

# Oracle® Order Management Suite

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# Contents

|   |         |
|---|---------|
| <b>Send Us Your Comments</b> .....  | xxiii   |
| <b>Preface</b> .....  | xxv     |
| <b>Audience for This Guide</b> .....                                      | xxv     |
| <b>How To Use This Guide</b> .....  | xxv     |
| Documentation Accessibility .....   | xxv     |
| <b>Other Information Sources</b> .....                                    | xxvi    |
| Online Documentation.....   | xxvi    |
| Related User’s Guides.....  | xxvii   |
| Guides Related to All Products .....                                      | xxvii   |
| User Guides Related to This Product .....                                 | xxvii   |
| Installation and System Administration .....                              | xxxvi   |
| Other Implementation Documentation.....                                   | xxxviii |
| Training and Support.....   | xxxix   |
| <b>Do Not Use Database Tools to Modify Oracle Applications Data</b> ..... | xl      |
| <b>About Oracle</b> .....   | xl      |
| <b>Your Feedback</b> .....  | xli     |
| <br>  |         |
| <b>1 Implementing Order Management</b>                                    |         |
| <b>Introduction</b> .....   | 1-2     |
| <br>  |         |
| <b>2 Order Management: New Features</b>                                   |         |
| <b>Introduction</b> .....   | 2-2     |
| <b>Architected for e-Business</b> .....                                   | 2-2     |

|  |     |
|--|-----|
| <b>New Features</b> .....                                    | 2-3 |
| Oracle Order Management as a Fulfillment Engine .....        | 2-3 |
| Order Capture from Any Source .....                          | 2-3 |
| Reduce Implementation Risk and Lower Cost of Ownership ..... | 2-4 |
| A New Look Takes Ease of Use to the Next Level.....          | 2-4 |

### **3 Shipping Execution: New Features**

|  |      |
|--|------|
| <b>Introduction</b> .....                      | 3-2  |
| <b>New Features</b> .....                      | 3-2  |
| Shipping Transaction Form.....                 | 3-3  |
| Tracking Freight Cost.....                     | 3-4  |
| Transportation Calendar.....                   | 3-4  |
| Container Management .....                     | 3-5  |
| Enhanced Pick Release.....                     | 3-5  |
| Transfer of Reservations to Cycle Count.....   | 3-8  |
| Over/Under Shipments.....                      | 3-9  |
| Over Picking.....                              | 3-9  |
| Shipping Exceptions.....                       | 3-10 |
| INTRASTAT & EXTRASTAT Movement Statistics..... | 3-10 |
| Global Packing Slip.....                       | 3-10 |
| Master Bill of Lading.....                     | 3-11 |
| Attachments for Shipping .....                 | 3-11 |
| United Parcel Service (UPS) Integration .....  | 3-11 |
| Enhanced Pick Slip Grouping Rules.....         | 3-12 |
| Document and Label Printer Assignments.....    | 3-13 |
| Roles and Users.....                           | 3-13 |
| Additional Line Status .....                   | 3-15 |
| Decimal Quantities for Standard Items.....     | 3-16 |
| Integration with Oracle Project Contracts..... | 3-16 |

### **4 Setup**

|  |      |
|--|------|
| <b>Overview</b> .....                                  | 4-1  |
| <b>Oracle Order Management Recommended Setup</b> ..... | 4-3  |
| <b>Order Management Profile Options</b> .....          | 4-15 |

|  |       |
|--|-------|
| <b>Enabling Order Management Parameters</b> .....            | 4-47  |
| <b>Taxation</b> .....  | 4-51  |
| <b>Defining Order Management QuickCodes</b> .....            | 4-55  |
| <b>Defining Freight and Special Charge Types</b> .....       | 4-57  |
| <b>Viewing Notifications</b> .....                           | 4-71  |
| <b>Defining Document Sequences for Order Numbering</b> ..... | 4-72  |
| <b>Defining Order Management Transaction Types</b> .....     | 4-75  |
| <b>Defining Sales Credit Types</b> .....                     | 4-92  |
| <b>Defining Order Import Sources</b> .....                   | 4-93  |
| <b>Overview of Processing Constraints</b> .....              | 4-95  |
| <b>Defining Processing Constraints</b> .....                 | 4-101 |
| <b>Processing Constraints Usage</b> .....                    | 4-107 |
| <b>Defining Validation Templates</b> .....                   | 4-108 |
| <b>Defining Record Sets</b> .....                            | 4-111 |
| <b>Overview of Defaulting Rules</b> .....                    | 4-113 |
| <b>Defining Defaulting Rules</b> .....                       | 4-121 |
| <b>Overview of Credit Checking</b> .....                     | 4-132 |
| <b>Defining Credit Profiles</b> .....                        | 4-144 |
| <b>Defining Credit Usage Rule Sets</b> .....                 | 4-150 |
| <b>Assigning Credit Usage Rule Sets</b> .....                | 4-154 |
| <b>Defining Credit Check Rules</b> .....                     | 4-157 |
| <b>Deactivating Credit Checking</b> .....                    | 4-166 |
| <b>iPayment Processing</b> .....                             | 4-167 |
| <b>Defining Holds</b> .....                                  | 4-170 |
| <b>Overview of Attachments</b> .....                         | 4-175 |
| <b>Defining Documents in Advance</b> .....                   | 4-178 |
| <b>Defining Attachment Addition Rules</b> .....              | 4-178 |
| <b>Defining Document Categories</b> .....                    | 4-179 |
| <b>Overview of Shipping Tolerances</b> .....                 | 4-183 |
| <b>Defining Shipping Tolerances</b> .....                    | 4-185 |
| <b>Trading Community usage within Order Management</b> ..... | 4-187 |

## **5 Sales Order Process**

|                             |     |
|-----------------------------|-----|
| <b>Overview</b> .....       | 5-2 |
| <b>Required Setup</b> ..... | 5-2 |

|   |      |
|---|------|
| <b>Process Steps</b> .....              | 5-5  |
| <b>Workflow</b> .....                   | 5-11 |
| <b>6 Returns</b>                        |      |
| <b>Overview</b> .....                   | 6-2  |
| Required Setup .....                    | 6-2  |
| <b>Process Flow</b> .....               | 6-5  |
| Workflow .....                          | 6-13 |
| <b>7 Drop Shipments</b>                 |      |
| <b>Overview</b> .....                   | 7-2  |
| <b>Required Setup</b> .....             | 7-2  |
| <b>Process Steps</b> .....              | 7-3  |
| <b>Workflow</b> .....                   | 7-3  |
| <b>8 Internal Orders</b>                |      |
| <b>Overview</b> .....                   | 8-2  |
| <b>Required Setup</b> .....             | 8-2  |
| <b>Process Steps</b> .....              | 8-3  |
| <b>Workflow</b> .....                   | 8-4  |
| <b>9 Configure-to-Order</b>             |      |
| <b>Overview</b> .....                   | 9-2  |
| <b>Required Setup</b> .....             | 9-4  |
| <b>Process Steps</b> .....              | 9-5  |
| Workflow .....                          | 9-9  |
| Configured Item Workflow .....          | 9-12 |
| <b>Related Processes</b> .....          | 9-15 |
| <b>10 Introduction to Basic Pricing</b> |      |
| <b>Overview</b> .....                   | 10-2 |
| <b>Overview of Basic Pricing</b> .....  | 10-2 |
| <b>Definitions</b> .....                | 10-3 |

|   |      |
|---|------|
| <b>Feature Highlights</b> .....                               | 10-4 |
| <b>Process Flow for Implementation</b> .....                  | 10-7 |
| <br>  |      |
| <b>11 Price Lists</b>   |      |
| <b>Overview</b> .....   | 11-2 |
| <b>General Basic Price List Capabilities</b> .....            | 11-2 |
| Role of precedence in resolving multiple price lists.....     | 11-4 |
| Price List Active Flag .....                                  | 11-5 |
| Price List Deletion.....                                      | 11-5 |
| Pricing Attributes - in Pricing Context Flexfield.....        | 11-6 |
| <br>  |      |
| <b>12 Modifiers</b>   |      |
| <b>Overview</b> .....   | 12-2 |
| <b>Implementing Modifiers</b> .....                           | 12-2 |
| <b>Types of Adjustments</b> .....                             | 12-2 |
| <b>Modifiers: How Do I Define My Product Hierarchy</b> .....  | 12-3 |
| Modifiers: How are they qualified? .....                      | 12-4 |
| <b>Modifier Applications Methods</b> .....                    | 12-5 |
| Modifier: Additional Controls and Special Considerations..... | 12-6 |
| <b>Manual Adjustments</b> .....                               | 12-7 |
| Applying Manual Adjustments.....                              | 12-7 |
| <br>  |      |
| <b>13 Agreements</b>  |      |
| <b>Overview of Agreement Features</b> .....                   | 13-2 |
| Type of Agreement.....  | 13-2 |
| Agreement Revisions .....                                     | 13-3 |
| Define Special Terms.....                                     | 13-3 |
| Pricing Agreement Price List and Lines.....                   | 13-3 |
| Customer Items.....   | 13-4 |
| Single Currency.....  | 13-4 |
| <b>Agreements Setup</b> .....                                 | 13-4 |
| <b>Defining Agreements</b> .....                              | 13-5 |

|           |  |      |
|-----------|--|------|
| <b>14</b> | <b>GSA Pricing</b>                             |      |
|           | <b>Overview of GSA Features</b> .....          | 14-2 |
|           | Government Services Pricing Guidelines.....    | 14-2 |
|           | Minimum Price Floors .....                     | 14-2 |
|           | GSA Pricing = GSA Discount.....                | 14-2 |
|           | GSA Violation.....                             | 14-3 |
|           | <b>Setup GSA Pricing</b> .....                 | 14-3 |
|           | <b>Defining GSA Pricing</b> .....              | 14-4 |
|           | List Qualifiers .....                          | 14-6 |
|           | Modifier Summary .....                         | 14-7 |
| <b>15</b> | <b>Formulas</b>                                |      |
|           | <b>Overview of Formulas</b> .....              | 15-2 |
|           | Defining Formulas .....                        | 15-2 |
|           | Formula SetUp Form.....                        | 15-2 |
|           | Updating Formula Pricing.....                  | 15-6 |
| <b>16</b> | <b>Pricing Profiles</b>                        |      |
|           | <b>Overview</b> .....                          | 16-2 |
|           | <b>Profile Options</b> .....                   | 16-2 |
|           | <b>Setup Profile Options Summary</b> .....     | 16-2 |
| <b>17</b> | <b>Using Defaulting Rules in Basic Pricing</b> |      |
|           | <b>Overview</b> .....                          | 17-2 |
|           | Pricing Date .....                             | 17-2 |
|           | Agreement .....                                | 17-2 |
|           | Price List.....                                | 17-2 |
|           | Currency Code .....                            | 17-2 |
| <b>18</b> | <b>Simple Pick &amp; Ship Process</b>          |      |
|           | <b>Overview</b> .....                          | 18-2 |
|           | <b>Required Setup</b> .....                    | 18-2 |
|           | <b>Process Steps</b> .....                     | 18-3 |



|           |   |       |
|-----------|---|-------|
| <b>19</b> | <b>Simple Pick &amp; Ship Process Using Mobile Devices and UPS</b>          |       |
|           | Overview .....  | 19-2  |
|           | Required Setup.....   | 19-3  |
|           | Process Steps.....  | 19-4  |
| <b>20</b> | <b>Simple Pick &amp; Ship Process Using Containers/LPNs</b>                 |       |
|           | Overview .....  | 20-2  |
|           | Required Setup.....   | 20-2  |
|           | Process Steps .....   | 20-4  |
| <b>21</b> | <b>Hold Management</b>  |       |
|           | Overview .....  | 21-2  |
|           | Required Setup.....   | 21-2  |
|           | Process Flow.....   | 21-4  |
|           | Workflow .....  | 21-19 |
| <b>22</b> | <b>Oracle Configurator Setup Requirements</b>                               |       |
|           | Overview .....  | 22-2  |
|           | Configurator.....   | 22-2  |
| <b>23</b> | <b>Order Import</b>   |       |
|           | Overview .....  | 23-2  |
|           | Feature Functions and Basic Instruction - What is it? How is it used? ..... | 23-2  |
|           | Tools/Techniques of Feature - API's, Workflow.....                          | 23-6  |
|           | Setup Steps to Implement Order Import .....                                 | 23-6  |
|           | Loading the Import tables.....  | 23-7  |
|           | Flags.....  | 23-7  |
|           | Actions Table .....   | 23-9  |
|           | IDs vs. Codes .....   | 23-10 |
|           | Matching Changes to Orders.....   | 23-10 |
|           | Summary/Conclusion .....  | 23-11 |

## 24 Invoicing

|  |      |
|--|------|
| <b>Overview</b> .....  | 24-2 |
| <b>Feature Functions and Basic Instruction - What is it? How is it used?</b> ..... | 24-3 |
| Invoicing and Fulfillment .....  | 24-3 |
| Discounts.....   | 24-3 |
| Freight and Other Charges .....  | 24-3 |
| Over and Under Shipments .....   | 24-4 |
| Credit Cards .....   | 24-4 |
| Notes/Attachments.....   | 24-4 |
| Viewing the Invoice.....   | 24-4 |
| <b>Tools/Techniques of Feature - API's, Workflow</b> .....                         | 24-5 |
| <b>Setup Steps to Implement Invoicing</b> .....                                    | 24-6 |
| <b>Troubleshooting</b> .....   | 24-8 |
| <b>Summary/Conclusion</b> .....  | 24-9 |

## 25 Shipping Execution Setup

|   |       |
|---|-------|
| <b>Overview of Setup</b> .....  | 25-2  |
| <b>Setup Steps</b> .....  | 25-4  |
| <b>Profile Options</b> .....  | 25-9  |
| <b>Defining Roles and Users</b> .....                                   | 25-12 |
| Upgrading and New Installation Considerations for Roles and Users ..... | 25-13 |
| Defining a New Role .....   | 25-13 |
| Copying an Existing Role .....  | 25-18 |
| Granting a Role to a User.....  | 25-18 |
| Finding Grants and Roles .....  | 25-21 |
| Updating a User's Grant .....   | 25-23 |
| <b>Defining Shipping Parameters</b> .....                               | 25-26 |
| Defining General Parameters.....  | 25-27 |
| Defining Pick Release Parameters.....                                   | 25-29 |
| Defining Shipping Transaction Parameters.....                           | 25-32 |
| Defining Delivery Grouping Parameters .....                             | 25-35 |
| <b>Defining Freight Carrier Ship Method Relationships</b> .....         | 25-37 |
| <b>Defining Freight Costs</b> .....                                     | 25-44 |
| <b>Defining Document Sequences</b> .....                                | 25-46 |
| <b>Defining Document Categories</b> .....                               | 25-48 |

|  |              |
|--|--------------|
| <b>Assigning Document Sequences to Document Categories .....</b> | <b>25-52</b> |
| <b>Defining Shipping Document Sets.....</b>                      | <b>25-53</b> |
| <b>Choosing Printers for Shipping Documents and Labels .....</b> | <b>25-56</b> |
| <b>Defining Pick Slip Grouping Rules.....</b>                    | <b>25-60</b> |
| <b>Defining Release Rules .....</b>                              | <b>25-62</b> |
| <b>Defining Release Sequence Rules.....</b>                      | <b>25-66</b> |
| <b>Defining Transportation Calendars .....</b>                   | <b>25-68</b> |
| <b>Defining Shipping Exceptions.....</b>                         | <b>25-71</b> |
| <b>Defining Containers and Vehicles .....</b>                    | <b>25-72</b> |
| <b>Defining Container-Item Relationships .....</b>               | <b>25-74</b> |
| <b>Finding Container-Item Relationships.....</b>                 | <b>25-76</b> |
| <b>International Trade Management Adapter .....</b>              | <b>25-78</b> |
| <b>Regions and Zones .....</b>                                   | <b>25-90</b> |

## **26 Shipping Migration**

|  |             |
|--|-------------|
| <b>Overview .....</b>                            | <b>26-2</b> |
| Functional Differences .....                     | 26-2        |
| Migration: Common Technical Considerations ..... | 26-4        |
| <b>Technical Migration R10.7 to R11i .....</b>   | <b>26-5</b> |
| <b>Technical Migration R11 to R11i .....</b>     | <b>26-6</b> |
| Data Not Upgraded.....                           | 26-7        |

## **27 Document Sequencing for Shipping**

|   |              |
|---|--------------|
| <b>Overview .....</b>   | <b>27-2</b>  |
| <b>Document Categories.....</b>                               | <b>27-2</b>  |
| <b>Defining Document Categories .....</b>                     | <b>27-3</b>  |
| Summary Document Category.....                                | 27-4         |
| <b>Document Sequence.....</b>                                 | <b>27-5</b>  |
| Summary Document Sequence.....                                | 27-6         |
| <b>Assign a Document Sequence to a Document Category.....</b> | <b>27-6</b>  |
| Summary Assign Category to Sequence .....                     | 27-7         |
| <b>Creating a Bill of Lading .....</b>                        | <b>27-8</b>  |
| Summary Generate Bill of Lading.....                          | 27-12        |
| <b>Creating a Packing List .....</b>                          | <b>27-13</b> |
| Summary Generate the Packing Slip .....                       | 27-17        |

## **28 Shipping Execution Reports, Documents, and Processes**

|  |       |
|--|-------|
| <b>Overview</b> .....                              | 28-2  |
| <b>Preliminary Setups</b> .....                    | 28-2  |
| Shipping Parameters Setups .....                   | 28-4  |
| Using Text Attachments .....                       | 28-4  |
| <b>Pick Slip Report</b> .....                      | 28-6  |
| <b>Backorder Reports</b> .....                     | 28-9  |
| <b>Open Deliveries Report</b> .....                | 28-9  |
| <b>Global Packing Slip Report</b> .....            | 28-10 |
| <b>Bill of Lading</b> .....                        | 28-10 |
| <b>Master Bill of Lading Report</b> .....          | 28-11 |
| <b>Mailing Labels</b> .....                        | 28-12 |
| <b>Commercial Invoice Report</b> .....             | 28-12 |
| <b>Import Delivery Lines</b> .....                 | 28-12 |
| <b>Order Management Interface - SRS</b> .....      | 28-12 |
| <b>Inventory Interface - SRS</b> .....             | 28-13 |
| <b>Departure Ship Notice Outbound (DSNO)</b> ..... | 28-13 |

## **29 Order Management Reports**

|                                  |      |
|----------------------------------|------|
| <b>Report Name Mapping</b> ..... | 29-2 |
|----------------------------------|------|

## **30 Flexfield Migration**

|                                     |      |
|-------------------------------------|------|
| <b>Descriptive Flexfields</b> ..... | 30-2 |
|-------------------------------------|------|

## **31 Migrating Profile Options**

|                                      |      |
|--------------------------------------|------|
| <b>Profile Options</b> .....         | 31-2 |
| <b>System Parameters Setup</b> ..... | 31-9 |

## **32 Migrating Cycles to Workflow**

|  |      |
|--|------|
| <b>Overview</b> .....                                      | 32-2 |
| <b>Upgrading Order Types</b> .....                         | 32-2 |
| <b>Upgrading Order Number Sources</b> .....                | 32-3 |
| <b>Upgrade Strategy for Cycles and Cycle History</b> ..... | 32-5 |

|   |       |
|---|-------|
| <b>Upgrading User Defined Cycle Data</b> .....                        | 32-6  |
| <b>Upgrading Order Type - Cycle Assignments</b> .....                 | 32-26 |
| <b>Upgrading Cycle History</b> .....                                  | 32-27 |
| <b>Post-Upgrade steps that affect the Cycle History Upgrade</b> ..... | 32-35 |
| <b>Cycles Upgrade and other Order Entry features</b> .....            | 32-38 |
| <b>Glossary</b> .....   | 32-39 |

## **A Using Workflow in Order Management**

|  |      |
|--|------|
| <b>Overview</b> .....  | A-2  |
| <b>Introduction</b> .....  | A-2  |
| <b>Functional Differences</b> .....  | A-2  |
| <b>R11i Features</b> .....   | A-4  |
| Flexible and extensible order processes .....                                      | A-4  |
| Automated, Deferred and Manual Transactions .....                                  | A-9  |
| Interactive decision support and exception handling.....                           | A-10 |
| <b>Order Management Workflow Standards</b> .....                                   | A-11 |
| Synchronous - Implementing a business function that is automatically executed..... | A-11 |
| Manual - Implementing a Business Function that Requires User Intervention. ....    | A-12 |
| Deferred - Implementing a Business Function that is Executed Off-line. ....        | A-12 |
| Naming Conventions .....   | A-14 |
| Activity Results .....   | A-15 |
| Default Error Process .....  | A-16 |
| Access Control.....  | A-17 |
| <b>Using WorkFlow in Order Management</b> .....                                    | A-17 |
| Set up.....  | A-17 |
| Order or Line Business Processes that are Workflow Enabled.....                    | A-23 |
| Moving Orders and Lines forward in their flows.....                                | A-26 |
| Tracking order status .....  | A-28 |
| Workflow and other OM function areas .....   | A-33 |
| Error handling.....  | A-34 |
| Purging Workflow Status Information.....   | A-35 |
| <b>Customizing Order and Line Flows</b> .....                                      | A-35 |
| Guidelines .....   | A-35 |
| Examples .....   | A-37 |
| Caveats .....  | A-43 |

|   |      |
|---|------|
| <b>Conclusion</b> .....                   | A-44 |
| <b>B Data Model Overview</b>              |      |
| <b>Order Management Overview</b> .....    | B-2  |
| <b>The Order Management Tables</b> .....  | B-3  |
| Sales Credits .....                       | B-22 |
| Price Adjustments.....                    | B-22 |
| Pricing Attributes.....                   | B-25 |
| Adjustment Attributes .....               | B-26 |
| Adjustment Associations.....              | B-27 |
| LOT and Serial Numbers.....               | B-27 |
| <b>KEY Order Management Modules</b> ..... | B-29 |
| Integration Points.....                   | B-34 |
| Oracle Order Management Conclusion.....   | B-41 |
| <b>Shipping Execution Overview</b> .....  | B-41 |
| <b>C Using Credit Cards and iPayment</b>  |      |
| <b>Overview</b> .....                     | C-2  |
| <b>Introduction</b> .....                 | C-2  |
| <b>Background</b> .....                   | C-2  |
| <b>Features Provided</b> .....            | C-3  |
| IPayment Process .....                    | C-3  |
| Types of Authorizations .....             | C-3  |
| <b>Set Up Required</b> .....              | C-6  |
| Profile Options .....                     | C-6  |
| Reports.....                              | C-8  |
| Watch Out For .....                       | C-8  |
| <b>D Defaulting Rules</b>                 |      |
| <b>Overview</b> .....                     | D-2  |
| <b>Introduction</b> .....                 | D-2  |
| <b>Background</b> .....                   | D-2  |
| <b>Functional Differences</b> .....       | D-3  |
| Key Enhancements .....                    | D-3  |

|   |      |
|---|------|
| Terminology .....                                 | D-3  |
| Attributes and Entities in Order Management ..... | D-3  |
| Conditions .....                                  | D-4  |
| Sequence of Defaulting .....                      | D-5  |
| Sources of Values .....                           | D-5  |
| Dependencies .....                                | D-6  |
| Controlling Changes .....                         | D-8  |
| Reports .....                                     | D-8  |
| <b>Watch Out For</b> .....                        | D-9  |
| Creating Conditions .....                         | D-9  |
| Defaulting vs. Cascading.....                     | D-10 |
| <b>Migration/Upgrade from SVRS</b> .....          | D-10 |
| <b>Example</b> .....                              | D-11 |
| <b>Conclusion</b> .....                           | D-12 |

## **E Using Processing Constraints**

|  |      |
|--|------|
| <b>Overview</b> .....                              | E-2  |
| <b>Introduction</b> .....                          | E-2  |
| <b>Background</b> .....                            | E-3  |
| <b>Functional Differences</b> .....                | E-3  |
| Key Enhancements .....                             | E-4  |
| Terminology .....                                  | E-4  |
| Defining Processing Constraints .....              | E-5  |
| Defining Validation Templates.....                 | E-11 |
| Defining Record Sets.....                          | E-14 |
| Concurrent Program .....                           | E-16 |
| Report .....                                       | E-16 |
| <b>Migration/Upgrade from Security Rules</b> ..... | E-16 |
| <b>Examples</b> .....                              | E-17 |

## **F Using Transaction Types**

|                                     |     |
|-------------------------------------|-----|
| <b>Overview</b> .....               | F-2 |
| <b>Introduction</b> .....           | F-2 |
| <b>Background</b> .....             | F-2 |
| <b>Functional Differences</b> ..... | F-2 |

|  |             |
|--|-------------|
| Key Enhancements .....                         | F-3         |
| Terminology .....                              | F-3         |
| Reports.....                                   | F-7         |
| <b>Migration/Upgrade from Order Types.....</b> | <b>F-8</b>  |
| <b>Example.....</b>                            | <b>F-8</b>  |
| <b>Conclusion.....</b>                         | <b>F-12</b> |

## **G Customer Agreements**

|   |             |
|---|-------------|
| <b>Overview .....</b>                             | <b>G-2</b>  |
| <b>Introduction .....</b>                         | <b>G-2</b>  |
| <b>Business Needs.....</b>                        | <b>G-2</b>  |
| <b>Major Features.....</b>                        | <b>G-3</b>  |
| Agreement Types and Agreements .....              | G-3         |
| Price Lists and Agreements.....                   | G-3         |
| Track Revisions to Agreements .....               | G-4         |
| Use Agreements on Orders .....                    | G-4         |
| <b>Set up.....</b>                                | <b>G-5</b>  |
| Define Agreement Types.....                       | G-5         |
| Define Agreements.....                            | G-5         |
| Define Order Transaction Types .....              | G-6         |
| Defaulting Rules and Processing Constraints ..... | G-6         |
| <b>Entering Orders Using Agreements .....</b>     | <b>G-7</b>  |
| Sales Order UI.....                               | G-7         |
| Sales Order Entry.....                            | G-7         |
| <b>Reports .....</b>                              | <b>G-7</b>  |
| <b>Using Agreements with Commitments .....</b>    | <b>G-8</b>  |
| <b>Example.....</b>                               | <b>G-8</b>  |
| A Second Example:.....                            | G-9         |
| <b>Migration/Upgrade .....</b>                    | <b>G-10</b> |
| <b>Conclusion.....</b>                            | <b>G-10</b> |

## **H Freight and Special Charges**

|                           |            |
|---------------------------|------------|
| <b>Overview .....</b>     | <b>H-1</b> |
| <b>Introduction .....</b> | <b>H-1</b> |
| <b>Background .....</b>   | <b>H-2</b> |



|  |      |
|--|------|
| <b>Process Flows</b> .....   | H-3  |
| <b>Charges Setup</b> .....   | H-5  |
| <b>Other Business Scenarios</b> .....                              | H-18 |
| <b>Troubleshooting</b> .....                                       | H-25 |
| <b>Conclusion</b> .....  | H-29 |
| <b>Supplement 1: Seeded Freight and Special Charge Types</b> ..... | H-29 |
| <b>Supplement 2: Order Level Cost to Charge Conversion</b> .....   | H-30 |

## **I Scheduling**

|   |      |
|---|------|
| <b>Overview</b> .....                       | I-2  |
| <b>Introduction</b> .....                   | I-2  |
| <b>Background</b> .....                     | I-2  |
| <b>Functional Differences</b> .....         | I-2  |
| Key Enhancements.....                       | I-3  |
| Terminology.....                            | I-3  |
| Calculating Available to Promise (ATP)..... | I-4  |
| Scheduling.....                             | I-6  |
| Reserving.....                              | I-9  |
| Unreserving and Unscheduler.....            | I-10 |
| Scheduling Groups of Lines.....             | I-10 |
| Changing Scheduled Lines.....               | I-11 |
| Setup.....                                  | I-13 |
| Choosing Not to Use Scheduling.....         | I-15 |
| <b>Watch Out For</b> .....                  | I-15 |
| Migration/Upgrade.....                      | I-16 |
| <b>Example</b> .....                        | I-16 |
| <b>Conclusion</b> .....                     | I-18 |

## **J Carrier-Ship Method Relationship and Setup**

|  |     |
|--|-----|
| <b>Overview</b> .....                                      | J-2 |
| <b>Difference Between Release 11 and Release 11i</b> ..... | J-2 |
| <b>Freight Carriers</b> .....                              | J-3 |
| Defining Freight Carriers.....                             | J-3 |
| <b>Ship Method</b> .....                                   | J-4 |
| <b>Carrier- Ship Method Relationship</b> .....             | J-7 |

|  |             |
|--|-------------|
| <b>Find a Carrier-Ship Method Relationship .....</b> | <b>J-9</b>  |
| <b>Assign a Ship Method.....</b>                     | <b>J-10</b> |
| <b>Defaulting Ship Method in Sales Order .....</b>   | <b>J-14</b> |
| <b>Business Scenario .....</b>                       | <b>J-15</b> |

## **K Containerization in Shipping Execution**

|   |             |
|---|-------------|
| <b>Overview .....</b>   | <b>K-2</b>  |
| <b>Setup Steps.....</b>   | <b>K-2</b>  |
| Define Container Item and Vehicle as Item Types .....                           | K-3         |
| Define Container Types .....  | K-3         |
| Create a Container Item.....  | K-4         |
| Create a Vehicle.....   | K-6         |
| Define Physical Attributes for Items to Include in Containers (Load Items)..... | K-7         |
| Setup Container-Load Relationships for Containers and Items .....               | K-9         |
| Define Shipping Parameters .....  | K-10        |
| Define Default Containers for Customer Items.....                               | K-13        |
| <b>Creating Containers.....</b>   | <b>K-14</b> |
| <b>Packing Items into Containers .....</b>                                      | <b>K-15</b> |
| Manual Packing .....  | K-16        |
| Auto-Packing.....   | K-16        |
| Packing Workbench.....  | K-18        |
| <b>Additional Functionality .....</b>   | <b>K-21</b> |
| Assigning Serial Numbers to Containers.....                                     | K-21        |
| Generating a Loading Sequence for Deliveries/Containers .....                   | K-21        |

## **L Roles and Users Security**

|   |             |
|---|-------------|
| <b>Shipping Execution Roles and Users .....</b> | <b>L-1</b>  |
| <b>Setting Up Roles and Users .....</b>         | <b>L-1</b>  |
| <b>Using Roles and Users .....</b>              | <b>L-19</b> |
| <b>Glossary .....</b>                           | <b>L-20</b> |
| <b>Templates.....</b>                           | <b>L-21</b> |

## **M Transfer of Delivery Line Reservations to Cycle Count**

|                       |            |
|-----------------------|------------|
| <b>Overview .....</b> | <b>M-1</b> |
|-----------------------|------------|

|                                |     |
|--------------------------------|-----|
| <b>Introduction</b> .....      | M-1 |
| <b>Business Need</b> .....     | M-1 |
| <b>Using the Feature</b> ..... | M-2 |

## **N Change Orders Information Management**

|   |      |
|---|------|
| <b>Order Line Change Management in Shipping</b> ..... | N-1  |
| <b>Change Management Core Functionalities</b> .....   | N-4  |
| <b>Setups</b> .....                                   | N-6  |
| <b>Exception Messages</b> .....                       | N-9  |
| <b>Frequently Asked Questions</b> .....               | N-10 |
| <b>Order is Booked/Scheduled</b> .....                | N-14 |
| <b>Delivery Lines are Pick Released</b> .....         | N-15 |
| <b>Delivery Lines Released to Warehouse</b> .....     | N-16 |
| <b>Staged Delivery Lines</b> .....                    | N-18 |
| <b>Ship Confirmed, In Transit, or Closed</b> .....    | N-19 |
| <b>Summary</b> .....                                  | N-20 |

## **O Multimodal and Consolidated Shipments**

|   |     |
|---|-----|
| <b>Introduction</b> .....                               | O-1 |
| <b>Definitions</b> .....                                | O-1 |
| <b>Business Scenario 1: Multimodal Shipment</b> .....   | O-2 |
| <b>Business Scenario 2: Consolidated Shipment</b> ..... | O-9 |

## **P Line Status in the Oracle Order Management Suite**

|  |      |
|--|------|
| <b>Introduction</b> .....                                  | P-1  |
| <b>Standard Line Status Flow (also includes PTO)</b> ..... | P-1  |
| <b>ATO Line Status Flow</b> .....                          | P-11 |
| <b>Bill Only Line Status Flow</b> .....                    | P-12 |
| <b>Returns Line Status Flow</b> .....                      | P-13 |
| <b>Drop Ship Line Status Flow</b> .....                    | P-13 |
| <b>Order and Delivery Line Statuses</b> .....              | P-13 |

## **Q Managing Material Picking Waves**

|                           |     |
|---------------------------|-----|
| <b>Introduction</b> ..... | Q-1 |
|---------------------------|-----|

|   |     |
|---|-----|
| <b>Key Features</b> .....                     | Q-1 |
| <b>Configuring Your Picking Process</b> ..... | Q-2 |
| <b>Further Reading</b> .....                  | Q-7 |

## **R Backorders**

|  |      |
|--|------|
| <b>Introduction</b> .....                                  | R-1  |
| <b>Release Statuses</b> .....                              | R-1  |
| <b>Backorder at Pick Release</b> .....                     | R-5  |
| <b>Backorder at Ship Confirmation</b> .....                | R-5  |
| <b>Scenario 1: Shortage at Detailing</b> .....             | R-9  |
| <b>Scenario 2: Shortage Reported at Pick Confirm</b> ..... | R-11 |
| <b>Backorders and Cycle Counting</b> .....                 | R-13 |
| <b>Backorders and Over picking</b> .....                   | R-17 |

## **S Fulfillment**

|                            |     |
|----------------------------|-----|
| <b>Overview</b> .....      | S-2 |
| <b>Introduction</b> .....  | S-2 |
| Terminology .....          | S-2 |
| How it Works .....         | S-2 |
| Setup .....                | S-3 |
| <b>Watch Out For</b> ..... | S-3 |
| <b>Examples</b> .....      | S-4 |
| <b>Conclusion</b> .....    | S-4 |

## **T Upgrading to Order Management**

|   |      |
|---|------|
| <b>Overview</b> .....                                 | T-2  |
| Documentation References.....                         | T-2  |
| <b>Strategy</b> .....                                 | T-2  |
| Bifurcation of Order Management Upgrade .....         | T-3  |
| <b>Intended Users</b> .....                           | T-4  |
| <b>Steps to Upgrade to Order Management 11i</b> ..... | T-4  |
| <b>An Insight to Order Management Upgrade</b> .....   | T-8  |
| Upgrade Temporary Objects.....                        | T-8  |
| <b>Fine Tuning the Order Management Upgrade</b> ..... | T-14 |

|   |             |
|---|-------------|
| Object Sizing files.....                                      | T-15        |
| Object Sizing Estimation.....                                 | T-15        |
| <b>Conclusion .....</b>                                       | <b>T-16</b> |
| <br>  |             |
| <b>U Lookups</b>  |             |
| <b>Advanced Pricing Lookups.....</b>                          | <b>U-2</b>  |
| <b>Shipping Execution Lookups .....</b>                       | <b>U-14</b> |
| <br>  |             |
| <b>V Pricing Attribute Seed Data</b>                          |             |
| <b>Pricing Attribute Seed Data.....</b>                       | <b>V-2</b>  |
| <br>  |             |
| <b>W Qualifier Seed Data</b>                                  |             |
| <b>Qualifier Seed Data.....</b>                               | <b>W-2</b>  |
| <br>  |             |
| <b>X Introduction to CBO Troubleshooting in R11i</b>          |             |
| <b>Introduction .....</b>                                     | <b>X-2</b>  |
| Objectives.....   | X-2         |
| Overview.....   | X-2         |
| <b>The Optimizer .....</b>                                    | <b>X-3</b>  |
| <b>CBO vs. RBO.....</b>                                       | <b>X-4</b>  |
| CBO Operation.....  | X-5         |
| COSTS .....   | X-8         |
| Statistics.....   | X-10        |
| TABLE STATISTICS.....   | X-12        |
| Troubleshooting.....  | X-15        |
| Reference Material.....                                       | X-17        |
| Appendix .....  | X-17        |
| B. Types of Access Methods.....                               | X-18        |
| C. Execution Plan.....  | X-21        |
| The EXPLAIN PLAN Command .....                                | X-23        |
| D. Parameters that Affect Cost-Based Optimization Plans ..... | X-24        |
| E. Gathering Statistics Concurrent Programs.....              | X-26        |
| F. Mandatory CBO init.ora Parameters.....                     | X-29        |

**Y Order Management Processing Constraints**

**Processing Constraints..... Y-2**

**Index**

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**Oracle Order Management Suite Implementation Manual, Release 11*i***

**Part No. A95859-01**

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## Audience for This Guide

Welcome to Release 11i of the Oracle® Order Management Suite Implementation Manual.

This guide assumes you have a working knowledge of the following:

- The principles and customary practices of your business area.
- Oracle® Order Management, Oracle Pricing (Basic), Oracle Shipping Execution

If you have never used Oracle® Order Management, Oracle Pricing, or Oracle Shipping Execution we suggest you attend one or more of the Oracle® Order Management training classes available through Oracle University.

<http://ou.us.oracle.com/>

- The Oracle Applications graphical user interface.

To learn more about the Oracle Applications graphical user interface, read the *Oracle Applications User Guide*.

See Other Information Sources for more information about Oracle Applications product information.

## How To Use This Guide

This guide contains the information you need to understand and use ***Oracle Order Management Suite***.

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***Oracle Order Management Suite Implementation Manual*** shares business and setup information with other Oracle Applications products. Therefore, you may want to refer to other user's guides when you set up and use ***Oracle Order Management Suite***.

You can read the guides online by choosing Library from the expandable menu on your HTML help window, by reading from the Oracle Applications Document Library CD included in your media pack, or by using a Web browser with a URL that your system administrator provides.

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You can access this user's guide online by choosing "Getting Started with Oracle Applications" from any Oracle Applications help file.

## User Guides Related to This Product

### User Guides Related to All Products

#### Oracle Applications User Guide

This guide explains how to navigate the system, enter data, and query information, and introduces other basic features of the GUI available with this release of Oracle® Order Management (and any other Oracle Applications product).

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## **User Guides Related to This Product**

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If you install Oracle Assets, you can use this manual to add assets and cost adjustments directly into Oracle Assets from invoice information in Payables.

### **Oracle Bills of Material User's Guide**

This guide describes how to create various bills of materials to maximize efficiency, improve quality and lower cost for the most sophisticated manufacturing

environments. By detailing integrated product structures and processes, flexible product and process definition, and configuration management, this guide enables you to manage product details within and across multiple manufacturing sites.

### **Oracle Business Intelligence System Implementation Guide**

This guide provides information about implementing Oracle Business Intelligence (BIS) in your environment.

### **BIS 11i User Guide Online Help**

This guide is provided as online help only from the BIS application and includes information about intelligence reports, Discoverer workbooks, and the Performance Management Framework.

### **Oracle Capacity User's Guide**

This guide describes how to validate a material plan by verifying that there are resources sufficient to perform the planned work for repetitive and discrete jobs. Using finite capacity planning techniques, you learn how to use rough-cut capacity planning to validate a master schedule and capacity planning to validate the material plan.

### **Oracle Cash Management User's Guide**

This manual explains how you can reconcile your payments with your bank statements.

### **Oracle Cost Management User's Guide**

This guide describes how to use Oracle Cost Management in either a standard costing or average costing organization. Cost Management can be used to cost inventory, receiving, order entry, and work in process transactions. It can also be used to collect transaction costs for transfer to Oracle Projects. Cost Management supports multiple cost elements and multiple subelements. It also provides comprehensive valuation and variance reporting.

### **Oracle e-Commerce Gateway User's Guide**

This guide describes how Oracle e-Commerce Gateway provides a means to conduct business with trading partners via Electronic Data Interchange (EDI). Data files are exchanged in a standard format to minimize manual effort, speed data processing and ensure accuracy.

### **Oracle Engineering User's Guide**

This guide enables your engineers to utilize the features of Oracle Engineering to quickly introduce and manage new designs into production. Specifically, this guide details how to quickly and accurately define the resources, materials and processes necessary to implement changes in product design.

### **Oracle General Ledger User's Guide**

This guide explains how to plan and define your chart of accounts, accounting period types and accounting calendar, functional currency, and set of books. It also describes how to define journal entry sources and categories so you can create journal entries for your general ledger. If you use multiple currencies, use this manual when you define additional rate types, and enter daily rates. This manual also includes complete information on implementing Budgetary Control.

### **Oracle HRMS Documentation Set**

- *Using Oracle HRMS - The Fundamentals* explains how to set up organizations and site locations.
- *Managing People Using Oracle HRMS* explains how to enter and track employee data.
- *Running Your Payroll Using Oracle HRMS* explains how to set up payroll, do withholding, run statutory reports, and pay employees.
- *Managing Compensation and Benefits Using Oracle HRMS* explains how to set up Total Compensation, including 401(k), health, and insurance plans.
- *Customizing, Reporting, and System Administration in Oracle HRMS* explains how to customize to the system and design reports.

### **Oracle Inventory User's Guide**

This guide describes how to define items and item information, perform receiving and inventory transactions, maintain cost control, plan items, perform cycle counting and physical inventories, and set up Oracle Inventory.

### **Oracle Manufacturing Scheduling User's Guide**

This guide describes how to use Oracle Manufacturing Scheduling to view and reschedule single discrete jobs or the entire shop floor. Specifically, this guide details how to easily use the drag and drop functionality to view and reschedule jobs, operations, and resources.

### **Oracle Master Scheduling/MRP and Oracle Advanced Supply Chain Planning User's Guide**

This guide describes how to anticipate and manage both supply and demand for your items. Using a variety of tools and techniques, you can create forecasts, load these forecasts into master production schedules, and plan your end-items and their component requirements. You can also execute the plan, releasing and rescheduling planning suggestions for discrete jobs and repetitive schedules.

### **Oracle Order Management User's Guide**

This guide describes how to enter sales orders and returns, copy existing sales orders, schedule orders, release orders, create price lists and discounts for orders, and create reports.

### **Oracle Payables User's Guide**

This guide describes how accounts payable transactions are created and entered in Oracle Payables. This guide also contains detailed setup information for Oracle Payables.

### **Oracle Pricing User's Guide**

This guide describes how to setup modifiers, price lists, formulas, pricing agreements, pricing rules, and pricing of special orders in Oracle Pricing.

### **Oracle Project Manufacturing User's Guide**

This guide describes the unique set of features Oracle Project Manufacturing provides for a project-based manufacturing environment. Oracle Project Manufacturing can be tightly integrated with Oracle Projects. However, in addition to Oracle Projects functionality, Oracle Project Manufacturing provides a comprehensive set of new features to support project sales management, project manufacturing costing, project manufacturing planning, project manufacturing execution and project quality management.

### **Oracle Projects User's Guide**

This guide explains how to set up projects for use in project manufacturing and project accounting.

### **Oracle Purchasing User's Guide**

This guide describes how to create and approve purchasing documents, including requisitions, different types of purchase orders, quotations, RFQs, and receipts. This guide also describes how to manage your supply base through agreements,

sourcing rules and approved supplier lists. In addition, this guide explains how you can automatically create purchasing documents based on business rules through integration with Oracle Workflow technology, which automates many of the key procurement processes.

### **Oracle Quality User's Guide**

This guide describes how Oracle Quality can be used to meet your quality data collection and analysis needs. This guide also explains how Oracle Quality interfaces with other Oracle Manufacturing applications to provide a closed loop quality control system.

### **Oracle Receivables User's Guide**

Use this manual to learn how to implement flexible address formats for different countries. You can use flexible address formats in the suppliers, banks, invoices, and payments windows.

### **Oracle Release Management User's Guide**

This manual describes how to manage high volume electronic demand by continually incorporating your customers demand into your order and planning processes. By explaining how to validate, archive, manage and reconcile incoming planning, shipping and production sequence schedules with updates to sales orders and forecasts, it enables you to electronically collaborate with your customers to more accurately manage demand. It also describes how to plan, create and manage trading partner layers for trading partner specific customizations.

### **Oracle Sales and Marketing Connected Client User's Guide**

This guide describes how to set up your connected client, manage your account information, manage your database of contacts, and how to record, review and add information about an account, contact, or opportunity. This guide also describes how to view pending, current, and past customer orders, to create and track responses to promotional campaigns, track the effectiveness of a promotional program, and how to project your progress towards sales goals.

### **Oracle Sales Compensation User's Guide**

This guide describes how to categorize your sales revenue, how to define the data you need to Oracle Sales Compensation, and where to collect the data from. Each sales organization has different ways of paying compensation; thus each organization needs different types of data to calculate a compensation payment. This guide also explains how to setup and calculate compensation for a salesperson, adjust for sales credits, and view a salesperson's performance against their quota. In



addition, this guide also explains how to run a variety of reports for individuals or groups of salespeople.

### **Oracle Shipping Execution User's Guide**

This guide describes how to set up Oracle Shipping Execution to process and plan your trips, stops and deliveries, ship confirmation, query shipments, determine freight cost and charges to meet your business needs.

### **Oracle Supplier Scheduling User's Guide**

This guide describes how you can use Oracle Supplier Scheduling to calculate and maintain planning and shipping schedules and communicate them to your suppliers.

### **Oracle Work in Process User's Guide**

This guide describes how Oracle Work in Process provides a complete production management system. Specifically this guide describes how discrete, repetitive, assemble-to-order, project, flow, and mixed manufacturing environments are supported.

### **Oracle Workflow User's Guide**

This guide explains how to define new workflow business processes as well as customize existing Oracle Applications-embedded workflow processes. You also use this guide to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes.

## **Reference Manuals**

### **Oracle Technical Reference Manuals**

Each technical reference manual contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing applications, integrate Oracle Applications data with non-Oracle applications, and write custom reports for Oracle Applications products.

You can order a technical reference manual for any Oracle Applications product you have licensed.

### **Oracle Release Management Implementation Manual**

This manual describes the setup and implementation of the Oracle Applications used for the Oracle Automotive solution, including Oracle Release Management and Oracle Automotive.

### **Oracle Manufacturing APIs and Open Interfaces Manual**

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes API's and open interfaces found in Oracle Manufacturing.

### **Oracle Order Management Suite APIs and Open Interfaces Manual**

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes API's and open interfaces found in Oracle Order Management Suite.

### **Oracle Applications Message Reference Manual**

This manual describes all Oracle Applications messages. This manual is available in HTML format on the documentation CD-ROM for Release 11i.

### **Oracle Project Manufacturing Implementation Manual**

This manual describes the setup steps and implementation for Oracle Project Manufacturing.

### **Oracle Receivables Tax Manual**

This manual provides everything you need to know about calculating tax within Oracle Receivables, Oracle Order Management, Oracle sales, and Oracle Web Customers. It includes information about implementation procedures, setup forms and windows, the Oracle Receivables Tax calculation process, tax reports and listings, and open interfaces.

### **Oracle Self-Service Expenses Implementation Guide**

This guide explains in detail how to configure Oracle Self-Service Expenses and describes its integration with Oracle Payable and Oracle Projects.

### **Oracle Self-Service Web Applications Implementation Manual**

This manual describes the setup steps for Oracle Self-Service Web Applications and the Web Applications dictionary.

## **Oracle Applications Flexfields Guide**

This guide provides flexfields planning, setup, and reference information for the Oracle® HRMS implementation team, as well as for users responsible for the ongoing maintenance of Oracle Applications product data. This guide also provides information on creating custom reports on flexfields data.

## **Installation and System Administration Guides**

### **Oracle Applications Concepts**

This guide provides an introduction to the concepts, features, technology stack, architecture, and terminology for Oracle Applications Release 11*i*. It provides a useful first book to read before an installation of Oracle Applications. This guide also introduces the concepts behind, and major issues, for Applications-wide features such as Business Intelligence (BIS), languages and character sets, and self-service applications.

### **Installing Oracle Applications**

This guide provides instructions for managing the installation of Oracle Applications products. In Release 11*i*, much of the installation process is handled using Oracle One-Hour Install, which minimizes the time it takes to install Oracle Applications and the Oracle 8*i* Server technology stack by automating many of the required steps. This guide contains instructions for using Oracle One-Hour Install and lists the tasks you need to perform to finish your installation. You should use this guide in conjunction with individual product user guides and implementation guides.

### **Upgrading Oracle Applications**

Refer to this guide if you are upgrading your Oracle Applications Release 10.7 or Release 11.0 products to Release 11*i*. This guide describes the upgrade process in general and lists database upgrade and product-specific upgrade tasks. You must be at either Release 10.7 (NCA, SmartClient, or character mode) or Release 11.0 to upgrade to Release 11*i*. You cannot upgrade to Release 11*i* directly from releases prior to 10.7.

### **Using the AD Utilities**

Use this guide to help you run the various AD utilities, such as AutoInstall, AutoPatch, AD Administration, AD Controller, Relink, and others. It contains how-to steps, screenshots, and other information that you need to run the AD utilities.

### **Oracle Applications Product Update Notes**

Use this guide as a reference if you are responsible for upgrading an installation of Oracle Applications. It provides a history of the changes to individual Oracle Applications products between Release 11.0 and Release 11*i*. It includes new features and enhancements and changes made to database objects, profile options, and seed data for this interval.

### **Oracle Applications System Administrator's Guide**

This guide provides planning and reference information for the Oracle Applications System Administrator. It contains information on how to define security, customize menus and online help, and manage processing.

### **Oracle Self-Service Purchasing Implementation Manual**

This manual describes how to set up Oracle Self-Service Purchasing. Self-Service Purchasing enables employees to requisition items through a self-service, Web interface.

### **Oracle Workflow Guide**

This guide explains how to define new workflow business processes as well as customize existing Oracle Applications-embedded workflow processes. You also use this guide to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes.

## **Installation and System Administration**

### **Oracle Applications Concepts**

This guide provides an introduction to the concepts, features, technology stack, architecture, and terminology for Oracle Applications Release 11*i*. It provides a useful first book to read before an installation of Oracle Applications. This guide also introduces the concepts behind Applications-wide features such as Business Intelligence (BIS), languages and character sets, and Self-Service Web Applications.

### **Installing Oracle Applications**

This guide provides instructions for managing the installation of Oracle Applications products. In Release 11*i*, much of the installation process is handled using Oracle Rapid Install, which minimizes the time to install Oracle Applications, the Oracle8 technology stack, and the Oracle8*i* Server technology stack by automating many of the required steps. This guide contains instructions for using

Oracle Rapid Install and lists the tasks you need to perform to finish your installation. You should use this guide in conjunction with individual product user's guides and implementation guides.

### **Upgrading Oracle Applications**

Refer to this guide if you are upgrading your Oracle Applications Release 10.7 or Release 11.0 products to Release 11*i*. This guide describes the upgrade process and lists database and product-specific upgrade tasks. You must be either at Release 10.7 (NCA, SmartClient, or character mode) or Release 11.0, to upgrade to Release 11*i*. You cannot upgrade to Release 11*i* directly from releases prior to 10.7.

### **Maintaining Oracle Applications**

Use this guide to help you run the various AD utilities, such as AutoUpgrade, AutoPatch, AD Administration, AD Controller, AD Relink, License Manager, and others. It contains how-to steps, screenshots, and other information that you need to run the AD utilities. This guide also provides information on maintaining the Oracle applications file system and database.

### **Oracle Applications System Administrator's Guide**

This guide provides planning and reference information for the Oracle Applications System Administrator. It contains information on how to define security, customize menus and online help, and manage concurrent processing.

### **Oracle Alert User's Guide**

This guide explains how to define periodic and event alerts to monitor the status of your Oracle Applications data.

### **Oracle Applications Developer's Guide**

This guide contains the coding standards followed by the Oracle Applications development staff. It describes the Oracle Application Object Library components needed to implement the Oracle Applications user interface described in the *Oracle Applications User Interface Standards for Forms-Based Products*. It also provides information to help you build your custom Oracle Forms Developer 6*i* forms so that they integrate with Oracle Applications.

### **Oracle Applications User Interface Standards for Forms-Based Products**

This guide contains the user interface (UI) standards followed by the Oracle Applications development staff. It describes the UI for the Oracle Applications

products and how to apply this UI to the design of an application built by using Oracle Forms.

## Other Implementation Documentation

### Oracle Applications Product Update Notes

Use this guide as a reference for upgrading an installation of Oracle Applications. It provides a history of the changes to individual Oracle Applications products between Release 11.0 and Release 11*i*. It includes new features, enhancements, and changes made to database objects, profile options, and seed data for this interval.

### Multiple Reporting Currencies in Oracle Applications

If you use the Multiple Reporting Currencies feature to record transactions in more than one currency, use this manual before implementing **Oracle Order Management Suite**. This manual details additional steps and setup considerations for implementing **Oracle Order Management Suite** with this feature.

### Multiple Organizations in Oracle Applications

This guide describes how to set up and use **Oracle Order Management Suite** with Oracle Applications' Multiple Organization support feature, so you can define and support different organization structures when running a single installation of **Oracle Order Management Suite**.

### Oracle Workflow Guide

This guide explains how to define new workflow business processes as well as customize existing Oracle Applications-embedded workflow processes. You also use this guide to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes.

### Oracle Applications Flexfields Guide

This guide provides flexfields planning, setup and reference information for the **Oracle Order Management Suite** implementation team, as well as for users responsible for the ongoing maintenance of Oracle Applications product data. This manual also provides information on creating custom reports on flexfields data.

## **Oracle eTechnical Reference Manuals**

Each eTechnical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing applications, integrate Oracle Applications data with non-Oracle applications, and write custom reports for Oracle Applications products. Oracle eTRM is available on Metalink

## **Oracle Manufacturing APIs and Open Interfaces Manual**

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes API's and open interfaces found in Oracle Manufacturing.

## **Oracle Order Management Suite APIs and Open Interfaces Manual**

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes API's and open interfaces found in Oracle Order Management Suite.

## **Oracle Applications Message Reference Manual**

This manual describes all Oracle Applications messages. This manual is available in HTML format on the documentation CD-ROM for Release 11i.

# **Training and Support**

## **Training**

Oracle offers a complete set of training courses to help you and your staff master **Oracle Order Management Suite** and reach full productivity quickly. These courses are organized into functional learning paths, so you take only those courses appropriate to your job or area of responsibility.

You have a choice of educational environments. You can attend courses offered by Oracle University at any one of our many Education Centers, you can arrange for our trainers to teach at your facility, or you can use Oracle Learning Network (OLN), Oracle University's online education utility. In addition, Oracle training professionals can tailor standard courses or develop custom courses to meet your needs. For example, you may want to use your organization structure, terminology, and data as examples in a customized training session delivered at your own facility.

## Support

From on-site support to central support, our team of experienced professionals provides the help and information you need to keep **Oracle Order Management Suite** working for you. This team includes your Technical Representative, Account Manager, and Oracle's large staff of consultants and support specialists with expertise in your business area, managing an Oracle<sup>®</sup> server, and your hardware and software environment.

## Do Not Use Database Tools to Modify Oracle Applications Data

***Oracle STRONGLY RECOMMENDS that you never use SQL\*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle Applications data unless otherwise instructed.***

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL\*Plus to modify Oracle Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle Applications tables are interrelated, any change you make using Oracle Applications can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL\*Plus and other database tools do not keep a record of changes.

## About Oracle

Oracle Corporation develops and markets an integrated line of software products for database management, applications development, decision support, and office automation, as well as Oracle Applications, an integrated suite of more than 160 software modules for financial management, supply chain management, manufacturing, project systems, human resources and customer relationship management.



Oracle products are available for mainframes, minicomputers, personal computers, network computers and personal digital assistants, allowing organizations to integrate different computers, different operating systems, different networks, and even different database management systems, into a single, unified computing and information resource.

Oracle is the world's leading supplier of software for information management, and the world's second largest software company. Oracle offers its database, tools, and applications products, along with related consulting, education, and support services, in over 145 countries around the world.

## Your Feedback

Thank you for using **Oracle Order Management Suite** and this user's guide.

Oracle values your comments and feedback. At the end of this guide is a Reader's Comment Form you can use to explain what you like or dislike about **Oracle Order Management Suite** or this user's guide. Mail your comments to the following address or call us directly at (650) 506-7000.

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Oracle Corporation  
500 Oracle Parkway  
Redwood Shores, CA 94065  
U.S.A.

Or, send electronic mail to **appsdoc\_us@oracle.com**.



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# Implementing Order Management

Topics covered in this chapter include:

- [Introduction](#) on page 1-2

## Introduction

Using the Oracle Order Management (OM) Suite, you can enter sales orders, calculate the price of items on order lines, fulfill the orders, for example by shipping the items, and send information to an accounts receivable system so that invoices are created. The core OM products are

- Oracle Order Management
- Oracle Shipping Execution (SE)
- Oracle Pricing

These products are included when Oracle Order Management is purchased. Additional products are available which are also integrated with Oracle Order Management, and these include

- Oracle Advanced Pricing
- Oracle Configurator
- Oracle Accounts Receivable
- Oracle Advanced Planning and Scheduling

This manual explains how to implement the core Oracle Order Management Products. It is divided into four parts.

1. Setup Steps - Flowchart of all required and optional steps for setting up Oracle Order Management. Each step is described.
2. Process Overviews - For Order Management and Shipping Execution, the supported business processes are described along with the special setup required to support those processes. For Oracle Order Management the processes include standard sales orders, returns and drop ship. For Shipping Execution the processes include simple shipping and container management.
3. Pricing Setup - Basic Pricing enables you to create pricing information such as price lists and modifiers. The pricing setup section describes how to setup and use basic pricing.
4. Topical Essays - This section includes more in depth information on certain features of Oracle Order Management such as scheduling and invoicing.

The Oracle Order Management products replace the Oracle Order Entry (OE) product and the Oracle Delivery Based Shipping product. Since 1990 the Oracle ERP suite included Oracle Order Entry. All features from Oracle Order Entry were carried forward. Also, an automated upgrade was written so that existing Oracle

Order Entry customers can migrate their setup and information to Oracle Order Management. This manual is designed both for new Oracle Order Management customers and for customers that are upgrading.



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## Order Management: New Features

Topics covered in this chapter include:

- [Introduction](#) on page 2-2
- [Architected for e-Business](#) on page 2-2
- [New Features](#) on page 2-3

## Introduction

Oracle Order Management is a new product within the Oracle Supply Chain family that supplies comprehensive transaction execution capabilities for managing and fulfilling all forms of customer demand.

Order Management is fully enabled for the new internet-based e-business paradigms of today's business world. Order Management provides the tools to meet these challenges. It provides the capability to proactively exploit the growing movement to internet selling and self service customer support through more effective customer service, more personalized products, and more profitable pricing and fulfillment.

Oracle Order Management replaces the Oracle Order Entry and Shipping products in the Oracle Applications product lineup. Order Management retains the functionality of the Order Entry/Shipping product, and significantly extends it.

## Architected for e-Business

Oracle Order Management is built on a new object-oriented, open API-based architecture that is flexible enough to support management of demand across all channels. Oracle Order Management delivers a robust set of features that enables it to perform as the central order fulfillment engine for Oracle Applications, both in the horizontal and vertical industries.

Order Management begins with a completely new architectural design that is based on open, documented APIs. These APIs perform all functions related to orders including checking security, validating items, creating orders, manipulating order lines, checking credit, pricing, packing, ship confirming, placing orders on hold, and releasing orders from hold.

Within Order Management, these APIs are invoked by logic coded in Oracle Workflow. Workflow controls the sequence of events that occur in the processing of both your customer's order and its respective order lines. This provides you with maximum flexibility, as you can use the combination of APIs and Oracle Workflow to efficiently handle not only the mainline revenue cycle-based business processes, but also the many exception-based processes that every business must accommodate.



## New Features

### Oracle Order Management as a Fulfillment Engine

You can define as many types of orders as your business requires, with each order type having its own unique set of processing steps in their own unique sequence. For example, business to consumer orders often require credit card processing, with payment approval being obtained from the credit card issuer. Business to business order transactions normally require a credit check be made against the user's own internal accounts receivable system. Using Oracle Order Management, a firm requiring both types of processes can create an order type with appropriate processing steps and sequence for each, and then run both processes side by side in the same instance of the software.

Specialized business flows such as no-charge sample orders, return orders, warehouse transfer orders, and rush orders, may require expensive and risky customization with competitive order entry systems, but can be accommodated simply and without custom coding in Oracle Order Management. Even more flexibility is gained through the use of the same workflow API constructs at the order line level. This makes it possible to flexibly combine customer returns and orders for new product on the same order. Additionally, the architecture enables users to easily and effectively collaborate with supply chain trading partners in the larger world tied together by the Internet. Oracle Order Management's Shipping Execution module includes several Self Service Web Applications that enable you to harness the power of the Internet to work more effectively with your customers, carriers, and logistics partners.

### Order Capture from Any Source

Oracle Order Management is very effective for large multinational manufacturers and distributors who are selling to other businesses and who must process high volumes of orders and order lines received from electronic sources such as EDI, and entered in the application by customer service staff. However, when implemented in conjunction with Oracle's Customer Relationship Management products, Order Management is ideally suited for companies transacting e-business over the Internet with either consumers or other businesses. The exploding world of e-Business demands that credit cards be accepted and handled in a secure environment. The new Order Management system integrates with the Oracle iPayment Server to provide credit card validation and authorization, and passes that information to Oracle Receivables for capture of funds.

Oracle Telesales, Oracle iStore, Oracle Marketing, and Oracle Service, Oracle Field Sales, and Oracle Trade Promotion all fully integrate and inter-operate with Oracle Order Management. These applications provide you with a variety of finely honed order entry/order capture capabilities appropriate to specialized sales environments such as web stores and telemarketing, yet let you to manage pricing and order fulfillment accurately and efficiently in one uniform application. This gives you a seamless, tight integration of front office and back office applications that no vendor other than Oracle Applications can offer.

After customer order demand has been captured, Oracle Order Management works with Oracle's other ERP applications such as Oracle Inventory, Oracle Purchasing, Oracle Manufacturing, and Oracle Advanced Supply Chain Planning to ensure that supplies of product are available to meet demand. Rounding out the back office, Order Management also integrates with Oracle Receivables and Oracle Sales Compensation.

## **Reduce Implementation Risk and Lower Cost of Ownership**

Because they manage mission-critical revenue cycle-related business processes, order management software applications are notorious for requiring extensive modifications and tailoring. Oracle's API/Oracle Workflow based architecture is both highly extensible and highly customizable. This makes Order Management faster and less expensive to implement because fewer modifications are required to accommodate your specialized revenue cycle processes. The design philosophy underlying Oracle Order Management is to provide the maximum capability to tailor the operation and functionality of this software product to your business, rather than forcing you to re-engineer your business to fit the software.

Where you may have requirements that make customizations unavoidable, the open, documented API set makes extensions easier and less time consuming. This reduces your expense and risk. You can develop extensions in a technically non-invasive manner that helps preserve your ability to upgrade to subsequent releases, and thereby leverages your investment in Oracle Applications.

## **A New Look Takes Ease of Use to the Next Level**

With its completely redesigned user interface, Oracle Order Management sets a new standard for productive, friendly, screen ergonomics. Regardless of whether you are a novice or experienced user, you will find it more convenient than ever to view summary information, status of orders, line and shipment details, and to enter orders quickly and easily. Summary and entry information is only one click away.

## Order Organizer and Tree

You can personalize your interface with the system through the use of folder technology and a tree-style representation of data that allows each user to store their favorite queries. These can then be re-used without having to drill down through a complex set of screen navigation. Order Management provides an interface suitable for both simple and complex business processes, while reducing training requirements by making primary tasks simple and intuitive.

## Configuration

Configuration Product and Services can be configured using Oracle Configurator.

Configurator provides next-generation, state-of-the-art configuration for all types of products and services - from simple units to full systems or assemblies.

Configurator supports configuration rules written against model structures provided by Oracle Bill of Materials. A default user interface (UI) is automatically derived from the configuration model using a predefined layout template. Oracle Configurator also provides the ability to create custom user interfaces to meet the unique needs of any end user or selling channel. Product specialists can quickly and easily build intuitive user interfaces using simple drag-and-drop techniques, eliminating the need for @ technical programming skills. To reinforce brand identity, corporate branding elements such as logos, colors and typefaces can be included. Configurator dynamically and interactively guides the end-user through option selection screens, resulting in a configuration that is always valid.

## Product Configuration

Product Configuration activities use tight integration with Oracle Configurator. Configurator provides next-generation, state-of-the-art configuration for all types of products - from simple units to full systems or assemblies, including engineer-to-order products. Configurator supports configuration rules written against model structures provided by Oracle Bills of Material. A default user interface (UI) is automatically derived from the configuration model using a predefined layout template. Oracle Configurator also provides the ability to create custom user interfaces to meet the unique needs of any end user or selling channel. Product specialists can quickly and easily build intuitive user interfaces using simple drag-and-drop techniques, eliminating the need for technical programming skills. To reinforce brand @ identity, corporate branding elements such as logos, colors and typefaces can be included. The default UI appears as a tree structure with the model bill displayed on the left side of the window, and product options displayed in the right side of the window. Configurator dynamically and

interactively guides the end-user through option selection screens, resulting in a configuration that is always valid.

### **Default Layout of Oracle Configurator Window**

Oracle Configurator provides prices for models, option classes and options during the configuration session. Available to Promise (ATP) checks can be performed to provide an estimate on the product availability date based on material and resource constraints. Configurator is licensed and priced separately from Oracle Order Management.

### **E-Business and E-Commerce Capabilities**

Oracle Order Management gives you the ability to transact e-business via four methods of information interchange. These are:

- Personalized, one to one order entry via Order Management's own internal UI.

- Electronically via an expanded repertoire of EDI transactions.

- Electronically via XML.

- Via open APIs to other Oracle products such as Oracle iStore and customer developed applications.

With these methods, Order Management provides support for both business to business and business to consumer order/demand capture and fulfillment applications.

In addition to these highly versatile methods of order capture, Order Management excels at high volume electronic collaboration between business to business trading partners via the Oracle e-Commerce Gateway and the new extension to it, the XML Gateway. Today's electronic collaborations not only demand a strong EDI capability, but also advanced technology to support collaboration with trading partners who do not yet use EDI, or who wish to bypass its sometimes expensive implementation cost. Oracle's e-Commerce Gateway and the XML Gateway together provide the solution with full enabled XML. Order Management adds a host of new enhancements to the existing Order Import process, and also adds support for several new EDI transaction sets. The Oracle e-Commerce Gateway is a product that is licensed and priced separately from Oracle Order Management.

### **Order Import Enhancements**

Today's e-business often requires users to capture orders using specialized external systems and then import them into Oracle Order Management for fulfillment. Order Management adds new edit, validation, and error handling capabilities to its

**Order Import.** You can view on-line orders and lines that did not import due to errors, and see detailed error messages about what went wrong. You can fix those errors using the same forms, and then re-import the data. You can also run Order Import in validation-only mode, without importing the data. Then, view and correct problems in the interface table before the base Order Management tables are updated.

When orders are imported with an entry status of Booked, they are automatically eligible to progress to the next step of its order cycle in the Workflow when the import is complete. If any of the required fields for a booked order are not supplied, Order Management still imports the order in the Entered state and reports a booking error. Import returns in addition to regular orders. You can import items identified using the supplier specific internal part number or using any one of the supported item identifiers such as Customer Item, UPC code, etc.

Order Import has been enhanced in direct response to requests by the EDI trading community. If Order Import detects differences in the system-calculated price and the user-provided price on an inbound order (850/ORDERS), Order Import will return an appropriate warning or error message. If there is a difference in the system-generated payment terms and the user-provided payment terms, Order Import will return a warning message to the user.

### **New EDI Transactions**

You can now import inbound Order Change (860/ORDCHG) transactions for automated changing of order shipment quantities, dates and location information. You can send EDI acknowledgments for original orders and change requests (whether received through EDI or other means). Both the outbound Purchase Order Acknowledgment (855/ORDRSP) transaction, and the outbound Purchase Order Change Acknowledgment (865/ORDRSP) transaction are supported.

### **Extended Core Order Management Features**

Enhancing and extending the already rich feature set delivered in Oracle Order Entry/Shipping, Oracle Order Management adds several new, significant capabilities. These give you powerful additional capabilities to configure Oracle Order Management to facilitate your business processes without requiring costly re-engineering.

### **Item Cross Reference**

This new capability allows your customers to order in their internal, customer specific, generic item numbers, or your internal item numbers. The following commonly used generic identifiers are supported:

- UPC (Universal Product Code)
- EAN (European Article Number)
- JAN (Japanese Article Number)
- CLEI (Common Language Equipment Identifier)
- ISBN

Customer/generic items can be used in both on-line order entry and Order Import. When entering on-line, searching using the cross references is possible. Both customer and generic item numbers can be printed on external documents, including acknowledgments and invoices.

### **Decimal Quantity Handling**

Order quantities for standard items can now be specified as decimal quantities. Whether or not decimal quantities are allowed for an item is specified at item setup. The maximum decimal precision that may be specified is 10 decimal digits and 15 mantissa digits.

### **Over/Under Shipment Tolerances**

You can now define tolerances for both over- and under-shipments. Using under-shipment tolerances, you can specify that if the quantity shipped to your customer is within a tolerance you specify, the order line is automatically considered to be fulfilled. This enables you to avoid the extra work of adjusting small quantity differences that you know will be tolerated by your customer. Using over-shipment tolerances, you can specify how much over the ordered quantity is allowed to be shipped. Shipping also can specify an option to allow users to over-ship above the tolerance.

### **Returns Enhancements**

Order Management adds several enhancements to Returns functionality. Returns and shipments can now be mixed on the same order. You can enter return receipts using standard Oracle Receiving forms. You can enter lot and serial numbers of goods being returned. You can now print acknowledgment documents for returns. You can also track goods returned for repair using a new Depot Repair process.

## Order Changes

Role-based Processing Constraints allow you to control who has permission to make changes. You can assign authority to make updates, perform cancellations, and deletion of orders to specific users. New functionality will allow you to notify an authorized user when a user with less authority attempts to make a change they are not authorized to perform. Multi-select and mass change of orders and lines is supported throughout the new Sales Order user interface, making it much easier and more efficient for you to make necessary changes.

Order Management enables you to more easily change configure-to-order lines after the manufacturing process has been initiated by automating some of the steps involved in effecting such a change. You can use Processing Constraints to control who has authority to make such changes.

## Order Cancellations

You have the option to cancel a sales order line with or without a reason code entry after the order has been booked. You can record and track changes in order quantity for historical and analytical purposes after the order is booked by using Change Order History. Multi-line selection during order line cancellation is now possible. You can cancel lines even after Pick Release, and Oracle Shipping Execution has visibility to the changed quantities. Order Import has been enhanced to process cancellation requests.

## Order Copy

The order copy function has been enhanced to allow you to copy orders at original prices, copy directly from sales forms, copy lines from orders to returns, access newly copied orders, append lines to existing orders, copy selected lines only to an order, and re-price a copied order.

## ATO-PTO Orders

You can use Oracle Workflow to manage the Assemble to Order (ATO) and Pick to Order (PTO) flows. The standard configure-to-order flow consists of independent workflow activities for configured item creation, bills of material and routing creation, lead time rollup, cost rollup, and supply order creation. Streamlined flows enables you to easily tailor the process to your specific requirements.

## Credit Checking

Credit Checking has been enhanced to let you to specify a maximum number of days due for invoices as a criteria for imposing credit holds. Tax will always be

included as part of the balance in the credit exposure calculation. You can now assign multiple bill-to locations to the same order. In this case, the bill-to credit limits will be separately evaluated for the value of the order assigned to each bill-to location.

### **Holds and Releases**

You can now apply and release holds directly from the Sales Order form or through the new Order Summary window. Also, you can request that the system send FYI notifications to specific individuals when an order hold is applied. Order holds can be detected as an Oracle Workflow activity. Tailor the processing flow for orders to your specific needs considering the hold status of your orders.

### **Error Message Handling Window**

You can view error messages from processes such as on-line mass changes, copying orders, and other concurrent programs through a standardized Message Window. You can save the messages for later review, or you can discard the messages. While viewing messages, you can send text message notifications to others.

### **Vendor Drop Shipments**

You now have the ability to conveniently and accurately maintain address information for vendor drop shipments at a single point within Oracle Applications. You can also associate sourcing rules to items. These rules will guide the system to automatically drop ship the item when an order is placed. Oracle Workflow streamlines the processing of these orders by eliminating the manual step of running Purchase Release.

### **Tax Triangulation**

Oracle Order Management provides support for Tax Triangulation for all transactions including European Union Triangulation for International Drop Shipments. Oracle Receivables Tax Groups have been enhanced to allow the system to automatically select applicable tax rates and liability accounting for all transactions from Order Management, based on a combination of addresses.

### **Freight and Special Charges**

Order Management provides a set of APIs that can capture, store, update and view costs associated with a shipment, order, container, or delivery. You can attach your own program logic to these APIs to allow these costs to be converted into charges that are added to the order. Order Management provides you the option to either



itemize or summarize such charges on your orders. This capability includes functionality to pass customer charge information to Oracle Receivables for invoicing.

### **Invoicing**

Pass detailed discount and promotional information from Order Management to Oracle Receivables. Detailed information about freight and other charges will also be passed to receivables. You have the option to pass a customer item description from Order Management to Oracle Receivables for invoice printing for item records where such a description exists. You can now select whether to invoice the quantity ordered or quantity shipped where an over-shipment has occurred.

### **Order Numbering**

Flexibility of order numbering is a capability frequently required by users. Several new capabilities that substantially increase system flexibility:

- Select separate number sequences by order type. The system will validate that the combination of order type with order number is unique.
- Import or enter orders where an order number is assigned outside the system and entered manually.
- Specify that a set of order numbers is to be gap-less, to fulfill requirements in certain legal jurisdictions. Orders entered using a gap-less number sequence cannot be deleted after entry, but may be canceled.

### **Defaulting**

Order Entry's standard value rule set functionality has been replaced with a more powerful and flexible defaulting architecture. The new defaulting framework allows for defaulting of more order and line attributes from more varied sources than previously possible.

### **Line Sets**

In addition to retaining the capability to group order lines into shipping line sets (included in Release 11 of Order Entry/Shipping), OM adds new capabilities that enable you to group order lines into arrival line sets. When so grouped, all order lines in the set are scheduled so that they can be delivered to the same place at the same time.

### **Order Workbench Enhancements**

Oracle Order Management has been enhanced with numerous improvements to make your order processing staff more productive. The Order Organizer has a tree structure and order summary information. Multi-select is enabled in all the windows of the Sales Order forms. You can define your own folders in the Order Organizer, Order Pad, and Find windows.

Access multiple functions from the Sales Order form, including cancel, copy, scheduling and hold functions. This saves time and helps you work efficiently by reducing the amount of navigation and forms you must go through to perform an action.

### **Enhanced Planning and Reservation Logic**

Oracle Order Management delivers new, enhanced reservations capabilities. You can define sourcing rules in Oracle Advanced Supply Chain Planning to determine from which warehouse an order should ship. A new workflow activity will source all lines that have not been sourced at entry. Once sourced, all lines are visible to Oracle Planning. Request that the system schedule your order within a schedule/delivery window from your request date.

Oracle Order Management now gives you the option to check ATP or display availability automatically as soon as you enter a line. You can also choose to reserve the inventory at entry, if the request date is within a user-specified window of time. If the request date is farther into the future, an automatic Workflow process will perform the reservation automatically as the requested ship date moves within the allocation window.

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## Shipping Execution: New Features

Topics covered in this chapter include:

- [Introduction](#) on page 3-2
- [New Features](#) on page 3-2

## Introduction

The Oracle Order Management Suite, a new product suite within the Oracle Supply Chain family, enables you to proactively exploit the growing movement to internet selling and self service customer support through more effective customer service, more personalized products, and more profitable pricing and fulfillment. The Oracle Order Management suite is part of the Oracle E-Business Suite, an integrated set of applications designed to transform your business into an e-business.

## New Features

Oracle Shipping Execution introduces and enhances many features in Release 11*i* to simplify shipment planning.

Several features and reports have been ENHANCED for Release 11*i*, including Pick Slip Grouping Rules, Commercial Invoice, Bill of Lading, Vehicle Load Sheet Summary and Detail, and Open APIs and Interfaces.

The following features are NEW in Release 11*i*. This chapter describes them:

- Shipping Transaction Form
- Tracking Freight Costs
- Transportation Calendar
- Container Management
- Enhanced Pick Release
- Transfer of Reservations to Cycle Count
- Over/Under Shipments
- Over Picking
- Shipping Exceptions
- INTRASTAT & EXTRASTAT Movement Statistics
- Global Packing Slip
- Master Bill of Lading
- Attachments for Shipping
- United Parcel Service (UPS) Integration
- Enhanced Pick Slip Grouping Rules

- Document and Label Printer Assignments
- Roles and Users
- Additional Line Status
- Decimal Quantities for Standard Items
- Integration with Oracle Project Contracts

For a complete list of new features introduced after the initial release of Oracle Shipping Execution, consult the Oracle Shipping Execution 11i+ Features Matrix on Metalink.

## Shipping Transaction Form

The Shipping Transaction form is a workbench that consolidates three major Shipping forms seen in Release 11: Departure Planning, Ship Confirm, and View Shipping Information. In addition to the consolidation, this form contains modifications that support many new features: trips, stops, deliveries, delivery lines, delivery legs, and containers (LPNs).

Most of the work done within Shipping Execution will take place in the Shipping Transaction Form. Here, you query and modify data, create and save queries, and modify tab names within the Lines/Containers (LPNs) tab. Using Folder technology, fields can be moved around to increase accessibility to fields you use most often. Within this form, you can also plan trips and deliveries, confirm shipments (trip, stops, and deliveries), explode, and enter sourcing material information for delivery lines, support multi-leg shipments (for shippers who have their own shipping fleet), and access all Shipping functionality by invoking forms and reports.

The Query Manager enables you to specify and find Trips, Stops, Deliveries, Delivery Lines and Containers (LPNs) plus provides the opportunity to save the queries to use in the Navigator tree. You can query by delivery lines (order# query), containers (LPNs), stops, trips, or deliveries.

The Data Manager enables you to navigate and modify the data easily. There are Actions available at each entity level that are possible to launch directly from this form. Tabs for different entities associated with the query are shown at the bottom. For example, when looking at the delivery line, the tabs for different entities associated with this delivery line are delivery, path by trip, path by stop.

## Tracking Freight Cost

Freight costs can now be tracked. For many companies, the Shipping operation is a profit center. By tracking the shipper's freight cost (amount shipper pays the carrier), the profit margin between the shipper's freight cost and the amount a customer pays for freight can be identified. Freight costs can be assigned to trips, stops, deliveries, delivery lines, delivery legs, or containers.

You can apportion the freight costs on a per line basis based on percentage of weight, volume, or quantity. If you have a weight defined for the items, then the apportionment will be based on weight. If you don't have a weight defined, then the apportionment will be based on volume. If you don't have a weight or a volume defined for the item, the apportionment will be based on quantity.

Freight costs can be modified after Ship Confirm. However, the modified costs will only be included on the customer invoice if OM Interface has not yet run (previously called Update Shipping). Once you have run the OM interface, you can no longer pass modified freight cost information back to OM. You can still modify freight costs, but you won't be able to pass the information to OM.

The currency of the freight costs will be automatically converted when you run the OM Interface (pass freight costs back to OM). A set of books currency will be used for the operating unit of the warehouse or ship from location as the default currency. The currency will be converted to the currency of the sales order.

## Transportation Calendar

A calendar function has been added to apply to shipping schedules for the shipper, receiver and carrier. The Transportation Calendar defines the valid shipping days and hours for shippers, receivers, and carriers. The Shipping and Receiving Calendar defines when your customers, customer sites, suppliers, supplier sites, and internal organizations can ship and receive.

For example, if you are shipping a delivery on Tuesday at 2 p.m. that will arrive at your customer's warehouse on Wednesday at 9 a.m., the system will validate that your warehouse is able to ship product on Tuesday at 2, that your customer can receive product on Wednesday at 9, and that your carrier will be able to pick up and drop off the delivery on those days.

The calendar consists of a repeating pattern of days on and days off as well as pattern exceptions, such as holidays. For example, a work week can be defined to have five shipping days followed by two non-shipping days for a standard work week. BOM calendars that have been defined for an organization are the basis for the assignment of the Transportation Calendars.

Although a transportation calendar can be defined at the organization level, it is probably more useful to define it at a lower level, such as the customer, and use it to manage exceptions. You can define transportation calendars for individual carriers.

The calendar is validated both when a delivery becomes status Planned and at ship confirm. The calendar does not affect scheduled departure and arrival dates for orders. It provides a warning message if a date conflict occurs.

## Container Management

The Container Management Module has been separated from Ship Confirm and features the creation and manipulation of containers at any point in the shipping process. You can autcreate and autopack containers using predefined container-load relationships that you define.

As a part of Container Management, you can create new containers without having to associate the containers to a delivery. This allows you to pack lines that have not yet been assigned to a delivery. Multiple containers can be packed with multiple lines. Containers can be automatically filled using one of two methods: 1) by placing an equal amount in each container, or 2) by filling each container sequentially maximizing the capacity of each container (weight ,volume or qty) prior to moving to the next container.

This new functionality lets you to assign a label/license plate number (LPN) to containers (automatically or manually), pack containers with or without assignment to a delivery, enter summary information for multiple containers and explode them into individual containers, estimate the number of containers required for a delivery line/item, pack multiple lines into multiple containers, assign containers to deliveries, and Pick Release containers.

The feature for estimating containers for unpacked lines has also been upgraded to automatically create and pack both the detail and master containers required for a delivery line. For more information, see the chapter on *Containerization in Shipping Execution*

## Enhanced Pick Release

In Release 11i, Pick Release provides increased functionality by becoming a two step process: allocation and pick confirm.

### Allocating

Pick Release creates Move Order Lines. To release lines to the warehouse and print pick slips the lines must be allocated. The process by which the Picking Engine

generates transaction line suggestions is called Allocating. The allocating process for a Pick Wave Move Order Line also creates a high level (organization level) Reservation on the material if no Reservations previously existed. This can be done immediately after the Move Order Lines are created or it can be postponed. Postponing the allocating process might be employed by organizations that pick release across multiple warehouses but prefer to allow each warehouse to determine when to release the order lines to the floor. Allocating the order lines immediately after creation is called auto-allocating. Auto-allocating suggests the sourcing for material immediately based on defined Picking Rules. A default allocating mode can be defined by organization in the Shipping Parameters form. This default can be overridden at each Pick Release. Postponing the allocating process is referred to as manual-allocate.

If Auto-allocate is NOT used, Oracle Shipping Execution does not create a move transaction. The manual process is to go to Move Transactions screen (Inventory), query the batch (created by the Pick Release process), and allocate the quantity manually.

### **Pick Confirm**

The Move Order Line Details (transaction lines) created by the allocating process must be transacted to confirm the material drop-off in staging. This process, called Pick Confirmation, executes the sub-inventory transfer that moves the material and transfers the reservation from its source location in the warehouse to the Staging location. Pick Confirmation automatically transfers the high level Reservation to a detailed Reservation (including lots, sub-inventory revisions and locators) in the Staging location. At pick confirmation, discrepancies in actual quantity, lot, serial, locator, or sub-inventory can be reported. If mobile devices such as bar code scanners are used to perform Inventory transactions, it is suggested that you use manual pick confirmation for greatest inventory accuracy and control.

If an organization's picks rarely deviate from the suggested picking lines and the overhead of requiring a Pick Confirmation is unmanageable, the Pick Confirm transactions can occur immediately after the lines are detailed. This option, called auto pick confirm, can also be defined to default by organization in the Shipping Parameters form. This default can be overridden at each Pick Release. Note that even if an automatic pick confirm is employed, the material is only transacted to the Staging sub-inventory and reserved. Any discrepancies found can be managed by deleting the reservation and transacting the material back to its original sub-inventory. If Auto Pick Confirm is used then Reservations are placed for each line up to the available quantity.



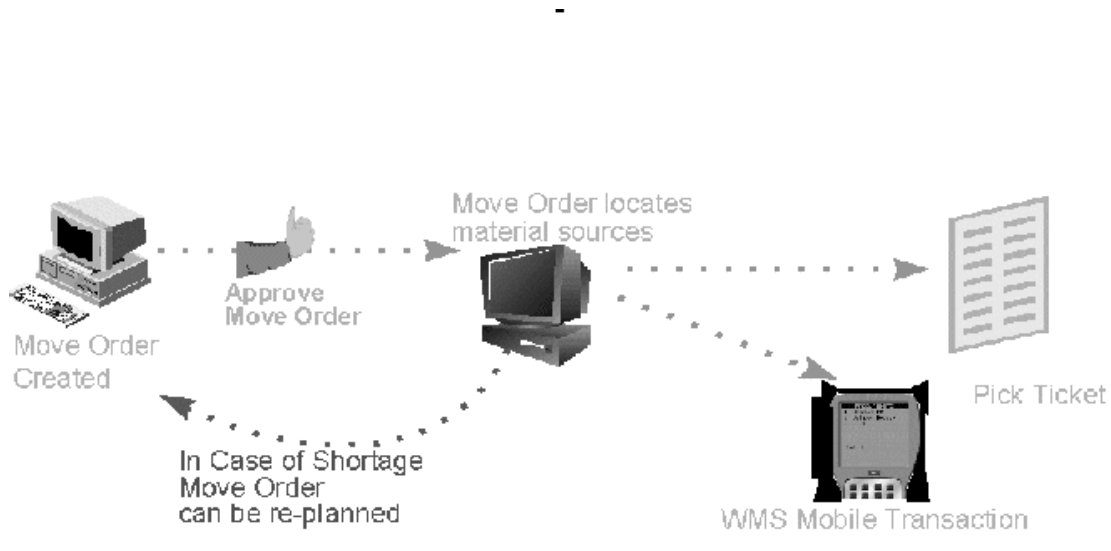
If Auto Pick Confirm is *not* used, the manual process is to go to Move Transactions screen (Inventory), query the batch (created by the Pick Release process), and pick confirm the quantity manually.

### Staging Locations

The destination sub-inventory on the Pick Wave Move Order is the staging location where the picked material should be deposited. **Each organization must designate at least one staging sub-inventory.** Each batch created at pick release will have the same destination staging sub-inventory. The default staging sub-inventory and locator to be used for all Pick Wave Move Orders can be specified by organization in the Shipping Parameters form. This location can be changed at Pick Release. To model different staging lanes within the staging area, facilities may choose to either create different sub-inventories or designate staging lane locators within one Staging sub-inventory.

Figure 3-1 exhibits the basic procedural flow for Material Picking move orders from allocation to staging.

**Figure 3-1** Flow for Material Picking move orders from allocation to staging



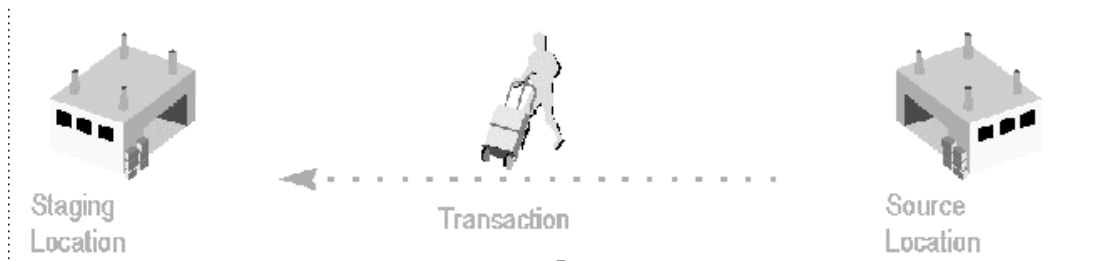
A move order is created by the Pick Release engine.

Next, it must be Allocated. Allocating is the process where the picking rules determine where to source the material from to fulfill a request line (move order line). The allocating process fills in the move order line details with the actual transactions to be performed. If adequate quantity is not available to allocate the move order, this process can be done later. If no reservation exists before the allocating process, it will also create the high level reservation for the material.

Before transaction, you can print a pick slip or push the move order line details to mobile devices for transaction through the move order APIs.

The move order can then transact to pick confirm. The order line can be transacted all at once, or one detail line at a time as the items are moved. If less than the requested quantity is transacted, the order will proceed according to the Over/Under Tolerance profiles described in the following section. The pick confirm transaction creates a sub-inventory transfer from the source location to the staging location.

**Figure 3–2** *Material Picking Move Orders*



## Transfer of Reservations to Cycle Count

Oracle Order Management and Shipping Execution now allow transfer of delivery line reservations to cycle count for managing inventory discrepancies.

During pick release, if the user notices a discrepancy between physical inventory and system inventory, then the missing quantity may be transferred to cycle count within the Shipping Transactions form using the Actions button. When the unavailable quantity is in cycle count, it is not available for pick release and the inventory control staff can correct the discrepancy during the next cycle count of the discrepant item. This functionality requires adding the security privilege Cycle Count Delivery Line.

## Over/Under Shipments

Over and under shipment tolerances can be defined for orders and for returns. Tolerances can be set up globally in OM profile options. The four profile options related to over/under tolerances are:

- OM: Over Return Tolerance
- OM: Over Shipment Tolerance
- OM: Under Return Tolerance
- OM: Under Shipment Tolerance

Tolerance Exceptions can be set at lower levels: at the customer or site level using Customer forms, the item level using PDM (Inventory) Master Items form, and for customer and item combination using a new Oracle Order Management form.

Over-Shipment tolerance is validated at ship confirm. The overship invoice basis profile option is:

- OM: Overshipment Invoice Basis

A quantity greater than the quantity on the line is allowed if it is within the over-shipment tolerance. If it is greater than the over shipment tolerance, a warning will be given, but the user will not be stopped from shipping the additional quantity. The actual quantity shipped is recorded on the line.

The Under-Shipment tolerance behaves differently. At ship confirm, any quantity less than the requested amount is allowable. If the quantity shipped is within the under-shipment tolerance, the line will close once the shipment is processed. The remaining quantity will automatically cancel. However, if the quantity shipped is outside the tolerance, the line will split into 2 lines, one line represents the quantity shipped, the other line becomes a backordered line with the difference.

The profile option OM: Overshipment Invoice Basis controls whether to invoice for quantity shipped or quantity ordered. A corresponding attribute exists on the Customer and site level to help manage exceptions. Undershipments are always invoiced at quantity shipped.

## Over Picking

The over picking enhancement supports the following:

- It allows the Pick Confirm transaction to pick in excess of the requested quantity as long as it is within the over shipment tolerance, which is a natural extension to the over shipping feature.

- It allows the user to prevent breaking LPNs or lots by small amounts when the quantity requested does not match the quantity in inventory. For example, if the customer orders five cans, the warehouse has only six-packs, and the warehouse either is out of individual cans or has a policy against loose cans. The over picking functionality allows the picker to pick a 6-pack (6 cans wrapped) to fulfill the order, instead of picking exactly 5 cans

## Shipping Exceptions

The Shipping Exceptions feature helps identify and correct shipping exceptions that violate the requirements of your operation or that of your carriers and customers.

The Shipping Exceptions feature enables the definition of exceptions and processes for handling them. Exceptions can be recorded automatically from within Oracle Shipping Execution, or you can log exceptions manually through the user interface input forms. You can initiate exception handling and view and track the exceptions as you manage them to resolution.

With some custom programming, provided APIs can be used to integrate with Oracle with third party applications to log exceptions.

## INTRASTAT & EXTRASTAT Movement Statistics

Oracle Purchasing, Order Management, and Inventory provide the ability to support the automatic creation of the INTRASTAT and EXTRASTAT movement statistics declarations to governmental authorities for the European Union (EU).

You can compile all material receipt (arrival) and shipment (dispatch) transactions for the given period and automatically create Intrastat records based on Ship-from and Ship-to locations.

You can then review and validate the data using the Movement Statistics Exception Report, update the information using the Movement Statistics Form, and run the Standard Movement Statistics Declaration Report. In addition, the Oracle e-Commerce Gateway supports the outbound EDIFACT INSTAT and EXSTAT transactions for electronic reporting to governmental authorities.

## Global Packing Slip

The Packing Slip has been enhanced to support many of the requirements needed for shipments made in European Countries. In Europe the Packing Slip acts more like a legal document similar to the Bill of Lading in the US.

For example some countries require an audit trail of the Packing Slips created for a particular shipper and the shipper must provide a gapless sequence of packing list created. This requirement is now supported. Additional features that are supported by the global packing slip include the ability to reprint, print prior to Ship Confirmation, provide draft and final versions, sort by inventory item or by customer item, allow alphanumeric prefix/suffix and allow subsequent reprint of final designation.

## Master Bill of Lading

Oracle Shipping Execution provides capability for creating a Master Bill of Lading. A Master Bill of Lading (B/L) consists of a grouping of individual B/Ls and includes the origin and destination, total units, product description, and weight for the entire contents of the container/trailer. It does not replace the individual B/Ls that are printed for each delivery.

This document provides a means of merging multiple deliveries going to the same location onto a single document for the freight carrier's use. A shipper would use a master B/L for shipments to multiple customers consolidated on the shipper's dock, then shipped to a cross docking facility for further consolidation. By combining multiple B/Ls going to the same intermediate destination on to one master B/L, the shipper reduces freight cost and the carrier reduces paperwork complexities.

## Attachments for Shipping

Oracle Shipping Execution supports attachments that are associated with sales orders, deliveries, delivery lines, trips, and stops. The Pick Slip, Packing Slip, and Commercial Invoice documents can be set up to include Order and Line level notes in the body of the report. This is only true for attachments of type short text.

## United Parcel Service (UPS) Integration

The integration with United Parcel Service (UPS) provides a common solution for those customers who use both Oracle Shipping Execution and UPS. The integration is in the form of APIs. Oracle-UPS APIs integrates shipping information, provided by UPS On-line Tools into Oracle Applications suite to help customers streamline operations in the fulfillment cycle. This feature is available in R11i and requires enabling the profile option WSH: Internet Proxy URL. This profile option allows the system to access UPS servers for UPS integration. If your site does not have a firewall, you do not need to set the profile. This profile can only be modified by the System Administrator at the site level.

Oracle Shipping Execution use these APIs to integrate UPS functionality into its functionality.

Oracle - UPS integration enables Oracle customers to use the following UPS features:

- **Rate & Service Selection:** You can calculate estimated rates and service costs in U.S. Dollars for deliveries, lines and containers and update freight cost value for a delivery line. This feature is available for shipments within the United States of America.
- **Address Validation:** This window validates the Ship From and Ship To address postal codes for a delivery line and matches it with the UPS address information. This feature is available for shipments within the United States of America.
- **Ground Time in Transit:** You can view how long it takes to ship between two sites. The time in transit displays in business days. This feature is available for shipments within the United States of America.
- **Shipment Tracking:** You can track UPS ground shipments for lines and containers and view information such as tracking numbers, status and service type. You can also view detailed tracking information for a selected line such as the date and location where a package was picked up or dropped off. This feature is available for all shipments.

## Enhanced Pick Slip Grouping Rules

Oracle Shipping Execution supports Pick Methodology. Several fields have been added to the Pick Slip Grouping Rules form: item, locator, lot, revision and pick methodology. Pick Methodology contains five possible values:

1. **User defined -** Grouping will be done according to the parameters set by the user. This will be the only value where you will be able to modify the group by clause. A unique pick slip number will be generated for each group. All tasks corresponding to a pick slip number will be dispatched to a single user.
2. **Order Picking -** Grouping will be done by order. The group by attributes will not be editable. A unique pick slip number will be generated for each order. The entire order will be dispatched to a single user. This selection is designed to work when Oracle Warehouse Management System (WMS) is installed.
3. **Zone Picking -** Grouping will be done by order and zone. Again, an unique pick slip number will be generated for each group and dispatched. The group by

attributes will not be editable. This selection is designed to work when Oracle Warehouse Management System (WMS) is installed.

4. Cluster - No grouping of pick tasks will be done. The tasks will be ordered by locator and dispatched to the appropriate users. The group by attributes will not be editable. This selection is designed to work when Oracle Warehouse Management System (WMS) is installed.
5. Bulk - Grouping will be done by item and locator. The group by attributes will not be editable. Tasks will be consolidated based on this grouping and dispatched to the appropriate users. This selection is designed to work when Oracle Warehouse Management System (WMS) is installed.

## Document and Label Printer Assignments

Document and Label Printer Assignments (RCD) allows printers to be assigned to different documents for multiple levels in Oracle Shipping Execution. The levels include Equipment Type, User, Zone, Department, Responsibility, Application, and Site in this order of precedence. Equipment Type is the most specific and Site is the most general. If Oracle Warehouse Management System (WMS) is installed, Equipment Type, Zone, and Department can be used.

## Roles and Users

### Defining Roles and Users

Shipping Execution introduces data access control features called *roles* that can be assigned to users. Roles can be assigned to permit or restrict a user's access to important shipping entities such as trips, stops, deliveries (including delivery legs, Bill of Lading, and Packing Slip), lines, and LPNs (containers). This is useful to prevent users from doing unwanted actions such as unintentionally pick releasing across multiple organizations or from entering incorrect data. Roles can also be used to limit access to certain functions for a specified period: for example, granting short-term roles with temporary privileges to temporary employees or granting view-only roles to inexperienced employees. Each role consists of a set of data action controls (also called privileges) that control a user's access to the Actions list and Tools menu in the Shipping Transactions window.

For example, a user with a view-only role can view shipping information but cannot make changes to the data or perform actions such as pick release. However, a role can also have a combination of view-only and edit features: for example, a user may be assigned a role that permits edit access to trips but view-only access to deliveries.

Roles can be created and assigned to users. The system administrator or super-user is responsible for assigning roles to users.

The privileges are:

- **Edit:** Enables users to edit and view the data, and perform actions such as pick release.
- **View:** Enables users to browse the data but not perform actions on them.
- **None:** Does not allow viewers to edit or view the selected actions.

During the upgrade, existing users are automatically assigned a default role that provides full view and edit privileges. These default roles can be changed by assigning a different role. New users for both upgrade and new installations are granted default roles with view-only access.

**Table 3–1 User Roles**

| <b>User</b> | <b>Upgrading</b>   | <b>Installing Shipping Execution for the first time (no upgrades)</b>  |
|-------------|--|--|
| Existing    | The default role Pre-Upgrade User is automatically assigned to all existing users. This provides <i>full view and edit</i> privileges. You can assign the user a new role. | N/A (No pre-existing users)  |
| New         | The default role New User is assigned to new users. This provides <i>view-only</i> access. You can assign the user a new role.   | The default role New User is assigned to new users. This provides <i>view-only</i> access. You can assign the user a new role. |

For example, if upgrading from Shipping Execution 11*i*, all existing users are automatically assigned a Pre-Upgrade User role, providing full view and edit privileges. After the upgrade, you can change this default role by assigning the user a different role.

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**Note:** New roles cannot be assigned globally to all users, you must assign the new role to each individual user.

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## Grants

When a role is assigned to a user, a *grant* that contains the identical privileges of the role is assigned. This provides flexibility for the system administrator to



apply user-level controls such as adding an expiration date to a grant. The user can only be assigned one grant per warehouse organization. More than one grant can be assigned to an individual user if different access controls are required to more than one warehouse organization. For example, if a user requires full-access privileges to three warehouses and view-only access to a fourth, the user must be assigned four grants—one for each respective organization (three full-access and one view-only grant). However, if only one grant is assigned, that grant becomes the default grant for all warehouses that the user can access. In addition, the grant has the following requirements:

A grant must have one inventory organization selected.

A role can be used by many grants.

A user can have one or more grants. (If the user does not have a grant, full access is the default.)

There is no provision for marking a grant as default.

A role can be assigned to a user that spans all warehouses instead of granting a unique grant per organization per user.

### Updating a User's Role

Changes in job requirements, such as a promotion, requires updates to a user's role. To change the role, you must end the user's existing role (expiration dates) and assign a new role with the new privileges. The start date of the new role must occur after the end date of the old. You can update the end date of a user's grant (if it has not expired) by editing the end date and saving the changes. If the date and grant has expired, the user must be granted a new grant (role).

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**Note:** You cannot change a role by editing the role's parameters and saving the changes. Updating a user's grant only affects that user, not all users assigned with the role.

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### Additional Line Status

In the Shipping Transactions window, you can view the status of a delivery line to identify its current stage in the shipping flow. You can find detailed information about the delivery line statuses in the Oracle Shipping Execution User's Guide, Delivery Details chapter, and the Line Status appendix of this manual.

## Decimal Quantities for Standard Items

With decimal quantity support, you can:

- Enter transactions for quantities of less than a unit without having to define a unit of measure to represent the partial quantity, for example, you should be able to order 1.1 tons of butter without having to define a UOM of 0.1 of a ton and order 11 of them.
- Specify certain items that can only be ordered in discrete quantities and not in decimal quantities. For example you can specify that pencils can be ordered in discrete quantities and not in decimals.
- Define a transactable unit for UOMs and items so that all transacted quantities are in multiple of the transactable unit. For example, the transactable unit for sugar is 0.1 gram. You can order 0.1, 0.2, or 1.5 gram of sugar but you cannot order 0.01 gram or 1.123 gram.
- Track and record quantities in two different UOMs. Transactions executed in one UOM will update the balance in the second UOM.
- You can define decimal ratios on the configuration bill of material (ATO, PTO, and Kit). For example, each unit of product X is composed of 11% of chemical A, 23% of chemical B, and 66% of chemical C

Also, you can enter transactions for quantities of less than a unit without having to define a unit of measure to represent the partial value of the configuration, for example, the customer orders 1.5 ton of product X and you need to perform an issue transaction on the three components.

## Integration with Oracle Project Contracts

Oracle Project Contracts is an application that can be integrated with Oracle Shipping Execution to initiate shipments for contract deliverables ready for shipping. This is useful for shipping non-item based delivery details or non-stocked items like engineering drawings and documents to fulfill a contract deliverable. Multiple deliverables can be shipped together into a single shipment.

If Oracle Project Contracts is installed and enabled with Oracle Shipping Execution, these line items are passed to Oracle Shipping Execution as delivery lines. The delivery detail does not require an item reference; instead, a generic item description and packing/shipping instructions is independently captured. Once the shipment line is passed to Shipping Execution, the shipment can be planned using standard Shipping Execution trip planning functions.

If the generation of a U.S. Department of Defense Material Inspection and Receiving Report (DD250) or other shipping inspection document is required, a document set can be submitted containing the DD250.



## Overview

This chapter explains new concepts and features for this release of the Oracle Order Management Application. The Oracle Order Management Application provides many flexible features enabling you to set up your system to begin processing order information. You must define your business order policies, such as how you classify your orders, as well as various control features prior to processing orders within the application.

Please refer to the Oracle Order Management Suite Implementation Manual for details on step and implementation issues. Additionally, please refer to the Using Oracle Workflow in Oracle Order Management, Release 11*i* manual for setup and implementation details for Order Management Workflows.

- Set up your profile options. See: Order Management Profile Options on page 4-15.
- Set your Order Management Parameters. See: Enabling Order Management Parameters on page 4-47
- Set up your tax information. See: Taxation on page 4-51 and Overview of Tax, Oracle Receivables User's Guide.
- Set up your QuickCodes. See: Defining Order Management QuickCodes on page 4-55.
- Define your document sequences for order numbering. See: Defining Document Sequences for Order Numbering on page 4-72.
- Define your Order Management Transaction Types (order and line types) on page 4-75

- Set up your security rules to prevent updates past certain steps in your order flows. See: Overview of Processing Constraints on page 4-95.
- Set up your defaulting rules. See: Overview of Defaulting Rules on page 4-113
- Set up your credit check processes. See: Overview of Credit Checking on page 4-132 See: Overview of Credit Checking
- Define your hold information. See: Defining Holds on page 4-170
- Set up your attachments to apply to sales orders. See: Overview of Attachments on page 4-175
- Set up your shipping tolerances for over and under shipments. See: Overview of Shipping Tolerances on page 4-183
- Trading Community usage within Order Management See: Trading Community usage within Order Management on page 4-187

## Oracle Order Management Recommended Setup

Setup involves several phases, including setting up other integrated applications, which include Oracle General Ledger, Oracle Receivables, and Oracle Inventory. Some setup steps are optional, depending on whether you have the integrating applications installed and whether you use the associated feature. For example, if your business supports drop shipments, you should also setup Oracle Purchasing. If you sell models and kits, setup Oracle Bills of Material and Oracle Configurator.

If you are using a multiple organization structure, your system administrator must set the parameter *OM: Item Validation Organization*. This enables Order Management to default code and revenue account information accurately.

### Oracle Applications Implementation Wizard

If you are implementing more than one Oracle Applications product, you may want to use the Oracle Applications Implementation Wizard to coordinate your setup activities. The Implementation Wizard guides you through the setup steps for the applications you have installed, suggesting a logical sequence that satisfies cross-product implementation dependencies and reduces redundant setup steps. The Wizard also identifies steps that can be completed independently by several teams working in parallel to help you manage your implementation process most efficiently.

You can use the Implementation Wizard as a resource center to see a graphical overview of setup steps, read outline help for a setup activity, and open the appropriate setup window. You can also document your implementation, for further reference and review, by using the Wizard to record comments for each step.

### Set Up Oracle Applications Technology

The setup steps in this chapter tell you how to implement the parts of Oracle Applications specific to Oracle Order Management.

The Implementation Wizard guides you through the entire Oracle Applications setup, including system administration. However, if you do not use the Wizard, you need to complete several other setup steps, including:

- Performing system-wide setup tasks, such as configuring concurrent managers and printers
- Managing data security, which includes setting up responsibilities to enable access to a specific set of business data and transactions, and assigning individual users to one or more of these responsibilities

Also, if your product uses Oracle Workflow, for example, to manage the approval of business documents or derive Accounting flexfield values via the Account Generator, you need to set up Oracle Workflow.

**See Also**

[Overview of Workflow](#), Oracle Workflow Guide

[Oracle System Administration](#), Oracle Applications System Administrator's Guide

Using Oracle Workflow in Oracle Order Management, Release 11i.

**Setup Steps**

**Step 1**

**Flexfields**

Define key and descriptive flexfields to capture additional information about orders and transactions.

This step is required for Key Flexfields, and optional if you plan on using the functionality surrounding Descriptive Flexfields. Several defaulting values are provided.

See: Oracle Order Management Suite Implementation Manual, Release 11i., Flexfields Appendix.

**Step 2**

**Multiple Organizations**

Define multiple organizations in Oracle Inventory. This step is optional.

See: [Overview of Inventory Structure](#), Oracle Inventory User's Guide.

**Step 3**

**Inventory Organizations**

Define inventory organizations (warehouses), parameters, subinventories, and picking rules in Oracle Inventory.

You must define at least one item validation organization and at least one organization that acts as an inventory source for orders fulfilled internally. If you



plan to drop ship some orders, you must also define at least one logical organization for receiving purposes. Your item validation organization can be the same as your inventory source or your logical receiving organization, but you cannot use one organization for all three purposes. See Step 5 for setting your item validation organization.

This step is required.

**See Also**

Oracle Inventory User's Guide, [Overview of Inventory Structure](#)

Oracle Inventory User's Guide, [Defining Picking Rules](#)

## Step 4

### Profile Options

Define profile options to specify certain implementation parameters, processing options, and system options.

This step is required.

See: [Order Management Profile Options](#).

See: Oracle Order Management Suite Implementation Manual, Release 11i., Order Management Profile Options.

## Step 5

### Parameters

Set your Order Management Parameters to validate items, enable customer relationships, and operating unit defaults.

This step is required.

See: [Enabling Order Management Parameters](#)

See: Oracle Order Management Suite Implementation Manual, Release 11i., Enabling Order Management Parameters.

## Step 6

### **Invoicing**

Define invoicing information, including payment terms, invoicing and accounting rules, Autoaccounting parameters, territories, and invoice sources.

This step is required if you plan on transferring invoicing information to Oracle Receivables. Several defaulting values are provided.

See the following topics in the Oracle Receivables User's Guide for more information:

[Payment terms](#)

[Invoice with Rules](#)

[Transaction Types](#)

[AutoAccounting](#)

[Territories](#)

[Invoice Batch Sources](#)

Within the Order Management User's Guide, [Invoice Processing](#)

## Step 7

### **Salespersons**

Define information on your sales representatives.

This step is optional.

See: [Salespersons](#), Oracle Receivables User's Guide.

## Step 8

### **Tax**

Define tax features, such as codes, rates, exceptions, and exemptions.

This step is required.

See: [Overview of Tax](#), Oracle Receivables User's Guide.

## Step 9

### **QuickCodes**

Define QuickCodes that provide custom values for many lists of values throughout Order Management.

This step is required if you plan on creating user defined Quickcodes for utilization within Order Management. Defaulting values are provided.

See: [Defining Order Management QuickCodes](#).

## Step 10

### **Workflow**

Define order and line processing flows to meet different order and line type requirements.

This step is required.

See: Using Oracle Workflow in Oracle Order Management, Release 11i.

## Step 11

### **Document Sequences (Order Numbering)**

Define Document Sequences for automatic or manual numbering of orders.

This step is required.

See: [Defining Document Sequences for Order Numbering](#).

## Step 12

### **Order Import Sources**

Define sources for importing orders into Order Management.

This step is required if you plan on importing orders or returns into Order Management.

See: [Defining Order Import Sources](#).

## Step 13

### **Units of Measure**

Define the units of measure in which you supply items.

This step is required.

See: [Defining Unit of Measure](#), Oracle Inventory User's Guide.

## Step 14

### **Item Information**

Define item information, including item attribute controls, categories, and statuses.

This step is required.

See these topics in the Oracle Inventory User's Guide for more information:

[Defining Item Attribute Controls](#)

[Defining Categories](#)

[Defining Item Status Codes.](#)

## Step 15

### **Items**

Define the items that you sell, as well as container items.

This step is required.

See: [Overview of Item Setup and Control](#), Oracle Inventory User's Guide.

## Step 16

### **Configurations**

Define the configurations that you sell.

This step is required if you plan on generating orders or returns for configured items. Several defaulting values are provided.

See: [Primary and Alternate Bills of Material](#), Oracle Bills of Material User's Guide.

## Step 17

### Pricing

Define price lists for each combination of item and unit of measure that you sell. Optionally, you can define pricing rules and parameters to add flexibility.

For more information about pricing setup and implementation, refer to the *Oracle Advanced Pricing Implementation Manual*.

This step is required.

See: [Overview of Pricing](#).

## Step 18

### Customer Classes

Define customer profile classes.

This step is required if you plan on using the functionality surrounding Customer Profiles. Several defaulting values are provided.

See: [Defining Customer Profile Classes](#), Oracle Receivables User's Guide.

## Step 19

### Customers

Define information on your customers.

This step is required.

See: [Entering Customers](#), Oracle Receivables User's Guide.

## Step 20

### Item Cross References

Define item cross references for ordering by customer part number, UPC, or any generic item number.

This step is required if you plan on using the functionality surrounding item cross referencing. Several defaulting values have been provided.

### See Also

## [Using Item Cross Referencing in Order Management](#)

Oracle Inventory's User's Guide, [Defining Customer Item Cross References](#)

Oracle Inventory's User's Guide, [Defining Cross Reference Types](#)

### Step 21

#### **Sourcing**

Define your sourcing rules for scheduling supply chain ATP functions.

This step is optional.

See: [Setting up the Supply Chain](#), Oracle Advanced Supply Chain Planning User's Guide.

### Step 22

#### **Order Management Transaction Types (Order and Line Types)**

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**Note:** Previous versions of this user's guide referred to Order Management Transaction Types as either *transaction types* or *order or line transaction types*. In an effort to distinguish between the various Oracle Transaction types available, Order Management Transaction types will now be referred to as either OM Order or Line Transaction Types.

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Define Order Management transaction types to classify orders and returns. For each order type, you can assign a default price list, defaulting rules, order lines, return lines, line types, workflow assignments, payment terms, and freight terms.

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**Note:** Order Management provides *NO* seeded OM transaction types. For existing Oracle Order Entry customers, Order Management will update existing *Order Types* to OM transaction type during the upgrade process.

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This step is required.

See: [Defining Order Management Transaction Types](#).

See: [Defining Order Management Transaction Types](#).

## Step 23

### **Cost of Goods Sold (COGS)**

Set up your Cost of Goods Sold Accounting Flexfield combination (COGS Account) in Oracle Inventory.

This step is required if you plan on utilizing the functionality surrounding COGS.

See: Oracle Inventory User's Guide.

## Step 24

### **Processing Constraints**

Define processing constraints to prevent users from adding updating, deleting, splitting lines, and cancelling order or return information beyond certain points in your order cycles. Use the constraints Order Management provides, which prevent data integrity violations, or create your own.

This step is optional. Several default values for processing constraints have been defined.

#### **See Also:**

[Defining Processing Constraints](#)

[Defining Validation Templates](#)

[Defining Record Sets](#).

Oracle Order Management Suite Implementation Manual, Release 11i:

Order Management Processing Constraints Appendix.

Defining Validation Templates

Defining Record Sets

## Step 25

### **Defaulting Rules**

Define defaulting rules to determine the source and prioritization for defaulting order information to reduce the amount of information you must enter manually in the Sales Orders window.

This step is optional. Several Defaulting rules and corresponding values for have been defined.

See: [Defining Defaulting Rules](#).

## Step 26

### **Credit Checking**

Define your credit checking rules.

This step is required if you plan on performing any type of order credit checking.

### **See Also**

[Defining Credit Check Rules](#)

[Defining Sales Credit Types](#)

Credit Checking in Order Management White Paper, available on OracleMetaLink, <http://www.oracle.com/support/metalink/>.

Oracle Order Management Suite Implementation Manual, Release 11i:

Defining Sales Credit Types

Defining Credit Check Rules

Credit Checking in Order Management White Paper, available on OracleMetaLink, <http://www.oracle.com/support/metalink/>.

## Step 27

### **Holds**

Define automatic holds to apply to orders and returns.

This step is required if you plan on performing automatic hold for orders or returns.

See: [Defining Holds](#).



See: Oracle Order Management Suite Implementation Manual, Release 11*i*, Defining Holds.

## Step 28

### **Attachments**

Define standard documents to attach automatically to orders and returns.

This step is optional.

See: [Overview of Attachments](#).

See: Oracle Order Management Suite Implementation Manual, Release 11*i*, Overview of Attachments.

## Step 29

### **Freight Charges and Carriers**

Define freight charges and freight carriers to specify on orders.

This step is required if you plan on charging customers for freight or additional order charges.

### **See Also**

#### [Defining Freight and Special Charge Types](#)

Oracle Order Management Suite Implementation Manual, Release 11*i*:

[Freight and Special Charges Examples](#)

[Defining Freight and Special Charge Types](#)

Oracle Shipping Execution User's Guide:

[Defining Freight Costs](#)

[Defining Freight Carriers](#)

## Step 30

### **Shipping**

Define shipping parameters in Oracle Shipping Execution.

This step is required.

See: [Oracle Shipping Execution User's Guide](#).

**Oracle Training Administration Users**

Please refer to the Oracle Training Administration User's Guide for additional Order Management Setup Steps.

See: [Using Oracle Training Administration with Order Management](#)

**Oracle Process Manufacturing Users**

Please refer to the Oracle Process Manufacturing User's Guide for additional Order Management Setup Steps.

## Order Management Profile Options

During your implementation, you set a value for each profile option in Order Management to specify how the application controls access and processes data.

You can set or view these profile options in Oracle Order Management. Generally, your system administrator sets up and updates profile option values. The *Oracle Applications System Administration User's Guide* contains more information on profile options, including the internal names of each Order Management profile option.

### See Also

[Overview of Configurator](#), Oracle Configurator User's Guide

[System Administration](#), Oracle Applications System Administrator's Guide

### Order Management Profile Options Level Setting and Default Values

The table below describes profile options that are used within Order Management. If the profile option from the table is prefaced with an application short code, you can find additional information surrounding the profile option usage in the related Application User Guide.

The table also uses the following values to describe profile option controls for columns *User*, *System Admin User*, *System Admin Resp*, *System Admin App*, and *System Admin Site*:

- **Yes:** You can update the profile option.
- **View Only:** You can view the profile option value in the Profiles window, but you cannot change it.
- **No:** You cannot view or change the profile option value.

Please note, for the table below, that if value No is displayed within column *Default Value*, the meaning is that the default for the profile option is No.

| Profile Option Name             | User      | System Admin. User | System Admin. Resp.   | System Admin. App. | System Admin. Site    | Required? | Default Value |
|---------------------------------|-----------|--------------------|-----------------------|--------------------|-----------------------|-----------|---------------|
| OM: Add Customer                | View Only | Yes                | Yes - default is None | Yes                | Yes - default is None | Required  | NULL          |
| OM: Add Customer (Order Import) | Yes       | Yes                | Yes                   | Yes                | Yes                   | Optional  | NULL          |

| Profile Option Name                            | User              | System Admin. User | System Admin. Resp. | System Admin. App. | System Admin. Site | Required?         | Default Value     |
|--|-------------------|--------------------|---------------------|--------------------|--------------------|-------------------|-------------------|
| OM: Administer Public Queries                  | No                | Yes                | Yes                 | Yes                | Yes                | Required          | No                |
| OM: Apply Automatic Attachments                | Yes               | No                 | Yes                 | Yes                | Yes                | Optional          | Yes               |
| OM: Autoschedule                               | View Only         | No                 | Yes                 | No                 | Yes                | Optional          | NULL              |
| OM: Auto Push Group Date                       | Yes               | No                 | Yes                 | No                 | Yes                | Optional          | NULL              |
| OM: Branch Scheduling                          | Internal use only | Internal use only  | Internal use only   | Internal use only  | Internal use only  | Internal use only | Internal use only |
| OM: Charges for Backorders                     | View Only         | No                 | No                  | No                 | Yes                | Optional          | NULL              |
| OM: Charges for included item                  | View Only         | No                 | No                  | No                 | Yes                | Optional          | NULL              |
| OM: Charging Privilege                         | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Commitment Balance Checking                | Obsolete          | Obsolete           | Obsolete            | Obsolete           | Obsolete           | Obsolete          | Obsolete          |
| OM: Commitment Sequencing                      | No                | No                 | No                  | No                 | Yes                | Optional          | No                |
| OM: Configuration Quick Save                   | No                | No                 | No                  | No                 | Yes                | Optional          | No                |
| OM: Context Responsibility for Upgraded Orders | View Only         | View Only          | Yes                 | View Only          | View Only          | Optional          | No Default        |
| OM: Credit Card Privileges                     | View Only         | View Only          | Yes                 | Yes                | Yes                | Optional          | None              |
| OM: Credit Check Engine API Code Flow          | No                |                    |                     |                    |                    |                   | Multi             |
| OM: Credit Memo Transaction Type               | View Only         | No                 | No                  | No                 | Yes                | Required          | NULL              |
| OM: Credit Salesperson for Freight on Sales    | Yes               | Yes                | Yes                 | Yes                | Yes                | No                | No                |

| Profile Option Name                          | User              | System Admin. User | System Admin. Resp. | System Admin. App. | System Admin. Site | Required?         | Default Value     |
|--|-------------------|--------------------|---------------------|--------------------|--------------------|-------------------|-------------------|
| OM: Cust Item Shows Matches                  | Internal use only | Internal use only  | Internal use only   | Internal use only  | Internal use only  | Internal use only | Internal use only |
| OM: Customer Relationships                   | Obsolete          | Obsolete           | Obsolete            | Obsolete           | Obsolete           | Obsolete          | Obsolete          |
| OM: Customer Service RMA Feedback            | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Customer Service Report Defect           | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | N                 |
| OM: Deactivate Pricing at Scheduling         | Yes               | Yes                | Yes                 | Yes                | Yes                | No                | NULL              |
| OM: Debug Level                              | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | 0                 |
| OM: Debug log Directory                      | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Discounting Privileges                   | No                | Yes                | Yes                 | Yes                | No                 | Optional          | NULL              |
| OM: Employee for Self-Service Orders         | No                | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: E-Mail Required On New Customers         | No                | No                 | No                  | No                 | Yes                | Optional          | No                |
| OM: Estimated Authorization Validity Period  | Yes               | Yes                | Yes                 | Yes                | Yes                | Required          | 21                |
| OM: GSA Discount Violation Action            | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Generic Update Constraints Apply to DFF? | View Only         | No                 | No                  | No                 | Yes                | Optional          | NULL              |
| OM: Generic Discount Violation Action        | No                | No                 | No                  | No                 | Yes                | Optional          | Yes               |
| OM: Included Item Freeze Method              | Yes               | No                 | No                  | No                 | Yes                | Required          | NULL              |
| OM: Invoice Numbering Method                 | No                | No                 | No                  | No                 | Yes                | Required          | Automatic         |

| Profile Option Name                      | User              | System Admin. User | System Admin. Resp. | System Admin. App. | System Admin. Site | Required?         | Default Value     |
|--|-------------------|--------------------|---------------------|--------------------|--------------------|-------------------|-------------------|
| OM: Invoice Source                       | View Only         | No                 | No                  | No                 | Yes                | Required          | NULL              |
| OM: Invoice Transaction Type             | View Only         | No                 | No                  | No                 | Yes                | Required          | NULL              |
| OM: Item Change Honors Frozen Price      | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Inventory Stock Location             | Obsolete          | Obsolete           | Obsolete            | Obsolete           | Obsolete           | Obsolete          | Obsolete          |
| OM: Item Change Honors Frozen Price      | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Item Flexfield                       | No                | No                 | No                  | No                 | Yes                | Required          | System items      |
| OM: Item View method                     | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Level of Credit Checking             | Obsolete          | Obsolete           | Obsolete            | Obsolete           | Obsolete           | Obsolete          | Obsolete          |
| OM: Log Directory for Generated Packages | Obsolete          | Obsolete           | Obsolete            | Obsolete           | Obsolete           | Obsolete          | Obsolete          |
| OM: Manual Linegroup Adjustment Exists   | Internal use only | Internal use only  | Internal use only   | Internal use only  | Internal use only  | Internal use only | Internal use only |
| OM: Negative Pricing                     | Yes               | No                 | No                  | Yes                | Yes                | Optional          | NULL              |
| OM: NonView Only Delivery Invoice Source | View Only         | No                 | No                  | No                 | Yes                | Required          | NULL              |
| OM: Notification Approver                | View Only         | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Order Information Regulatory logging | Yes               | Yes                | Yes                 | Yes                | Yes                | Yes               |                   |
| OM: Orders Purge Per Commit              | View Only         | No                 | No                  | No                 | Yes                | Optional          | 100               |
| OM: Over Return Tolerance                | View Only         | No                 | No                  | No                 | Yes                | Required          | 0                 |
| OM: Over Shipment Tolerance              | View Only         | No                 | Yes                 | Yes                | Yes                | Required          | 0                 |

| Profile Option Name                                  | User              | System Admin. User | System Admin. Resp. | System Admin. App. | System Admin. Site | Required?         | Default Value     |
|--|-------------------|--------------------|---------------------|--------------------|--------------------|-------------------|-------------------|
| OM: Over Shipment Invoice Basis                      | View Only         | No                 | Yes                 | Yes                | Yes                | Required          | NULL              |
| OM: Party Totals Currency                            | Yes               | View Only          | View Only           | View Only          | Yes                | Required          | US Dollars        |
| OM: Payment Method for Credit Card Transactions      | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Preinsert Manual Adjustments                     | Internal use only | Internal use only  | Internal use only   | Internal use only  | Internal use only  | Internal use only | Internal use only |
| OM: Population Of Buyer Code For Dropship            | View Only         | No                 | No                  | No                 | Yes                | Optional          | NULL              |
| OM: Promotion Limit Violation Action                 | View Only         | No                 | No                  | No                 | Yes                | Optional          |                   |
| OM: Process Payment Immediately at Booking           | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | Yes               |
| OM: Records on Summary Page for External Users       | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Reservation Time Fence                           | Yes               | No                 | Yes                 | No                 | Yes                | Optional          | NULL              |
| OM: Return Item Mismatch Action                      | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Return Unfulfilled Referenced Line Action        | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Risk Factor Threshold for Electronic Payments    | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | 50                |
| OM: Round Unit Selling Price                         | Obsolete          | Obsolete           | Obsolete            | Obsolete           | Obsolete           | Obsolete          | Obsolete          |
| OM: Run Order Import for XML                         | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Sales Order Form: Cascade Header Changes to Line | Internal use only | Internal use only  | Internal use only   | Internal use only  | Internal use only  | Internal use only | Internal use only |

| Profile Option Name  | User              | System Admin. User | System Admin. Resp. | System Admin. App. | System Admin. Site | Required?         | Default Value     |
|--|-------------------|--------------------|---------------------|--------------------|--------------------|-------------------|-------------------|
| OM: Sales Order Form: Restrict Customers                                     | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | Global            |
| OM: Set of Books   | Obsolete          | Obsolete           | Obsolete            | Obsolete           | Obsolete           | Obsolete          | Obsolete          |
| OM: Set Receivables Transaction Date as Current Date for Non-Shippable lines | Yes               | No                 | No                  | No                 | Yes                | Optional          | No                |
| OM: Schedule Line on Hold  | Yes               | No                 | Yes                 | No                 | Yes                | Optional          | NULL              |
| OM: Show Discount Details on Invoice   | Yes               | No                 | Yes                 | Yes                | Yes                | Required          | No                |
| OM: Show Line Details  | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: Source Code  | No                | No                 | No                  | No                 | Yes                | Required          | ORDER ENTRY       |
| OM: Use Configurator   | Yes               | No                 | No                  | No                 | Yes                | Optional          | Yes               |
| OM: Under Return Tolerance   | View Only         | No                 | No                  | No                 | Yes                | Required          | 0                 |
| OM: Under Shipment Tolerance   | View Only         | No                 | No                  | No                 | Yes                | Required          | 0                 |
| OM: Unit Price Precision Type  | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| OM: View Canceled Lines  | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | Yes               |
| OM: View Closed Lines  | Yes               | Yes                | Yes                 | Yes                | Yes                | Optional          | Yes               |
| Tax: Inventory Item for Freight  | View Only         | No                 | Yes                 | No                 | Yes                | Optional          | NULL              |
| Tax: Invoice Freight as Revenue  | View Only         | Yes                | Yes                 | Yes                | Yes                | Optional          | NULL              |
| ONT_ACTIVATE_CMS   | Internal use only | Internal use only  | Internal use only   | Internal use only  | Internal use only  | Internal use only | Internal use only |
| AR: Item Flexfield Mode (AR)   | Yes               | Yes                | Yes                 | Yes                | Yes                | Required          | NULL              |



| Profile Option Name                              | User      | System Admin. User | System Admin. Resp. | System Admin. App. | System Admin. Site | Required? | Default Value            |
|--|-----------|--------------------|---------------------|--------------------|--------------------|-----------|--------------------------|
| AR: Use Invoice Accounting for Credit Memos (AR) | View Only | Yes                | Yes                 | Yes                | Yes                | Required  | No                       |
| HZ: Generate Contact Number (AR)                 | Yes       | Yes                | Yes                 | Yes                | Yes                | Required  | NULL - equivalent to Yes |
| HZ: Generate Party Number (AR)                   | Yes       | Yes                | Yes                 | Yes                | Yes                | Required  | NULL - equivalent to Yes |
| HZ: Generate Party Site Number (AR)              | Yes       | Yes                | Yes                 | Yes                | Yes                | Required  | NULL - equivalent to Yes |
| Tax: Allow Ad Hoc Tax Changes (AR)               | View Only | Yes                | Yes                 | Yes                | Yes                | Required  | NULL                     |
| Tax: Allow Manual Tax Lines (AR)                 | View Only | Yes                | Yes                 | Yes                | Yes                | Required  | NULL                     |
| Tax: Allow Override of Customer Exemptions (AR)  | View Only | Yes                | Yes                 | Yes                | Yes                | Required  | NULL                     |
| Tax: Allow Override of Tax Code (AR)             | View Only | Yes                | Yes                 | Yes                | Yes                | Required  | NULL                     |
| Tax: Calculate Tax on Credit Memos (AR)          | View Only | No                 | Yes                 | Yes                | Yes                | Optional  | NULL                     |
| Tax: Use Tax PL/SQL Vendor (AR)                  | View Only | No                 | Yes                 | Yes                | Yes                |           | No                       |
| Tax: Use Tax Vendor (AR)                         | View Only | No                 | Yes                 | Yes                | Yes                | Required  | No                       |
| BOM: Check for Duplicate Configuration (BOM)     | View Only | No                 | No                  | No                 | Yes                | Optional  | No                       |
| BOM: Component Item Sequence Increment (BOM)     | Yes       | Yes                | Yes                 | Yes                | Yes                | Optional  | 10                       |
| BOM: Configurator URL of UI Manager (BOM)        | Yes       | Yes                | Yes                 | Yes                | Yes                | Required  |                          |

| Profile Option Name                        | User      | System Admin. User | System Admin. Resp. | System Admin. App. | System Admin. Site | Required? | Default Value |
|--|-----------|--------------------|---------------------|--------------------|--------------------|-----------|---------------|
| BOM: Default Bill of Material Levels (BOM) | Yes       | Yes                | Yes                 | Yes                | Yes                | Optional  | No            |
| Sequential Numbering (FND)                 | View Only | No                 | Yes                 | Yes                | Yes                | Required  |               |
| Default Country (FND)                      | Yes       | Yes                | Yes                 | Yes                | Yes                | Required  | NULL          |
| Flexfields: Open Descr Window (FND)        | Yes       | Yes                | Yes                 | Yes                | Yes                | Optional  | Yes           |
| Journals: Display Inverse Rate (GL)        | Yes       | Yes                | Yes                 | Yes                | Yes                | Optional  | At site level |
| INV: Capable to Promise (INV)              | Yes       | Yes                | No                  | No                 | Yes                | Optional  | NULL          |
| QP: Accrual UOM Class (QP)                 | View Only | No                 | No                  | Yes                | Yes                | Optional  | No Default    |
| QP: Blind Discount Option (QP)             | View Only | No                 | No                  | Yes                | Yes                | Required  | Yes           |
| QP: Bypass the Pricing Engine (QP)         | Obsolete  | Obsolete           | Obsolete            | Obsolete           | Obsolete           | Obsolete  | Obsolete      |
| QP: Item Validation Organization (QP)      | View Only | No                 | Yes                 | No                 | Yes                | Required  | No Default    |
| QP: Line Volume UOM Code (QP)              | View Only | No                 | No                  | Yes                | Yes                | Optional  | No Default    |
| QP: Line Weight UOM Code (QP)              | View Only | No                 | No                  | Yes                | Yes                | Optional  | No Default    |
| QP: Negative Pricing (QP)                  | View Only | No                 | No                  | Yes                | Yes                | Required  | No Default    |
| QP: Return Manual Discounts (QP)           | Yes       | Yes                | Yes                 | Yes                | Yes                |           |               |
| QP: Source System Code (QP)                | No        | No                 | No                  | Yes                | Yes                | Required  | No Default    |
| QP: Unit Price Precision Type (QP)         | No        | No                 | No                  | Yes                | Yes                | Required  | Standard      |
| QP: Verify GSA Violations (QP)             | No        | No                 | No                  | No                 | Yes                | Required  | No            |



This profile option determines which users can create new customers and customer details when importing order using the Order Import concurrent program. Select from:

- **All:** Users can access the Add Customer window to create new customers, customer addresses, and customer contacts.
- **None:** User is not given access to the Add Customer form.
- **Address and Contact only:** Users can access the Add Customer window to create both new customer addresses and/or customer contacts for existing customers only.

The default for this profile option is *None*.

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**Note:** You cannot update existing customer information via the Add Customer window. However, if the e-mail address field is NULL for a customer and/or customer contact, you can update these fields.

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**OM: Administer Public Queries** ONT\_ADMINISTER\_PUBLIC\_QUERIES

This profile option determines which responsibility is able to create and update public queries within Order Management windows.

**OM: Apply Automatic Attachments** OE\_APPLY\_AUTOMATIC\_ATCHMT

This profile option determines whether rule-based attachments are applied without user intervention.

**OM: Auto Push Group Date** ONT\_AUTO\_PUSH\_GRP\_DATE

This profile option controls scheduling when a new line is inserted into an existing set. If the new line cannot be scheduled on the same date as the rest of the set, this profile is used. If the profile is set to Yes, the entire set will be automatically rescheduled. If the profile is set to No, an error will occur. You can change the dates or quantities to make scheduling succeed. This profile option can be overridden for a parameter specific to customers or customer sites by setting a value in the Customer window. The default is NULL which is equivalent to No.

**OM: AutoSchedule** ONT\_AUTOSCHEDULE

This profile option determines the default setting for autoscheduling orders, and also controls the display of the Availability window within the Sales Order Lines

window. Please note that autoscheduling orders is only supported for orders that contain standard line items, not models or kits.

Select from:

- **Yes:** Order lines are scheduled automatically at the time of entry. Automatically display the Availability window within the Sales Order window when entering order line details.
- **No:** Order lines are not scheduled automatically at the time of entry. *Do not* automatically display the Availability window within the Sales Order window when entering order line details.

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**Note:** If the item or model is a standard item or has the item ATP flag enabled, ATP inquiry will automatically be performed on the item or model once it has been entered on an order line and a user exits the item field.

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The Line Generic workflow process sequences the line scheduling action to occur after you book the order. However, even if you have set this profile option to No and you indicate ship set or arrival set on a order line, the order entry processing schedules the line and sets the Visible Demand Flag.

To group lines into ship sets and arrival sets, order entry processing uses the warehouse, scheduled shipment date, ship to location, shipment priority, and shipment method. Therefore, it schedules the order lines with ship set values to obtain scheduled shipment date.

If you want the Line Generic workflow process to schedule an order line, you cannot specify a ship set or arrival set for it.

**OM: Branch Scheduling** ONT\_BRANCH\_SCHEDULING

This profile option is for internal use only. Do not attempt to enter or modify the value of the profile option.

**OM: Charges for Backorders**

This profile option controls the setting of the Calculate Price Flag when backorder lines are created.

Select from:

- **No** or **NULL**: The Calculate Price Flag will be set to *Freeze*, and the pricing engine will not apply charges.
- **Yes**: The Calculate Price Flag will be set to *Partial* to enable charges to be calculated when the backordered item ultimately ships.

**OM: Charges for included item** ONT\_CHARGES\_FOR\_INCLUDED\_ITEM

This profile option determines if Order Management will calculate and return charges for included items. The profile option setting does not control the pricing of include items, only the calculation and return of charges associated with an order line containing an included item.

Select from:

- **Yes**: Calculate and return charges for included items.
- **No**: Do not calculate charges for included items.

**OM: Charging Privilege** OE\_CHARGING\_PRIVILEGE

This profile option controls your ability to manually apply freight and special charges on an order or order line.

Select from:

- **Full Access: You** can modify and apply charges, but you cannot modify non-overridable charges.
- **View Only Access**: You can only view charges.
- **Unlimited Access: You** can modify and apply all charges including the non-overridable charges.

**OM: Configuration Quick Save** ONT\_CONFIG\_QUICK\_SAVE

This profile option determines how Order Management will save option or model class lines for unbooked sales orders from within the Sales Order window *only*.

If you set this profile option to Y, class lines will be saved by a direct database insert call with a minimum of order line defaulting values, unless the value of the Order Management profile option *OM: Included Item Freeze Method* is set to *Entry*. If the value of *OM: Included Item Freeze Method* is set to *Entry*, you cannot perform direct database inserts of model or class order lines with a minimum of defaulting.

**OE: Commitment Balance Checking** OE\_COMMITMENT\_BAL\_CHECK

This profile option is **obsolete** and no longer used by Order Management. Order Management currently validates commitment balance prior to applying the commitment amount to an order line; if the balance is zero or less, the commitment cannot be applied to order line.

**OM: Commitment Sequencing** OE\_COMMITMENT\_SEQUENCING

This profile option determines whether or not Oracle Order Management calculates and stores the amount of the line that can be paid using the commitment, and if commitments will be applied in Oracle Receivables in the same sequence that they are applied in Order Management. Select from:

- **Yes:** Order Management populates the commitment applied and then will interface the commitment amount applied to Oracle Receivables.

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**Note:** If you set this profile option to **Yes**, and you have not installed Bills Receivables for Oracle Receivables, Order Management will not capture the applied commitment amount and therefore will not relay commitment applied amounts to Oracle Receivables; no Warning or Error message is displayed.

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- **No:** Order Management does not calculate the exact commitment applied amount for an order line. Instead, the extended amount of the line is shown in the commitment applied field within the Sales Order Line, Pricing Tab window.

**OM: Context Responsibility for Upgraded Orders** OE\_RESP\_FOR\_WF\_UPGRADE

This profile option is used to flag certain responsibilities to be used when setting the applications context for deferred activities for upgraded orders and order lines. It is used for customers who are upgrading and only needs to be set if a user, who has created orders, (created\_by column in Order Management schema) has multiple responsibilities that point to a single operating unit.

This profile option can only be set at the *Responsibility* level.

**OM: Credit Card Privileges** ONT\_CREDIT\_CARD\_PRIVILEGES

This profile option limits the amount of credit card information displayed in the Sales Orders window and limits who can perform manual or on-line authorizations. The authorization code and credit card number fields displays only the last four digits if the profile option is set to None or Limited. On-line and manual

authorizations are allowed if this profile option is set to All or Limited. Choose from All, Limited, or None.

**OM: Credit Check Engine API Code Flow** OE\_CREDIT\_CHECK\_API\_FLOW

Set to MULTI will switch the code to the new Multi currency API in Verify\_payment

**OM: Credit Memo Transaction Type** OE\_CREDIT\_TRANSACTION\_TYPE\_ID

This profile option value is transferred to Receivables if no value is defined for the credit memo Receivables transaction type associated with the Inbound Order Line OM transaction type and either:

- The Order Header has an OM transaction type of Mixed *or*
- The Receivables transaction type associated with the Order Header OM transaction type is NULL

**OM: Credit Salesperson for Freight on Sales** WSH\_CR\_SREP\_FOR\_FREIGHT

This profile option specifies whether to credit the Salesperson on the invoicing line or order header for freight charges when the freight charges are treated as revenue.

**OM: Cust Item Shows Matches** OE\_CUST\_ITEM\_SHOW\_MATCHES

This profile option determines whether Order Management defaults the Item with the highest ranking item or shows the list of all the matched Internal item numbers when a customer item number is used and that customer item is cross-referenced to more than one internal item.

**OM: Cust Item Shows Matches** OE\_CUST\_ITEM\_SHOW\_MATCHES

This profile option is for internal use only. Do not attempt to enter a value for this profile option.

**OM: Customer Relationships** ONT\_CUSTOMER\_RELATIONSHIPS

This profile option is no longer used by Oracle. It is now obsolete, and has been replaced by an entry on the Order Management *Parameters* window.

**OM: Customer Service RMA Feedback** ONT\_FEEDBACK\_PROFILE

This profile option indicates the Customer contact that a workflow notification will be sent to for RMA requests entered via the Order Information Portal. The values for the LOV for this profile option is all users defined to Oracle Applications via the System Administrator responsibility having *no* customer contacts.



The default for this profile option is *Null*.

**OM: Customer Service Report Defect**    `ONT_REPORTDEFECT_PROFILE`

This profile option indicates the Customer contact that will receive a workflow notification for any Report Defects submitted via the Order Information Portal. The values for the LOV for this profile option is all users defined to Oracle Applications via the System Administrator responsibility having *no* customer contacts.

The default for this profile option is *Null*.

**OM: Deactivate Pricing at Scheduling**    `ONT_NO_PRICING_AT_SCHEDULING`

This profile option should not be set unless directed by an Oracle Representative.

**OM: Debug Log directory**    `OE_DEBUG_LOG_DIRECTORY`

This profile option determines the default directory used to store log file outputs when performing Order Management debugging.

**OM: Debug Level**    `ONT_DEBUG_LEVEL`

This profile option is used to store debug messages to assist in problem identification. The OM: Debug profile option controls which debug messages get written to the debug log based on their assigned level. The directory to be specified for this profile should be available in *utl\_file\_dir* parameter of the init.ora file (or check v\$parameter) of the application database instance.

Assigning a value greater than 0 or NULL causes debugging to be turned on. The value of this option determines the level of debug messages printed within a log file. For example, if OM: Debug Level has a current value of 3, all debugging messages with a level of 1,2 or 3 will be spooled out to the debug log.

Valid values for this profile option are:

- **NULL**: Do not print any debug messages
- **1**: Level 1; Print a limited subset of debug messages (level 1)
- **2**: Level 2; Print a limited subset of debug messages, including level 1
- **3**: Level 3; Print a limited subset of debug messages, including levels 1,2
- **4**: Level 4; Print a limited subset of debug messages, including levels 1,2 3
- **5**: Level 5; Print all debug messages

If you set this profile option to a value other than NULL, system performance may be adversely affected; the greater the value entered, the greater the chance your system may experience performance issues.

Order Management recommends you set this profile option only if you are attempting to gather additional details for an unexpected application issues and then rest the value back to NULL once you have gathered the necessary debug details.

The default for this profile option is NULL.

**OM: Discounting Privilege** ONT\_DISCOUNTING\_PRIVILEGE

This profile option provides the choice of controlling user's ability to apply discounts on an order or order line.

Select from:

- **Full:** Ability to apply any valid discount against an order or order line, as long as the order type of the order does not enforce list prices. (Default value).
- **Non-Overridable Only:** Ability to apply only non-overridable discounts against an order or order line.
- **Unlimited:** Ability to apply any valid discount against any order or order line, regardless of whether the order type of the order enforces list prices.
- **None:** No privileges, view-only access.

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**Note:** A Null value for this profile option is handled as if you selected the value FULL.

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**OM: Employee for Self-Service Orders** ONT\_EMP\_ID\_FOR\_SS\_ORDERS

This profile option determines the default employee assignment (CREATED\_BY) for requisition creation in the event that the user creating the sales order or return does not have an associated employee id and the order source name (OE\_ORDER\_SOURCES.ORDER\_SOURCE\_ID is greater than or equal to 11 and less than or equal to 19) is one of the following values:

- IBU (ORDER\_SOURCE\_ID=11)
- IStore Walkin (ORDER\_SOURCE\_ID=12)
- IStore Account (ORDER\_SOURCE\_ID=13)

- IStore Oneclick (ORDER\_SOURCE\_ID)=14
- Contract Renewal (ORDER\_SOURCE\_ID=15)
- Order Capture Quotes (ORDER\_SOURCE\_ID=16)
- CRM Apps (ORDER\_SOURCE\_ID=17)
- Field Service Report (ORDER\_SOURCE\_ID=18)
- Telesales Collateral (ORDER\_SOURCE\_ID=19)

This profile option is *required* if importing self-service orders or returns that are created by users who are not defined as an employee within the system.

**OM: E-Mail Required on New Customers** ONT\_MANDATE\_CUSTOMER\_EMAIL

This profile option determines whether the field E-mail address is required for any customer or customer contact you define within Order Management. Select from:

- **Yes:** E-mail address is required, for both the customer and customer contact, when defining or updating a customer or customer contact.
- **No:** E-mail address is not required when defining or updating either a customer or customer contact.

The default for this profile option is *Null*.

**OM: Estimated Authorization Validity Period** ONT\_EST\_AUTH\_VALID\_DAYS

This profile option determines the estimated number of days a credit card authorization is assumed to be valid. The default value is 21 days.

**OM: GSA Discount Violation Action** ONT\_GSA\_VIOLATION\_ACTION

This profile option determines how you want the user notified when you define a discount that results in an item price less than the price on a GSA discount for the same price list.

Select from:

- **Error:** Provide error message
- **Warning:** Provide a warning message

**OM: Generic Update Constraints Apply to DFF?** This profile option determines whether you can update processing-constrained descriptive flexfield attributes on closed orders. There is a seeded processing constraint against updating closed order

lines; this profile option does not control order line fields other than the flexfield attributes.

- If you select 'Yes' (the default), you cannot update processing-constrained flexfield attributes on closed orders.
- If profile is set to 'No', you can update processing-constrained flexfield attributes on closed orders.
- This profile option is updateable at the site level.

Regardless of this profile option, you can set up constraints specific to flexfield attribute constraints.

**OM: Included Item Freeze Method** ONT\_INCLUDED\_ITEM\_FREEZE\_METHOD

This profile option determines the date and time Order Management uses to determine when included items for a configuration's bill of material are added as lines on the order. Included items for a PTO Model/Class/Kit will also be exploded based on the profile option.

Select from:

- **Pick/Purchase Release:** If the value for this profile option is set to *Pick/Purchase Release*, both the Inventory Interface and Purchase Release workflow activities will explode the included items when processed during pick release and purchase release, respectively.
- **Entry:** If the value for this profile option is set to *Entry*, included items will explode on the sales order when moving to a new line or performing a save.

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**Note:** If the Order Management profile option *OM: Configuration Quick Save* is set to *Yes*, you should not set the value of this profile option to *Entry*. If you do, the Quick Save functionality for streamlining model class order lines will be unavailable.

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- **Booking:** If the value for this profile option is set to *Booking*, The Booking Activity will explode included items when processed.

**OM: Invoice Numbering Method** WSH\_INVOICE\_NUMBERING\_METHOD

This profile option determines whether or not the Invoicing activity generates invoice numbers based on the delivery name or automatically.

Select from:

- **Automatic:** Choose this value if you want to create invoices with automatic numbering. Transaction numbering is controlled automatically by the Receivables AutoInvoice concurrent program. If you set the profile option to this value, you must use an invoice source with automatic transaction numbering.
- **Delivery Name:** Choose this value if you want to create invoices for all shippable lines based on Delivery Name. If you process order lines in a delivery in more than one batch, then this function modifies the delivery name with a number to create a unique transaction number.

If you set the profile option to this value, you must use an invoice source without automatic transaction numbering.

Note: Delivery based invoicing is not supported if order lines within the delivery belong to different operating units.

**OM: Invoice Source** OE\_INVOICE\_SOURCE

This profile option value is transferred to Receivables if the Invoice Source value is null for your transaction type at Order Line and null at the Order Header level.

**OM: Invoice Transaction Type** OE\_INVOICE\_TRANSACTION\_TYPE\_ID

This profile option value is transferred to Receivables if no value is defined for the Receivables transaction type associated with the Outbound OM order line transaction type and OM order Header transaction type.

**OM: Inventory Stock Location** This profile option is no longer used by Oracle. It is now obsolete. If the inventory item is set up to the locator level Order Management will use that as the default picking location. You can also enable default staging locations at the locator level in Shipping Parameters window.

**OM: Item Change Honors Frozen Price** ONT\_HONOR\_ITEM\_CHANGE

This profile option determines whether Order Management will change the value of calculate price flag when an item is changed on an unbooked order line.

Select from:

- **Yes:** Order Management will not change the value of the calculate price flag, whose original value is honored; the original value will control whether the order line gets repriced.
- **No:** Order management will set the calculate price flag to Y, and the order line will be repriced.

**.OM: Item Flexfield** OE\_ID\_FLEX\_CODE

This profile option determines the structure of the Item Flexfield (System Items) used by Order Management. This structure should be the same across all applications in the same database.

**OM: Item View Method** ONT\_ITEM\_VIEW\_METHOD

This profile option determines the display method of data retrieved within the LOV for the *Item* field within the Order Management Options Window. Valid values are:

- 1: Only return item descriptions, with child indentations.
- 2: Only return item description without child indentations.
- 3: Display the concatenated item segment values with child indentations.
- 4: Display the concatenated segment values without indentation.

**OM: Level of Credit Checking** OE\_CREDIT\_CHECKING\_LEVEL

This profile option is obsolete and no longer used. You now specify the credit checking level when defining your Credit Check Rules.

**OM: Log Directory for Generated Packages** OE\_CONC\_LOG\_DIRECTORY

This profile option is no longer used by Oracle Order Management.

**OM: Negative Pricing** ONT\_NEGATIVE\_PRICING

This profile option controls whether Order Management allows a negative list price or negative selling price to be determined by the Pricing Engine or to be entered as an override by a user on a sales order.

The profile option *QP: Negative Pricing* is used for price lists, and controls whether a negative unit price can be entered on a price list

**OM: Notification Approver** OE\_NOTIFICATION\_APPROVER

This profile option is used during upgrading Order Entry Order Cycle History to Order Management Workflow History. Setting this profile option enables you to send workflow Notifications (Approval or FYI notifications) to the Role that the option is set to for the following Oracle Order Management seeded Workflow types:

- OEOH-OM Order Header
- OEOL-OM Order Line

This profile option can be optionally set. When an order or line is created, the value of this profile option is defaulted to the wf item attribute Notification Approver on the Sales Order Header or Sales Order Line work items. Valid values for this profile are based upon a Value Set that uses the seeded view WF\_ROLES.

If the profile option is NULL, then notifications for this role value will go to the user *SYSADMIN*.

All upgraded approvals are sent to this role value of this Profile option.

**OM: Non-Delivery Invoice Source** OE\_NON\_DELIVERY\_INVOICE\_SOURCE

This profile option value is transferred to Receivables if the *OM: Invoice Numbering Method* profile option is set to Delivery and the line is non-shippable.

**OM: Order Information Regulatory logging** ONT\_MSDS\_LOGGING

This profile option is used to determine if you enable logging OPM Regulatory history dispatching within the Order Information portal. Select from:

- **Yes:** Enable logging OPM Regulatory history dispatching within the Order Information portal. Document and user details are stored within the dispatch histories using an API. MSDS document will be displayed to a user only if a successful log for the request is created.
- **No:** Do not enable the logging of OPM Regulatory history dispatching within the Order Information portal.

The default for this profile is *No*.

**OM: Orders Purge Per Commit** OM\_ORDERS\_PURGE\_PER\_COMMIT

This profile option determines how many orders the purge process should purge before performing a commit to the database.

**OM: Over Return Tolerance** OM\_OVER\_RETURN\_TOLERANCE

This profile option indicates the percentage by which a return line can be over-received. Any value greater than or equal to zero (0) is a valid value. This profile option is set at the site level. Default value is zero (0).

**OM: Over Shipment Invoice Basis** OE\_OVERSHIP\_INVOICE\_BASIS

This profile option determines whether to invoice the ordered quantity or the shipped quantity for an over shipment. This profile option can be overridden for

the parameter specific to customers or customer sites by setting a value in the Customer window. Default value is Shipped.

**OM: Over Shipment Tolerance** OM\_OVER\_SHIPMENT\_TOLERANCE

This profile option indicates the percentage by which an order line can be over-shipped. Any value greater than or equal to zero (0) is a valid value. This profile option is set at the site level. Default value is zero (0).

This profile is also applicable to Inbound Lines (RMA).

**OM: Party Totals Currency** OM\_CUST\_TOTAL\_CURRENCY

This profile option determines the currency used by the *Calculate Party Totals* current program which sums order totals by Party. Order Management recommends that you set this profile option at the *Site* level only.

**OM: Payment Method for Credit Card Transactions** ONT\_RECEIPT\_METHOD\_ID

This profile option is used by the credit card authorization process as a default for the primary payment method if a specific customer does not have a primary payment method defined.

**OM: Population Of Buyer Code For Dropship** ONT\_POPULATE\_BUYER

This profile option is used to control how Order Management will populate buyer details when sending sales order data to Oracle Purchasing for requisition processing during requisition import. Select from:

- **Order Creator.** The suggested\_buyer\_id field in the po\_requisitions\_interface table is populated with the buyer details (the employee\_id of the person who enters the sales order). Your sales people must be defined as a buyers in Oracle Purchasing.
- **NULL:** Oracle Purchasing will perform the Get\_Suggested\_Buyer\_Id function (retrieve the buyer information from the master item)

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**Note:** If you set the value of this profile option to NULL, you will be unable to select the value *Buyer* for the input parameter Group prior to submission of the Oracle Purchasing Requisition Import concurrent program.

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**OM: Promotion Limit Violation Action** ONT\_PROMOTION\_LIMIT\_VIOLATION\_ACTION



This system level profile option determines the hold action Order Management will take when encountering a initial promotional hold returned by the pricing engine. If the pricing engine returns a possible promotional hold for an order or order line, Order Management will use the value of this profile option to determine the course of action for the order or line. Messages are generated and can be viewed within the Process Messages Window.

Select from:

- **Place holds where violated (either Line or Order):** If the pricing engine returns an initial promotional hold, place a hold for the corresponding order or order line.
- **No holds applied:** If the pricing engine returns an initial promotional hold, do not apply a hold for either an order or order line. Allow the order or order line to continue processing within its' associated workflow.
- **Place order on hold when any violation occurs** (both Line and Order): If the pricing engine returns an initial promotional hold, irrespective of the hold level, place the order on hold, in addition to any order lines that may be marked for promotional hold.

This profile option is optional, and the default is *Null*.

#### **OM: Process Payment Immediately at Booking**    ONT\_Process\_Payment\_Immediately

This profile option determines how and when payment processing occurs for orders that utilize both a *Payment Term* which enable prepayment and a *Payment Type* of Credit Card. You can choose to process pending payments immediately at booking or in deferred mode (submission of a concurrent program). Select from:

- **Yes:** Payment is processed when an order is booked for the first time, only (immediate processing). If receipt for payment is successfully created, a message is displayed informing the user of the receipt creation.
  - a. If the payment fails processing due to a data error or other Oracle iPayment data errors, the order is placed on ePayment Hold).
  - b. If the payment fails processing due to a server error (connection to your credit card authorization routines encounter an error) or a failed to call to Oracle iPayment, the order is placed on ePayment Server Failure Hold.

If receipt for payment is unsuccessful, a message is displayed informing the user that a receipt was not successfully created.

Both ePayment Hold and ePayment Server Failure Hold are system generated holds, and cannot be removed by a user. You must submit the Process Pending Payments concurrent program in order to remove these hold types.

- **No:** Payment is not processed when an order is booked for the first time. When an order is booked, the order is placed on Pending Process Payment (PPP) Hold (deferred processing). The payment for the order is processed during the next successful submission of the Process Pending Payments concurrent program.

The default for this profile option is Yes.

See: [Process Pending Payments Concurrent Program](#)

**OM: Records on Summary Page for External Users**    ONT\_ICP\_DEFAULT\_RECORDS

This profile option indicates the default query (for external users) called when a user requests either the Orders or Delivery summary pages available from the Order Information Portal. Valid values for this option are any positive, whole integer.

For external users, if you set this profile option to some value other than zero, the Order Information Home page and the Order Status page in Order Information will run a default query to show most recent open orders based upon the numeric value of the profile option. If you set the profile option to zero, the default query is not executed when displaying the Order Information Home page or the Order Status page.

**OM: Reservation Time Fence**    ONT\_RISK\_FAC\_THRESHOLD

This profile option controls automatic reservations during scheduling. The profile option represents the number of days into the future that scheduling will reserve. The default value is NULL which means that scheduling will not automatically reserve. This profile option is used during autoscheduling and also by the scheduling workflow activity and concurrent program to perform reservations.

**OM: Return Item Mismatch Action**    ONT\_RETURN\_ITEM\_MISMATCH\_ACTION

This profile option controls what should occur if you try to change the item ID of a referenced return line. Select from:

- **Reject:** Line processing is halted with an error message.
- **Warning:** Line processing is continued with a warning.
- **Allow:** Line processing continues with no warning or error.

The default for this profile option is *Allow*.

**OM: Return Unfulfilled Referenced Line Action**    ONT\_RETURN\_FULFILLED\_LINE\_ACTION

This profile option is used for returns to control return of unfulfilled lines. Default value is Allow.

Select from:

- **Reject:** Do not create return line if the reference line is non-fulfilled.
- **Warning:** Create return line with Warning if the referenced line is non-fulfilled.
- **Allow:** Create return line without Warning if the referenced line is non-fulfilled.

**OM: Risk Factor Threshold for Electronic Payments**    ONT\_RISK\_FAC\_THRESHOLD

This profile option sets a threshold for determining whether a credit card authorization qualifies as a high risk. Scores can range from 0 to 100, referring to a risk free authorization and 100 referring to a high risk authorization. If the score for a transaction exceeds this threshold, Order Management will put the order on a High Risk Hold. The default value is a score of 50.

**OM: Round Unit Selling Price**    OE\_UNIT\_PRICE\_ROUNDING

This profile option is no longer used within Order Management and is obsolete. It has been replaced with the Pricing profile option QP: Selling Price Rounding Options.

**OM: Run Order Import for XML**    ONT\_TRANSACTION\_PROCESSING

This profile option determines if the Oracle Order Import concurrent program is automatically submitted after the successful import of XML data into Order Management interface tables. Select from:

- **Asynchronous:** Order Import will not automatically be submitted for execution once XML data has been interfaced. You must manually submit the concurrent program after XML data has been interfaced to Order Management.
- **Synchronous:** Order Import will automatically be submitted for execution once XML data has been interfaced to Order Management.

The default for this option is NULL.

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**Note:** A NULL value for this profile option is equivalent to setting the profile option to Asynchronous.

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**OM: Sales Order Form: Cascade Header Changes to Line** OM\_UI\_CASCADE\_HEADER\_ATTRIBUTES

This profile option is for internal use only. Do not attempt to enter a value for this profile option.

**OM: Sales Order Form: Restrict Customers** ONT\_UI\_RESTRICT\_CUSTOMERS

The value of this profile option determines if all customers are displayed within the Customer field on the Sales Order Header, Main Tab or only customers who have addresses in the organization the order is defined for. This profile is applicable only for the Sales Order Header Main Tab.

Customers are visible across all operating units; Customer Addresses are Organization specific.

The default for this profile option is *Global*.

**OM: Set of Books** OE\_SET\_OF\_BOOKS\_ID

This profile option is no longer used. It has been replaced by entering an operating unit on the Order Management Parameters window that is associated with a default set of books you wish to use.

**OM: Set Receivables Transaction Date as Current Date for Non-Shippable lines**  
OE\_RECEIVABLES\_DATE\_FOR\_NONSHIP\_LINES

This profile option determines if the Oracle Receivables transaction date will be populated with the system date (SYSDATE) for non-shippable order or return lines.

Select from:

- **Yes:** Populate the Oracle Receivables transaction date for non-shippable order or return lines with the current system date.
- **No:** Do not populate the Oracle Receivables transaction date for non-shippable order or return lines with the current system date. Populate the Oracle Receivables transaction date for non-shippable order or return lines with the corresponding line order date or line return date.

This profile option is optional, and the default is NO.

**OM: Schedule Line on Hold** ONT\_SCHEDULE\_LINE\_ON\_HOLD

This profile option controls whether scheduling will attempt to schedule lines that are on hold. The default value is NULL, which is the equivalent to Yes.

**OM: Show Discount Details on Invoice** OE\_DISCOUNT\_DETAILS\_ON\_INVOICE

This profile option determines whether the discount details are passed to Oracle Receivables for printing on an invoice. Default value is No.

If you set this profile option to No, then Extended Amounts will includes discounts.

**OM: Show Line Details** ONT\_SHOW\_LINE\_DETAILS

This profile option determines whether the line details of a model are displayed in the Sales Orders window. You can also toggle the display of line details using the Tools menu from the Sales Orders window.

**OM: Source Code** ONT\_SOURCE\_CODE

This profile option identifies the source code that Order Management passes to Oracle Inventory during scheduling. The source code should be defined as the third segment of the Sales Order Flexfield to guarantee that each transaction is unique.

**OM: Use Configurator** ONT\_USE\_CONFIGURATOR

This profile option indicates which Oracle application software is launched to enter configuration information when selecting the *Configurator* button from the Sales Order window. Valid values are:

- **Yes:** Use the Oracle Configurator application to enter you configurations via Oracle Configurator user interfaces. Oracle Configurator *should* be installed and setup if you chose this value. See: Oracle Configurator Installation Guide.
- **No:** Use the Oracle Order Management application to enter your configurations via the Options window

The default for this profile option is *No*.

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**Note:**

- If you set this profile option value to *Yes* and do not have the Oracle Configurator product installed, Order Management automatically displays the Order Management Options window when selecting the Configurator button from the Sales Order Pad.
  - Do not switch the value of this profile option when working with existing orders. For example; If a sales order that contains configurations is created while the profile value is set to *Yes*, do not change your profile option value to *No* and then attempt to update the sales order via the *Configurator* button. Update the configuration information through the same options window as the order was created in, or update via the Sales Order window.
- 
- 

**OM: Under Return Tolerance** OM\_UNDER\_RETURN\_TOLERANCE

This profile option indicates the percentage by which a return line can be under-received for it to be considered fulfilled. Any value between zero (0) and 100 (both inclusive) is a valid value. This profile option is set at the site level. Default value is zero (0).

**OM: Under Shipment Tolerance** OM\_UNDER\_SHIPMENT\_TOLERANCE

This profile option indicates the percentage by which an order line can be under-shipped for it to be considered fulfilled. Any value between zero (0) and 100 (both inclusive) is a valid value. This profile option can be set only at the site level. Default value is zero (0).

For additional information on profile option descriptions and setting for products other than Order Management, please refer to the product specific users guide.

**OM: Unit Price Precision Type** ONT\_UNIT\_PRICE\_PRECISION\_TYPE

This profile option controls the display of Unit Selling Price field for sales order lines only.

Select from:

- **Standard:** You will see at least two decimal places, up to a total of 20 decimal places.
- **Extended:** You see at least five decimal places, up to a total of 20 decimal places.

The QP: Unit Price Precision profile controls how many decimal points you can use on a Price List for a rounding factor.

**OM: View Cancel Lines** ONT\_SHOW\_CANCEL\_LINES

This profile option controls the default value of the Cancel check box when sorting sales order lines within the Sales Order Lines Tab, Sort window. The default value is Yes. Select from:

- **Yes:** The Cancel check box will be automatically selected when sorting sales order lines within the Sales Order Lines Tab, Sort window. Cancelled order lines will not be displayed once the sort completes.
- **No:** The Cancel check box will not be selected when sorting sales order lines within the Sales Order window, Lines Tab sort window. Cancelled order lines will be displayed once the sort completes if you do not manually select the check box.

**OM: View Closed Lines** ONT\_VIEW\_CLOSED\_LINES

This profile option controls the default value of the Closed check box when sorting sales order lines within the Sales Order Lines Tab, Sort window. The default value is Yes. Select from:

- **Yes:** The Closed check box will be automatically selected when sorting sales order lines within the Sales Order Lines Tab, Sort window. Closed order lines will not be displayed once the sort completes.
- **No:** The Closed check box will not be selected when sorting sales order lines within the Sales Order window, Lines Tab sort window. Closed order lines will be displayed once the sort completes if you do not manually select the check box.

**ONT\_ACTIVATE\_CMS** ONT\_ACTIVATE\_CMS

This profile option is for internal use only. Do not attempt to enter or update the value of this profile option.

**Tax: Inventory Item for Freight** OE\_INVENTORY\_ITEM\_FOR\_FREIGHT

This profile option is used only when the freight item is passed as revenue line. If you set the value of this profile option to *Inventory Item* then the Invoicing module passes this item for freight charges, which will be treated as revenue lines. This profile option can only be set at the Application or Site level.

**Tax: Invoice Freight as Revenue** OE\_INVOICE\_FREIGHT\_AS\_LINE

If the Receivables profile option TAX: Allow Tax Code Override is set to YES, and profile option TAX: Invoice Freight as Revenue is set to YES, then freight charges are treated as revenue lines, and the Invoicing module will pass VAT tax and associated sales credits for processing.

**Selected Oracle Application Profile Option Descriptions**

**(General Ledger) Journals: Display Inverse Rate** DISPLAY\_INVERSE\_RATE

- If the profile option Journal: Display Inverse Rate is set to Yes, then the value entered for the conversion rate field in the Sales Order window should be entered from Base to Foreign currency (user must enter the conversion rate in functional currency to foreign currency).
- If the profile Journals: Display Inverse Rate is set to No, then the value entered for the conversion rate field in the Sales Order window should be entered from Foreign to Base currency (user must enter the conversion rate in foreign currency to functional currency).

Please note, however, that the system will always store the currency rate in Foreign to Base format irrespective of the profile.

For example, suppose the base currency is USD and the foreign currency is CAD.

- If the profile option Journal: Display Inverse Rate is set to Yes, the following message is displayed when the users navigate to the conversion rate field on the Sales Order window:  
Please Enter the Rate for USD to CAD.
- If the profile option Journal: Display Inverse Rate is set to No, the following message is displayed when the users navigate to the conversion rate field on the Sales Order window:  
Please Enter the Rate for CAD to USD.

**(Inventory) INV: Capable to Promise** INV\_CTP

This profile option determines which planning data store availability checking is performed against when submitting an ATP inquiry. Select from:

- *Enable PL/SQL based ATP with planning output:* This option enables ATP inquiry against the Planning Data Store (PDS) within the Advanced Planning and Scheduling (APS) database. For a PDS ATP inquiry, you can perform Basic ATP,



Single-Level Supply Chain ATP, Multilevel Supply Chain ATP. Only supply and demand of the plan selected is considered during an ATP Inquiry in this mode.

When an ATP inquiry is submitted within Order Management, Oracle Global Available To Promise determines which plan within the PDS is used to determine availability. The item instance/organization combination of the inquiry is sent to Oracle Global Available To Promise, enabling plan selection based upon the following:

- **Inactive On:** Within the APS *Supply Chain Plan Names* window, the Inactive On (date) determines if a plan should be considered as a source for availability data. If the field contains a date, then the date must be prior to the availability check date.
- **Enable ATP Check Box:** Within the APS *Supply Chain Plan Names* window, the Enable ATP check box determines if a plan should be considered for availability data. The check box must be selected in order for the plan to be considered as a source for availability data.
- **PLAN\_ID:** If the item instance/organization combination of the inquiry resides in the PDS for multiple plans not inactive and enabled for ATP, the plan definition with the lowest PLAN\_ID is used as the source for availability checking.

For example, Profile Option INV: Capable to promise = *ATP/CTP Based upon Planning Output*, and you have the following plans within the PDS, with each plan enabling ATP.

- PLAN\_ID=100; Inactive on 20-FEB-2003; Item AS54888; Instance/Organization NEW/M1, NEW/V1
  - PLAN\_ID=105; Inactive on 20-FEB-2001; Items AS54888; AS544432, Instance/Organization NEW/M1, NEW/M2, NEW/V1
  - PLAN\_ID=202; Inactive on 20-FEB-2005; Item AS54888; Instance/Organization NEW/M1, NEW/M2, NEW/V1
- c. When you perform an ATP inquiry for item AS54888 on 18-FEB-2001, while within instance/organization combination NEW/V1, then ATP results displayed are based upon planning data within the PDS for PLAN\_ID=100
- Item AS54888 is currently defined for instance/organization combination NEW/M1 within the PDS for PLAN\_ID=100, PLAN\_ID=105, and PLAN\_ID=202.

PLAN\_ID=100 is active and has the lowest numeric value, so the data within the PDS for PLAN\_ID=100 is used to check availability.

- d. When you perform an ATP Inquiry for item AS54888 on 25-MAR-2002 while within instance/organization combination NEW/M2, then ATP results displayed are based upon planning data for PLAN\_ID=202.

Item AS54888 is currently defined for instance/organization combination New/M2 within the PDS for PLAN\_ID=105 and PLAN\_ID=202

PLAN\_ID=105 is the lowest numeric value, but is Inactive as of 20-FEB-2001, so the data within the PDS for PLAN\_ID=202 is used to check availability.

- **Enable PL/SQL based ATP without planning output:** This option enables ATP inquiry against the Operation Data Store (ODS) within the Advanced Planning and Scheduling (APS) database.

The ODS consists of all of the data that has been collected, including any incremental refreshes. Data is loaded into the ODS when you submit the APS ATP Data Collections Request Set. For ODS based ATP inquiry, you can currently only perform Basic ATP & Single level Supply Chain ATP. The ATP Rule is used to specify the time fence options and supply and demand sources to use during order promising inquiry.

## Enabling Order Management Parameters

With this release of Order Management 11i, you now have the ability to define global system parameters for use with other Oracle Products which are independent of a responsibility.

### Operating Unit

In Order Management, the *Operating Unit Default* parameter indicates the operating unit that can be used to provide additional defaulting information for processing orders and returns if certain order/line attributes are not entered.

### Item Validation Organization

In Order Management, the Item Validation Organization parameter indicates the Oracle Manufacturing organization against which items are validated.

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**Note:** Organization is synonymous with warehouse in Order Management.

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You set the Item Validation Organization parameter in the Parameters window, and can only set the value to the operating unit associated with your current sign on responsibility. You must also define all transactable items in this organization.

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**Note:** If you are upgrading from Oracle Order Entry Release 11 to Oracle Order Management Release 11i, the upgrading process automatically sets up the Item Validation Organization system parameter to the current Release 11 values (for each operating unit) for the OE profile option: *OE: Item Validation Organization*.

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### Customer Relationships

You can use customer relationships to share ship to and bill to locations among customers.

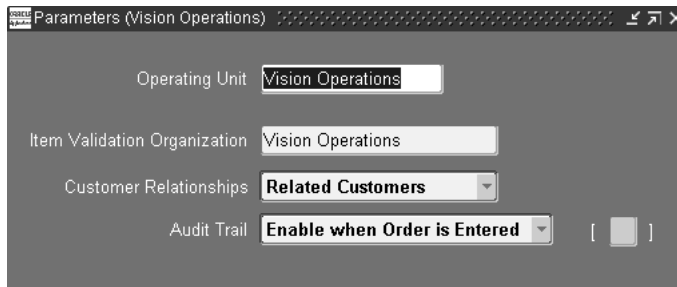
### Audit Trail

You can enable the Audit Trail feature to track order changes as they occur.

#### ► To enable Order Management parameters:

1. Navigate to the Parameters window.

The *Parameters* window displays.



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**Warning:** You cannot have any open orders when performing updates to Order Management Parameters. If open orders are found, a warning message displays. Select the *OK* button to ignore the Warning or select the *Cancel* button to not commit changes.

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2. Select a value for the *Operating Unit*.

This value is set based on the current responsibility you are using, and cannot be changed within this window. The operating unit can provide additional defaulting information for processing orders and returns if certain order information is not entered.

3. View the *Item Validation Organization* for your operating unit.

The *Item Validation Organization* determines which inventory organization you will validate the your order line items against. Items attributes assist Order Management in determining the selling characteristics of an item and what additional functions are available when you enter sales order lines.

This field typically contains the value of your Master Inventory Organization.

4. In *Customer Relationships* field, select one of three options to instruct Oracle Order Management how to validate Bill To, Ship To, and Deliver To customer relationships within the Sales Orders window and when importing orders utilizing Order Import.

Within the Oracle Receivables Standard Customer window, Order Management utilizes both the customer address business purpose (Address Tab) and customer relationship Bill To and Ship To flags (Relationships Tab) for

determining eligible Bill To, Ship To, and Deliver To values when placing orders.

- **Single Customer:** Bill To, Ship To, and Deliver To customers and customer sites must belong to the Sold To customer without regard to the customer Ship To and Bill To relationship flags.
- **Related Customers:** Bill To, Ship To, and Deliver To customers and customer sites may belong to the Sold To customer or any of its related customers.

For related customers, customer sites are only eligible as Bill To sites if their respective Bill To relationship flag is enabled. Customer sites are only eligible as Ship To and Deliver To sites if the Ship To relationship flag is enabled.

- **All Customers:** Bill To, Ship To, and Deliver To customers and customer sites may belong to any customer, regardless of whether there is a customer relationship between that customer and the Sold To customer and without regard to the relationships Ship To and Bill To flags.

Selecting this option and not specifying Bill To and Ship To customers and customer sites may result in long waits for the list of values to display for the Ship To location field.

5. Select a value for the Audit Trail parameter. The Audit Trail parameter determines whether or not you will capture order changes as they occur, and when to begin capturing such changes. Select from:
  - **Disabled:** Order changes will not be captured as they occur, irrespective of the processing constraints defined to capture audited order changes.
  - **Enable when order is entered:** Once an order has been successfully saved, if any changes occur to order or line attributes that have corresponding enabled audit history processing constraints defined, changes will be captured as they occur.
  - **Enable when order is booked:** Once an order has been successfully Booked, if any changes occur to order or line attributes that have corresponding enabled audit history processing constraints defined, changes will be captured only after an order has been booked.

6. Save your work.

See: Oracle Order Management Suite Implementation Manual, Release 11i., Overview of Processing Constraints, Defining Processing Constraints, and Order Audit Trail.

See Also

[Overview of Processing Constraints](#)

## Defining Processing Constraints

### Order Audit Trail

#### Customer Relationship Parameter Setting Examples

The table below provides common relationships that can exist between Bill To, Ship To, and Deliver To customers and customer sites. The data within the table will be used to describe how each of the profile option settings control the list of values for available for order data fields when placing an order. It is assumed that all the Sites within the table (W, X, Y, Z) have customer business purposes of Bill To, Ship To, and Deliver To defined.

**Table A**

| Customer | Site | Related To Customer | Bill To Relationship Flag | Ship To Relationship Flag |
|----------|------|---------------------|---------------------------|---------------------------|
| A        | X    | None                | Yes                       | No                        |
| B        | Y    | A                   | Yes                       | No                        |
| B        | Z    | A                   | No                        | Yes                       |
| C        | W    | None                | Yes                       | No                        |

If the parameter for Customer Relationships is set to *Single*, using the data within table A, when placing an order for Customer A:

- the eligible Bill To, Ship To, and Deliver To location is Customer A, Site X.

If the parameter for Customer Relationships is set to *Related Customers*, using the data within table A, when placing an order for Customer A:

- the eligible Ship To and Deliver To locations are Customer A, Site X and Customer B, Site Z.
- the eligible Bill To locations are Customer A, Site X and Customer B, Site Y.

If the parameter for Customer Relationships is set to *All Customers*, using the data within table A, when placing an order for Customer A:

- the eligible Bill To, Ship To, and Deliver To locations are all customers and all of their sites.

## Taxation

Order Management enables you to quote an estimated tax for orders<sup>7</sup> at the time of order entry. The tax estimate can be based on the tax status; address information, and VAT (Value Added Tax) codes assigned to items, ship to sites, and customers. The actual tax value that appears on the customer's invoice in Oracle Receivables may vary. See: [Overview of Tax](#) and [Setup Steps for Value Added Tax](#), Oracle Receivables User's Guide.

### Credit Check

Tax amount for each line will be stored on the order line. You can control whether the tax amount is included in credit checking while specifying the credit checking rules.

### Multiple Tax Amounts on an Order Line

You can specify a tax group for an order line. You can view multiple taxes applied to an order line at the time of entry and query, or on the acknowledgement and notification of shipment. Oracle Receivables allows each invoice line to be taxed automatically with one or more taxes.

### Tax Related Processing Constraints

Through the use of seeded processing constraints, Order Management does not allow a user to:

- Enter/Change Tax Code on Order Line if the profile option *Tax: Allow Override of Tax Code* is set to NO.
- Enter/Change Tax Handling, Tax Exemption Number and Tax Exemption Reason when the profile option *Tax: Allow Override of Customer Exemptions* is set to NO.
- Update Tax Exempt Number, Reason, or any other tax related fields once an invoice has been generated.

If your business process allows tax information to be updated after an invoice has been created, you must modify the seeded processing constraints that affect updating tax information.

### Tax Calculation

You can calculate tax by selecting a Tax Date to base your tax rates on, choosing the tax the tax schedule, requested, promise, and system dates. You cannot set a value

for the Tax Date field within the Sales Order window, but you can decide to change or update the existing seeded Defaulting Rule for Tax Date.

Tax calculation in Order Management can occur at one of the following events:

- Entry
- Booking
- Invoicing

Tax calculation for the above events can only be controlled at the order level (not at the order line level). You specify when to calculate the tax for an entire order when you create Order Types within the Order Management Transaction Types window.

The default value for Tax Calculation Event Code is null. Null Tax Calculation Event is same as Entry. For payment verification purposes (to include tax in the total authorized amount), specify Entry or Booking as your Tax Event.

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**Note:** The Copy Order functionality does not copy tax amounts; tax is recalculated for the new order.

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For return orders (referenced or non-referenced returns), tax calculation occurs at the tax event defined for the associated Order Management transaction type. To calculate tax at any time, select *Calculate Tax* from the Actions button menu within the Sales Order or Order Organizer windows.

Tax amounts are displayed:

- Within the Sales Order window, Main Tab. This is value is the current total order tax.
- Within the Sales Order Lines window, Pricing tab. This tax value is for each taxable order line.

Additionally, tax is always recalculated when tax-dependent attributes change on the order line.

### **Tax Calculation at Entry**

With tax calculation at Entry, tax is calculated as each order line is entered. This calculation is used, for example, in businesses that requires the user performing order entry to view the total of the order, including tax, so it can be quoted to a customer.

To include tax in Commitment Applied Amount, set the tax event to Entry.



### **Tax Calculation at Booking**

When tax calculation occurs at Booking, tax is calculated on each of the booked order lines. This tax calculation option is used, for example, in business that require tax visibility for booked orders, but who want to increase order entry input times by not calculating tax at entry.

### **Tax Calculation at Invoicing**

When tax calculation occurs at Invoicing, no tax calculations will occur within Order Management. Tax calculation will occur in Oracle Receivables when the order or order line is invoiced.

For maximum performance, set Invoicing as the Tax Event.

### **Inclusive Taxes**

When you create your tax codes and tax groups, you can specify that the taxes are *inclusive* taxes (the tax amounts are already included in the price of the item).

When the Tax Engine is called to calculate taxes, it will return inclusive taxes as well as exclusive taxes. Any inclusive taxes returned are not added to the extended amount of the order line or displayed within the Tax column of an order line. Order Management displays the estimated tax amount based on the tax date on the order line. However, inclusive taxes are displayed when you View Tax Details from the Action button menu within the Sales Order Lines window.

You can perform a credit check including or excluding the estimated tax amount.

### **Tax Method Options**

Order Management enables you to specify the tax method for your company or installation as a Oracle Receivables system option. The tax method determines how taxes are calculated. Tax methods include the following:

- Sales Tax

For sales tax, taxes are based on different components of the customer's shipping address. Order Management provides you with a default sales tax location flexfield structure composed of the State, County, and City.

- Value Added Tax (VAT)

For value added tax, taxes are based on tax rates assigned to user- defined codes. These codes are assigned to specific items, customers, and customers business locations.

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**Note:** Tax codes are used for value added taxes or a location-based taxes (sales tax)

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### **Tax Security**

Order Management enables you to update the tax security information on an order or return by setting the *Tax: Allow Override of Customer Exemption* profile option. This profile option controls the modification of the Tax Handling Status, Reason & Certificate fields at the order header and order line levels. Standard tax calculations can be overridden by setting the profile option to Yes. The *Tax: Allow Override of Tax Code* profile option determines whether the defaulted tax code on an order line can be updated.

### **Non-Taxable Transaction Types**

Order Management enables you to define whether Oracle Receivables will automatically calculate taxes for a given OM order line type. You will need to associate a Receivables Transaction Type with the OM Transaction Type for this to occur.

This will determine if tax is required on an order. This option (tax calculation flag) is set in Oracle Receivables. You can specify whether a transaction type is taxable in the Receivables Transaction Types window. See: [Transaction Types](#), Oracle Receivables User's Guide.

### **See Also**

Oracle Receivables User's Guide:

[Overview of Tax](#)

[Setup Steps for Value Added Tax](#)

[Tax Codes and Rates](#)

[Tax Groups](#)

[Tax Exemptions](#)

## Defining Order Management QuickCodes

You can create lookup codes for Order Management. QuickCode types that you can define include:

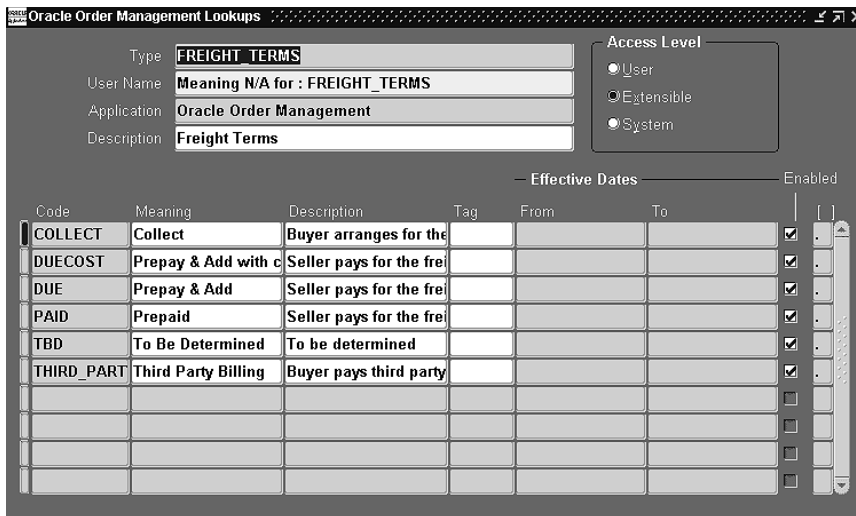
- Cancellation Codes
- Credit Cards
- Freight Terms
- Hold Types
- Note Usage Formats
- Release Reasons
- Sales Channels
- Shipment Priorities

You can create as many quickcodes as you require. You can also inactivate quickcodes.

### ■ To define quickcodes:

1. Navigate to the Oracle Order Management Lookups window.

The *Oracle Order Management Lookups* window displays.



2. Query the Type for which you want to enter Lookup Codes.
3. Enter your User Name.
4. Select the Application you want to use to define QuickCodes.

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**Note:** The Access Level toggles display whether you can define new Lookup Codes. You can modify User and Extensible Lookup Codes, however, system code cannot be modified. Contact your system administrator.

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5. Optionally, enter the effective dates for the Lookup Code.
6. Check Enabled to activate the Lookup Code.
7. Toggle Enabled off to inactivate the Lookup Code.
8. Save your work.

**See Also**

[Lookups - Defining Receivables Lookups](#), Oracle Receivables User's Guide.

## Defining Freight and Special Charge Types

### OEXOCHG\_ADJUSTMENTS

Order Management enables you to charge for freight and special charges to meet your business needs. The full charge to your customer is visible at the time of order entry and can be communicated to the customer. The freight and special charge amounts can be estimated or final. The actual costs incurred are captured at Ship Confirmation and can be converted to charges based on freight terms and other rules you define. Freight and Special Charges are created and enabled using pricing Modifiers.

See: [Overview of Modifiers](#).

Order Management captures the freight and special charges information and Shipping Execution captures all costs incurred on the shipment of goods. Once ship confirmation completes, the costs are transferred to Order Management and may be used to convert the costs into charges. You can set up your different freight costs in Shipping Execution.

Order Management's freight and special charge feature enables you to:

- Capture the charges at the time of order entry.
- Change the freight and special charges until invoicing.
- Capture the freight and special charge information at any point in the order flow.
- Create various freight and special charge types.
- Support charges at various levels (order and line).
- Specify the controls for refunds.

## Freight Terms

You can choose the freight terms for an order line depending on the Customer Contracts (agreements), Customer, Ship To, and Ship-From locations. Freight Terms can be used as Qualifiers to apply freight & special charges, although no such functionality is seeded with the application. Freight terms can include the following:

**Prepaid** You (the shipper) take responsibility for paying the freight costs. The costs are recorded in Shipping Execution.

**Prepay and add with fixed charges** You can prepay the freight costs and charge your customer a fixed amount. The costs are recorded in Shipping Execution and transferred to Order Management.

**Prepay and add with cost converted to charge** You can prepay the freight costs and pass it on to your customer as a charge with a markup or markdown or a direct pass through. The costs are recorded in Shipping Execution and transferred to Order Management.

A pricing formula and pricing modifier are used to calculate the markup/markdown and apply the charge to the customer invoice.

**Collect** The freight carrier bills the customer directly; not you. The costs are not recorded in Shipping Execution or Order Management.

**Third Party Billing** The freight carrier bills a third party, not the seller or buyer. The costs are not recorded in Shipping Execution or Order Management.

## Freight and Special Charge Types

Order Management provides you with the ability to setup and capture different charge types and sub type including (but not limited to):

- Duty
- Handling
- Insurance
- Export
- Freight
- Administration

- Miscellaneous

### Grouping of Freight and Special Charges

You can setup different sub-types under a give charge type, such as, if the freight or special charge type is Miscellaneous, you can group the following different charges:

- Late penalty charges
- Restocking charges
- Negotiations and legal fees
- Foreign agent commissions

The following Charge Types and sub-types have been predefined by Oracle Advanced Pricing under the Oracle Shipping Execution lookup for FREIGHT\_COST\_TYPE:

- Insurance
- Export
- Duty
- Freight
- Administration
- Handling

Order Management shares these Freight Cost Types with Shipping Execution for the COST to CHARGE conversion.

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**Note:** You cannot define sub-types for the Shipping Execution Charge Types lookups.

Additionally, you can only receive cost to charge conversions for auto configured items.

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Additionally, Oracle Advanced Pricing has its own lookup type, also called FREIGHT\_CHARGES\_TYPE. You are allowed to add charge types codes to the Advanced Pricing lookup FREIGHT\_CHARGES\_TYPE. The following charge type code is predefined for this lookup:

- Miscellaneous

You can define sub-types for the Oracle Advanced Pricing Charge Type Code of FREIGHT\_CHARGES\_TYPE. The following sub-types are predefined for the Advanced Pricing FREIGHT CHARGE TYPE = Miscellaneous:

- Penalty
- Restocking
- Return Fees

### Definition Data Elements

You can define different attributes for setting your charges including the following elements:

- *Charge Currency*: The currency for the Charge amount setup at list level
- *Charge Name*: Charge Name picked from the pre-defined setup in pricing
- *Level*: Order Level or Line level charges
- *Calculation Method*: Percentage (%), Amt (Per pricing unit), Lumpsum amount Formula based
- *Refundable*: Whether the charge is refundable
- *Automatic*: Whether the charge is automatic or manual
- *Overridable*: Whether the charge is overridable after it is applied
- *Start/End Dates*: Active date range
- *Qualifiers*: Qualifiers to apply charges conditionally

### Calculation Method

Various common methods of calculating charges are supported. Examples of calculation methods include:

- Fixed amount
- Percentage of line or order amount
- Fixed rate per pricing unit of measure
- Simple pass of a cost
- Percentage markup or markdown of a cost
- User-defined formula for a given charge type. The formula can be constructed using the pricing attributes, constant values, or function returning a value.



### Qualifier /Pricing Attributes for Freight and Special charges

The tables indicate both Qualifier Attributes and Pricing Attributes that have been predefined for Freight and Special Charges.

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**Note:** You can also make use of any other Qualifier / Pricing Attributes setup in the Pricing for freight and special charges

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Freight and Special Charges Qualifier Attributes Table

| Context | Attribute              |
|---------|------------------------|
| ORDER   | SHIPPABLE_FLAG         |
| ORDER   | SHIPPED_FLAG           |
| ORDER   | FREIGHT_COST_TYPE_CODE |
| VOLUME  | LINE_WEIGHT            |
| VOLUME  | LINE_VOLUME            |

Freight and Special Charges Pricing Attributes Table

| Context            | Attribute           |
|--------------------|---------------------|
| PRICING ATTRIBUTES | INSURANCE_COST      |
| PRICING ATTRIBUTES | HANDLING_COST       |
| PRICING ATTRIBUTES | DUTY_COST           |
| PRICING ATTRIBUTES | EXPORT_COST         |
| PRICING ATTRIBUTES | FREIGHT_COST        |
| PRICING ATTRIBUTES | ADMINISTRATIVE_COST |

For more information on Freight and Special Charges using qualifiers within Order Management, Oracle Order Management Suite Implementation Manual, Release 11i, Freight and Special Charges Examples.

### Application of Charges

You can have freight and special charges applied to an order in the following ways:

- Manually Applied

- Open Interface
- Automatically based on the qualifier setup

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**Note:** Any freight charge modifier's you wish to define for ATO configuration items should use a phase that is included in the Order Management workflow 'SHIP' event.

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### Order or Order Line Charges

You can enter charges for order or order line levels. The Freight and Special Charges are returned by the Pricing Engine and if there are multiple automatic charges of same charge type and subtype then Order Management applies the one with Maximum amount. If the user wants the charge to be applied in preference then they may need to set them up with incompatibility group and precedence as described in the Modifier Setup section.

See: [Overview of Modifiers](#).

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**Note:** If there is an applied charge of a *Charge Type/Subtype* then the LOV for *Charge Name* field in *Charges* window will not show any manual charges for the same type/subtype. The Charge Name is always derived from the meaning for the charge sub-type lookup code. If the charge sub-type is NULL then the name is derived from the meaning for the charge type lookup code

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### Estimate or Actual

The estimated or fixed charge is displayed in the Charges user interface. You can set the amount as Estimated or Fixed.

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**Note:** You can set estimated or fixed charges only after a charge has been applied on an order or order line.

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### Multiple Unlimited Charges

You can enter an unlimited number of charges at each level with unique combination of Charge Type and Charge Sub-Type.

### **Timing of Charges Entry**

You can enter freight and special charges at any event point or activity, up to the point where the order and line is invoiced. At the point of invoicing the charge will be fixed and no more charges can be added after the line is invoiced.

### **Changing and Deleting of Charges**

Based on your processing constraints, you have the ability to manually change the amount, delete, or cancel charges applied to an order or order line until invoicing. You can enter a reason code if the charge is being changed, however, the history will not be maintained. In addition, you can add processing constraints to prevent charges from deletion or cancellation after a user-definable point in the order's process.

### **Freight Charges and Included Items**

In order to apply any eligible freight charges for an Included Item, the profile option *OM: Charges for Included Item* should be set to Y.

When this profile option is set to Y, and the calculate price flag of the order line with an included item is either Calculate Price (Y) or Partial Price (P), then the eligible freight charges are applied to the order line.

For backordered lines within Included Items, both the profile options *OM: Charges for backorders* and *OM: Charges for Included Item* need to be set to Y to view and apply any freight charges.

Any freight charge modifiers you define for included item should be within a pricing phase that is included within the Order Management 'LINE' or 'SHIP' workflow event.

### **Freight charges for Backordered Lines**

The Order Management profile option *OM: Charges for backorders* controls how the system will set the value of the calculate price flag for backordered lines.

- If the profile option is set to Y, the system will set the calculate price flag to P and freight charges are calculated for backorder lines.
- If the profile option is set to N, the system will set the calculate price flag to 'N' and freight charges are not calculated for backorder lines.

### Rounding of Freight charges

The Oracle Advanced Pricing profile option QP: Selling Price Rounding Options determines if your freight charges are rounded. See: Oracle Advance Pricing Implementation Guide, Profile Options.

#### ■ To define Order Management Freight Cost Type Names:

1. Navigate to the Oracle Order Management Freight Cost Types window.

The *Freight Cost Types* window displays.

| Name             | Type                | Currency | Amount | From       | To | Map to Charge                       |
|------------------|---------------------|----------|--------|------------|----|-------------------------------------|
| Duty Fee         | Duty Fees           | CAD      | 120.00 | 02-26-2001 |    | <input checked="" type="checkbox"/> |
| Document Fee     | Administration Fees | USD      | 15.00  | 02-26-2001 |    | <input checked="" type="checkbox"/> |
| Special Handling | Freight Costs       | USD      | 25.00  | 03-21-2001 |    | <input checked="" type="checkbox"/> |
| Hazardous Handl  | Handling Costs      | AUD      | 26.00  | 03-21-2001 |    | <input type="checkbox"/>            |
| Handling Costs   | Handling Costs      | USD      | 20.00  | 06-14-2001 |    | <input checked="" type="checkbox"/> |
| Freight Costs    | Freight Costs       | USD      | 50.00  | 06-14-2001 |    | <input checked="" type="checkbox"/> |
| Insurance Costs  | Insurance           | USD      | 25.00  | 06-14-2001 |    | <input checked="" type="checkbox"/> |
|                  |                     |          |        |            |    | <input type="checkbox"/>            |
|                  |                     |          |        |            |    | <input type="checkbox"/>            |
|                  |                     |          |        |            |    | <input type="checkbox"/>            |

Description

2. Enter a name for your Freight Cost type in the *Name* field.

The value entered in this field is the value a Shipping Clerk will see on within the Oracle Shipping Execution Transactions window when entering Freight Costs during the shipping process.

3. Choose a type for your Freight Cost Name from the LOV in the *Type* field.
4. Select a currency that the Freight Cost Type will use in the *Currency* field.
5. Enter the default value for your Freight Cost Type in the *Amount* field. The amount will be defaulted in the Freight Cost window when you enter or select the Freight Cost Name during the shipping process.
6. Enter effective dates for you Freight Cost Name in the *Effective Date From/To* fields.

7. Save your work.

► **To define Order Pricing or Shipping Execution Freight Charge lookups:**

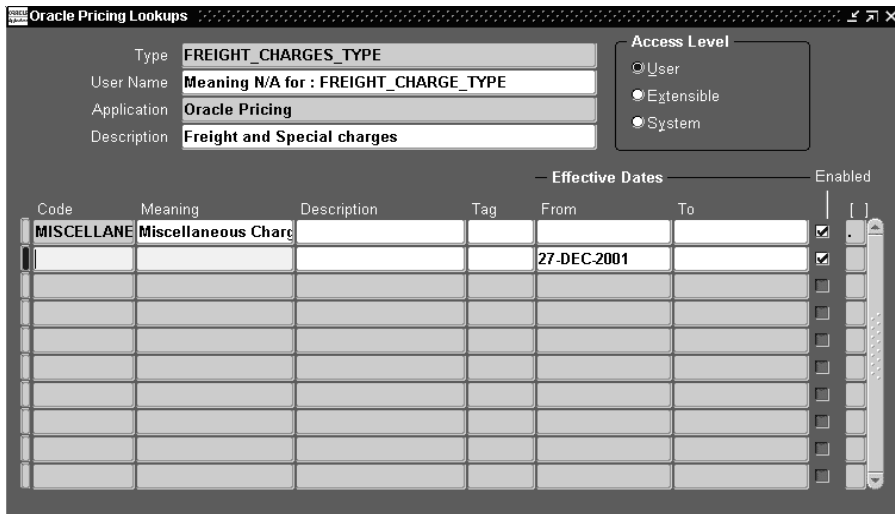
**Attention:** Freight and Special charges setup shares a two different lookups. One lookup is from the Oracle Pricing window and the other is from the Shipping Execution window. The lookup type for Oracle Pricing is *FREIGHT\_CHARGES\_TYPE* and should be used to define freight charges which are *not shipping related*.

The lookup type from Shipping Execution is *FREIGHT\_COST\_TYPE* and it should be used to define Freight Costs *that are captured in Shipping*. Ensure that the lookup\_codes defined for these two types should be unique in terms of lookup\_code and the meaning.

As discussed previously in this section, the meaning is used to display names for freight and special charges.

1. Navigate to the Oracle Pricing / Oracle Shipping Lookups window.

The *Oracle Pricing or Oracle Shipping Lookups* window displays.



2. Query for Pricing / Shipping lookup = *FREIGHT\_CHARGES\_TYPE* / *FREIGHT\_COST\_TYPE* respectively.

3. Enter a name for your Pricing or Shipping freight charge lookup in the *Code* field.
4. Enter a meaning that will appear in the List of Values when defining a freight charge within the Modifiers window.  
  
For example, the Lookup type *Print* has a code of *Y*, and a value *Yes* in the *Meaning* field. When you select the LOV for the *Print* lookup code, you will see *Yes* as opposed to *Y*.
5. Enter a description for your Pricing or Shipping freight charge lookup in the *Description* field.
6. Optionally, enter a value in the *Tag* field to describe your lookup. Tags are used to make Lookups visible within web-based applications such as Oracle iReceivables.
7. Enter effectivity dates for your lookup in the *Effective Date From/To* fields.
8. Select the *Enable* check box to enable you Pricing or Shipping freight charge lookup to be selected when entering an order line.
9. Save your work.
  - a. To define a new sub-type for Pricing *FREIGHT\_CHARGES\_TYPE*, create a new Pricing Lookup where *lookup\_type = <lookup\_code previous defined>*  
This becomes a Type for all sub-type codes.

See: Oracle Order Management Suite Implementation Manual, Release 11i., Freight and Special Charges Examples.

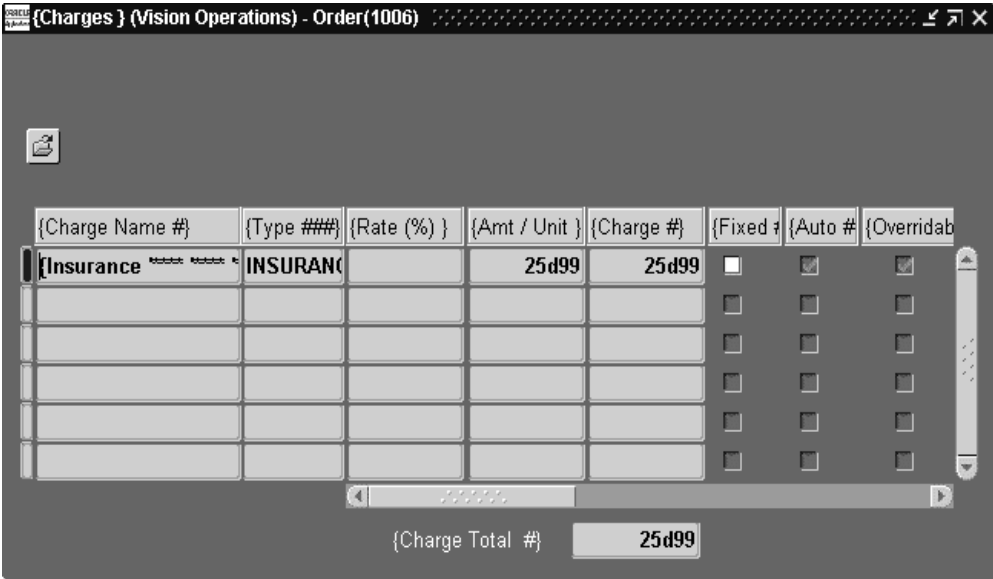
### Sales Orders window

You can setup Charges to apply automatically when a new order or order line is entered. The charges are displayed in Charges user interface accessible from Sales Orders window.

### Viewing and Applying Freight and Special Charges

Freight and special charges can be viewed from within the Sales Order window, provided the profile option *OM:Charging Privilege* has been properly set.

- To view Order level charges, navigate to the Sales Order Header window, select *Actions*, then select *Charges*.
- To view Order Lines charges, navigate to the Sales Order Lines window, select *Actions*, then select *Charges*.



**Field Information for Charges window**

- *Charge Name*: The charge name for the charge.
- *Type*: The charge type code for Freight Charge.
- *Rate*: The rate percentage specified in the setup of the Freight Charge.
- *Amt/Unit*: If the charge is setup as AMT, then this field contains the amount per pricing unit.
- *Charge*: The applicable charge amount in the Order currency.
- *Fixed*: This check box can be used to mark the charge as *Fixed* so that the charge is not overridden by the Pricing Engine or any cost conversion programs.
- *Auto*: This check box indicates whether the charge is automatic or manual. Automatic charges are applied directly by the Pricing Engine.
- *Overridable*: This check box indicates whether the charge is overridable by the user. Unless the user has unlimited privileges, no changes are allowed on charges with this box unchecked, although a user can mark or un-mark the charge as fixed or estimated.
- *Refundable*: This check box indicates whether the charge is refundable or not.

- **Invoiced:** This check box will indicate whether the charge is invoiced or not. Invoiced charges are non-modifiable.
- **Reason:** If any change is made to the charge, the user will need to specify the reason for the change.
- **Comments:** Optional field for entering the comments on the charge.

You are allowed to change a Charge as a Credit within the *Charges* window by changing the integer sign for a value within either the *Rate*, *Percent*, *Amt/Unit*, or *Charge Amount* fields, provided the charge you are modifying is overridable.

Charge Types which have been defined as *Automatic* are applied to an order or order line. If multiple charges (automatic charges only) of the same type/subtype are returned by the Pricing Engine, then the charge with highest amount will be applied to the order or line.

Manual Charges are available for use on order or order lines through the Charges window. The LOV for the *Charge Name* field displays available manual charges only.

- When navigating to the Charges window, if there currently is an applied charge of a type/subtype appearing, then the LOV for the *Charge Name* field will not show a charge of the same type/subtype.
- If there are no manual charges setup in Pricing, then the *Charge Name* field LOV returns no records.

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**Note:** If the profile option OM: Charging Privilege is set to UNLIMITED, then you can update manual non-overridable charges.

However, if you choose to update manual non-overridable charges, the update must be performed manually; manual non-overridable charges are never altered by the system, even if the order undergoes repricing.

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## Returns

The user will be allowed to set Freight Charges for return lines using the Line Category/Line Type as the Qualifier Attributes.

- These Freight charges can be a charge or credit to the customer.
- These charges can be setup using a Qualifier of Freight Terms defined on the return line.



- The Freight Term will be either defaulted or copied from the referenced line.
- User may change the (Defaulted/Referenced) Freight Term, depending upon the contract he has with the Customer, for the Freight on return.
- If the Return Line is referenced from any existing Order Line, the refundable freight charges associated with the referenced order, will be available as a credit to the user.
- If the user creates a new Return line without a reference to any existing line, then the user will have to manually apply any Refundable Freight Charges on it.

### Copying Charges

The copy order functionality in Oracle Order Management supports the following pricing options for standard copying of orders and returns:

#### Copy for Orders

*Retain Original Pricing:* Retains manual, automatic price adjustments, and charges. The CALCULATE\_PRICE\_FLAG is set to *Freeze Price*.

*Re-price based on user-defined date:* Manual adjustments and charges will be recalculated. The CALCULATE\_PRICE\_FLAG is set to *Calculate Price*.

#### Copy for Returns

*Retain original pricing:* Retains the refundable manual and automatic charges. The CALCULATE\_PRICE\_FLAG will be set to Partial. The CALCULATE\_PRICE\_FLAG is set to Partial in order for any manual charges, such as the return and restocking fees can be added to the order.

*Re-price based on user-defined date:* Retains the refundable manual and automatic charges. The charges are marked as *Fixed* so that they cannot be overridden by subsequent re-pricing requests. The CALCULATE\_PRICE\_FLAG is set to *Calculate Price*.

### Invoicing

A line level charge is invoiced with the invoicing order line. All order and order line level charges are invoiced with the first invoicing order line. If any new charges are added at the order header level, then the charges are invoiced with the next invoicing order line.

**See Also**

[Overview of Sales Orders](#)

[Invoicing Processing](#)

[Copying Orders](#)

[Overview of Returns](#)

[Order Import](#)

## Viewing Notifications

OEXOORD\_NOTIFY

### Single Notification Viewer

You can use a single mechanism for receiving all of your notifications, as opposed to different review facilities for different types of messages. This viewer is provided with Oracle Workflow.

### Customizable Notification Viewer

You can review notifications and take the appropriate action to resolve each one quickly and easily. You can define selection and sorting criteria that let you manage your notification list so you see the most critical notifications first or can view different types of notifications on demand.

### Notification Context

Given this universal Inbox of exceptions, you can see the context of each notification. For notifications where you need no additional information, you can choose a button to take the suitable action.

If you require additional information, you can open the appropriate Order Management window. For example, if you must approve or reject an order, you can view the order header and lines easily. The notification can either be a URL message or an attachment.

See: [Order Changes](#)

See: Using Oracle Workflow in Oracle Order Management, Release 11i.

## Defining Document Sequences for Order Numbering

Order Management utilizes AOL Document Sequence functionality for order numbering. You can define document sequences that automatically generate numbers for your orders and returns as you enter them. You can define a single document sequence to assign unique consecutive numbers to all your orders and returns, or you can define multiple document sequences that are assigned to different order types. In the latter case, an order or return is uniquely identified by its type and its number, since orders and returns of different types may share numbers. Order and return numbers cannot contain alphabetic characters.

### Gapless Order Number Source

Many countries have legal and audit requirements for order numbers to be contiguous. You can set up a document sequences as gapless through the Define Documents Sequences window. In addition, Order Management prevents deletion of orders that have been numbered using the gapless numbering sequence. The application uses locks to ensure gapless numbering. If you are using gapless sequences, please save your changes frequently to minimize lock contention issues.

### Manual Order Numbers

Order Management enables you to enter the order numbers for certain types of orders. You can define a document sequence as manual and assign it to a desired order type. This order type can be used on orders that you want to manually enter order numbers. When an order number is specified for such an order, Order Management validates that it is unique for a given order type.

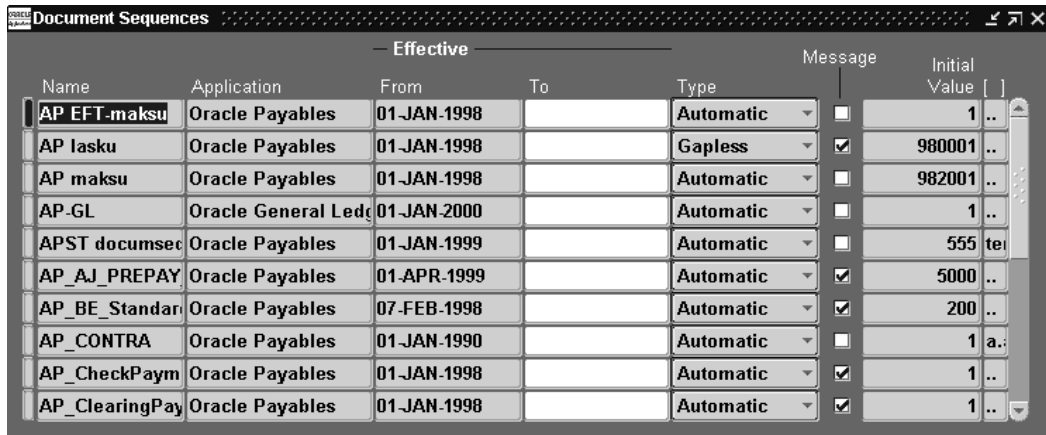
### Prerequisites

- Set the profile option *Sequential Numbering* to Always Used at the Order Management Application level.
- Set your document sequences to Automatic, Gapless, or Manual.

► **To define document sequences for order numbering:**

1. Navigate to the Document Sequences window.

The *Document Sequences* window appears.



| Name           | Application           | From        | To | Type      | Message                             | Initial Value [ ] |
|----------------|-----------------------|-------------|----|-----------|-------------------------------------|-------------------|
| AP EFT-maksu   | Oracle Payables       | 01 JAN-1998 |    | Automatic | <input type="checkbox"/>            | 1 ..              |
| AP lasku       | Oracle Payables       | 01 JAN-1998 |    | Gapless   | <input checked="" type="checkbox"/> | 980001 ..         |
| AP maksu       | Oracle Payables       | 01 JAN-1998 |    | Automatic | <input type="checkbox"/>            | 982001 ..         |
| AP-GL          | Oracle General Ledger | 01 JAN-2000 |    | Automatic | <input type="checkbox"/>            | 1 ..              |
| APST documsec  | Oracle Payables       | 01 JAN-1999 |    | Automatic | <input type="checkbox"/>            | 555 te            |
| AP_AJ_PREPAY   | Oracle Payables       | 01 APR-1999 |    | Automatic | <input checked="" type="checkbox"/> | 5000 ..           |
| AP_BE_Standar  | Oracle Payables       | 07 FEB-1998 |    | Automatic | <input checked="" type="checkbox"/> | 200 ..            |
| AP_CONTRA      | Oracle Payables       | 01 JAN-1990 |    | Automatic | <input type="checkbox"/>            | 1 a:              |
| AP_CheckPaym   | Oracle Payables       | 01 JAN-1998 |    | Automatic | <input checked="" type="checkbox"/> | 1 ..              |
| AP_ClearingPay | Oracle Payables       | 01 JAN-1998 |    | Automatic | <input checked="" type="checkbox"/> | 1 ..              |

2. You can define the sequence to be Automatic, Gapless or Manual.
  - Automatic sequences: The system will automatically increment document numbers. Automatic sequences *do not* guarantee contiguous numbering.
  - Gapless sequences: The system guarantees that the numbers returned are contiguous.
  - Manual: User must specify a unique document number.

For all types of numbering, the Order Management system validates that the number specified by you is unique for a given order type.

For more information on AOL Document Sequences, see System Administrator's User's Guide, [Document Sequencing](#).

3. Enter a name for the document sequence.  
Specify Oracle Order Management as the Application.
4. Enter a starting number.
5. Optionally, enter effective dates for the document sequence.

6. Save your work.

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**Note:** When Order Types are defined, a corresponding Document Sequence Category will automatically be created. The category created has the same name as the order type. You must navigate to the AOL Assign Document Sequence window to assign a sequence to the newly created category. If the Document Descriptive Flexfield is enabled, you need to specify the governing Set of Books. The Document Method code should be left blank.

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**See Also**

[Order Management Profile Options](#)

Oracle Order Management Suite Implementation Manual, Release 11*i*, Order Management Profile Options.

## Defining Order Management Transaction Types

### Overview

In prior releases of Oracle Order Entry, Order Types were used for defaulting information on orders, establishing processing controls such as invoicing, and most importantly, determining the Order Cycle that an order would have. Order Cycles, in turn, controlled the processing flow of an order.

With the release of Oracle Order Management 11*i*, Order Cycles have been replaced by Oracle Order Management Workflow definitions, and Order Types have been replaced by Order Management Transaction Types. Order Management provides seeded Workflow process definitions for both orders and lines, and Order Management also enables you to define both order header and Order Line transaction types.

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**Note:** Order Management provides *NO* seeded transaction types. For existing Oracle Order Entry customers, Order Management will update existing *Order Types* to order and line transaction types during the upgrade process

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Order Management Transaction types:

- Determine the workflow processes executed for both the order and line.
- Can act as sources for order and line level attribute defaulting.
- Can establish order or line level processing constraints.
- Can default from the Customer, Ship To, Bill To, or Deliver-To site at the order header, and line transaction types can default from the order transaction type.
- Enable you to group orders and lines.
- Can specific processing controls for an order or line based upon the transaction type entered.

For example, the Scheduling level controls the way scheduling works at the time of order entry for lines.

### Prerequisites

- Review seeded order and line flows.

- Define all lookups. See: [Defining Order Management QuickCodes](#). Oracle Order Management Suite Implementation Manual, Release 11i, Defining Order Management QuickCodes.
  - Define freight carriers. See: [Oracle Shipping Execution User's Guide](#).
  - Define organizations. See: [Creating an Organization](#), *Oracle Human Resources Management Systems User's Guide*.
  - Define document sequences. See: [Defining Document Sequences for Order Numbering](#). Oracle Order Management Suite Implementation Manual, Release 11i, Defining Document Sequences for Order Numbering.
  - Define defaulting rules. See [Overview of Defining Defaulting Rules](#)
  - Define price lists. See: [Creating a Price List](#).
- Define credit check rules. See: [Defining Credit Check Rules](#)  
[See: Defining Credit Check Rules](#)
- Define currencies and currency types. See: [Defining Currencies](#), *Oracle Applications System Administrator's Guide*.
  - Set up your cost of goods sold account flexfield segments. See: [Defining Key Flexfield Segments](#), *Oracle Applications Flexfields Guide*.

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**Note:** You must first define your OM Line Transaction Types so that they can be assigned when defining your OM Order transaction types.

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### Order and Line Level Controls

You can define order controls that apply to the order as a whole and are not overridable at the line level. For example, order numbering is controlled at the order level. An order can be numbered differently based on the order type, such as an order or return.

You can also define line controls that affect the line type level. You can set up certain controls that default from the order level and can be overridden at the line level. For example, you can have both return and order lines on a single order, however, the return and order lines process differently. The individual line processing is controlled at a higher line type level. You need to specify the workflow couplings for the permitted transaction type combinations. If a combination has notifications or workflow activities at the header flow which need to be completed before the



line can proceed, then the header flow needs to have a *Continue-flow* activity. The line flow needs to have the appropriate *Wait-for-flow* activity.

The following table displays the various column controls that are available for Order Management *Order* transaction types.

| Column Name                   | Purpose   | Define for Order Transaction Types | Required on Order Transaction Types | Defaulting Source for Header |
|-------------------------------|---|------------------------------------|-------------------------------------|------------------------------|
| NAME                          | Unique within the table for a given language.   | Yes                                | Yes                                 | No                           |
| TRANSACTION_TYPE_CODE         | Distinguishes between order and line types. Line types are Order and Line.  | Yes                                | Yes                                 | No                           |
| ORDER_CATEGORY_CODE           | Defaulting on the order or line. Restricts the types of lines on an Order: Mixed, Order, or Return. Line types are Order or Return. | Yes                                | Yes                                 | Yes                          |
| CURRENCY_CODE                 | Defaulting source.  | Yes                                | No                                  | Yes                          |
| CONVERSION_TYPE_CODE          | Defaulting source.  | Yes                                | No                                  | Yes                          |
| CUST_TRX_TYPE_ID              | Invoicing Interface./Tax  | Yes                                | No                                  | No                           |
| COST_OF_GOODS_SOLD_ACCOUNT    | Invoicing Interface   | Yes                                | No                                  | No                           |
| ENTRY_CREDIT_CHECK_RULE_ID    | Credit checking.  | Yes                                | No                                  | No                           |
| SHIPPING_CREDIT_CHECK_RULE_ID | Credit checking.  | Yes                                | No                                  | No                           |
| PRICE_LIST_ID                 | Defaulting source   | Yes                                | No                                  | Yes                          |
| ENFORCE_LINE_PRICES_FLAG      | Used for validating discount application on order and lines   | Yes                                | Yes                                 | No                           |
| WAREHOUSE_ID                  | Defaulting source.  | Yes                                | No                                  | Yes                          |
| DEMAND_CLASS_CODE             | Defaulting source.  | Yes                                | No                                  | Yes                          |

| Column Name                   | Purpose   | Define for Order Transaction Types | Required on Order Transaction Types | Defaulting Source for Header |
|-------------------------------|---|------------------------------------|-------------------------------------|------------------------------|
| SHIPMENT_PRIORITY_CODE        | Defaulting source.                                    | Yes                                | No                                  | Yes                          |
| SHIPPING_METHOD_CODE          | Defaulting source.                                    | Yes                                | No                                  | Yes                          |
| FREIGHT_TERMS_CODE            | Defaulting source.                                    | Yes                                | No                                  | Yes                          |
| FOB_POINT_CODE                | Defaulting source.                                    | Yes                                | No                                  | Yes                          |
| SHIP_SOURCE_TYPE_CODE         | Defaulting source. The values are Internal, External. | No                                 | No                                  | No                           |
| AUTO_SCHEDULE_FLAG            | Used by Scheduling. The values are Yes, No.           | Yes                                | No                                  | No                           |
| SCHEDULING_LEVEL_CODE         | Used by Scheduling. The values are 0, 1, 2.           | Yes                                | No                                  | No                           |
| AGREEMENT_TYPE_CODE           | Validation at header level.                           | Yes                                | No                                  | No                           |
| AGREEMENT_REQUIRED_FLAG       | Validation on Header.                                 | Yes                                | Yes                                 | No                           |
| PO_REQUIRED_FLAG              | Validation at header level.                           | Yes                                | Yes                                 | No                           |
| INVOICING_RULE_ID             | Defaulting source.                                    | Yes                                | No                                  | Yes                          |
| INVOICING_CREDIT_METHOD_CODE  | Defaulting source.                                    | Yes                                | No                                  | Yes                          |
| ACCOUNTING_RULE_ID            | Defaulting source.                                    | Yes                                | No                                  | Yes                          |
| ACCOUNTING_CREDIT_METHOD_CODE | Defaulting source.                                    | Yes                                | No                                  | Yes                          |
| INVOICE_SOURCE_ID             | Invoicing Interface.                                  | Yes                                | No                                  | No                           |

| Column Name                    | Purpose  | Define for Order Transaction Types | Required on Order Transaction Types | Defaulting Source for Header |
|--------------------------------|--|------------------------------------|-------------------------------------|------------------------------|
| NON_DELIVERY_INVOICE_SOURCE_ID | Invoicing Interface.   | Yes                                | No                                  | No                           |
| DEFAULT_INBOUND_LINE_TYPE_ID   | Defaulting source for inbound lines. Use this value as Source for defaulting Line type on Line.  | Yes                                | No                                  | No                           |
| DEFAULT_OUTBOUND_LINE_TYPE_ID  | Defaulting source for outbound lines. Use this value as Source for defaulting Line type on Line. | Yes                                | No                                  | No                           |

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**Note:** The transaction type name for the base language cannot be changed once there are orders or lines referenced.

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### Order Category

You can specify an order category on the order transaction type. The category code controls the types of lines which are permitted on the order.

The order category can be defined as Order, Return, or Mixed. If the category code is Order, then the order can only have outbound lines. If the category code is Return, then the order can only have inbound lines. If the category code is Mixed, then the order can have inbound and/or outbound lines.

### Order Numbering

Define your order numbering options using the Oracle Application Object Library (AOL) Document Sequence functionary. You can set up various OM order transaction types and different document sequences. Both OM transaction types and document sequences can control which types of orders are numbered automatically or manually.

For example, you can have all your outbound orders numbered in a certain sequence and all your returns in a different sequence. When an OM order transaction type is created, a document category with the same name is automatically created. You can define sequences and assign them to the respective document category. See: [Defining Document Sequences for Order Numbering](#).

## Order Management Line Transaction Types

Order Management line transaction types can be defined to control order line information. There are specific controls that need to be definable at the line type level. Some controls can be such that, they default from the order level, but can be overridden at the line level. For example, you can have both order and return lines on a single order. However, order and return lines go through different types of processing. The kind of processing that an individual line undergoes is controllable at a line type level.

The following table displays the various column controls that are available for Order Management *Line* transaction types.

| Column                        | Purpose  | Usable on Line Type | Required for Line Type | Defaulting source for Line |
|-------------------------------|--|---------------------|------------------------|----------------------------|
| NAME                          | Unique within the table for a given language.  | Yes                 | Yes                    |                            |
| TRANSACTION_TYPE_CODE         | Distinguish between order and line types. Valid values for Line types: <i>Order/Line</i> .                                     | Yes                 | Yes                    | No                         |
| ORDER_CATEGORY_CODE           | Defaulting for order or line; If used on Order Type, restricts line types.<br>Valid values for Line Types: <i>Order/Return</i> | Yes                 | Yes                    | Yes                        |
| CURRENCY_CODE                 | Defaulting Source  | No                  | No                     | No                         |
| CONVERSION_TYPE_CODE          | Defaulting Source  | No                  | No                     | No                         |
| CUST_TRX_TYPE_ID              | Used by Invoicing  | Yes                 | No                     | No                         |
| COST_OF_GOODS_SOLD_ACCOUNT    | Used by Inventory Interface  | No                  | No                     | No                         |
| ENTRY_CREDIT_CHECK_RULE_ID    | Used by Credit Checking  | No                  | No                     | No                         |
| SHIPPING_CREDIT_CHECK_RULE_ID | Used by Credit Checking  | No                  | No                     | No                         |
| PRICE_LIST_ID                 | Defaulting Source  | Yes                 | No                     | Yes                        |
| ENFORCE_LINE_PRICES_FLAG      | Used for validating discount application on Order/Lines  | No                  | No                     | No                         |
| WAREHOUSE_ID                  | Defaulting source  | Yes                 | No                     | Yes                        |

| Column                         | Purpose   | Usable on Line Type | Required for Line Type | Defaulting source for Line |
|--------------------------------|---|---------------------|------------------------|----------------------------|
| DEMAND_CLASS_CODE              | Defaulting source   | Yes                 | No                     | Yes                        |
| SHIPMENT_PRIORITY_CODE         | Defaulting source   | Yes                 | No                     | Yes                        |
| SHIPPING_METHOD_CODE           | Defaulting source   | Yes                 | No                     | Yes                        |
| FREIGHT_TERMS_CODE             | Defaulting source   | Yes                 | No                     | Yes                        |
| FOB_POINT_CODE                 | Defaulting source   | Yes                 | No                     | Yes                        |
| SHIP_SOURCE_TYPE_CODE          | Defaulting source. Valid values: <i>Internal/External</i>                                       | Yes                 | No                     | Yes                        |
| AUTO_SCHEDULE_FLAG             | Used by Scheduling. Valid values: <i>Yes/No</i>   | No                  | No                     | No                         |
| SCHEDULING_LEVEL_CODE          | Used by Scheduling. Valid values: <i>ONE, TWO, THREE</i>  | Yes                 | No                     | No                         |
| AGREEMENT_TYPE_CODE            | Validation on Header  | No                  | No                     | No                         |
| AGREEMENT_REQUIRED_FLAG        | Validation on Header  | No                  | No                     | No                         |
| PO_REQUIRED_FLAG               | Validation on Header  | No                  | No                     | No                         |
| INVOICING_RULE_ID              | Defaulting source   | Yes                 | No                     | Yes                        |
| INVOICING_CREDIT_METHOD_CODE   | Defaulting Source   | Yes                 | No                     | Yes                        |
| ACCOUNTING_RULE_ID             | Defaulting source   | Yes                 | No                     | Yes                        |
| ACCOUNTING_CREDIT_METHOD_CODE  | Defaulting Source   | Yes                 | No                     | Yes                        |
| INVOICE_SOURCE_ID              | Used by Invoicing   | Yes                 | No                     | No                         |
| NON_DELIVERY_INVOICE_SOURCE_ID | Used by Invoicing   | Yes                 | No                     | No                         |
| DEFAULT_INBOUND_LINE_TYPE_ID   | Defaulting source for Inbound Lines. Use this value as Source for defaulting Line type on Line  | No                  | No                     | Yes                        |
| DEFAULT_OUTBOUND_LINE_TYPE_ID  | Defaulting Source for Outbound Lines. Use this value as Source for defaulting Line type on Line | No                  | No                     | Yes                        |

When you define OM line transaction types, you can define the line flow that lines of this type will follow. A line transaction type can be coupled with different OM order transaction types. For example, a return transaction type can be used with a standard order type or an international order type. However, you need to specify the flow couplings for the permitted transaction type combinations.

### **Workflow Assignments**

The order type determines the order workflow. The combination of the order type, the line type, and the item type determines the line workflow.

Select appropriate workflows for order types, line types and item types:

You can perform all standard processing including orders, returns, drop ship orders, orders for configured items, and orders for assemble-to-order items using seeded workflows. You can also create your own workflows if you need additional steps, for example, additional notifications or processes.

You cannot select any order workflow to be used with a line workflow. Some workflow steps between an order and line are interdependent based on how Continue-flow and Wait-for-flow activities are paired. Therefore, the same line transaction type needs to follow a different line flow when used with a different order transaction type.

For example, the order flow with header level invoicing waits for an activity in the line flow to complete. If you do not use order and line flows which are designed to work together you can have orders or lines which either complete activities too early or which never complete.

The inventory item that a line is processing may have specific flow requirements. For example, a configuration needs to have a BOM and work order created before it can be picked and shipped. The standard item can be picked from stock and shipped. Therefore, the workflow for a configuration item is different than a standard item. However, both types of order lines can be use the same line type. The Workflow Assignments window displays the following item types for which a workflow can be assigned for a given order or order line type assignment:

- ATO Models, Classes, Options, Items
- Configured Item
- Kits
- Included Items
- PTO Models, Classes, Options

- Standard Items
- Service Items

If the item type code is left blank, the specified workflow assignment applies to all item types for which there is no specific assignment. However, you should specify an assignment for the configured item type, if you plan to use the line type for ATO models.

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**Note:** A workflow assignment is required for a given line type to support creation of lines using that line type.

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The following table displays sample Order types and associated Order Header workflow assignments.

| Order Type    | Header Flow Assignment                                     |
|---------------|--|
| Domestic      | Header - Standard  |
| International | Header - International (This has a post-booking approval.) |

### Line Flow Assignments

The Line Flow Assignments window is available only for OM order transaction types only. Use this window to assign line flows to the various line types that can be used with an order type.

A line flow can be assigned to an order type, line type and item type combination. Order Management enables you to define only one effective assignment for a given combination. If the item type is left blank, then that assignment will apply to all item types that do not have a specific assignment. If you plan to use a line type for ATO models then Order Management requires that you specify an assignment for the item type of configured item. Refer to Overview of Workflows and Setting up Workflow.

The following table displays sample Order Line types and associated Order line workflow assignments.

| Line Type | Order Types used with | For Item Type   | Line Flow Assignments             | Comments  |
|-----------|-----------------------|-----------------|-----------------------------------|---|
| Standard  | Domestic              |                 | Outbound Domestic                 | For all item types (except configured items)  |
| Standard  | Domestic              | Configured Item | Outbound Domestic Configuration   | Workflow specific to configured items.  |
| Standard  | International         |                 | Outbound International            | This has the appropriate <i>Wait-for Flow</i> defined for the notification activity on the International Header flow. The workflow is for all item types (except configured items). |
| Standard  | International         | Configured Item | Outbound Domestic - Configuration | This workflow is specifically for configured items.   |
| Return    | Domestic              |                 | Inbound Domestic                  | For all item types.   |
| Return    | International         |                 | Inbound International             | This has the appropriate <i>Wait-for- Flow</i> defined for the notification activity on the International Header flow. This workflow is for all item types.                         |

## Defining Order Management Transaction Types

### Prerequisites

- Review seeded Order and Line flows. Define new to meet your business requirements.
- Define all lookups.
- Define freight carriers. See: Oracle Shipping Execution User's Guide.
- Define organizations. See: Creating an Organization, Oracle Human Resources Management Systems User's Guide.
- Create Document Sequences for order numbering.



- Define defaulting rules.
  - Define price lists.
  - Define credit check rules.
  - Define currencies and currency types. See: [Defining Currencies](#), Oracle Applications System Administrator's Guide.
  - Set up your cost of goods sold account flexfield segments. See: [Defining Key Flexfield Segments](#), Oracle Applications Flexfields User's Guide.
- **To define Order Management document, Pricing, or Credit Check order or line transaction types information:**
1. Navigate to the Transaction Types window.

The *Transaction Types* window displays.

The screenshot shows the 'Transaction Types' window with the following details:

- Transaction Type:** Standard Order
- Description:** (empty)
- Effective Dates:** 05-AUG-2002
- Transaction Type Code:** ORDER
- Order Category:** Order
- Order Workflow:** Order Flow - Generic with deferred b
- Document Section:**
  - Agreement Type: (empty)
  - Default Return Line Type: (empty)
  - Default Order Line Type: Standard Line (SNG)
  - Agreement Required:
  - Purchase Order Required:
- Pricing Section:**
  - Price List: CORPORATE
  - Enforce List Price:
- Credit Check Rule Section:**
  - Ordering: Booking
  - Packing: External
  - Picking/Purchase Release: Picking
  - Shipping: AR\_SHIPPING

2. Select the Main tabbed region and specify a name that is unique across Operating Units.
3. Enter a Description.
4. Specify whether this is an order or line transaction type.

5. Specify the category.

For Order Types, you can specify a value of Order, Return, or Mixed. For Line Types you can specify Order or Return. When an order type is assigned to an order, the category determines whether both order and return lines can go on the order. A category of Mixed enables an order to have both kinds of lines.

6. For Order Transaction Type only - Optionally, enter an agreement type.

If you enter an agreement type here, you can choose only agreements with this agreement type when using this order type. Define agreement types using Order Management QuickCodes.

7. For Order Transaction Type only, specify a line type that will serve a default for all lines on the order with this order type.

If you are defining a Mixed order type, specify an inbound and outbound default line type. When you create a return line with negative quantities, the Sales Order window automatically sets the category on the to Return.

For Order Lines, the Sales Orders window automatically sets the category to Order. Order Management seeds defaulting rules to get the appropriate default outbound or inbound line transaction type from an order type to a line based on its category code.

8. Indicate whether an agreement is required for order transaction type only.

9. For Order Transaction Type only, check Purchase Order Required to require purchase order numbers during order entry for orders and returns with this Order type.

10. Select a price list to serve as a defaulting source.

11. For Order Transaction Type only- Optionally check Enforce List Price, if you do you cannot apply discounts to the order line list price when you use this order type and you cannot override the selling price, unless the profile option *OM: Discounting Privilege* is set at the appropriate level.

12. Optionally, select credit check rules to use when performing checking credit at either Booking, Pick Release and Purchase Release (for drop shipments), Packing, or Shipping within the corresponding Credit Check Rule fields.

You can select a credit check rule for each field within the Credit Check Rule region, or choose to select combinations that suit your business purposes. For example, you can choose to select a credit check rule for booking only, or booking and shipping.

If you leave any of the Credit Check Rule fields blank, no credit checking will occur when an order or order line reaches the corresponding workflow activity within the order or line flow, using the order or order line type specified.

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**Note:** When an order type is created, Order Management automatically creates a Document Sequence Category of the same name for you. You can then go an assign a document sequence that you have defined for order numbering to this document sequence category. Document sequence categories are not MLS Compliant. Order Management recommends that you create your order types in the base language of your installation to minimize potential confusion.

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**Note:** Workflow assignments are required for order types to support the creation of orders.

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13. Save your work.

► **To define Shipping Related Attributes for Order Management order and line transaction types:**

1. Navigate to the Shipping tabbed region in the Transaction Types window.
2. Optionally, select a warehouse. Warehouses are synonymous with inventory organizations in Oracle Manufacturing.
3. Optionally, enter a Shipping Method.
4. Optionally, enter a Shipment priority.  
Define shipment priorities using Order Management QuickCodes.
5. Optionally, enter the Freight terms.  
Define freight terms using Order Management QuickCodes.
6. Optionally, enter the Free On Board (FOB) point.  
Define FOB points using Receivables QuickCodes.
7. For Line Transaction Type only – Optionally specify a value for ship source type. It can be either internal or external. This determines whether the order line is sourced internally or externally (via Drop Shipment).

8. Optionally, enter the Demand Class.  
Define demand classes using Manufacturing QuickCodes.
9. Optionally, specify the scheduling level. It can have the following values:
  - *One*: Perform only ATP check.
  - *TWO*: Perform ATP check and Scheduling - *No reservations*
  - *THREE*: perform complete scheduling (ATP Check, Demanding, Reserving).

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**Note:** If you do not specify a value for an Order Transaction type, the application interpreted the null value as *Complete Scheduling*. If you do not specify a value for a Line Transaction Type the application uses the value from the Order Type on the Order.

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10. For order transaction type only - Optionally, check auto-schedule.  
This setting determines whether auto-scheduling is performed for orders using this order type.
11. For return line transaction type only – Optionally, set whether inspection is required.

**► To define Financial attributes for Order Management order or line transaction types:**

1. Navigate to the Finance tabbed region in the Transaction Types window.
2. If you use Oracle Receivables, enter the Default Invoicing Rule to apply to this order or line type.  
An invoicing rule controls the amount and timing of your invoices.
3. If you use Oracle Receivables, enter the default accounting rule to apply to this order type or line type. An accounting rule controls the amount and timing of when you recognize revenue for this order.  
See: Defining Invoicing and Accounting Rules, Oracle Receivables User's Guide.
4. Optionally, select a Invoice Source.
5. Optionally, select a Non-Delivery Invoice Source.

6. Optionally, select the Accounting credit method Oracle Receivables uses when adjusting the revenue account assignments of invoices using multi-period invoicing and accounting rules. See: *Crediting Transactions, Oracle Receivables User's Guide*.
  - LIFO (Last In First Out)--Backs out revenue starting with the last general ledger period, and reverses all prior periods until it has used up the credit memo.
  - Prorate--Credits an equal percentage to all account assignments for that invoice.
  - Unit--Reverses the revenue for the number of units you specify from an original line of the invoice.
  - Optionally, select the Invoicing credit method Oracle Receivables uses when crediting the installments of invoices that have multiple installments (split term invoices). *Crediting Transactions, Oracle Receivables User's Guide*.
  - LIFO (Last In First Out)--Credits the last installment to be credited first and then credits all prior installments until all of the credit is used.
  - FIFO (First In First Out)--Credits the first installment first and then credits all subsequent installments until all of the credit is used.
  - Prorate--Prorates the credit received by the installments of invoices by the amount remaining on their installments.
7. If you use Oracle Receivables, enter the receivables transaction invoice type.

Invoice types designate invoice status, invoice printing options, credit memo type, and whether the invoice posts to General Ledger or creates an open receivable. Ensure the Tax Calculation Flag for the Receivables transaction type you choose is set accordingly as this will determine whether Tax is calculated for the order line.
8. If you are defining a return type, select the invoice type associated with the appropriate credit memo type.
9. Optionally, enter a Cost of Goods Sold Account. – Definable only for the Order Transaction Type.
10. Optionally, enter a currency and a currency conversion type. – Definable only for the order transaction type.

If you choose User as the currency conversion type, the Sales Orders window requires you to enter the conversion rate and date.

11. Save your work.

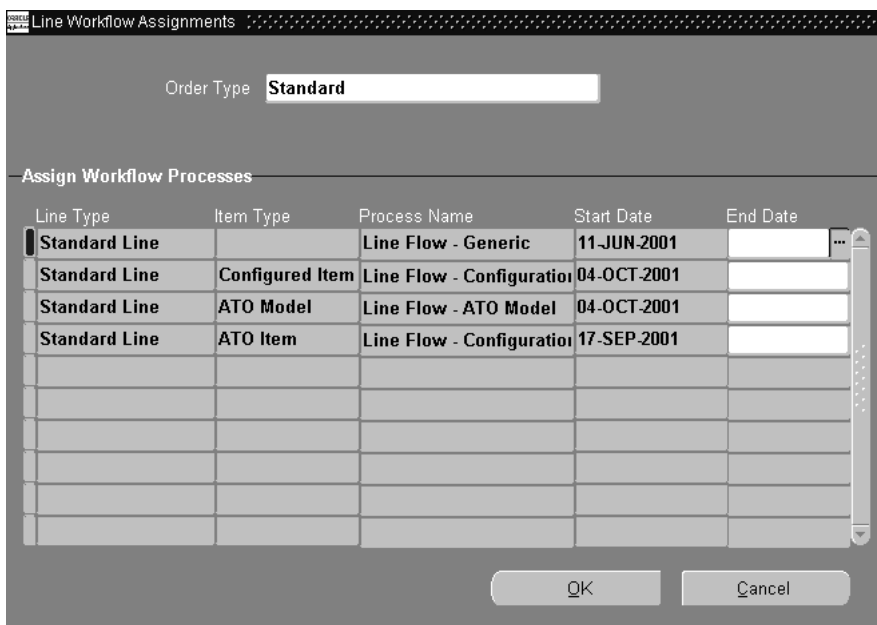
**■ To assign workflows to transaction types:**

Use this procedure to assign workflows to line transaction types. The combination of the order type, the line type, and the item type determines the line workflow.

Once you have created a document using an order type you cannot change the existing line workflow assignments. Instead, enter an end date for the existing assignment and enter a new assignment for the for the new workflow.

1. Navigate to the Transaction Types window and query the desired transaction type.
2. Click Assign Line Flows.

The *Line Workflow Assignments* window displays.



3. In Order Type, select the order type/line type/item type combination to which you want to assign a workflow.

If you leave Item Type blank, the workflow applies to all item types for the line type (unless they have a specific assignment in this form).

If you use line type ATO Models, use item type Configured Item and return line types use item type Standard even if they are for configurations.

4. In Process Name, select the workflow that Oracle Order Management should use for the order type/line type/item type.

If you do not assign a workflow to a configured item type, the configured item does not use a workflow.

5. In Start Date and End Date, select the time period during which the assignment is effective.
6. Save your work.

## Defining Sales Credit Types

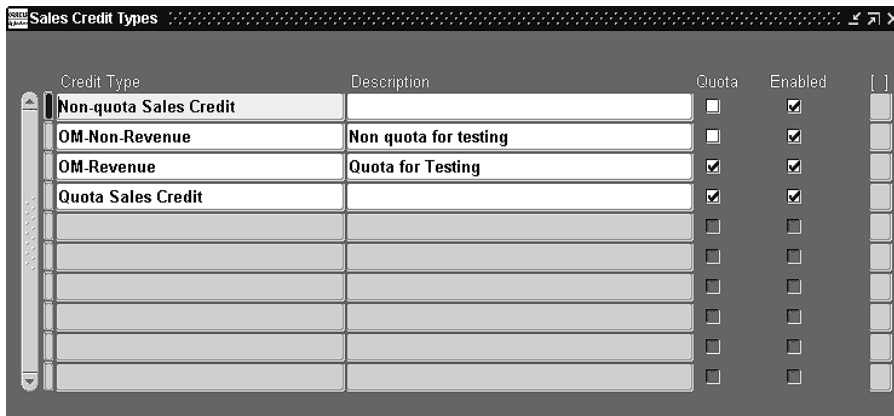
Order Management uses sales credit types to determine if the sales credit for an order is a quota or non-quota amount. Order level sales credits for revenue must always be equivalent to 100 percent of the sales credit for the order, and non revenue sales credits can be any value you choose.

You can define as many sales credit types as you need.

### ► To define sales credit types:

1. Navigate to the Sales Credit Types window.

The *Sales Credit Types* window displays.



| Credit Type            | Description           | Quota                               | Enabled                             | [ ] |
|------------------------|-----------------------|-------------------------------------|-------------------------------------|-----|
| Non-quota Sales Credit |                       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |     |
| OM-Non-Revenue         | Non quota for testing | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |     |
| OM-Revenue             | Quota for Testing     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |     |
| Quota Sales Credit     |                       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |     |
|                        |                       | <input type="checkbox"/>            | <input type="checkbox"/>            |     |
|                        |                       | <input type="checkbox"/>            | <input type="checkbox"/>            |     |
|                        |                       | <input type="checkbox"/>            | <input type="checkbox"/>            |     |
|                        |                       | <input type="checkbox"/>            | <input type="checkbox"/>            |     |
|                        |                       | <input type="checkbox"/>            | <input type="checkbox"/>            |     |
|                        |                       | <input type="checkbox"/>            | <input type="checkbox"/>            |     |

2. Enter the Credit Type Name and Description for the credit type.
3. Select the Quota check box if the sales credit type applies to revenue quota sales credit that you assign to salespeople.
4. Select the Enabled check box to activate the sales credit type.
5. Save your work.



## Defining Order Import Sources

You can define Order Import Sources from which to import order information. You can import historical orders, orders from other quote or sales systems, and changes to orders. Oracle Order Management recommends that you define a unique name for each source of order information you are importing. When you run the Order Import program, you can enter the source or sources for each execution. You can run Order Import for multiple sources at one time.

### Internal Sales Orders

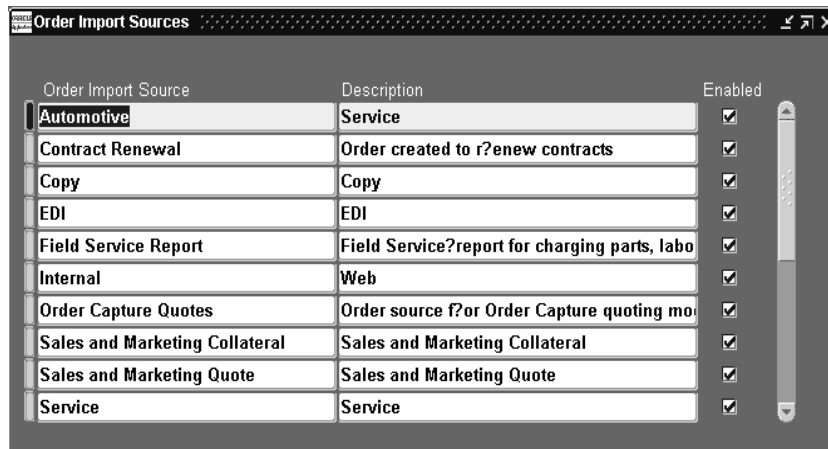
If you are importing internal sales orders from Oracle Purchasing, you need to define an Order Import source to be used when you transfer the internal requisition information from Oracle Purchasing to create an internal sales order in Order Management.

You need to choose an Order Import source for internal requisitions/internal sales orders when you define purchasing options in Oracle Purchasing. You choose this same Order Import source as a parameter when you run the Order Import program in Order Management. See: *Integrating Oracle Order Management Using Order Import, Oracle Manufacturing, Distribution, Sales and Service Open Interfaces Manual.*

#### ■ To define an Order Import source:

1. Navigate to the Order Import Sources window.

The *Order Import Sources* window displays.



| Order Import Source            | Description                                   | Enabled                             |
|--------------------------------|---|-------------------------------------|
| Automotive                     | Service                                       | <input checked="" type="checkbox"/> |
| Contract Renewal               | Order created to r?enew contracts             | <input checked="" type="checkbox"/> |
| Copy                           | Copy  | <input checked="" type="checkbox"/> |
| EDI                            | EDI   | <input checked="" type="checkbox"/> |
| Field Service Report           | Field Service?report for charging parts, labo | <input checked="" type="checkbox"/> |
| Internal                       | Web   | <input checked="" type="checkbox"/> |
| Order Capture Quotes           | Order source f?or Order Capture quoting mo    | <input checked="" type="checkbox"/> |
| Sales and Marketing Collateral | Sales and Marketing Collateral                | <input checked="" type="checkbox"/> |
| Sales and Marketing Quote      | Sales and Marketing Quote                     | <input checked="" type="checkbox"/> |
| Service                        | Service                                       | <input checked="" type="checkbox"/> |

2. Enter the Order Import source name and a description.
3. Check Enabled to activate the Order Import source.
4. Save your work.

**See Also**

[Order Import](#)

## Overview of Processing Constraints

In previous releases of Oracle Order Entry, a feature called Security Rules enabled you to control whether changes could be made to certain characteristics of an order after certain cycle steps had been reached. In Release 11i Order Management, Oracle has introduced a new security paradigm called Processing Constraints, which offers somewhat differing functionality. Processing Constraints allow Order Management users the ability to control changes to sales orders, at all stages of its order or line workflows. Reasons to limit changes to existing orders can be:

- Changing data on an entity that would make the data inconsistent and difficult to audit. For example, changing the price list on an order already invoiced. Oracle Applications generally enforces these constraints through seeded processing constraints or within the operation of forms and processes.
- Changing data on an entity that has effected downstream activities that are difficult or costly to undo. For example, changing options on an ATO configuration order if the item is already built. You generally determine the business need for these constraints and, to express them, create processing constraints.

Processing Constraints also provide:

- The ability to control who can make changes based on Responsibility. A constraint (rule) may apply to all responsibilities, a list of constrained responsibilities, or to all except a list of authorized responsibilities.
- The ability to define constraining conditions based on the state of related objects (for example, define a processing constraint for order lines based upon the current status of the order).
- The ability to control order changes based on field values
- The ability to call custom PL/SQL code to determine whether a processing constraint condition evaluates to true.
- The ability to constrain operations at any point in the order or line process flow. In prior releases of Oracle Order Entry, you could only control operations for certain hard-coded cycle actions.

A processing constraint includes these components:

- Entity
- Operation
- Attribute

If an attribute is not assigned to a constraint, the constraint prevents you from updating all attributes on the entity.

- Group Number
- Conditions
  - User Action
  - Validation Entity
  - Scope
  - Record Set
  - Modifier
  - Validation Template
- Applicable To (Optional, user responsibility)

You can define processing constraints for *entity* or *attributes*. *Entities* include regions on the Sales Orders window, such as Order, Line, Order Price Adjustments, Line Price Adjustments, Order Sales Credits, and Line Sales Credits. *Attributes* include individual fields (of a particular *entity*), such as Warehouse, Ship To Location, or Agreement.

As you use Order Management, processing constraints are evaluated for any *entity* you try to cancel, delete, create, split, or update. If you are trying to modify an order line, Order Management evaluates the processing constraints for the Line *entity*.

You can relate a given role to the highest state of the order that changes can be made. For example, the order entry clerk cannot change an order when it has been acknowledged by customer, but the order entry supervisor can change the order until it has shipped. These constraints may apply to the entire order or individual attributes.

For a complete list of processing constraints that are available in the Order Management application, see the Oracle Order Management Suite Implementation Manual, Release 11*i*, Appendix G.

## Processing Constraint Terminology

### Entity

Processing Constraints enable you to define constraints for entities such as order header, order line, order/line price adjustments, and order/line sales credits.

Entities can consist of a group of related attributes that similarly correspond to a database table or Order Management form. Entities that can be managed with Processing Constraints are:

- Line Price Adjustment
- Line Sales Credit
- Order Header
- Order Line
- Order Price Adjustment
- Order Sales Credit

### **Operation**

You can define processing constraints to prevent users from performing the operations of Cancel, Create, Delete, Update, and Split on your orders and returns. You can prevent Update on *attributes*. You can effectively assign a general Update rule to all *attributes* associated with a particular *entity*, as a data entry tool. For example, given a set of conditions you may not allow a user to create a new order line.

### **Attribute**

An attribute is considered a field or column that belongs to an entity. For example, *ordered unit of measure* is an attribute of the 'Order Line' entity

Select an attribute when the operation is UPDATE or leave the field blank to prevent update of all attributes.

### **Action**

In addition to completely forbidding an action (Not Allowed), you can allow certain actions such as Update or Delete, but maintain an Audit Trail of the changes. To indicate you want to keep an Audit Trail only when a reason is required (Requires Reason with History) or not required (Requires History).

The *Requires Reason and History* action is applicable for the cancel or update operations to the *Order Quantity* attribute on the line, only.

### **System Changes**

System changes are used for defaulting and enabling the system to re-default attribute values whenever the defaulting source changes. A changed attribute value

would default even if constraint conditions are applicable. This is only applicable for attribute or field level UPDATE operations.

### **User Changes**

User changes can be used to indicate whether an attribute level constraint applies to the user only for record updates or will the constraint apply even if the attribute value is modified by the user while the record is being created.

- Select *Never after Insert*, (default), to indicate that a user may modify this field only if the entity has not yet been saved to the database. This is for attribute for field level update operations.
- Select *Never* so that an attribute value can never be updated by a user.

For example, setting System Changes to 'Always' and User Changes to 'Never' sets up a constraint where this attribute value can never be edited by the user while constraint conditions are applicable; however the system can always default or re-default a value for this attribute.

### **Conditions**

The condition of your processing constraint is like an *If-Then* statement. Order Management checks for occurrences of the condition in your constraint while users are cancelling, deleting, creating, splitting lines, and updating orders and returns. When the condition or conditions of a processing constraint are met, Order Management prevents the operation of that constraint.

### **Group Number**

Each processing constraint condition has a number that indicates whether the condition is independent of all other conditions, or whether it should be considered only when another condition is also true. Use this number to create *and/or* conditions. Create an *And* condition by using the same group number for each row in the condition, or an *Or* condition by using a different group number for each row. Conditions with the same number must both be true for the processing constraint to apply.

For conditions with different numbers, at least one must be true for the processing constraint to apply. You can create several *And* conditions and *Or* conditions for one object or attribute.

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**Attention:** Order Management does not allow you to enter a number equal to any number already used in the Number field of a system processing constraint condition. This would, in effect, create an *And* statement with a system processing constraint, and could endanger data integrity.

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### Scope

Scope indicates whether you want Order Management to evaluate the condition of the constraint against any or all entities in the record sets.

- If the Scope is *Any* the condition holds true if *any* line within the record set meets the condition.
- If the scope is *All*, all lines in the record set must meet the condition for the entire condition to be evaluated as True.

### Validation Entity

The validation entity is the entity on which the constraint condition is based on. This could be same as the entity on the constraint or it could be an entity related to the constrained entity. For example, a constraint might be defined for UPDATE of Ship To on Order Header entity but condition needs to be if Any Order Line has been shipped. Thus validation entity is Order Line while constrained entity is Order Header.

### Record Sets

A record set is a set of records that are bound by common attributes such as invoice sets. You can define constraining conditions and specify a record set to be validated for a given condition as defined by its validation template.

### Modifier / Not

You can use a modifier in the condition of a processing constraint to define a negative condition. For example, if the condition is Booked and the Modifier/Not check box is checked, then the condition is evaluated as NOT booked.

### Validation Template

The validation template defines how the condition is to be evaluated. The template could be based on a workflow state, field value or if it is complex, it could also be based on the output of a validation API.

API based validation templates are not available if the constrained entity is different from the validation entity on the condition. Validation templates are not available even if the record set being used is anything other than the primary key record set.

For example,

API based Validation template *Pick Released* has been set up for entity Order Line. If you set up a constraint for attribute *Ship To* on Order Line, the validation template *Pick Released* is available but for a constraint on attribute *Ship To* on Order Header, *Pick Released* will not be available.

For attribute *Ship To* on Order Line, if the constraint condition uses any record set (ATO Configuration, for example) other than the primary key record set *Order Line*, the validation template *Pick Released* will not be available.

## Special Considerations

### Rules That Cannot Apply

If you define a constraint for Create on an entity where the condition would be applicable on the same existing entity, the constraint will never apply. If the condition only occurs for existing entities, but they are already inserted, the constraint cannot be enforced and will not be applied. For example, a rule for Insert on a Line where the condition is Ship Confirm is unenforceable because a line is already inserted if that condition exists.

### Processing Constraints Must Be Cooperative at Various Entity Levels

Order Management evaluates processing constraints for an entity when you are trying to perform an action on that entity. If you have a processing constraint on a lower-level entity (such as Line), and you try to perform an operation on the higher-level entity (such as Order), the Line level constraint is not evaluated. Therefore, when defining processing constraints, make sure that your higher-level entity constraints cooperate with your lower-level entity constraints so that all levels are synchronized. For example, if you have a constraint for the Line entity on the operation of Delete, define a comparable constraint for the Order entity so that you can cover all delete situations.

See: [Defining Processing Constraints](#)

Order Management seeded Processing Constraints Appendix, Oracle Order Management Suite Implementation Manual, Release 11*i*.



## Defining Processing Constraints

This describes how to set up your processing constraints based on validation conditions in validation templates (for example, Booked = Yes) which are evaluated for groups of records (record sets).

### Prerequisites

Become familiar with the Processing Constraints that are delivered with the Order Management Application. See: Oracle Order Management Suite Implementation Manual, Release 11i, Order Management Processing Constraints Appendix.

- You must define your validation templates and record sets:

- [Defining Validation Templates](#)

- [Defining Record Sets.](#)

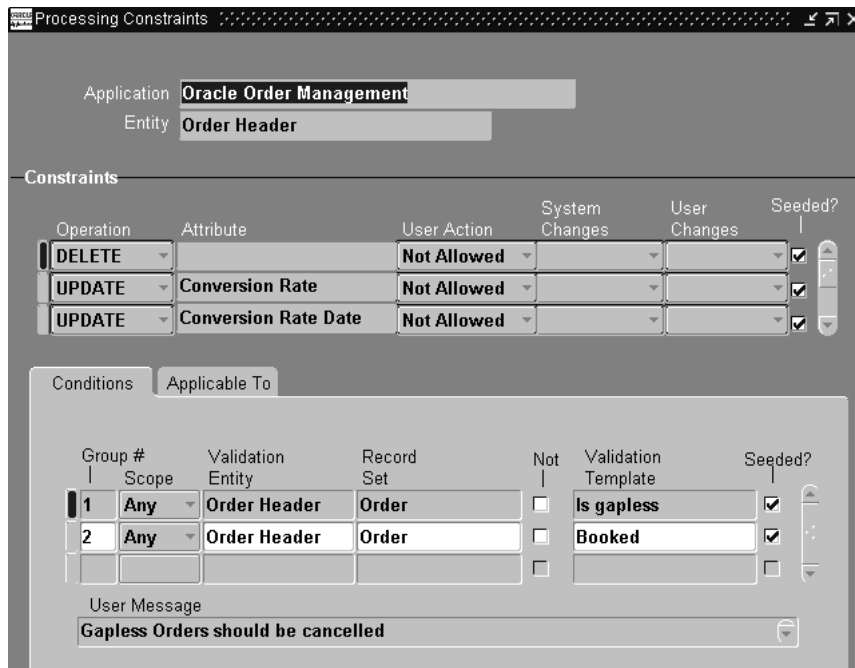
- See: Oracle Order Management Suite Implementation Manual, Release 11i:

- [Defining Record Sets.](#)

- [Defining Validation Templates](#)

- To set up processing constraints

1. Navigate to the Define Processing Constraints form.  
The Define Processing Constraints window appears.



2. Query Application for Oracle Order Management and Entity for the entity for which you want the processing constraint, for example, Order Header or Order Line.
3. Move to the Constraints region. In the top area of the region, enter each constraint in a line.
4. In Operation, select the operation that you want to constrain.
5. Select an Attribute to constraint, based upon the operation selected.
  - If you select the value UPDATE for the Operation field and you do not select an Attribute value, the constraint allows no update to any field of the entity, by any user.
6. In User Action, select one of the following:
  - Not Allowed: You cannot perform the constrained operation.
  - Require Reason and History: You can perform the operation only if you enter a reason. Use this with Operation CANCEL, Operation UPDATE if the

constrained attribute is Ordered Quantity only, and for recording Audit Trail history when requiring a reason for an attribute change.

- Requires History: You can perform the operation and will not be prompted to enter a Reason. You still have the option to enter both a Reason and Comment, and if you do so, the information is recorded. Use the value for enabling Audit Trail history to be recorded without a reason for an attribute change.
7. Select a value for the System Changes field. The value selected in this field determines if system changes are allowed, despite the constraint. Choose from:
    - Always: System changes allowed
    - Never after Insert: System changes allowed if the entry has not been saved to the database.
  8. Select a value for the User Changes Field. Choose from:
    - Never: The user is always constrained
    - Never after Insert: The user is constrained after the entry is saved to the database
  9. Seeded Check Box - If a Constraint has the seeded check box selected, you cannot update the constraint definition.
  10. Move to the Conditions tabbed region. Enter a constraining condition for the selected constraint. The selected constraint is determined by the previous cursor position prior to moving to the Conditions tabbed region.
  11. In Group Number field, enter a numeric value according to the following principles:
    - For conditions that should together evaluate to TRUE (AND conditions), enter the same group number. The constraint applies if the entity in question meets all of the conditions defined.
    - For conditions that should together evaluate to OR (OR conditions), enter a different number for each record. The constraint applies if the entity in question meets any one of the conditions defined.
  12. In Scope, if the record set applies to multiple records, indicate the scope of evaluation of the record set for this condition. An example of a record set that applies to multiple records is the record set of all of the lines of a sales order. Select one of the following:
    - Any: The condition is satisfied if one of the records meets it, for example, the condition is satisfied if one of the sales order lines is booked.

- All: The condition is satisfied if all of the records meet it, for example, the condition is satisfied if all of the sales order lines are booked
13. In Validation Entity, enter the entity for which the condition is validated. You can enter the same entity as the constraint (at the top of the Constraints region) or you can enter an entity related to the constraint. For example, if the constraint is against Order Header, Validation Entity can be Order Line.
  14. In Record Set, select the record set that corresponds to the entities to which the constraints process should apply the condition. For example, if you enter the order line record set Line, the condition is evaluated against the order line in question. If you enter the order line record set Order, the condition is evaluated against any or all (depending on the scope) lines of the order in question.  

If Validation Entity is different from Entity (at the top of the form), you can only select record sets based on the primary key of the validation entity.
  15. Select the Not check box (the negative condition modifier) to direct the constraints processing to evaluate the NOT condition of Validation Template. For example, if you expect to select Validation Template Booked, selecting NOT creates the condition of not booked for the constraint.
  16. In Validation Template, select a validation template. This item specifies the condition being evaluated.
  17. Constraint Condition Seeded check box:
    - If a Constraint has the seeded check box selected, and the constraint condition check box is also selected, you cannot update the constraint condition.
    - If a Constraint has the seeded check box selected, and the constraint condition check box is not selected, you can update the constraint condition.
  18. In User Message, enter the trailing portion of the error message that the constraint processing should display when the user violates the constraint.  

For example, if the constraint was to not allow an update of the item field on the order line if the line has been previously booked, constraints processing displays the error message You are not allowed to update the item; the item is booked.
  19. Move to the Applicable To tabbed region. In this region, specify to whom the constraint applies.

Application: **Oracle Order Management**  
Entity: **Order Header**

**Constraints**

| Operation | Attribute            | User Action | System Changes | User Changes | Seeded?                             |
|-----------|----------------------|-------------|----------------|--------------|-------------------------------------|
| DELETE    |                      | Not Allowed |                |              | <input checked="" type="checkbox"/> |
| UPDATE    | Conversion Rate      | Not Allowed |                |              | <input checked="" type="checkbox"/> |
| UPDATE    | Conversion Rate Date | Not Allowed |                |              | <input checked="" type="checkbox"/> |

Conditions | Applicable To

All responsibilities  
 Authorized responsibilities  
 Constrained responsibilities

20. Select one of the following:

- All responsibilities: The constraint applies to all responsibilities.
- Authorized responsibilities: The constraint applies to all responsibilities except ones that you specify. Specify the excepted responsibilities in the untitled lines below your selection.
- Constrained responsibilities: The constraint applies to the responsibilities that you specify. Specify the excepted responsibilities in the untitled lines below your selection.

21. Save your work.

### Processing Constraints Example

To set up a processing constraint that forbids update of the sales order header order type when there are order lines created or when the order is booked, do the following after navigating to the Define Processing Constraints form:

- Query in the top of the form:

- Application: Oracle Order Management
- Entity: Order Header
- Enter on a new line at top of the Constraints region:
  - Operation: Update
  - Attribute: Order Type
  - User Action: Not allowed
  - Leave System Changes, User Changes blank
  - Clear Seeded check box
- Enter in the first line of the Conditions tabbed region:
  - Group Number: 1
  - Scope: Any
  - Validation Entity: Order Header
  - Record Set: Order
  - Clear NOT check box
  - Validation Template: Booked
  - Clear Seeded checkbox
  - User Message: the order is booked
- Enter in the second line of the Conditions tabbed region:
  - Group Number 2
  - Scope: Any
  - Validation Entity: Order Header
  - Record Set: Order
  - Clear NOT checkbox
  - Validation Template: Lines Exist
  - Clear Seeded checkbox
  - User Message: the order has lines

**See Also**

[Overview of Processing Constraints](#)

Order Management seeded Processing Constraints Appendix, Oracle Order Management Suite Implementation Manual, Release 11*i*.

## Processing Constraints Usage

As you use Order Management, processing constraints are evaluated for any *entity* you try to cancel, delete, create, split, or update. If you are trying to modify an order line, Order Management evaluates the processing constraints for the Line *entity*.

**See Also**

[Overview of Processing Constraints](#)

[Defining Processing Constraints](#)

[Overview of Sales Orders](#)

[Cancelling Orders](#)

[Order Changes](#)

See: Oracle Order Management Suite Implementation Manual, Release 11*i*:

[Overview of Processing Constraints](#)

[Defining Processing Constraints](#)

[Seeded Processing Constraints Appendix.](#)

## Defining Validation Templates

Order Management provides you the ability to define your own validation conditions by the use of validation templates. A validation template names a condition and defines the semantics of how to validate that condition. Validation templates can be used in the processing constraints framework to specify the constraining conditions for a given constraint. These conditions are based on:

- where the entity is in its workflow
- the state of attributes on an entity
- any other validation condition that cannot be modeled using the above methods

API based validation templates are not available if constrained entity is different from the entity for which the validation template has been defined (or the Validation templates are not available even if the record set being used is anything other than the primary key record set).

For example,

API based Validation template *Pick Released* has been set up for entity Order Line. If you set up a constraint for attribute *Ship To* on Order Line, the validation template *Pick Released* is available but for a constraint on attribute *Ship To* on Order Header, *Pick Released* will not be available.

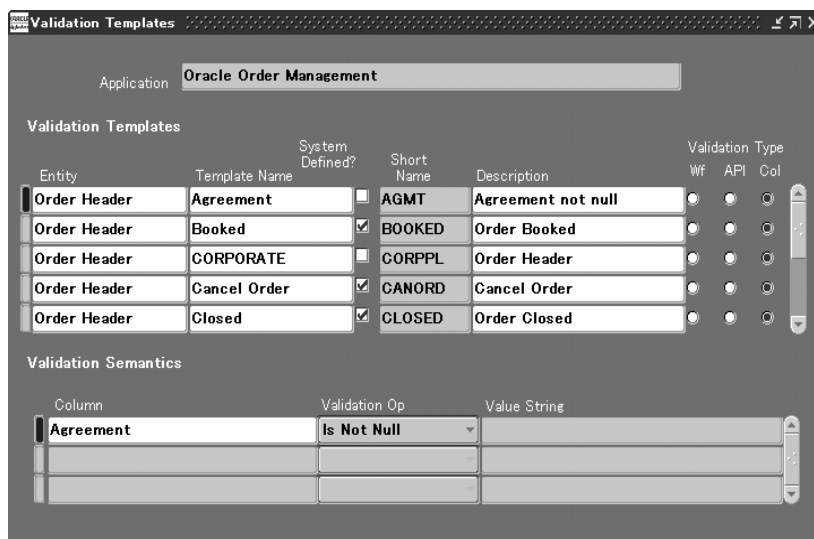
For attribute *Ship To* on Order Line, if the constraint condition uses any record set (ATO Configuration, for example) other than the primary key record set *Order Line*, the validation template *Pick Released* will not be available.

### ■ To define a validation template:

1. Navigate to Validation Templates window.

The *Validation Templates* window displays.





2. Select the Entity for which the condition is to be defined.
3. Enter a Template Name for the condition.
4. Enter a name in the Short Name field for the condition.
5. Optionally, enter a Description for the constraint condition.
6. Select the Validation Type to be performed by the condition. Select from:
  1. Wf: (validation is based on the workflow status of this entity):
    - Select the Activity for the condition.
    - Select the Activity Status for the condition. Select from: Active, Complete, Error, Notified, and Suspended.
    - Select the activity Result for the condition.
    - Save your work.
  2. API (validation is completed through an Application Program Interface):
    - Select the PL/SQL Package you wish to interface with the constraint condition.
    - Enter the Procedure name of the API.
    - Save your work.

3. Col (validation is based on the values of database columns on this entity):
  - Select the Attribute Column name on the entity for the constraint condition.
  - Select the Validation Operation for the constraint condition. Select from: = (Equal To), <> (Not Equal To), Is NULL, Is Not NULL.
  - Select the Value String you want to validate against the value of the column.

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**Note:** You can add more than one attribute, value pair, otherwise all pairs will be added together in the validation.

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7. Save your work.
8. When you have created new validation templates or record sets, you will need to submit the Create Validation Packages concurrent program from the Tools menu to submit a concurrent request to create a validation package for all new or modified validation templates and record sets that may constitute a permitted validation combination. After the request completes, all validation templates that processed successfully will be visible in the list of values in the Processing Constraints window.

**See Also**

[Defining Processing Constraints](#)

[Defining Record Sets.](#)

See: Oracle Order Management Suite Implementation Manual, Release 11i:

[Defining Processing Constraints](#)

[Defining Record Sets](#)

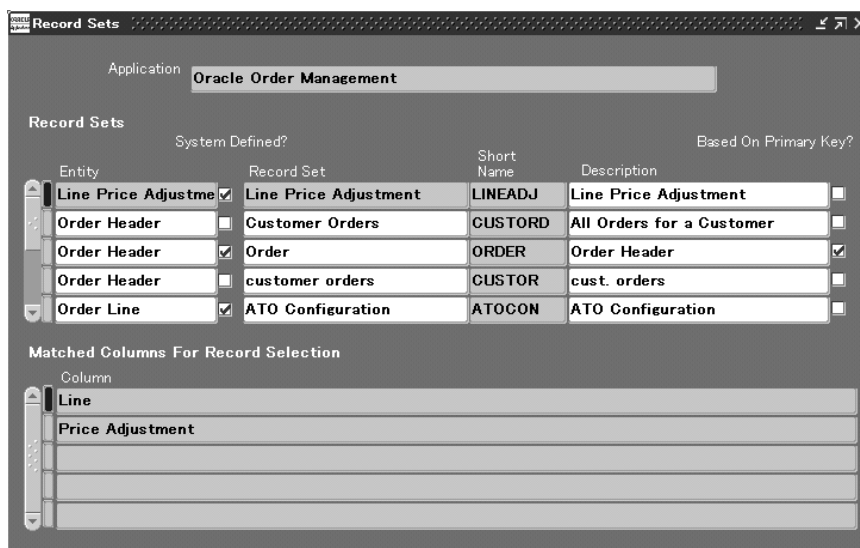
## Defining Record Sets

The Records Sets feature in Order Management is used to define and maintain record set definitions for processing constraints. A record set is a set of records that are bound by common attributes such as ship sets. You can define constraining conditions and specify a record set to be validated for a given condition as defined by its validation template.

### ► To define a record set:

1. Navigate to the Record Sets window.

The *Record Sets* window displays.



2. Select the Entity for which you are defining a record set.

The Seeded check box is enabled if the system automatically defines the name of the record set. This check box is non updateable.

3. Enter the name of the Record Set.

4. Enter the Short Name for the record set.

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**Note:** You cannot modify the Short Name once it has been entered.

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5. Optionally, enter a Description for the record set.

The Based On Primary Key check box is used to indicate the record set that is based on the primary key columns for the entity. There can only be one primary record set per entity. These records are seeded and cannot be updated.

6. Select the name of the columns that should be matched from the validated record in the Matched Columns For Record Selection region.

For example, if you define a Ship Set record set, the matching columns will be the Header ID and the Ship Set number.

7. Save your work.

8. Select the Create Validation Packages concurrent program from the Tools menu to submit a concurrent request to create a validation package for all modified validation templates and record sets that may constitute a permitted validation combination.

Only after the request completes, the created validation template is visible in the list of values in the Processing Constraints window.

9. Save your work.

## Overview of Defaulting Rules

### Overview

Order Management Defaulting Rules reduce the amount of data input required when entering orders or returns. You can define business rules for defaulting values, and prioritize how conditions and validation rules are implemented. If a defaulting rule definition fails to default desired values for orders or returns, you can choose to define additional defaulting rules for most attributes (fields) within Entities such as Order or Line.

Order Management provides seeded defaulting rules, and you can create additional Defaulting Rules by either

- defining a new defaulting rule, either with a new Condition you create or using an existing Condition.
- disabling a seeded defaulting rule and creating your own. You can not change seeded defaulting rules but you can disable the defaulting rule's condition.

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**Note:** You cannot update defaulting rules marked as seeded. However, you can create additional rules based upon seeded rule definitions and consequently disable the seeded rule.

Depending on your release level, if you wish to default the Item Identifier type attribute for an order line, select either *INT* or *Internal Item*.

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You can use defaulting rules to default values into fields (attributes) in both the Header and Lines Entities

- Entities include groups of related attributes such as Order or Line.
- Attributes are the individual fields within a particular entity, such as Warehouse, Ship To Location, or Agreement.

A default is a value that Order Management automatically places in an order or line field.

- If the Attribute name is the same on both the Order and the Line, you can initially default the value from the Header to the Line.

For example, you can default Purchase Order at the Header to Purchase Order at the Line when you first create a PO number.

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**Note:** The initial value will default, but if you change the PO the new value will not default automatically from the header to the line.

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- You can also default the value of an attribute from another attribute within the same entity. For example, you could default Promise Date on the Line from Request Date within the Line Entity.

A defaulting condition is evaluated at run time to select the appropriate default source assignments for all the object attributes. You can define defaulting conditions that control defaulting of object attributes of an object (data object) in given mode of functionality. For example, you may have set up a condition for defaulting to occur one way if the Payment Terms are A, and another way if the Payment Terms are B.

- Defaulting conditions created for an Entity must be based on attributes within that Entity. For example, within the Lines Entity, you cannot use the attribute Order Type because Order Type is a attribute within the Header Entity.

A defaulting rule includes the following components:

- Defaulting Source/Value (Entity and Attribute, Source Type)
- Defaulting Condition
- Precedence of Defaulting Condition (if multiple defaulting conditions exist, precedence determines the condition to use)
- Sequence (in what order is the rule applied if multiple rules exist)
- Source Type and Defaulting Source/Value: (how the attribute value is derived)

## Defaulting Rules

You can define several different rules to use in different order processing situations.

### Sequence of Initial Attribute Defaulting

When attributes have equal sequence numbers, defaulting takes place alphabetically. You can change these sequences, if you need defaulting to happen in some different order. For example, you might define a sourcing rule that says default attribute A on the line from attribute B on the same line. In this case, you need to ensure that the Attribute B is defaulted before A is defaulted, or the rule may not work as you expect.

Alternatively, attribute A can be set up to be dependent on Attribute B. Refer to 'Dependencies' section for further details on how to set this up.

### **Defaulting Rule Sequences**

Specify the priority sequence in which you want to search for a field's defaulting value. Order Management looks at the lowest sequence number initially to begin searching for a default value, and continues to the next highest sequence number until it finds a value. For example, if your first and second sources are null, but your third source contains a value, Order Management uses your third source as the source.

### **Defaulting Sources**

A defaulting rule source is the location from which you obtain a defaulting value; usually the location is another entity and attribute. For most attributes, you can assign at least one entity/attribute defaulting source, in addition to using other defaulting sources.

Defaulting Sources include:

- Same Record
- Related Record
- System Variable
- Constant Value
- Profile Option
- PL/SQL API.

For example, you may want to define a rule to default the Price List to the order header based upon a variety of different sources. Potential defaulting sources include customer agreement, customer, and order type; the potential attribute for all three of these entities would be Price List. You can choose any of the three source entities. Your choice may depend on your business practices, whether those sources exist for a particular order, and whether those sources have a price list defined for them. For the customer, you may have defined separate price lists for the Bill To and Ship To addresses in addition to the customer itself. All three of these fields are available as sources.

## Examples of Defaulting Sources

**Profile Option** The profile option source enables you to use a profile option, either system- or user-defined, as a default value source. You must indicate the name of the profile option to be used as the default value in your rule. Profile options sources enable for flexible default value tailoring without complex customizations.

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**Note:** If you intend to use a profile option as a defaulting source, be certain that it is defined before attempting to reference it in a defaulting rule.

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**Constant Value** The constant value source option enables you to specify a constant value instead of a field that contains a value. This is especially useful if you want your default to be the same value or to be used if no other sources you have defined for your rule can provide a value.

For example, if all items in your organization are sold with the unit of measure *Each*, you could define a defaulting rule to default the value of *Each* for the Unit of Measure attribute within the Order Line entity.

**System Variable** This system variable source option enables you to default system variables or functions of system variables for a field. This is commonly used to default date fields where SYSDATE expression or functions on SYSDATE can be used to default the current date or a function of the current date.

For example if the policy of your organization is to ship all items on the next day, you can setup the Request Date defaulting rule with System Variable as *sysdate + 1*.

**Same Record** Using same record as a source, you can default an attribute from another attribute on the same entity record.

For example a common requirement is to compute tax for an order line based on the scheduled ship date for that line. Set up a defaulting rule for tax date with Same Record source and Source Attribute as Schedule Ship Date.

**Related Record** The Relates Record is one of the most frequently used defaulting sources. Defaults for certain attributes can be setup when defining related object records such as Customer, Ship To, Bill To and Item.

For each attribute that you can use as a default, related record source objects/ source attributes are pre-defined in the system.



For example Order Type can be defaulted from its value on the related objects: Customer, Invoice To, or Ship To. The source attribute in each case would be Order Type.

**PL/SQL API** If you have a complex defaulting rule that cannot be defined using any other defaulting source, you can use the API source. Your logic to derive default values can be coded into your custom PL/SQL API, enabling you to reference you API within a defaulting rule.

See: Defining Defaulting Rules.

### Dependencies

Some attributes are dependent upon the value of other attributes on the same record. Dependencies can be established only among attributes on the same entity, not across entities. The list of available Source Attribute and Dependent attributes is pre-defined; most attributes are available but some are not.

- If an attribute is changed, either by the user or by the system, any attributes that are dependent on it will be cleared and then re-defaulted.

For example, the Freight Terms for the Header Entity is dependent on Agreement. If the Header Agreement is changed, the Freight Terms for the Header entity will be cleared and re-defaulted.

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**Note:** Since the initial release of Oracle Order Management, functionality for Defaulting Rules has been slightly modified. Previous versions of Order Management allowed a change for certain attributes such that if re-defaulting did not determine a default for the dependent attribute, the previous value would be retained instead of clearing the value. Attributes affected are:

- price list
- salesperson
- customer po number
- order type.

For example, the Salesperson for the Header Entity is dependent on Header Customer. If the Header Customer is changed, the Salesperson for the Header entity will be cleared and defaulting rules re-applied.

- Within previous releases, if the new Customer entered does not have a value for Salesperson, the old value was retained.
- In this release and within future releases, Order Management will leave the field Salesperson NULL if a default is not available.

The new functionality surrounding defaulting is available and part of the core Order Management application.

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- If you create a rule for attribute X based on a condition using attribute Y, ensure that attribute Y is defaulted (not manually entered) before attribute X. Please note that if you manually enter Y and want to default X based upon the current value of Y, you will need to define a dependency where the source attribute is Y and the dependent attribute is X.

For example, if you define a Condition for defaulting the Unit of Measure by using the Customer, ensure that Customer is defaulted before the UOM. If you were to enter the Customer and you want Unit of Measure to re-default based on this new Customer value, you must define a dependency for Unit of Measure on Customer.

If you wish to create additional dependencies or disable existing dependencies, you can code a simple customization in the dependencies API

For additional details on dependencies and usage of the APIs within Defaulting Rules, refer to the Order Management white paper *Defaulting Rules Setup*, available on OracleMetaLink, <http://www.oracle.com/support/metalink/>.

## Effects of Modifications to Orders and Rules

Modifications to orders may cause Order Management to re-apply defaulting values from your defaulting rules. This reapplication of defaults also may lead to changes that trigger another default.

If re-application changes a value and results in inconsistent information on the order, Order Management prevents users from committing the order and provides messages to assist in correcting the data. For example, depending on the defaulting rules, changing the line type on the order line could change the price list on the line. If the line items are not in the new price list, Order Management prevents you from committing the order and issues instructions.

Modifications to defaulting rules take effect for any new orders that use the modified defaulting rules when you open the Sales Order Header or Lines windows or if you update an attribute (field) on an order. If you do not or query an order or make a change to an existing order that uses the modified defaulting rules, thus activating validations for defaulting, then the order is not affected by the modification.

- During order and line defaulting, Order Management does not replicate the value of defaulted attributes to all common lower level entities (cascading) when performing updates to existing orders. If you want to change the value of lower level entities for defaulting attributes on existing order or line records, you should utilize Mass Change functionality.

For example, assume you have a defaulting rule set up to default the line-level attribute Ship Method from the order header to all order line. You create an order using Ship Method A, then add several lines. Since you are using Ship Method A for the order header, each subsequent order line created will use the default, Ship Method A. Now, you decide to change the Ship Method for the order header to Ship Method B.

- Changing this attribute at the order header will result in any subsequent new order lines created to use Ship Method B as a default. Existing order lines that have Ship Method A are not updated to Ship Method B as a result of your changing the header attribute.
- Use mass change to update order lines to Ship Method B.

## Generating Defaulting Packages for Rules and Conditions

To generate or update defaulting rules or defaulting conditions, you must submit the Defaulting Generator concurrent program. When you submit the Defaulting Generator concurrent program, a defaulting handler package is generated for each

attribute on each entity. The creation of new rules or conditions, as well as modified rules and conditions are not effective until the defaulting package for the attribute is successfully generated.

The concurrent program must be submitted if you perform either of the following:

- Update an existing defaulting rule.
- Update a defaulting condition: When validation rules for a defaulting condition are updated, defaulting packages need to be re-generated for all attributes of the entity.
- Disable a defaulting condition.

### **See Also**

[Defining Defaulting Rules](#)

[Defaulting Generator Concurrent Program](#)

Order Management Seeded Defaulting Rules Appendix, Oracle Order Management Suite Implementation Manual, Release 11i.

## Defining Defaulting Rules

You can create and modify defaulting rules to improve the efficiency and accuracy with which you enter orders. You can define the rules to determine the source and prioritization for defaulting order information to reduce the amount of information you must enter manually in the Sales Orders window. For most fields, you can assign one or more defaulting sources in a priority sequence, or, if the default is always the same, you can define a constant value.

Updates to defaulting rules take effect once the Defaulting Generator concurrent program has been submitted for the application and entity combination modified and the program successfully completes for the entity combination modified. Existing orders are only affected by updates to defaulting rules if you update an attribute on an order that was included in the modified defaulting rule. If you do not perform a change to an existing order that uses the modified defaulting rules, thus activating validation of defaulting, the order is not affected by the modification.

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**Note:** Seeded defaulting rules can be disabled, but not modified.

If you wish to modify a seeded defaulting rule, disable the seeded defaulting rule condition, and then create a copy of the seeded defaulting rule and include your changes in the copied defaulting rule.

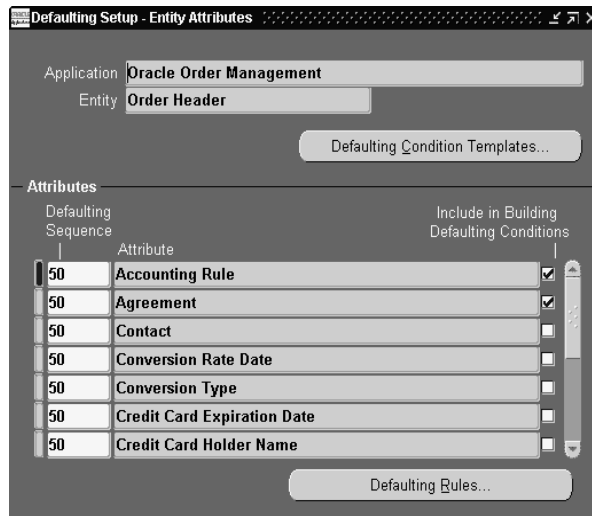
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### ► To query entities and attributes:

1. Navigate to the Defaulting Setup - Entity Attributes window.

The *Defaulting Setup - Entity Attributes* window displays.



### Entity Region

2. Application--The Application field displays the application context for the entity displayed. For Oracle Order Management, the value is “Oracle Order Management”. This field is non updateable.
3. Entity--The Entity field displays the name of the object for which defaulting rules and conditions are being defined such as the order line. For Order Management you have the following options:
  - Order Header
  - Order Line

### Attribute Region

The Attributes Region displays all the entity attributes for which defaulting rules can be defined. You are currently NOT allowed to enter new records here.

4. The Defaulting Sequence field enables a user to assign the sequence (priority) number in which this attribute should be defaulted.

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**Note:** Attribute with identical sequence numbers are defaulted in alphabetical order.

e.g. If the order type has a sequence number of 1 and the price list has a sequence number of 1, then the order type defaults before the price list.

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5. The Attribute field stores the name of available attributes. Values are currently defaulted based upon the entity selected.
6. The Include in Building Defaulting Conditions check box indicates whether an attribute can be used in defining conditions for the entity selected.

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**Note:** The *Include in Building Defaulting Conditions* checkbox is for display purposes only, and is non-updateable.

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7. Save your work.
  - The *Defaulting Condition Templates* button enables you to define defaulting template and conditions for the application\entity combination displayed on the defaulting rules setup window. Selecting this button will take you to the Defaulting Condition Validation Templates window.
  - The *Defaulting Rules* button enables users to define defaulting rules for the attribute selected. Selecting this button will take you to the Attribute Defaulting Rules window. For more information on defining or updating defaulting sourcing rules, see the Define Defaulting Rules section.

Select the *Defaulting Condition Templates* button to define the defaulting condition for this entity.

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**Note:** The template that appears after selecting the Default Condition Template button is based upon current values displayed in the Application and Entity field on the Defaulting Step screen.

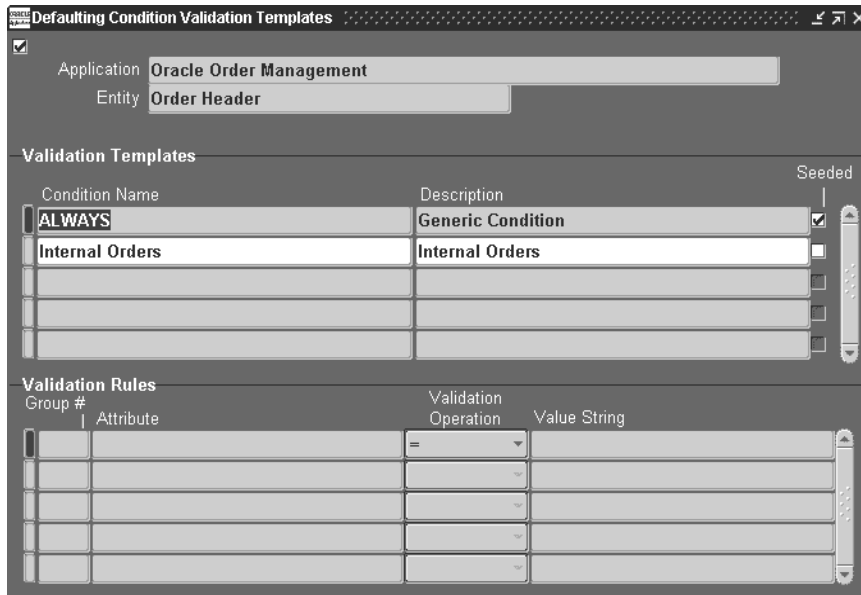
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#### ► To define Defaulting Condition Templates:

1. Navigate to the Defaulting Conditions Validation Templates window.  
The *Defaulting Condition Validation Templates* window displays.



2. Defaulting conditions enable you to define conditions that can be used to dictate how and when an attribute is sourced and defaulted. Select an existing condition name if you wish to update the associated validation rules or add a new condition name with associated validation rules.
3. In the Description field, enter a brief description of the condition.

---

**Note:** A generic condition of *Always* is seeded for each entity. Use this condition to define generic defaulting rules

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4. The Seeded check box will be checked for seeded conditions. This field is protected against update. You cannot update seeded conditions or validation rules associated with seeded conditions, however, you can disable seeded conditions and create your own.

In the Validation Rules Region, enter the validation rules based on the attribute values of the above entity. For example, standard orders could have the order type Standard. Order type = Standard.

5. In the Group Number field:



- For conditions that should together evaluate to TRUE (AND conditions), enter the same group number.
  - For conditions that should together evaluate to OR (OR conditions), enter a different number for each record.
6. Select the Attribute name, such as Order Type.
  7. Select the validation operation: Select from:
    - (>) Greater Than
    - (<) Less Than
    - (>=) Greater than or Equal to
    - (<=) Less than or Equal to
    - (=) Equal
    - (!=) Not Equal
  8. Enter the Value String of the attribute that you want to validate against.
  9. Navigate to the Defaulting Setup - Entity Attributes window.

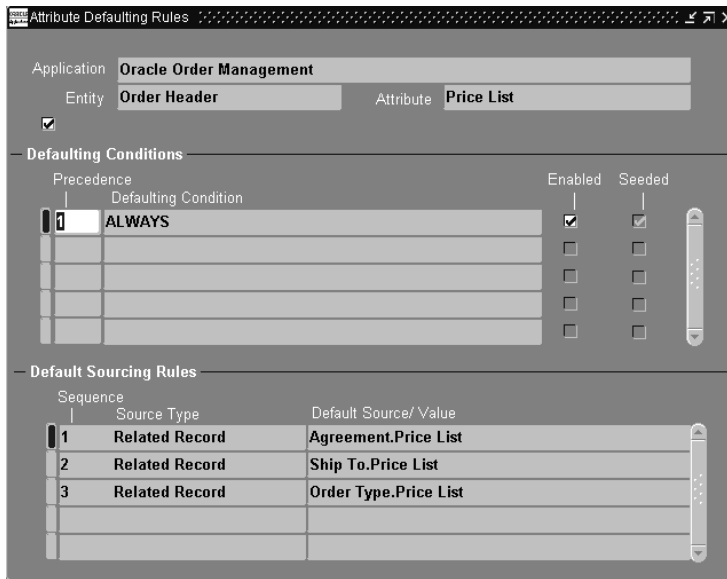
The Attribute name displays in the Attribute field. Descriptive Flexfield attributes will not be displayed.
  10. Save your work.

Select the *Defaulting Rules* button to define your defaulting rules.

■ **To define defaulting rules:**

1. Navigate to the Attribute Defaulting Rules window.

The *Attribute Defaulting Rules* window displays.



### Defaulting Conditions Region

2. Enter a value in the Precedence field to determine the precedence when resolving multiple TRUE defaulting conditions.

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**Note:** If more than one defaulting condition is valid, the conflict is resolved by internally ranking conditions using the Precedence value.

For example, defaulting condition *Standard Order* has a precedence value of two and *Copied Order* has a precedence value of one. If an order is standard *and* a copied order, then the defaulting condition with higher priority, Copied Order, is used initially. If your conditions for *Copy Order* do not return a default, conditions for *Standard Order* will be evaluated.

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3. Select a Defaulting Condition from the List of Values and then enter the defaulting rules to be used if this defaulting condition is TRUE.

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**Note:** The *Always* condition should be the last in this sequence as it would always evaluate to *True* and no other defaulting conditions would be evaluated.

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4. Select the *Enable* check box if you wish to enable the defaulting condition. If this check box is not selected, the defaulting condition is disabled and the rules and condition associated with this condition are not used in default possessing.
5. The check box for the field *Seeded* cannot be updated. This value is seeded by Order Management. For seeded Order Management defaulting conditions, you are unable to update or delete any fields except:
  - the Precedence field on the defaulting rule condition and
  - the *Enable* check box. You can disable seeded Order Management defaulting rules.

### Default Sourcing Rules Region

6. Select the priority Sequence in which you want to retrieve the default for this attribute.

The defaulting process searches for a default for your attribute by evaluating defaulting rules in ascending order.

7. Select the defaulting source type. The defaulting source type determines data entry in the Default Source/Value field.
8. Based on the default source type selected, either select the default sources or enter default values in the Default Source/Value field.

The table below describes Order Management Source Types and the appropriate action required by a user.

| Source Type     | Action required  |
|-----------------|--|
| Constant Value  | Enter the default constant value.  |
| Profile Option  | Select the profile option from where you want to retrieve the default value.   |
| Same Record     | Select the attribute on the same record from where you want to retrieve the default value.   |
| Related Record  | Object--Select the related object.<br>Attribute--Select the attribute on the related object from where you want to retrieve the default value. |
| System Variable | Expression--Enter the system expression to be evaluated to obtain the default value. (E.g. System Date.)                                       |

| Source Type | Action required   |
|-------------|---|
| PL/SQL API  | <p>You can write a custom API to obtain a default value if the value cannot be obtained using other source types such as, the default order number from a sequence.</p> <p>Package--Enter the PL/SQL package name.</p> <p>Function--Enter the function name.</p> <p>Object--Optionally, enter the name of an object to be passed to this API.</p> <p>Attribute--Optionally, you can also enter the name of an attribute to be passed to this API. (See the PL/SQL API Procedure below.)</p> |

## 9. Save your work.

### Caution

If defaulting rules or conditions are updated, the Defaulting Generator concurrent program must be run to generate new defaulting packages.

- If you update an existing defaulting rule or condition from within the Defaulting Rules window and the update is saved, a pop up window will display a note reminding you to submit the Defaulting Generator concurrent program.
- Choose to submit the program by selecting Defaulting Generator from the Tools menu while within the Defaulting Rules window, or from the Order Management SRS window.
- To generate the Defaulting Generator concurrent program for an Entity, you must go to the Requests form and select your entity. This will happen rarely in a production environment, but when necessary, it is recommended that all users briefly log off the system while the entity package is being re-generated. Otherwise, you may encounter record locking constraints, and the defaulting package may not generate successfully. It is unlikely that users will need to log off the system when a package is being re-generated for an attribute only.

You may execute the Defaulting Generator concurrent program while users are still on the system, although the defaulting package may not generate successfully. This can be due to the package currently being called by other users who are processing orders on the system. Common errors within the output log file for this concurrent program may contain text that a time-out occurred while waiting to lock object.

If defaulting packages do not generate successfully, you must choose to run the program at a later time, or to have users briefly log off the system while defaulting packages are regenerated.

See: [Defaulting Generator Concurrent Program](#).

### Defaulting Rule Example

Here is an example of a defaulting rule that you can define so that a specific *Price List* will default to the Sales Order Header window. You may also define a sequence (priority) in which you want Order Management to search for a Price List.

The default sequence can also be complex. For example

Look on an Agreement for a Price List, followed by the Invoice To Location, then the Ship To Location, then the Customer, and finally, the Order Type. If Order Management still does not find a price list for any of the source locations listed (Invoice-To, Ship To, Customer, Order Type), you can have a *Constant Value* default, such as *1998 USA Prices*, which you enter in the Value field of the Attribute Defaulting Rules window.

The table below corresponds to the example stated above.

| Sequence | Defaulting Sources    | Source Field or Value          |
|----------|-----------------------|--------------------------------|
| 1        | <i>Related Record</i> | Agreement.Price List           |
| 2        | <i>Related Record</i> | Invoice To Location.Price List |
| 3        | <i>Related Record</i> | Ship To Location.Price List    |
| 4        | <i>Related Record</i> | Customer.Price List            |
| 5        | <i>Related Record</i> | Order Type.Price List          |
| 6        | Constant Value        | 1998 USA Prices                |

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**Suggestion:** Oracle Order Management does not recommend that you define any overly complex or recurring defaulting rules.

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### PL/SQL API Procedure

The signature of the PL/SQL API is:

```
p_attribute_codeVARCHAR2)
```

```
return VARCHAR2
```

The table below describes Order Management entities, their associated entity code, and the database object called when the entity is processed within an Order Management.

| Entity       | Entity Code | Database Object       |
|--------------|-------------|-----------------------|
| Order Header | HEADER      | OE_AK_ORDER_HEADERS_V |
| Order Line   | LINE        | OE_AK_ORDER_LINES_V   |

For example:

Function to default order number from a sequence based on the order type:

```
Function Get_Order_Number(p_database_object_name IN VARCHAR2,
    p_attribute_code IN VARCHAR2)
    return varchar2
IS
    l_header_rec OE_AK_ORDER_HEADERS_V%ROWTYPE;
BEGIN
    -- Getting the defaulting global record
    l_header_rec := ONT_Header_Def_Hdlr.g_record;
    -- for internal orders, use this sequence but for all other order types use the --
    sequence for STANDARD orders.
    if l_header_rec.order_type_id = 1 then
        return to_char(OE_INTERNAL_ORDERS_S.nextval);
    else
        return to_char(OE_STANDARD_ORDERS_S.nextval);
    end if;
END;
```

### See also

[Defaulting Generator Concurrent Program](#)

Order Management Seeded Defaulting Rules Appendix, Oracle Order Management Suite Implementation Manual, Release 11i.

## Overview of Credit Checking

The ultimate goal of Credit Management processes is to minimize the financial risk that your organization assumes as a result of day-to-day operations. Order Management's credit checking feature is the process by which orders are validated and released against your credit checking business rules. Using credit rules, system parameters, and credit profiles, Order Management credit checking verifies that your customer has a sufficient credit availability with your organization to allow orders to be processed and shipped in advance of payment.

Order Management enables you to perform credit checks on customer orders or order lines, and automatically hold orders or lines that violate your credit setup. Using Order Management credit checking effectively requires a complete understanding of the functional components as well as a careful consideration of timing and performance factors. For example,

- You can choose to perform credit checking automatically at pre-specified workflow events against real time transactional data or pre-calculated summary exposure amounts. Pre-calculated exposure amounts can be either:
  - Real time transactional data summarized at a specific point in time.
  - Exposure amounts imported into Oracle Order Management exposure tables.
  - Real time transactional data summarized at a specific point in time plus exposure amounts imported into Oracle Order Management exposure tables.
- You can choose to perform credit checking across orders with different currencies within a single organization, specifying the currencies to include when calculating overall exposure amount.
- You can choose to perform credit checking at the customer account level, across all operating units within your system.
- You can choose to perform credit checking on external transactions utilizing the credit check processes and exposure balances maintained within Oracle Applications.

Order Management Credit checking includes:

- Validating orders and lines against existing credit limits to enable continued flow through order and line workflows.
- Placing credit holds at either the order or line level, including notifications to appropriate parties of credit holds.



- The functionality to either manually release or schedule credit reassessment processes for order or line credit holds.
- Approvals for orders that exceed credit limits.
- Reporting and querying tools to effectively manage your credit processes and ensure credit holds are processed in a timely manner.

Depending upon your business practices, you may not want to perform credit check for all orders, but rather only those orders that could pose a credit risk. Orders that could be exempted from credit check can be:

- Orders of a given type. For example, you may want to exclude staff sales or internal sales orders from credit checks. Credit checking rules are assigned to order types. While setting up order types, if the credit check rule fields are left blank, this would automatically exclude orders of that type from credit check.
- Orders for a given customer. For example, a manufacturer may wish to exclude all orders from its largest customer from credit check. With Order Management and Oracle Receivables, excluding a specific customer from a credit check can be achieved by disabling the Credit Check flag for this customer in the individual customer profile.
- Orders for a given class of customer. For example, a manufacturer may wish to exclude all orders from internal customers from credit check. You can group all your internal customers into one Customer Profile Class, and then set up credit checking rules to exclude that profile class of customer. With Order Management and Oracle Receivables, while setting up a customer profile class, you can disable the Credit Check flag. Customers that have this customer profile class assigned to them would then be excluded from credit check.
- Orders for a given customer billing address. For example, a manufacturer may wish to exclude orders that will be invoiced to one of its' largest customer corporate headquarters from the credit check process. With Order Management and Oracle Receivables, the individual bill-to sites can have a different transaction profile from the parent customer. While setting up the bill-to site profile, enabling the Credit Check flag determines whether orders billed to that address will be credit checked.
- Order lines with a given payment term. For example, order lines with a cash on delivery payment term can be excluded from the credit checking process. With Order Management and Oracle Receivables, the payment terms also have a Credit Check flag. Disabling this flag will automatically exclude order lines with that payment term from the credit evaluation. Only those lines that have

payment terms with credit checking turned on are compared against the credit limits.

- Order lines that are paid via Commitments. These lines are in effect prepaid, so you do not need to credit check them.
- Orders with payment type = *Credit Card*. These orders will have credit card authorization in place of credit checking.

When using Oracle Order Management to define your credit management policies, you should familiarize yourself with the following Oracle credit check concepts:

- Credit Profile
- Credit Check Rules
- Credit Usage Rules

### **Credit Checking Components**

The Credit Check process can be performed for orders or order lines, and the determination on whether credit checking is performed is based upon all of the following:

- the credit check rule definition and order type the definition is attached to
- order or line payment terms.
- enabled credit profiles.

Credit Checking will only occur for an order or line when all three levels enable credit checking. If one level disregards credit checking, credit checking does not occur for the order or line.

### **Credit Exposure**

When you perform credit checking in Order Management, you determine what type of exposure to use when determining credit worthiness. Order Management enables you to perform credit checking against real time transactional data or current exposure amounts stored in exposure summary tables.

- Real time transactional data is all related transactions which are summarized at the point credit checking is invoked.
- Current (pre-calculated) exposure amounts can be either:
  - Real time transactional data summarized at a specific point in time *or*
  - Exposure amounts imported using the Credit Exposure Import concurrent program.

When defining your Credit Check rules, you specify the type of exposure to utilize when performing credit checking.

### **Credit Check Rule Definition**

Credit Checking Rules within Order Management enable you to determine credit worthiness of orders when performing credit checking, and provide you with various options in determining your customer's credit exposure.

Credit Check Rules are attached to Order Management Transaction Types. Within the Transaction Type window, credit check rules are assigned to pre-specified workflow events that trigger the credit checking process. For example, you might want to perform a high-level credit check before booking, but you may want to apply more specific controls before shipping the product to your customer.

In Order Management, separate credit checking rules can be assigned for use at the time of booking, pick release and purchase release (for drop shipments), packing, or shipping within corresponding order or line workflow processes. You can also choose to perform credit checking at multiple points within an order or line workflow processes by selecting credit check rules for a combination of booking, pick release and purchase release (from drop shipments), packing, or shipping.

Order Management Credit Check Rules enable and control:

- credit check level
- credit check hold level
- currency conversion type used during exposure calculations
- the exposure method used for validating credit checking
- whether to include open receivables balances, uninvoiced order balances, freight and special charges, or taxes
- Hold management procedures
- notifications of credit holds to appropriate personnel.

See: [Defining Credit Checking Rules](#)

### **Credit Checking Rule Level**

The Credit Check process can be performed at sales order header or sales order line level. Additionally, the payment terms used for orders and order lines must be enabled for credit checking to occur. See Payment Terms.

1. **Order Header Level:** Order Level credit check uses exclusively header level information ignoring different bill-to sites detailed at line level. Order level credit check uses the credit profile attached to the customer Bill-to site defined at order (header) level. Credit checking will use order totals and will evaluate credit exposure against the credit profile attached at header level, and holds are always applied at header level.

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**Note:** Sales Order header level credit checking enables backward compatibility with previous credit check versions.

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2. **Order Line Level:** Line level credit check uses data at the sales order line level. If you have sales order lines that are attached to different Bill To sites and if you want to use the specific credit profiles attached to those Bill To Sites, you should use Sales Order Lines level credit check.

Additionally, you could use line level credit check when you have defined customer relationships in your system and you actively use them in Order Management. In this situation, you are able to create a sales order whose lines could be attached to different bill-to sites owned by different customers.

#### **Credit Checking Rule Hold Level**

You can choose to place credit holds for orders or lines that fail credit check validations at either the sales order or sales order line if you use order line level credit checking. Credit checking holds are automatically placed based upon your credit rule definition, and you can automatically release order or order line credit holds when a customer's credit exposure has been reduced to a point that enables credit checking validation to pass successfully. You automatically release credit holds by scheduling the Credit Check Processor concurrent program to run at specific intervals.

#### **Credit Checking Rule Override Manual Release (check box)**

In previous releases of Oracle Order Management, you had the ability to manually release order or line credit check holds that were placed by credit check process. However, no additional credit checking of manually released credit holds occurred.

You can now specify whether or not you wish to enable additional credit checking if an order or line credit check hold was released manually. The Override Manual Release check box, used in conjunction with Days to Honor Manual Release field, enables you to define the duration (number of days) you will forego additional credit checking if an order or line credit check hold is released manually.

Your Order Management Transactions Type definitions will control whether or not additional credit check processing can occur for manually released holds (credit check rules entered for booking, pick release and purchase release (for drop shipments), packing, or shipping within your transaction type definitions).

#### **Credit Checking Rule Days to Honor Manual Release**

This field, in conjunction with the Override Manual Release check box, enables you to define the duration (number of days) manually released holds will be honored and not overridden by additional credit checking processes.

For example, suppose you have defined a credit check rule in which you have enabled the Override Manual Release check box, with a value of 15 within the Days to Honor Manual Release field. Assume that this credit check rule is assigned to the transaction type as a credit check rule for booking and shipping. If you manually release an order or line from credit check hold after booking, and if you ship the order or order line within 15 days, Order Management will not enable credit checking to occur again. However, if you ship after Day 15, then Order Management will enable the credit checking process to be invoked again.

#### **Credit Checking Rule Conversion Type**

Conversion types for credit check rules enable you to model a fixed exchange rate between currencies or use an average exchange rate. When performing credit checking, the credit limit currency does not necessarily have to be the same as the functional currency. Conversion types are limited to the values you define within the Oracle General Ledger Conversion Rate Types window.

#### **Credit Checking Rule Exposure**

You can choose how you wish to validate credit worthiness during credit checking by determining the exposure method used.

Previous versions of credit checking calculated customer exposure accessing underlying transactional tables. When a credit check request was executed, underlying transaction tables were summed to generate customer balance information.

In order to improve performance, Oracle Order Management has incorporated an additional option, the use of pre-calculated exposure. Using this option, credit checking will validate exposure against balance information stored in a summary table. The summary table is updated as often as your business practices require, and updates to the table are performed by submitting a concurrent program. This program accesses both Oracle Receivables and Order Management transactional

tables, and should be scheduled to run periodically, based on your specific business needs.

#### **Credit Checking Rule Values to include within exposure calculation**

Your credit checking rule definition can include or exclude the following credit related details when calculating credit exposure:

- open receivables balances
- uninvoiced order balances
- freight and special charges
- taxes
- payments at risk

#### **Credit Checking Rule Notifications**

You can choose to send notifications whenever a sales order or order lines fails credit check. The notification is sent to the person who created the order.

#### **Order Management Order Transaction Type**

Order Management Order Transaction Types enable you to also control when credit checking occurs and the credit check rule to be utilized when calculating credit exposure (outstanding credit balance) by assigning credit check rules to Order Management Transaction Types.

When you assign a credit check rule to a transaction type within the Order Management Transaction Types window, you enable credit checking for all orders or order lines which use the order type. Select a credit check rule for an order type by selecting a credit check rule within the Booking, Pick Release and Purchase Release (for drop shipments), Packing, or Shipping fields of the Credit Check Rule region.

You can assign the same credit check rule to a single function (field), multiple functions, or all functions, or use a different credit check rule for each function, depending upon your business needs.

#### **Payment Terms**

Payment Terms specify the due date and discount date for payment of an invoice. Payment terms also enable you to choose whether or not the payment term will be used for controlling credit checking. Each payment term can be enabled for credit

checking by selecting the *Credit Check* check box for the payment term so you never unnecessarily perform credit checking.

All orders, except orders with a Payment Type of *Credit Card* are included when exposure calculations are performed, regardless of their payment terms. If an order is to be paid by credit card and has already been approved (approval date not null) it will never be included in exposure.

### Credit Profiles

Credit profiles define the maximum financial risk you are willing to withstand on your regular operations. The *Credit Check* check box in the credit region of the Standard Customer window (for the customer master record) must be enabled in order to perform credit check. You can define the credit profile information at the following levels:

- **Customer and Customer Site:** This profile defines your credit policies for individual customers or customer sites. You can accept the default credit policies from a Customer Profile Class, or you can customize credit limits to fit the particular customer.

You can implement credit policy changes by modifying a Profile Class and cascading the changes to individual Customer Profiles. Check current limitations for multi-currency credit check set up.

- **Organization:** This type of Credit Profile is used to define an organization's (operating unit) credit policy for credit control and credit checking. It is used as a default when customer/customer site credit profile is missing.

Organization Default provides a higher level in the customer profile hierarchy (customer site - customer - organization default), and the fulfilled credit profile at operating unit level enforces credit checking for any customer which does not have credit limits defined at the customer or site level.

- **Item Category:** Item Category Credit Profiles enables you to define credit information by Order Management Item Category.

Item Category credit profile is completely independent from customer credit profiles. Item-category credit check will place a credit hold for transaction amounts over pre-defined category credit limits.

Item Category credit profiles can be used to model credit limits such as service line for insurance coverage which can prevent you from shipping materials that exceed a pre-defined monetary limit.

There is an embedded hierarchy provided by credit checking routines for establishing credit information between the following entities:

- Customer Site
- Customer
- Organization Default

When customer site and customer credit profiles do not exist, the Organization Default credit profile is used, if it exists.

### **Global Credit Checking**

With this release, Oracle Order Management enables you to perform global (across multiple operating units) credit checking. Global credit checking ensures that all organizational data, irrespective of the operating unit, is considered during the credit checking process. You enable global exposure credit checking if you select the Global Exposure checkbox when defining Credit Usage Rules.

Global Credit checking is currently only enabled at the following levels in the credit checking hierarchy:

- 1. Customer level credit checking: Global credit checking will use the overall credit limit defined at the customer level for all operating units.
- 2. Organization (org) Default level credit checking: Global credit checking will use the overall credit limit defined at the organizational level for all operating units within the organization.

The credit check engine will identify the overall limit (which level within hierarchy) to utilize for credit checking, calculate the credit exposure for all the operating units, and then validate the calculated exposure against the overall credit limit selected.

### **Multi-currency Credit Check**

You can perform multiple currency credit checking by sharing credit limits across currencies you specify.

With Single currency credit check you must define a credit limit profile in each currency if you want to control your customer exposure in that currency. In other words, every currency is treated individually for credit check purposes.

With Multi-currency credit checking, you need to define just one credit profile (i.e. in US dollars) and share it among the other currencies.



### Multi-currency Terminology

- Usage Rule Sets: Usage rule sets define the set of currencies that are involved in a specific credit check process. A usage rule set specifies which transactions (based upon transaction currency) qualify for use with a credit limit.

Usage Rule Sets can be assigned to a customer profile class, or credit profiles: customer, customer site, item category, or organization. If you do not assign a credit usage rule set to your credit profiles, then the credit checking is performed as Single currency credit check.

### Support for Credit Checking External Transactions against exposure balances maintained within Oracle Order Management (OE\_EXTERNAL\_CREDIT\_PUB)

With this release, Order Management enables you to perform credit checking of external amounts utilizing the Oracle credit check process and exposure balances maintained within Order Management. The API essentially perform the same credit checking process as the Order Management credit check engine except for the differences listed in the table below:

| OM Credit Check Engine  | Check External Credit API   |
|---|---|
| Validate if the item categories flag is enabled for the credit check rule. If, enabled, perform item category credit check for each item category of the sales order.               | Item category limits will not be checked. The API will give an error if the credit check rule has the item categories flag enabled.   |
| Check that the Credit Check flag is specified for the customer profile and payment term. If either of these items are not enabled, do not perform credit check for the sales order. | Ignore the Credit Check flag setting at the Payment term. Only the Credit Check flag specified at the default/customer/site credit profile is validated to see if credit checking will be performed.<br><br>For anything else, it is assumed that credit check is needed when the API is called. It is up to the calling program to determine credit check should be done or not. |
| The credit check level (order / line) selected for the credit check rule setup determines what level the credit engine will perform.  | The API will only allow credit check rules that utilize order level credit checking; the API does not support line level credit checking and will error out if a line level credit checking rule is provided.   |

| OM Credit Check Engine  | Check External Credit API  |
|---|--|
| If the Send Holds Notification check box is enabled for the credit check rule, the credit check engine will send a workflow notification to the creator of the sales order when a credit hold is placed on the sales order. | The API will not send any notifications. It will ignore the Send Hold Notifications flag set at the credit check rule.   |
| When an order fails credit check, it is placed on credit check hold. The hold contains the reason for the failure.  | When an order fails credit check, a reason is returned to the calling program in addition to the Failure result. It is up to the calling program to take appropriate action, such as placing the sales order on credit check hold. |

Given a credit check rule, a bill-to site, and the transaction amount and currency, the API will credit check the amount against the credit limits and exposure within Oracle Applications and return the result of the credit check. The calling routine then can perform the appropriate action depending on the result of the check.

You must create a custom program that can execute PL/SQL procedures to utilize the Check External Credit API. For each sales order in the external system, a call will need to be made to the Check External Credit API to credit check against the exposure data stored inside Oracle Order Management. Prior to executing the call, ensure the following:

- Group all the lines for the external transaction into a single amount and single currency, along with the credit check rule to utilize.
- Determine appropriate customer (Bill To site) within Oracle Applications to associated your external transactions with.

The API will return the result of the credit check.

- Depending on the result of the check, the custom program can take the appropriate action for the sales order such as place a credit hold on it.

**See Also**

[Defining Credit Profiles.](#)

[Defining Credit Usage Rule Sets.](#)

[Assigning Credit Usage Rule Sets.](#)

[Credit Check Processor Concurrent Program](#)

[Initialize Credit Summaries Table Concurrent Program](#)

For additional details surrounding implementing Order Management Credit Checking, please refer to the Order Management White Paper, Credit Checking in Order Management, available on OracleMetaLink, <http://www.oracle.com/support/metalink/>.

## Defining Credit Profiles

Organization Credit Profiles are a set of criteria that define an operating unit's credit policy for credit control and order credit checking. Credit Profiles include the credit limit and pertinent data needed to determine total credit exposure for orders undergoing credit checking.

Credit Profile Limits Hierarchy when performing credit checking:

- Customer Site Profile
- Customer Credit Profile
- Operating Unit Default Credit Profile

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**Note:** Item Category Credit Profiles are used if you enable Item Category Credit Check for a credit check rule.

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The Credit Profile window enables users to create and maintain credit information for Operating Units and Item Categories.

Operating Unit Default Credit Profiles can assist in further defining your credit policies by providing global defaults if no other information is present during credit checking.

To create a new credit profile, users must specify what type of credit profile to create, and depending on the credit profile type chosen, appropriate fields within the window become updateable or non-updateable.

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**ATTENTION:**

- You cannot define Credit Profiles for Customer or Customer Site by directly navigating to the Credit Profile window.
  - Credit Profiles for Customer and Customer Sites are initially defined when entering credit information in the *Credit* section of the *Profile-Transactions* tab of the Customer and Customer Site windows. See Oracle Receivables, [Customers](#).
  - You must then assign a Credit Usage Rule to your Customer or Customer Site if you want to enable multi currency credit check. See [Assigning Credit Usage Rule Sets](#).
- 
-

## Credit Profile Types

- **Customer:** Enables you to define credit limits by currency for Customers.
- **Customer Site:** Enables you to define credit limits by currency for Customer Sites.
- **Operating Unit Default:** Enables you to set credit limits and terms, by currency, within a given operating unit.

*Operating Unit Default* Credit Profiles enable you to effectively enforce a formal credit checking process for all order transactions/currencies from any customer, provided you define an *Operating Unit Default* Credit Profile for each currency you process order transactions for.

For example, if a transaction is entered and no credit limits exist at the customer or customer site levels for the specified order currency, the *Operating Unit Default* Credit Profile for the transaction/currency entered will be used to determine credit availability.

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**Note:** The Operating Unit Credit Profile is used as the default profile for all customers that do not have an individual credit profile either at customer or site level.

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- **Item Category:** Enables you to set order credit limits, by currency, for one or more Item Categories. This type of profiles enables you to specify limits for the maximum amount on each order for an item category irrespective of a customer or site.

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**Note:** Only categories associated with the default category set for the Order Management functional area are supported.

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Unlike the Operating Unit Default Credit Profile that defines credit limits for specific operating units, Item Category Credit Profiles are applicable *across* operating units. Item Category profiles are global credit profiles and are transaction currency based: the credit limits defined for an item category are for individual transactions (orders) only. There is no overall system credit limit for a category.

Item Categories enable you to set order credit limits/profiles for one or more item category (applicable for all customers). For example, an Item Category Credit Profile can specify that the maximum order value cannot

exceed \$10,000 USD for any order lines that contain an item associated with the Item Category *Computers*. This is extremely useful if your business practice requires item-based insurance coverage.

**To define Credit Profiles:**

1. Navigate to the Define Credit Profiles window.

The *Credit Profiles* window displays.

The screenshot shows the 'Credit Profiles' window with the following details:

- Profile Section:**
  - Credit Profile Type: Operating Unit Default (dropdown)
  - Operating Unit: Vision Operations (dropdown)
  - Effective Date From: 01-DEC-2001 (text field)
  - Effective Date To: 25-DEC-2001 (text field)
  - Item Category: (empty dropdown)
  - Enabled:  Enabled (checkbox)
- Credit Section:**
  - Credit Rating: (empty text field)
  - Tolerance: 0 (text field)
  - Next Review Date: (empty text field)
  - Credit Check:  Credit Check (checkbox)
  - Credit Hold:  Credit Hold (checkbox)
- Currency Credit Limits Section:**

| Currency | Order Credit Limit | Overall Credit Limit |
|----------|--------------------|----------------------|
| EUR      | 20,000.00          |                      |
| JPY      | 0.00               | 0.00                 |
| USD      | 1,500.00           | 3,000.00             |

Assign Rule Sets (button)

2. Select a value for your Credit Profile Type in the *Credit Profile Type* field. Valid Values are
  - Item Category
  - Operating Unit Default

Based upon the *Credit Profile Type* you chose, certain fields become protected or non-updateable.

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**Note:**

- If *Credit Profile Type* = *Operating Unit Default*, the *Item Category* field is disabled.
  - If *Credit Profile Type* = *Item Category*, the *Overall Credit Limit* field is disabled.
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- 

Enter remaining fields that require a value, or update any fields that contain a default value based upon the *Credit Profile Type* selected:

- ***Operating Unit:***

Select an *Operating Unit* name from a list of values if you are defining a *Operating Unit Default Credit Profile*.

- ***Item Category:***

Select an *Item Category* name from a list of values if you are defining an *Item Category Credit Profile*.

- ***Effective Date From/ Effective Date To:***

Select the *Effective Date From* and *Effective Date To* for your *Credit Profile*.

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---

**Note:** When defining *Credit Profiles* for *Operating Unit Default* and *Item Category*, the *Effective Dates From/To* cannot overlap previously defined *Credit Profiles* for the same *Operating Unit Default* or *Item Category*, regardless of the currency.

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- **Tolerance:** Enter a numeric value in the *Tolerance* field. Tolerance values are used to calculate extended exposure limits during credit checking.

For example, supposed you enter a value of 5 for *Tolerance*, and an *Credit Limit* of \$10,000 USD. During credit checking, the exposure credit limit would actually be \$10,500 USD.  $((\text{Tolerance} + 100) * \text{Credit Limit} / 100)$ .

- **Currency:** Select a value in the *Currency* field to limit the *Credit Profile* to a specific currency.

- **Order Credit Limit:** Enter a value in the *Order Credit Limit* field, based upon the Credit Profile Type. New orders may not exceed the value entered in the *Order Credit Limit* field if the checking processing defaults to the operating unit level.
- **Overall Credit Limit:** Enter a value in the Overall Credit Limit field for a a Operating Unit Default Credit Profile Type. Total exposure within an operating unit for the particular customer may not exceed the value entered in the *Overall Credit Limit* field if credit checking processing defaults to the operating unit level.

The following fields are for future use and are for information purposes only. Values that are ignored during the credit checking process are:

- Credit Check
  - Credit Hold
  - Credit Rating
  - Next Review Date
3. If you wish to enable multi currency credit check, you must assign Credit Usage Rule Sets to your Credit Profile. Select the *Assign Rule Set* button. The *Assign Rule Set* button is only enabled for the following Credit Profile Types:

- Item Category
- Operating Unit Default

To assign Credit Usage Rules to Customer or Customer Sites Credit Profile Types, you must use the *Assign Credit Usage Rules* window.

[See: Assigning Credit Usage Rule Sets.](#)

Oracle Order Management Suite Implementation Manual, Release 11i,  
Assigning Credit Usage Rule Sets

4. Save your work.

#### **See Also**

[Defining Credit Usage Rule Sets.](#)

[Assigning Credit Usage Rule Sets.](#)

[Credit Check Processor Concurrent Program](#)

[Initialize Credit Summaries Table Concurrent Program](#)



For additional details surrounding implementing Order Management Credit Checking, please refer to the Order Management White Paper, Credit Checking in Order Management, available on OracleMetaLink, <http://www.oracle.com/support/metalink/>.

## Defining Credit Usage Rule Sets

The Define Credit Usage Rules window enables a user to create and maintain credit usage rule sets that can be assigned to Credit Profiles.

Credit Usage Rule Sets define the set of currencies that will share a predefined credit limit during the credit checking process, and enable the grouping of currencies for global credit checking. Usage Rules Sets ensure that if credit checking is enabled, that all transactions for specified currencies go through the currency conversion process and are summarized by currency prior to the credit checking process.

- You can define a usage rule set for a single currency or multiple currencies.
- You can choose to assign a global usage rule (all currencies) and then exclude one or more currencies from the rule set.
- You can choose to define multiple usage rules for multiple currencies within the usage rule set.
- You can choose to add or delete new Currency records for an existing Usage Rule Set.

Usage rule sets consist of *at least* one usage rule/currency combination, and once a rule set is assigned to an Oracle Entity, the rule set provides processing defaults for determining credit availability during multiple currency credit checking processing routines.

### ■ To define credit usage rule sets:

1. Navigate to the Define Credit Usage Rules window.

The *Define Credit Check Usage Rules* window displays.

Define Credit Usage Rules

Usage Rule Set Name

Global Exposure

| Usage Type | Currencies | Exclude [ ]              |
|------------|------------|--------------------------|
|            |            | <input type="checkbox"/> |
|            |            | <input type="checkbox"/> |
|            |            | <input type="checkbox"/> |
|            |            | <input type="checkbox"/> |
|            |            | <input type="checkbox"/> |
|            |            | <input type="checkbox"/> |
|            |            | <input type="checkbox"/> |
|            |            | <input type="checkbox"/> |

2. Enter a name for you rule set in the *Usage Rule Set Name* field.
3. Select the Global Exposure check box if you wish to enable the Usage Rule Set for global exposure (across operating units). The default value for this check box is un-checked (do not enable Global Exposure for the usage rule set).

If you are unable to select the Global Exposure check box, submit the Credit Limit Usages Report. Review the report output and un-assign any usage rule sets with different Global Exposure options for the same credit profile.

4. Select the value *Currency* in the *Usage Type* field.
5. Enter a currency in the *Currency* field.  
The *Currency* field can contain any Currency Code currently defined. The *Currency* field may also use the lookup *All Currencies* to indicate the usage rule is for all currencies defined.
6. Chose to exclude a specific currency for your usage rule by selecting the *Exclude* check box. The default is unchecked, or No.

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**Note:** If the field *Currency* has value of *All*, the *Exclude* check box is non-updateable.

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7. Save your work.

**See Also**

[Defining Credit Profiles](#)

[Assigning Credit Usage Rule Sets.](#)

[Credit Check Processor Concurrent Program](#)

[Initialize Credit Summaries Table Concurrent Program](#)

For additional details surrounding implementing Order Management Credit Checking, please refer to the Order Management White Paper, Credit Checking in Order Management, available on OracleMetaLink, <http://www.oracle.com/support/metalink/>.

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**Attention:**

Given a customer with the following credit profiles:

- FRF (french francs) credit limit
- EUR (euro) credit limit assigned to a european set of currencies that includes FRF (using the new multicurrency feature - usage rule sets)

The credit checking process for a transaction in FRF is determined by the credit check engine; perform multi-currency credit check if a Credit Usage Rule Set assignment has been defined.

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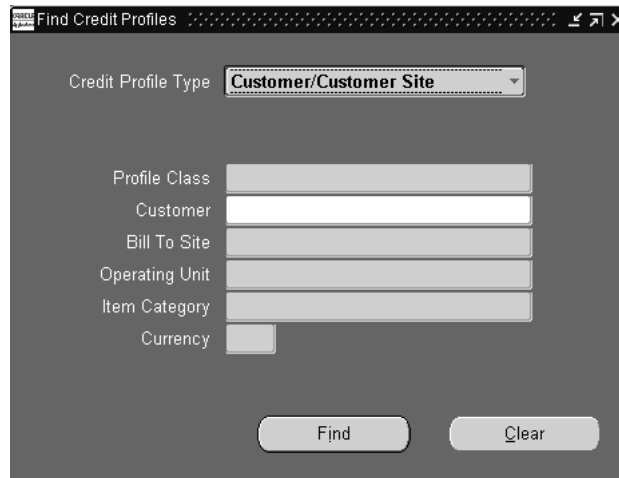
## Assigning Credit Usage Rule Sets

The Assign Credit Usage Rules form enables a user to assign credit usage rules sets for multiple currency credit checking to Credit Profiles.

### ► To assign credit usage rules:

1. Navigate to the Assign Usage Rules window.

The *Find Credit Profiles* window displays.



The screenshot shows a window titled "Find Credit Profiles". At the top, there is a dropdown menu labeled "Credit Profile Type" with the selected value "Customer/Customer Site". Below this, there are several input fields: "Profile Class" (disabled), "Customer" (active), "Bill To Site" (disabled), "Operating Unit" (disabled), "Item Category" (disabled), and "Currency" (disabled). At the bottom of the window, there are two buttons: "Find" and "Clear".

### Find Credit Profiles Window

Before you can assign a Usage Rule Set to a Credit Profile, you must first select the Credit Profile Type and then locate the corresponding Credit Profiles.

Certain query processing logic has been disabled within the Find Credit Profiles window;

- If the value of the Credit Profile Type field is *Profile Class*, then fields Operating Unit, Customer, Bill To Site, and Item Category are *disabled*.
- If the value of the Credit Profile Type field is *Customer*, then fields Profile Class, Operating Unit, and Item Category are *disabled*.
- If the value of the Credit Profile Type field is *Operating Unit Default*, then fields Profile Class, Customer, Bill To Site, and Item Category are *disabled*.

- If the value of the Credit Profile Type field is *Item Category*, then fields Profile Class, Operating Unit, Customer, Bill To Site, and Overall Credit Limit fields are *disabled*.

Once you have entered your search criteria, select the *Find* button to either locate your existing credit profile usage rules or to define new usage rules for an existing profile.

The *Assign Credit Usage Rules* window displays.

| Rule Set Name | Included Currencies | Excluded Currencies |
|---------------|---------------------|---------------------|
|               |                     |                     |
|               |                     |                     |
|               |                     |                     |
|               |                     |                     |
|               |                     |                     |

2. The data appearing in the upper region of the window defaults from the Credit Profile you have queried. This information is protected against update.
3. The multi-row section of the Assign Usage Rules window enables you to select Credit Usage Rule Sets to use with the credit profile.

You select a *Name* from the List of Values, and the included and excluded currencies fields will display currencies that the usage rule set consists of. These values are protected against update from this window.

For detailed field information, see *Defining Credit Profiles*, Step 3 and 4.

4. Save your work.

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**Note:**

- Upon saving your usage rule assignments, a message is displayed to ask if you wish to cascade changes to usage rule assignments for existing customers with the Customer Profile Class you are saving.
  - New customers created using Customer Profile Classes with previously defined credit usage rules do not automatically inherit the Customer Profile Class usage rule assignments. You must manually create these assignments.
- 
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**See Also**

[Defining Credit Profiles.](#)

[Defining Credit Usage Rule Sets.](#)

[Credit Check Processor Concurrent Program](#)

[Initialize Credit Summaries Table Concurrent Program](#)

For additional details surrounding implementing Order Management Credit Checking, please refer to the Order Management White Paper, Credit Checking in Order Management, available on OracleMetaLink, <http://www.oracle.com/support/metalink/>.



## Defining Credit Check Rules

### Overview

Order Management credit check rules enable you to determine what credit checking criteria is used when determining credit exposure during the credit checking process. Order Management transaction types determine when credit checking actually occurs, and when used in conjunction with credit checking rules, define your credit checking process.

For example, you can define credit checking rules that utilize pre-calculated exposure information to use when comparing a customer's current order amount against their overall exposure; if the order transaction type utilizes this rule, and the order fails during the credit check process, it is automatically placed on credit check hold. You can define as many credit checking rules as you need, and if you inactivate a credit checking rule, you also must remove it from any order types that use it.

Additionally, you can include in or exclude from your credit check rule some or all of your open accounts receivable balances, and some or all of your uninvoiced orders.

Order Management uses the currency of the order you are credit checking to determine which credit limits to use in credit checking calculations. Order Management only includes orders and invoices in the same currency as the order you are credit checking when calculating a customer's outstanding credit balance, unless you have set up multiple currency credit checking.

Besides defining your credit exposure composition, the credit check rule also determines:

- Credit check level (order or line)
- Credit Hold level (order or line)
- Conversion type used when you enable multi-currency credit check
- Use of item category credit check
- Send hold notifications to the sales order creator
- Use of pre-calculated exposure

**Performance Note** In order to improve performance you can enable the use of pre-calculated exposure. Utilizing this option, the credit check engine will use summary balance details stored in a periodically updated summary table.

The update is done by running a concurrent program which accesses Order Management and Account Receivable transactional tables. This program should be scheduled to run periodically based on your specific business needs. You should also run this concurrent program when you have done major changes in your set up or transactional data (merge customers, incorporate transactions from external systems, change transaction status using customized programs, etc.).

See: [Initialize Summary Table Concurrent Program](#)

■ **To define a credit check rule:**

1. Navigate to the Credit Check Rules window.

The *Credit Check Rules* window displays.

The screenshot shows the 'Credit Check Rules' window with the 'Exposure' tab selected. The 'Rule' field contains 'Booking' and 'Effective Dates' are set to '01-JAN-2001'. Under the 'Options' section, 'Credit Check Level' and 'Credit Hold Level' are both set to 'Sales order'. There are three checkboxes: 'Override Manual Release' (unchecked), 'Check Item Categories' (unchecked), and 'Segd Hold Notifications' (unchecked). The 'Conversion Type' is set to 'Corporate'.

2. Enter a name for your credit check rule.
3. Optionally, enter the Effective Dates for your rule.

**Options Tab**

4. Select the entity to perform credit checking against for your rule. Select from:
  - Sales Order
  - Sales Order Line

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**Note:** If you select Sales Order Line as your credit check level, the Use Pre-calculated Exposure check box will be checked and protected against update

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If you choose to perform credit checking at the Sales Order level, you are limited to the system generating header level credit holds only. The Credit Hold Level field will default to Sales Order and is protected against update.

5. Select the Credit Hold Level for your credit rule. Select from
  - **Sales Order:** Sales Order (order level) credit check is performed for the header Bill To site. Sales Order level credit checking provides backward compatibility with previous credit check versions. When credit checking rules are defining using Sales Order as the credit check level, the credit check engine will examine order totals and evaluate credit exposure against the credit profile attached at header level

Holds will be always applied at header level.

Use order level credit check when order lines always have the same Bill To Site as the Order Header.

- **Sales Order Line:** Sales Order Line (line level) credit check is performed against order line Bill To Sites. The credit check engine will group all order lines belonging to the same Bill To Site and check available credit for each specific Bill To Site. When an order line fails credit check, any remaining lines grouped with the same Bill To Site are placed on hold.

Holds can be placed at either the order or order line level when you use line level credit checking.

Use line level credit check when sales order lines are attached to different Bill To Sites and you want to use the credit profile defined at that level. Additionally, you can use line level credit check when you have defined customer relationships within your system and actively use them within Order Management. Using customer relationships, you can create sales orders with order lines attached to different Bill To Sites owned by different customers.

Order Header level credit checking uses header level information ignoring different bill-to sites detailed at the line. Credit Check uses the credit profile attached to the customer Bill-to site defined at order (header) level. Credit checking at the Order Header level will use order totals and will evaluate credit

exposure against the credit profile attached at header level, and holds are always applied at header level.

### **Special Considerations for Credit Hold Level**

- If you update the Credit Hold Level from Sales Order to Sales Order Line, a pop up dialog box will display a message indicating that existing sales order credit holds will need to be released manually. Select Yes to continue or No to not commit the update.
  - If you update the Credit Hold Level from Sales Order Line to Sales Order, a pop up dialog box will display a message indicating that existing sales order line credit holds will not be released automatically. Select Yes to continue or No to not commit the update.
6. **Override Manual Release check box:** This checkbox enables an order or line which had failed credit checking and then was subsequently manually released to be eligible for additional credit check processing. Select from:
- **Yes:** Manual Released Holds will be overridden. You must also enter a value within the Days to Honor Manual Release field.
  - **No:** Manual Released Holds will be honored. The field Days to Honor Manual Release will be non-updateable.
7. **Days to Honor Manual Release:** The field is used in conjunction with the Override Manual Release check box. If you enable the Override Manual Release check box, you must enter a numeric value greater than zero within this field.

### **Manual Released Holds (Credit Checking Procedures)**

Each time a credit check failure occurs for order or order line, the corresponding order or order line is placed on credit check hold. However, prior to the credit check holds actually being applied, the credit check process determines:

- if a manually released credit check hold exists *and*
- if your credit check rule enables override of manually released holds (in conjunction with the value for Days to Honor Manual Release).

If Override Manual Release is not enabled for your credit check rule, then manually released holds are honored and no additional credit checking will occur.

If Override Manual Release is enabled, the credit checking process will validate if the release date is within the interval defined by the value of Days to Honor Manual Release. If the value is within the range defined, then manually released holds will be honored and additional credit checking is not performed.

If the value is not within the range defined, credit checking can occur again and credit check holds can be applied if the order or lines fails the credit check process.

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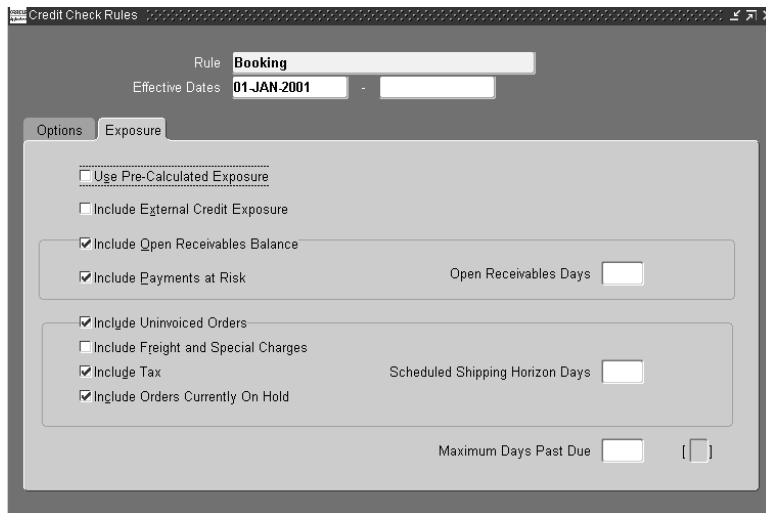
**Note:** The value of OE\_HOLD\_RELEASES.CREATION\_ DATE is used by the credit check process to determine if the duration defined for the credit check rule is within range for additional credit checking: when any hold is released for an order or line, Order Management inserts a record within OE\_HOLD\_RELEASES.

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8. Select the conversion type to use when performing credit checking using your credit rule. The LOV for this field is limited to the values you define within the Oracle General Ledger Conversion Rate Types window.
9. Select the *Check Item Categories* check box for your credit rule if you wish to perform credit checking for sales orders by Item Categories defined for Order Management.
10. Select the *Send Hold Notifications* check box if you wish to send hold notifications whenever a credit hold is placed for a sales order or order line. The notification is sent to the creator of the order.

Determine the type of credit exposure to use when defining your credit check rules by selecting the Exposure Tab within the Define Credit Check Rules window.



### Exposure Tab

11. Select the *Use Pre-calculated Exposure* check box for your credit rule if you wish to perform credit checking against pre-calculated exposure summary tables.
  - When the first credit check rule that has the *Use Pre-Calculated Exposure* check box checked is successfully saved, the following message will display:
 

This credit check rule uses pre-calculated exposure. Please run the Initialize Credit Summaries program to update the pre-calculated data.
  - If the *Use Pre-calculated Exposure* check box is checked and the *Include Open Receivables balance* check box is checked, then *Open Receivables Days* is protected against update and is NULL.
  - If the *Use Pre-calculated Exposure* check box is checked and the *Include Uninvoiced Orders* check box is checked, then *Shipping Horizon Days* is protected against update and is NULL.
12. Select the *Include External Credit Exposure* check box if you wish to include external exposure details imported into Order Management during the credit checking process.

When an Oracle Order Management sales order is credit checked, the exposure data from the external system is included in the overall exposure check. The default value for this check box is un-checked (exclude external exposure details when performing credit checking).

### Receivables Balance Region

13. Select the *Open Receivables Balance* check box for your credit rule if you wish to include open receivables balances.

You must enable either the Include Open Receivables Balance check box or the Include Uninvoiced Orders check box in your credit check rule. You can activate both, but you cannot toggle both off.

If you select both the *Pre-calculated Exposure* and *Open Receivables Balance* check boxes, you are unable to specify Open Receivables Days.

14. If you enabled Include Open Receivables Balance in your credit check rule, you can indicate whether to Include Payments at Risk when calculating a customer's outstanding balance.

Receipts at risk are remitted receipts that have not been cleared, or discounted (factored) receipts that have not been risk eliminated. If the performance of credit checking requires improvement you can toggle off this option.

15. If you enabled Include Open Receivables Balance, enter a value to indicate the range of dates for open receivables you wish to include for your credit check rule.
- Negative Number--Includes past due, current, and future open receivables up to X days beyond the current date.
  - Positive Number--Includes open receivables with invoice dates X days earlier than the current date.
  - No Value--Includes all open receivables.

### Uninvoiced Orders Region

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**Note:** If you do not select the *Include Uninvoiced Orders* check box, you cannot select any check boxes within the region.

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16. Select the *Include Uninvoiced Orders* check box if you wish to include uninvoiced orders for your credit rule.

If you enabled Include Uninvoiced Orders:

- Indicate whether to include Freight and Special Charges for uninvoiced orders when performing credit checking.

Select the *Freight and Special charges* check box to include Freight and Special Charges.

- Indicate whether to include Tax information for uninvoiced orders when performing credit checking

Select the *Tax* check box to include Tax information for uninvoiced orders. Credit checking calculations on open receivables always include tax amounts and are not affected by the Include Tax option. If the performance of credit checking requires improvement you can toggle off this option.

- Indicate the number of scheduled shipping horizon days for your credit rule for uninvoiced orders to be included in your total credit exposure when performing credit checking.

For example, if you enter 45, the total exposure includes only uninvoiced orders scheduled to ship within 45 days of the current date. Orders scheduled to ship after 45 days are not included when calculating exposure.

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**Note:** If the *Use Pre-calculated Exposure* check box is checked, Scheduled Shipping Horizon Days is protected against update.

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- Indicate whether to Include Orders Currently On hold. Select the Include Orders Currently On hold check box to include orders on hold within the exposure calculation for your credit rule.

**17. Indicate the Maximum Days Past Due.**

The *Maximum Days Past Due* field value specifies the number of day that you will allow an invoice to be past due before holding the customers orders. During the credit checking process, Order Management will verify that no invoices for the customer have been past due beyond the number of days you specified with this field. If there are any such past due invoices, the order is placed on credit hold.

**18. Save your work.**

**See Also**

[Defining Credit Profiles.](#)

[Defining Credit Usage Rule Sets.](#)

[Assigning Credit Usage Rule Sets.](#)



**Credit Check Processor Concurrent Program**

**Initialize Credit Summaries Table Concurrent Program**

For additional details surrounding implementing Order Management Credit Checking, please refer to the Order Management White Paper, Credit Checking in Order Management, available on OracleMetaLink, <http://www.oracle.com/support/metalink/>.

## Deactivating Credit Checking

There are three ways to deactivate Credit Checking on an order:

- Use an order type that does not have an assigned credit rule.
- Define the Customer Profile so that the Credit Check check box is not checked.
- Use payment terms for which the Credit Check check box is not checked.

Deactivating Credit Checking does not automatically release orders previously on credit hold. However, the next time you attempt to Book, Pick Release or Purchase Release (for drop shipments), Pack, or Ship Confirm an order which utilizes a Order Management Transaction type that enables credit checking to occur at the specified order points, or you perform an order change that trigger credit checking in the Sales Orders window, Order Management will releases the credit check hold if the order or line meets the requirements for successful credit check.

### **See Also**

[Defining Credit Check Rules](#)

[Overview of Sales Orders](#)

[Releasing Holds](#)

[Defining Holds.](#)

[Orders on Credit Check Hold Report](#)

[Outstanding Holds Report.](#)

## iPayment Processing

Order Management provides you with the ability to record credit card information through the Sales Orders window and obtain authorizations for credit card transactions using Oracle iPayment. You can also set up the security feature to mask confidential card holder information.

Order Management tracks the following credit card information at the order header:

- credit card numbers
- credit type
- credit card holder's names
- expiration dates
- payment types and methods
- authorization codes and amounts

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**Attention: iPayment processing can only occur if you are using an order type that has a credit checking rule and the rule will perform the authorization at Booking or Shipping.**

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### Risk Management

iPayment offers a risk management feature to identify high risk transactions by Oracle iRisk. This feature enables merchants and e-commerce service providers to manage the risk when processing transaction through the internet. Oracle iRisk enables you to define any number of risk factors to verify the identity of your customers, assess their credit rating, and manage risk in a secure on-line environment.

You will receive the customer's risk score, which is based on the risk factors, scores, and formulas that are setup in Oracle iRisk. The risk factor calculations are dependent on the *OM: Risk Factor Threshold for Electronic Payments* profile option. See: [Order Management Profile Options](#).

If the risk factor score exceeds the risk score threshold, the order is automatically placed on hold. High risk holds include credit card authorization and high risk failures. If a customer's transaction receives both authorization failures, the authorization failure hold will be applied. Both hold types can be removed manually and the order will continue through the order cycle process.

Order Management authorizations use the default risk formula that you have set up in iPayment. Below is a list of risk factors that can be used by iPayment:

- payment amount
- time of purchase
- payment history
- frequency of payments
- transaction amount limit
- Ship To and Bill To addresses

### Quantity Changes and Cancellations

Authorizations occur at the sales order header for the total order amount less any amounts covered by commitments. Return lines are not included in the order amount to be authorized.

When an authorized order is changed, iPayment Processing re-authorizes the credit card if the existing authorization has expired. Estimated expiration of the authorization is calculated as the authorization date plus the value of the OM profile OM: Estimated Authorization Validity Period. Actual expiration of authorization varies by card issuer and cannot be accurately determined by iPayment or Order Management. Because these incremental amounts may not be authorized, you might not be able to collect those funds.

To perform authorization of these incremental amounts, do either of the following:

- Enter a new order for the additional items or quantities.
- Use action Authorize Payment. This process reauthorizes the full order amount and may result in an understating of the customer's open to buy balance on their credit card.

### Manual and On-line Authorizations

You can choose to obtain manual authorizations and enter the authorization code in the Authorization Code field in the Sales Orders window.

### Security

Order Management enables you to mask cardholder information including credit card numbers and authorization codes by setting the *OM: Credit Card Privileges* profile option. Only the last four digits of the credit card number are displayed if

the profile option is set to Limited or None. If the profile option is set to All, the full credit card number is displayed.

### **Drop Shipments**

Order Management provides the ability to obtain credit card authorizations for drop shipments. Authorizations are obtained at the booking and purchase release activity of the drop shipment order.

### **See Also**

[Defining Sales Order Main and Others Header Information.](#)

[Order Management Profile Options](#)

## Defining Holds

You can define holds to halt processing of your orders, returns, and their lines. Because orders and returns are not affected by holds until they are applied, you can define all the holds you use in your business at once. You can define holds that are effective only at certain steps of the order or line workflow and holds that apply regardless of the stage in the order's flow.

For example, you may want to apply an item hold to prevent order lines for a particular item to be released for shipment. Any orders that are not ready for shipment or any orders that have already been shipped are not affected by this hold. You can also define a hold that affects all orders, no matter where the order is in its cycle. When this type of hold is applied, it is effective regardless of the order's position in the cycle.

For each hold, you can specify hold security by responsibility to control which responsibilities have authority to apply and/or remove the holds you define. Holds can be defined to be specific to pick, pack, ship, or invoice interface activities.

Order Management Hold database tables are striped by organization ID. Therefore, you will need to define holds for each operating unit within your enterprise structure. However, hold type quickcodes only need to be defined once.

The table below describes Order Management seeded Hold Names, the associated Hold Type, and a description of the hold source.

| Hold Name                         | Hold Type               | Description  |
|-----------------------------------|-------------------------|--|
| Configurator Validation Hold      | Configurator Validation | Automatically applied to order lines that fail Configurator Validation.  |
| Credit Card Authorization Failure | Electronic Payment      | Automatically applied to orders if credit card authorization request to iPayment fails.  |
| Credit Card High Risk             | Electronic Payment      | Automatically applied to orders if risk score determined by iPayment is greater than the value of profile <i>OM: Risk Factor Threshold for Electronic Payments</i> . |
| Credit Check Failure              | Credit Check            | Automatically placed if credit check rule evaluation fails on orders setup to be credit checked.   |
| GSA Violation                     | GSA Violation           | Automatically placed on orders which are in violation of GSA.  |

| Hold Name                                   | Hold Type                  | Description  |
|---|----------------------------|--|
| NO pre-defined hold name for this hold type | Order Administration Hold  | Reserved for you to define administration holds based on your business processes.                                |
| Denied Parties Hold                         | Import / Export Compliance | This hold is applied when an order fails denied party screening  |
| Embargo Hold                                | Import / Export Compliance | This hold is applied when an order fails export compliance for with the Ship To or Ship From (embargo countries) |
| ePayment Failure Hold                       | Electronic Payment         | This is for expected errors returned by ipayment like invalid data   |
| ePayment server Failure Hold                | Electronic Payment         | This is for unexpected errors returned by Oracle iPayment, for example a failure to connect to the server.       |
| License determination Hold                  | Import / Export Compliance | This hold is applied when an order fails export compliance screening.  |
| Pending Process Payment Hold                | Electronic Payment         | This is applied when process payments is deferred.   |
| Promotional Line                            | Promotional Hold           | Automatically placed on lines which exceed a soft modifier promotional limit.                                    |
| Promotional Order                           | Promotional Hold           | Automatically placed on orders which exceed a soft modifier promotional limit.                                   |

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\*Promotional Line/Order Holds functionality is only available if you have licensed and installed Oracle Advanced Pricing.

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#### ► To define a generic hold:

1. Navigate to the Holds window.

The *Holds* window displays.

The screenshot shows the 'Holds' configuration window. The fields are filled with the following information:

- Name: **Booking Hold**
- Description: **Hold to Prevent Booking of Orders**
- Type: **Order Administration Hold**
- Workflow Item: **OM Order Header**
- Workflow Activity: **Book Order**
- Effective Dates: (Empty)

The 'Authorizations' table is as follows:

| Responsibility                     | Authorized Action | Effective Dates |    | [ ] |
|------------------------------------|-------------------|-----------------|----|-----|
|                                    |                   | From            | To |     |
| Order Management Super User, Visio | Apply Hold        | 03-OCT-2000     |    |     |
| Order Management Super User, Visio | Remove Hold       | 03-OCT-2000     |    |     |
|                                    |                   |                 |    |     |
|                                    |                   |                 |    |     |
|                                    |                   |                 |    |     |
|                                    |                   |                 |    |     |
|                                    |                   |                 |    |     |

Generic holds are placed at the order level. Order lines are considered implicitly on hold for an order that has a generic hold against it.

You will not see hold information for generic holds at the order line level, only at the order header.

2. Enter the Name and Description for the hold you want to create.
3. Select a valid Hold Type. Hold Types are defined using the Order Management Quickcodes window. See: Quickcodes
4. Workflow Item: Leave this field blank for generic holds.
5. Workflow Activity: Leave this field blank for generic holds.
6. Optionally, enter the Effective Dates for the hold to control when you can use this hold.
7. Optionally, determine which user responsibilities have authority to apply and/or release holds by entering combinations of responsibilities, authorized actions, and effective dates.



You can give some responsibilities the authority to apply a hold, other responsibilities the authority to release it, and others the authority to do both. If you do not specify a responsibility for a hold, any responsibility can apply or release it.

8. Save your work.

**■ To define an activity-specific hold:**

1. Navigate to the Holds window.
2. Enter the Name and Description of the activity-specific hold you want to create.
3. Select a valid activity-specific hold Type.

Order Management provides two standard hold types that are used for the GSA and Credit Checking features: GSA Violation Failure and Credit Check Failure. Order Management also provides the Configurator Validation hold type, which is used if you invalidate a configuration after booking and an order administration hold. Hold types are also provided for import/export compliance, Epayment and promotional limits. Define other hold types using quickcodes.

4. Select the Workflow Activity for the hold.

The workflow activity determines where in the order process the hold will be applied. At the line level, All other lines will be processed except for the line for which the hold is effective.

The LOV for this field is determined by the value selected for the field Workflow Item. This field is required if you have entered or selected a value within the Workflow Item field only.

For example, you can define a hold that prevents an order line from being released for picking by entering Pick Release in this field. The hold takes effect as soon as an order line that meets your hold criteria is eligible for Pick Release.

5. If you want included items of a configurations option class the included items may have had a hold placed against it to be included in the applied hold. This is an optional feature based on your specific business requirements.
6. Optionally, enter the Effective Dates for the activity-specific hold to control when you can use this hold.
7. Optionally, determine which user responsibilities have authority to apply or release activity-specific holds by entering combinations of responsibilities, authorized actions, and effective dates.

You can give some responsibilities the authority to apply a hold, other responsibilities the authority to release it, and others the authority to do both. If you do not specify a responsibility for an activity-specific hold, anyone can apply or release it.

8. Save your work.

### **See Also**

[Overview of Holds](#)

[Applying Holds](#)

[Releasing Holds](#)

[Promotional Limits](#)

## Overview of Attachments

Order Management provides you with attachments features to:

- include attachments with orders and order lines
- include attachments with order returns and order return lines
- add free form text to the Sales Order Acknowledgement Report.

### Defining Documents for use by the Attachment feature

Using standard Oracle Application Attachment functionality, you can define and set up standard or one time documents with or without attachment addition rules. These documents can later be attached to your orders or order lines using the Attachments window or automatically by specifying attachment addition rules. You can add free form text to your orders, order lines, returns, and return lines as attachments, and you can also copy standard documents and modify them into one time document attachments. You may also translate documents to the language of your choice.

### See Also

[Defining Documents in Advance](#)

[Defining Attachment Rules](#)

[Oracle Applications User's Guide, Working with Attachments.](#)

### Applying Attachments

You can automatically apply standard attachments to orders and returns based on the attachment addition rules you define. You can also apply attachments manually by selecting the Actions button and then selecting Apply Automatic Attachments within the Sales Orders or Order Organizer window.

If you wish to enable the automatic attachment functionality, you must set profile option *OM: Apply Automatic Attachments* to Yes. However, if an order or return is modified, attachments must be reapplied manually, by the method mentioned above.

### Editing Attachments

You can edit existing attachments by the following methods:

- via the Sales Order or Order Organizer window by choosing the Attachments icon from the toolbar, and then modifying existing attachments (provided the attachment has been enabled for edit) or
- via the Documents window by first locating your document, and then performing your edit.

### Viewing Attachments

You can view the attached documents in the Order Organizer and Sales Orders windows. Within these windows, you can view attachments in either of the following manners:

- from the View menu, select Attachments or
- Select the Attachment icon from the Toolbar.

### Copying Orders

You can copy document attachments to a new order or return when you copy an order by using the Copy orders feature. When performing an order copy, within the Copy Orders window, select either the option of including or excluding manual attachments when copying orders, order lines, returns, and return lines.

### Order Import

Once an order has been imported through Order Import into Order Management, you can apply your attachments. You can automatically apply attachments to imported orders based on your attachment addition rules. When creating the order or order line through Order Import, automatic attachments are applied if the profile option *OM: Apply Automatic Attachments* is set to Yes.

### Report Assignment

Order Management currently utilizes Oracle Attachments functionality for the Sales Order Acknowledgement Report. You can choose to attach a document of type *Text* to be printed on the report output for either the Order Header, Order Body, or Order Footer entity.

### See Also

[Defining Document Categories](#)

## Security

When viewing order and returns, you can specify which user responsibility can apply and update or simply view attachments. The function security feature available from the Oracle System Administrator responsibility also applies attachments. If you set the function security to view orders and returns, you will only be able to view attachments without the ability to apply or update the attachment.

## Application Object Library Profile Option setting for Attachments

### Attachment File Directory ATTACHMENT\_FILE\_DIRECTORY

The directory in which file type attachments data is stored. The system administrator sets this profile option during the install process. Users can see but not update this profile option.

This profile option is visible and updatable at all levels.

| Profile Level Setting                | Visible | Allow user Update? |
|--------------------------------------|---------|--------------------|
| System Administrator: Site           | Yes     | Yes                |
| System Administrator: Application    | Yes     | Yes                |
| System Administrator: Responsibility | Yes     | Yes                |
| System Administrator: User           | Yes     | Yes                |
| User                                 | Yes     | No                 |

### Indicate Attachments ATCHMT\_SET\_INDICATOR.

This profile option allows you to turn off indication of attachments when querying records (for performance reasons). Users can see and update this profile option.

This profile option is visible and updatable at all four levels.

| Profile Level Setting             | Visible | Allow user Update? |
|-----------------------------------|---------|--------------------|
| System Administrator: Site        | Yes     | Yes                |
| System Administrator: Application | Yes     | Yes                |

| Profile Level Setting                | Visible | Allow user Update? |
|--------------------------------------|---------|--------------------|
| System Administrator: Responsibility | Yes     | Yes                |
| System Administrator: User           | Yes     | Yes                |
| User                                 | Yes     | Yes                |

## Defining Documents in Advance

You can predefine standard, template, and one-time documents to attach to your orders or returns and additionally, order and return lines.

### Prerequisites

- Define your document categories. See [Defining Document Categories](#).

## Defining Attachment Addition Rules

Using standard Oracle Attachment functionality, you can specify rules for automatically attaching of all types of documents to orders and order lines. You can specify that documents be applied to orders or lines for a certain customer, Bill To customer, Ship To customer, item, order type, and/or purchase order. For Order Management, you can specify attachment addition rules at the order level for the following attributes for orders or returns:

- Customer
- Customer PO
- Invoice To
- Order Category
- Order Type
- Ship To

At the order line level, you can specify your attachment addition rules by specifying values for the following attributes on the order or return line:

- Customer
- Inventory Item
- Invoice To

- Line Category
- Line Type
- Purchase Order
- Ship To

For information on defining documents in advance, see Oracle Application User's Guide, [Working With Attachments](#).

## Defining Document Categories

Using the functionality of Document Categories within the Oracle Applications Documents feature, you specify document categories to define Order Management attachment definition rules. You can choose to the following Document types as attachments:

- Document Reference
- File
- Long Text
- Short Text
- Web Page

Once you have defined you document Category, you can then perform Category Assignments to enable Oracle Applications functionality for the following entities:

- Oracle Forms
- Oracle Application Functions
- Oracle Reports that have been enabled for usage with Attachments.

### ■ To define document categories:

1. Navigate to the Document Categories window.

The *Document Categories* window displays.

| Document Categories                                |                  |      |             |
|--|------------------|------|-------------|
| Effective Dates                                    |                  |      |             |
| Category   | Default Datatype | From | To          |
| <input checked="" type="checkbox"/> AN Test - file | File             |      |             |
| <input type="checkbox"/> AN Test - url             | Web Page         |      |             |
| <input type="checkbox"/> BR-Line                   | Short Text       |      |             |
| <input type="checkbox"/> BR-Manual                 | Short Text       |      |             |
| <input type="checkbox"/> BR-Order                  | Short Text       |      | 08-AUG-2001 |
| <input type="checkbox"/> BR-Test                   | Long Text        |      |             |
| <input type="checkbox"/> Customer Notes            | Short Text       |      |             |
| <input type="checkbox"/> KS-DOC-Category1          |                  |      |             |
| <input type="checkbox"/> KS-DOC-Category2          |                  |      |             |
| <input type="checkbox"/> LH-DOC-CAT1               | Short Text       |      |             |

Assignments

**Note:** Ensure that you navigate to the Document categories window available from the Order Management Superuser Responsibility, Attachments submenu (Setup->Sales Order/Returns->Attachments->Document Categories) when defining attachments for Order Management reports or windows.

The Document Categories window available from the Order Management Superuser Responsibility, Documents submenu (Setup->Documents->Categories) is for creating document categories to assign document sequence rules.

2. Enter a value for your category name in the Category field.
3. Select the default attachment datatype in the Default Datatype field.

The default Datatype can be overridden when you create documents. If you are creating a document category for Order Management reports, you must choose either *Short Text* or *Long Text*.

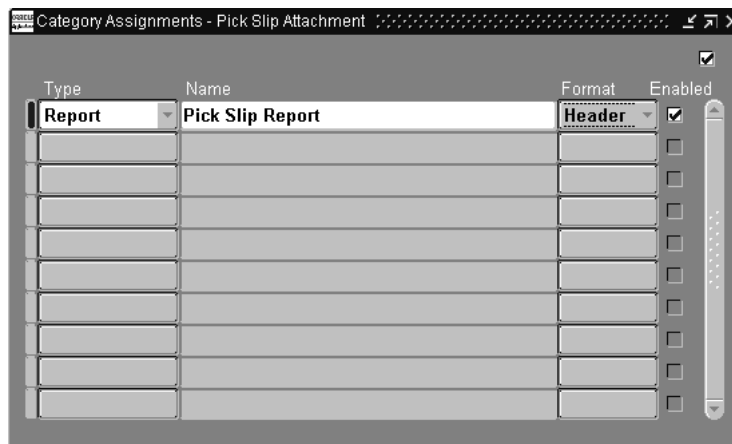
4. Optionally, enter an effective date range for your attachment category.
5. Save your work.



► **To assign document categories to functions, forms, or report:**

1. Navigate to the Document Categories window.
2. Either enter a new Document Category and save your work, or select a Document Category previously defined, and select the *Assignments* button.

The *Category Assignments* window displays.



3. Select the entity type you wish to enable document category attachments for. Select from:
  - Forms
  - Functions
  - Reports

Order Management enables Oracle Application Attachment functionality for the following entities:

- The Sales Order and Order Organizer Window (form)
- The Sales Order Acknowledgement Report

If you choose to include an Attachment for printing on the Sales Order Acknowledgement Report, you are currently limited to selecting a data type of *Short or Long Text*. Additionally, order-level attachments print only at the order header or order footer within the output, and order line-level attachments print only in the report body (within the body of each record displayed).

You can associate as many reports as you need with a single category. If you customize your own reports to include documents, you can specify your own as well as Order Management's default reports in this field. Only text documents can print on reports.

Oracle Shipping Execution enables Oracle Application Attachment functionality for entities such as Bill of Lading, Commercial Invoice, Pack Slip, and Pick Slip. See Oracle Shipping Execution User's Guide, [Attachments](#).

Oracle Pricing enables Oracle Application Attachment functionality for entities such as Agreements and Price Lists. See Oracle [Advanced Pricing User's Guide](#).

4. Select a Format. Select from:

- Header
- Body
- Footer

The Format value determines where documents in this category will appear on the report. You can add your own formats for selection within the Category Assignment window by adding values to the Order Management QuickCode NOTE\_FORMAT type. However, standard reports support only the seeded format of Header, Body, and Footer.

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**Attention: In standard reports, order-level notes print only at the header and footer levels; line-level notes print only in the report body.**

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5. Save your work.
6. For information on Defining and Assigning Document Categories, see [Oracle Application User's Guide](#).

## Overview of Shipping Tolerances

Oracle Order Management provides you with the ability to capture shipping tolerance levels for over and under shipments recorded during ship confirmation. The shipping tolerance feature enables you to define various shipping tolerance levels for ordered and expected return quantities. Order Management shipping tolerances are used to validate the percentage of the ordered quantity. Once shipping tolerances have been defined, Order Management then automatically fulfills order lines using the tolerances you defined.

Order Management's shipping tolerances feature captures:

- over and under shipments and returns percentages at the system, customer, site, item, site-item, and customer item levels.
- different tolerances for ordered and returned quantities.
- defaulted tolerances from various sources based on your defaulting rules.
- automatic fulfillment of total shipped quantities for order lines within the under tolerance limit.
- tolerances levels that enable you to over ship at the time of ship confirmation.

### Over Shipments

When Oracle Shipping Execution attempts to over ship an order, Order Management processes the order based on the shipping tolerances you define. In order to perform an over shipment, Order Management:

- determines if the ship quantity is within the defined over shipment tolerance levels you defined by setting the *OM: Overshipment Tolerance* profile option or setting your shipment tolerances in Order Management. See: [Order Management Profile Options](#).
- notifies the appropriate personnel when an over shipment is above the set shipping tolerance.
- issues the material for any unpicked or unreserved quantity.

## Under Shipments

When Oracle Shipping Execution attempts to under ship an order, Order Management processes the order based on the shipping tolerances you define. In order to perform an under shipment, you must:

- ship confirm the quantity at the time of closing the delivery.
- determine if the total quantity shipped is within the under shipment tolerances you defined. Any remaining shipment allocations are removed.

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**Note:** If the total quantity shipped is under the shipment tolerances, Order Management will split the original shipment line. The shipment will be shipped as a partial shipment.

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Under Shipment tolerances greater than 100% are treated as the equivalent of a 100% tolerance; to close order lines a shipment of a non-zero quantity is required, even if the under shipment tolerance is set to 100%.

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**ATTENTION:** If a zero quantity is entered at shipment, the system will process the transaction. However, zero quantity shipments are not allowed; Order Management will therefore perform a backorder for the zero quantity shipment line at ship confirm.

A shipment of a quantity other than zero is needed in order to enable order lines to progress to closure.

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## Over Shipments Report

Oracle Shipping Execution provides the Over Shipments Report for displaying shipping tolerances. This report displays shipping tolerance information based on the customer, site, item, warehouse, ship date, and order type.

### See Also

[Order Management Profile Options](#)

[Oracle Shipping Execution User's Guide](#)

## Defining Shipping Tolerances

Defining shipping tolerances are based on your customers and items or your customer site and item tolerances.

### Prerequisites

- set up your customer and customer site tolerances in the Customer window.
- set up your tolerances for items in the Master Items window.

### ► To define shipping tolerances for orders or returns:

1. Navigate to the Setup Tolerance window.

The *Setup Tolerance* window displays.

2. Select the Customer name for the shipping tolerance.
3. Select the customer Address for the shipping tolerance.
4. Select the Item Number for the shipping tolerance.
5. Enter the Over Shipment Tolerance percentage.

The over shipment tolerance percentage determines the amount of the shipment you can exceed at the time of ship confirmation.

6. Enter the Under Shipment Tolerance percentage.

The under shipment tolerance percentage determines the minimum amount of the shipment at the time of ship confirmation. If you enter more than 100, the shipping process will use 100.

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**Note:** At high level, Order Management currently does not support over and under shipment tolerances for ATOs (Model, Kit and all children). Updates to shipment tolerances for PTOs is currently not allowed.

If you have defined non-zero tolerances within either the Item Form, Customer Form, Shipping Tolerances Form, or the profile option value, the values are ignored for PTOs; the over and under shipment tolerance for PTOs will always default to 0.

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7. Enter the Over Return Tolerance percentage for return receipts.

The over return tolerance percentage determines the amount of the return you can accept above.

8. Enter the Under Return Tolerance percentage for return receipts.

The under return tolerance percentage determines the amount of the return you can accept below.

9. Save your work.

**See Also**

[Overview of Shipping Tolerances](#)

## Trading Community usage within Order Management

In general, previous releases of Order Applications and initial releases of Oracle CRM products utilized the Oracle Receivables Customer Model for storing and retrieving customer information.

With release 11i, a new way of internally modeling customers and customer details was introduced; Oracle's Trading Community model. Oracle's Trading Community customer model is a powerful customer architectural design building on the Receivables Customer model, enabling users to now define and maintain customer hierarchies and relationships between customers and sites. If a CRM or ERP application maintains customer information, the application is using the Trading Community customer model.

Trading Community enables you to:

- Separate entities you enter into a relationship with from the business relationship itself.
- Provide a common location entity that can be shared, enabling greater optimization for distributed planning.
- Maintain businesses and people as different entity types.
- Enables multiple customer relationships to be established for one common entity.

### Terminology

#### Trading Community

- Party - This is a generic term for any entity which can have any type of relationship with your company. The three primary party types are:
  - Person - This party type is typically used when you are creating an entity that operates within a business to customer environment.
  - Organization - This party type is typically used when you are creating an entity that operates within a business to business environment.
  - Party Relationship - This party type represents a binary relationship between two parties such as a partnership. Party relationship types can be seeded or user-defined. A party relationship is optionally a party itself, meaning certain party relationships can enter into relationships themselves (currently not supported within Order Management).

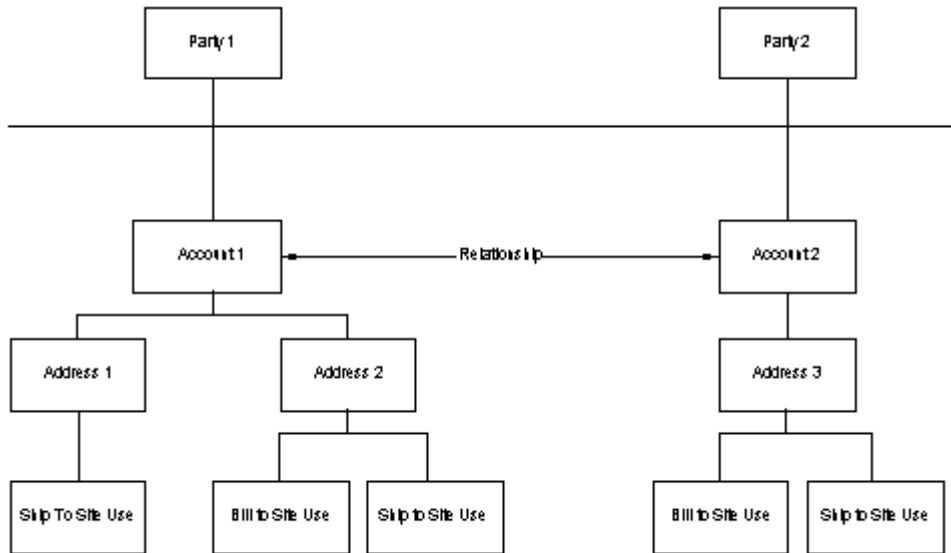
- **Party Site - Part Site** represents the link between a party and a location (a valid location for the party. Typically, your organizational hierarchy is used when modeling using party relationships.
- **Account** - An account represents a relationship between your company and a party in the Trading Community model who is your customer. Accounts contain the attributes of the selling relationship between your organization and a party. Account attributes do not describe a party; they only exist when a selling relationship is present between the your organization and a party. The information which is used for processing orders and receivables transactions is part of the account information.
- **Account Site** - a party site address that is used within the context of an account.
- **Account Site Usage** - an account site created for specific usage; for example, billing or shipping purposes.

#### **Mapping Order Management terminology to Trading Community terminology**

- **Customer Site, Customer Location, Customer Address** - These terms, within Order Management equate to Trading Community Account Sites.
- **Bill To, Ship To, Deliver To** - These terms, within Order Management, equate to Trading Community Account Sites Usages.

The following figure describes the conceptual usage of the Trading Community model as utilized currently within Order Management.





The figure above conceptually represents the Trading Community customer model and how Trading Community has been integrated within the Order Management Application. When defining a customer, you are defining a Trading Community account, which can be linked to a new or existing Party. Accounts have at least one address and each address may have one or more site uses. You can also create new relationships among accounts across parties.

Within Order Management, each account belongs to a party. These parties may have additional relationships and details defined, but Order Management currently only utilizes a limited subset of the party data (accounts, addresses, and sites usages).

The Trading Community model includes all the information which was previously stored in the Receivables customer model. This includes information such as:

- customers
- customer addresses and site uses
- profile amounts
- customer relationships.

In order to maintain backward compatibility for the Oracle Receivables customer model, Order Management currently accesses data stored in Trading Community

database tables via Order Management database views. Future development projects are in progress to update Order Management applications code to retrieve Trading Community details directly from Trading Community base tables rather than utilizing Order Management views.

As Order Management adds new features and additional functionality to its core application, users will begin to see Trading Community terminology incorporated into Order Management Forms (windows), Reports, Concurrent Programs, and product documentation. Until these project are completed, Order Management forms will continue to use names of entities as they existed in the Receivables customer database tables. The following table provides a mapping of these field names.

| <b>Order Management Form (window)<br/>Entity Name</b> | <b>Trading Community Base Table Entity<br/>Name</b> |
|---|---|
| Customer Number                                       | Account Number                                      |
| Customer Name   | Party Name  |

For more information on Trading Community and the new Trading Community customer model, see: [Oracle Receivables User's Guide, Customers](#).

# 5

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## Sales Order Process

Topics covered in this chapter include:

- [Overview](#) on page 5-2
- [Required Setup](#) on page 5-2
- [Process Steps](#) on page 5-5
- [Workflow](#) on page 5-11

## Overview

In Oracle Order Management, the sales order form enables you to organize, enter, view, and update order information. Order Management offers Line level independence where you can capture regular orders as well as returns using the same form. The sales order form offers users a convenient and quick entry point for creating and editing order information as well as viewing summary information from other subsystems (i.e. Shipping, Receivables, Purchasing etc.) and status of orders.

Oracle Order Management designed a mechanism called the Process Order API which performs a consistent validation of data manipulation (i.e. changes, deletions etc.) on the Sales Order attributes. This provides a consistent, secure, and valid means for managing sales orders. With the flexibility of the new Process Order API, Processing Constraints, Workflow, and Transaction Type framework, Order Management provides a flexible and powerful tool for processing orders.

## Required Setup

To accomplish entering an order from entry to invoicing, the following setups are required:

### **Order Header/Line Workflow processes**

Order Management comes with seeded Workflow processes. Review the seeded flows, activities and notifications to determine if the seeded data can meet your business needs. To successfully enter a standard order in OM, you can use the Generic - Order and Line Flows. If you need to modify the seeded workflows, it is recommended that you make a copy and modify the copy. You can also determine if you want certain activities to be Synchronous, Deferred, or Manual. The Workflow engine will move the order/line ahead as long as the activities are synchronous activities. The order or line flow will stop at any manual activity which will require a manual task to move the workflow along. The Workflow background engine processes deferred activities, notifications, wait activities and time out activities. You setup the Workflow background engine when setting up Workflow in your environment. You also need to schedule the Workflow Background Process concurrent program to re-submit periodically. When scheduling the concurrent program, please specify Order Management work item types as the parameter so that it will only pick up the activities or notifications for Order Management work items. Refer to the topical essay on Workflow at the end of this manual for details on setting up workflow process.

## Transaction Types

Both order and line transaction types need to be setup in order for an order to process from entry to invoicing. When setting up order types, assign order header and line workflows to the order type. Since each line can go through its own flow process, each line needs to have its own workflow process. Line level workflow processes are assigned based on the order type, line type, and item type combination. E.g. Generic Order Type + Generic Line Type + Standard Item => Generic Line Workflow process. Refer to the topical essay Using Transaction Types in Oracle Order Management at the end of this manual for details on setting up transaction types.

## Document Sequence

The document sequence functionality is for numbering orders. The same sequence can then be assigned to all order types. For instance, you could define an automatic sequence beginning with 1 and assign it to all your order types. Then each new order that you enter will receive the next number in the sequence. Refer to the topical essay Using Transaction Types in Oracle Order Management at the end of this manual for details on document sequencing setup.

## Processing Constraints

Order Management has seeded constraints that will prevent data integrity problems. If the business needs more restrictive rules when processing orders, rules can be set up to control changes or operations of the order process flow. Refer to the topical essay on Processing Constraints at the end of this manual for details on setting up processing constraints.

## Scheduling Activity

The “Schedule function can be performed anywhere in a process flow according to your business needs. If you want to setup scheduling to run automatically, you can set it as a synchronous function within the workflow process so it will happen automatically. The profile option OM: Autoschedule should be set to Yes. Or the user can schedule manually directly from the sales order form. Refer to the topical essay on Scheduling at the end of this manual for details on scheduling setup.

## Shipping Parameters

Set the Shipping Parameters specific to company picking and ship confirmation processes. The Shipping Parameters form consists of four tabs: General, Pick Release, Shipping Transaction and Delivery Grouping. The General Tab includes percent fill basis (i.e. by quantity), Weight and Volume UOM Class. These

parameters are primarily used for the containerization functionality. The Pick Release Tab includes a default Pick Slip Grouping Rule, Release Sequence Rule and a Auto Pick Confirmation flag which confirms your order to be released from Inventory. The Shipping Transactions Tab includes default Shipping Documents at ship confirmation and container packing controls. Finally, the Delivery Grouping Tab includes the criteria for grouping delivery lines (i.e. must have same ship to location, warehouse etc. as order lines).

### **Master Items**

A standard, finished good item should be defined in the Inventory module, with attributes set appropriately. The key attributes that control the processing of a finished good item are on the Order Management tab in the Master Item setup form. The flag Shippable and Transactable should be selected. The best way to create your items is to copy them from the Finished Good seeded template.

### **Item Quantity On-Hand**

In order to ship an item, there must be sufficient quantity available. In a test environment you can create inventory by executing a miscellaneous receipt .in the Inventory module., To generate a miscellaneous receipt, go to the Transactions > Miscellaneous Transactions form. Enter the newly created Item name and specify a subinventory and quantity and save. In a production environment, your inventory will typically come from receipts against purchase orders or completion of work orders. The quantity on hand for the item will be decremented the amount of the order line when pick releasing the order.

### **Price List Setup**

To price the new item when entering the ordered item on the order, the user should add the new item to a price list. The item is added to a price list via the Price List Setup form: Pricing > Lists > Price Lists Setup. Query an existing price list or create a new price list. Add a new line, enter the item name, UOM and price and save. The price and UOM will default when entering the item on the order line.

### **Installed Base Integration**

If you are using Oracle Installed Base version 11.5.6 or later, and you have items that are non-shippable but need to be interfaced to the Installed Base (such as PTO Models, PTO Option Classes, and Service Items), you will need to add the Installed Base Interface activity to your line level workflows. The activity is seeded. It should be added to the line workflow processes following the fulfillment activity.

## Process Steps

This section will guide you through a basic sales order flow from entry to invoicing, including:

- Enter a Standard Sales Order
  - Schedule the Order
  - Book the Order
  - Pick Release
  - Ship Confirm
  - Fulfillment
  - Invoicing Interface
1. Enter Order Header information with a standard order type. **Note:** There are no seeded transaction types. You will need to create a standard order type which uses the generic order and line workflow to progress the order through to invoicing. Refer to the Required Setup section for Workflow and Transaction Type setup. Figure 1 shows the Sales Order Header.

Figure 5–1 Sales Order Information (Header) form

| Order Information |  |
|-------------------|--|
| Standard          |  |
| Main              |  |
| Customer          | Computer Service and Rentals                                       |
| Customer Number   | 1006   |
| Customer PO       |  |
| Customer Contact  |  |
| Ship To           | Chattanooga<br>301 Summit Hill Drive<br>Chattanooga, TN, 37401, US |
| Bill To           | Chattanooga<br>301 Summit Hill Drive<br>Chattanooga, TN, 37401, US |
| Order Number      | 97057  |
| Order Type        | Standard   |
| Date Ordered      | 16-AUG-2001 15:11:09   |
| Price List        | CORPORATE  |
| Salesperson       | Green, Ms. Suzanne   |
| Status            | Booked   |
| Currency          | USD  |
| Subtotal          | 400.00   |
| Tax               | 0.00   |
| Charges           | 0.00   |
| Total             | 400.00   |

The Order Information screen is in a single record format. The most commonly used fields by all industries will be displayed by default. You may use the folder tools to add or remove fields which are displayed. Forms can be customized to meet business needs. Field values can be set up to default from a variety of sources such as the Order Type or the customer record. All defaults can be overridden.

Once the Order Header information is entered, you will enter the line information within the Line Items screen. The Line Items form, shown in Figure 2, will display in multi-line format. The overflow region will display Item Description, Line Total and Line Quantity fields. The Line, Ordered Item and Quantity fields are static on



the form. Minimum line information required to book an order is item number and quantity. Other line information that can be entered in the Main tab include Schedule Date, Line Type, Source Type, etc. The Line Items form includes five additional tabs to enter detailed line information. These tabs include Pricing, Shipping, Addresses, Returns, and Other.

**Figure 5-2 Sales Orders: Line Items**

The screenshot shows a software interface for managing sales orders. The window title is "Sales Orders (97057) - Computer Service and Rentals". The "Line Items" tab is selected, and the "Main" sub-tab is active. The interface displays a table of line items and summary information.

| Line | Ordered Item | Qty | UOM | Unit Selling Price | Request Date      | Schedule Ship Date  | Statu |
|------|--------------|-----|-----|--------------------|-------------------|---------------------|-------|
| 1.1  | AS54888      | 4   | Ea  | 100.00             | 17-AUG-2001 00:00 | 17-AUG-2001 00:00:0 | Awai  |
| 1.2  | AS54888      | 4   | Ea  | 100.00             | 31-AUG-2001 00:00 | 31-AUG-2001 00:00:0 | Awai  |

Order Total: 400.00

Line Total: 400.00      Line Qty: 4

Description: Sentinel Standard Desktop

Buttons at the bottom: Actions, Configurator, Availability, Book Order

Other functions are available through the Actions button on both the Order Information and Line Items forms. On the Order Information form, the Actions include functions such as, Copy, Cancel, Apply and Release Holds, Price Order, etc. In the Line Items form, the Actions include additional functions such as, Split Line, ATP, Price Line, Configurator, etc.

2. Schedule the order. This can be setup to be performed manually or automatically, depending on the user's needs. The user can schedule orders automatically by setting the Autoscheduling feature via a profile option or from the Special menu. Or the user can schedule orders manually by using the right mouse button or from the Special menu. Refer to the topical essay on Scheduling in this manual for the details of scheduling. Once the order is scheduled, the schedule ship date will be populated on the lines of the order.
3. Book the order. Users are able to book an order at either the Order Information tab or Line Items tab via the Book button.
4. Pick release the order from the Shipping > Release Sales Orders > Release Sales Orders form. Make sure to include a Release Sequence Rule, a Warehouse, a Pick Slip Grouping Rule and check the Auto Detail and Auto Pick Confirm boxes. Users can also pick release their orders from the Shipping Transaction form. Although, the user will need to setup their Shipping Parameters to ensure the order is released. Refer to the *Required Setup* section below for details.
5. View the Pick Status of the lines. The lines of the order must be in a status Released to proceed to the Ship Confirmation activity in the Workflow process. You can view the status in the Shipping Transaction form. First, the user will query the order number in the Query Manager form (Figure 3). This form will execute your query and populate the order lines in the Shipping Transaction form.

Figure 5–3 Query Manager form

The screenshot shows the Query Manager application window. The main area is titled "Criteria" and contains several search fields:

- Name:** Text input field.
- Description:** Text input field.
- Sharing:**
  - Owner: **VISION** (dropdown menu)
  - Share?:
- Entity Type to Search:**
  - Trips
  - Stops
  - Deliveries
  - Lines/Containers
- Criteria Section:**
  - Delivery Lines: [ ] - [ ]
  - Containers: [ ] - [ ]
  - Status: [ ] (dropdown menu)
  - Item: [ ]
  - Consignee: [ ]
  - Ship Method: [ ]
  - Ship from Site: [ ]
  - Ship to Site: [ ]
  - Dates Scheduled: [ ] - [ ]
  - Dates Shipped: [ ] - [ ]
  - Source System: **Order Entry** (dropdown menu)
  - Order Numbers: **5107** - **5107** ...
  - Order Type: **Standard**
  - Order Line: [ ]

At the bottom of the window, there are buttons for **Open ...**, **Save**, **Copy**, **Delete**, **Clear**, and **Find...**

To view the status of the lines, use the horizontal scroll bar in the Lines/ Containers tab of the Shipping Transaction form, and scroll to the right to a field called Pick Status. You can also click on the Detail button to open up the form. The status should be Released for all lines.

6. Create a Delivery. This can be performed automatically during Pick Release by selecting AutoCreate Delivery equal to Yes. This can also be performed manually or automatically within the Shipping Transaction form (Figure 4). If you manually create a delivery, you need to use the same ship to address, warehouse etc. based on the setup criteria of the shipping parameters. Refer to the Required Setup section for information on Shipping Parameters. In this example, we will create a delivery automatically within the Shipping

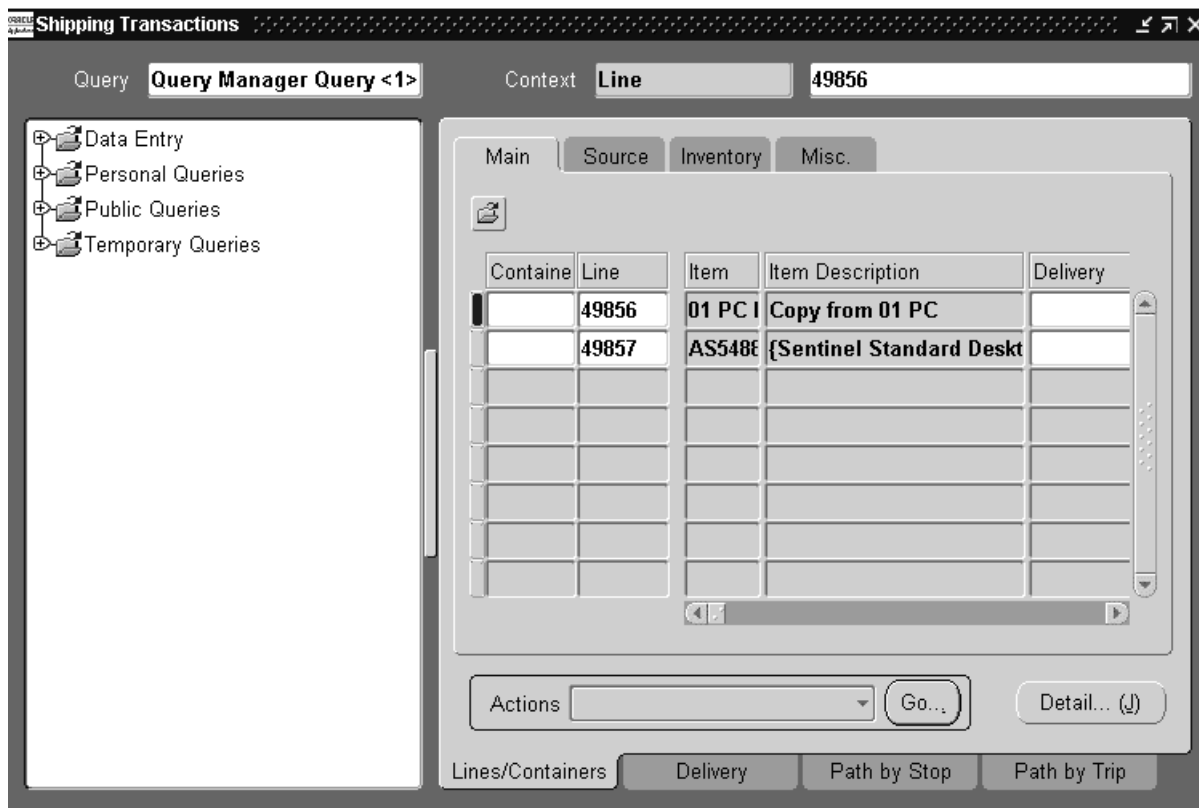
Transaction form. Once the order has been queried, the lines will appear in the Shipping Transaction Form. To create a delivery automatically, highlight (Ctrl + mouse click) the lines you want to include in the delivery, select the Actions list and choose Autocreate Deliveries and GO. A system generated delivery name will be populated on all of the lines selected. At this time, you can click on the Delivery Tab to see the delivery name, ship to location and other shipping information.

---

**Note :** If you want to use prefixes or suffixes with delivery names, modify the wsh\_external\_custom.delivery\_name package. No profile options exist for specifying prefixes or suffixes.

---

**Figure 5–4 Shipping Transaction Form**



7. Ship Confirm the order. Specify a quantity to be shipped in the Lines/Containers tab of the Shipping Transaction form, and optionally enter a Waybill in the Delivery Tab. To ship confirm the order, select the Actions list in the Delivery Tab, choose Ship Confirm and GO. The ship confirmation window will appear and give you the options to backorder, ship all or ship partial quantities and set user defined shipping documents to print. The ship confirm process triggers the inventory interface automatically to update quantities, and triggers the Order Management Interface to update the status of the order lines.
8. The fulfillment activity acts as a synchronization point for all lines on the order that are in a fulfillment set. The lines in the fulfillment set will wait at the fulfillment activity until all the lines in the set have reached the activity. Lines that are not in a fulfillment set simply pass through the activity.
9. Invoice the order. Once the Fulfillment activity completes, a Background Workflow Process processes the order line(s) to the Invoice Interface activity. The invoice interface activity places the information from the sales order line into the Receivables Interface tables. When the information is written to the tables, the invoice interface activity is complete, and the line proceeds to the close line activity. However, note that the invoice is not actually generated until the Autoinvoice program in Receivables has been run. The invoice will then be viewable in the Sales Order form.

## Workflow

A basic order flow, from entry to invoicing, will most commonly use the Generic Order and Line flows which are assigned to a Generic order type. Figure 5 is an example of a Generic Order Workflow process (enter -> book -> close):

**Figure 5–5 Order Flow - Generic Workflow Process**

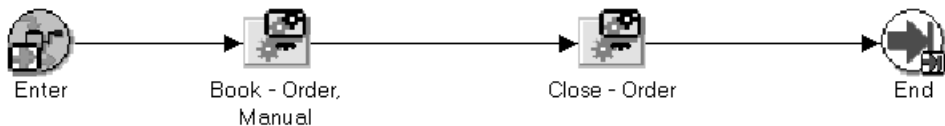
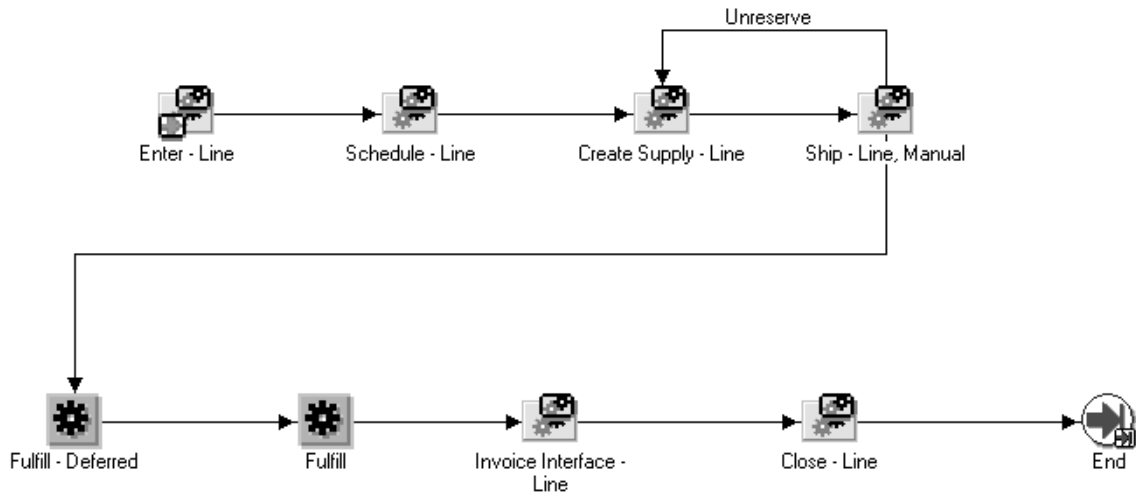


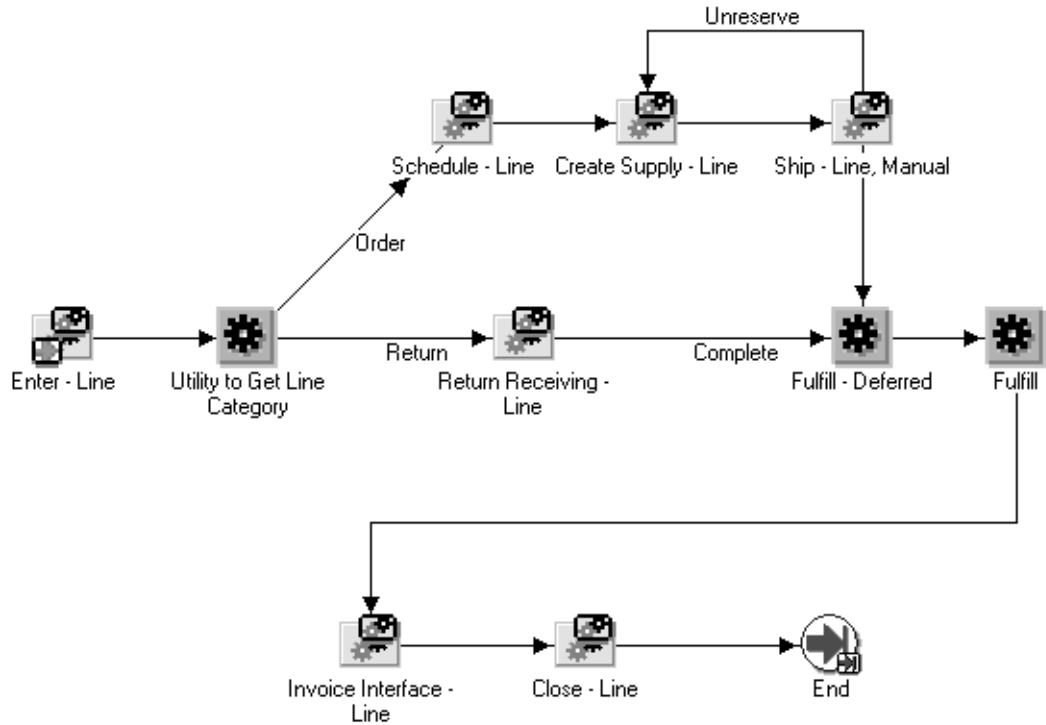
Figure 6 is an example of a Generic Order Line Workflow process (enter -> schedule -> ship -> bill -> close):

**Figure 5–6 Line Flow - Generic Workflow Process**



In Order Management, the user now has the ability to enter order lines or return lines in the same form. Figure 7 is an example of a Line flow for inbound and outbound shipments (Refer to the *Returns* section of the manual for information on the RMA process):

**Figure 5–7 Line Flow - Generic for Inbound and Outbound Shipments**







# 6

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## Returns

Topics covered in this chapter include:

- [Overview](#) on page 6-2
- [Process Flow](#) on page 6-5

## Overview

In Release 11i of Oracle Order Management, Return Materials Authorization (RMA) functionality is now incorporated in the Sales Order form where users can enter both regular and return order lines on the same order. RMA is often used synonymously with Return or Credit Orders and Returned Material. An order can have a mix of outbound (regular) and inbound (return) lines, if not restricted by the order type definition. Credit order types have an order type category Return and an order with Mixed order type category can contain both regular and return lines. Each order type and each line type is associated with a workflow process. A return line is indicated by Line Type and by its negative and highlighted item quantity and line total price. Line types can be variations of Return, such as Return with Approval, Return for Credit Only, etc., and have a line type category of RETURN.

There are three ways to create RMA's within Order Management. First, identify a sales order to be returned and query the order lines. After you have selected the sales order or order lines, use the Copy function in the Actions list to generate the return order or line by specifying an RMA line type. Second, reference a sales order, invoice, PO number or serial number of an item directly in the Return Reference field within the Line Items tab of the Sales Order form. Lastly, for return without originating sales order line, manually enter return line information and choose the appropriate return line type in the Sales Order form.

## Required Setup

### Profile Options

There are three profile options relating to RMA's that you may want to set differently than the seeded value. First, the profile, OM: Return Item Mismatch Action, allows a mismatch value between the item on the RMA line and the item on the referenced line. For example, you may need to allow a mismatch when a wrong item is shipped and you want to put the correct item on the RMA line. The seeded value is Allow or no profile option entry will be treated as Allow. The second profile is OM: Return Unfulfilled Referenced Line Action which allows non-fulfilled lines to be used as referenced lines. The seeded value is Allow or no profile option entry will be treated as Allow. And third profile is *OM: Overshipment Invoice Basis* which will determine when an over-shipment happens, should the invoicing module invoice the ordered quantity or the shipped quantity. For instance, material is received at the receiving dock, the quantity received will be compared with the RMA, which could be less than tolerance, within tolerance or greater than tolerance. When the received quantity is greater than tolerance, Purchasing will create a receipt with the quantity on the return line and an unordered receipt for the remaining quantity. When Order

---

Management is notified by the customer about the over-return, another return line will be created so that Purchasing can match it against the unordered receipt.

### **Workflow**

Order Management comes with seeded Workflow processes. Review the seeded flows, activities and notifications to determine if the seeded data can meet your business needs. To successfully enter a RMA in OM, you can use the Generic - Order Flow Return with Approval and Line Flow - Return for Credit only. The user can also modify existing seeded workflows or create new workflows to include or exclude inspections and/or invoicing activity. For instance, you can have the Invoicing Activity after the Receiving activity, or you can simply close the line without interfacing data to Receivables. For inspections, a workflow can be setup to process Invoicing once the materials have been received or to wait until inspection has been completed before invoicing is invoked. The seeded workflow will process Invoicing only after the completion of Inspection (delivery) Activity. Also, if any return lines are flagged as non-shippable or non-transactable, the Receiving workflow activity will complete with a Not Eligible result. Although, fulfillment of ATO/PTO items is required before crediting the ATO/PTO lines. This is achieved by inserting ATO/PTO lines into Fulfillment sets. This means the ATO/PTO line will wait at fulfillment until all its children are received and reach fulfillment. Refer to the topical essay on Workflow at the end of this manual for details on setting up workflow process.

### **Transaction Types**

Both order and line transaction types need to be setup in order to process an RMA. When setting up order types, you need to assign order header and line workflows to the order type. Since each line can go through its own flow process, you need to setup workflow assignments to let each line assign its own workflow process. Credit order types have an order type category Return. An order with a Mixed order type category can contain both regular and return lines. Line level workflow processes are assigned based on the order type, line type, and item type combination. When you setup a return order type or mixed order type, you have the option to set a default return line type, so that the user doesn't have to manually choose the line type unless they want it to be different. Refer to the topical essay Using Transaction Types in Oracle Order Management at the end of this manual for details on setting up transaction types.

### **Master Items**

You can create a return line only if an item is Returnable. Therefore, a standard,

finished good item should be defined in the Inventory module, with attributes set appropriately. The best way to create your items is to copy them from the Finished Good seeded template and set additional attributes as needed in the Master Item setup form. The key attributes that control the processing of a returnable item are:

- Order Management Tab: Returnable, Shippable and Transactable = Yes, RMA Inspection Required = Yes or No
- Receiving Tab: Receipt Routing = Inspection (if required)
- Invoicing Tab: Invoicable Item = Yes or No, Invoice Enabled = Yes or No

Note: If the Item is not flagged as Returnable, Shippable and Transactable, you cannot receive in Oracle Purchasing's receiving module and if the item is not flagged as Invoicable the return lines will not interface to Receivables. Also, an item can be returnable but not orderable. This is commonly used if a company stops selling an item, but they still want to be able to do returns for it.

For lot and/or serial controlled items, OM will have the capability to store one or more lot and serial numbers associated with one RMA line. Order Management will not validate the serial numbers against Inventory serial numbers in the system or against serial numbers associated with the referenced sales order. Receiving will capture the serial numbers of the items at delivery. The Credit Order Discrepancy Report can be used to show the difference between actually delivered lot/serial numbers and the numbers on the RMA. The sales order form has a window to capture lot and serial numbers suggested by the customer for the RMA line.

For ATO/PTO configurations, only the Returnable configuration lines will be displayed on the sales order form. Therefore, you need to make sure that the item attributes are set correctly for ATO/PTO children items.

## Price List Setup

In order to price any **new** items when entering an ordered item on the sales order form, the user should add the new item to a price list. The item is added to a price list via the Price List Setup form: Pricing > Lists > Price Lists Setup. Query an existing price list or create a new price list. Add a new line, enter the item name, UOM and price and save. The price and UOM will default when entering the item on the order line. When an RMA line is created and the originating transaction is known, the pricing information is populated from the originating order line. The user can change the pricing if needed. The list of values on the Price List will show all the active price lists on the pricing date. Also, ATO configured items and PTO included items should be included on a price list in order to be received and credited.

## Processing Constraints

Order Management has seeded constraints that will simply prevent data integrity problems. For instance, you can prevent change for a line if it has been: closed, canceled at order level, canceled, shipped, invoiced, return line cannot be canceled after it has been interfaced to Receivables and a return line cannot be canceled after it has been received. If the business needs more restrictive rules when processing orders, they can setup rules to control changes or operations of the order process flow. Refer to the topical essay on Processing Constraints at the end of this manual for details on setting up processing constraints.

## Return Reason Codes

Since a return reason is required on all returns, you can setup your own reason codes in the Receivables Quickcodes form. To do this, navigate to the Order Management responsibility and select the menu: Setup > Quickcodes > Receivables. The Oracle Receivables Lookup form will appear. Query the CREDIT\_MEMO\_REASON code from the query manager (Flashlight icon). You can view the existing codes or add a new code. These codes will show up in the Return Reason list of values when entering a return.

## Reports

The Returns by Reason report can be used to view all return reasons setup in the system. You can run the report by Return Reason, Credit Order Date, Credit Order or Line Type and/or Item Number.

## Freight and Special Charges for Returns

When setting up freight or special charges, users can specify if the charge is returnable, meaning the charge may be refunded. When you create a return line from an original order line, you should copy the refundable invoiced charges. You can also setup special charges to be applied specifically to returns, like restocking fees, return handling, damage etc. You can set this through an attribute called Refundable Flag (Include on Returns field) within the Pricing Modifier setup. Refer to the topical essay on *Freight and Special Charges* for more information.

## Process Flow

This section will guide you through a basic flow for a Return for Credit with Receipt, from entry to generating a credit memo, including:

- Create an RMA having a single line whose originating transaction is unknown

- Book the RMA
  - Receive the RMA using the Receipts form of Oracle Purchasing
  - Check the on-hand quantity of the item in Inventory to verify that correct quantity was received
  - Fulfill RMA line
  - Generate a credit memo
  - View the Credit Memo in Order Management
  - Check the Shipped and Fulfilled quantity on the RMA line
1. Enter the RMA on the Sales Order form. Entering a return on the Sales Order form, is exactly the same as entering an order, except at the line level where the user specifies the Line Type as a Return and a negative line quantity and total quantity appear on the form. Thus, in the Order Information tab of the Sales Order form, the user will enter the same information (i.e. Customer Name, Order Type, etc.) as a standard order. The Standard order type is assigned to a Generic Order and Line workflow which allows either an order or return to be entered. Refer to the Workflow section for details on the Generic Order and Line workflow for returns. [Figure 6-1](#) is the Sales Order form for entering the Header information for the RMA:

Figure 6–1 Sales Order Information (Header) form

Oracle Applications - tst115

File Edit View Folder Tools Window Help

Sales Orders - [New]

Order Information Line Items

Main Others

|                  |                           |              |                          |
|------------------|---------------------------|--------------|--------------------------|
| Customer         | Computer Service and Re   | Order Number |                          |
| Customer Number  | 1006                      | Order Type   | RMA - Credit             |
| Customer PO      |                           | Date Ordered | 22-JAN-2002 13:31:55     |
| Customer Contact |                           | Price List   | CORPORATE                |
| Ship To          | Chattanooga               | Salesperson  | Smith-Jones, Ms. Dolores |
|                  | 301 Summit Hill Drive     | Status       |                          |
|                  | Chattanooga, TN, 37401, U | Currency     | USD                      |
| Bill To          | Chattanooga               | Subtotal     | 0.00                     |
|                  | 301 Summit Hill Drive     | Tax          | 0.00                     |
|                  | Chattanooga, TN, 37401, U | Charges      | 0.00                     |
|                  |                           | Total        | 0.00                     |

Actions Configurator Availability Book Order

- Once the Order Header information is entered, you will enter the line information within the Line Items screen, as seen in [Figure 6–2](#) :

Figure 6–2 Line Items form

Oracle Applications - tst115  
 File Edit View Folder Tools Window Help

Sales Orders (87) - Computer Service and Rentals

Order Information Line Items

{Boon Test} Order Total 52.90

Main Pricing Shipping Addresses Returns Services Others

| Line | Ordered Item | Qty | Return Reason  | Line Type        | Reference | Order |
|------|--------------|-----|----------------|------------------|-----------|-------|
| 1.1  | AS54888      | -1  | Product Return | Return with Rece |           |       |
|      |              |     |                |                  |           |       |
|      |              |     |                |                  |           |       |
|      |              |     |                |                  |           |       |
|      |              |     |                |                  |           |       |
|      |              |     |                |                  |           |       |
|      |              |     |                |                  |           |       |
|      |              |     |                |                  |           |       |
|      |              |     |                |                  |           |       |
|      |              |     |                |                  |           |       |

Line Total 52.90 Line Qty -1

Description Sentinel Standard Desktop

Actions Configurator Availability Book Order

- In the Main Tab, enter the Ordered Item and the Quantity to be returned . The user can enter a positive or negative number. You will also see that the negative quantity will be highlighted in another color. Next, in the Returns tab, the user will need to enter the Line Type as a return (i.e. Return for Credit with Receipt of Goods) and enter a Return Reason. A Return Reason is required to be entered (i.e. Product Discontinued). Since we did not reference a sales order, we are entering a single line RMA where the originating transaction is unknown.



4. Book the RMA. Users are able to book an order or return at either the Order Information Tab or Line Items Tab via the Book button.
5. Receive the RMA using the Receipts form of Oracle Purchasing. Change responsibilities to Purchasing and navigate to the Receiving > Receipts form. In the Receipts form, an Organization window will be displayed if this is the first time you have navigated to the Purchasing > Receipts form since your login. The organization you choose should be the same warehouse where your RMA is created. In the Receipt Header window, select the Customer Tab and find your RMA #. Tab through the Header window to the Receipts Line window. Once you are in the Receipts Line window, the RMA number and quantity will populate the form. Check the box next to the line you wish to receive, enter a Destination Type as Inventory and subinventory. Save this transaction and record the receipt number in the Header window. By choosing the Destination Type as Inventory, the user is creating a transfer to inventory transaction in Purchasing. These items are now considered as supply. Purchasing will communicate the quantity received to Order Management to update the RMA.

Figure 6-3 Receipt Header form

Oracle Applications - tst115

File Edit View Folder Tools Window Help

Receipts (V1)

Receipt Header (V1)

New Receipt  Add To Receipt

Receipt

Shipment

Packing Slip

Freight Carrier

Containers

Customer **Computer Service and Rental**

Comments

Receipt Date **22-JAN-2002**

Shipped Date

Waybill/Airbill

Bill of Lading

Received By **Stock, Ms. Pat**

Figure 6-4 Receipts (Line) form

File Edit View Folder Tools Window Help

Receipts (V1)

Lines Details Currency Order Information Outside Processing Shipment Information

| Quantity                              | UOM  | Inventory | Locator | Category          | ASN Type | Country of Origin |
|---------------------------------------|------|-----------|---------|-------------------|----------|-------------------|
| <input checked="" type="checkbox"/> 1 | Each | s         |         | PRODUCTN.FINGOOD! |          |                   |
| <input type="checkbox"/>              |      |           |         |                   |          |                   |
| <input type="checkbox"/>              |      |           |         |                   |          |                   |
| <input type="checkbox"/>              |      |           |         |                   |          |                   |
| <input type="checkbox"/>              |      |           |         |                   |          |                   |
| <input type="checkbox"/>              |      |           |         |                   |          |                   |
| <input type="checkbox"/>              |      |           |         |                   |          |                   |

Order Type: Return with Receipt of Goods      Order: 20016

Customer: Computer Service and Rentals      Due Date: 18-DEC-2001

Item Description: {Sentinel Standard Desktop}      Hazard:

Destination: --Stores-      UN Number:

Receiver Note:      Routing: {Standard Receipt}

Note for Receiver:

Lot - Serial      Cascade      Express      Header

6. Check the on-hand quantity of the item in Inventory to verify that correct quantity was received. Change responsibilities to Inventory and navigate to the Transactions > Material Transactions form. In the Material Transactions form, an Organization window will be displayed if this is the first time you have navigated to the Inventory > Material Transactions form since your login. The organization you choose should be the same warehouse where your RMA is created. Find the item name being returned and navigate to the Transaction Type tab. Verify that the source type is RMA and the source is your RMA # for

the quantity being returned. This form will show you your item #, the subinventory chosen and the quantity specified to be returned from the Receipts form.

**Figure 6–5 Material Transaction form**

The screenshot shows the 'Material Transactions (V1)' window. At the top, there is a menu bar (File, Edit, View, Folder, Tools, Window, Help) and a toolbar with various icons. Below the menu bar, there are tabs for 'Location', 'Intransit', 'Reason, Reference', 'Transaction ID', and 'Transaction Type'. The main area contains a table with the following columns: Item, Source Type, Source, Transaction Type, and Transactio. The table lists several transactions for item AS54888, with source types like '{Sales order}' and sources like '96629.{Standard}' or '96632.{Standard}'. Transaction types include '{Sales order issue}' and '{Sales order staging transfer}'. Below the table, there are input fields for 'Item Description' (containing '{Sentinel Standard Desktop}'), 'Date' (14 JAN-2002 17:51:51), 'Primary UOM' (Ea), and 'Primary Quantity' (-2). At the bottom, there are buttons for 'Distributions', 'Lot / Serial', 'Clear', and 'Find'.

| Item    | Source Type   | Source           | Transaction Type               | Transactio |
|---------|---------------|------------------|--------------------------------|------------|
| AS54888 | {Sales order} | 96629.{Standard} | {Sales order issue}            | Issue from |
| AS54888 | {Sales order} | 96632.{Standard} | {Sales order issue}            | Issue from |
| AS54888 | {Sales order} | 96629.{Standard} | {Sales order issue}            | Issue from |
| AS54888 | {Sales order} | 96632.{Standard} | {Sales order staging transfer} | Staging t  |
| AS54888 | {Sales order} | 96632.{Standard} | {Sales order staging transfer} | Staging t  |
| AS54888 | {Sales order} | 96629.{Standard} | {Sales order staging transfer} | Staging t  |
| AS54888 | {Sales order} | 96629.{Standard} | {Sales order staging transfer} | Staging t  |
| AS54888 | {Sales order} | 96629.{Standard} | {Sales order staging transfer} | Staging t  |
| AS54888 | {Sales order} | 96629.{Standard} | {Sales order staging transfer} | Staging t  |
| AS54888 | {Sales order} | 96629.{Standard} | {Sales order staging transfer} | Staging t  |
| AS54888 | {Sales order} | 96630.{Standard} | {Sales order issue}            | Issue from |

Item Description: {Sentinel Standard Desktop}      Date: 14 JAN-2002 17:51:51  
 Primary UOM: Ea      Primary Quantity: -2

Buttons: Distributions, Lot / Serial, Clear, Find

7. Fulfill RMA line. The fulfillment activity acts as a synchronization point for all lines on the order that are in a fulfillment set. The lines in the fulfillment set will wait at the fulfillment activity until all the lines in the set have reached the

activity. Lines that are not in a fulfillment set simply pass through the activity automatically. The user will not have to perform anything during this step. The eligible lines will automatically be put into a fulfillment set.

8. Generate a credit memo for the return. The Workflow process of the return line(s) will be on the Invoice Interface activity, once the Fulfillment activity completes. The invoice interface activity places the information from the return line into the Receivables Interface tables. Once the information is written to the tables, the invoice interface activity is complete, and the line proceeds to the close line activity. However, note that the credit memo is not actually generated until the Autoinvoice program in Receivables has been run. The credit memo will then be viewable in the Sales Order form. To run the Autoinvoice program, the user needs to change responsibilities to Receivables and navigate to the Interfaces form. Select the Autoinvoice Master program and run the program for your RMA # and specify the invoice source as the one associated with the line type of the RMA line. The Autoinvoice Master program will generate the Autoinvoice Import program which generates the credit memo.
9. View the credit memo in Order Management. To view the credit memo in Order Management, the user need to change responsibilities to Order Management > Orders, Returns > Order Organizer form. Query your RMA # in the Order Organizer. Once the RMA is queried, select the Actions button and choose Additional Order Information. Once the Additional Order Information form has opened, click on the Receivables tab to view the credit memo. This form will show your the credit memo number and amount.
10. Check the Shipped and Fulfilled quantity on the RMA line. From the above step, navigate in the Sales Order form to the Line Items tab for the RMA. Scroll to view the Shipped Quantity field. To access the Fulfilled Quantity field, the user needs to use the folder technology to add the field to the sales order form. To add the field, click on the Warehouse field in the Shipping Tab of the Line Items form. Next, select the Folder menu at the top of the form, select Show Field and choose the Quantity Fulfilled field from the list. The field will populate in the form. The Shipped Quantity means the received quantity for return lines and the Fulfilled Quantity means the delivered quantity for the return lines.

## Workflow

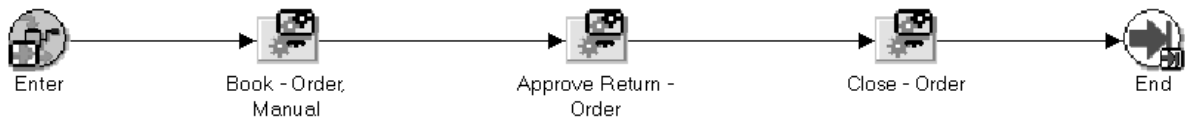
In Oracle Order Management, you can have many types of credit order by specifying it's Order Type and Line Type. Each order type and each line type is associated with a workflow process. You can customize order types and RMA line types to meet your business needs. For instance, you can use Approvals and Holds with returns in

order to manage exceptions when your customer returns more or less than you authorize.

Credit order types have order type category Return'. An order with a Mixed order type category can contain both regular and return lines. But you cannot enter return lines into an order with order type category Regular.

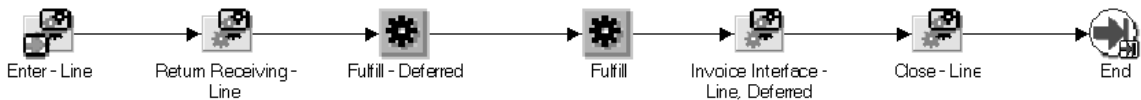
[Figure 6-6](#) is an example of a seeded Order Return Flow process (enter -> book -> approval notification -> close):

**Figure 6-6 Order Flow - Return with Approval**



[Figure 6-7](#) is an example of a seeded Order Return Line Flow process (enter -> return-> invoice -> close):

**Figure 6-7 Line Flow - Return for Credit with Receipt**



[Figure 6-8](#), [Figure 6-9](#), and [Figure 6-10](#) are other workflow processes that Order Management seeds for Return Line flows:

**Figure 6–8 Line Flow - Return for Credit only**

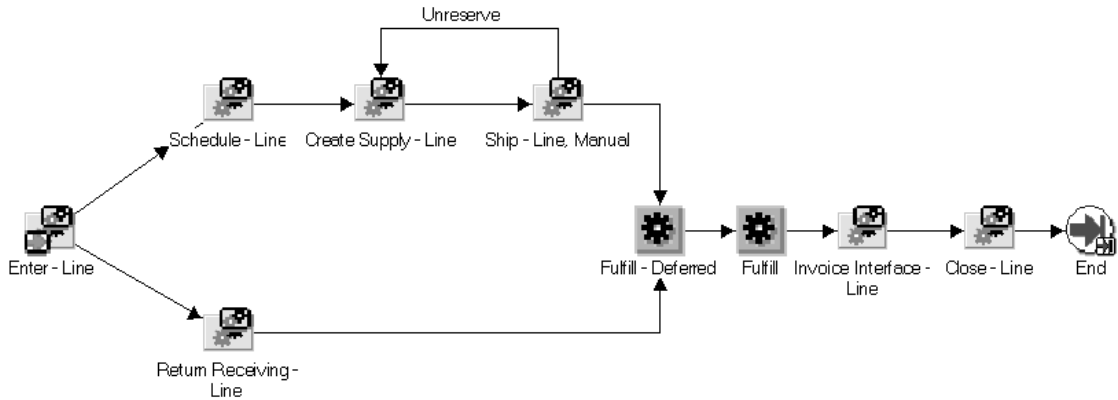


**Figure 6–9 Line Flow - Return for Credit only with Approval**



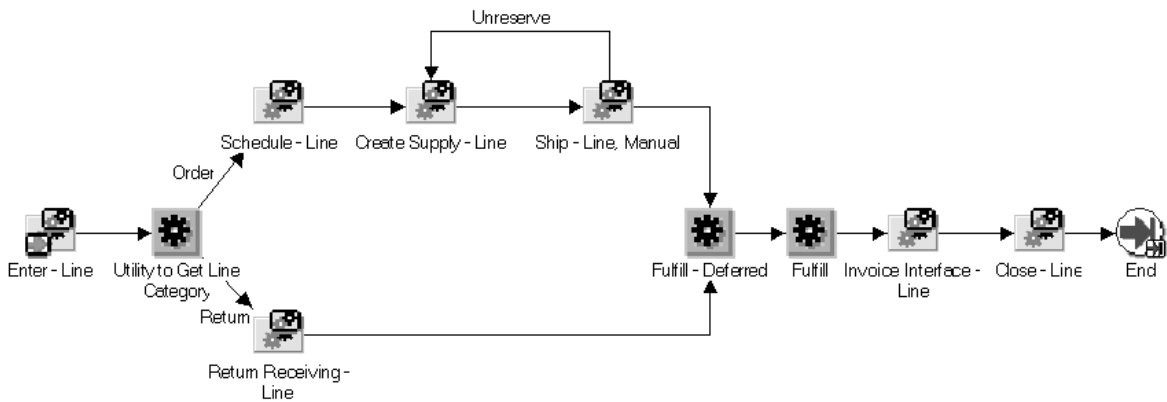
In Oracle Order Management, there are also flows which support both order and return lines (inbound and outbound transactions), however, there are no seeded workflows. Customers can create flows that support both Order & Return Lines. **However this should be done with caution as Workflow does not function identically to Cycles.** For instance, the flow listed below (Figure 10) will not work correctly, since once a line is booked, workflow randomly picks which transition to process first. It then processes it all the way till it can go no further. So for an outbound Line using this flow, if the branch 'Returns receiving' is first processed, it will get marked as Not Eligible and hit the Fulfill -Defer activity (to defer thread) and stop. Then the WF Engine starts executing the other branch; the line will schedule and hit the Ship - Line, Manual sub-process, where it will stop and wait to get picked and shipped. However the Background Engine could pick up the deferred thread and execute the Fulfill activity. This activity will error out since the fulfilling event for the order line Ship-Confirmation is not yet complete.

**Figure 6–10 INCORRECT Line Flow - Supporting inbound and outbound shipments**



For this flow to work **correctly**, the flow ensures that only one transitions is executed (Order or Return). The flow needs to be defined as follows:

**Figure 6–11 CORRECT Line Flow - Supporting inbound and outbound shipments**



After booking the line flow branches based on the Line Category ensuring **that only one** of the branches are (Order or Return) executed runtime. The activity Utility to



get Line Category is seeded OM: Order Line Work Item.

With regard to item inspections, the Order Management system does not process inspection results, and only processes delivery transactions. Based on the users business rules, if an item is rejected, the user can either deliver to inventory (scrap sub-inventory) or return to the customer. Delivering to inventory will give credit to the customer. Returning to the customer will reduce the shipped quantity and credit will be given for only accepted goods. Therefore, receiving transactions drive the flow of the return and what gets credited



# 7

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## Drop Shipments

Topics covered in this chapter include:

- [Required Setup](#) on page 7-2
- [Required Setup](#) on page 7-2
- [Process Steps](#) on page 7-3
- [Workflow](#) on page 7-3

## Overview

A Drop Shipment occurs when a customer order is sourced from and delivered by a supplier. Order Management sends information to the Purchasing Application to create that PO, and then when that PO is received (to indicate shipment from the supplier to your customer), the order line is automatically updated to indicate that it was fulfilled.

In this process, the company running Order Management is modeled as the company to whom the end customer places the original order. We call this process Vendor Drop Shipment, to indicate that we are defining the process from this point of view.

The Source Type attribute on the order line controls whether a line will be fulfilled internally or drop shipped. A source type of External indicates Drop Ship. Only standard items may be drop shipped; kits and models cannot be drop shipped at this time.

## Required Setup

Verify the following are set up to meet your business' drop ship needs:

### Customers

In R11, because of the separate data models of OE and PO, it was necessary for user to maintain the customer address in two places - the AR tables and the HR tables. In R11i Order Management, there is no longer a need for dual address maintenance - Purchasing obtains the ship-to address from the AR tables. Therefore there is no special setup for Customers to do drop shipments.

### Warehouse

Consider establishing a logical warehouse to receive drop shipments. This will isolate the costs of drop shipped items from items you physically stock. Order Management does not require you to use a special shipping org for drop shipments, but you can choose to do so. In that case, define the logical warehouse as a shipping org, and enable the items you want to be drop shipped in that warehouse.

### Order Type/Line Type

Define line type/order types for your drop shipment orders that have a workflow containing the Create Supply activity.

## Defaulting Rules

Define defaulting rules, based on conditions that make sense to your business process, for the source type attribute of the Order Line. If you want a line to be drop shipped, make the source type equal to External. In addition, if you defined a special warehouse for drop shipped items, you might want to create a defaulting rule to default that shipping org to your order line.

## Process Steps

Enter and book order. Defaulting Rules may set source type attribute to **External**, or the user may manually choose External source type. Note that only standard items can be drop shipped; kits and models cannot be drop shipped.

Create Supply workflow step loads OM information into Purchasing's Requisition Import tables. Alternatively, a Purchase Release concurrent program can be run to do the same. Run Requisition Import in Purchasing to create the requisition.

After Requisition Import completes successfully, approve the requisition to generate the Purchase Order. Create a PO or autcreate a Blanket PO Release from the approved requisition. This is sent to the vendor.

A drop ship order can be changed or canceled in Order Management after it has been sent to Purchasing but before receipt. However, the changes are not automatically communicated to Purchasing. A report, Sales Order/Purchase Order Discrepancy Report, shows what orders have changed. These changes need to be manually updated in Purchasing and then communicated to the vendor.

When the vendor ships product to your customer, you may receive an ASN, or even an invoice, to indicate shipment to the customer. The receipt triggers automatic receipt of the line in Purchasing. If the vendor does not send ASN, receipt can be entered manually (passive receiving). Inbound and outbound material transactions are automatically created for accounting purposes.

OM workflow proceeds to next step, typically invoicing of the end customer.

## Workflow

Figure 1., the Generic Line workflow, contains the Create Supply activity, which branches to various sub-processes based on different characteristics of the item and sales order line.

Order Management's Workflows streamline the process of loading order information into the Purchasing requisition import tables, eliminating the need to

run the Purchase Release concurrent program. You can still run Purchase Release as a concurrent program, if you prefer to batch up requisition lines.

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# Internal Orders

Topics covered in this chapter include:

- [Overview](#) on page 8-2
- [Required Setup](#) on page 8-2
- [Process Steps](#) on page 8-3
- [Workflow](#) on page 8-4

## Overview

The Internal Requisition/Internal Orders process is used for requesting and transferring material from one inventory or expense location to another. An Internal Requisition is initiated in Oracle Purchasing. Sourcing rules can automatically determine if the source type is to be Inventory or an external supplier. Order Management receives information from the Purchasing Application to create an Internal Sales Order. When the sales order is shipped (to indicate either intra or inter-organization movement of goods), the requisition can be received to record receipt of goods.

The Source Type attribute on the requisition line controls whether a line will be fulfilled internally or purchased from a supplier. A source type of Inventory indicates an internal order. Order Management is seeded with an Order Source of Internal, to identify lines created from internal requisitions. The internal requisition id is stored in the Original System Reference column on the order header of the Internal Order. It is not possible to manually enter Internal Orders using the Order Management user interface – these orders must come in via Order Import.

Within Release 11i Order Management, the internal order is processed almost exactly like an order that is to be shipped to an external customer. Some coordination between Order Management and Purchasing has been automated – tighter coordination is being planned for future releases. Please refer to the *Oracle Purchasing User's Guide* for details of Purchasing set up and processing.

## Required Setup

To process Internal Orders, the following special setups are required:

### Customers

Because internal orders are processed through the sales order form, corporate locations that receive product via internal orders must be set up as customers. Create customer records to correspond to internal locations, and link them using location associations on the Customer bill-to site usage.

### Items

Set up the items you want to allow on Internal Orders with both the Internal Orders enabled flag and the Internal Ordered Item flag on. Enable the item in both the source and the destination organizations.



### Order Type/Line Type

You do not have to set up special order types or line types for Internal Orders. You do have to specify in your Purchasing setup what order type you are using for internal orders, however. You can use any generic order type for internal orders.

### Defaulting Rules

Analyze your business process and define defaulting rules for Internal Order defaults.

### Processing Constraints

Seeded processing constraints in Order Management prevent changes to the Customer, Ship To, Invoice To, Warehouse, Request Date, Source Type, and the Ordered Quantity for internal lines. If you want to further restrict what can be changed on internal orders, you can constrain other attributes using the Internal Order validation template.

### Order Source

An order source (for Order Import) of Internal is seeded. This should be selected in the Purchasing options setup for Order Source.

## Process Steps

1. Enter Requisition in Oracle Purchasing. Sourcing Rules may set source type attribute to **Inventory**, or manually choose Inventory source type.
2. Approve the Internal Requisition.
3. Run the Create Internal Sales Order concurrent program in Purchasing to load the Order Import tables. This can also be scheduled as part of your set up to run periodically to meet business needs.
4. Run Order Import with Order Source = Internal in OM to create the Internal Order. Be sure to run Order Import using a responsibility that corresponds to the operating unit in which the internal order needs to be created. It is possible to create an internal order in an operating unit different from that of the internal requisition. This can also be scheduled as part of your set up to run periodically to meet business needs.
5. After Order Import completes successfully, book, pick and ship the internal order.

6. Receive against the Internal Requisition.

## **Workflow**

There are no special Workflow implications to processing Internal Orders, the Standard Flows can be used. Even if the workflow contains a step for Invoicing Interface, Internal Order lines will not be invoiced.

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# Configure-to-Order

Topics covered in this chapter include:

- [Overview](#) on page 9-2
- [Required Setup](#) on page 9-4
- [Process Steps](#) on page 9-5
- [Related Processes](#) on page 9-15

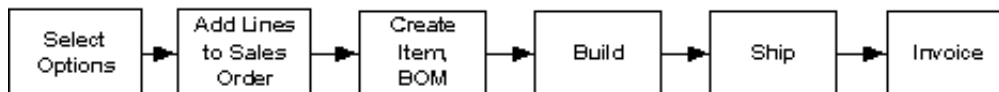
## Overview

The Configure-to-Order process (CTO) is a cross-modular process which enables users to select options in the sales order form to define a possibly unique item, build the item using Oracle's Manufacturing Applications Suite, and continue processing the item as if it were a standard item through the shipping and invoicing activities. This section defines the CTO process as well as the related processes of Assemble-to-Order (ATO), Pick-to-Order (PTO) and Kits. It provides an overview of how this business process is implemented, the workflow processes that support it, and the required setup.

For details on implementing CTO, please see the Oracle Configure to Order Implementation Manual.

The CTO process goes through these basic steps:

*Figure 9–1 CTO Process*



First the user goes to the sales order form and enters an ATO model as an item. They press the Configurator button, and a form opens which allows them to select options. When they close the form, the system adds the options to the sales order as new lines. The system creates a new item and a new bill of material (if necessary) and generates communicates with the manufacturing applications so that the item is built. The completed item is then shipped to the customer and an invoice is generated.

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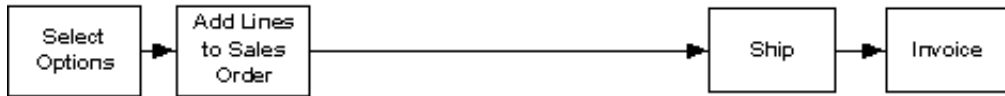
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**Note:** These steps will be described in detail later in this paper.

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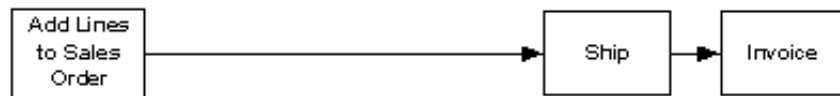
The PTO process is similar except that all options are finished goods which are stocked in the warehouse, so no assembly operation is required. These are the basic steps for the PTO process.

**Figure 9–2 PTO Process**

The ATO process is also similar. The item is built based on the demand from the customer order. However, for an ATO item the customer cannot select options. Therefore the item and the bill of material are already defined. The user enters an ATO item and it follows this process.

**Figure 9–3 ATO Process**

Finally, the kit process is similar to the CTO process, because a kit item has a bill of material structure and the included items are added as lines to the sales order. The user enters a Kit item and it follows this process.

**Figure 9–4 Kit Process**

## Required Setup

To make these flows work, some special setup is required. First, all models, option classes, options and kits must be defined in the Inventory module and they must have their attributes set appropriately. Bills of Material must be created for all models, option classes and ATO items. Finally, the workflow processes must be correctly assigned to the transaction types.

The key attributes that control the processing of the CTO and related processes are on the Order Management tab in the Item setup form. The flag Assemble to Order should be selected for CTO items and ATO items. The Pick Components flag should be selected for PTO models. Other attributes are also important. The best way to create your items is to copy them from the following seeded templates:

- ATO Model (for the Configure-to-Order process)
- ATO Option Class
- ATO Item
- PTO Model
- PTO Option Class
- Kit

Bills of Material (BOMs) must be created for your models, option classes, ATO items, and kits. For models and option classes, some key attributes are defined on the Order Entry tab of the BOM form. The optional flag is checked if an option class or option is not required. If an option class is required then the configuration must include at least one of the options from the class. The option class that is not optional is called a mandatory option class. If an option is not optional it is considered an included item and it not shown as an available selection in the Configurator or option selection window. It is automatically added to the sales order. At least one item should be optional within the structure of an ATO model or a PTO model. No items can be optional in a kit. Another important attribute of the BOM is the required for revenue flag on the shipping tab. This flag is only enabled in PTO configurations for included items. If the flag is checked, then the option class or model which is the parent of the item will not be invoiced until this item has been shipped for additional information see the Oracle Bill of Material User's Guide.

The transaction type for an order which will include CTO items must have at least two line workflow processes associated with it - one for the model, options and option classes and one for the configured item. In the Assign Line Flows form, the item type of Configuration must be specified for the workflow of the configured

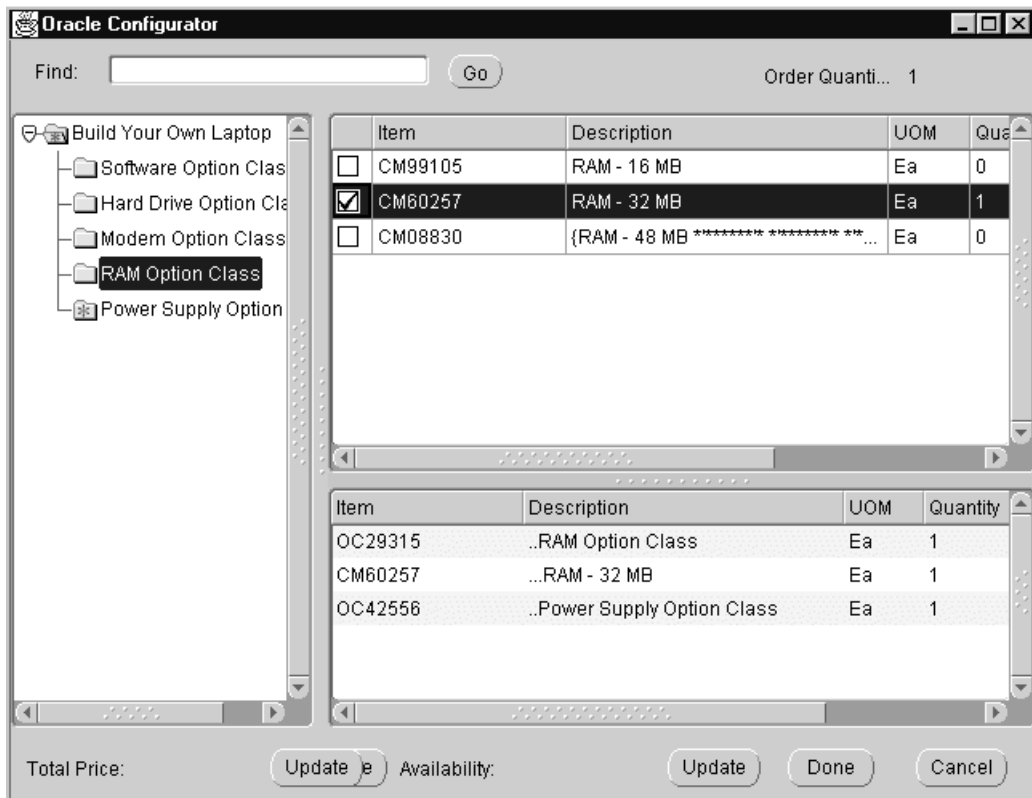
item. For ATO models, ATO items, PTO models, options, option classes, and kits the seeded generic line flow can be used for all the item types. See the topical essay [Using Transaction Types in Oracle Order Management](#) at the end of this manual for details on setting up transaction types.

## Process Steps

This section will describe to steps required to order, ship and invoice a CTO item from the Order Management point of view including:

- Entering the item - OM
  - Selecting the options - CZ
  - Creation of a configured item - BOM
  - Creation of a work order - WIP
  - Manufacturing - WIP
  - Shipping and Invoicing - SHP
  - Associated Workflows - WF
1. Enter your item. The CTO process begins in the sales order form. Enter an ATO model as the item number and then select Configurator. You will see a graphical screen for selecting options shown in [Figure 9-5](#)

Figure 9–5 Oracle Configurator window



2. Select your options. The folders on the left side are the model and its option classes. For the selected option class (in this example the RAM option class), the available options are in the top box on the right. The options are selected by checking the box to the left of the item name. The options and option classes which are selected are in the bottom right. Required option classes which have no selections are indicated by a red asterisk on the folder icon.



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**Note: Oracle Configurator is a powerful tool which allows you create complex rules for configurations and then validate those rules when you create configurations. It is completely integrated with Order Management. For more information on Oracle Configurator, Oracle Configurator Developer User's Guide and the Oracle Configurator Installation Guide.**

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Once you have selected the options that your customer has requested you select Done or OK and return to the sales order form. The model, option classes, and selected options are now all separate lines on the sales order form, as shown in [Figure 9-6](#). Note that the lines are related by the line number.

**Figure 9–6 Sales Order Form with Model, Option Classes and Options**

Order Information    Line Items

Order Total    **1,608.12**

Main    Pricing    Shipping    Addresses    Returns    Services    Others

| Line  | Ordered Item   | Qty | UOM | Unit Selling Price | Request Date         | Schedule Ship Date | S |
|-------|----------------|-----|-----|--------------------|----------------------|--------------------|---|
| 1.1   | <b>CN97444</b> | 1   | Ea  | 1,269.00           | 16-JAN-2002 00:00:00 |                    | E |
| 1.1.1 | OC68020        | 1   | Ea  | 9.00               | 16-JAN-2002 00:00:00 |                    | E |
| 1.1.2 | CM25287        | 1   | Ea  | 146.70             | 16-JAN-2002 00:00:00 |                    | E |
| 1.1.3 | OC42556        | 1   | Ea  | 9.00               | 16-JAN-2002 00:00:00 |                    | E |
| 1.1.4 | CM34225        | 1   | Ea  | 9.00               | 16-JAN-2002 00:00:00 |                    | E |

Line Total    **1,442.70**    Line Qty    **1**

Description    **Build Your Own Laptop**

Actions    Configurator    Availability    Book Order

Each of these lines has a separate workflow and this paper will discuss the workflow process for each line in the workflow section.

After the options for the configuration are selected, the items on the order must be scheduled. See the topical essay on Scheduling in this manual for the details of scheduling.

3. Create the configured item. This item could be completely new, or it could have been manufactured before because someone selected the same combination of options. A program runs which first looks for an existing configuration with these options (if the value of the profile option BOM: Match to Existing Configuration = Yes), and if one does not exist (or if the value of the profile option BOM: Match to Existing Configuration = No) it creates an item and BOM

for this combination of options. To run this program from the sales order form, place your cursor on the model line (the one with a two segment line number), press the Actions button and select Progress Order. The line will be eligible for the Create Configuration activity. Select this from the list and press the OK button. Alternatively you can create one or more configuration items in batch mode by running the AutoCreate Configuration Items concurrent request in the Bills of Material application.

When you have completed this step, your order will have an additional line item which is known as the configured item. The item will have an item number which was created for the first order with this exact combination of selected options. The format for the configuration item number is determined by the Numbering Method parameter in the BOM parameters window.

4. Create the work order. Creation of the work order will trigger the manufacture of the item. (Note: The CTO process works with both Oracle's Discrete Manufacturing applications and Oracle's Flow Manufacturing applications. This section uses the terminology of the discrete manufacturing process). To create the work order from the sales order form, place your cursor on the configured item line (the one that was added in the previous step,) press the Actions button and select Progress Order. The line will be eligible for the Create Final Assembly Order activity. Select this from the list and press the OK button. Alternatively you can create one or more work orders in batch mode by running the AutoCreate FAS **concurrent** request in the Work in Process (WIP) application.
5. Manufacture the Item. In a production environment this could require many steps. None directly affect Order Management until the final status of work order completion. When the completion activity is performed in WIP the item is transferred to inventory with a reservation to the sales order.

At this point, the configured item is available to progress through the standard order process of shipping and the model progresses through the invoice activity. The steps are described in the sales order flow and the shipping process flows sections of this manual.

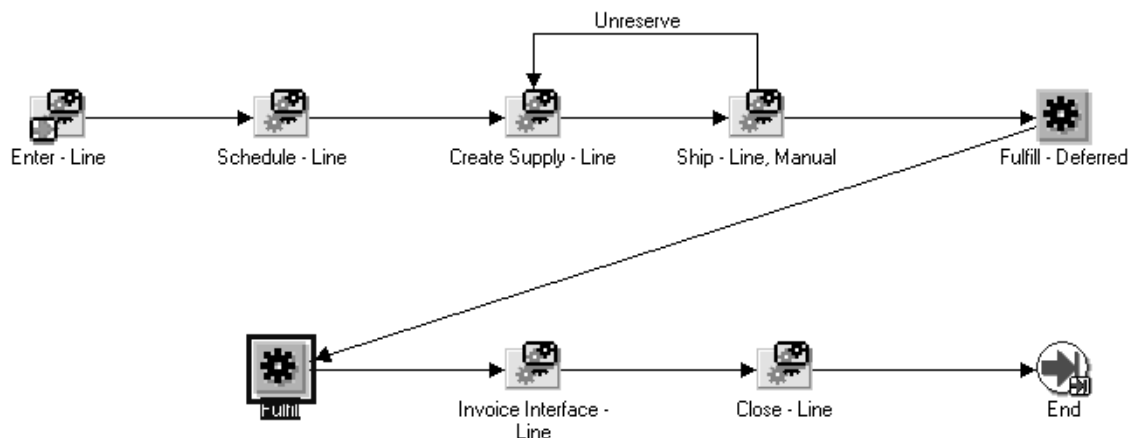
## Workflow

Although there are many item types in this business process, only two top level line workflow processes are needed to support it. The seeded flow Line Flow - Generic is used for the model, option class and option lines. The seeded flow Line Flow - Configuration is used for the configured item.

### Model, Options and Option Classes Workflow

The flow for the model, options and option classes all begin with the following basic process depicted in [Figure 9-7](#).

**Figure 9-7 Line Flow - Generic Workflow Process**



The lines progress through the Enter - Line and Schedule - Line subflows along the same path. At the Create Supply - Line subflow, their paths deviate.

**Figure 9–8 Create Supply - Line Subprocess**

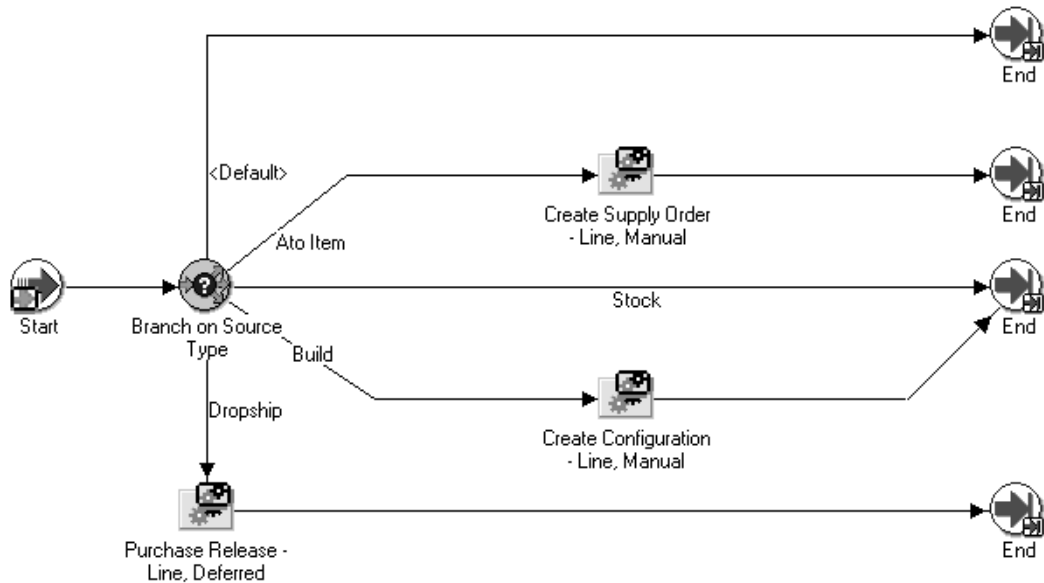
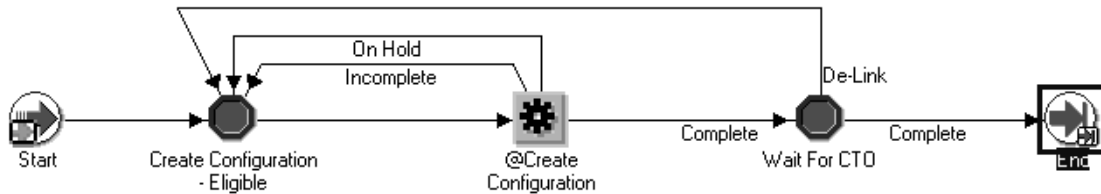


Figure 9–8 shows the variety of sublow paths that can be taken within Create - Supply Line. In the Branch on Source Type function, the options follow the path for Stock and the model follows the path for Build. Purchase Release - Line, Deferred is another subflow for drop shipments. See the corresponding section in this manual for more information on drop shipments.

The Build path, shown in Figure 9–9, has an additional sub-process of Create Configuration - Line Manual which looks like this.

**Figure 9–9 Create Configuration - Line, Manual Workflow Subprocess**

This subprocess creates the new line on the order for the configuration item, and its workflow begins. This flow will be addressed in a moment. The activity also creates the new item (or finds the existing one, if applicable,) and creates the BOM and Routing.

Once the Create Configuration - Line, Manual subflow is complete for the model line, the model line as well as the options and option classes have completed the Create Supply - Line subprocess and are ready for shipping. However, the model, options and option classes of a Configure to Order item are not shippable. The assumption is that in the manufacturing process the components are built into one indivisible item. So they pass through the shipping process with a result of Not Applicable, and proceed to the invoice process. The model line will be invoiced, so it goes through the Invoice Interface - Line activity and should complete. The options and option classes are not invoiced, so they go through the Invoice Interface - Line activity with a result of Not Applicable.

## Configured Item Workflow

The configured item is created and added to the order when the model goes through the Create Configuration activity. Its workflow process is simpler than the process for models and options, shown in [Figure 9–10](#).

**Figure 9–10 Line Flow - Configuration Workflow Process**

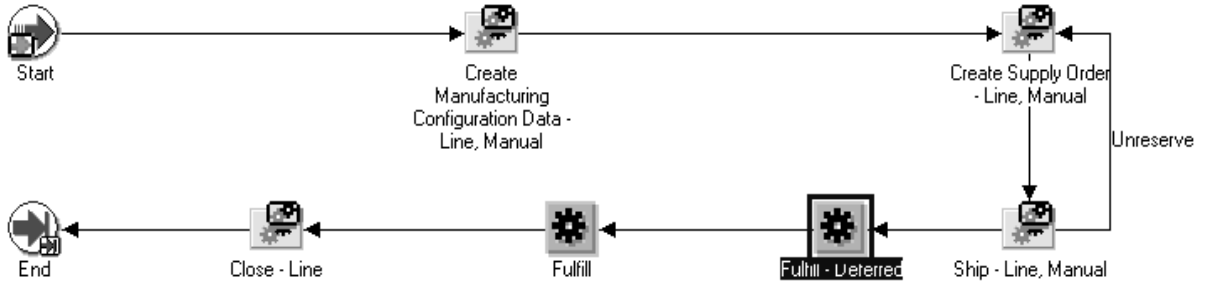
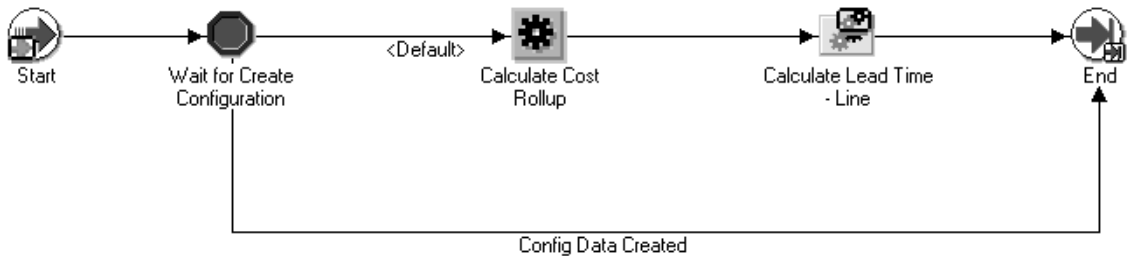


Figure 9–11 shows the first subprocess in the flow is the Create Manufacturing Configuration Date - Line, Manual.

**Figure 9–11 Create Manufacturing Configuration Data - Line Manual Workflow Subprocess**

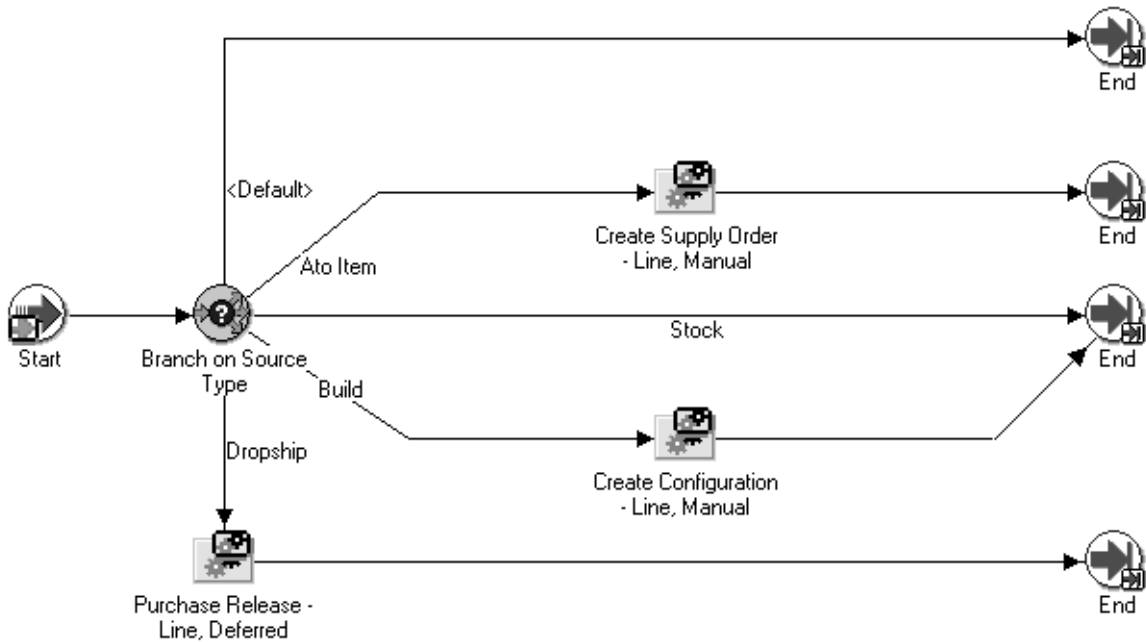


This is the subprocess that performs the necessary Costing rollup and calculates the lead time for the configured item.

Figure 9–12 shows the next step in the configured item workflow, Create Supply Order - Line, Manual subprocess. This subprocess interfaces with the manufacturing system to trigger the assembly of the item. The Check Supply Type activity determines whether the item should be manufactured using discrete

manufacturing or flow manufacturing. If the result is Flow Schedule, the Create Flow Schedule activity is executed. If the result is a Work Order, the final subprocess, the Create Work Order - Line process is executed.

**Figure 9-12 Create Supply Order - Line, Manual Workflow Subprocess**





**Figure 9–13 Create Work Order - Line Workflow Subprocess**

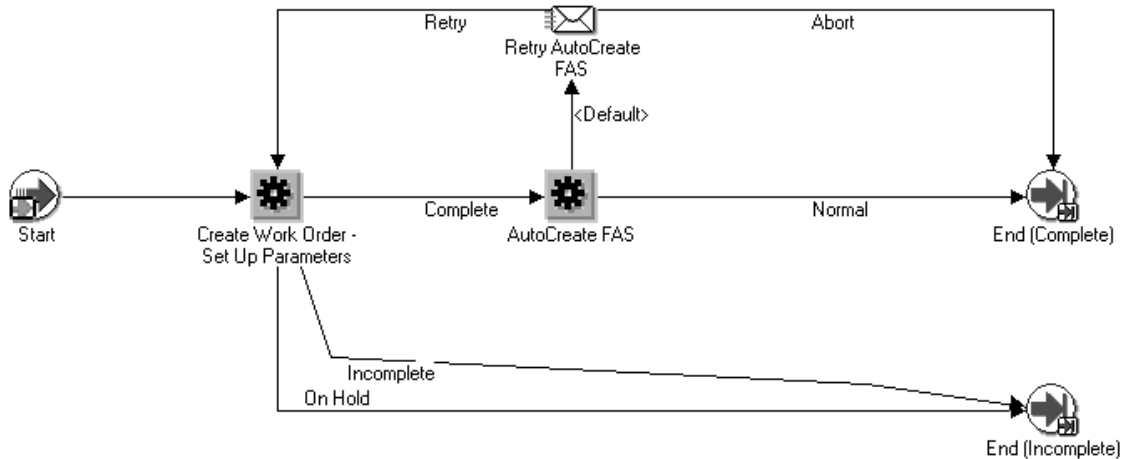


Figure 9–13 indicates the final subprocess flow - Create Work Order - Line. The primary activity in this flow is the AutoCreate FAS activity, which will cause the WIP application to create a work order.

After the work order is created, the sales order will wait for completion of the work order before proceeding. When the work order is complete the inventory will be received into the inventory module and automatically reserved to the sales order.

The configured item then continues through the normal shipping and fulfillment steps from Figure 9–7 and then its workflow is complete. It does not have an Invoice Interface subprocess because it is never invoiced. Only the model line, option classes and options may be invoiced depending on their item attributes.

## Related Processes

Several processes share some of the characteristics of the configure-to-order process. They include the assemble-to-order process, the pick-to-order process and the kit process. Because the configure-to-order process is the most comprehensive and includes all the steps it was described first, and the rest will be described relative to it.

The assemble-to-order process is similar to the PTO model, item, or PTO/ATO models because the items that are ordered by a customer are manufactured specifically for the customer order. So the manufacturing steps of the configured item are part of this process. However, the ATO item is not configurable for a customer in the sales order form. The ATO item is entered on the sales order form and then the order is booked without selecting any options. No option class lines or option lines are added to the order. The workflow process Line Flow - Generic supports the ATO process. The ATO item takes the ATO item branch in the Create Supply - Line workflow subprocess.

The pick-to-order process is similar to the configure-to-order process because you can select the options chosen by the customer. It follows the same flow as [Figure 9-12](#). On the sales order form the PTO model is entered, and then you press the Configurator button to launch the options selection window. The configuration options are saved, and the option classes and options are added as lines on the sales order. However, there are no assembly steps in the PTO process. The options all continue their own workflows which include the standard sales order line activities. When you create your PTO model in the Inventory application, Inventory sets the attributes for the model, and you can specify whether or not it is Ship Model Complete. If this attribute is Yes, all the options will be in a ship set. If this attribute is No then the items can ship independently.

The kit process is similar to the pick-to-order process except that the user cannot select options to create a configuration. All the items in the kit are required; these are known as included items. Kits are similar to configure-to-order items because the included items are added to the order and have their own workflows. They are added either when the kit line is saved, when the order is booked, or when the line is pick released depending on the value of the profile option **OM: Included Item Freeze Method**. Ship Model Complete logic for PTO models also applies to kits.

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## Introduction to Basic Pricing

Topics covered in this chapter include:

- [Overview](#) on page 10-2
- [Overview of Basic Pricing](#) on page 10-2
- [Definitions](#) on page 10-3
- [Feature Highlights](#) on page 10-4
- [Process Flow for Implementation](#) on page 10-7

## Overview

This section explains how to implement the Basic Pricing capability of Oracle Order Management, including:

- Definitions
- Feature Highlights
- Implementation Planning Process Flow
- Price Lists
- Agreements
- Modifiers
- Formulas
- GSA Pricing
- Freight And Special Charges
- Defaulting Decisions
- Profile Options and Systems Parameters
- Technical Considerations / Troubleshooting
- Migration

## Overview of Basic Pricing

The Basic Pricing component of Oracle Order Management provides the capability to price orders according to price lists, pricing formulas, or agreements. You can also apply discounts, control the lowest level price that may be given in order to comply with General Services Administration Agency (GSA) regulations, and apply freight and logistics related charges to orders.

It is important to note that if you have licensed Oracle Advanced Pricing, you should not use this section for implementation guidance. Instead, refer to the *Oracle Advance Pricing Implementation Manual* and *Oracle Pricing User's Guide*.

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## Definitions

### Customer Hierarchy

The customer hierarchy in Basic Pricing consists of the ability to roll up individual customers according to the following structure:

- The sold-to organization
- The ship-to organization
- The bill-to organization
- Site
- Customer Class

You can use elements of the customer hierarchy above as defaults to control the operation of price lists and modifiers.

Additional product hierarchy capabilities, such as additional levels, can be defined if Oracle Advanced Pricing is installed.

### Pricing Engine

The pricing engine is the program module called by Order Management that prices the order as orders are entered, or order data changed.

### Pricing Request

A pricing request is the specific information provided to the Pricing Engine when the engine is called by Order Management. In general, this includes the customer, the product, what attributes may be associated with the customer or product that may be used by the pricing engine, the pricing date, and other pricing data attributes that may be required by the pricing engine.

### Product Hierarchy

The product hierarchy in Basic Pricing consists of the ability to roll individual items, as defined in `MTL_SYSTEM_ITEMS` table, into single level groups called Item Categories. For price lists, you can only define products at the item level, however, you can use hierarchy to reprice. For modifiers, you can use item, item and pricing attribute, item categories, or the Super Group of item ALL.

Additional levels of product hierarchy can be defined if Oracle Advanced Pricing is installed.

### **Oracle Advanced Pricing**

Oracle Advanced Pricing is a separately licensable product that can be used as an alternative to Basic Pricing. Oracle Advanced Pricing provides the functionality of Basic Pricing, while adding significant additional functionality and extensibility. For additional information, refer to the *Oracle Pricing User's Guide* and the *Oracle Advanced Pricing Implementation Guide*.

## **Feature Highlights**

The following is a list of key Basic Pricing features supported by Oracle Applications:

### **Price Lists**

Price lists relate a selling price to a product. Price lists contains one or more price list lines, pricing attributes, and secondary price lists. Basic information includes the price list name, effective dates, currency, rounding factor, and shipping defaults such as freight terms and freight carrier.

You may default a price list based on any one of the following:

- An agreement
- The sold-to organization
- The ship-to organization
- The bill-to organization
- Order type

You can define multiple price lists. Alternatively, you may enter a specific price list on the order header or at the order line level. For each price list, you can also designate Secondary Price lists, which the engine will search for a price when it cannot find an item on the primary list. Only one secondary price list will be searched for each primary list.

Price lists may be specified in different currencies. During order entry, if you enter a currency on the order, the pricing engine will select price lists having a currency matching the currency you entered on the order.

### **Pricing Attributes**

Order Management with Basic Pricing is delivered with seeded pricing attributes. The same attributes are seeded for Basic as with Advanced Pricing. The seeded

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attributes are documented in the *Oracle Pricing User's Guide*, Appendix A. You can use one pricing attribute per order line.

### Maintaining Price Lists

You can maintain price lists using any one of the following functions:

- Copy Price List
- Adjust Price List
- Add Items to Price List

These capabilities are invoked from a form within the Order Management Superuser Responsibility, which submits Concurrent Manager jobs for each step.

### Agreements

Agreements let you define the prices, payment terms and freight terms that you negotiated with specific customers. You can:

- Define your agreements using customer part numbers and inventory item numbers.
- Make revisions to the original terms and maintain these changes and their reasons under separate revision numbers.
- Attach an already existing price list to the agreement or define new prices.
- Assign optional price breaks by quantity.
- Set effectivity dates for agreement terms.
- Set payment terms including invoice rule and accounting rule.
- Set freight terms including the freight carrier.
- Apply agreement terms to sales orders by reference agreements.

### GSA Pricing

GSA Pricing enables you to define a GSA Price List for your GSA customers. The GSA Price List actually uses the modifiers form and uses the new price. You create a discount that adjusts the base price of the item to the GSA price.

## Formulas

Formulas allow you to define a mathematical expression that the pricing engine uses to determine the list prices of items. A full complement of mathematical operators and numeric operands can be used.

When processing formulas, the Pricing Engine begins by locating a price list line linked to a formula. It then applies the mathematical expression to generate a final list price. In Basic Pricing, formulas are static; that is, the variables in the formula must be pre-populated with data by running a concurrent manager job before the formula can be used.

## Modifiers

Using modifiers, you may increase or decrease the list price to arrive at a net selling price for your orders. You can define a modifier that will be applied automatically by the pricing engine, or you can manually enter a modifier. Additionally, modifiers, with proper setup, can be overridden.

Modifier have a data structure that consists of a header along with one or more lines. You can define modifier headers as one of the following three types:

1. Discount
2. Surcharge
3. Freight and Special Charge

You may default the pricing engine's selections of modifiers at the header level to one of the following customer hierarchy related attributes:

- Site
- Customer Name
- Customer class - (as defined in RA\_CUSTOMERS table)

As an alternative, you can also default the pricing engine's selection of modifiers based on the price list name.

You may define default modifiers at the order line level based on agreements including:

- Agreement Type
- Agreement Name



Alternatively, you can default modifiers based on Purchase order. For a modifier to default at the line level, it must first default at the header level. If it does not default at the header level, the line level default will have no effect.

In combination with the above defaults, you can also default modifiers based one of three levels of the product hierarchy. These are:

1. Item
2. Item Category
3. All Items

Modifiers can be used to compute price breaks. You can define breaks at the line level to be computed as percent, amount or fixed price. Price breaks are available only on modifiers in Basic Pricing. Point type price breaks are supported in Basic Pricing.

### **Freight and Special Charges**

The Freight and Special Charges capability of Oracle Order Management gives you the ability to capture, store, update and view costs associated with a shipment, order, container, or delivery. You can either itemize or summarize such charges on your orders. This capability includes functionality to pass customer charge information to Oracle Receivables for invoicing.

When using freight and special charges, you set up freight and special charges as pricing modifiers. The pricing engine applies the qualified freight and special charges to order lines. You can view the application of freight and special charges. Order Management captures costs at shipping and converts them to charges. Freight and special charges appear on invoices.

## **Process Flow for Implementation**

The process flows for implementing from a fresh install and implementing from an upgrade both assume that Oracle Applications, including Order Management has been successfully installed, that Oracle Pricing has been installed Shared, and that all necessary patches have been applied.

### **Implementing from Fresh Install**

Following are the recommended steps for implementation assuming a fresh install e.g. no prior implementation of Oracle Order Entry/Shipping exists. The recommended implementation steps differ when upgrading from prior release.

**Table 10–1 Fresh Install Steps**

| <b>#</b> | <b>Name</b>  | <b>Description</b>   |
|----------|--|--|
| 1        | Analyze and Understand Business Pricing Scenarios                      | It is highly recommended that an exact understanding of pricing business requirements be established, before beginning an implementation of Basic Pricing.   |
| 2        | Develop Logical Pricing Model Solutions                                | For each Pricing Scenario, plan how you will use Basic Pricing to accomplish each. An excellent resource for this is the remainder of this manual.   |
| 3        | Setup and Test Prototype Solutions                                     | Prior to implementing a production system, setup prototype Basic Pricing solutions for all the pricing scenario's you have identified, and have entered test orders against them to determine that they are handled properly. The Vision Sample database shipped with the software can be used to facilitate this process. |
| 4        | Make necessary defaulting decisions                                    | See subsequent section of this manual for details.   |
| 5        | Setup Basic Pricing Profile Options and System Parameters              | See subsequent section of this manual for details.   |
| 6        | Setup Customers and necessary customer hierarchy information           | Customer setup must be performed using Oracle Accounts Receivable  |
| 7        | Setup Items and Item Hierarchy information (except Pricing Attributes) | Item setup must be performed using Oracle Inventory  |
| 8        | Setup Pricing Attributes   | See subsequent section of this manual for details.   |
| 9        | Setup Price Lists  | See subsequent section of this manual for details.   |
| 10       | Setup Formulas   | See subsequent section of this manual for details.   |
| 11       | Setup Agreements   | See subsequent section of this manual for details.   |
| 12       | Setup Modifiers  | See subsequent section of this manual for details.   |

**Table 10–1 Fresh Install Steps**

|    |  |  |
|----|--|--|
| 13 | Setup GSA Pricing, if required                 | See subsequent section of this manual for details.           |
| 14 | Setup Freight and Special Charges, if required | Refer to Appendix for chapter on Freight and Special Charges |

## Upgrading from Release 10.7 or Release 11 of Oracle Applications

When upgrading from previous release, the upgrade of pricing data to Release 11*i* Basic Pricing occurs within the overall flow of upgrading from Order Entry Shipping.

Since the outcome of the upgrade process is to establish a working 11*i* system into which new transactions can be entered, the steps to complete the upgrade are the same steps required to implement.

In general, Basic Pricing supports a similar feature set to Oracle Applications Release 10.7 and Release 11. There are functional differences in the behavior of pricing objects such as price lists, formulas, modifier, etc. in Basic Pricing release 11*i* from their counterparts in prior releases.

The table below summarizes where such functional differences exist, and indicates whether further post upgrade setup is required before the object can be used.

**Table 10–2 Functional Differences in Pricing Objects**

| Release 10.7 & Release 11 |                     |   |
|---------------------------|---------------------|---|
| #                         | Pricing Object Name | Upgrade Summary   |
| 1                         | Item Groups         | Migrated to Item Categories and Item Category Sets in Release 11 <i>i</i> . Additional setup is required post upgrade.<br>1) Run Add Items to Price List concurrent request to add upgraded Item Category to Price List<br>2) Additional set-up is required for non-upgraded fields |
| 2                         | Price Lists         | Price Lists in Prior Releases migrate to Price Lists in Basic Pricing. No additional setup is required after running migration for price lists to be usable.  |

**Table 10–2 Functional Differences in Pricing Objects**

|   |                             |  |
|---|-----------------------------|--|
| 3 | Pricing Rules               | Pricing Rules in prior releases migrate to Static Pricing Formulas in Basic Pricing. No additional setup is required after running migration for Pricing formulas to be usable.  |
| 4 | Agreements                  | Agreements in Prior Releases are migrated to Standard Agreements in Basic Pricing. A new separate form is provided for agreements in R11i Basic Pricing. No additional setup is required after running migration for Standard Agreements to be usable. |
| 5 | Discounts                   | Discount headers, customers, and line forms found in prior releases are upgraded to Modifier header and lines in Basic Pricing. No additional setup is required after running migration for Basic Pricing modifiers to be usable.                      |
| 6 | GSA Pricing                 | GSA Discounts in prior releases migrate to GSA modifiers. No additional setup is required after running migration for GSA modifiers to be usable.  |
| 7 | Freight and Special Charges | Freight and Special Charge capability is new for R11i Basic Pricing, and did not exist in prior releases. See subsequent section of this manual for details.   |

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## Price Lists

This chapter contains information about the implementation consideration of Price Lists in the Basic Pricing functions of Oracle Order Management. For further information see Pricing Section of the *Oracle Order Management User's Guide*.

Topics covered in this chapter include:

- [Overview](#) on page 11-2
- [General Basic Price List Capabilities](#) on page 11-2

## Overview

Price Lists are essential to ordering products because each item entered on an order must have a price. An order cannot be booked with an ordered item that does not exist on a price list. Each price list contains basic list header information and one or more pricing lines, pricing attributes, and secondary price lists. Basic information includes the price list name, effective dates, currency, pricing controls, rounding factor, and shipping defaults such as freight terms and freight carrier.

Price lists contain prices and currencies for specific products and services. They can be defined in the following types of prices:

- **Unit price**--A fixed price.
- **Percent Price**--A price which is a percent of the price of another item. This is especially useful in pricing service items.
- **Formula**--Multiple pricing entities and constant values related by arithmetic operators. For example, you define the price of an item to be a percentage price of another price list line.

### Price List Maintenance

Once Price Lists have been set up Oracle Order Management enables you to perform maintenance on the Price List allowing you to:

- manually add lines to a price list
- copy price list lines from one price list to another
- add a new group of inventory items to a price list by specifying a range
- add a new group of inventory items to a price list by specifying an item category

## General Basic Price List Capabilities

### Multiple Price lists

Order Management enables you to define and use multiple price lists to serve various business needs. At least one price list must be established to price all orders. A base or corporate price list can be created with all inventory items to establish a base price for each. This price list can be used in the absence of a specific price list.

In Basic Pricing, price lists can only use one Product Context: Item, one Product Attribute: Item Number, and Product Value is the item Id. Defaulted Precedence value is 220.

If price list defaulting rules are not defined for customer, or order type, the sales order header does not require a selection of price list. In this event, the Pricing Engine will utilize precedence to search for and return the price with the lowest precedence value for any given order line from among the several price lists. Multiple Price lists may contain the same products and be priced differently using Precedence. The price list containing the item ordered with the lowest precedence value will be selected by the pricing engine (See Role of Precedence in resolving multiple price list below). Precedence is not used by the Pricing Engine whenever a specific price list is defaulted to the customer or order type, or selected at order entry.

Price lists can be in several currencies. If you have international sales, you can record transactions in different currencies by defining a price list for each currency. After entering the currency for an order or return, you must choose a price list in the same currency.

If an ordered item is not on any price list, the pricing engine returns an error message that it cannot locate the item and UOM. In such cases, the order cannot be booked with an un-priced line.

### **Secondary Price Lists**

The pricing engine uses secondary price lists when it cannot determine the price for an item using the price list assigned to an order. Primary and secondary price lists must have the same currency. You can only assign one secondary price list to any specific primary price list, however, you can assign the same secondary price list to multiple primary price lists.

If an item appears on both the primary and a secondary price list with the same effective dates, the pricing engine uses the primary price list to price the item. If an item appears on the primary price list but is not active (the effective end date has passed), the pricing engine uses the price on the secondary price list.

Line-level discounts and modifiers that apply to the primary price list do not apply to the secondary price list.

### **Multiple Currencies**

International sales transactions can be recorded in different currencies by defining a price list for each currency. After entering the currency for an order or return, you

must choose a price list in the same currency. Currency must match in Price List, Pricing Request, and Assigned customer profile class.

### Negative Pricing

Depending upon the Profile setting of QP: Negative Pricing, you can have either positive or negative prices or both, depending upon the selection, to be on a price list. Profile option OM: Allow Negative Pricing determines whether or not a negative list price or selling price can be entered on an order.

### GSA (USA General Services Administration) Price List

If your business requirements are for use of GSA price lists, you can set these price lists up using the modifier form. See Profile Options section for discussion of setting up GSA profile options.

### Qualifiers for Price List

Qualify by defaulting rules - There are no qualifiers in User Interface Form as all happens behind the scene. You cannot define or add any Qualifiers to a Price List in Basic Pricing. Hence, for example, to make a Price List, Customer or Order specific you would need to use the Defaulting Rules in Order Management to default the appropriate Price List. These rules can be setup in Order Management at the Customer Set up as well as set up of Order Types.

### Customer Default

You cannot create qualifiers for a price list in the Pricing Price List form. Price lists are defaulted from the Customer Set up or from the Sales Order form.

- **Customer Set up** - In the customer definition, a price list can be assigned to a customer. At order entry for this customer, this price list will be defaulted from that source.
- **Sales Order form** - In the Sales Order form, a price list may be selected from the LOV of available price lists.
- **Order Type** - In Order Management, Order Types are defined and may be defined to default a specific price list.

## Role of precedence in resolving multiple price lists

The Segment Number in the Item Context ONLY is defaulted into the Precedence of a Price List Line or Modifier during setup.



Precedence controls which Price List or Modifier is applied to the order line when multiple are eligible. The Price List Line or Modifier with the highest - precedence (lowest Precedence value) is selected. Precedence may be better thought of as Specificity--the lower the precedence the more specific the price or discount.

### Price List Lines

The precedence on Price List Lines decides what price the pricing engine should select when an item is found on more than one price list. This could occur if the price list was not specified on the order line and as a result the pricing engine searched all eligible price lists for an item.

Note: It is not possible to price by Item Category in Basic Pricing.

### Price List Active Flag

A check box on the Price List header indicates the status of the price list as to whether it is active or not. A checked box indicates an active price list. The default status when entering a new price list is active. You have the ability to temporarily or permanently disable the price list. This functionality will also be used in the Euro conversion where a user must be able to manually activate or de-activate a particular price list.

In query mode the check box appears as checked, but the underlying value is null. Thus if doing query by example, attempting to retrieve price lists that are active, the user must un-check and recheck the box.

Effective dates: Price lists can have Starting and Ending Dates. This allows one to prepare price list before they are valid and to ensure that they will not be used until their Start Date.

Make manual changes to price lists for effective pricing requests passed to the pricing engine after the change. Use price list and price list line effective dates to retain history.

### Price List Deletion

You cannot delete Price Lists nor can you delete Price List Lines once they are created and saved. However, Price lists can be ended by utilizing the End Date on the Price List Header for the entire price list, or on the Price List Line to effectively remove use of the line you wish to delete.

## Pricing Attributes - in Pricing Context Flexfield

Navigation > Set Up > Flexfields > Descriptive

In the set up of Descriptive Flexfields, the following considerations of Pricing Context should be taken into account. For Price List, only one Context for product is allowed, however, you can create as many as 100 pricing attributes for products.

Users can create as many as 100 Attributes for pricing context on an Order Line.

**Figure 11–1 Descriptive Flexfield Segments**

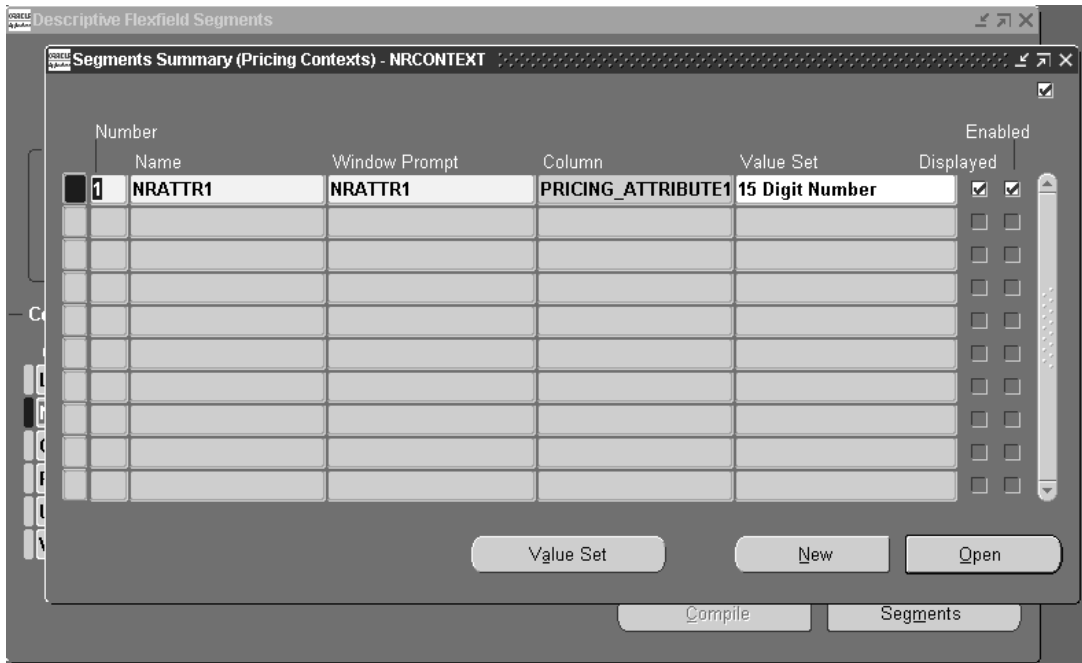
The screenshot shows the 'Descriptive Flexfield Segments' window for the 'Oracle Pricing' application. The title is 'Pricing Contexts' and the segment separator is 'Period (. )'. The 'Context Field' section has a prompt of 'Context Value'. Below this is a table of 'Context Field Values'.

| Code              | Name              | Description                | Enabled                             |
|-------------------|-------------------|----------------------------|-------------------------------------|
| LOGISTICS         | Logistics         | Logistics Exchange Context | <input type="checkbox"/>            |
| <b>NRCONTEXT</b>  | NRCONTEXT         | NR TESTING CONTEXT         | <input checked="" type="checkbox"/> |
| OTA               | OTA Pricing       | OTA Pricing Context        | <input type="checkbox"/>            |
| PRICING ATTRIBUTE | Pricing Attribute | Pricing Attribute Context  | <input checked="" type="checkbox"/> |
| Upgrade Context   | Upgrade Context   | Upgrade Context            | <input checked="" type="checkbox"/> |
| VOLUME            | Volume            | Volume Context             | <input checked="" type="checkbox"/> |

Buttons at the bottom: Compile, Segments

### Descriptive Flexfield Segments Window

Descriptive Flexfield Segments reflects a pricing context created, where a pricing attribute was added, NRCONTEXT, with a simple description. New Attribute information is added by navigating to the Segments field.

**Figure 11-2 Segments Summary Window**

### Segments Summary Window

After selecting Segments, provide a name and window prompt for a Pricing Attribute with a value of 15 Digit Number. This attribute is associated with the product AS54888, in the Price List NH23.

**Figure 11–3 Price Lists Window**

The screenshot shows a software window titled "Price Lists" with a sub-header "Price List". The window contains several input fields and a table. The fields are: Name (NH23), Description (NH23), Currency (USD), Effective Dates (02/JAN/2001), Freight Terms, Comments, Active (checked), Round To (-2), Payment Terms, and Freight Carriers. Below these fields are two tabs: "List Lines" and "Secondary Price List". The "List Lines" tab is active and contains a table with the following data:

| Product Context | Product Attribute | Product Value | UOM | Primary UOM              | Line T |
|-----------------|-------------------|---------------|-----|--------------------------|--------|
| Item            | Item Number       | AS54888       | Ea  | <input type="checkbox"/> | Price  |
|                 |                   |               |     | <input type="checkbox"/> |        |
|                 |                   |               |     | <input type="checkbox"/> |        |
|                 |                   |               |     | <input type="checkbox"/> |        |
|                 |                   |               |     | <input type="checkbox"/> |        |

At the bottom right of the window, there is a button labeled "Pricing Attributes".

**Price Lists Window**

This shows an inventory item Id. AS54888 as the only item on this special price list. Selecting Pricing Attributes shows a user created pricing attribute 3.

Figure 11-4 Pricing Attributes Window

The screenshot shows a software interface with two overlapping windows. The background window, titled 'Price Lists', contains the following fields:

- Name: NH23
- Description: NH23
- Currency: USD
- Effective Dates: 02/JAN/2001
- Freight Terms: (empty)
- Comments: (empty)
- Active:
- Round To: -2
- Payment Terms: (empty)

The foreground window, titled 'Pricing Attributes', displays a table with the following data:

| Product Value | Pricing Context | Pricing Attribute | Operator |
|---------------|-----------------|-------------------|----------|
| AS54888       | NRCONTEXT       | NRATTR1           | BETWE    |
|               |                 |                   |          |
|               |                 |                   |          |
|               |                 |                   |          |
|               |                 |                   |          |

### Pricing Attributes Window

This displays the Pricing Context of NRCONTEXT, Pricing Attribute of NRATTR1. The value of the Pricing Attribute can be entered in this screen. Subsequently an Order for this product., using the Price List NH23 will ask for the value of the Pricing Attribute associated with Item AS54888.

### Static Formulas

You can use static formulas to create a price on a price list. Once static formulas are created, or updated, you must run a concurrent process BEFORE any order entry to update the price on the price list. Otherwise, the pricing engine will not return the new price. Static formulas are calculated once, and related price lists updated.



# 12

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## Modifiers

Topics covered in this chapter include:

- [Overview](#) on page 12-2
- [Implementing Modifiers](#) on page 12-2
- [Types of Adjustments](#) on page 12-2
- [Modifiers: How Do I Define My Product Hierarchy](#) on page 12-3
- [Modifier Applications Methods](#) on page 12-5
- [Manual Adjustments](#) on page 12-7

## Overview

This chapter contains information about what to consider when implementing modifiers. The Modifier form is used to set up price adjustments, freight and special charges, simple discounts and surcharges. Modifier lists contain one or more modifiers. Modifiers have list-level and line-level components. Qualifiers at the list and line levels define a customer's eligibility for the modifier.

For basic pricing, the qualifiers determine the eligibility of various modifiers. By defining them at the list and line levels, you can define a customer's eligibility. The modifier level, product & product groups, and attributes also help to determine which modifiers will get applied. In basic pricing, pricing phase, incompatibility group, and bucket are defaulted. The pricing engine returns volume breaks and price adjustments back to the calling application.

## Implementing Modifiers

There are certain questions you should consider for implementing modifiers.

- What types of adjustments can I make?
- At what item level can I apply my adjustments?
- How are these modifiers qualified?
- How are my adjustment applied?
- Are there any additional controls and special cases?

## Types of Adjustments

You can create 3 modifier list types in Basic Pricing.

1. Discount List
2. Surcharge List
3. Freight and Special Charges List

There are 4 modifier line types available in Basic Pricing.

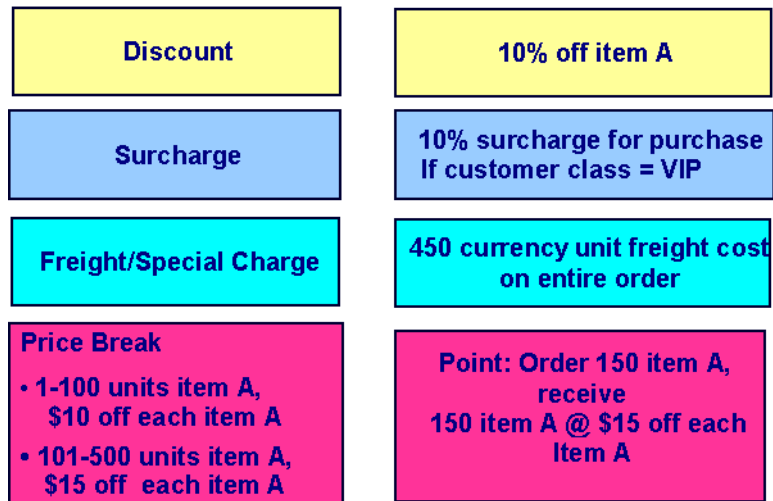
1. Discount: Creates a negative price adjustment
2. Surcharge: Creates a positive price adjustment



3. Freight and Special Charges Amount applied to the customer invoice for movement of a shipment to a destination. See the Appendix chapter on Freight & Special Charges for details.
4. Price Break: Creates price breaks based on item quantity or item amount.

Discounts and Price Breaks can be defined for a discount list. Similarly, a surcharge list can include surcharges and price breaks. Freight and special charges are only available from the Freight and Special Charges List. Figure 12-1 depicts the four modifier types.

**Figure 12-1 Four Modifier Types**



## Modifiers: How Do I Define My Product Hierarchy

Modifiers are defined at the line or order level. Discounts, surcharges, and freight and special charges may be defined at the line or order level. Price Breaks are only defined at the line level. Line level modifiers can be defined for an item, an item category, or for all products within your product hierarchy. You can attach pricing

attributes when Product Attribute field is ITEM\_ALL. Only one context per order line with 100 attributes is allowed for Pricing Attributes.

Example:

- Discount of \$15 on Item A
- Surcharge of 10% for All Items with Grade A
- Price Break for item category- Sodas

### Setup Considerations

The Precedence field is defaulted based on the Product Attribute selected and can be updated. When two modifiers qualify to apply to the same line, precedence determines which one applies. The lower the value the higher the precedence.

UOM is not mandatory unless the modifier line type is price breaks.

For Line level Discount and Surcharge Lists, the following fields are defaulted.

- Pricing Phase: List Line Adjustment
- Incompatibility: Level 1 Incompatibility
- Bucket: 1

## Modifiers: How are they qualified?

Qualifiers help to determine who is eligible for certain modifiers. They are linked individually to modifiers. Oracle provides basic seeded qualifier contexts and attributes. You cannot create new qualifier attributes.

Qualifiers may be grouped to create and/or conditions using grouping numbers. Qualifiers with the same group number create and conditions and require that all conditions be met. Qualifier groups with different numbers create or conditions indicating that at least one qualifying condition must be met.

Qualifiers can be defined at the list or line level. List Qualifiers are Customer Name, Price Lists, Customer Class, and Customer Site. Line Level Qualifiers are Agreement Name, Agreement Type, Order Type, and Purchase Order. Line level qualifiers are only applicable if the Product Attribute is ITEM\_ALL.

### Null Qualifiers

If a qualifier is mandatory for all qualifying conditions, the field can be left null. The pricing engine will always ensure a null qualifier condition is met before proceeding to other qualifiers.

Example: A customer will receive a discount on a order if the Customer Name is Customer X or Customer Class is High Tech and Customer Name is Customer Y, but the price list always has to be the Fall Price List.

**Table 12–1 Example of Qualifier Group, Attribute, Operator, Values From and To**

| Qualifier Group | Qualifier Attribute | Operator | Value From      | Value To |
|-----------------|---------------------|----------|-----------------|----------|
| Null            | Price List          | =        | Fall Price List |          |
| 1               | Customer Name       | =        | Customer X      |          |
| 2               | Customer Class      | =        | High Tech       |          |
| 2               | Customer Name       | =        | Customer Y      |          |

## Modifier Applications Methods

The application methods available for modifiers will depend on the modifier line type and modifier level. The various methods are:

- Amount: Creates a fixed price adjustment on each unit for the amount specified in the field
- Value
- Percentage: Creates a percentage price adjustment on each unit for the percentage specified in the field Value
- New Price: Overrides the selling price of this item and makes it the new price.
- Lump sum: Creates a price adjustment for this lump sum amount on the entire line

For Freight and Special Charges, you can attach a formula to calculate the value of the charge.

**Table 12–2 Freight and Special**

| Modifiers Application Method | Percent | Amount | New Price | Lump sum | Formula |
|------------------------------|---------|--------|-----------|----------|---------|
| Line Level Discount          | X       | X      | X         |          | X       |
| Line Level Surcharge         | X       | X      | X         |          | X       |

**Table 12–2 Freight and Special**

|                           |   |   |   |   |   |
|---------------------------|---|---|---|---|---|
| Line Level Freight Charge | X | X | X | X | X |
| Line Level Price Breaks   | X | X | X |   | X |
| Order Level Discount      | X |   |   |   | X |
| Order Level Surcharge     | X |   |   |   | X |
| Order Level Freight       |   |   |   | X | X |

## Modifier: Additional Controls and Special Considerations

### Precedence

The precedence is defaulted from the segment number in the descriptive flexfields. In Basic Pricing all modifiers are automatically incompatible with one another as the Incompatibility Code is always set as LVL 1. Hence the pricing engine will select which modifier to apply to the Order Line based on best price processing. The engine will apply the modifier which gives the Best Price to the customer.

Example:

- Modifier 1: Discount by Item Category : All 6 Packs of Soda \$1.00, (Defaulted Precedence => 290 )
- Modifier 2: Discount by Item : 6 Pack of Pepsi \$2.00, (Defaulted Precedence => 220 )
- The engine will select a discount of \$2.00 when pricing a 6 Pack of Pepsi because that will give the customer a lower price.

### Modifier Effectivity

There are two places the pricing engine looks to determine valid Modifiers: The Active checkbox and the effectivity dates. The Active checkbox determines whether the pricing engine will consider the modifier as an option. The pricing engine will search all Active Modifiers. If a modifier is active, it must then have a current effectivity date for the pricing engine to continue. Modifier effectivity can be controlled at the header and line level. The effectivity dates of the modifier line must fall within the effectivity dates for the modifier list.

## UOM

UOM is not a mandatory field for modifier types other than price breaks. If the Primary UOM checkbox is selected on the price list, the pricing engine will evaluate modifiers lines that have the same UOM as the ordered UOM and primary UOM.

Example: Item A has a UOM of EA with Primary UOM checked for the price list line. The ordered UOM for Item A is DZN, then the engine will consider modifier lines with EA and with null values.

## Manual Adjustments

To manually create a new selling price on the order line, either a discount, surcharge or new price, you must define a manual discount (to decrease the price) and a manual surcharge (to increase the price). When you move to another line or the line is saved, a new price can be typed and the manual adjustment type selected.

If you have only manual overridable discounts eligible at the line level, you can only decrease the price. If you have only manual overridable surcharges eligible at the line level, you can only decrease the price.

A manual adjustment has the following field value characteristics: automatic checkbox is unchecked at the modifier list and line level, Modifier Line is overridable, and the bucket is null.

The pricing phase will determine when you can override the selling price. For lines in the pricing phase List Line Adjustment, you cannot override the selling price without moving to another line or saving the order for lines. For Order level adjustment, you cannot override the selling price without saving the order.

If the profile option QP: Return Manual Discounts Profile Option set to Y, then ALL manual discounts will be returned and all automatic discounts that were not considered will be returned as manual discounts. This is the default value.

If this profile option is set to N, then the pricing engine will return only one automatic or one manual discount. Discounts (automatic or manual) will not be returned as manual discounts.

## Applying Manual Adjustments

In the Sales Order form, select Actions and select View Adjustments. In the Modifier Name field, select the LOV to view the unapplied manual adjustments for the line.

In the Sales Order form Line Items Tab, choose Unit Selling Price LOV to apply line level manual adjustments. Type over the Unit Selling Price field to apply manual overridable adjustments for the line.

Overtyping the Unit Selling Price field to apply line level manual overridable adjustments.

To manually override the selling price, verify the profile option *OM: Discounting Privileges* is set to Unlimited. This allows the user to apply all eligible manual adjustments. If it's set to Non-Overridable Only, then only non-overridable manual adjustments can be applied. Also make sure the Enforce List Price check box for the order type is unchecked so that the order allows manual override of the selling price.

Note: If you invoke the Unit Selling Price LOV twice, you may get an error message because the manual adjustment was applied the first time and there are no more manual adjustments eligible.

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## Agreements

Oracle Order Management enables you to establish agreements with your customers that let you define the prices, payment terms, and freight terms that you negotiated in your agreement. This chapter contains information about the implementation consideration of Agreements in Oracle Order Management.

Topics covered in this chapter include:

- [Overview of Agreement Features](#) on page 13-2
- [Agreements Setup](#) on page 13-4
- [Defining Agreements](#) on page 13-5

## Overview of Agreement Features

### Type of Agreement

Order Management offers two different types of Agreement functionality: Standard Agreements and Pricing Agreements. Each type serves different business needs. You will need to determine how you will use each type of agreement and thus establish controls around the naming, numbering and using of each.

#### Standard Agreement

Standard Agreements use standard price lists. Price list lines are setup and maintained through the regular Price List Setup form. Use Standard Agreements to define special terms and conditions that are defaulted onto the order, but use prices that are available to other orders. Standard Agreements can be generic or can be specific to a customer or customer family.

#### Pricing Agreements

Pricing Agreements use Agreement Price Lists. These price lists are setup and maintained through the Agreements form. Use Pricing Agreements to setup special pricing arrangements with either a customer or a group of customers. You are also able to define special terms and conditions that are defaulted onto the order.

#### Standard Agreement vs. Pricing Agreement

The table below explains the difference between the two types of Agreements:

**Table 13–1 Differences Between Agreements**

| <b>Standard Agreements</b>   | <b>Pricing Agreements</b>  |
|--|--|
| Agreement lines not allowed.   | Agreement lines required.  |
| Associated with standard price list (type PRL).  | Associated with agreement price list (type AGR).   |
| Maintain and view price list lines through price list form.  | Maintain and view price list lines through agreement form.   |
| Use each standard price list with multiple standard agreements and to price orders not associated with an agreement. | Use each agreement price list with multiple pricing agreements. Not usable to price orders not associated with an agreement. |
| Cannot revise price list lines using agreement form.   | Can revise price list lines using agreement form.  |



**Table 13–1 Differences Between Agreements**

| <b>Standard Agreements</b>   | <b>Pricing Agreements</b>  |
|--|--|
| Agreement number not automatically created as a qualifier for the associated price list. | Agreement number automatically created as a qualifier for the associated price list. You can only use it to specify the pricing agreement on the order line. |

## Agreement Revisions

Order Management enables you to maintain multiple versions of the same agreement. This enables you to keep the same agreement name, make changes to the original terms, and keep a record of these changes. Create new versions by changing the Reason number field on the Agreement header. You can further manage these changes by providing a reason for the revision chosen from an LOV. You can have many versions of the agreement, but only one version of an agreement can be active. Effective date ranges must also be exclusive for each agreement version.

For Pricing Agreements only, you have line level revision and reason capability that is independent of the Agreement level revision. You must manually end date the line and enter a reason number prior to entering the new agreement line.

## Define Special Terms

Order Management enables you to define special terms for an Agreement. These become defaults to the order lines when an agreement is used on an order. Defaulted attributes include: price list, freight terms, freight carrier, payment terms, accounting rule, and invoicing rule. The values of these attributes will default to the order lines when this agreement is used on an order.

## Pricing Agreement Price List and Lines

Pricing Agreement price lists are defined in the Agreements form on the Pricing tab. When you choose the Price List Type of Pricing Agreement, the LOV price lists that are displayed in the Price List field only those associated with Agreements. Choose to use an existing Agreement Price List, or create a new Agreement Price List. You can use each agreement price list with multiple pricing agreements. Agreement number is automatically created as a qualifier for the associated agreement price

list. Only use this price list to specify the pricing agreement on the order line. You cannot use an agreement price list to price orders not associated with an agreement. Pricing Agreement Price List lines are defined on the bottom block of the agreements form. Here you can define agreement prices for the agreement price list using customer part numbers and inventory item numbers. You can also maintain line revisions and keep track of these with revision reasons.

## Customer Items

You can define Pricing Agreements for customer items. The Customer Item must be setup in the inventory system. At order entry time, you can order either by the customer item or its cross referenced internal item.

## Single Currency

Both Standard Agreements and Pricing Agreements are for a single currency. This is the currency that is specified on the price list. If you need an agreement to apply to multiple currencies, then you need to setup multiple price lists for each currency, and then setup multiple agreements and attach the price list to each.

## Agreements Setup

Prior to defining Agreements, you need to determine how agreements can be used in your business processes. The following needs to be considered:

### **Agreement and Customer Relationship**

Agreements can be defined to be generic, that they can be used by any customer. Agreements can also be defined for a specific customer and all their related customers.

### **Defining Agreement Types**

By setting up different Agreement Types (not to be confused with Type of Agreement), you can categorize agreements into a particular type. A type can be used to limit which agreements can be entered on a particular order type or a type can be used for segmenting for reporting purposes. Agreement type is not mandatory. You define Agreement Types by using the Lookups menu item under the Pricing sub-menu.

### **Revision Reason**

Revision Reasons can help you track the reason why a new version of an agreement was created. This is an optional field. You define Revision Reasons by using the Lookups menu item under the Pricing sub-menu.

### **Customer Items**

You can define Pricing Agreements for customer items. The Customer Item must be setup in the inventory system. Set customer items in Order Management Super User > Items > Customer Items. You can specify the org ID and setup customer items. The customer item must then be cross referenced to an internal item.

In the agreement form, the customer item LOV shows all customer items setup for that customer and the product value has its internal item number defaulted when a customer item is chosen.

## **Defining Agreements**

In this section, implementation considerations will be discussed regarding each field on the Agreements User Interface form. The differences for a Standard Agreement and a Pricing Agreement will be highlighted if any exist. For the user steps for creating an Agreement, refer to the *Oracle Order Management User's Guide*. Navigate: Pricing > Pricing Agreements to get to the Pricing Agreements form shown in [Figure 13-1](#).

Figure 13–1 Pricing Agreements, Agreement tab

The screenshot shows the 'Agreement' tab of the 'Pricing Agreements' window. The form includes the following fields and values:

- Agreement Name: [Empty]
- Agreement Number, Revision: [Empty] 1
- Revision Date: 14/DEC/2000
- Revision Reason: [Empty]
- Customer: [Empty]
- Cust Number: [Empty]
- Agreement Type: [Empty]
- Contact: [Empty]
- Effective Dates: 14/DEC/2000 to 14/DEC/2002
- Sales Person: [Empty]
- Purchase Order: [Empty]
- Signature Date: 14/DEC/2000

The table below the form has the following structure:

| Customer Item | Address | Address Category | Product Value | UOM     | Primary UOM              |
|---------------|---------|------------------|---------------|---------|--------------------------|
| [Empty]       | [Empty] | [Empty]          | [Empty]       | [Empty] | <input type="checkbox"/> |
| [Empty]       | [Empty] | [Empty]          | [Empty]       | [Empty] | <input type="checkbox"/> |
| [Empty]       | [Empty] | [Empty]          | [Empty]       | [Empty] | <input type="checkbox"/> |
| [Empty]       | [Empty] | [Empty]          | [Empty]       | [Empty] | <input type="checkbox"/> |
| [Empty]       | [Empty] | [Empty]          | [Empty]       | [Empty] | <input type="checkbox"/> |

Buttons at the bottom: Price Breaks, Pricing Attributes.

## Agreement Tab

**Agreement Name** Enter an Agreement Name. A consistent, meaningful naming convention should be considered and business practices established. Consideration giving a separate naming pattern for Standard Agreements versus Pricing Agreements so a user will be able to query and identify the type of agreement. This is because the find query, using the flashlight icon, displays only the Agreement Name, Customer, Customer Number and Revision. The sort reduction is only based on Agreement Name.

The contents of the Agreement Name is the name that displayed in the Sales Order Pad LOV at time of order entry.

**Agreement Number** Agreement number is entered by the user. A consistent, meaningful naming convention should be considered and business practices established. This field is not mandatory. It is only informational.

**Revision** Revision number defaults to 1 at setup time. Additional versions of the same agreement can be maintained. Each Agreement version needs to have a unique date range. There can only be one active agreement version at a time. The creation of new Agreement versions is manual. Manually change the end of the an Agreement effective date to end prior to the start of a new agreement. Only then can you create the new agreement with the same Agreement Name, new Revision number and new effective dates.

**Revision Date** Revision Date is the date on which the revision was made. This is a mandatory field. The form checks that the revision cannot be before the start date active of the agreement.

**Revision Reason** This field can be used to enter a reason corresponding to the agreement revision. This is an optional field.

**Customer** This field displays a LOV of customers. If a customer is entered, then the agreement is limited to use for this customer and all its related customers. If this field is left blank, then this agreement can be used for any customer. If a customer is not specified, then fields such as Contact, Invoice-to location and Invoice Contact cannot be entered. For Pricing Agreements, you cannot use a customer item number if there is no customer.

**Customer Number** Defaults automatically from the customer.

**Agreement Type** Can be used for creating reports by agreement type or can be used to restrict order types to certain agreement types. Please refer to White Paper - Customer Agreements in Order Management for discussion on Agreement Types. This field is optional.

**Contact** Use this field to enter a customer contact from LOV of contacts for this customer. This field can be entered only if you have specified a customer.

**Effective Dates** When an agreement is initially created, start date defaults to the current system date. These values can be changed. The end date will need to be changed prior to making a new revision number.

**Sales Person** Use this field to enter Sale Person information. The LOV shows names of all active salesreps. This comes from the receivables table ra\_salesreps. The LOV of sales person does not depend on the customer.

**Purchase Order** Use this field to reference a Purchase Order for this Agreement. This is an enterable field, there is no LOV. This field does not depend on the customer.

**Signature Date** Use this field to enter the date that the agreement was signed or the date on the purchase order. This is a referencable field only and is also to be entered by the user.

## Pricing Tab

The functionality of the information on the pricing tab differs for a Standard Agreement and a Pricing Agreement. Each type and field behavior is described in [Figure 13-2](#).

**Figure 13-2 Pricing Agreements, Pricing tab**

The screenshot shows the 'Pricing Agreements' window with the 'Pricing' tab selected. The form fields are as follows:

- Price List Type:
- Price List:
- Currency: **USD**
- Rounding Factor:
- Description:
- Freight carrier:
- Freight Terms:
- Comments:

The table below has the following structure:

| Customer Item        | Address              | Address Category     | Product Value        | UOM                  | Primary UOM              |
|----------------------|----------------------|----------------------|----------------------|----------------------|--------------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="checkbox"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="checkbox"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="checkbox"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="checkbox"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="checkbox"/> |

Buttons at the bottom:

## Standard Agreement

**Price List Type = Standard Price List** If the Price List Type is a Standard Price List it means that only standard price lists can be referenced on the agreement. Once you choose that the agreement is for a standard price list this agreement must always be for a standard price list and you cannot change the price list type.

Use each standard price list with multiple standard agreements and to price orders not associated with an agreement.

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**Note:** The default price list for an agreement can be overridden by the user on the order, but it can only be replaced by a standard price list.

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**Price List** The LOV displays only Standard Price Lists that are setup and maintained through the Price List Setup form. When you choose a Price List from the LOV, the Currency, Rounding Factor, Description fields are defaulted from the standard price list. These fields cannot be changed through the Agreements form. Any changes to these fields must be made through the Price List Setup form. Information in the Freight Carrier, Freight Terms, and Comments fields also default from the standard price list but can be updated on the Agreements form.

The information that is entered in the Freight Carrier and Freight Terms fields will be defaulted on the order when this agreement is referenced.

Change the Standard Price List for the Agreement by choosing a different Standard Price List from the LOV. You will need to save this change, and requery the agreement form to have the agreement lines display with the values of the standard price list.

The Standard Price List lines also default and display in Agreement Lines block on this form. These fields are only for display and cannot be changed through the Agreements form. Any changes to these fields must be made through the Price List Setup form.

## Pricing Agreement

**Price List Type = Agreement Price List** If the Price List Type is a Agreement Price List, then the Price List is of type AGR. This means that only agreement price lists can be referenced on the agreement. Once you choose that the agreement is for an agreement price list this agreement must always be for an agreement price list and you cannot change the price list type.



**Price List** The LOV price lists that are displayed in the Price List field are price lists that are only associated with Agreements. Use an existing Agreement Price List, or create a new Agreement Price List.

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**Note:** If you choose an existing agreement price list, you can make changes to the fields on the Pricing Tab and to the fields in the Agreement Lines. However, these changes will also be reflected in every agreement that uses this price list.

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The Currency, Rounding Factor fields are mandatory and must be entered. The Description, Freight Carrier, Freight Terms, and Comments fields are optional and can be entered by the user. The LOV for the Freight Carrier and Freight Terms is the same as the LOV for these fields found on the standard price list.

The information that is entered in the Freight Carrier and Freight Terms fields will be defaulted on the order when this agreement is referenced.

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**Note:** You can use each agreement price list with multiple pricing agreements. Agreement number is automatically created as a qualifier for the associated AGR price list. You can only use this price list to specify the pricing agreement on the order line. You cannot use an AGR price list to price orders not associated with an agreement.

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### **Payment Tab**

The information that is entered on the payment tab will be defaulted to the order line when the agreement is referenced on the order. These have priority over other defaulted rules establish for the customer. [Figure 13-3](#) shows the Payment tab.

Figure 13–3 Pricing Agreements, Payment tab

The screenshot shows the 'Payment' tab of the 'Pricing Agreements' window. It features two main sections: 'Payment Terms' and 'Rules'. The 'Payment Terms' section includes fields for 'Payment Terms', 'Invoice To', 'Address', and 'Invoice Contact'. The 'Rules' section includes 'Accounting Rule', 'Invoicing', and an 'Override Flag' section with checkboxes for 'Accounting Rule' and 'Invoicing Rule'. Below these sections is a table with columns: 'Customer Item', 'Address', 'Address Category', 'Product Value', 'UOM', and 'Primary UOM'. The table has five rows, with the first row having a checkbox in the 'Primary UOM' column. At the bottom are buttons for 'Price Breaks' and 'Pricing Attributes'.

### Payment terms

**Payment Terms** This is a mandatory field. User chooses from LOV of payment terms.

**Invoice-to** Field can only be entered if you specify a customer on the agreement. LOV contains the customer specified and all the related customers.

**Address** Field is mandatory if you entered the Invoice-to field. Choose from LOV of address.

**Contact** Contact field will default from information entered in Contact field on the agreements tab.

**Accounting Rule** Optional field. User can choose from LOV of valid accounting rules.

**Invoicing** Optional field. User can choose from LOV of valid invoicing rules.

**Override Flag** Determines whether or not defaulting values can be overridden.

**Accounting Rule and Invoicing Rule** If one or both of these boxes is checked, then the flag is Y. This means that during the receivables interface, the item or order rules could override the rules set on the agreement.

### **Agreement Lines**

**Pricing Agreement Price List lines** are defined on the bottom block of the agreements form. Here is where you can define your agreement prices for the Agreement Price Lists only.

The Standard Price List lines default and display in Agreement Lines block. These fields are only for display and cannot be changed through the Agreements form. Any changes to these fields must be made through the Price List Setup form.

**Customer Item** You can optionally define prices for customer items. The Customer Item must be setup in the inventory system. You can set customer items in Order Management Super User > Items > Customer Items. You can specify the org ID and setup customer items. The customer item must then be cross referenced to an internal item.

In the agreement form, the customer item LOV will show all customer items setup for that customer and the product value will have its internal item number defaulted when a customer item is chosen.

**Address and Address Category** The address and address category fields get defaulted when a customer item is chosen from the LOV if these values exist for the customer item. These fields do not have any individual LOV's.

**Product Value** Choose the item for the LOV that you want to define an agreement price. If you have defined a customer item on this line, then the LOV of product values contains the valid cross referenced values. It is mandatory to have a product value if you have customer item.

**UOM** Specify the UOM for the product value.

**Primary UOM** You can make this item UOM be the primary UOM. Please refer to definition of Primary UOM in the Order Management user guide, Price List chapter.

**Line Type** Enter Price Break Header if you want to create price breaks for this line item.

**Price Break Type** This defaults of price break type if this line is a price break line.

**Application Method** Field defaults to Unit Price.

**Value** Enter the base price value of the agreement line item.

**Start Date** Optionally enter the Start Date that this value is effective.

**End Date** Optionally enter the End Date that this value is effective.

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**Note: the start date and end dates must be with in the date range of the Agreement.**

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**Comments** Optionally enter user comments.

**Revision** You also have line revision capability that is independent of the Agreement level revision. You must manually end date the line and enter a reason number prior to entering the new agreement line.

**Revision Reason** This field can be used to enter a reason corresponding to the agreement revision. This is an optional field.

**Revision Date** Revision Date is the date on which the revision was made. This is a mandatory field if you made a line revision. The field defaults with the date that the line revision was entered.

**Pricing Attributes Button:** You can enter pricing attributes for the internal item. These attributes are defined and work exactly like pricing attributes for standard price lists. Please refer to the Pricing Attribute documentation in the Order Management user guide, Price List chapter.

**Price Breaks** You can enter different prices for this item based on the quantity ordered. Enter the quantity range and a corresponding price for this range

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## GSA Pricing

This chapter provides information on the implementation of the GSA Pricing functionality and how this feature can be used for companies that follow the Government Services Administration pricing guidelines, or to create minimum price floors.

Topics covered in this chapter include:

- [Overview of GSA Features](#) on page 14-2
- [Setup GSA Pricing](#) on page 14-3
- [Defining GSA Pricing](#) on page 14-4

## Overview of GSA Features

Oracle Order Management provides functionality that enables you to identify when a selling price of an item falls below a minimum price. This functionality is used in companies that have Government Services Administration agreements. Commercial customers, otherwise known as non-GSA customers, should not receive a selling price for an item that is equal or less than a price for a GSA customer.

Order Management only provides functionality to manage this pricing practice. It does not provide any official GSA pricing policies. The setting up and managing of GSA customers is solely the responsibility of internal corporate policies and practices. Business practices for overriding GSA violation warnings should be determined by the company.

Even though this feature is designed to enforce GSA Pricing, it's functionality can also be used to set price floors.

## Government Services Pricing Guidelines

GSA policies require that commercial (non-GSA) customers of a company do not receive equal or greater discounts than GSA customers. If the price of the same item is equal or lower then it causes a GSA violation. Oracle Order Management provides functionality to warn when a GSA violation has occurred.

The GSA Advantage policy allows the Order to have several ship-to locations but a single bill-to (GSA Address). Order Management also provides functionality to allow different ship-to addresses on the same order. Order Management also allows you to have more than one bill-to address for a customer, but only the bill-to addresses checked GSA will get the GSA price.

## Minimum Price Floors

Even if your business is not governed by the pricing rules of the Government Services Administration, the GSA Pricing functionality can be used to monitor minimum price floors for items. Thus, you have the ability to define price minimums and issue warnings when selling prices go below this minimum.

## GSA Pricing = GSA Discount

In R11i Oracle Order Management, there is a new form and name for creating GSA Prices. However, the functionality is similar to that of R11 Order Entry GSA Discounts. The GSA Pricing form actually uses the Modifier technology. When you setup a GSA price, you are actually creating a modifier discount with an application method of new price. At order entry time, when the item is entered for a GSA customer, the base price will be returned

from the regular price list. When you leave the order line, the New Price discount will be applied and become the new base price. A price adjustment will be created for the difference of the new price and the base price:

For example:

Base Price Item A: \$12

GSA Price Item A: \$10

Unit Selling Price on Order Line: \$10

GSA Discount Item A: \$2

A GSA Discount is created for the requirement that some companies need to manage the discounts given to GSA customers. The value of these discounts represents the loss in revenue for an item for doing business with a GSA customer versus a non-GSA customer.

## GSA Violation

A GSA Violation occurs when the price of an item for a non-GSA customer is equal to or less than the price of this item in the GSA Price List. This will cause a GSA violation. In Oracle Order Management there is a profile option that determines how the company wants this violation to be controlled.

In the event of multiple GSA price lists, the violation floor will be set based on the GSA price list with the highest price for the item.

## Setup GSA Pricing

### Creating a GSA Customer

To identify a customer as being eligible to receive a GSA Price, the GSA box needs to be checked. The GSA box is located on the Customer record on the Order Management tab. You can navigate to the Customer form from Oracle Order Management > Customers > Standard. Only GSA customers can receive prices that are on the GSA price list.

If you want to use the GSA functionality for monitoring price minimums, then you do not need to specify any customers as being GSA.

### QP: Verify GSA

The GSA Pricing feature must be enabled before it can be used. The profile option QP: Verify GSA controls is the comparison between the selling price for items being sold to

non-GSA customers and items price in the GSA Price List. The default value of No must be switched to Yes before the GSA Pricing functionality will work.

You must enable this system profile option to use the GSA functionality for monitoring price minimums.

### **OM: GSA Discount Violation Action**

Order Management lets you define how to notify the user when a GSA Violation has occurred. The system profile: OM GSA Discount Violation Action determines what will occur in the event of a GSA Violation: Prevent GSA Violation by Causing Error or Issue Warning when GSA Rules are violated. The default value for this profile option is to issue a warning. The business practice should dictate how this profile option is set.

### **GSA Violation Hold**

Oracle Order Management has seeded the hold type: GSA Violation Failure. If the OM: GSA Discount Violation Action is set to Prevent GSA Violation by Causing Error, orders that are in GSA violation will automatically be placed on hold. The GSA Violation holds are automatically released if the order or order line is updated and no longer violates the business rule due to which the hold was applied.

## **Defining GSA Pricing**

The GSA Pricing form is found in Oracle Order Management > Pricing > Price Lists > GSA Pricing Setup. The form name is Define Modifier - Define GSA Price. GSA Pricing uses the modifier technology to apply GSA Prices (i.e. GSA Discounts as described above). This form has been coded to only accept GSA Price setup. You cannot use this form to define any other modifiers.

In this section, implementation considerations will be discussed regarding each field on the GSA Pricing form.

For more information of the functionality of the fields in the modifier form, refer to the Modifier Implementation section.

### **Main Tab**

Define Modifier to view the Oracle form.



Figure 14-1 Define Modifier Window

The screenshot shows the 'Define Modifier - Define GSA Price' window. The 'Main' tab is active, displaying the following fields:

- Type: **Discount List**
- Name: **General Services Administrati**
- Currency: **USD**
- Number: **GSA Discount 100**
- Version: **1**
- Start Date: [ ] - [ ]
- Active:
- Automatic:
- Description: [ ] [ . ]
- List Qualifiers button

The 'Modifiers Summary' tab is also visible, showing a table with the following data:

| Modifier No | Level | Modifier Type | Pricing Phase        | Incompatibility Group   | Bucket | Product A |
|-------------|-------|---------------|----------------------|-------------------------|--------|-----------|
| 001         | Line+ | Discount      | List Line Adjustment | Level 1 Incompatibility | 1      | Item Nun  |
| 002         | Line+ | Discount      | List Line Adjustment | Level 1 Incompatibility | 1      | Item Nun  |
| 003         | Line+ | Discount      | List Line Adjustment | Level 1 Incompatibility | 1      | Item Nun  |

### Type

This field is coded to default to Discount List. This field cannot be changed.

### Number

GSA Pricing, i.e. GSA Discount is entered by user. This number will be the reference number used for the GSA Discount that is created when the GSA New Price is applied. This number will be displayed in the Modifier Number field in the View Adjustments form. The field is AlphaNumeric. A consistent, meaningful naming convention should be considered and business practices established.

### Name

This field is used for reference. Entry is mandatory.

### **Version**

You can have more than one version of a GSA Price list, but only one version is allowed to be active at a time. This activity is controlled by the effectivity dates on the list header.

### **Currency**

This field is mandatory. The default is USD. Other currencies are allowed because this feature can be used for price floors and not just GSA Pricing which is a USA Government regulation.

### **Start Date**

User can define dates that this GSA Price list is effective. If the date fields are blank then this GSA Price list is effective.

### **Description**

Field is for reference only.

## **List Qualifiers**

The GSA flag on the customer record defines a customers GSA status. This flag must be set for Customers to be eligible to receive a GSA Price. Using List Qualifiers in Oracle Order Management, you have the ability to define GSA Price lists that are specific to a GSA Customer. If there are no List Qualifiers defined for a GSA Price List, then all GSA customers are eligible to receive the prices on the GSA Price list. If you are using the GSA Pricing functionality to monitor price floors, then you would not define any customers as GSA, and you would not define any customers in the List Qualifiers.

### **Grouping Number**

You can use both And or Or grouping numbers for Qualifiers.

### **Qualifier Context**

Qualifier context LOV is limited to Customer or Modifier List.

### **Qualifier Attribute**

Qualifier attributes are limited per context:

- Customer Context: Customer Name or Site Use
- Modifier List Context: Price List

## Operator

You can define operators as being equal, between, or not equal. Between cannot be used to validate alpha character ranges. It is only used for numeric and thus will most likely not be used to define any of these qualifiers.

## Value From

Depending on the qualifier attribute, the LOV contain:

- Customer Name - LOV of GSA customers
- Site Use - LOV of Sites. The LOV is independent of any customers defined as qualifiers on this form.
- Price List - LOV contains all Price Lists. If Price List is a qualifier, the Price List must be used on order for this GSA Price to apply.

## OK Button

After entering information into the List Qualifier form, the OK button saves the data. You do not need to select the save icon from the main form to save the List Qualifier data.

## Modifier Summary

### Modifier No

Field used for reference; optional.

### Level

Coded for Line level. Cannot be changed by user.

### Modifier Type

Coded for Discount type. Cannot be changed by user.

### Start Date & End Date

User can enter line level start and end effectivity dates. Date range must be valid with in any dates that are defined on the list header.

### Automatic

Coded as automatic Yes. Cannot be changed by user. If customer is eligible to receive GSA price, then the GSA price is automatically applied.

### **Override**

Coded as No. A GSA Price cannot be overridden.

### **Proration Type**

Coded as None. Cannot be changed by user.

### **Pricing Phase**

Coded as List Line adjustment. Cannot be changed by user.

### **Incompatibility Group**

Coded as Level 1 Incompatibility. Cannot be changed by user.

### **Bucket**

Coded as 1. Cannot be changed by user.

### **Product Attribute**

Coded as Item Number. Cannot be changed by user.

### **Product Attribute Value**

User enters Item Number value from LOV of items.

### **Precedence**

Precedence can be used to determine which new price value to apply if an item is found on more than one GSA Price List, and a GSA customer is eligible to receive both. The item value with the highest precedence (i.e. lowest precedence number) will be applied.

### **UOM**

User can enter UOM for item if more than one UOM exist.

### **Application Method**

Coded as New Price. Cannot be changed by user.

### **Value**

User enters New Price value of GSA Price. User does not enter the GSA discount value. The GSA Discount value will be calculated automatically when the GSA New Price is applied on.



# 15

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## Formulas

This chapter contains information about the implementation considerations of Pricing Formulas in Oracle Order Management.

Topics covered in this chapter include:

- [Overview of Formulas](#) on page 15-2

## Overview of Formulas

Oracle Order Management offers the ability to create formulas (mathematical expressions) that the pricing engine uses to calculate the list prices of items and the discounts that apply to them. You can use these formulas to:

- Create a price from a computation as an alternative to entering prices in a price list.
- Calculate a price adjustment. For example, you can instruct the pricing engine to calculate Freight and Special charges by attaching a formula to a discount line.
- Meet different business needs. Determine how to use each formula and establish controls around the naming and description of each formula.

**Note:** In Oracle Order Management Basic Pricing only static formulas can be used. This requires that prior to running any newly created or updated formulas, a concurrent process must be run prior to any order entry activity, in order to update any prices in price lists.

## Defining Formulas

In this section, implementation considerations will be discussed regarding each field on the Pricing Formulas User Interface form. For the user steps for creating a formula, refer to the *Oracle Order Management User's Guide*.

## Formula SetUp Form

Navigate: Pricing > Pricing Formulas > Formula Setup to view the Pricing Formulas form depicted in [Figure 15-1](#).



Figure 15–1 Defining Formulas Window

The screenshot shows the 'Pricing Formulas' window with the following fields:

- Name: TEST FORMULA
- Description: test
- Effective Dates: 14/DEC/2000 - 15/DEC/2000
- Formula:  $(1+2)*(2+3)/1$

Below the fields is a table titled 'Formula Lines' with the following data:

| Formula Type      | Pricing Attribute Context | Pricing Attribute  | Component | Step | [ ] |
|-------------------|---------------------------|--------------------|-----------|------|-----|
| Numeric Constant  |                           |                    | 100       | 1    |     |
| Pricing Attribute | OTA Pricing               | Number of students |           | 2    |     |
| Factor List       |                           |                    | TEST      | 3    |     |
|                   |                           |                    |           |      |     |
|                   |                           |                    |           |      |     |
|                   |                           |                    |           |      |     |
|                   |                           |                    |           |      |     |
|                   |                           |                    |           |      |     |

A 'Factors' button is located at the bottom right of the window.

**Formula Name** Enter the Formula Name. A consistent, meaningful naming convention should be considered and business practices established. Consideration should be given to having a naming pattern that will facilitate users ability to query and identify formulas in a meaningful way. This is because the find query, using the flashlight icon, displays only the Formula Name and Effective dates on which to query. The name field will have a LOV with all existing formulas. The sort reduction is only based on Formula Name.

**Description** User enters a brief description of what the formula relates to.

**Effective Dates** User enters Start and End Dates. A Start Date and null End Date will keep the formula active at all times. Entering an End Date specifies a beginning and

ending effective date and can be used to end or make a formula ineffective. Formulas cannot be deleted.

**Formula** The user enters the mathematical expression of the formula. Operands are \*,+,- and (), /

**Formula Type** User enters Formula Line Type. A the line types can be used throughout the formula. Basic Pricing uses three formula line types:

1. **Numeric Constant.** Requires the numeric constant in Component
2. **Pricing Attribute.** A single context must be used for all formula steps.
3. **Factor List.**

These line types can be used throughout the formula.

**Pricing Attribute Context** Select the pricing context in Pricing Attribute Context

**Pricing Attribute** Select the pricing attribute name in Pricing Attribute.

**Factor List** Select an existing factor list from the list of values, or create a new factor list, by entering the name and the form Whenever Factor List is entered as a formula line type, the Factors Button is activated.

**Component** For Numeric Constant, enter the numeric constant in this field.

For Pricing Attribute, enter the attribute being used related to the Pricing Attribute Context selected.

For Factor List, enter or select a Factor List name.

**Step** Enter the step for which this line is to be used.

### Defining Factor List

Factor lists are defined in the Pricing Formulas window, Formula Lines, by selecting the Factors tab which displays the Factors window. This tab is activated whenever a factor list line type is entered in Formula Type. Selecting this tab will open the Factors form, shown in [Figure 15-2](#), with the Factor List name entered in the Component.

Figure 15–2 Factors Window

The screenshot shows a window titled 'Factors - TEST' with two main sections: 'Base Pricing Attributes' and 'Associate Pricing Attributes'.

**Base Pricing Attributes**

| Base Pricing Attribute Context | Base Pricing Attribute | Operator | Value From | Value To | Adjustment Factor |
|--------------------------------|------------------------|----------|------------|----------|-------------------|
| OTA Pricing                    | Number of students     | Between  | 1          | 100      | 2                 |
| OTA Pricing                    | Number of students     | Between  | 101        | 500      | 2.1               |

**Associate Pricing Attributes**

| Associated Pricing Attribute Context | Associated Pricing Attribute | Operator | Value From | Value To |
|--------------------------------------|------------------------------|----------|------------|----------|
|                                      |                              |          |            |          |
|                                      |                              |          |            |          |
|                                      |                              |          |            |          |

At the bottom right of the window are 'OK' and 'Cancel' buttons.

### Base Pricing Attributes

Factor information is entered in the columns of this region

**Base Pricing Attribute Context** Select a value for Base Pricing Attribute Context. If you have multiple entries, you must use the same base context in this region (to create an OR condition); the pricing engine chooses one of the entries.

**Base Pricing Attribute** Select a value for Base Pricing Attribute.

**Operator** A Comparison Operator of 'Between' will require a Value From. The Value To defaults to unlimited. A Comparison Operator of '=' only allows a Value From value, no Value To.

**Adjustment Factor** Enter a numerical adjustment factor in this region.

### Associate Pricing Attributes

Use the Associate Pricing Attributes region to associate additional contexts with the base context (to create an AND condition).

**Associated Pricing Attribute Context** Select a value for Associated Pricing Attribute Context.

### Associated Pricing Attribute

Select a value for Associated Pricing Attribute.

**Operator** A Comparison Operator of 'Between' will require a Value From. The Value To defaults to unlimited. A Comparison Operator of '=' only allows a Value From value, no Value To.

## Updating Formula Pricing

In this section, implementation considerations will be discussed regarding the updating of Formulas after original creation or updating existing formulas. It is important to understand that formulas will not update prices or changes unless a concurrent process is run prior to any order entry activity. Not doing so, will not update or change any previously defined formula.

**Figure 15–3 Update Formula Prices**

The screenshot shows a dialog box titled "Update Formula Prices". At the top, there is a checked checkbox labeled "New and Modified Lines Only of Price Lists". Below this, there are two radio button options: "Update All Pricing Formulas for Price Lists" and "Update Individual Pricing Formula for Price Lists". There are two input fields: "Pricing Formula" and "Request ID". A "Submit" button is located at the bottom right of the dialog.

## Update formula prices

Navigate: Pricing > Pricing Formulas > Update Formula Prices to the Update Formula Prices form displayed in [Figure 15-3](#).

**New and Modified Lines Only** Select New and Modified Lines Only of Price Lists to calculate formula-based prices for price list lines whose formulas you have added or changed since the process was last executed.

To calculate formula-based prices for all price list lines, clear the New and Modified Lines Only of Price Lists.

**Update All Pricing Formulas for Price Lists** To include price list lines that have any formula, select Update All Pricing Formulas for Price List.

**Update Individual Pricing Formula for Price Lists** To include price list lines that have a specific formula:

- Select Update Individual Pricing Formula for Price Lists
- In Pricing Formula, select the pricing formula from the list of values.

The process applies this choice after it selects the price list lines whose formulas you have added or changed since the process was last executed.

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**Note: You must remember to do this process after creating or changing any formulas in order for the engine to calculate and update the related price list lines covered by the formula.**

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# 16

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## Pricing Profiles

Topics covered in this chapter include:

- [Overview](#) on page 16-2
- [Profile Options](#) on page 16-2
- [Setup Profile Options Summary](#) on page 16-2

## Overview

This chapter contains information about the implementation considerations of Profile Options and System Parameters at Implementation time in Oracle Order Management. Discussion will be limited to those Profiles and Parameters required by Pricing.

## Profile Options

During implementation, value for each user profile option is defined to specify how Oracle Pricing controls access to and processes data. The system administrator usually owns the tasks of setting and updating profile values. For more information see *Oracle Applications System Administrator's Guide*.

## Setup Profile Options Summary

The table below indicates whether you can view or update the profile option and at which System Administrator level the profile options can be updated: User, Responsibility, Application, or Site levels. A Required profile option requires you to provide a value.

The following terms describe the available permissions:

- *View & Update*: You can view and update the profile option.
- *View*: You can view the profile option.
- *No access*: You can neither view nor update the profile option.

Second, it indicates if the profile option is required or optional (Required column). If the cell indicates Required, you must provide a value; if the cell indicates Optional, you do not need to provide a value.

Third, it indicates the default value for each profile option (Default Value column); you only need to change its value you do not want to use the default value. The phrase No Default indicates that there is no default value for the profile option; it does not indicate that there is a default of value No.

After the table, the text describes the meaning of each profile option.



**Table 16–1 Profile Options**

| <b>Profile Option</b>                          | <b>Sys Admin User</b> | <b>Sys Admin Resp</b> | <b>Sys Admin App</b> | <b>Sys Admin Site</b> | <b>Required</b> | <b>Default Value</b> |
|--|-----------------------|-----------------------|----------------------|-----------------------|-----------------|----------------------|
| QP: Accrual UOM Class                          | No access             | No access             | View & Update        | View & Update         | Optional        | No Default           |
| QP: Blind Discount Option                      | No access             | No access             | View & Update        | View & Update         | Required        | Yes                  |
| QP: Cross Order Volume Period 1                | No access             | No access             | View & Update        | View & Update         | Required        | No Default           |
| QP: Cross Order Volume Period 2                | No access             | No access             | View & Update        | View & Update         | Required        | No Default           |
| QP: Cross Order Volume Period 3                | No access             | No access             | View & Update        | View & Update         | Required        | No Default           |
| QP: Get Custom Price Customized                | No access             | No access             | No access            | View & Update         | Required        | No                   |
| QP: Insert Formula Step Values into Temp Table | View                  | View                  | View                 | View & Update         | Required        | Yes                  |
| QP: Item Validation Organization               | No access             | View & Update         | No access            | View & Update         | Required        | No Default           |
| QP: Limit Exceed Action                        | View                  | View & Update         | View                 | View & Update         | Optional        | Yes                  |
| QP: Line Volume UOM Code                       | No access             | No access             | View & Update        | View & Update         | Optional        | No Default           |
| QP: Line Weight UOM Code                       | No access             | No access             | View & Update        | View & Update         | Optional        | No                   |
| QP: Negative Pricing                           | No access             | No access             | View & Update        | View & Update         | Required        | No Default           |
| QP: Promotional Limits Installed               | View                  | View & Update         | View                 | View                  | Required        | Yes                  |
| QP: Return Manual Discounts                    | View & Update         | View & Update         | View & Update        | View & Update         | Optional        | Yes                  |
| QP: Source System Code                         | No access             | No access             | View & Update        | View & Update         | Required        | No Default           |
| QP: Unit Price Precision Type                  | No access             | No access             | View & Update        | View & Update         | Required        | Standard             |

| Profile Option             | Sys Admin User | Sys Admin Resp | Sys Admin App | Sys Admin Site | Required | Default Value |
|----------------------------|----------------|----------------|---------------|----------------|----------|---------------|
| QP: Valueset Lookup Filter | View & Update  | View & Update  | View & Update | View & Update  | Optional | Yes           |
| QP: Verify GSA             | No access      | No access      | No access     | View & Update  | Required | No            |

### QP: Accrual UOM Class

Default Value: None

This is required if your business gives non-monetary accruals as benefits.

Specifies the unit of measure class to be used for defining accrual units of measure. The Modifier Setup window displays all units of measure in this class when entering the Benefit UOM for an accrual.

The possible values for this profile option are all UOM classes defined to Oracle Applications.

This profile option is visible and updateable at the site and application levels.

### QP: Blind Discount Option

Default Value: Yes

The default value for this profile option should only be changed if you never define blind discounts.

Used for tuning purposes. If you never define blind discounts, set this profile option to No to bypass part of the search engine processing. A blind discount is a modifier that has:

- No List Qualifiers on the Modifier List Header and
- No Line Qualifiers on the Modifier *and*
- No Products or Pricing Attributes

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**Note:** If your business needs to define blind discount modifiers, make sure that this profile option is set to Yes. Otherwise these Modifiers will not be selected by the Search Engine

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The possible values for this profile option are:

- Yes: Blind Discounts are enabled.
- No: Blind Discounts are disabled, that is, Bypass Blind Discount processing in Search Engine.

This profile option is visible and updateable at the site and application levels.

### **QP: Cross Order Volume Period 1**

*Default Value:* None

This is required if you will be running the cross order volume load program. This defines the number of days of order lines that the load program will accumulate and total. This value must not be the same as the value in QP: Cross Order Volume Period 2 or QP: Cross Order Volume Period 3.

The unit of measure of this profile option is days.

This profile option is visible and updateable at the site and application level.

### **QP: Cross Order Volume Period 2**

*Default Value:* None

This is required if you will be running the cross order volume load program. This defines the number of days of order lines that the load program will accumulate and total. This value must not be the same as the value in QP: Cross Order Volume Period 1 or QP: Cross Order Volume Period 3.

The unit of measure of this profile option is days.

This profile option is visible and updateable at the site level.

### **QP: Cross Order Volume Period 3**

*Default Value:* None

This is required if you will be running the cross order volume load program. This defines the number of days of order lines that the load program will accumulate and total. This value must not be the same as the value in QP: Cross Order Volume Period 1 or QP: Cross Order Volume Period 2.

The unit of measure of this profile option is days.

This profile option is visible and updateable at the site level.

### **QP: Get Custom Price Customized**

*Default Value:* No

Indicates if, when processing formulas, the pricing engine evaluates the line type Function. If your organization wants to use this formula line type, you need to:

- Customize the GET\_CUSTOM\_PRICE function
- Set this profile option to Yes.

If the pricing engine evaluates custom code within the GET\_CUSTOM\_PRICE function and the profile option is No, the formula calculation fails, and the calling application processes the failure.

The possible values for this profile option are:

- Yes: When processing formulas, the pricing engine evaluates the line type Function.
- No: When processing formulas, the pricing engine does not evaluate the line type Function.

This profile option is updateable at the site level only.

### **QP: Insert Formula Step Values into Temp Table**

*Default Value:* No

The possible values are Yes and No. If this profile option is set to Yes, the step values of each formula attached to a price list line is evaluated by the Pricing Engine and inserted into the temporary table QP\_FORMULA\_STEP\_VALUES\_TMP. This can be referenced by customized code.

The following values are listed in the table: PRICE\_FORMULA\_ID, STEP\_NUMBER, COMPONENT\_VALUE, PRICE\_FORMULA\_LINE\_TYPE\_CODE, LINE\_INDEX, LIST\_LINE\_TYPE\_CODE, LIST\_HEADER\_ID, LIST\_LINE\_ID.

This profile option can be set only at the Site level using the System Administrator responsibility.

### **QP: Item Validation Organization**

*Default Value:* None

Set this to an organization at the level in your organization hierarchy at which you set prices for items.

Indicates the Oracle Manufacturing organization that items are validated and viewed against when entering items in the Price List or Modifier windows.

Set the QP: Item Validation Organization profile, by site or responsibility, to an organization at the level in your organization hierarchy at which you set prices for items.

The possible values for this profile option are all inventory master organizations currently defined.

This profile option is visible and updateable at the site and responsibility levels.

### **QP: Limit Exceed Action**

*Default Value:* Soft--Adjusted Benefit Amount

This profile option defines the default action codes for promotion and modifier limits. It specifies the action for the pricing engine if a pricing request exceeds a promotional limit.

This profile option is based on the lookup type Limit Exceed Action. The possible values for this profile option are:

- *Soft--Full Benefit Amount:* Applies the full benefit to the order even if the transaction exceeds the defined limit.
- *Hard--Adjust Benefit Amount:* Adjusts the order benefit amount so that the order meets but does not exceed the promotional limit. A status message is sent to the calling application such as Order Management to place a promotional hold on the order.

This profile option is visible and can be updated at the site and System Administrator responsibility levels.

### **QP: Line Volume UOM Code**

*Default Value:* None

This is required if your business needs to define qualifier rules which include the seeded qualifier Line Volume

Specifies the unit of measure of the Line Volume Qualifier. The attribute sourcing API converts the item on the Request Line to its primary UOM, and then uses the volume attributes of the item to derive the Line Volume of the item in the UOM specified in this profile option.

The possible values for this profile option are all units of measure currently defined.

This profile option is visible and updateable at the site and application levels.

### **QP: Line Weight UOM Code**

*Default Value:* None

This is required if your business needs to define qualifier rules which include the seeded qualifier Line Weight.

Specifies the unit of measure of the Line Weight Qualifier. The attribute sourcing api converts the item on the Request Line to its primary UOM, and then uses the weight attributes of the item to derive the Line Weight of the item in the UOM specified in this profile option.

The possible values for this profile option are all units of measure currently defined.

This profile option is visible and updateable at the site and application levels.

### **QP: Negative Pricing**

*Default Value:* No

The default value should only be changed if your business needs to define a negative price on a price list line. Controls whether a negative price can be entered in the Price List Setup U.I.

The possible values for this profile option are:

- *Yes:* Allow a negative price to be entered.
- *No:* Do not allow a negative price to be entered.

This profile option is visible and updateable at the site and application levels. QP: Promotional Limits Installed.

### **QP: Promotional Limits Installed**

*Default Value:* No

This profile option activates the promotional limits feature in Oracle Advanced Pricing to enable users to manage promotional limits and related functions. The initial default value is *N* for No which means the limit feature is not active. The System Administrator must change this value to *Y* for Yes to be able to use limits. Only the System Administrator can change the value of this profile at site level only. Other users can view the profile only.

- *Yes:* Enables the promotional limits features to be used.
- *No:* Disables the promotional limits features.

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**Warning:** Once the *QP: Promotional Limits Installed* profile option is enabled, leave the promotional limits active with the value of Y. Do not disable the *QP: Promotional Limits Installed* profile option once it has been enabled!

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## QP: Return Manual Discounts

*Default Value:* Yes

Indicates how the pricing engine should perform incompatibility processing for manual discounts.

The possible values for this profile option are:

- *Yes:* All the manual discounts will be returned. All the automatic discounts that get deleted as part of incompatibility processing will be returned as manual discounts.
- *No:* All automatic and manual discounts will go through incompatibility processing and one of them in each incompatibility group will be returned. In this process an automatic discount might get deleted and a manual discount might get selected.

Discounts (automatic or manual) deleted as part of incompatibility processing will not be returned as manual discounts.

This profile option is visible and updateable at the site, application, responsibility, and user levels.

## QP: Source System Code

*Default Value:* QP: Oracle Pricing

Used in all setup windows to identify the application through which the pricing information is being entered. This Source System code is held on all Price and Modifier Lists to identify the origin of the data. At the time of pricing, the pricing engine may restrict its search to pricing information which originated from a particular application depending on the Request Type to Source System Setup.

No specific set-up is required if you do not want to differentiate between applications or prevent update of modifiers created by different applications because all the modifiers are created with same value for source system code (assuming the value of this profile is set only at site level by default or same value if set for all applications which create modifiers).

By default, the value of the profile option *QP\_SOURCE\_SYSTEM\_CODE* is QP (Oracle Pricing) at the Site level. However, to differentiate between applications and prevent update of modifiers among several applications, the value of this profile can be set up at the Application level.

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**Note:** If the value is set at both the Application and Site level, then the value at the Application level takes precedence.

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If modifiers are created in different applications such as Oracle Advanced Pricing, Order Management or Trade Management, then changes to the modifier can only be made in the application that the modifier was originally created. These changes include changes to the modifier header (as delete is already prevented) or changes such as inserting, updating, or deleting modifier lines, pricing attributes, and qualifiers.

The following example describes the customer requirements and proposed profile option set up:

- Modifiers created by Trade Management application can only be changed by Trade Management
- Modifiers created by Oracle Pricing and Oracle Order Management applications can interchangeably update them but not other applications
- All other applications can update the modifiers of other applications except Trade Management, Oracle Pricing and Order Management

To accommodate these requirements, the value of the profile *QP\_SOURCE\_SYSTEM\_CODE* is set up as follows:

- *Site level:* QP (default)
- *Trade Management:* XXX
- *Oracle Pricing:* YYY
- *Order Management:* YYY (same as Oracle Pricing)

The default value for the source system code should only be changed if your pricing data source is not Oracle Advanced Pricing. Set this to the Source System Lookup Code of the application which is interfacing the pricing data



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**Note:** Set the QP: Source System Code Profile to the Source System Lookup Code of the application from which the QP Setup or other application setup U.Is are being called

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The possible values for this profile option are:

- QP: Oracle Pricing
- The source system lookup code of the source of your pricing data

This profile option is updateable at the site and responsibility levels.

### **QP: Unit Price Precision Type**

*Default Value:* Standard

This profile option determines the value for the rounding factor which is defaulted on the Price List. The rounding factor is limited by the number of positions allowed in the standard or extended precision format of the price list currency.

The possible values for this profile option are:

- Extended: Rounding Factor is defaulted to the currencies extended precision
- Standard: Rounding Factor is defaulted to the currencies standard precision

This profile option is updateable at the site and application levels.

### **QP: Valueset Lookup Filter**

*Default Value:* Yes

Use this profile option to enable or disable a search criteria window for qualifier value lookups in qualifiers, price lists, and modifiers. Some qualifiers use large valusets, for example, those based on all customers, and searches may take a long time. If you want to reduce the number of items that display in the list of values, you can enter search criteria. If you do not enter search criteria and click the list of values indicator for the fields Value From or Value To, you see a window which advises that you have not entered search criteria and that the search may take a long time.

The possible values for this profile option are:

- Yes: The message displays.

- *No*: The message does not display. Use this value if you do not expect to have large qualifier valuesets and do not need to enter search criteria to reduce the display.

This profile option is visible and updateable at the site, application, responsibility, and user levels.

### **QP: Verify GSA**

*Default Value*: No

Change the default value to Yes if your business requires GSA pricing functionality

Indicates whether the pricing calculation engine should test for GSA violations. The evaluation is performed if a request is for a non-GSA customer, and GSA rules are violated if the selling price of an item is calculated to be less than the price of the item on any GSA price list.

The possible values for this profile option are:

- *Yes*: Pricing Calculation engine tests for GSA violations, any violating request lines are returned to the calling application with a status of GSA violation.
- *No*: Do not test for GSA violations.

This profile option is updateable at the site level.

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## Using Defaulting Rules in Basic Pricing

Topics covered in this chapter include:

- [Overview](#) on page 17-2

## Overview

Some of the defaulting decisions established in Oracle Order Management (OM) can potentially change the final price fetched by the pricing engine. It is imperative to carefully select your defaulting values during order entry.

## Pricing Date

Pricing date instructs the pricing engine to price the order using list prices and benefits that are valid on that day.

At the Order Line level, you can setup a defaulting rule to default the pricing date entered in the order header, ordered date or requested date etc. By controlling the defaulting value of the pricing date you control the LOV of price lists being queried in OM and the list price and benefits applied on to the order.

## Agreement

By entering an agreement name on an order the customer is able to receive the prices negotiated in the agreement. Agreement is tied to a standard price list or an agreement price list. An agreement price list could be chosen in OM only if the agreement to which the price list is tied to has been entered in the Sales Order screen.

You can use agreements to default Sales person, Purchase Order Number, Payment terms, Freight terms, etc.

## Price List

The price list on the order line is used to fetch the list price and apply benefits. If the item is not found in the price list, the secondary price list is searched. If the item is not listed on the secondary price list, or if there is no secondary price list, an error message is given.

If an agreement is mentioned on the order, then standard price lists and agreement pricelist attached to the agreement can be used. Price lists can be defaulted from customer, agreement, or order type.

## Currency Code

The pricing engine searches for the price lists and benefits in the currency code mentioned on the order. Use defaulting to control the currency in which the order is going to be priced.

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## Simple Pick & Ship Process

Topics covered in this chapter include:

- [Overview](#) on page 18-2
- [Required Setup](#) on page 18-2
- [Process Steps](#) on page 18-3

## Overview

The Simple Pick and Ship process is the business process used to pick and ship an order in the most expedient method. When an order line reaches the Order Management workflow Shipping Activity, Order Management calls Shipping Execution to indicate the line is ready to import. Shipping then imports the order line.

Setting defaults in the Organization and Shipping Parameters will allow the Simple Pick and Ship process to occur.

## Required Setup

To accomplish Simple Pick & Ship, the following setups are required:

### Organization Parameters

Navigate: Order Management > Shipping > Setup > Organization Parameters. On the ATP, Pick, Item-Sourcing tab, ensure that the Pick Confirmation Required check box is UNCHECKED. This will allow Inventory to automatically pick confirm each move order line.

### Shipping Parameters

Navigate: Order Management > Shipping > Setup > Shipping Parameters.

**Pick Release tab** Check Autocreate Deliveries and Auto Allocate boxes. Autocreate Deliveries will use the defined Delivery Grouping Rules to group delivery lines into deliveries. Auto Allocate will use the Picking Rules that you have defined in Inventory to determine the source.

**Delivery Grouping tab** You can define delivery grouping rules, based on conditions that make sense to your business process. Ship From Location and Ship To Location are mandatory. Five additional attributes enable multiple grouping options; customer, freight terms, FOB code, intermediate ship to location, and ship method.

**Picking Rules** Navigate: Inventory > Setup > Rules > Picking. When you define an item you choose a picking rule to determine the order in which revisions, lots, subinventories, and locators are picked for sales orders. Oracle Shipping Execution submits requests to Oracle Inventory, which uses the information you enter in the Picking Rules window to generate pick lists for sales orders. If you choose None for any of the criteria fields, Inventory ignores that criterion. For example, if you choose None for Revision, Inventory picks units of an item without regard to

revision levels. Oracle Inventory looks at the picking criteria in the order in which they appear in the Picking Rules window. Then, Inventory looks at the options (except for None options) for each criterion in the order in which they appear beneath each criterion.

**Defaulting Rules** Navigate: Order Management>Setup>Rules>Defaulting. Ship Method, Freight Terms and FOB Point are fields which appear on the Order Header that could be helpful to have default at the time the order is created, depending on your business process. They may also be entered or the defaults overridden at the time the order is created. These fields can be entered until the Delivery has been Ship Confirmed. Once the Delivery has been Ship Confirmed, changes can not be made to the above mentioned fields.

## Process Steps

**Enter and Book Order.** When scheduling occurs, Oracle Shipping automatically imports the delivery lines.

**Launch Pick Release.** There are several ways to launch Pick Release however the most streamlined method would be to set up Pick Release to run as a concurrent process which you schedule according to your business needs. Navigate: Shipping > Release Sales Orders > Release Sales Orders SRS.

Other methods for launching Pick Release are:

From the Shipping Transactions Form (STF):

- Select specific Delivery Lines for Pick Release by selecting one or multi-selecting many delivery lines, then Navigate: Action > Launch Pick Release and click on the 'Go' button. (Once created, Containers/LPNs, Deliveries, Stops and Trips can also be submitted for Pick Release through the STF.)
- You can also bring up the Release Sales Order form while in the Shipping Transactions form by using the Tools menu and selecting the Pick Release Form.

Finally, Pick Release can be run manually. Navigate: Shipping > Release Sales Orders > Release Sales Orders

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**Note:** When Pick Releasing using the Release Sales Order form, any of the defaults set in the Organization and Shipping Parameters can be overridden for that particular Pick Release.

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Ship Confirm the Delivery (i.e.) associated to the lines from the order. On the Ship Confirm form, check Set Delivery In Transit and Auto Close Trip.

Navigate: Order Management > Shipping > Transactions, choose the Delivery tab, highlight the desired delivery (for multiple selections, hold the shift key and left click each delivery). Go to Actions, choose Ship Confirm and click the Go button, the Ship Confirm window will appear. Check the Set Delivery In Transit box and the Auto Close Trip box. The Set Delivery In Transit will automatically update the status of each Delivery to In Transit. The Auto Close Trip will change the status of the Stops Picked up or Dropped Off and the status of the Trip will be Closed. By checking these boxes, the delivery lines will be available to the Receivables Interface. (Process Order API and Inventory)



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## Simple Pick & Ship Process Using Mobile Devices and UPS

Topics covered in this chapter include:

- [Overview](#) on page 19-2
- [Required Setup](#) on page 19-3
- [Process Steps](#) on page 19-4

## Overview

A variation of the Simple Pick and Ship process includes the use of mobile devices to streamline the picking process and incorporate real time shipment information utilizing the four API's that have been built as a result of Oracle's collaboration with United Parcel Service (UPS). These two features are independent of one another and can be used separately or together as described in this scenario. This business process starts when your company receives an order from your customer and you would like to pick and ship using mobile devices. In this scenario, the preferred carrier is UPS.

Once the order line reaches the Order Management workflow Shipping Activity, Order Management calls Shipping Execution to tell them the line is ready to import. Shipping then imports the order line.

Setting defaults in the Organization and Shipping Parameters will allow the Simple Pick and Ship with mobile devices process to occur. Enabling the profile option, WSH: Internet Proxy URL, allows your company to exchange information with UPS via APIs. This scenario employs the use of Oracle Mobile Supply Chain Applications, a new module available in Release 11i that provides mobile user interfaces for Inventory (to include shipping and receiving), Work in Process (WIP), and Quality.

## Required Setup

To accomplish Simple Pick & Ship using Mobile Devices and UPS, the following setups are required:

### Organization Parameters

Navigate: Order Management > Shipping > Setup > Organization Parameters

**ATP, Pick, Item-Sourcing tab** Ensure that the Pick Confirmation Required check box is checked. This will allow you to manually Pick Confirm each move order line utilizing mobile devices.

### Shipping Parameters:

Navigate: > Order Management> Shipping > Setup > Shipping Parameters

**Pick Release tab** Check Autocreate Deliveries to use the Delivery Grouping Rules you have defined to group delivery lines into deliveries Check Auto Allocate to use the Picking Rules that you have defined in Inventory to determine the source.

**Delivery Grouping tab** Define delivery grouping rules, based on conditions that make sense to your business process. Ship from location and Ship to location are mandatory. Five additional attributes enable multiple grouping options: customer, freight terms, FOB code, intermediate ship to location, and ship method.

### Profile Option

Navigate: Order Management > Shipping > Setup > Profiles WSH: Internet Proxy URL must be enabled for your company to access the UPS servers via API. If your site does not have a firewall, you do not need to set the profile. This profile can only be modified by the System Administrator at the site level.

### Picking Rules

Navigate: Inventory > Setup > Rules > Picking. When you define an item, define a picking rule to determine the order in which revisions, lots, subinventories, and locators are picked for sales orders. Oracle Shipping Execution submits pick requests to Oracle Inventory, which uses the information entered in the Picking Rules window to generate allocations for sales orders. If you choose None for any of the criteria fields, Inventory ignores that criterion. For example, if you choose None for Revision, Inventory picks units of an item without regard to revision levels. Inventory looks at the picking criteria in the order in which they appear in

the Picking Rules window. Then, Inventory looks at the options (except for None options) for each criterion in the order in which they appear beneath each criterion.

### Defaulting Rules

Navigate: Order Management > Setup > Rules > Defaulting. Ship Method, Freight Terms and FOB Point are fields which appear on the Order Header that could be helpful to have default at the time the order is created, depending on your business process. They may also be entered or the defaults overridden at the time the order is created. These fields can be entered until the Delivery has been Ship Confirmed. Once the Delivery has been Ship Confirmed, changes cannot be made to the above mentioned fields.

## Process Steps

### Enter and book order

When scheduling occurs, Oracle Shipping will automatically import the delivery lines.

### Launch Pick Release

There are several ways to launch Pick Release however the most streamlined method would be to set up Pick Release to run as a concurrent process which you schedule according to your business needs. Navigate: Shipping > Release Sales Orders > Release Sales Orders SRS.

Other methods for launching Pick Release are:

From the Shipping Transactions Form (STF):

- Select specific Delivery Lines for Pick Release by selecting one or multi-selecting many delivery lines, then Navigate: Action > Launch Pick Release and click Go. (Once created, Containers/LPNs, Deliveries, Stops and Trips can also be submitted for Pick Release through the STF.)
- You can also bring up the Release Sales Order form while in the Shipping Transactions form by using the Tools menu and selecting the Pick Release form.
- Finally, Pick Release can be run manually. Navigate: Shipping > Release Sales Orders > Release Sales Orders

**Note:** When Pick Releasing using the Release Sales Order form, any of the defaults set in the Organization and Shipping Parameters can be overridden for that particular Pick Release.

### **Pick Confirm via Mobile Device**

The Pick Release process in R11i is two fold. The first portion is allocation and the second part is pick confirm. Using the default in the Shipping Parameters to auto allocate will tell the system to use the Picking Rules that you have defined in Inventory to determine the source of the item to be picked. The picker will receive the information about the item and its source on the pick slip and can confirm that pick transaction or change the details to reflect material that was actually picked on the mobile device. When the item is picked from its source location, the picker will verify the information on the mobile device by scanning the location and item bar codes and transfer the item to the staging location. The verification and staging transfer represent the second step of the Pick Release process, Pick Confirm. The quantity, serial #, lot and location can all be confirmed on the mobile device and transmitted back to Inventory as the pick confirmation for each move order line. Once both steps of Pick Release are completed, the delivery line is eligible to be Ship Confirmed.

---

---

Note: Pick Confirm can be committed through the standard forms if Mobile Supply Chain Applications (MSCA) are not employed, Navigate: Inventory > Move Orders > Transact Move Orders, select the desired move order lines and then transact.

---

---

*Figure 19-1 MSCA Query Pickwave Move Order screen using Sales Order number to display Allocation information*

```
Query Pickwave MO(V1
SO Num   >98139
MO Num   >
Pick Slip>
Deliv Num>
Item     >
<Query>
<Cancel>
```

**Figure 19-2 MSCA Pick Confirm by validating the information for each Move Order Line.**

```

MO Allocation(v1)
<Next>
MO Num      :52096
Line Num    :1
SO Num      :98139
Item        :CM11062
Confirm     :
From Sub    :Stores
Confirm     :
To Sub      :FGI
UOM         :Ea
Avail Qty   :
Req Qty     :2.0
Confirm     :
Reason      >

```

### Select UPS API

The UPS APIs can be accessed in the Shipping Transactions form from the Lines/LPNs tab or the Delivery tab, Navigate: Order Management > Shipping > Transactions > Actions, choose from one of the four API's below:

**Rate & Service Selection:** Calculate estimated rates and service costs in US dollars for deliveries, delivery lines and containers and update freight cost value for a delivery line. Currently, this service is available for US domestic shipments.

**Address Validation:** This window validates the Ship From and Ship To address postal codes for deliveries, delivery lines and containers and matches it with the UPS address information. Currently, this service is available for US domestic shipments.

**Ground Time in Transit:** Using UPS Ground Level Service, view how long it takes to ship between a shipment's origin and it's destination. The time in transit displays in business days. This is available for deliveries, delivery lines and containers. Currently, this service is available for US domestic shipments.

**Shipment Tracking:** Track UPS ground shipments for delivery lines and containers and view information such as tracking numbers, status and service type. You can also view detailed tracking information for a selected line such as the date and location where a package was picked up or dropped off. Shipment tracking is available for international as well as US domestic numbers.

---

---

**Note:** The UPS APIs do not validate against the Ship Method on the deliveries, delivery lines or containers. It is possible that the Ship Method would be DHL Overnight Express and you wanted to obtain the estimated cost if the shipment were to travel via UPS One Day Air. If you prefer to ship with UPS, you would have to change the Ship Method to UPS One Day Air.

---

---

This step can be executed as soon as the delivery lines have been imported to Shipping from Order Management. It is not necessary to wait until after Pick Release to access the API's. However, if a delivery has not yet been created (this flow autocreates deliveries at the time of Pick Release) then you will not be able to run the APIs for the delivery entity.

**Ship Confirm the Delivery (ies) associated to the lines from the order.**

There are currently two methods for Ship Confirming via MSCA. The simplest method is called EZ Ship, see [Figure 19-3](#). With EZ-Ship, enter the Delivery name and the system ships all quantities as entered during Pick Confirm. Optionally, enter the weight, waybill, bill of lading (BOL) and carrier of the Delivery.

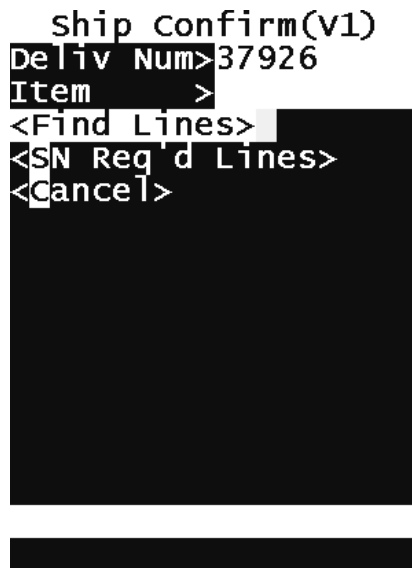


Figure 19-3 MCSA screen: EZ Ship

```
EZ Ship(v1)
Deliv Num>
weight :
Deliv UOM:
Waybill :
BOL :
Carrier >
<Done>
<Return to stock>
```

The second Ship Confirm method via MCSA allows you to enter the specific items and quantities being shipped. This allows you to change the shipped quantities, ship only some of the lines of a delivery or enter serial numbers for items that are serialized at sales order issue and not at receipt. To use this form, enter the delivery number followed by each line being shipped by entering the item and shipped quantity. The waybill can be recorded at the Delivery Line level or at the delivery header. As with the EZ Ship form, the weight, waybill, carrier, and bill of lading can be entered for the delivery. The process involves three steps, querying the Delivery (see [Figure 19-4](#)), verify Delivery Line information and entering Delivery header information.

**Figure 19-4** MSCA screen: Ship Confirm, query Delivery



Verify the Item and Ship Qty for each Delivery Line (Figure 19-5) associated with the Delivery to be ship confirmed. The Waybill can be recorded at the Delivery Line level or at the Delivery header level.

**Figure 19-5** MSCA screen: Ship Confirm, verify Delivery Line information. (Item, Ship Qty, Miss Qty, Waybill)

```
Ship Confirm(V1)
Deliv Num:37926
Line Num :130618
Item      :CM11062
Confirm  >CM11062
Desc     :{Mouse Pad
Req Qty  :2
Ship Qty :2
Miss Qty :
Waybill  :1Z90845
<Done>
<Find More>
<Cancel>
```

The final step to complete the Ship Confirm process is to enter the Delivery header information ([Figure 19-6](#)).

**Figure 19–6** MSCA screen: *Ship Confirm*, enter *Delivery header information*. (Weight, Waybill, BOL, Carrier)

```
Ship confirm(v1)
Deliv Num:37926
weight :12
Deliv UOM:Lbs
waybill :
BOL :
Carrier >DHL WORLDW
<Done>
<Cancel>
```

---

## Simple Pick & Ship Process Using Containers/LPNs

Topics covered in this chapter include:

- [Overview](#) on page 20-2
- [Required Setup](#) on page 20-2

## Overview

The Simple Pick and Ship process can be expanded to include the use of containers. After Shipping Execution imports the order lines from Order Management, predefined container-load relationships enables the system to automatically pack the items into containers and onto a pallet; ready to be picked and shipped quickly.

A few quick setup steps can be followed to create this scenario. Set defaults in the Organization and Shipping Parameters to allow the Simple Pick and Ship process to occur. Create containers/LPNs in Inventory to enable the definition Container-load relationships used to automatically pack items into containers and containers into larger containers.

## Required Setup

To accomplish Simple Pick & Ship using Containers/LPNs, the following setups are required:

### Organization Parameters

Navigate: Order Management > Shipping > Setup > Organization Parameters. On the ATP, Pick, Item-Sourcing tab, ensure that the Pick Confirm Required check box is unchecked, to enable Inventory to automatically pick confirm each move order line.

### Shipping Parameters

Navigate: Order Management > Shipping > Setup > Shipping Parameters. On the Pick Release tab, check Autocreate Deliveries and Auto Allocate boxes. Autocreate Deliveries uses the defined Delivery Grouping Rules to group delivery lines into deliveries. Auto Allocate uses the Picking Rules defined in Inventory to determine the source. On the Delivery Grouping tab, define delivery grouping rules, based on conditions that make sense to your business process. Ship from location and Ship to location are mandatory. There are five additional conditions: customer, freight terms, FOB code, intermediate ship to locations, and ship method.

### Picking Rules

Navigate: Inventory > Setup > Rules > Picking. Picking rules determine the order in which revisions, lots, subinventories, and locators are picked for sales orders. These rules are assigned to the master item. Oracle Shipping Execution submits requests to Oracle Inventory, that uses the information entered in the Picking Rules window to generate pick lists for sales orders. If you choose None for any of the criteria

fields, Inventory ignores that criterion. For example, if you choose None for Revision, Inventory picks units of an item without regard to revision levels. Oracle Inventory looks at the picking criteria in the order they appear in the Picking Rules window. Then, Inventory looks at the options (except for None options) for each criterion in the order they appear beneath each criterion.

### **Defaulting Rules**

Navigate: Order Management > Setup > Rules > Defaulting. Ship Method, Freight Terms, and FOB Point are fields that appear on the Order Header that can be set to default at order entry. Defaults may be overridden or non-defaulting values manually keyed. These fields can be entered until the Delivery has been Ship Confirmed. Once the Delivery has been Ship Confirmed, changes can not be made to these fields.

### **Container Item**

Navigate: Inventory > Items > Master Items. Containers/LPNs items must be created to utilize the Packing functionality. The tabs that have container/LPN specific fields are:

Main tab: User Item Type, select Container from the List of Values.

Physical Attributes tab: Complete the fields in the Weight, Volume, and Container sections.

### **Inventory**

Define the Serial Generation as At Sales Order Issue to assign serial numbers to the container/LPN in the Shipping Transactions form.

### **Container-Load Relationship**

Navigate: Order Management > Shipping > Setup > Container-Load Details. To utilize the Auto-Pack and Auto-Pack Master functionalities, relationships must be established between an item (load) and the corresponding container/LPN, including maximum quantity to be packed in the container/LPN. A relationship must also be defined to pack one container/LPN inside another container/LPN. It is possible to have multiple load-relationships between items and different containers. Check the preferred flag in order to identify a preferred relationship for Auto-Pack and Auto-Pack Master.

An Auto-Pack Master example: ten hard drives (load item) pack inside a 24" x 30" box (container/ LPN), and eight 24" x 30" boxes (now considered load item) pack

onto a pallet (container/LPN). Establish a relationship between the hard drive and the 24" x 30" box, and the 24" x 30" box and the pallet. The system will be able to automatically pack 10 hard drives into each 24" x30" box and pack eight 24" x 30" boxes (filled with 10 hard drives each) onto a pallet.

## Process Steps

1. Enter and Book order

When scheduling occurs, Oracle Shipping will automatically import the delivery lines.

2. Autopack Master. From the Shipping Transactions form, highlight the delivery lines you wish to pack (into a box and onto a pallet), navigate to Actions, select Autopack Master and click on the Go button. The containers will be automatically created and the items packed based on the defined container-load relationships.

3. Launch Pick Release. There are several ways to launch Pick Release. The most streamlined method is to schedule Pick Release to run as a concurrent process which you schedule according to your business needs. Navigate: Shipping > Release Sales Orders > Release Sales Orders SRS.

Other methods for launching Pick Release are:

From the Shipping Transactions Form: Select a specific LPN for Pick Release by selecting one or multi-selecting many LPNs, then Navigate: Action>Launch Pick Release and click on the Go button. (You can pick release by Delivery Line(s) and once created, Deliveries, Stops, and Trips can also be submitted for Pick Release through the STF.)

Open the Release Sales Order form while in the Shipping Transactions form by using the Tools menu and selecting the Pick Release form.

Pick Release can be run manually. Navigate: Shipping > Release Sales Orders > Release Sales Orders.

---

---

**Note:** When Pick Releasing using the Release Sales Order form, any of the defaults set in the Organization and Shipping Parameters can be overridden for that particular Pick Release.

---

---

4. Find the LPNs before you choose the Delivery tab. Ship Confirm the Delivery (ies) associated to the LPN(s) from the order. On the Ship Confirm dialog, check Set



Delivery In Transit and Auto Close Trip. Navigate: Order Management > Shipping > Transactions, choose the Delivery tab, highlight the desired delivery (for multiple selections, hold the shift key and left click each delivery). Go to Actions, choose Ship Confirm and click the Go button, the Ship Confirm window will appear. At this time, check the Set Delivery In Transit to automatically update the status of each Delivery to In Transit. Check the Auto Close Trip box to change the status of the Stops Picked up or Dropped Off and the status of the Trip will be Closed. By checking these boxes, the delivery lines will be available to the Receivables Interface. (Process Order API and Inventory Interface run after a delivery has been Ship Confirmed.)

For additional information, reference the Appendix Chapter, *Containerization in Shipping Execution*.



---

## Hold Management

Topics covered in this chapter include:

- [Overview](#) on page 21-2
- [Required Setup](#) on page 21-2
- [Process Flow](#) on page 21-4
- [Workflow](#) on page 21-19

## Overview

In R11i Oracle Order Management, applying and releasing holds is convenient as it is possible to perform these activities right from the Sales Order Pad. You can create holds based on a combination of two criteria, such as customer and item, or item and warehouse. Also, you can manually send a notification through Workflow to specific individuals when an order hold is applied. There is a concurrent program whose function is to automatically release holds based on the 'hold until' date. Additionally, you are able to track and view history information on holds at the order and/or line level.

When you prevent further processing on an order through an exception, you are placing a hold on the order. However, you can arbitrarily hold all orders for a specific customer or customer site, an individual order, or all order lines for a specific item. Furthermore, you can define holds that affect existing orders, future orders, or both. Holds can be placed automatically when certain metrics, such as credit limits, are violated. Holds can be automatically released by using Workflow once the order or line no longer violates the business metric. Oracle Order Management manages exposure to these various types of risks through this holds and releases functionality.

## Required Setup

### Profile Options

The profile option *OM: Notification Approver* is setup to enable you to send notifications (approval or FYI notifications) to this role. It can be set at any level (Site, Application, Responsibility, User). For a different Approver role per Operating Unit, set the profile option at the responsibility level. Notifications generated by OM flows can be sent to this role via a seeded WF item attribute (Notification Approver). This item attribute is used as a place holder for storing role information. When the Header or line is created, the item attribute Notification Approver is set based on the profile option setting. If all approvals need to go to this role, you do not need to use the Utility - Set Notification Approver. If they do not then you can use this seeded utility to set the value of the item attribute Notification Approver to various values. Refer to the Workflow section for additional details. Another profile option to be aware of for holds is *OM: Schedule Line on Hold* that controls whether scheduling should attempt to schedule lines that are on hold. The default is set to No.

## Workflow

Order Management comes with seeded Workflow processes. Review the seeded flows, activities and notifications to determine if the seeded data can meet your business needs. Typically, the Generic - Order Flow and Line Flows are used for standard orders. The user can modify this existing seeded workflows or create new workflows to include approval activities or wait-for-flow activities in order to safeguard processing orders that are on hold. Refer to the topical essay on Workflow at the end of this manual for details on setting up workflow processes.

## Hold Lookup Codes

Setup your own codes for Hold Types, Holdable Header and Line Activities for workflow in the Order Management Quickcodes form. To do this, Navigate: Order Management > Setup > Quickcodes > Order Management. The Order Management Lookup form will appear. Select the query manager (Flashlight icon) to view the existing codes or add a new code.

## Reports

There are some seeded reports in Order Management for Holds. They include: Hold Source Activity Report, Lines on Credit Check Hold Report, Orders on Credit Check Hold Report and Outstanding Holds Report. You can run these reports by a variety of parameters, including, customer name, hold name, item, order, order type, etc.

## Credit Check Rules & Profiles

When setting up credit checking rules, you have the ability to specify if you want to include orders currently on hold in the exposure calculation when the order flow performs a credit check. To set this option, Navigate: Setup > Credit > Credit Check Rules and check the box for Include orders currently on hold.

## Customers

In Receivables, when setting up a Customer, you can specify whether or not to perform credit checking for this customer by checking the credit check box in the profile. When you process orders for that particular customer and if you use an order type and payment terms that also call for credit checking, the credit check process will run and if they do not pass based on their credit limits, the orders will go on hold automatically. In addition, there is a 'credit hold' check box on the Customer form. When checked, all orders for the customer will go on credit hold without going through credit check logic - a hold source is automatically created to put all that customers existing and future orders on hold. To activate credit check

holds on a customer, navigate to the Order Management or Receivables responsibility, and select Customers > Standard. Either enter a new customer or find an existing customer, select the Profile: Transactions Tab and check the credit check and possibly the credit hold boxes. To perform credit checking, you will also need to set the credit limits for the customer in the Profile: Amounts Tab of the Customer form.

## Process Flow

This section will cover the different process flows for defining, applying and releasing holds through Oracle Order Management, including:

1. Defining Generic and Activity-Specific Holds
2. Creating a Generic Hold Source
3. Creating a Hold Source with Multiple Entities
4. Applying a Generic Hold
5. Releasing Holds and Hold Sources
6. View Hold Information

### Define Generic and Activity-Specific Holds

The first step is defining a generic or activity-specific hold and assigning the responsibilities that are authorized to apply or release the hold. A hold can be defined to be effective at certain steps of the order or line workflow or to be applied regardless of the stage of the orders flow. Because orders and returns are not effected by holds until they are **applied**, define all the holds you use in your business at once. To define a hold, Navigate: Order Management > Setup > Orders > Holds. [Figure 21-1](#) shows the Holds form for defining a generic or activity-specific hold.

Figure 21-1 Holds form

The screenshot shows a software window titled "Holds" with a menu bar (File, Edit, View, Folder, Tools, Window, Help) and a toolbar. The form contains the following fields:

- Name:
- Description:
- Type:
- Workflow Item:
- Workflow Activity:
- Effective Dates:  -

Below the form fields is a section titled "Authorizations" containing a table:

| Responsibility              | Authorized Action | Effective Dates      |                      | [ ]                      |
|-----------------------------|-------------------|----------------------|----------------------|--------------------------|
|                             |                   | From                 | To                   |                          |
| Order Management Super User | Apply Hold        | <input type="text"/> | <input type="text"/> | <input type="checkbox"/> |
| Order Management Super User | Remove Hold       | <input type="text"/> | <input type="text"/> | <input type="checkbox"/> |
|                             |                   |                      |                      |                          |
|                             |                   |                      |                      |                          |
|                             |                   |                      |                      |                          |
|                             |                   |                      |                      |                          |
|                             |                   |                      |                      |                          |
|                             |                   |                      |                      |                          |
|                             |                   |                      |                      |                          |

For a generic hold, define a name, description and a hold type (i.e. Credit Check) for the hold. Assign specific responsibilities to allow access to apply or release this hold. For an activity-specific hold, define a name, description and hold type, but also assign a workflow item and activity. By assigning a workflow item and activity, the hold will be applied based on where the activity is assigned. For instance, defining a hold with the workflow item as Order Header and the workflow activity as Book Order, the order will be placed on hold before or when

the order has been booked. You can create activity-specific holds for shipping activities which include: Pack Line, Pick Line, and Ship Line. You can define holds with these activities to hold lines at those particular activities. For example in the generic hold, you can assign specific responsibilities to allow access to apply or release or both for activity-specific holds. Optionally, effective dates can be entered if the hold is effective only for a period of time.

### **Create a Generic Hold Source**

A hold source allows you to apply a particular hold to a group of existing orders, returns or lines and to new orders and lines meeting your hold criteria. Hold Sources are created to hold all current and future orders for an item, customer, order, warehouse or customer site (Bill to or Ship To locations). Navigate: Order Management > Orders, Returns > Order Organizer. Select the Tools menu, and choose Create Hold Source. The Apply Holds form will appear as shown in [Figure 21-2](#)



**Figure 21-2 Apply Holds form**

The screenshot shows a software window titled "Apply Holds" with a menu bar (File, Edit, View, Folder, Tools, Window, Help) and a toolbar. The window contains two tabs: "Criteria" and "Hold Name". The "Hold Name" tab is selected and contains the following fields:

- Hold Name:
- Hold Type:
- Description:
- Hold Criteria:  (with a dropdown arrow)
- Criteria Value:
- Hold Criteria:  (with a dropdown arrow)
- Criteria Value:

At the bottom of the form are two buttons: "Apply Holds" and "Cancel".

In this form, define the entity based on which the orders and lines can be placed on hold. This entity can either be Customer, Warehouse, Bill To Site, Ship To Site, Item or the Order itself. It can also be a combination of up to two entities. The multiple entity hold sources will be discussed in the next step. In the Criteria Tab, use the list of values to retrieve the hold defined above. This will default the Hold Type and Description as defined from the hold. The user can add a Hold Until Date and Comments and/or hold all existing or future orders/lines if needed. Next, the user

will select a Hold Criteria. This can be any of the following: Customer, Warehouse, Bill To Site, Ship To Site, Item, or Order. Enter a value for the Hold Criteria based on the selected Hold Criteria (i.e. Item number, Order Number etc.).

### **Create Hold Source with Multiple Entities**

Creating a Hold Source for Multiple Entities occurs in the same Apply Holds form as above (Figure 21-2). Follow the same steps when entering the Hold Source, but define two entities which orders and lines can be placed on hold based on the hold criteria defined. For instance, if you want to hold a specific item from being shipped to a customer, select the first Hold Criteria as Customer and the second as Item. This will create a hold source using that specific Customer and Item and will not process orders or lines that have that Item and Customer on it. Currently, Order Management supports Hold Sources with up to two entities. The combinations of two supported entities are as follows:

- Item > Customer
- Item > Ship To Site
- Item > Bill To Site
- Item > Warehouse
- Warehouse > Customer
- Warehouse > Ship To Site
- Warehouse > Bill To Site

### **Apply a Hold**

Applying a Hold can be performed through the Sales Order form. To hold existing orders or lines, Navigate: Orders > Returns > Order Organizer. The Find Orders window will appear where you can search for the orders you want to put on hold. In the Holds Information tab of the Find window, you can search by different criteria such as Hold Name, Held By, etc. as seen in Figure 21-3

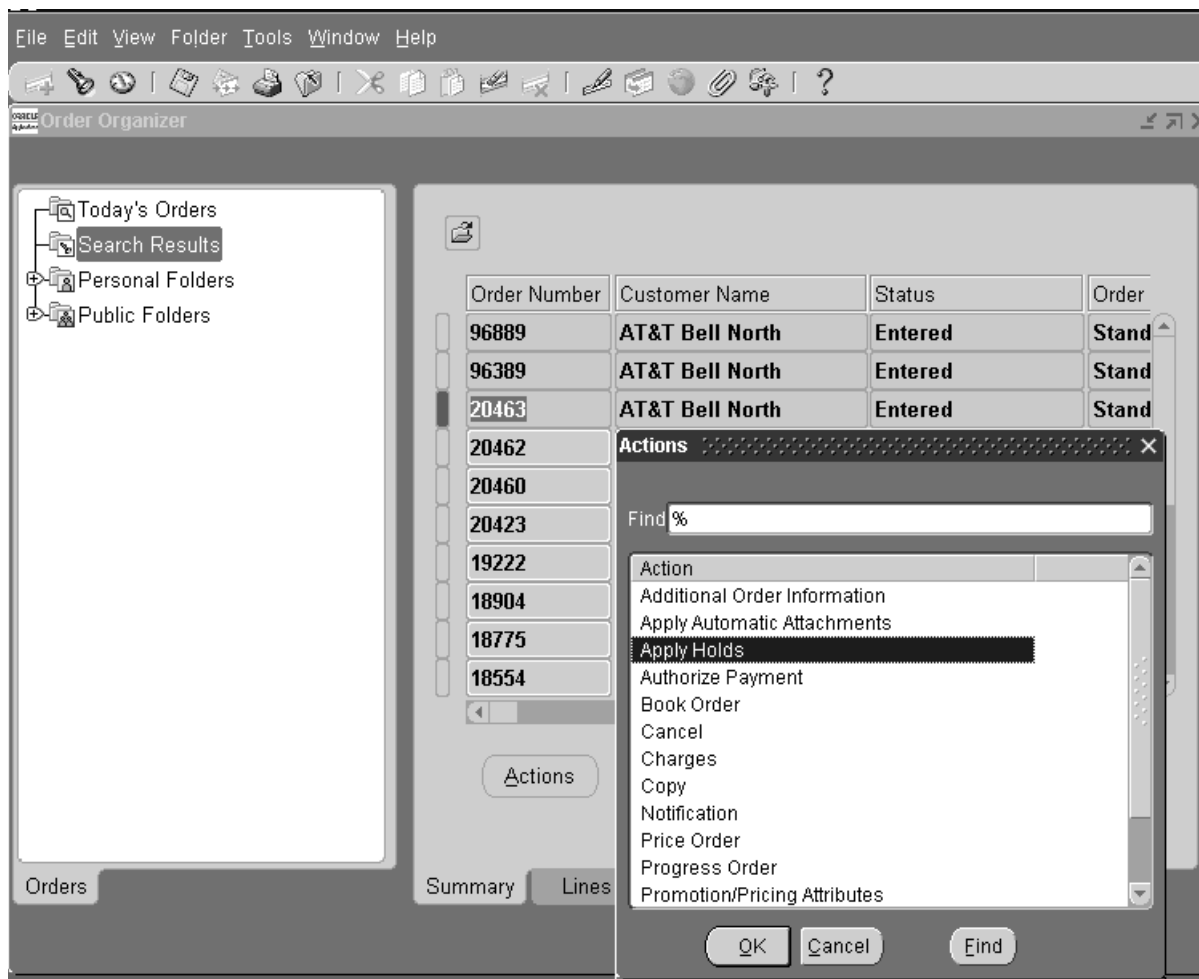
**Figure 21-3 Find Orders (Holds Information Tab) form**

The screenshot shows a software window titled "Find Orders" with a menu bar (File, Edit, View, Folder, Tools, Window, Help) and a toolbar. The "Holds Information" tab is selected. The form contains the following fields and buttons:

- Hold Name:** Text box containing "Credit Card Hold".
- Hold Type:** Text box containing "Electronic Payment".
- Description:** Text box containing "Credit Card Hold".
- Held By:** Empty text box.
- Criteria:** Two sets of dropdown menus and text boxes for defining search criteria.
- Value:** Two empty text boxes for defining search values.
- Hold Sources:** Button located at the bottom right of the form area.
- Clear, New Order, Find:** Three buttons located at the bottom of the window.

Once you have selected which orders you want placed on hold, the Find window will take you to the Orders Organizer window of the Sales Order form and display the orders or lines that have met your search criteria. To hold more than one of the orders, multi-select the orders by the Ctrl + mouse click. Click Actions and select Apply Holds as seen in the screen in [Figure 21-4](#)

**Figure 21-4 Order Organizer form (Apply Holds)**

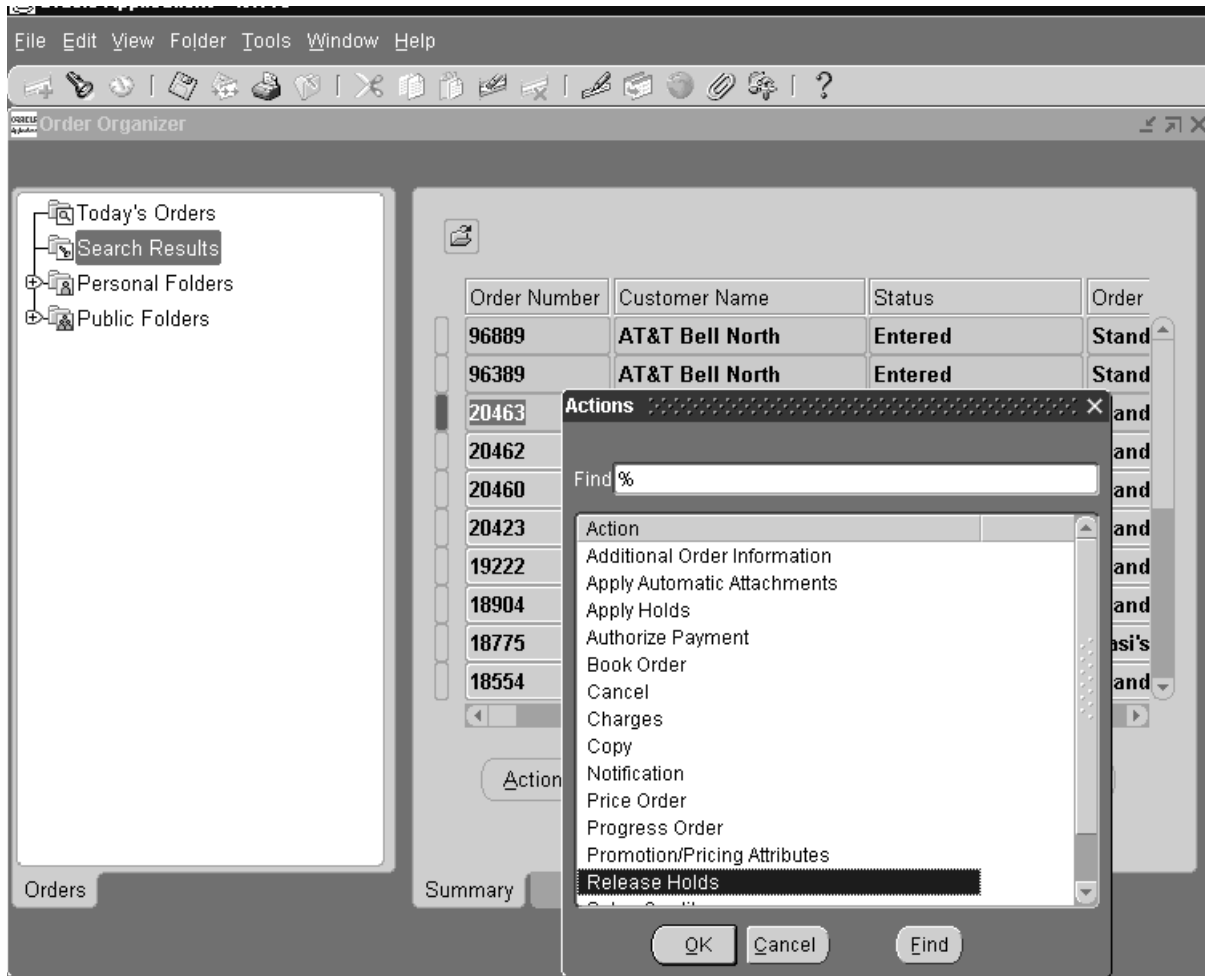


The Apply Holds window will appear where the user can enter Hold Criteria, Hold Until Dates etc. based on the user's business needs for the hold. This Apply Holds window is the same window seen above in [Figure 21-2](#)

### **Release a Hold**

Releasing a Hold can also be performed through the Sales Order form. To release holds of orders or lines, Navigate: Orders, Returns > Order Organizer. The Find Orders window will appear where you can search for the orders that you want to release. Once the Order Organizer window displays the orders or lines that have met your search criteria, you can select one order to release or multi-select multiple orders by using the Ctrl + mouse click function. Click Actions and select Release Holds as seen in the screen in [Figure 21-5](#).

**Figure 21–5 Order Organizer form (Release Holds)**



Apply and Release Holds at the order and/or line level within the Order Organizer of the Sales Order form. The examples are shown at the order level, however, you can apply or release holds at a line level by moving to the Line Items form and performing the same steps.

Select Action > Release Holds, the Release Holds window will appear as seen in [Figure 21–6](#).

**Figure 21-6 Release Holds form**

| Release Orders     |           |
|--------------------|-----------|
| AT&T Customer Hold | VISION_US |
| AT&T Customer Hold | VISION_US |
| AT&T Customer Hold | VISION_US |
|                    |           |
|                    |           |
|                    |           |
|                    |           |

Reason

Comments

You are required to enter a Release Reason (i.e. Passed credit check). To release multiple holds, highlight all the holds to be released and select a Reason. Click Release. You will receive a message stating the Release was successful.

Additionally, holds can be released automatically when you run the Released Expired Holds concurrent program on or after the date that the hold source expires. This date is defined in the Hold Until Date field in the Release Hold Sources

window. This concurrent program is a way to automatically release orders on hold when that date is reached.

Releasing a Hold Source is performed in the same way as releasing a hold. Although, releasing a hold source releases all the orders, returns and lines to which that hold source is applied. Whereas, when you release an order, return or their lines, that order or return becomes available for the subsequent workflow steps. Navigate: Orders > Returns > Order Organizer. The Find Orders window will appear. Select the Holds Information Tab. Enter the search criteria for all Hold Sources you want to release. Click Hold Sources. This will take you to the Release Sources form as seen in [Figure 21-7](#).



Figure 21–7 Release Sources form

The screenshot shows a software window titled "Release Sources" with a menu bar (File, Edit, View, Folder, Tools, Window, Help) and a toolbar. The main area is titled "Release Holds" and contains a table with the following data:

| Hold Name          | Hold Criteria |            | Entity | Value | Held By    |
|--------------------|---------------|------------|--------|-------|------------|
|                    | Entity        | Value      |        |       |            |
| {CMN SITE HOLD *** | Ship To Site  | PETALUMA   |        |       | ?VISION    |
| {CMN SITE HOLD *** | Ship To Site  | SANTA ROSA |        |       | VISION     |
| {CMN SITE HOLD *** | Ship To Site  | Belgium    |        |       | VISION     |
| RLM:Prevent Closur | Order         | 3260       |        |       | VISION     |
| RLM:Prevent Closur | Order         | 3262       |        |       | VISION     |
| RLM:Prevent Closur | Order         | 3549       |        |       | AUTOMOTIVE |
| OM-ITEM-HOLD       | Order         | 3806       |        |       | VISION     |

Below the table are two input fields: "Reason" with a dropdown arrow and "Comments" with a text area and a vertical scrollbar. At the bottom right are two buttons: "Cancel" and "Release".

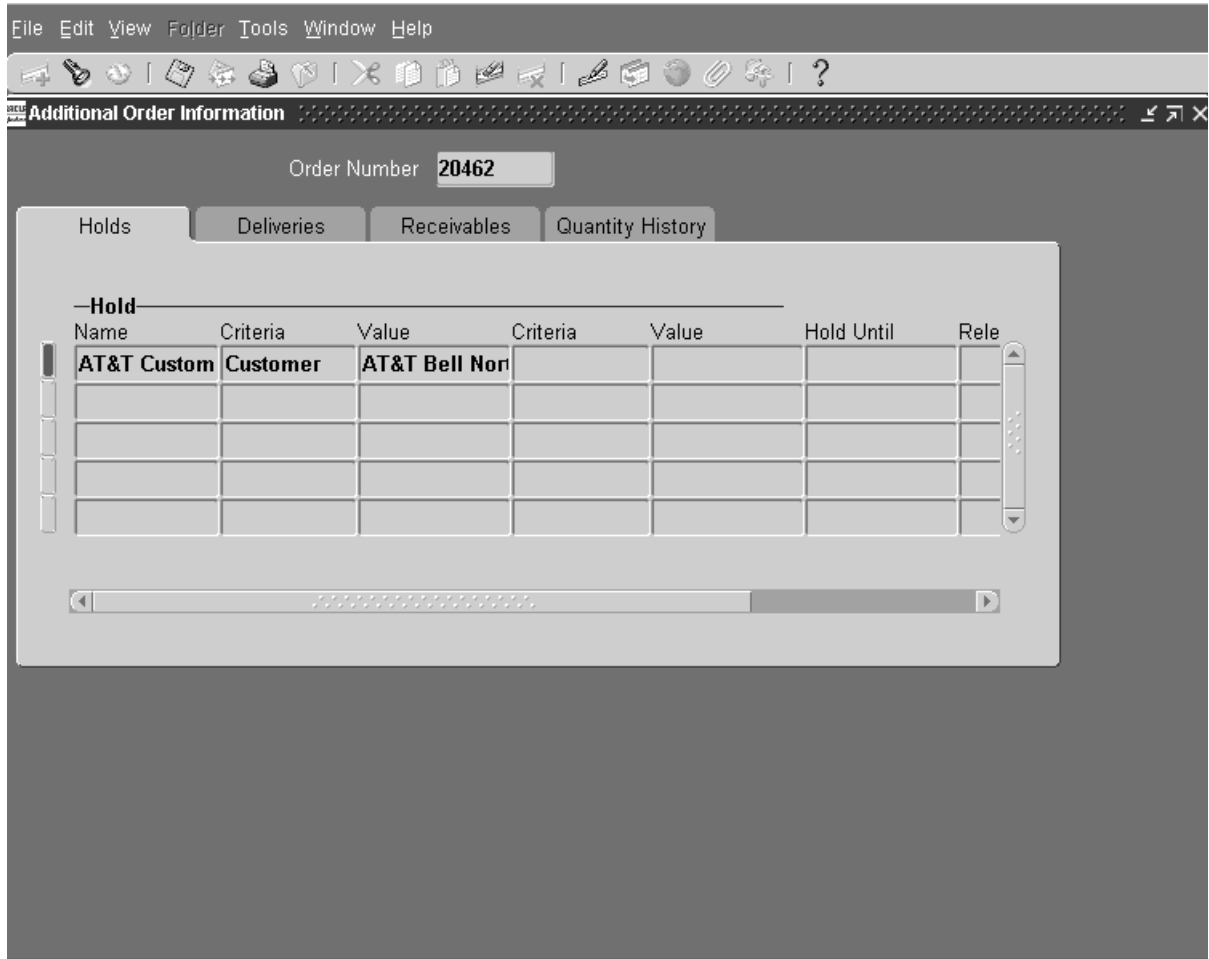
Based on your search criteria, you will see the appropriate hold sources. Highlight the Hold Source you would like to release, if more than one, highlight each line and select a Release Reason. Click Release. You will receive a message that states the release was successful.

### View Hold Information

Hold information can be viewed from the Sales Order form at either the order or line level. To view hold information at the Order level, Navigate: Orders > Returns > Order Organizer. Search for the order or orders you whose Hold history you

would like to view. Click on the order and right mouse click. This will give you a pop-up menu, select Additional Order Information > Holds. The Additional Order Information window will appear within the Holds Tab as seen in [Figure 21-8](#).

**Figure 21-8 Additional Order Information (Holds Tab) form**



The page shows you the history information about the order, such as how many holds have been applied and if any of the holds have been released. Also, you can

find all orders on a specific hold or set of criteria by using the Hold Tab on the Find Window of the Order Organizer.

View the Line level hold information just like you would do for the order level. Navigate: Orders > Returns > Order Organizer. Search for the order or orders whose order line history you would like to view. Click on the Order and select Open Order. Once the order opens, click the Line Items Tab. When you get to the Line Items form, select a line to view and right mouse click. This will give you a pop-up menu, select Additional Line Information > Holds. The Additional Line Information window will appear within the Holds Tab as seen in [Figure 21-9](#)

**Figure 21–9 Additional Line Information (Holds Tab) form**

File Edit View Folder Tools Window Help

Additional Line Information

Order Number  Line

Holds Return Activity Deliveries Receivables Internal Requisition Drop Ship Quantity History

**—Hold**

| Name         | Criteria  | Value          | Criteria | Value | Hold Until | Release |
|--------------|-----------|----------------|----------|-------|------------|---------|
| Verification | Warehouse | Vision Operati |          |       |            |         |
|              |           |                |          |       |            |         |
|              |           |                |          |       |            |         |
|              |           |                |          |       |            |         |

This will show you the history information about the Line. You can also use the Actions button at the Order or Line level to view the Additional Order/Line Information.

## Workflow

In R11i Order Management, you can control the steps in your order process at which a hold is applied. Even with an exception, processing on an order can continue up to a certain step. More generally, when you place a hold against an item, you can disable any or all activities in its order process so the order cannot proceed unless the hold is removed.

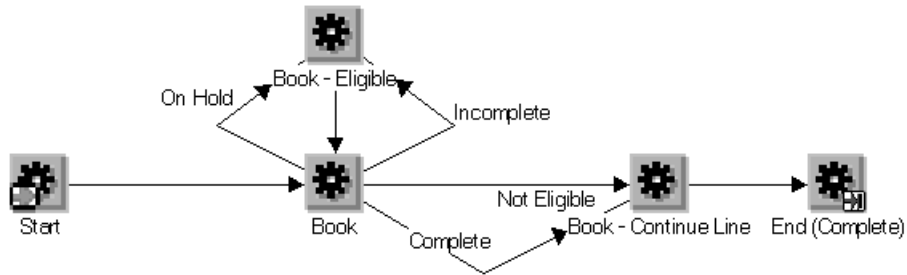
For example, you cannot Book an order that has a generic order level hold or a Booking specific hold. The Book activity posts messages indicating that a hold exists. It then completes with an On Hold result and transition back to the Book - Eligible activity.

You can define custom workflow activities that honor holds. Order Management provides Public APIs that can apply holds, check whether an order or line is on hold and remove holds. You can also seed lookups (Holdable Header Activities, Holdable Line Activities) based on your custom workflow activities and define holds based on them.

Additionally, the notification functionality in R11i can be used for handling business exceptions (i.e. orders on hold) and approval requests. For instance, you can setup a notification that requires a manager's approval when orders go on credit check hold. The role assigned to the Notification Approver, determines to whom the notification is sent. For instance, the person assigned as Notification Approver can be a Manager where all orders that are placed on credit check hold would be routed to him via email for approval before the orders are released from the hold. Refer to the Required Setup, Profile Options section for details on assigning a notification approver.

[Figure 21-10](#) is an example of a Booking process with exception handling.

**Figure 21–10 Booking Process with Exception Handling**



In this example, the booking process is designed to handle expected errors, that are validation or other errors that are expected as part of normal processing (i.e. Line on Hold, it cannot be Picked). If the Booking activity finds a hold on the Order, it will post a message that the Order is on hold and then complete with a result of ON\_HOLD to the Booking eligibility block.

The flow needs to transition to a block that can be completed from the Sales Order form or to a Wait Activity.

The Line flow that is used with the Header flow should have the appropriate co-ordination wait-for-flow activity so that the line will not proceed until the appropriate action has been taken to resolve the error. Workflow provides you the ability to customize your processes to include exception processing activities as well as approval activities in order to ensure the appropriate holds are placed on specific orders and/or lines.

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## Oracle Configurator Setup Requirements

Topics covered in this chapter include:

- [Overview](#) on page 22-2
- [Configurator](#) on page 22-2

## Overview

This section talks about what to set up to access configurator in order management. For details of implementing CTO, Please see the Oracle Configure to Order Implementation Manual and also please refer to the section on Configure to Order Process to understand how Order Management is integrated with CTO, ATO, PTO and KITS and how these items are processed to their fulfillment. It also talks about implementation of such items in detail.

## Configurator

Before using the CTO process and configurator window in sales order form you must have the following setup in place.

### Installation Status

The status of configurator product must be in complete installed mode (**Status = 'I'**).

### Profile OM: Included Item Freeze Method

This profile decides when to freeze included items for Model, Class or Kit. Once the included items are frozen, they will not be re-exploded at any given time. The profile will have the following values.

**Entry** - Indicates included items will be exploded at the time the MODEL, CLASS or KIT is entered

**Booking** - If the profile value is booking, the included items will be exploded at the time of booking.

**Pick Release** - If the profile value is pick release, the included items will be exploded when the parent line reaches workflow activity 'SHIP\_LINE' in the flow.

### Profile BOM:Configurator URL of UI Manager

Ensure that the profile which identifies the URL of the Configurator UI Manager is correct. This profile setting is used by OM to identify the configurator. To verify this profile: Navigate: System Administrator > Profile > System. Perform Find System Profiles using %BOM%URL% as the profile search string.

Note: This name may vary, but it is usually BOM:configurator URL of UI Manager.

Verify that the value is: "**http://{URL}:{port}/{mount\_point\_for\_configurator\_servlet}/oracle.apps.cz.servlet.UiServlet**" where the values in braces ({} ) should be replaced with the appropriate values. Note: The profile must be set for the site OR for every user. If this profile is not set properly, the configurator screen will come



up blank. Errors will not be logged, but if you turn on the Java Console it will capture as invalid URL error.

### Edit/Create .dbc File

In order to use the Oracle Configurator, the Database Configuration (".dbc") file must be edited/created for your particular installation. You must ensure that .dbc file exists in \$FND\_TOP/secure directory and is in <hostname>\_<SID>.dbc (be sure to replace db\_host and SID with the correct values) format. If it does not exist, use template.dbc to create this file in the given format.

The following changes are required on top of any settings that maybe required by other Application products:

Only Oracle thin drivers are supported, so uncomment:

- APPS\_JDBC\_DRIVER\_TYPE=THIN

Add the following two lines and replace the items between brackets (<>) with the appropriate values:

- BATCH\_VALIDATE\_USER = <Applications Username of the Guest>
- BATCH\_VALIDATE\_PWD=<Applications Password of the Guest>

Uncomment the following line and replace "host\_name" with the appropriate value:

- DB\_HOST=host\_name

Uncomment the following line and replace "port\_number" with the appropriate value:

- DB\_PORT=port\_number

Uncomment the following line and replace "db\_name" with the appropriate value:

- DB\_NAME=db\_name

Note: Please refer to *Oracle Configurator Implementation Guide* and the *Oracle Configurator Custom Web Deployment Guide* and information posted on meta link for further details on the setup and possible issues that might come up while working in a Configurator window.



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## Order Import

Topics covered in this chapter include:

- [Overview](#) on page 23-2
- [Feature Functions and Basic Instruction - What is it? How is it used?](#) on page 23-2
- [Tools/Techniques of Feature - API's, Workflow](#) on page 23-6
- [Setup Steps to Implement Order Import](#) on page 23-6
- [Loading the Import tables](#) on page 23-7
- [Actions Table](#) on page 23-9
- [IDs vs. Codes](#) on page 23-10
- [Matching Changes to Orders](#) on page 23-10
- [Summary/Conclusion](#) on page 23-11

## Overview

Order Import is Order Management's open interface for entering, changing or canceling orders and returns. Use Order Import to bring in orders from external systems, legacy systems, EDI, or from internal systems such as internal orders created by Oracle Purchasing to fulfill internal requisitions.

Order Import has been implemented as a set of interface tables that must be loaded with the order or return data, and a set of APIs to process that data. A concurrent program is provided which calls the APIs to initiate processing of the data. In addition, Order Import provides forms that allow you to query orders from the interface tables, make corrections or changes to that data, and re-initiate the import process. Orders that fail to be imported are retained in the tables, and can be queried and corrected using the forms. Messages are provided to give you details of why the order did not import.

Order Import calls base Order Management APIs (specifically, Process Order API) to validate and insert or update data in the base order tables, thereby insuring that consistent processing occurs.

## Feature Functions and Basic Instruction - What is it? How is it used?

Order Import provides many features to ease the work of integrating order data from external and other types of system.

### Importing Orders

Order Import's main task is to provide a batch-like facility for inputting large numbers of orders into Order Management in a hands-off manner. It is runnable as a concurrent request, so you can schedule it to run at specific intervals throughout the day – for example, to coincide with schedules of your feeding systems. Once orders are imported into the base Order Management tables, the order and line workflows are started. All subsequent processing, including sourcing and scheduling activities, takes place as though the order were input manually.

### Validation

Order Import does not contain its own validation routines for the data. Instead, it calls the Process Orders API, which is the same API used to validate and insert orders if you are keying them through the Sales Order form. This design makes for better maintainability, as any enhancements or bug fixes done to Process Orders will immediately affect importing orders too. The Process Orders API uses Processing Constraints to evaluate whether a requested change can be made to an

order. Order Import, because it uses Process Order API, evaluates all Processing Constraints, and any constraint violations are captured and can be reviewed using the Correction Forms and the Messaging Window. Order Import has a feature that allows you to run in validate only mode, to pre-screen the orders in a batch and correct all the errors before you run the import. If an order has any errors, then the entire order will be retained in the import tables. Importing is an all-or-nothing process per order.

### Correction Forms

Order Management has a set of forms you can use to review and correct data that is in the Order Import tables. They are called the Order Import Correction forms. They are accessible from the OM Menu under the Order Import menu item. They consist of a find screen followed by a series of forms where you can view and correct data. There are forms to display order headers, order lines, sales credits, price adjustments, return lot/serial numbers, and the actions table. The forms have buttons to enable you to re-validate or re-import data that you have selected. There is another button to transfer to the Message Window to display any error messages in your data import. Viewing error and warning messages about imported orders replaces the Order Import Processing Exception Report used in the R11 Order Entry version of Order Import. Most fields do not have any validation or list of values within the form, so if you key over a field to correct it, you won't know if it is good until you either validate or re-import. If you decide an order or line is in the import tables in error, you can set the Reject\_Flag to Y on the Status Tab to indicate that you don't want to continue processing it. The order or line will be deleted in the next run of Order Import. See the Flags section below for more information about the Reject\_Flag. This can be useful if an order is too difficult to correct via the forms. This allows you to fix it in the feeder system and re-import it, or it can be used to purge off orders that may have resulted from duplicate runs of your feeder systems.

The user interface for the Correction Form is currently not a folder form – the thinking was that if users hide columns and then those columns are the ones in error, it would be difficult for the user to make the necessary corrections. There is an enhancement request logged to make these forms folder-enabled, and that will be done when the work can be scheduled. In addition, the forms are not currently multi-select enabled for re-validating or re-importing using the button. There is an enhancement pending to enable multi-select. The data from the header and lines import tables is presented in forms with the data organized logically onto various tabs. The other forms (discounts, sales credits and actions) are single-tab forms. Screen shots of the Find screen and the Orders window are contained in the *Oracle Order Management User's Guide*.

## Booking Orders via Order Import

Import orders and book them through Order Import. If the order fails booking validation, the order is still imported, but is left in the Entered state. The Messages Window can be used to see why the order failed booking or you can just attempt to Book using the Book button, and then errors will be displayed. To indicate that you want the order to be booked, you must load the actions interface table OE\_ACTIONS\_IFACE\_ALL with a value of BOOK\_ORDER in the OPERATION\_CODE column to import orders in a booked status. See the section below on the Actions table for more information.

## Item Cross Referencing

Customer item numbers or UPC numbers can be entered in Order Import the same way as manually created orders, so long as you have the cross-references and cross reference types set up in advance of running order import. In the interface tables you need to put the 'item ordered' into the column named CUSTOMER\_ITEM\_NAME and if you know what kind of item number it is (customer, inventory item or one of the generic cross references), you can put its type into CUSTOMER\_ITEM\_ID\_TYPE.

## Changes and Cancellations

Input order changes and cancellations to existing orders via the Order Import open interface tables. There is a column in each of the interface tables called OPERATION\_CODE where you put INSERT, UPDATE or DELETE. Null is equivalent to INSERT. If you want to make changes, you must specify an OPERATION\_CODE of UPDATE. To cancel a line, use an operation of UPDATE and then make the ordered quantity = 0. To partially cancel, change the ordered quantity to the new quantity you want to remain on the line. To cancel an order in its entirety, use an operation of UPDATE at the header, and then set the CANCEL-FLAG to Y. All order changes and cancellations are subject to the Processing Constraints you defined.

## Returns

Import returns just like you import orders, by choosing an order type that supports return line types. You can also import mixed orders – those are orders that have some outbound lines and also some inbound (return) lines. The path that the line follows is determined by the workflow attached to the line type. You might import returns or return lines from legacy systems, or from other order entry systems you might be running. There is a separate interface table where you can import anticipated lot/serial numbers – this table is only used for return lines.

## Notes/Attachments

Orders that are input using Order Import will get rule-based attachments automatically applied based on the setting of the profile option *OM: Apply Automatic Attachments*. If you have this profile option set to NO, you can still apply automatic attachments on an order by order basis by using the Actions Interface table – see the discussion of that table below. There is at this time no way to import note texts, or to create attachments via an open interface.

## Pricing

There are two ways to price orders being imported. You can let the system calculate the price, or you can populate the price fields in the lines interface table with the price you want to charge, and also populate the price-adjustment interface tables with price adjustments that result in that net price. You indicate which you want to use by setting a value in *CALCULATE\_PRICE\_FLAG* in the lines interface table. If the calculate price flag is Y, the system will ignore any pricing values loaded into the price fields and will calculate the price using the pricing engine. If the calculate price flag is N, you must populate unit list price, unit net price, and any price adjustments in the interface tables to account for the difference between list and net.

## Pricing and Payment Terms Validation

A common requirement from EDI customers is the ability to validate the price and payment terms that a customer sends in against what the system determines. EDI customers do not typically accept any price or terms that the customer sends in, but they need to keep track of what the customer said they thought they should get. The Customer Service Representative usually contacts the customer to resolve any discrepancies. For example, a customer may send in one price that they have been quoted by a salesperson, which assumed they received some discount. Perhaps the discount had expired by the time the order was imported. This results in a discrepancy that a CSR needs to investigate.

Order Import supports this requirement by letting you populate two attributes in the order lines interface table, *CUSTOMER\_ITEM\_NET\_PRICE* and *CUSTOMER\_PAYMENT\_TERM*. If either of these columns contain data, Order Import compares the system-determined price or payment terms to these columns, and raises a warning if there is a difference. It will still import the order as long as there are no other errors in the order. In both cases, the system-determined value is what is used to process the order, and the customer value is retained on the order line in the base sales order tables for reference purposes.

Following is a table with examples of what would happen in different cases of the customer price and the system price – in addition, it shows how the Calculate Price Flag affects the process:

**Table 23–1 Examples of Customer Price and the System Price**

| Calculate Price Flag | Customer Provided Price | System Calculated Price | Action  |
|----------------------|-------------------------|-------------------------|---|
| N                    | 20                      | -                       | Accept customer price.  |
| Y                    | 20                      | 20                      | Accept customer price. (System = Customer).                         |
| Y                    | 20                      | 10                      | Accept customer price. (System < Customer).                         |
| Y                    | 20                      | 30                      | Don't accept Customer price. Report the error. (System > Customer). |

## Tools/Techniques of Feature - API's, Workflow

Order Import uses the Process Orders API to validate and process order data in the interface tables. For more information on open interfaces, see the *Oracle Manufacturing APIs and Open Interfaces Manual*.

There are no special workflow considerations for Order Import.

## Setup Steps to Implement Order Import

There is only one special setup for Order Import; otherwise, the same setup that you need to perform to manually key orders must be in place before you can import orders.

### Order Import Sources

Set up the names of the sources from which you intend to import orders. There is a special setup form in Order Management allows you to define the name and description for your source. Import Source is a parameter you can use when you submit the Order Import concurrent program, and it is also one of the queryable fields on the Find form of the Order Import Correction form. The Import Source is carried in the order header also, so you can identify the origin of the order. Seeded Order Import sources include EDI and Internal Orders.



The **Item Validation Org** parameter for the operating unit of the user running Order Import determines the organization used for validating items and bill of material structures. Item Validation Org is an Order Management parameter that is set per operating unit.

## Loading the Import tables

To import orders, you need some means to load the Order Import tables. In most cases, you will develop a program or script using SQL-loader or some other programming language to convert data from your feeder system into the standard data format that Order Import is expecting.

Oracle Purchasing contains such a program (Create Internal Sales Order) that takes data from the Purchasing schema for internal requisitions and loads the Order Import tables. Similarly, the eCommerce Gateway product provides a program (Purchase Order Inbound ) that loads the import tables for the Inbound Purchase Order EDI transaction set. You can take a look at that code to guide you in writing your own program to load the tables.

It is advisable that you set up Defaulting Rules in Order Management that will default as much of the order and line information as possible for your environment, thereby reducing the amount of data that would need to be populated into the import tables.

There are certain columns and tables in the set of import tables whose function is not self-evident. Here is some additional information about these attributes to help you be successful in loading the tables properly.

## Flags

Several flags in the interface tables of Order Management affect Order Import processing. Valid values of these flags are Y, N and null. Null means different things depending on the particular flag. These flags are viewable and updateable from the Status Tab of both the Order Header and Lines forms of the Order Import Correction Forms.

**Force Apply Flag** (used for Change transactions only) The Force Apply flag is used to indicate that you want to apply a Change transaction even though the change sequence numbers are out of order. Default is N, and a null value is equivalent to N. Typically a user would set this flag to Y (checked in the UI) if they determine that a set of changes should be applied regardless of the change sequence. See the

section below for more information on **Change Sequence Numbers** and how they are used.

This flag is at the header level only.

**Closed Flag** The Closed flag is used to indicate the line or order being imported should be imported in a Closed state. You might want to import a closed order so your historical data is all in one place, or to provide reference data for Returns. Default for this flag is N, and a null value is equivalent to N.

This flag is at both the header and the line level.

**Canceled Flag** The Canceled flag is typically used to indicate that the line or order being imported should be imported in a Canceled state. Default is N, and a null value is equivalent to N.

This flag is at both the header and the line level.

**Reject Flag** There may be orders or order lines you have determined you no longer want to attempt to process further. Using the Order Import Corrections window, you can select an order or line you no longer wish to process, go to the STATUS tab, and select the Rejected checkbox. Rejected orders or rejected order lines are *Deleted* during the next execution of the Order Import program. Default is N, and a null value is equivalent to N.

This flag is at both the header and the line level.

**ERROR\_FLAG** The error flag is set on by the Order Import process whenever an error is encountered during the validation process. Default is N, and a null value is equivalent to N.

This flag is at both the header and the line level.

**READY\_FLAG** The ready flag indicates that the record will be processed in the Order Import Process. Default is Y, and a null value is equivalent to Y. If the ready flag is N, the order will not be looked at when Order Import is run.

This flag is at the header level.

**Validate Mode Parameter in Concurrent Manager** There is a validate mode parameter you can set when you submit Order Import to run through the concurrent manager. This parameter tells the process to only validate the records, and not to process valid records any further. Base Order Management tables will not have records inserted, updated, or deleted.

**Table 23–2 Parameters**

|                   | <b>(Only)</b>    |   |
|-------------------|------------------|---|
|                   | <b>Validate</b>  |   |
| <b>READY_FLAG</b> | <b>Parameter</b> | <b>Processing</b>                             |
| N                 | Y                | Record is not processed                       |
| N                 | N                | Record is not processed                       |
| Y or NULL         | Y                | Process to Validate Only                      |
| Y or NULL         | N                | Process to Insert/Update/Delete in Base Table |

## Actions Table

One of the Order Management interface tables is the Actions table. Its purpose is to allow you to indicate what ‘actions’ you want to be done to the order, once it has been written to the Order Management base tables. It is the Order Import equivalent of a user pressing the Action button on the Sales Order form after you have entered an order. Load the action name into the OPERATION\_CODE column of this table, and populate other data as needed, and then Process Orders will execute that action if the order import is successful. You can hold or release an order or line from hold using this method, and this is how you book an order through Order Import, too. Other actions you can perform are Apply Automatic Attachments and Delink Config Item and Match & Reserve a configured item. Here is the character string you need to populate in OPERATION\_CODE of the OE\_ACTIONS\_INTERFACE table and other data you need to put in the table to achieve each action.

**Table 23–3 Actions Table**

| <b>ACTION</b>               | <b>OPERATION_CODE</b> | <b>OTHER DATA</b>  |
|-----------------------------|-----------------------|--|
| Apply Automatic Attachments | AUTOMATIC_ATCHMT      | none   |
| Apply a Hold                | APPLY_HOLD            | hold_id, hold_type_code, hold_type_id, comments (optional), hold_until_date (optional) |
| Release a Hold              | RELEASE_HOLD          | hold_id, hold_type_code, hold_type_id, comments (optional), release_reason_code        |

**Table 23–3 Actions Table**

| <b>ACTION</b>   | <b>OPERATION_CODE</b> | <b>OTHER DATA</b> |
|---|-----------------------|-------------------|
| Book the Order  | BOOK_ORDER            | none              |
| Delink the Config Item                                  | DELINK_CONFIG         | none              |
| Match and Reserve a configuration item for an ATO model | MATCH_AND_RESERVE     | none              |

## IDs vs. Codes

Most attributes in the interface tables have two flavors – a code or name and an ID. You may choose to populate either the code or the ID for each attribute. If you populate IDs, performance will be improved. If you populate both an ID and a code for an attribute, the ID will be used and the value in the code field will be ignored.

## Matching Changes to Orders

When you send in changes to orders using Order Import, you need a way to tell Order Import what order or line you are changing. Your feeding system most likely doesn't know the Order Management Order Number. If it does, you can populate the interface column ORDER\_NUMBER to locate your order. There are a group of columns in the interface tables that are carried over into the Sales Order tables, and these are used to locate the order to be changed.

For Order level changes, the following fields need to match between the change transaction in the interface tables and the existing order in the Sales Order tables:

- ORIG\_SYS\_DOCUMENT\_REF - note, this is often the customer's purchase order number
- ORDER\_SOURCE\_ID

For Line level changes, the following fields need to match between the change transaction in the interface tables and the existing order in the Sales Order tables:

- ORIG\_SYS\_DOCUMENT\_REF - note, this is often the Customer's Purchase Order Number
- ORDER\_SOURCE\_ID

- ORIG\_SYS\_LINE\_REF - note, this is often the customer's purchase order line Number concatenated with the shipment number or current customer request date.

If the existing order or line do not have these fields populated, you will not be able to make changes to them using Order Import.

### **Change Sequence Numbers**

Change sequence numbers are a way to control the sequence in which a group of changes is applied to an order. The use of change sequence numbers in Order Import is optional. Change sequence numbers are most frequently used by the EDI Purchase Order Change transaction, but you can also use them to control the order of application of changes, in the event you are importing changes from a legacy or third-party system. For more information about how change sequence numbers work, see the *Oracle Order Management User's Guide*.

## **Summary/Conclusion**

In summary, Oracle Order Management provides a powerful and robust open interface to facilitate your loading orders and returns, as well as changes to existing orders and returns, from external or internal systems. It also provides you with tools to manage the import process and correct errors that are encountered during the importing of data.



Topics covered in this chapter include:

- [Overview](#) on page 24-2
- [Feature Functions and Basic Instruction - What is it? How is it used?](#) on page 24-3
- [Tools/Techniques of Feature - API's, Workflow](#) on page 24-5
- [Setup Steps to Implement Invoicing](#) on page 24-6
- [Troubleshooting](#) on page 24-8
- [Summary/Conclusion](#) on page 24-9

## Overview

Invoicing in Order Management is the process by which data from Orders and Returns is communicated to Oracle Receivables to create invoices, credit memos and credits on account, recognize revenue and manage sales credits.

Invoicing Integration has been implemented as a workflow activity in Order Management. When it executes, it transfers fulfilled item information including quantities, selling prices, payment terms, and transaction dates to Oracle Receivables, which processes invoices for customers and accounts for revenue. Additionally, you can process credit memos and credits on accounts created from returns using this process. Upon completion of the Invoicing workflow activity, users must submit AutoInvoice from Oracle Receivables to import the invoice and credit data into Oracle Receivables. The Invoicing Integration workflow activity can be part of the Order Header workflow, if you want the entire order to interface to Receivables at the same time, or part of the Order Line workflow, which will interface each line or set of lines as they become eligible.

For more information about the Invoicing activity and the nuances of interfacing to Receivables see the *Oracle Order Management User's Guide* and the *Oracle Manufacturing APIs and Open Interfaces Manual, Release 11i*.



## Feature Functions and Basic Instruction - What is it? How is it used?

The Invoicing workflow activity loads the Receivables Autoinvoice Interface tables with data from the order lines, price adjustments, sales credits and charges. Types of data interfaced are product information (ordered item identifier, description, inventory item identifier), quantities and prices, currency, payment terms, etc. It can be run from the line workflow or the header workflow, depending on whether you want to invoice the lines as they are shipped or wait for the whole order to invoice together.

### Invoicing and Fulfillment

Order Management seeded workflows are designed so order lines are eligible to be Invoice Interfaced once they have completed the Fulfillment workflow activity. The Fulfillment concept, along with the use of fulfillment sets, allows you to group lines together for invoicing purposes. Typically, for shippable lines, shipping completes fulfillment. For non-shippable lines, booking completes fulfillment. If you want to hold up invoicing of a non-shippable line until an associated shippable line is shipped, put those lines together into a fulfillment set. None of the lines in the set progress past fulfillment to invoicing until all lines in the set are fulfilled.

### Discounts

In Order Management, you have the option to send items and prices to Receivables net of any price adjustments (as was done in R11 and prior releases of Order Entry) or to send the list price and then send separate adjustment lines for each discount. This is controlled by the profile option OM: Show Discount Details on Invoice. If you choose to show discounts, they are sent as regular invoice lines to Receivables with a negative price, and are accounted for like the item to which they belong. The Description field for the discount lines is the name of the discount. This feature provides visibility to discounts for printing on invoices, but does not provide separate accounting for discounts.

### Freight and Other Charges

In Order Management, all charges (freight and special charges such as insurance, handling, export charges, etc.) are passed individually to Oracle Receivables as invoice header level charges. There is no grouping done by the Invoicing Activity. However, Oracle Receivables will consolidate all the freight charge lines into one line for accounting and printing on the invoice. Order Management passes the

details to Receivables to support differing charge accounting and printing in the future, once Receivables supports such functionality.

## Over and Under Shipments

Overshipments are invoiced based on the setting of the OM: Overshipment Invoice Basis profile option and also corresponding attributes on the Customer and bill-to site. Values for this attribute are Ordered or Shipped. If this value is Ordered, the ordered quantity is invoiced, even if a larger amount was actually shipped. If this value is Shipped, the actual shipped quantity is used for billing. Undershipments are always invoiced as the amount shipped. Please note that you must set over and under shipment tolerances to be able to overship or automatically close a line on an undershipment. You can set site-level shipping tolerances via a profile option. You can also specify exceptions for a customer, bill-to site, item or customer/item combination using the Customer Standard form, Master Items form, and a new Order Management form for customer/item.

## Credit Cards

Credit card information is sent to Receivables if the Payment Type on the order is Credit Card. Data interfaced includes: iPayment order number (transaction id), approval code, bank account id, credit card holder name, primary payment method. This information will allow Receivables to do the necessary capture functions for the credit card.

## Notes/Attachments

It is possible in Order Management to set up note categories to indicate you want the note to print on the Invoice. As of this time, these notes will not actually print on the standard Receivables Invoice. However, if you choose to customize the printing of the Invoice, you can fetch those notes flagged for the invoice and print them in your print procedure.

## Viewing the Invoice

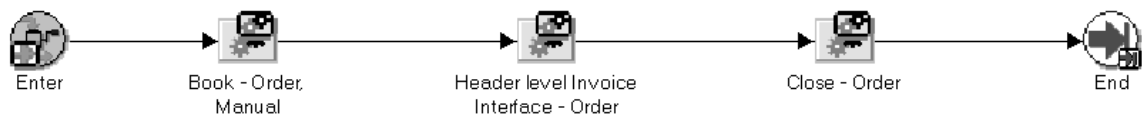
Once a line or an order has invoiced, Receivables updates the order with the invoice information. From the Sales Order Organizer, you can query your order, go to Additional Line Information – Invoicing or Additional Order Information – Invoicing to see invoice data. Data available to be viewed include Invoice Number, Batch Source, invoice date, amount and balance.

## Tools/Techniques of Feature - API's, Workflow

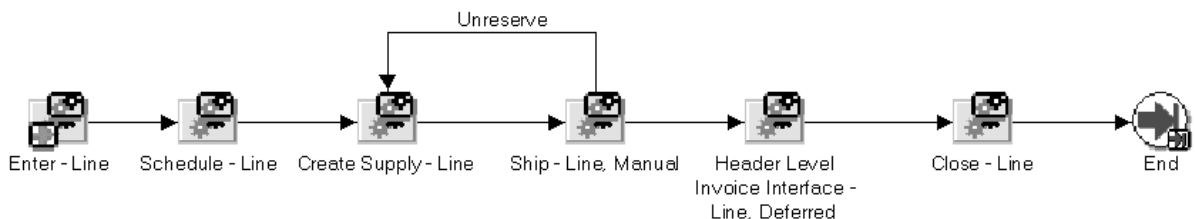
When you set up your order and line workflows for invoicing, choose carefully which line and header workflows you use together to be sure you match the correct Invoicing Activities.

If you intend to use header level Invoicing, be sure to use line level workflows that have coordination points with the header activity. The seeded workflows are named to make that easy to do. For example, there is a header workflow called Order Flow – Generic with Header Level Invoice Interface – you would use it with line flows such as Line Flow – Generic with Header Level Invoice Interface. See [Figure 24-1](#) and [Figure 24-2](#)

**Figure 24-1 Order Flow with Header Level Invoicing**



**Figure 24-2 Line Flow with Header Level Invoicing**



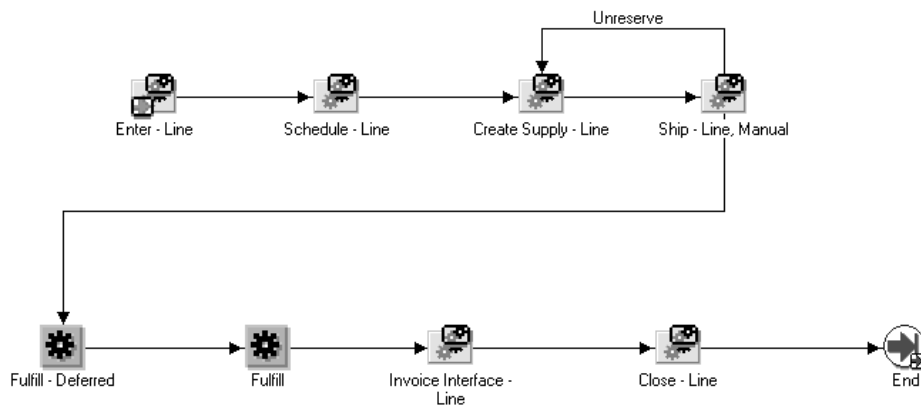
Similarly, if you want to use line level Invoicing, use a header workflow that does not have invoicing, and use line flows that do not wait for coordination with the header regarding Invoicing. See [Figure 24-3](#) and [Figure 24-4](#) For more information

on the Invoicing Workflow Activity processes, see the *Oracle Order Management User's Guide*.

**Figure 24–3 Order Flow with Line Level Invoicing**



**Figure 24–4 Figure 4: Line Flow with Line Level Invoicing**



## Setup Steps to Implement Invoicing

There are numerous setup steps required to get Invoicing to work in your environment. Here are some of them that are especially important:

### Profile Options

There are many profile options that control the Invoicing Process, specifically, **OM: Credit Memo Transaction Type**, **OM: Credit Salesperson for Freight**, **OM: Invoice Numbering Method**, **OM: Invoice Source**, **OM: Invoice Transaction Type**, **OM: Non-Delivery Invoice Source**, **OM: Overshipment Invoice Basis**, and **OM: Show**

**Discount Details on Invoice.** For more information about setting these profile options see the *Oracle Order Management User's Guide*.

### Item Attributes

The items you expect to invoice must be setup with the Invoiceable and the Invoice Enabled item attributes turned on. You can also specify a GL account which can be used for building the revenue account in autoAccounting on this tab of the item setup form.

### Accounting Rules and Invoicing Rules

These are set up in Oracle Receivables and refer to the way revenue is recognized and in which accounting period. There are several seeded rules which suit most applications. In Order Management, you can specify an Accounting and an Invoicing Rule when you define an order type or line type, and also when you define agreements. When the Invoice Interface workflow activity runs, the data to pass to Receivables is obtained based on tables documented in the *Oracle Manufacturing APIs and Open Interfaces Manual, Release 11i* chapter on Interfacing Oracle Order Management with Oracle Receivables and Invoicing.

### Receivables Transaction Types

There are various transaction types seeded in Receivables, such as Invoice, Credit Memo, etc. These definitions control how the different AR transactions are processed, and this is where you can specify various GL accounts available for use during autoAccounting. You must attach a Receivables Transaction Type to your Order Management Order Types and Lines Types when you define them in order to make Autoinvoice import your orders.

### Receivables Invoice Sources

Also called Transaction Sources or Batch Sources – these entities enable you to specify a default transaction type assigned to a batch and determine whether Receivables will automatically number your transactions and batches. To use for OM, create at least one of these with a type = automatic. For more information on Invoice Sources and uses, see *Oracle Manufacturing APIs and Open Interfaces Manual, Release 11i* chapter on Interfacing Oracle Order Management with Oracle Receivables and Invoicing.

### **Auto-accounting**

Controls the how the accounting is derived for lines that are processed by the Autoinvoice Import process. See the *Oracle Receivables User's Guide* for set up details.

### **Order Management Transaction Types**

When you define your OM order types and line types, you can specify various information that affects the Invoicing Activity. Enter this information on the Finance tab of the Define Transaction Type form. Pick a Receivables Transaction Type and Invoice Source. You may choose Accounting and Invoicing Rules, Credit Method for Accounting and Installment.

### **Invoice Grouping Rules**

These rules are setup in Receivables and let you specify which attributes must be identical on the same invoice. If the chosen attributes are different for different lines, then separate invoices will be generated.

### **Invoice Line Ordering Rules**

These rules are also setup in Receivables and let you specify the sequence of printing lines within an invoice.

## **Troubleshooting**

If your order does not appear in the Sales Order list of values in the Autoinvoice Import request submission window, check the workflow status of your lines and verify that the Invoice Interface activity status is COMPLETE.

If your lines show Invoice Interface activity status of INCOMPLETE, use the Process Messages window to find the messages logged by the Invoice Interface for these lines. Typically this process errors out due to incomplete or missing data on the order line, data such as batch source name, Receivables transaction type, credit memo transaction type or service start date and end date for service lines.

If your invoices are not getting created when you run Autoinvoice Import, be sure to examine the log and report resulting from the concurrent job. It points out the reasons why data is not processed. Usually the problem stems from auto-accounting rules that have or have not been set up. For example, verify that there are General Ledger numbers entered for the revenue accounts for the salespeople on your order. Usually you can correct the setup and rerun

Autoinvoice Import. The corrected sales order data will process correctly and your invoices will be created.

## Summary/Conclusion

In summary, Oracle Order Management integrates with Oracle Receivables to provide billing and revenue recognition capabilities. Users in Order Management have some measure of control over how and when invoices are produced, but the formatting of the physical invoice and the complexities of accounting are all controlled by the Receivables application.







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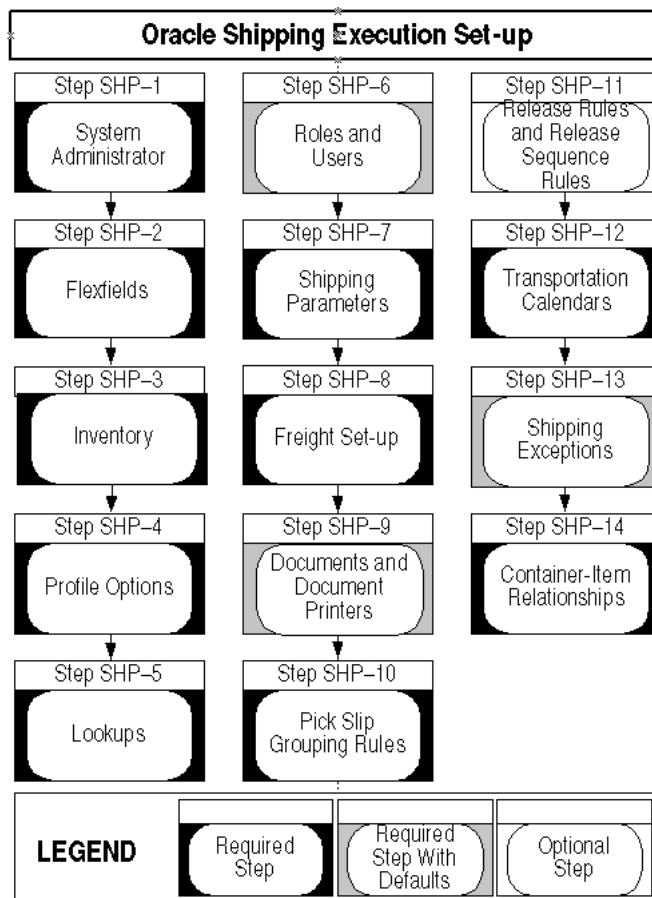
# Shipping Execution Setup

This chapter tells you how to set up Oracle Shipping Execution. This consists of several steps that include setting up shipping parameters, transportation calendars, pick slip rules, container-item relationships, suppliers (freight carriers), and document printing.

## Overview of Setup

Some of the setup steps are required and some are optional:

- The *Required Step With Defaults* refers to setup functionality that comes with pre-seeded, default values in the database; however, you should review those defaults and decide whether to change them to suit your business needs. If you want or need to change them, you should perform the step.
- You need to perform *Optional* steps only if you plan to use the related feature or complete certain business functions.



This table lists the setup steps which are described in more detail in the section Setup Steps.

**Table 25–1 Oracle Shipping Execution Setup Steps**

| Step | Required                          | Step  |
|------|-----------------------------------|---|
| 1    | Required                          | Set up System Administrator                     |
| 2    | Required                          | Set up Flexfields                               |
| 3    | Required                          | Perform Oracle Inventory Setup                  |
| 4    | Required with Defaults            | Define Profile Options                          |
| 5    | Required                          | Define Lookups                                  |
| 6    | Required with Defaults            | Define Roles and Users                          |
| 7    | Required                          | Define Shipping Parameters:                     |
| 8    | Required                          | Define Freight Set-Up:                          |
| 9    | Required (if using document sets) | Define Documents and Document Printers:         |
| 10   | Optional                          | Define Pick Slip Grouping Rules                 |
| 11   | Required                          | Define Release Rules and Release Sequence Rules |
| 12   | Optional                          | Define Transportation Calendars                 |
| 13   | Required with defaults            | Define Shipping Exceptions                      |
| 14   | Required                          | Define Container-Item Relationships             |

## Setup Steps

### Step 1: Set up System Administrator

This step involves the following tasks:

- Define responsibilities. See: *Oracle Applications System Administrator Guide*.
- Set up printers (optional). See *Setting Up Your Printers, Oracle Applications System Administrator Guide*.

### Step 2: Set up Flexfields

Define key and descriptive flexfields to capture additional information about orders and transactions. See: *Oracle Application User's Guide*.

### Step 3: Perform Oracle Inventory Setup

Perform all setup steps required for Oracle Inventory, then perform the following.

#### Locations

Set up internal locations for Human Resources for your Inventory Organizations.



The screenshot shows the Oracle Inventory 'Location' setup form. The form is titled 'Location' and contains the following fields and options:

- Name:** M2- Boston
- Description:** Boston Mfg Plant 2 used in Operations SoB
- Inactive Date:** (empty field)
- Global:**

Below these fields are three tabs: 'Address Details', 'Shipping Details', and 'Other Details'. The 'Address Details' tab is selected, showing:

- Address Style:** United States
- Address:** 393 Berkeley Street...Boston.MA.02116-3321.Suffolk.L

At the bottom left of the form is a button labeled 'Extra Inform...'. At the bottom right, there is a small icon representing a menu or options.

Map inventory organizations to internal locations.

The screenshot shows the 'Organization' setup window with the following details:

- Name:** Boston Manufacturing
- Type:** Plant
- Dates:** From 01-JAN-1987, To (empty)
- Location:** M2- Boston
- Internal or External:** Internal
- Location Address:** 393 Berkeley Street...Boston.MA.02116-3321.Suffolk.United States.....
- Internal Address:** (empty)
- Organization Classifications:**

| Name                   | Enabled                             |
|------------------------|-------------------------------------|
| HR Organization        | <input checked="" type="checkbox"/> |
| Inventory Organization | <input checked="" type="checkbox"/> |
|                        | <input type="checkbox"/>            |
- Others:** (button)

## Organizations

Define at least one:

- Item validation organization
- Organization as inventory source for internal orders
- Organization for receiving purposes, if you use drop ship orders

Your item validation organization can be the same as your inventory source or your logical receiving organization, but you cannot use one organization for all three purposes.

## Pick Confirmation

The Pick Confirmation Required check box affects the behavior of the picking process in Shipping Execution. Navigate: Oracle Shipping > Set up > Organization Parameters > ATP, Picking, Item- Sourcing tab

If the Pick Confirmation Required check box is checked, the system requires that the user navigate to inventory forms to perform a manual pick confirmation of the move order that was generated as a result of the Pick Release process. The pick

confirmation process acknowledges the transfer of the item being picked from its source location to the default staging location.

If the Pick Confirmation Required check box is unchecked (the default) for new installs, the system performs the pick confirmation process automatically based on sourcing rules set up in Oracle Inventory. To emulate the picking processes from release 10.7 and 11.0, this check box should be unchecked.

Use the Carrier Manifesting Organization checkbox only if you have Oracle Transportation installed.

The screenshot shows the 'Organization Parameters (M2)' window with the following sections:

- ATP Defaults:** Rule: Total ATP, No DC
- Picking Defaults:** Rule: RevSub, Subinventory Order: [empty], Locator Order: [empty],  Pick Confirmation Required
- Item-Sourcing Detail:** Type: Supplier, Organization: [empty], Subinventory: [empty]
- Distributed Parameters:**  Distributed Organization,  Carrier Manifesting Organization

## Staging Subinventory

Create at least one staging subinventory for each organization. Move orders record the movement of pick released material to staging subinventories. Staging subinventories should be reservable.

#### **Step 4: Define Profile Options**

Define profile options to specify certain implementation parameters, processing options, and system options. See: Profile Options, *Oracle Shipping Execution User's Guide*.

#### **Step 5: Define Lookups**

Define lookups that provide custom values for many lists of values throughout Shipping Execution. See: Lookups, *Oracle Shipping Execution User's Guide*.

#### **Step 6: Define Roles and Users**

Assign roles to users that control access (edit or view privileges) to shipping entities in the Shipping Transaction window.

#### **Step 7: Define Shipping Parameters**

Define default Shipping Parameters. See: Defining Shipping Parameters, *Oracle Shipping Execution User's Guide*.

#### **Step 8: Define Freight Set-up**

Define freight carriers, services, and freight costs to specify on orders. Assign carrier services to organizations. See: Defining Freight Carrier Ship Method Relationships.

Define freight costs to specify on orders. See: Defining Freight Costs.

#### **Step 9: Define Documents and Document Printers**

Define groups of shipping documents that can print to specified printers when you confirm shipments.

To set up document sequencing perform the following tasks:

- Define document sequences. See: Defining Document Sequences in *Shipping Execution User's Guide*.
- Define document categories. See: Defining Document Categories in *Shipping Execution User's Guide*.

- Assign document sequences to document categories. See: Assigning Document Sequences to Document Categories in *Shipping Execution User's Guide*.
- Define document sets. See: Defining Shipping Document Sets in *Shipping Execution User's Guide*.
- Choose printers. See: Choosing Printers for Shipping Documents and Labels in *Shipping Execution User's Guide*.

### **Step 10: Define Pick Slip Grouping Rules**

Define pick slip grouping rules to determine how released picking lines are grouped onto pick slips. See *Defining Pick Release Parameters*.

### **Step 11: Define Release Rules and Release Sequence Rules**

Define the order in which picking lines are allocated to inventory. See: Defining Release Sequence Rules in *Shipping Execution User's Guide*.

### **Step 12: Defining Transportation Calendars**

Assign a calendar that you created in the Bill of Materials (BOM) application to a shipper, receiver, or carrier. See: *Bill of Materials User's Guide* and Defining Transportation Calendars, *Shipping Execution User's Guide*.

### **Step 13: Define Shipping Exceptions**

You can define exceptions, define processes for exception handling and relate them to appropriate exceptions, log exceptions, associate status to exceptions at various stages in the logging and handling process, start exception handling, and view and track exceptions. See: Defining Shipping Exceptions, *Oracle Shipping Execution User's Guide*.

### **Step 14: Define Container-Item Relationships**

Define the relationship between container items and load items to specify which items can be contained with other items. See: Defining Container-Item Relationships, *Oracle Shipping Execution User's Guide*.



## Profile Options

During implementation, you set a value for each user profile option to specify how Shipping Execution controls access to and processes data.

Generally, the system administrator sets and updates profile values. See: Setting User Profile Options, *Oracle Applications System Administrator's Guide*.

### Implementing Profile Options Summary

The following table indicates whether you (the “User”) can view or update the profile option and at which System Administrator level the profile options can be updated. The System Administrator level includes User, Responsibility, Application, and Site levels.

The table also displays if the profile option is Optional or Required:

- **Required:** Requires you to provide a value.
- **Optional:** A default value is provided, so you only need to change it if you do not want to accept the default

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**Note:** If you are using a multi-organization structure, your system administrator must change the *OM Item Validation Organization* profile option to be visible and updateable at the responsibility level. This change allows Shipping Execution to apply the default tax code and revenue account information correctly. See: Setting Up, *Multiple Organizations in Oracle Applications*.

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The following terms are used in the table to identify if you can view or update the profile option information:

- *Updatable*: You can update the profile option.
- *View Only*: You can view the profile option value but you cannot change it.
- *No Update or View*: You cannot view or change the profile option value.

| Profile Option           | User      | System Admin. User | System Admin. Resp | System Admin. App | System Admin. Site | Required | Default Value |
|--------------------------|-----------|--------------------|--------------------|-------------------|--------------------|----------|---------------|
| WSH debug file location  | Updatable | Updatable          | Updatable          | Updatable         | Updatable          | Optional | <none>        |
| WSH Debug Mode           | Updatable | Updatable          | Updatable          | Updatable         | Updatable          | Optional | 0             |
| WSH: Internet Proxy URL  | View Only | View Only          | View Only          | View Only         | Updatable          | Optional | <none>        |
| WSH: Overpicking Enabled | Updatable | Updatable          | Updatable          | View Only         | Updatable          | Optional | No            |

### WSH Debug file location

Enter the directory where the debug files should reside.

### WSH Debug Mode

Provides additional messages or debug information to user if system error occurs. Debug information can be either logged in a log file for reference or be printed. When setting up this profile option, select one of the following user values:

- *Yes*: Provides additional debug information to the user.
- *No*: Does not provide additional debug information to the user. (Default value)

### WSH: Internet Proxy URL

This allows the system to access UPS servers for United Parcel Service integration. If no firewall is installed at your site, you do not need to set the profile. This profile can only be modified by the System Administrator at the site level.

**WSH: Overpicking Enabled**

Enter Yes to allow overpicking. Overpicking is using the pick confirm transaction to pick more than the requested quantity of a delivery, up to the overshipment tolerance.

## Defining Roles and Users

Shipping Execution provides data access controls called *roles* that control users' access to the Actions list and Tools menu in the Shipping Transactions window. Roles are assigned to users using *grants* that control access to view or edit specific shipping data or actions.

This is useful, for example, if you want to assign a grant to inexperienced users that provides view-only access or assign grants that prevent unwanted actions such as unintentional pick releases across multiple organizations.

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**Note:** Roles provide data access controls for the Shipping Transactions window. If you want to restrict user access to other windows like the Pick Release or Set up windows, you can edit the Shipping menus in Shipping Administration.

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For each role, you can select the following data access controls that control edit and view access to shipping entities such as trips, stops, deliveries, lines/LPNs.

- *Data Access Edit* enables users to edit and view the data.
- *Data Access View* enables users to browse the data.
- *Data Access None* prevents users from editing and browsing data and performing actions.

A role can provide either view-only, edit-only, or a combination of view and edit access depending on the set up of the role. You can create customized roles by defining the access controls you want. During the set-up for each role, you can quickly enable or disable actions by selecting the Disable or Enable Actions button.

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**Note:** If no data access control is selected, the user cannot edit or view the selected action.

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Once you have defined a role you can assign it to a user through a grant. A grant defines both the user's role and related information about the grant including the date, and the organization(s) to which the grant applies.

The system administrator or super-user is responsible for defining roles and assigning the grants to users. For more information, see [Granting a Role to a User](#) on page 25-18.

## Upgrading and New Installation Considerations for Roles and Users

Privileges for roles and users may differ depending on your software installation:

- **Upgrading from 11i.2:** Existing users are assigned the default system privileges which provide *full view and edit* access. To change these privileges you must first end the user's assigned grant by entering an end date for the upgraded grant, and then assign a new grant.
- **Installing 11i.4 or a later version (fresh install—no upgrade from previous version):** New users are assigned the default system privileges which are *view-only*. To change these privileges, you can assign a new grant to each user.

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**Note:** You cannot assign a new role globally to all users, you must assign the new role to each individual user.

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## Defining a New Role

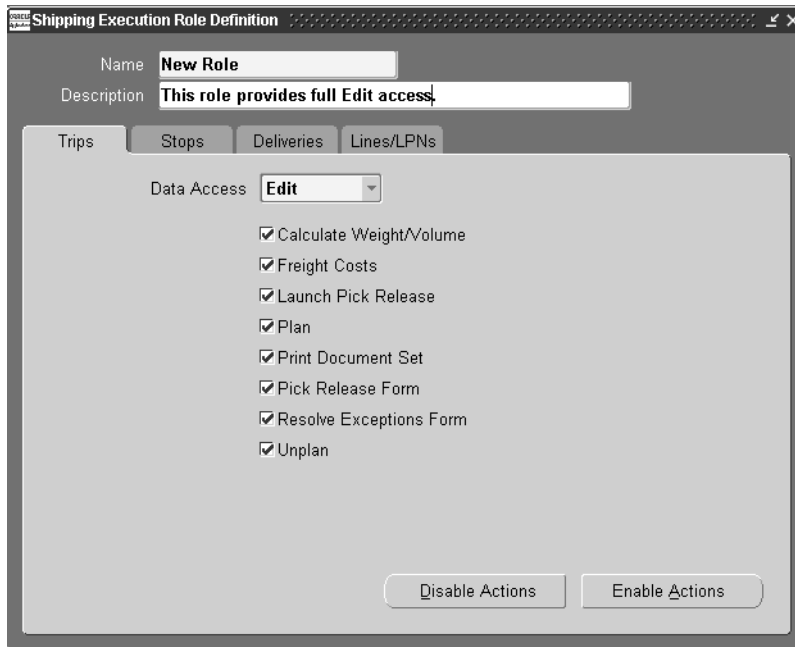
Shipping Execution enables you to define new roles by selecting the data access controls you want. You can define a new role by:

- ***Copying an existing role:*** An existing role can be copied to create a new role. The copied role has the same data access privileges of the original, but if desired, these privileges can be edited for the new role. Save the new role with a different name than the original. See [Copying an existing role](#) on page 25-18.
- ***Manually defining a new role:*** You can create a new role in the Shipping Execution Role Definition window by selecting the data access controls to trips, stops, lines, and deliveries. Save the new role with a unique name.

Once you have created the new role you can assign it by grant to a user.

### To define a new role

1. Navigate to the Shipping Execution Role Definition window.



2. In the Name field, enter the name of the role.
3. In the Description field, enter a description of the role.
4. In the Trips tab, in the Data Access field, select:
  - *Edit* to provide edit access for the trip records.
  - *View* to provide view-only access for the trip records.
  - *None* to disable access and actions.
5. From the list of trip actions, select the action(s) that the user can do.

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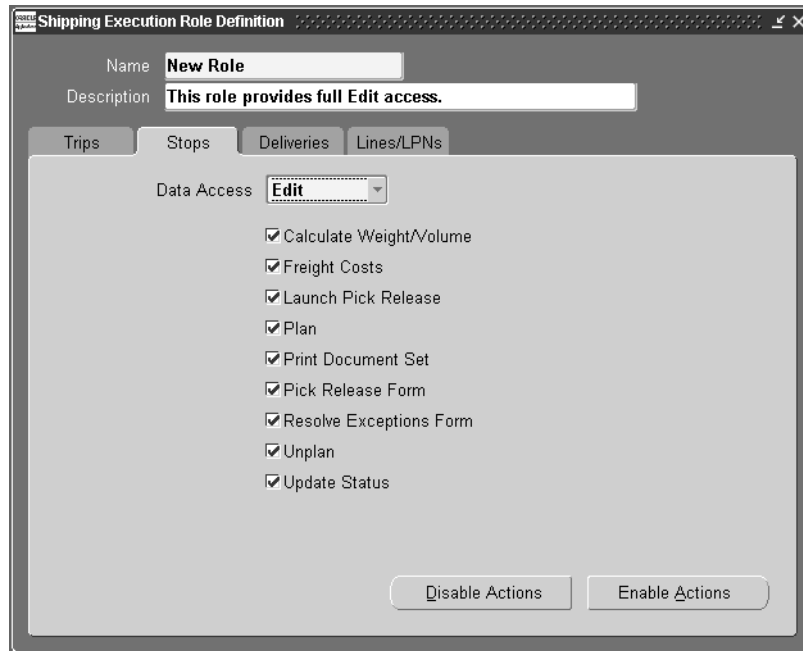
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**Note:** As a shortcut, choose the Disable Actions button to disable all the actions or the Enable Actions button to enable all the actions.

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6. Choose the Stops tab.



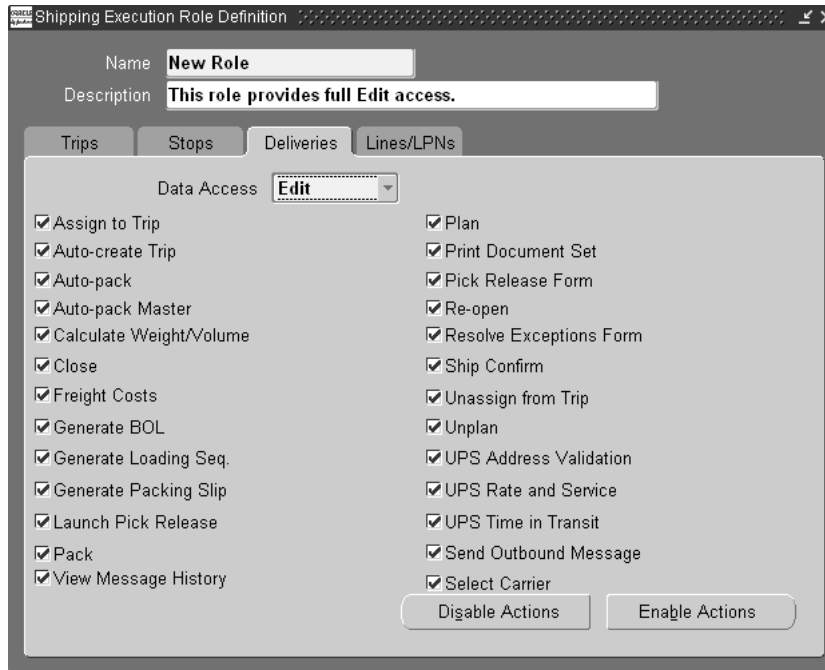
7. In the Data Access field, select:
  - *Edit* to provide edit access to the stop records.
  - *View* to provide view-only access to the stop records.
  - *None* to provide no access to the stop records.
8. From the list of stop actions, select the action(s) that the user can do.

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**Note:** As a shortcut, choose the Disable Actions button to disable all the actions or the Enable Actions button to enable all the actions.

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9. Choose the Deliveries tab.



10. In the Data Access field, select:

- *Edit* to provide edit access to the delivery records.
- *View* to provide view-only access to the delivery records.
- *None* to provide no access to the delivery records.

11. From the list of delivery actions, select the action(s) that the user can do. Use actions View Message History, Send Outbound Message, and Select Carrier if you have Oracle Transportation installed.

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**Note:** As a shortcut, choose the Disable Actions button to disable all the actions or the Enable Actions button to enable all the actions.

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**In the Lines/LPNs tab:**

The screenshot shows the 'Shipping Execution Role Definition' dialog box with the 'Lines/LPNs' tab selected. The 'Name' field contains 'New Role' and the 'Description' field contains 'This role provides full Edit access.'. The 'Data Access' dropdown menu is set to 'Edit'. A list of actions is displayed with checkboxes, all of which are checked. At the bottom right, there are two buttons: 'Disable Actions' and 'Enable Actions'.

| Action                    | Checked |
|---------------------------|---------|
| Assign to Delivery        | Yes     |
| Auto-create Deliveries    | Yes     |
| Auto-create Trip          | Yes     |
| Auto-pack                 | Yes     |
| Auto-pack Master          | Yes     |
| Calculate Weight/Volume   | Yes     |
| Create LPNs               | Yes     |
| Freight Costs             | Yes     |
| Launch Pick Release       | Yes     |
| Pack                      | Yes     |
| Packing Calculator        | Yes     |
| Packing Workbench         | Yes     |
| Pick Release Form         | Yes     |
| Resolve Exceptions Form   | Yes     |
| Split Line                | Yes     |
| Unassign from Delivery    | Yes     |
| Unpack                    | Yes     |
| UPS Address Validation    | Yes     |
| UPS Rate and Service      | Yes     |
| UPS Tracking              | Yes     |
| UPS Time in Transit       | Yes     |
| Cycle Count Delivery Line | Yes     |

12. Choose the Lines/LPNs tab.

13. In the Data Access field, select:

- *Edit* to provide edit access to the lines/LPNs records.
- *View* to provide view-only access to the lines/LPNs records.
- *None* to provide no access to the lines/LPNs records.

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**Note:** The delivery records also includes delivery legs and packing slips.

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14. From the list of lines/LPNs actions, select the action(s) that the user can do.

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**Note:** As a shortcut, choose the Disable Actions button to disable all the actions or the Enable Actions button to enable all the actions.

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## Copying an Existing Role

Copying a role is useful for creating a new role based on the privileges of an existing role. Since copying automatically duplicates the original role, it saves you time from manually entering all the control privileges of the original.

You can edit the privileges of the copied role, save the role with a new name, and assign it to users.

### To copy an existing role

1. Navigate to the Shipping Execution Role Definition window.
2. Find the role that you want to copy.
3. Click the New Record button to create a new record.
4. From the Edit menu, select Duplicate—Record Above to create a new role based on the privileges of the original.
5. Save the new role.

## Granting a Role to a User

You can grant a user a role in one organization or all organizations for a period of time. The role is assigned to a user by a *grant*. The grant is specific to a particular user and defines the role(s) assigned to the user, the organization where the grant is effective, the start date and optionally, an end date.

More than one grant can be assigned if the user requires different access controls to more than one organization. The start and end dates for grants can overlap.

For example, if a user requires full-access privileges to three organizations and view-only access to a fourth, the user must be assigned four grants—one for each respective organization (three full-access and one view-only grant). However, if only one grant is assigned, that grant becomes the default grant for the user.

In addition, the grant has the following requirements:

- A grant may or may not have one inventory organization selected.
- Many grants can be assigned for each role.

- A user can have one or more grants. If the user does not have any grant (expired, effective, or future), the default is view-only access to all organizations. If the user has grants, the user's access is controlled by the effective grants. If there are overlapping grants in the same organization or an intersection of grant date ranges, the union of grant privileges controls the user's access.
- A grant cannot be designated as the default grant.

A role can be assigned to a user that spans all organizations instead of granting a unique grant per organization. If an organization is not specified, the grant is applicable to all organizations.

### **Warehouse Organization**

A grant can have one or all inventory organizations. If an organization is not specified, the grant is applicable to all organizations.

If the user's activities span more than one organization, for example, a stock picker who pick releases across multiple organizations (but not all), then separate grants for each organization must be created to associate the user, the user's role, and effective dates for the grant. Alternately, if you do not select a specific organization, the stock picker can pick across all organizations.

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**Note:** Use caution when creating grants for all organizations (when no specific organization is selected). For example, if a user has a grant to view all organizations and a grant to perform actions on one organization, the union of these grants will enable the user to perform actions in all organizations.

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### **Changing Organizations in the Shipping Transactions window**

If a user's effective grants are single organization, the user can select an organization when opening the Shipping Transactions window or from the Tools menu—Change Organization. If all effective grants are in the same organization, the Shipping Transactions window defaults to that organization.

### **Effective Dates for a Grant**

Optionally, in the Start and End Date fields, you can enter a start and end date for the grant to assign it for specific period. For example, you can assign temporary employees a grant that is effective for the duration of their assignment. The date status for a grant can be endless, future or expired:

- **Endless:** If you enter a start date but no end date, the grant is effective for an indefinite period.
- **Future:** You can specify start and end dates for a grant so that the grant is effective only between those dates. For example, a temporary employee can be assigned a role that is effective for the duration of his/her contract. The start date can be a current or future date. You cannot back-date the date: for example, you cannot enter a start date of yesterday.
- **Expired:** When the end date of the grant expires, the user cannot access the Shipping Transactions window and perform the job duties unless assigned a new grant by the system administrator.

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**Note:** If the user has expired and future grants but no effective grants, the user has no access to the Shipping Transactions window. If required, you can leave a gap between an expired grant and a future grant: for example, one grant can expire in June and another can begin in August.

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### To grant a role to a user

1. Navigate to the Shipping Execution Grants window.



2. In the User field, select the user's name.
3. In the Role field, select the role that you want assigned to the user.

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**Note:** To view the available privileges for a selected role, choose the View Role button to display the Shipping Execution Role Definition window.

---

---

4. In the Org field, select the organization to which the grant is assigned (optional). The user can be assigned only role per warehouse (organization). However, you can assign a different role to a different warehouse.
5. In the Start Date, enter the date you want the role to start.
6. In the End Date field, enter the date that you want the role to end. If you do not want the role to end, leave the field blank.  
  
Once the grant is saved, only the end date can be updated. However, the date cannot be updated once it has expired.
7. Save your work to activate the role.

## Finding Grants and Roles

You can do a search to find current or expired grants, find users and their assigned grants, or find active grants for an organization(s).

You can do a search to find existing roles.

### To find a grant

1. Navigate to the Shipping Execution Grants window.
2. Choose the Find icon to display the Find Grants window.

3. Enter the user name to find the users and their assigned roles.
4. Enter the role name to find the available roles and the users assigned to them.
5. In the Org Span field, select:
  - Single Organization to find grants in one organization, or
  - All Organizations to find grants in all organizations.
6. Enter the organization if you selected Single Organization for the Org Span, or leave blank if you left the Org Span blank.
7. Select the start date or a range for the start dates.
8. Select the end date or a range for the end dates.
9. Select the Effectivity for the role you are searching for. Select from:
  - *Expired*: All expired roles.
  - *Effective*: All current active roles.
  - *Future*: All roles beginning on a future date.

For example, if you wanted to search for expired roles, select Expired.
10. Click the Find button to display the search results in the Shipping Execution Grants window.
  - Click the View Role button to see details about the assigned role.
  - Optionally, click the Define Role button to create a new role.
11. Save your work.

### To find a role definition

1. Navigate to the Shipping Execution Role Definition window.
2. Choose the Find icon to display the Find a Role Definition window.



3. In the Find field, enter the name of the role and choose the Find button.  
The search results display in the Name column.
4. Select the role and choose the OK button to display the role in the Shipping Execution Role Definition window.

### Updating a User's Grant

At times, a user's assigned grant may need to be updated. For example, if the user gets promoted and requires a different set of privileges, the assigned role needs to be updated for the user's organization to reflect the changed responsibilities.

To change the role, you must end the user's existing role and assign a new role with the new privileges.

If you want to change the end date for a grant that has not expired, you can update the end date and saving the changes. If the date and grant has expired, the user must be granted a new grant (role).

**Note:** You cannot change a role by editing the role's parameters and saving the changes.

Updating a user's grant only affects that user, not all users assigned with the role.

### To update a user's grant

1. Navigate to the Shipping Execution Grants window.



2. Find the user whose role you want to update. The user and current role assignments display in the Shipping Execution Grants window.
3. If you are just updating the End Date, enter a new date in the End Date column and save the changes.

If you are ending a user's role and assigning another role:

4. Enter an end date in the End Date column of the role you want to end.
5. Select the new role, the Org to which the new role is assigned, and the start and end dates of the new role.

The start date must follow the end date of the role that you are updating. The new role is effective when it reaches its start date.



6. Choose the Save button to save your work.

## Defining Shipping Parameters

You can define the default values for basic shipping information such as units of measurement, pick release rules, weight and volume calculations, and delivery grouping rules. Shipping parameters are organization specific.

The parameters are arranged into the following tabbed regions in the Shipping Parameters window:

- *General*: You can define shipping units of measurement such as weight, volume, and the unit of measure used for percent fill basis calculations.
- *Pick Release*: You can define release rules, pick slip grouping rules, release sequence rules, and printing parameters.
- *Shipping Transaction*: You can define automatic or manual weight and volume calculations, container volume calculations, container inventory control, and goods dispatched (COGS) account.
- *Delivery Grouping*: You can define how to group delivery lines for a delivery.

## Defining General Parameters

You can define unit of measure (UOM) parameters such as weight and volume, and select the unit of measure used for percent fill basis calculations. The units of measure you select as the default are used when you calculate the weight and volume of deliveries and the fill percentage of containers.

### To define general parameters

1. Navigate to the Shipping Parameters window.

The screenshot shows the 'Shipping Parameters (V1)' window with the 'General' tab selected. The parameters are as follows:

|                                    |                          |
|------------------------------------|--------------------------|
| Weight UOM Class                   | Weight                   |
| Volume UOM Class                   | Volume                   |
| Percent Fill Basis                 | Weight                   |
| Secondary Export Country Screening | IN                       |
| Auto Select Carrier                | <input type="checkbox"/> |

2. Select the General tab.
3. Select the default Weight UOM Class from the valid UOM classes.
4. Select the Volume UOM Class from the valid UOM classes.

---

**Note:** The seeded values shown in the UOM class are created in Oracle Inventory.

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5. Select the default unit of measure for the Percent Fill Basis of a container. You can select quantity, volume, or weight. Percent Fill Basis is used to determine if containers have met their minimum fill percentage requirements.

If you choose weight or volume, the calculation uses the item and container physical attributes in Oracle Inventory.

If you choose quantity, the calculation uses the Container Load Details set up in which you specify the maximum amount that will fit into the container.

6. In Secondary Export Country Screening, select a country code. If you use International Trade Management, you can additionally screen against the parent country. This parameter specifies the default parent country.
7. Auto Select Carrier is for future use.
8. Save your work.

## Defining Pick Release Parameters

You can define default picking criteria that is used at pick release. You can also select the default settings for auto-detailing and auto-creating deliveries.

### To define pick release parameters

1. Navigate to the Shipping Parameters window.

The screenshot shows the 'Shipping Parameters (V1)' window with the 'Pick Release' tab selected. The settings are as follows:

| Parameter                         | Value                               |
|-----------------------------------|-------------------------------------|
| Release Sequence Rule             | Sched Date Shipment Priority        |
| Pick Slip Grouping Rule           | Order Number Only                   |
| Print Pick Slip                   | Immediate                           |
| Default Pick Release Document Set | All Pick Release Documents          |
| Autocreate Delivery Criteria      | Across Orders                       |
| Default Stage Subinventory        | Stores                              |
| Default Stage Locator             |                                     |
| Number of Pick Slip Lines         |                                     |
| Auto Allocate                     | <input checked="" type="checkbox"/> |
| Autocreate Deliveries             | <input checked="" type="checkbox"/> |
| Enforce Ship Sets and Ship Models | <input checked="" type="checkbox"/> |

2. Select the Pick Release tab.
3. Select the Release Sequence Rule. During pick release, this rule determines the order in which order lines reserve against inventory. It appears as the default release sequence rule in the Release Sales Order form.

We recommend that you select the most frequently used release sequence rule; although it becomes the default, you can change it any time you launch pick release.

4. Select the Pick Slip Grouping Rule. This rule dictates how the released delivery lines are grouped on pick slips and how the pick slip number is generated by pick release. It appears as the default pick slip grouping rule in the Release Sales Order form.

We recommend that you select the most frequently used pick slip grouping rule; although it becomes the default, you can change it any time you launch pick release.

5. Select when you want the pick slips printed:
  - If you select **At the End**, a pick slip will be generated when all items within the pick slip are completely released.
  - If you select **Immediate**, you must specify the number of lines per pick slip. Whenever this threshold is reached, a pick slip document is submitted, and the rest of the pick release documents are submitted at the end of the pick release process. For example, if there are 20 custom defined lines, all pick slips belonging to these 20 lines are printed in a single pick slip report. The number of pick slips printed depends on the pick slip grouping rule and the custom defined lines. This choice typically has less impact on system resources.
6. Select the default pick release document set to be printed at pick release. The list of values displays all document sets.
7. Select the auto-create delivery criteria to automatically create deliveries for lines that have been successfully released for shipment:
  - Select **Within An Order** to auto-create deliveries whose lines all belong to the same sales order.
  - Select **Across Orders** to auto-create deliveries across orders. All delivery lines that are shipping to the same customer ship to address appear on one delivery.

Auto-create deliveries only applies to non-trip releases. Auto-created deliveries are grouped together based on rules that include criteria selected in the Shipping Parameters window.
8. Select the default staging subinventory. Move orders move material to this subinventory. The list of values displays all subinventories in the organization. Staging subinventories should be reservable.
9. Select the default staging locator. Move orders move material to this locator. The list of values displays all locators in the organization
10. If **Print Pick Slip** is **Immediate**, enter the maximum **Number of Pick Slip Lines** to print on each pick slip. For example, if **Number of Pick Slip Lines** is 25 and pick release selects 40 lines, it prints two pick slips, one with 25 lines and the other with 15 lines.
11. Use **Auto Allocate** to specify how you want order lines allocated (reserved):
  - **Selected**: Pick release creates move orders and allocates them. This setting emulates the pick release process in Releases 10.7 and 11.

- Cleared: Pick release creates move orders. You manually allocate the order lines using the Inventory Transact Move Orders window.
12. Use Autocreate Deliveries to specify your preference for delivery creation. You can override this preference at pick release execution.
- Selected: Pick release automatically creates deliveries based on the Delivery Grouping Rules and assigns delivery lines to them. When pick releasing, the Auto Create Deliveries check box in the pick release form defaults to this parameter setting if you enter a warehouse. If you do not enter a warehouse, pick release uses this parameter setting from the organization of the warehouse on each sales order line.
  - Cleared: Pick release does not automatically create deliveries.
13. Select if you want to enforce ship sets and ship models during picking:
- If you do not select the Enforce Ship Sets and Ship Models box, delivery lines for ship sets and ship models are not validated during picking even if the ship set is specified on order lines.

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**Note:** Depending on your business needs, you must set up the Enforce Ship Sets and Ship Models parameter for each warehouse.

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- If you select the Enforce Ship Sets and Ship Models box, delivery lines for ship sets and ship models are validated during picking. All order lines in ship sets are either released completely or auto-backordered during pick release. If any portion is not available, then all lines in the entire ship set are backordered.

When you create the order, you must specify if you want to retain (or not retain) the ship set for the back-ordered lines. You can do this in the Sales Order widow in Order Management.

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**Note:** Ship sets for non-transactable delivery lines are validated during ship confirm. However, a ship set for non-transactable delivery lines is not validated during pick release because the item(s) are not picked from inventory.

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## Defining Shipping Transaction Parameters

You can define parameters for your shipping transactions such as automatic or manual weight and volume calculations, container volume calculations, and the goods dispatched account.

### To define shipping transaction parameters

1. Navigate to the Shipping Parameters window.

2. Select the Shipping Transaction tab.
3. Select the default delivery document set that prints as part of the ship confirm process. The list of values displays the valid delivery document sets. For more information, see: [Defining Shipping Document Sets](#).
4. Select a value for Weight/Volume Calculation.

If you select Automatic, the following measurements are calculated automatically at ship confirm:

- Weight and volume of the trip or delivery
- Fill percentage of the containers

If you select Manual, you manually calculate the weight and volume. Navigate to the Transactions form and, in the Actions field, select Calculate Weight/Volume.



5. Select a value for Enforce Packing in Containers:
  - If you select Yes, ship confirm displays a warning when confirming a delivery or trip with unpacked delivery line items. You can bypass the warning and complete the shipment.
  - If you select No, ship confirm does not display the warning.
6. Container Inventory Control is for future use.
7. Select a default Goods Dispatched account. Use the Cost of Goods Sold (COGS) account for this organization. The sales order issue transaction uses this account if the Oracle Order Management workflow cannot determine one.
8. Freight Class Category Set is for future use.
9. Commodity Code Category Set is for future use.

You can set the following parameters once for all organizations.

10. Select one of the following for the enforce ship method:
  - Select the Enforce Ship Method check box to enforce that a ship method (carrier) is entered and recorded for each shipment. This is recommended if your business practices require a record of the ship method/carrier for each shipment.  
  
During order processing, if a ship method has not been entered, a warning box appears at ship confirm advising you to enter it. You can enter the ship method in the Confirm Delivery window, the Delivery tab of the Shipping Transactions window, or the Sales Order window [Line Items tab > Shipping tab > Shipping Method field].
  - If the Enforce Ship Method check box is not selected, the ship method is not enforced at ship confirm and a warning does not display. For example, if your organization uses the same ship method (carrier) for all shipments, you may not want to enforce the selection of a ship method.
11. Select or clear Allow Future Ship Date.
  - If you select it, you can enter a future date as the Actual Departure Date while ship confirming the delivery.
  - If you clear it, you should not enter a future date as the Actual Departure Date while ship confirming the delivery because you receive an error.
12. Select the Defer Interface check box if you want to defer shipping interfaces from initiating updates to the interface tables. If you defer the interface, you must manually run the interface to update the interface tables. For example, if

you defer the Inventory Interface, the inventory tables are not updated until you manually run the Inventory Interface in the Shipping Interfaces window.

If you do not select the Defer Interface check box, the interfaces are run automatically when initiated.

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**Note:** If you select the Defer Interface check box, all interfaces are deferred. You cannot defer selected interfaces.

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13. Save your work.

## Defining Delivery Grouping Parameters

Delivery grouping parameters enable you to define how to group delivery lines for a delivery. The mandatory default attributes are Ship From Location and Ship To Location; however, you can select optional grouping parameters that include:

- Customer
- Freight Terms
- FOB Code
- Intermediate Ship To location
- Ship Method

The delivery grouping attributes determine how delivery lines are grouped into deliveries when auto-creating deliveries. For example, if the grouping parameter *Customer* is selected as the delivery grouping attribute, the delivery lines are grouped into deliveries by customer: for example, deliveries for Customer A are grouped into Delivery A, deliveries for Customer B are grouped into Delivery B.

You can select more than one grouping attribute to refine your grouping criteria further: for example, if you select Customer and Ship Method as grouping criteria, delivery lines with the same customer and carrier criteria are grouped into deliveries.

If each optional grouping attribute is checked, the delivery's corresponding field cannot be updated if delivery lines are assigned to the delivery. This ensures that the delivery lines' grouping criteria is not broken by a different attribute value: for example, if someone tries to select a different ship method.

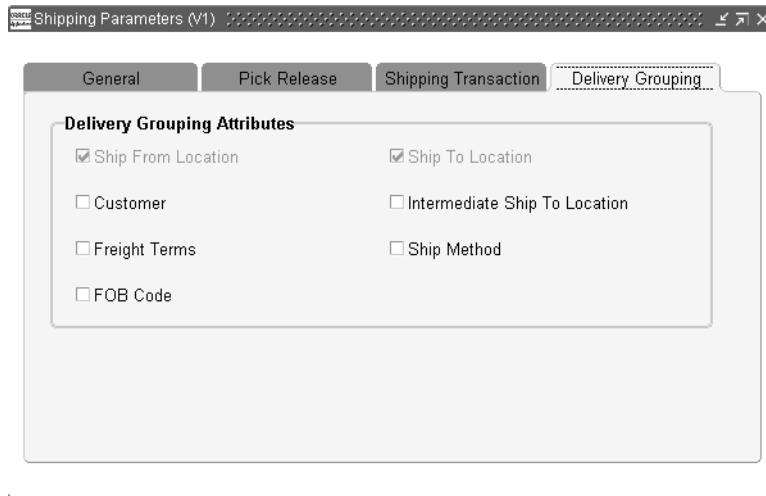
If each optional grouping attribute is unchecked, its field in the delivery record can be updated until the ship confirm stage.

For example, if you want to change the Ship Method in the delivery and do not need to enforce it as a grouping attribute, you can unselect Ship Method.

Do not change these options if you have and deliveries that are not ship confirmed.

### To define delivery grouping parameters

1. Navigate to the Shipping Parameters window.



The screenshot shows a window titled "Shipping Parameters (V1)" with four tabs: "General", "Pick Release", "Shipping Transaction", and "Delivery Grouping". The "Delivery Grouping" tab is active. Below the tabs is a section titled "Delivery Grouping Attributes" containing a list of checkboxes:

- Ship From Location
- Customer
- Freight Terms
- FOB Code
- Ship To Location
- Intermediate Ship To Location
- Ship Method

2. Click the Delivery Grouping tab.
3. Choose the attribute(s) for grouping the delivery lines.
4. Save your work.

## Defining Freight Carrier Ship Method Relationships

### Freight Carrier

A freight carrier is a commercial company that provides shipments to and from customers, suppliers, and internal organizations. You must set up each carrier's information as a party in Oracle Shipping Execution before shipping goods; you must assign a carrier to each delivery. You also must associate a general ledger account with each carrier to collect associated costs.

Before you set up the carriers:

- Collect general information about each carrier
- Determine the types of services that your carriers offer and that you use

To set up each carrier, enter the following types of information:

- General carrier information: Identification, address, contact information, and currency
- Services: Service level and transportation mode  
Service level is a type of service and transportation mode is the type of transport vehicle on which the carrier transports the goods. For example, XYZ Carrier offers both Ground truck and 2nd Day air services; if you use both of these offerings, you create two different services for XYZ Carrier.
- Inventory organizations to which it provides services

### Ship Method

Ship methods differentiate among multiple transportation modes and service levels for multiple carriers.

When you are sending shipments, use the ship method relationship to select the carrier, service level, and transportation mode.

Before you can assign ship methods to deliveries in an organization, you must enable them in the organization.

As you add the carriers, attend to the following values as they may be parts of the ship method:

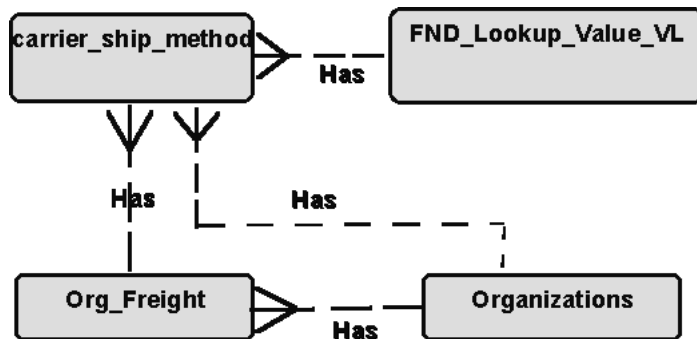
- Carrier short name
- Service level meaning

## Upgrade Processing

At upgrade, the information in ORG\_FREIGHT will be upgraded to FND\_LOOKUP\_VALUES. You should not have to maintain freight carrier and ship method information immediately after the upgrade; you can then begin to maintain any changes after this point.

## Ship Method Defaulting Rule

For the ship method to pass from the sales order to the Shipping Transactions window, it must appear at the line level. To accomplish this, create a defaulting rule such that ship method defaults automatically from the sales order header to all sales order lines. The procedure appears later in this section.



For additional information, please see the ship methods topical essay in Metalink.

## To add service levels

1. If you want to enter a group of service levels before using them with specific carriers:
  - Navigate to the Lookups form
  - Query the Carrier Service Levels lookups. The type is WSH\_SERVICE\_LEVELS.
2. If you want to define new service levels as needed while you are creating freight carriers, follow the procedure To create a freight carrier. From the carrier creation form, you can create new service levels.

## To create a freight carrier

1. Navigate to the Carriers form.

The screenshot shows the Oracle Carriers form with the following data entered:

- Carrier: **WATKINS MOTOR LINES**
- Short Name: **WATKINS**
- Active:
- SCAC Code: [Empty]
- Currency: **USD**
- Enable Manifesting:

The form has two tabs: **Main** and **Services**. The **Main** tab is selected, showing the following information:

- Country: **United States**
- Address: **1144 West Griffin Road**
- Site Name: [Empty]
- City: **LAKELAND**
- State: **FL**
- Postal Code: **33804**
- Province: [Empty]
- County: [Empty]

Below the address information, there are two sections:

- Contact Name** table:
 

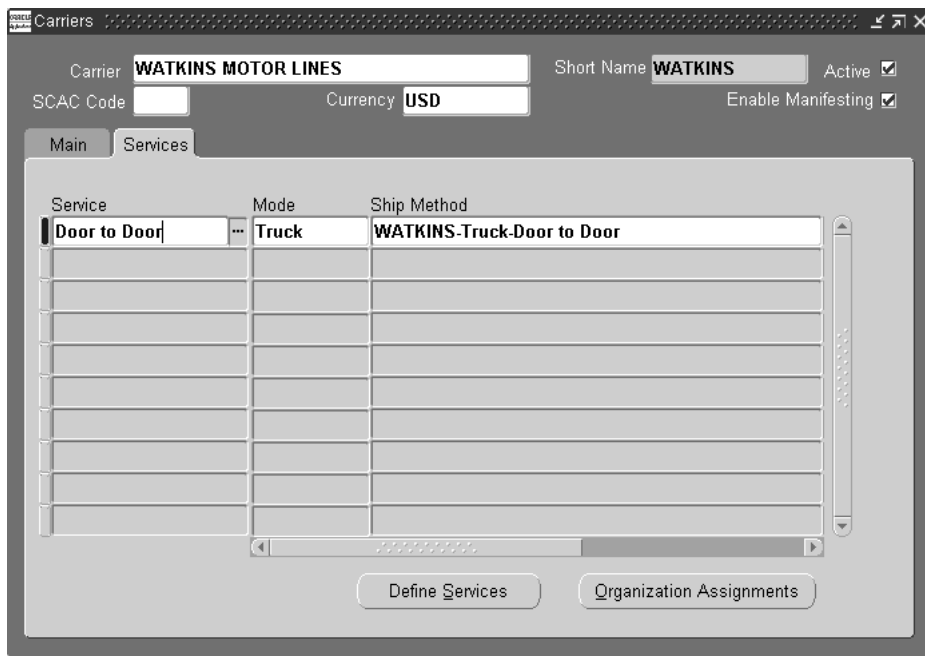
| Last         | First       | Title      | Active                              |
|--------------|-------------|------------|-------------------------------------|
| <b>SMITH</b> | <b>JOHN</b> | <b>MR.</b> | <input checked="" type="checkbox"/> |
| [Empty]      | [Empty]     | [Empty]    | <input type="checkbox"/>            |
- Contact Telephones** table:
 

| Country Code | Area Code  | Phone          | Extension | Primary                             | Active                              |
|--------------|------------|----------------|-----------|-------------------------------------|-------------------------------------|
| <b>1</b>     | <b>800</b> | <b>2844544</b> | [Empty]   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| [Empty]      | [Empty]    | [Empty]        | [Empty]   | <input type="checkbox"/>            | <input type="checkbox"/>            |

2. Enter the Name and Short Name for the carrier. Attend to Short Name as it may be a portion of the ship method.
3. If the carrier can be assigned to deliveries, select Active.
4. In SCAC Code, enter the standard carrier alpha code.
5. Enter the carrier's Currency.
6. If you want deliveries for the carrier services enabled for manifesting integration, select Enable Manifesting. You must have Oracle Transportation installed and must assign the service to organizations in which you use it.

If you use manifesting, Oracle Transportation sends messages to carrier manifesting systems. The messages upload delivery detail information which rates the delivery, determines freight costs, and prints labels and other paperwork.

7. In the top portion of the Main tabbed region, enter address and site information for the carrier.
8. Enter your carrier contacts in the Contact Name and Contact Telephones regions. Mark the current contact as Active, mark the current telephone numbers of each contact as Active, and select one telephone number for each contact as the Primary one.
9. Save your work.
10. Navigate to the Services tabbed region.



11. Select Service and Mode (of transportation) combinations that the carrier offers and that you use. Attend to Service as it may be a portion of the ship method.  
If you need to use a new service that is not identified to Oracle Shipping Execution, click Define Services. The Lookups form displays the carrier service levels lookup to which you can add a new service.
12. After you enter each Service and Mode (of transportation) combination, Oracle Shipping Execution assigns a ship method. The format of the generated ship



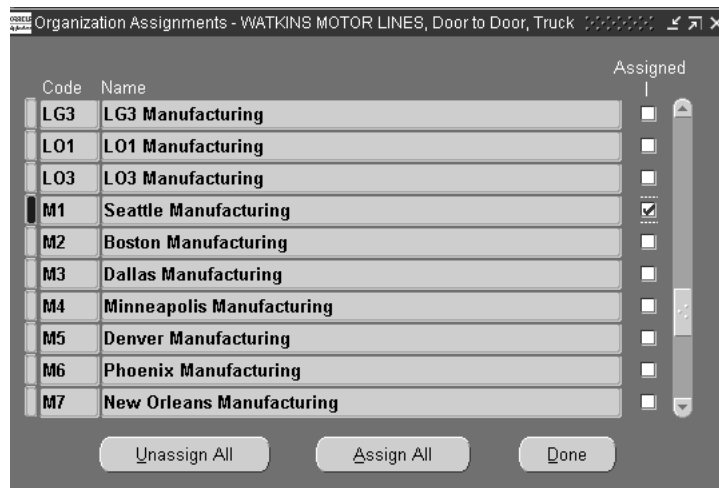
method is <carrier short name>-<transportation mode>-<service level>, for example, WATKINS-Truck-Door to Door.

You can change the generated ship method but each of your ship methods must be unique.

13. Certain carriers offer services with time estimates or guarantees. You can record this information in the Service Times fields and then use it later for reference when deciding which carrier to use for a certain delivery.

Assemble the times so that both of them are in the same unit of time. Enter the best case time in Service Times Min, enter the worst case time in Service Times Max, and select the unit of time of both of them in Service Times Period.

14. Select Enable if you can assign this ship method to organizations and to deliveries in Oracle Shipping Execution. Select Web Enable if you can assign this ship method in Oracle iStore.
15. Save your work.
16. Click Organization Assignments.



17. Select Assigned to assign the ship method to the organizations that use it. You can assign the ship method to more than one organization.

If you want to assign the ship method to all of your organizations, click Assign All to have all organizations' Assigned field selected. If you want to begin again

with your assignments, click Unassign All to have all organizations' Assigned field cleared.

18. Click Done.
19. Save your work.
20. To enter distribution accounts, place your cursor in the Carrier field and navigate to the Freight Carriers window from the Tools menu.

| Carrier Short Name | Carrier Name        | Organization | Distribution Account | Inactive After | [ ] |
|--------------------|---------------------|--------------|----------------------|----------------|-----|
| Tidewater          | Tidewater Transport | V1           | 01-580-7740-0000-000 |                |     |
| Tidewater          | Tidewater Transport | M2           | 01-580-7740-0000-000 |                |     |
| Tidewater          | Tidewater Transport | D1           | 02-580-7740-0000-000 | 19-APR-2002    |     |
|                    |                     |              |                      |                |     |
|                    |                     |              |                      |                |     |
|                    |                     |              |                      |                |     |

21. For each organization to which the carrier is assigned, enter the Distribution Account. If Inactive After displays a date, it is the date that the carrier became inactive in the organization (the Organization Assignments form, Active checkbox is cleared).
22. Save your work.

**To create a ship method defaulting rule**

1. Navigate to the Defaulting Setup - Entity Attributes window.
2. Choose the flashlight icon to display the Entity window.
3. Select Order Line as the entity and click OK; the order line displays.
4. From the attribute list, select Shipping Method.
5. Click Defaulting Rules; the Attribute Defaulting Rules window displays.
6. In the Defaulting Conditions section, enter 1 as the precedence and select Always as the defaulting condition.
7. In the Default Sourcing Rules section, enter 1 as the sequence and select Related Record as the source type.

8. In the Default Source/Value section, select Order Header.Shipping Method.
9. Save your work.

To verify that the defaulting rule is working properly, enter a sales order. Select a ship method in the order header, enter a sales order line, then verify that the line ship method matches the header ship method.

## Defining Freight Costs

You can define allowable freight costs and suggested amounts for shipments. These amounts are applied at ship confirm or once a delivery line is planned. You can add multiple freight costs to a shipment from the list of allowable freight cost types that you define.

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**Note:** If necessary, you can override the freight costs and suggested freight amounts at ship confirm.

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You can also define multiple freight costs for a specific freight cost type. For example, if you want to track different types of insurance, you can create different insurance costs under the insurance freight cost type such as liability insurance or shipping insurance.

When you add freight costs at ship confirmation for a foreign currency order, you can use either your functional currency or the order's foreign currency. If you use your functional currency, the freight charges are converted to the order currency through Oracle Receivables.

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**Note:** You should define all your freight costs in your functional currency for uniformity. You can then modify the currency to match the order, and modify the amount on the Confirm Shipments window, as necessary.

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### Prerequisites

- Define your Freight Cost Type Lookups. See: *Defining Order Management Lookups*.
- To pass freight costs to Order Management and Accounts Receivable so that the customer is invoiced (for example, freight terms = Prepay and Add), then a pricing modifier and pricing formula are required. For more information, see the topical essay on Metalink: Freight/Special Charges and Converting Freight Costs into Charges with Basic Pricing. If set up properly, then freight costs appear as Charges amount on the Sales Order window.

### To define freight costs

1. Navigate to the Freight Cost Types window.

| Name         | Type                | Currency | Amount | From       | To |
|--------------|---------------------|----------|--------|------------|----|
| Duty Free    | Duty Fees           | CAD      | 123.00 | 11-JUN-200 |    |
| Document Fee | Administration Fees | USD      | 90.00  | 11-JUN-200 |    |
|              |                     |          |        |            |    |
|              |                     |          |        |            |    |
|              |                     |          |        |            |    |
|              |                     |          |        |            |    |
|              |                     |          |        |            |    |
|              |                     |          |        |            |    |
|              |                     |          |        |            |    |

Description

2. Enter a name for the freight cost.
3. Select the type of freight cost.
4. Select a currency for the freight charge.
5. Enter the amount for the freight charge.  
You can change this amount during ship confirmation. You can enter 0 as the amount.
6. Optionally, enter effective dates for the freight charge.
7. Save your work.

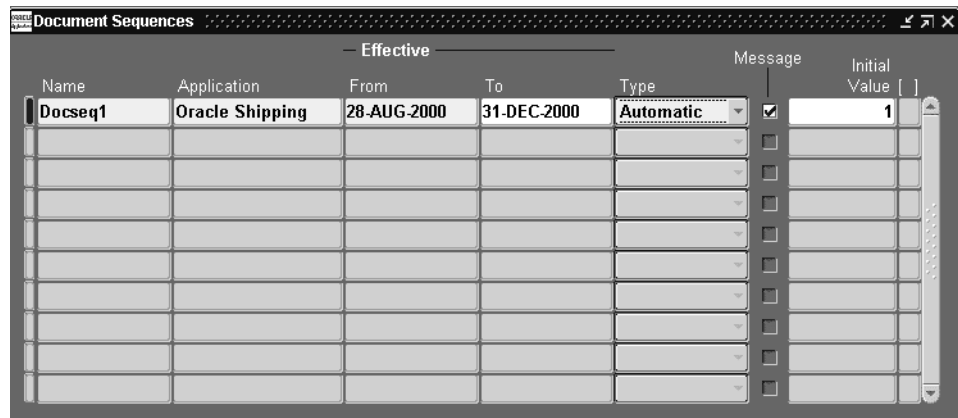
## Defining Document Sequences

You can define document sequences to generate a unique numbering sequence for documents in an Oracle Applications product. For example, document sequencing can be used to uniquely number invoices generated by Oracle Receivables and bills of lading and packing slips in Oracle Shipping Execution.

Using the Sequence Assignments window, you assign your sequence to number only those documents that satisfy rules you define. Document sequences ensure that every document your users create can be accounted for.

### To define document sequences

1. Navigate to the Document Sequences window.



2. Define the document sequence name and application. Name must be a unique name that identifies this sequence in the application. In Application, select Oracle Shipping.

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**Note:** Once the sequence name and application are selected, they cannot be changed.

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3. Select the date range over which the sequence is valid.

The From field automatically defaults to the current date, and once a sequence is defined, the start date cannot be changed. If you leave the To field blank, your document sequence does not expire; and if you enter an end date and define

your sequence, the end date cannot be modified later. If there is no end date defined and there are no active assignments for a sequence, you can disable the sequence by entering the current date as the end date.

4. In Type of numbering, select Automatic. If you have certain localizations, select Gapless only under the direction of Oracle Support.
5. Enable the Message box to have each document display a message to inform the user of the sequence name and value (number). The message displays in the message line near the bottom of the window.

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**Note:** This check box only applies to sequences with the automatic type of numbering. Messages appear only on form displays, and are not written to a request's log file. Once a sequence is defined, the message choice cannot be changed.

---

---

6. Enter an initial value for the first document in your sequence. This field only applies to sequences with automatic or gapless numbering type.

If you leave this field blank, the first document is automatically assigned a value of 1. Once a sequence is defined, this initial value cannot be changed.

You can assign valid operating dates for document sequences, and set them to run manually or automatically during ship confirm and pick release. See: *Application Object Library*.

## Defining Document Categories

You can create a document category for shipping documents such as a bill of lading (BOL) and assign it to a location or all locations. You can create more than one document category for a document, for example, if you want each carrier to have its own Bill of Lading number series, you can set up a unique document category to accommodate this requirements.

You must define a category for each bill of lading and packing slip you wish to create. You can create a bill of lading category for each ship method/carrier or define a single bill of lading category for all. When you use a different bill of lading sequence for each carrier, you can easily identify the carrier by looking at the bill of lading number.

In addition, you can tie a category to a specific location and have a different BOL sequence for the same carrier departing from a different location. For example:

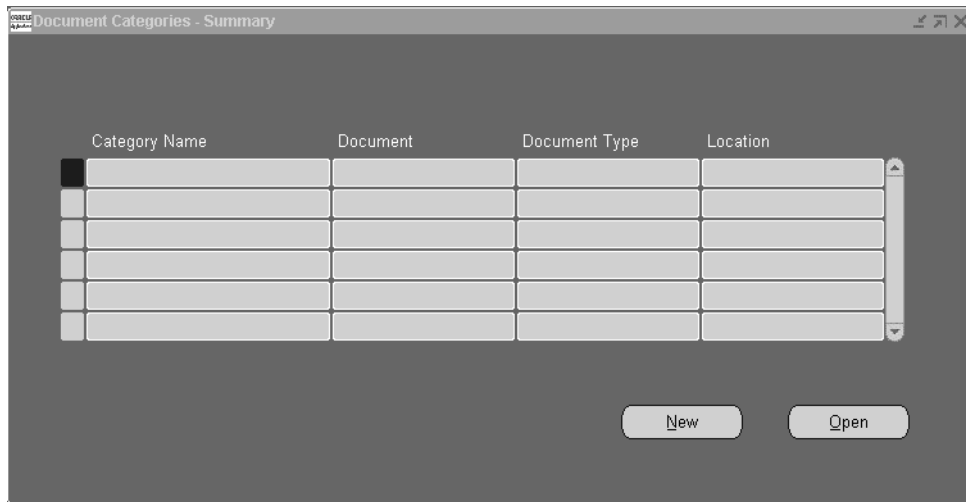
- For a Viking Freight shipment departing from warehouse 1, the bill of lading number is WH1-12345-Viking.
- For a Viking Freight shipment departing from warehouse 2, the bill of lading number is WH2-55466-Viking.

When defining a document sequence for the packing slip, you can create a category for every location or one category for all locations. The document category is specific to a document type and location. The document category is also specific to the application and responsibility from which you accessed the form. If you create a document category called Viking BOL for WH1 in responsibility Oracle Order Management Super User, you must be working as Oracle Order Management Super User to have visibility of this category when assigning document sequences to it.

### **To view existing document categories**

1. Navigate to the Document Categories Summary window.





2. Click the Find button to display the list of existing document categories.
3. Select the document category, and choose the OK button to display it in the Document Categories Summary window.
4. Select the document category and choose the Open button.

### To define a document category

1. Navigate to the Document Categories window.

2. Enter a category name and description.
3. Select the Document assigned to the category; for example, Bill of Lading or Packing Slip.

---

**Note:** You can override this selection when you create documents; however, selecting a default here provides faster document definitions.

---

In the Category Includes region, select the following information about the ship methods and locations to be included in the document category:

4. Select the document type and inventory locations for the document types:
  - *All*: All ship methods and inventory locations are included.
  - *Only*: Only the selected ship methods and inventory locations are included.

Decide at the initial setup whether to set up document categories and locations for All or One (individual) ship method and location. For example, you initially set up document category name SEQ3204 for bills of lading on deliveries shipped via carrier Viking. Then, you select One in the Ship Methods region. Later, you decide to enter a setup for All ship methods for the document Bill of

Lading. The individual bill of lading setup information is overridden by the All ship methods setup.

5. In the Sequence region, enter the prefix, suffix, and delimiter for the sequence number to be printed on the document. Preview the sequence name in Default Appearance.

Enter any alphanumeric values for Prefix and Suffix. Typically, enter a value that identifies the location, carrier, or date in which document is generated. The delimiter separates the prefix and suffix from the generated number and can be any character.

6. Save your work.

## Assigning Document Sequences to Document Categories

After defining document sequences and categories, assign document sequences to document categories. Assigning sequences is application and category specific.

You cannot change a document category definition. If you find incorrect information, create a new category with the correct information, re-assign document sequences to the new category, and disable the old category.

Either leave alone the existing Category or Disable it cautiously since it may affect other documents using the setting. For that reason disabling can not be undone.

For additional information, see *Oracle Order Management Suite Implementation Manual*.

### **To assign document sequences to document categories**

1. Navigate to the Sequence Assignments form.
2. Choose Oracle Shipping as Application.
3. Choose the Document Category.
4. Enter the Start and End Dates.
5. Choose the Document Sequence.

## Defining Shipping Document Sets

You can group related shipping documents and other reports in a set that can be printed at pick release or ship confirm. You can include a variety of shipping documents in a set such as a Bill of Lading and Packing Slip Report and determine the print sequence.

Shipping Execution provides three pre-defined (seeded) document sets:

- *Pick Release documents*: You can set the default Pick Release Document Set in the Pick Release tab of the Shipping Parameters window.
- *All Shipping documents*: You can set the default in the Document Set field of the ship confirm window.
- *Pack Slip only (at ship confirm)*: You can set the default in the Document Set field of the ship confirm window.

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**Note:** You can create additional document sets based on your business needs.

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### To define document sets

1. Navigate to the Shipping Document Sets window.

Shipping Document Sets

Document Set: Pslip

Description:

Usage: Pick Release

Effective Dates:

From: 31-JUL-2001

To: 31-DEC-2001

Printing Method:

Parallel

Sequential

Documents

| Seq | Application     | Report Name                  | Description                              |
|-----|-----------------|------------------------------|--|
| 1   | Oracle Shipping | Pick Slip Report             | Pick Slip Report                         |
| 2   | Oracle Shipping | Pick Selection List Generati | Generate selection list for pick release |
|     |                 |                              |  |
|     |                 |                              |  |
|     |                 |                              |  |
|     |                 |                              |  |

2. Enter a name and description for the new document set.
3. Select the usage for the document set:
  - *Pick Release*: For printing at pick release.
  - *Ship Confirm*: For printing at ship confirm.
4. Optionally, enter the effective stop date for the document set.
5. The default printing method is parallel. This submits the reports for printing separately, each with a different request ID. If one of the reports in the document set fails to print, the other reports still print.
6. In the Sequence field, enter a number that prioritizes the printing order within the document set. For example, if you enter a 1 in the Sequence field, it is printed first.
7. Select the report name to be included in the document set.
8. Save your work.

**To edit document sets**

1. Navigate to the Shipping Document Sets window.
2. Query an existing document set.
3. Edit the existing effective dates, sequence of documents, or documents contained within the document set.
4. Save your work.

## Choosing Printers for Shipping Documents and Labels

You can assign shipping documents and selected reports to specific printers for multiple levels. The levels, ranging from most to least specific, are User, Responsibility, Application, and Site--User is the most specific and Site is the most General.

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**Note:** Use the levels Equipment Type, Zone, and Department when the Oracle Warehouse Management System (WMS) is installed.

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For example, you can assign pick slips and pack slips to your warehouse tractor feed printer, your mailing labels to a tractor feed printer stocked with blank labels, and other documents to a laser printer in your order entry office.

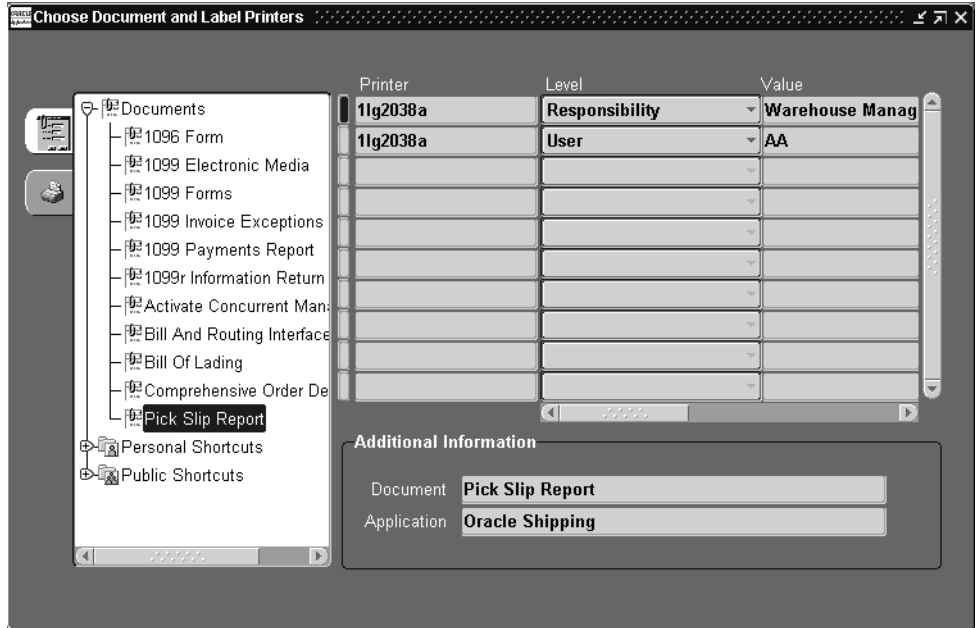
The window consists of a Document and a Printer tab: the Documents tab displays all the documents assigned to a printer, while the Printers tab displays all printers assigned to a document.

If a user or responsibility is not specified, Shipping Execution uses the printer assigned to the application.

### To assign documents to a printer

1. Navigate to the Choose Document and Label Printers window.





2. Choose the Documents icon to display documents currently assigned to printers.
3. Select the document from the Documents list.  
If the document is not listed, select New from the File menu to display documents not yet assigned to a printer. Select the document and click the OK button. The document is added to the Documents list and you can start assigning printers to it.
4. In the Printer field, select the printer you want assigned to the document.
5. In the Level field, select the operational level for the printer. You can choose from User, Responsibility, Application, and Site.

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**Note:** You must assign the shipping document to at least one printer at the Application level. You can use the following levels--Equipment Type, Zone, and Department--when the Oracle Warehouse Management System (WMS) is installed.

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6. Optionally, enter any comments.
7. Enable the Enabled box to activate the printer assignment.
8. Enable the Default box if you want this printer as the default.

Only one printer can be used as the default. For example, if a document is printed in multiple printers by one user, only one printer should be assigned as the default.

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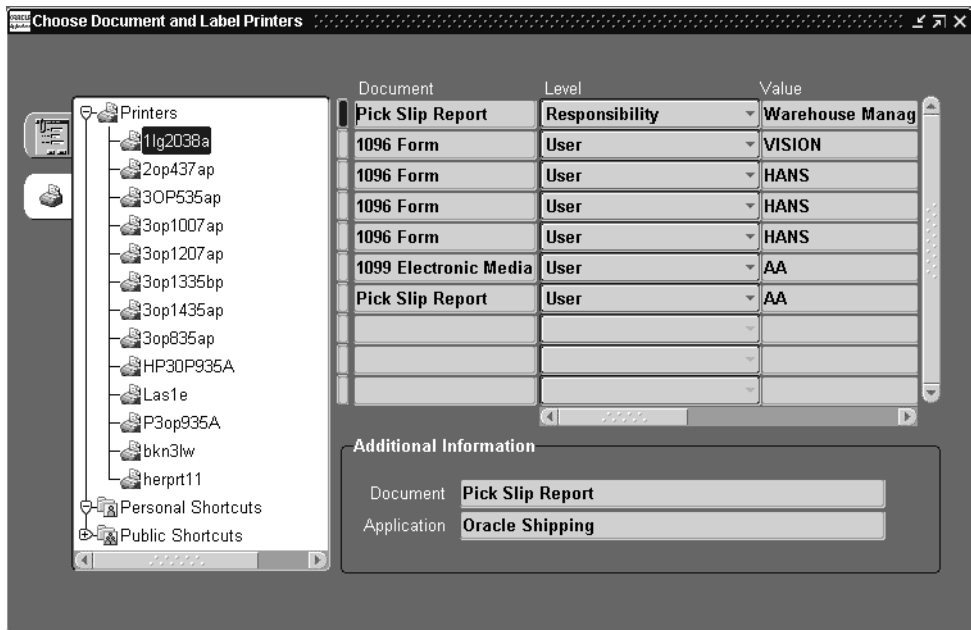
**Note:** The default printer checkbox is visible only in the Document tab.

---

9. Save your work.

### To assign printers to documents

1. Navigate to the Choose Document and Label Printers window.



2. Choose the Printers icon to display printers currently assigned to documents.

3. Select the printer from the list.

If the printer is not listed, select New from the File menu to display new printers. Select the printer and click the OK button. The printer is added to the Printers list and you can start assigning documents to it.

4. In the Document field, select the document to be assigned to the printer.
5. In the Level field, select the operational level for the printer. You can choose from User, Responsibility, Application, and Site.

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**Note:** You can use the following levels--Equipment Type, Zone, and Department--when the Oracle Warehouse Management System (WMS) is installed.

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6. Optionally, enter any comments.
7. Enable the Enabled box to activate the document/printer assignment.
8. Save your work.

## Defining Pick Slip Grouping Rules

You can create grouping rules to organize how picking lines for released sales orders are grouped on to pick slips. For example, if you select Delivery as a grouping criteria, all picking lines for the same delivery are grouped together on a pick slip. If there are multiple deliveries, multiple pick slips are created.

You can also define your grouping criteria further by selecting additional grouping attributes. For example, if you select Delivery and Carrier as grouping criteria, picking lines for the same delivery and carrier are grouped together on a pick slip.

### To define pick slip grouping rules

1. Navigate to the Pick Slip Grouping Rules window.

The screenshot shows the 'Pick Slip Grouping Rules' window. The 'Pick Methodology' dropdown is set to 'User Defined'. The 'Rule Name' text box contains 'Customer Group Rule'. The 'Description' text box contains 'Customer grouping'. The 'Effective' date field is set to '08/27/2001'. The 'Group By' section is a grid of checkboxes for the following attributes: Order Number, Subinventory, Customer (checked), Ship To, Carrier, Trip Stop, Delivery, Shipment Priority, Item, Locator, Lgt, and Revision.

2. Select a pick methodology:
  - **User Defined:** You can modify the Group By clause with this value. Grouping is done according to the parameters set by the user. A unique pick slip number is generated for each group. All tasks corresponding to a pick slip number is dispatched to a single user.  
You can only use the following Pick Methodologies when the Oracle Warehouse Management System (WMS) is installed:
  - **Order Picking:** Grouping is done by order and a unique pick slip number is generated for each order. The entire order will subsequently be dispatched to a single user.
  - **Zone Picking:** Grouping is done by order and zone. A unique pick slip number is generated for each group and dispatched.

- *Cluster*: No grouping of pick tasks is done. The tasks are ordered by locator and dispatched to the appropriate users.
  - *Bulk*: Grouping by item and locator is done. Tasks are consolidated based on this grouping and dispatched to the appropriate users.
3. Enter a name for the grouping rule.
  4. Enter a description for the rule.
  5. Enter an effective date range for the rule.
  6. In the Group By region, select one or more grouping criteria for the pick slips.

---

---

**Note:** You can use the following grouping criteria--Item, Locator, Lot, and Revision--when the Oracle Warehouse Management System (WMS) is installed.

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7. Save your work.

## Defining Release Rules

You can create default pick release rules that are applied at pick release in the Release Sales Orders window. Each rule can be set up with its own set of unique pick release parameters depending on the pick release criteria required.

When pick release is run, the pick release is performed based on the parameters set up in the selected pick release rule. For example, to pick release only backordered lines, you can create a specific rule that pick releases only backordered lines.

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---

**Note:** Although you can also enter the pick release criteria at pick release time without creating a rule, creating a rule is more efficient if you frequently do the same pick release.

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### To define release rules

1. Navigate to the Release Rules window.

Release Rules

Rule:  Effective:  -

**Release Criteria**

Order:

Orders:  Order Type:

Order Number:  Ship Set:

Customer:  Ship-To:

Item:

Prior Reservations Only

**Scheduled Ship Dates**

From:  To:

**Requested Dates**

From:  To:

2. Enter a name for the rule and the effective start date. Optionally, you can enter a stop date.

**In the Order tab:**

Select one or more of the following criteria for your query. Select only the criteria that you want for the pick release:

3. Select the order type and the orders you want included in the pick release:
  - *Unreleased*: The rule is applied to unreleased orders.
  - *All*: The rule applies to all orders.
  - *Backordered*: The rule applies only to backordered orders.
4. Enter the order number, and select the customer and ship-to location.
5. Enable the Prior Reservations Only box if you want to pick-release prior reservations only.
6. Select the range of scheduled ship dates and requested dates.

**In the Shipping tab:**

The screenshot shows the 'Release Rules' dialog box with the 'Shipping' tab selected. The 'Rule' field is 'Release Rule EG' and the 'Effective' date is '17-JUN-2002'. Under 'Release Criteria', the 'Shipping' sub-tab is active. The 'Ship Method' is '000001\_DHL\_A', 'Ship From' is 'V1- New York City', 'Shipment Priority' is 'Standard Priority', 'Release Sequence Rule' is 'Scheduled Date Shipment', 'Autocreate Deliveries' is 'Yes', and 'Document Set' is 'All Pick Release Documents'. There is an unchecked checkbox for 'Include Assigned Lines'.

Select one or more of the following criteria for your query. Select only the criteria that you want for the pick release:

- Enter the ship method to pick release by a certain ship method.

- Select the shipment priority, ship from location, and release sequence rule if required.
- Enable the Include Assigned Lines box if you want to include assigned lines in the pick release.
- Select Autocreate Deliveries if you want to automatically create deliveries for the order lines at pick release.

**In the Inventory tab:**

Release Rules

Rule **Release Rule EG** Effective **05/17/2002**

— Release Criteria

Order Shipping **Inventory**

Warehouse **V1** ...

Project

Task

Pick Slip Grouping Rule **Order Number Only**

Auto Allocate **Yes**

Auto Pick Confirm **Yes**

**Pick From**

Subinventory **Stores**

Locator **1.12.C12..**

**Default Stage**

Subinventory **Stores**

Locator **4.12.D..**

Select one or more of the following criteria for your query. Select only the criteria that you want for the pick release:

- Select the warehouse and default pick slip grouping rule for grouping the pick slips. If the warehouse field is left blank, pick release is done across all warehouse organizations and could include multiple countries.
- Select Auto Allocate if you want to automatically allocate the order lines at pick release. If Auto Allocate is selected, order lines are automatically allocated and reserved. If not selected, you must allocate the lines and create reservations using the Inventory Transact Move Orders window.
- Select Auto Pick Confirm if you want to automatically pick confirm the order lines at pick release.



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**Note:** If Auto Allocate is not selected, you cannot auto pick confirm.

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If both Auto Allocate and Auto Pick Confirm are selected, pick confirmation automatically follows the allocating and reservation process.

7. In the Pick From region, select the Subinventory and Locator of the default picking location.
8. In the Default Stage region, select the Subinventory and Locator of the default staging area.
9. Save your work.

## Defining Release Sequence Rules

You can define release sequence rules to specify the order in which eligible picking lines are allocated to Inventory during pick release. You can release the picking lines by:

- Order number
- Outstanding Invoice Value
- Scheduled Date
- Departure Date
- Shipment Priority

You can assign a priority level to one or more attributes with 1 being the highest priority and 5 being the lowest. You can also define whether you want the picking lines released in ascending or descending order.

For example, if you select the Ascending button for Order, picking lines are released by ascending order number--Order 1 is released first, then Order 2, Order 3, and so on. If the Descending button is selected, the picking lines are released by descending Order number from highest to lowest--Order 4 is released first, then Order 3, Order 2, and Order 1.

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**Note:** You can define either the Outstanding Invoice Value attribute or the Order attribute for the Release Sequence Rule, but you cannot select both for the same rule. No two attributes can be given the same priority.

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You can edit existing release sequence rules, but you cannot change the name of an existing release sequence rule.

### To define release sequence rules

1. Navigate to the Release Sequence Rules window.

|                           | Priority | Ascending             | Descending                       |
|---------------------------|----------|-----------------------|----------------------------------|
| Order                     | 1        | <input type="radio"/> | <input checked="" type="radio"/> |
| Outstanding Invoice Value |          | <input type="radio"/> | <input type="radio"/>            |
| Schedule Date             | 2        | <input type="radio"/> | <input checked="" type="radio"/> |
| Departure Date            | 3        | <input type="radio"/> | <input checked="" type="radio"/> |
| Shipment Priority         | 4        | <input type="radio"/> | <input checked="" type="radio"/> |

2. Enter a name for the rule you want to create.
3. Enter the effective dates for the rule.
4. Specify a Priority (1, 2, 3, 4, or 5 where 1 is the highest priority and 5 is the lowest) for one or all of the following attributes:
  - Order Number:* Releases picking lines based on order number. If you define a priority for the Order Number attribute, you cannot define a priority for the Outstanding Invoice Value attribute.
  - Outstanding Invoice Value:* Releases picking lines based on the outstanding invoice value. If you define a priority for the Outstanding Invoice Value attribute, you cannot define a priority for the Order Number attribute.
  - Scheduled Date:* Releases picking lines based on scheduled date.
  - Departure Date:* Releases picking lines based on departure date.
  - Shipment Priority:* Releases picking lines based on shipment priority.
5. Select the Ascending or Descending toggle next to each attribute.
6. If you select the Ascending toggle next to the Scheduled Date attribute, for example, the picking lines with the earliest Scheduled Date are released first. If you select the Descending toggle, the picking lines with the most recent Scheduled Date are released last.
7. Save your work.

## Defining Transportation Calendars

You can use a transportation calendar to define valid shipping days and hours for a shipper, receiver, and carrier. Using these calendars is optional.

The shipping and receiving calendars designate when your customers, customer sites, suppliers, supplier sites, and internal organizations can ship and receive. The ship confirm process uses these calendars to warn you of invalid shipping days and hours. The calendars do not affect scheduling performed by Oracle Advanced Planning and Scheduling.

For example, if you are shipping a delivery on Tuesday to arrive at your customer's site on Wednesday, ship confirm checks the calendars to confirm that:

- Your warehouse can ship on Tuesday
- Your customer can receive goods on Wednesday
- Your carrier is able to pick up and drop off the deliveries on those days

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**Note:** If the transportation calendars are not defined, every day and time is assumed to be valid for shipping and receiving.

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### Prerequisites

A calendar must be created and defined in the Oracle Bills of Material (BOM) application as a Workday calendar before it can be assigned to a shipper, receiver, or carrier.

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**Note:** The start and end dates for the calendar and the location's shipping and non-shipping patterns must be defined.

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### To define a transportation calendar

1. Navigate to the Assign Calendars window.

**Assign Calendars ()**

Trading Partner

Supplier      Trading Partner Name

Customer

Organization

Carrier      Used For

Calendar Usage: **Shipping**

Default Calendar Code

**Site Calendars**

| Site Name | Calendar Code | Enabled                  |
|-----------|---------------|--------------------------|
|           |               | <input type="checkbox"/> |
|           |               | <input type="checkbox"/> |
|           |               | <input type="checkbox"/> |
|           |               | <input type="checkbox"/> |
|           |               | <input type="checkbox"/> |

Show Candidates

- Choose the role of the trading partner: Supplier, Customer, Organization, or Carrier. For example, if the trading partner is a customer, choose the Customer button.

If you selected Carrier as the trading partner, complete the following:

- In the Used For fields, select if the carrier is used for pick up/delivery to a supplier, customer, or organization and then select the name of the supplier, customer, or organization.

- Select the name of the trading partner to whom you are assigning the calendar.
- Select the calendar usage.

The calendar usage depends on the trading partner you selected. For example, if the trading partner is receiving your goods, create a Receiving Calendar.

- Select the default calendar code. You can override the default calendar code by selecting a new calendar code for each site as described below.

6. Choose the **Show Candidates** button to display the sites for the selected trading partner.
7. If you want to override the default calendar code, select the new calendar code in the **Calendar code** field.
8. Select the **Enabled** box to activate the calendar for that site.
9. Save your work.

## Defining Shipping Exceptions

During the shipping and transportation of goods, unforeseen shipping exceptions can occur that conflict with the actual requirements of the shipper, transportation carrier, or customer.

If these exceptions are not handled promptly or properly, it could result in reduced customer satisfaction and loss of business and revenue for a company. Tracking exceptions can also be helpful to identify and correct defects in the business process.

Oracle Applications provides the following seeded exception definitions to address common business needs:

- WSH\_PICK\_BACKORDER: Backorder occurred at picking time.
- WSH\_PICK\_HOLD: Hold on the line at picking time.
- WSH\_INVALID\_PACKING: Items should be unpacked from the container.
- WSH\_INVALID\_DELIVERY\_PLANNING: Planned delivery has changes
- WSH\_INVALID\_PACKING\_PLANNING: Planned packing has changes.
- WSH\_UNPACK\_ITEM: Packing Exception.
- WSH\_CUSTOMER\_MERGE\_CHANGE: Change to delivery detail due to customer merge.

You can also define other exceptions and processes for exception handling in the Define Shipping Exceptions window.

### To define shipping exceptions

1. Navigate to the Define Shipping Exceptions window.

The screenshot shows the 'Define Shipping Exceptions' window with the following configuration:

- Exception Name: MM SHIPPING EXCEPTIONS
- Description: Mochi's Shipping Exceptions
- Exception Type: Delivery Exception
- Default Severity: High
- Exception Handling:  Manual  Workflow  No Action Required
- Workflow Item Type: (empty)
- Workflow Process: (empty)
- Initiate Workflow button

2. Enter a unique exception name to identify the exception.
3. Enter a description for the exception definition.
4. Select the type of exception that you want to create: Delivery, Picking, or Trip exception.
5. Select one of the following default severity settings:
  - High:* The exception must be handled before the task can be completed.
  - Medium:* The exception must be handled before the task can be completed. However, the manager can override it so that the task can be completed.
  - Low:* A warning is given but the task can be completed.
6. Choose one of the following exception handling methods:
  - Manual:* The exception must be manually corrected and the exception status must be closed.
  - Workflow:* A workflow is used for exception notification and exception handling.
  - No Action Required:* No exception handling method is required.
7. If you select workflow as the exception handling method, enter the workflow item type and enable the Initiate Workflow box.
8. Save your work.

## Defining Containers and Vehicles

Set up containers and vehicles as inventory items. For each container and vehicle, attend to the following:

- In the tabbed region, select OE Transactable.
- In the Physical Attributes tabbed region, Containers region:
  - Select either Container or Vehicle
  - Enter Container Type
  - Enter the container's internal volume
  - Enter the container's maximum load weight.
  - Enter the container's minimum fill %
  - Enter the weight of the empty container.



- Enter the external volume of the container.

For additional information, see the containerization white paper on Metalink.

The screenshot shows the SAP Master Item (V1) Physical Attributes tab for item 'Container 1432'. The organization is 'V1 Vision Operations' and the description is 'Pallet'. The 'Display Attributes' section is set to 'Master'. The 'Physical Attributes' tab is active, showing fields for Weight, Volume, Dimensions, Container, and Type.

Organization: V1 Vision Operations  
Item: Container 1432  
Description: Pallet

Display Attributes:  Master  Org  All

Costing Purchasing Receiving **Physical Attributes** General Planning MPS/MRP Planning Lead Times

**Weight**  
Unit of Measure: [ ]  
Unit Weight: [ ]

**Volume**  
Unit of Measure: [ ]  
Unit Volume: [ ]

**Dimensions**  
Unit of Measure: [ ]  
Length: [ ]  
Width: [ ]  
Height: [ ]

**Container**  
 Container (M)  Vehicle (E)  
Container Type: [ ]  
Internal Volume: [ ]  
Maximum Load Weight: [ ]  
Minimum Fill Percent: [ ]

**Type**  
 Collateral Item (Q)  Electronic Format (Z)  
 Event (X)  Downloadable  
 Equipment  OM Indivisible

## Defining Container-Item Relationships

When setting up container-item relationships, you define the maximum quantity of load items (delivery lines) that can be packed into a container: for example, defining that a maximum of 12 items can be packed into a small box. These relationships are used to:

- calculate/estimate the number of containers required for delivery lines in a delivery or trip. This enables you to use the auto-pack function to auto-pack delivery line items into new containers. The number of containers required to pack the delivery lines is automatically calculated based on the container-item relationships.
- calculate the fill percentage for containers when the Fill Percentage Shipping parameter is set to Quantity. See: [Defining Shipping Transaction Parameters](#) on page 25-32.

In addition to packing delivery lines in containers, Oracle Shipping Execution features an *Auto-pack Master* function that enables you to auto-pack delivery line items into new containers, and then auto-pack these new containers into new master containers such as pallets or railway boxcars.

The innermost container is considered the detail container item, and the pallet or boxcar is the master (outermost) container. If you want to use the auto-pack master feature, you must set up a relationship that relates the container (the load item) to a master container such as a pallet (the container item).

In the following example, auto-pack master would create one container for up to 5 engines and pack up to 4 containers onto a pallet.

**Table 25–2 Auto-Pack Master Example**

| Load Item | Container Item | Max Load Qty | Preferred |
|-----------|----------------|--------------|-----------|
| Engine    | Container      | 5            | Y         |
| Container | Pallet         | 4            | Y         |

For more information, see Auto-packing delivery Lines into Containers, *Oracle Shipping Execution User's Guide*.

### To define container-item relationships

1. Navigate to the Container-Item Relationships window.

The screenshot shows a software window titled "Container-Item Relationships (000)". The window is split into two main sections: "Container" and "Load".

**Container Section:**

| Item | Type | Item | UOM | Maximum Quantity | Preferred Flag           |
|------|------|------|-----|------------------|--------------------------|
|      |      |      |     |                  | <input type="checkbox"/> |
|      |      |      |     |                  | <input type="checkbox"/> |
|      |      |      |     |                  | <input type="checkbox"/> |
|      |      |      |     |                  | <input type="checkbox"/> |
|      |      |      |     |                  | <input type="checkbox"/> |
|      |      |      |     |                  | <input type="checkbox"/> |
|      |      |      |     |                  | <input type="checkbox"/> |
|      |      |      |     |                  | <input type="checkbox"/> |

**Load Section:**

| Item | UOM | Maximum Quantity | Preferred Flag           |
|------|-----|------------------|--------------------------|
|      |     |                  | <input type="checkbox"/> |
|      |     |                  | <input type="checkbox"/> |
|      |     |                  | <input type="checkbox"/> |
|      |     |                  | <input type="checkbox"/> |
|      |     |                  | <input type="checkbox"/> |
|      |     |                  | <input type="checkbox"/> |
|      |     |                  | <input type="checkbox"/> |
|      |     |                  | <input type="checkbox"/> |

**Item Description Section:**

Container:

Load:

2. Select the Container Item from the List of Values.
3. The Container Item and Container Type display in the window.
4. Select the load item that you want to place in the Container Item.
5. Define the maximum quantity of items that can be placed in the Container Item.
6. If the container-item relationship is a common shipping configuration in that inventory organization, select Preferred Flag.
7. Save your work.

## Finding Container-Item Relationships

You can search existing container-item relationships to find:

- Load items associated with a container (LPN) or container type.
- Containers (LPNs) associated with a particular load item.

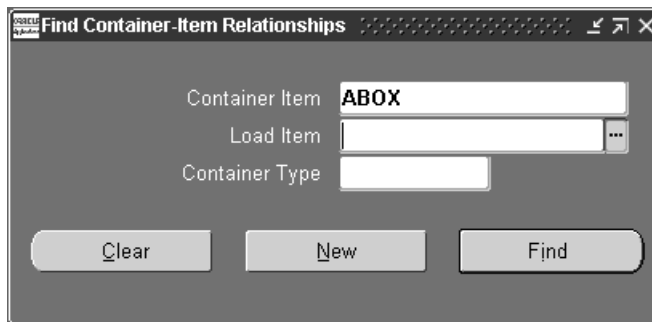
For example, a shipper may search for container-item relationships to find what load items packed in a certain type of container, or the type of container used to pack a particular load item.

If one or more relationships for the selected item, container, or container type are found, the relationship(s) display in the Container-Item Relationships window.

The Preferred Flag box in the Container-Item Relationships window indicates the preferred relationship that is used when auto-packing LPNs. For more information, see Auto-packing delivery Lines into Containers, *Oracle Shipping Execution User's Guide*.

### To find container-item relationships

1. Navigate to the Container-Item Relationships window.
2. Choose the Find icon to display the Find Customer-Item Relationships window.
3. Enter only the criteria required for your search:



The screenshot shows a window titled "Find Container-Item Relationships". It has three input fields: "Container Item" containing "ABOX", "Load Item" (empty), and "Container Type" (empty). Below the fields are three buttons: "Clear", "New", and "Find".

- **Container Item:** Enter the name of the container item to find container-load relationships for that container.
- **Load Item:** Enter the name of the load item to find container-load relationships for that load item.

- *Container Type*: Enter the name of the container type to find all relationships for that container type and the related load items.
4. Choose the Find button to display the relationships in the Container-Item Relationships window. Optionally, choose the New button to create a new container-load relationship.

## International Trade Management Adapter

Use the International Trade Management (ITM) application if you conduct business across international borders and need to ensure that your cross-border trade complies with the export and import rules, regulations, and duties of all countries involved in the transaction (trade compliance).

To provide export compliance and resolve regulatory screening issues, Oracle Applications uses International Trade Management partners that are skilled in the laws of import/export and in acquiring and maintaining this information. With the ITM integration, there is global trade functionality in the standard business transactions. For example, if a partner application detects a customer who is a denied party, Oracle Order Management application places their sales order on hold.

Oracle Order Management provides a workflow subprocess--Export Compliance Screening - Line--that you can insert into your workflows to execute the international trade management functions. This workflow subprocess is part of the seeded Line Flow - Generic, With Export Compliance workflow process.

### Services

Denied Party Screening: Compares transaction party names and addresses to parties that are denied import/export privileges, for example, known terrorists and those guilty of trade violations.

### Processing

Oracle's generic adapter provides a common infrastructure between any Oracle Application and the International Trade Management partner applications.

To use the adapter, populate the adapter interface tables through an API which submits a service request to the adapter. The adapter generates XML transactions for submission to a partner at the appropriate time in your business process.

The adapter can also use your custom processing logic after it performs its usual transaction processing. You can group requests by assigning them to the same request set; the Adapter performs your custom process after it processes all transactions in each request set.

The partner:

- Validates the XML transactions
- Performs the services

- For each transaction, sends a success/fail status and a response to each XML transaction to Oracle Applications.

The adapter receives the statuses and responses and places them in the response interface tables.

The response processor API interprets the messages and takes actions depending on your response rules. It sets the request status based on the highest level message that it finds. The hierarchy of message levels, from highest to lowest, is SYSTEM, DATA, ON\_HOLD, and SUCCESS. The error type is always ITM Adapter.

After analyzing the error responses in a report, you can:

- Run a concurrent process (Skip Screening) to skip adapter screening for certain requests and maintain the workflow activity. Then, you correct the errors and submit the request again.
- Run a concurrent process (Resubmit Errored Requests) to resubmit requests to the ITM Adapter.

### Setup Process

Prior to performing international trade management setup, decide:

- Whether you will need lookup codes in addition to those seeded.
- Which ITM partner you use for which services.
- Which current Oracle Applications users will process international trade management information.
- The master organizations in which they will work.
- Whether to restrict any users to only one organization.
- How Oracle Applications should respond to error conditions from the partners.

To set up for international trade management functions, you must:

- Define international trade management partners
- Define international trade management users
- Specify your preferred partners for the ITM services
- Specify adapter parameters
- Specify the actions to take with the partner responses

## International Trade Management Partners

Use this form to master information about international trade management partners. You enter three types of information about a partner:

- Master information
- Services offered and parameter information about the services
- Parameters about the partner

### To set up international trade management partners

1. Navigate to the ITM Partners form.

ITM Partner

Website

Contact Person

Email

Supports Combination

Services | Partner Parameters

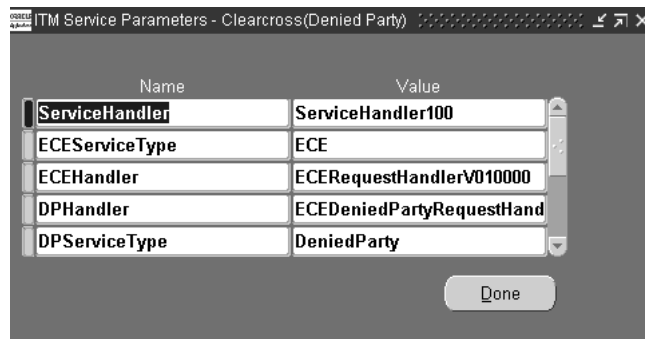
| Service Type | URL                        | Port | Protocol | Name | Certificate |          | Additional Country       |
|--------------|----------------------------|------|----------|------|-------------|----------|--------------------------|
|              |                            |      |          |      | Store       | Password |                          |
| Denied Party | http://prod.Clearcross.com | 80   | HTTP     |      |             |          | <input type="checkbox"/> |
|              |                            |      |          |      |             |          | <input type="checkbox"/> |
|              |                            |      |          |      |             |          | <input type="checkbox"/> |
|              |                            |      |          |      |             |          | <input type="checkbox"/> |
|              |                            |      |          |      |             |          | <input type="checkbox"/> |

Service Parameters

2. In ITM Partner, enter an international trade management partner.
3. In Website, enter the uniform resource locator of the partner's web site.
4. In Contact Person, enter the name of your company's contact at the partner.
5. In E-mail, enter the e-mail address at which you contact the partner with queries.



6. Select Supports Combination if the partner can provide more than one service for each of your requests. If you select this, it indicates that the partner can provide one service for one of your requests, all of its services for one of your requests, and any combination of its services for one of your requests.
7. Save your work.
8. In each line of the Services tabbed region, in Service Type, select a service that the partner provides.
9. In URL, enter the uniform resource locator of the site to which you post the request.
10. In Port, enter the web server listener port number of the uniform resource locator to which you post the request.
11. In Protocol, select the method of communication.
12. If the protocol is HTTPS:
  - In Certificate Name, enter the certificate name.
  - In Certificate Store, enter the certificate storage location.
  - In Certificate Password, enter the certificate password.
13. If you want the service to additionally screen against the parent country, select Additional Country. International Trade Management also screens the secondary country listed in the Shipping Parameters form.
14. Save your work
15. For each service, click Service Parameters.



16. In Name, enter the name of the service parameters and in Value, enter the value for each service parameter. Each International Trade Management partner specifies the additional service parameters that they need in the requests that you submit to them.
17. Click Done and navigate to the Partner Parameters tabbed region.

The screenshot shows the 'ITM Partners' application window. At the top, there are input fields for 'ITM Partner' (containing 'Clearcross'), 'Website', 'Contact Person', and 'Email'. Below these is a 'Supports Combination' checkbox. The main area has two tabs: 'Services' and 'Partner Parameters'. The 'Partner Parameters' tab is active, displaying a table with the following data:

| Name            | Value                    |
|-----------------|--------------------------|
| RequestLanguage | US-ENG                   |
| RequestVersion  | 1.0                      |
| RequestHandler  | GCMRequestHandlerV010000 |
| RequestType     | GCM                      |
| DeploymentMode  | SELFTEST                 |

18. In Name, enter the name of the partner parameters and in Value, enter the value for each partner parameter. Each International Trade Management partner specifies the additional partner parameters that they need in the requests that you submit to them.
19. Save your work.

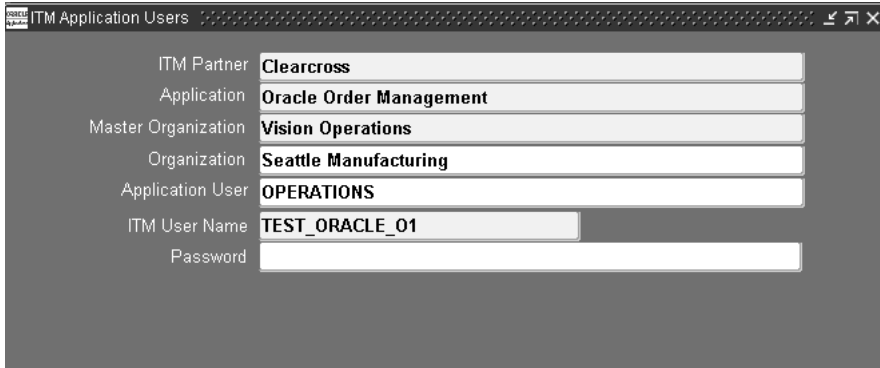
### International Trade Management Users

Use this form to set up the login information for the partners. You can set up a user for an Application User ID, for a master organization, for an individual organization. A more specific setup overrides a more general setup. For example, a request from an organization with a specific setup uses that specific setup while a

request from an organization without a specific setup uses the setup of the master organization to which it belongs.

### To set up international trade management users

1. Navigate to the ITM Application Users form.



|                     |                         |
|---------------------|-------------------------|
| ITM Partner         | Clearcross              |
| Application         | Oracle Order Management |
| Master Organization | Vision Operations       |
| Organization        | Seattle Manufacturing   |
| Application User    | OPERATIONS              |
| ITM User Name       | TEST_ORACLE_01          |
| Password            |                         |

2. In ITM Partner, select an international trade management partner.
3. In Application, select the application which sends requests to this partner (the calling application), for example, Oracle Order Management.
4. In Master Organization, enter the master organization whose organizations send requests to this partner. For Oracle Exchange, enter Operator ID.
5. In Organization, enter an organization which sends requests to this partner. For Oracle Exchange, enter Party ID.
6. In Application User, enter an existing Oracle Applications user name which sends requests to this partner.
7. In ITM User Name, enter the user name that the partner provides for your access to the partner system. The user name can be up to 35 characters and numbers.
8. In Password, enter--twice--the password that the partner provides for your access to the partner system. The password should be at least five characters.
9. Save your work.

## International Trade Management Partner Service Types

Use this form to specify your preference of partners who provide international trade management services to you.

### To set up international trade management partner service types

1. Navigate to the ITM Partner Service Types form.

| ITM Partner | Service Type | Active                              | Priority |
|-------------|--------------|-------------------------------------|----------|
| Clearcross  | Denied Party | <input checked="" type="checkbox"/> | 1        |
|             |              | <input type="checkbox"/>            |          |
|             |              | <input type="checkbox"/>            |          |
|             |              | <input type="checkbox"/>            |          |
|             |              | <input type="checkbox"/>            |          |

2. Select an application from which you make service requests.
3. Select a master organization from which from which you make service requests. For Oracle Exchange, enter Operator ID.
4. Enter one line of information for each service and partner that you may use. If you may use more than one partner for a service, enter each partner-service combination on a separate line.
5. In ITM Partner, select a partner who provides a service.
6. In Service Type, select a service that the partner provides.
7. Select Active to indicate that you can submit this type of service request to this partner. Clear Active to indicate that you do not want to submit this type of service request to this partner. You can have only one Active partner for each service at one time.
8. In Priority, select the indicate the processing priority of this service type with this partner in relation to other partners and services. Select a number from one (highest priority) through five.

For example, you specify that ITM partner A's denied party transactions are priority 1 in the Operations organization and priority 2 in the Geneva Manufacturing organization. The ITM Adapter processes ITM partner A's denied party transactions from the Operations organization before those from the Geneva Manufacturing organization.

## International Trade Management Adapter Parameters

Use this form to set up adapter parameters. After you set up or change parameters, stop and start the Adapter (ShutDown ITM Adapter concurrent process and StartUp ITM Adapter concurrent process).

### To set up international trade management adapter parameters

1. Navigate to the ITM Parameter Setup form.

| Name               | System Defined | Override Allowed                    | User Defined        |
|--------------------|----------------|-------------------------------------|---------------------|
| ITM Root Directory |                | <input checked="" type="checkbox"/> | /home/cnarasim/itr  |
| Output Directory   | output         | <input checked="" type="checkbox"/> | output              |
| Save XML Response  | OFF            | <input checked="" type="checkbox"/> | ON                  |
| Save XML Request   | OFF            | <input checked="" type="checkbox"/> | ON                  |
| Log File Directory | log            | <input checked="" type="checkbox"/> | log                 |
| Log Severity       | 3              | <input checked="" type="checkbox"/> | 1                   |
| Set Proxy          | TRUE           | <input checked="" type="checkbox"/> | FALSE               |
| Proxy Host         |                | <input checked="" type="checkbox"/> | www.proxy.us.oracle |
| Proxy Port         |                | <input checked="" type="checkbox"/> | 80                  |
| Polling Frequency  | 5000           | <input checked="" type="checkbox"/> | 5000                |

Description: The Root Directory for all the ITM related files.

2. The valid values are seeded, you cannot create new parameters. You can change the parameters whose Override Allowed checkbox is selected.
3. Highlight the parameter that you want to change.
4. In Description, read instructions for the parameter.
5. In User Defined, enter your changed information.

6. Save your work.

**Adapter Parameter Details**

**ITM Root Directory:** The root directory for all the ITM Adapter related files, for example: d:\ITM.

**Output Directory (Default = output):** The directory under the ITM Application Root Directory where all the request and response XML files are stored. For example, if the parameter value is output, then all the request and response XML Files will be stored in the d:\ITM\output directory. If this directory structure does not exist then the Adapter Startup Concurrent Program errors out.

**Save XML Response (Default = OFF):** This option enables all the response XML Files sent by ITM partner to be stored in the Output Directory. The response XML files follow the naming convention Gen\_Res\_<Vendor\_name>\_<request\_control\_id>\_<response\_header\_id>.xml (Vendor\_name indicates the sender of this response document), except for Clearcross files which follow the naming convention CC\_Res\_<Vendor\_name>\_<request\_control\_id>\_<response\_header\_id>.xml.

**Save XML Request (Default = OFF):** This option enables all the request XML Files generated by the ITM Adapter to be stored in the Output Directory. The request XML files follow the naming convention Gen\_Req\_<request\_control\_id>.xml except for Clearcross files which follow the naming convention CC\_Req\_<request\_control\_id>.xml .

**Log File Directory (Default = log):** The directory under the ITM Application Root Directory where all the log files generated by ITM Adapter are stored. For example, if the parameter value is log, then all the log files will be stored in the d:\ITM\log directory. If this directory structure does not exist then the Adapter Startup concurrent program errors out.

**Log Severity (Default = 3):** The log severity values are:

- 1: Debug. If the log severity is 1, the log files generated by ITM Adapter print all types of messages; recommended for heavy debugging.
- 2: Information
- 3: Warning
- 4: Error. If the log severity is 4, the log files generated by ITM Adapter print only the error messages.

**Set Proxy (Default = True):** Set this value to True if proxy settings are required.

**Proxy Host:** If the parameter Set Proxy is True then Proxy Host should be not null.

**Proxy Port:** If the parameter Set Proxy is True then Proxy Port should be not null.

**Polling Frequency (Default = 3000):** This is the time interval for polling the interface table in milliseconds. For example, if this value is 500 milliseconds, the interface tables are checked for new requests after every 500 milliseconds. Based on the frequency of requests submitted, this parameter has to be set so that the Adapter immediately picks up by the requests.

**Task Size (Default = 2):** The number of requests which will be grouped and sent as one request to the ITM partner Application. Task Size of 2 is recommended for better performance.

**Maximum DB Connection (Default = 7):** Based on the load, the ITM Adapter can increase the number of connections in the Connection Pool to this value. This parameter should be ideally set to (Maximum threads) + 1.

**Minimum DB Connections (Default = 4):** The minimum number of database connections which the ITM Adapter could get during startup. The minimum number of connections should be at least (Minimum threads) + 1. Ideally this parameter can be set to say (Minimum threads) + 2.

**DB Connection Timeout (Default = 5):** Maximum wait time while getting a database connection (in milliseconds).

**DB Connection Idle Time (Default = 300):** Maximum time for which a database connection can be idle. If the number of connections in the connection pool is greater than Minimum DB Connection, a connection will be dropped if the idle time exceeds this parameter. The idle timeout should be large enough so that connections are not too frequently dropped. But it should not be so large as to hold on to costly connection resources. This parameter can be set to 5 minutes so that we are not holding the resource for a longer time.

**Maximum Threads (Default = 5):** The maximum number of threads ITM Adapter can create.

**Minimum Threads (Default = 2):** The number of worker threads that the ITM Adapter creates initially. For example, if there are 500 requests submitted each hour, you can have a minimum of three threads running so that no extra time is spent in creating new threads when a request is submitted.

**Maximum Resubmits on Error (Default = 2):** If a request errors out with Error Code 100, 101, 106, 108, 109, or 110, the Adapter tries to resubmit these requests. This parameter limits the number of times these requests can be resubmitted. We recommend an initial value of 2.

**Thread Maximum Idle Time (Default = 100000):** The maximum time a thread can be idle. After this interval that thread is ended.

**Queue Polling Interval (Default = 7000)**

**XSL Transform URL (Default = http://www.w3.org/1999/XSL/Transform):** W3C XSL transform URL.

**Request Stylesheet:** The stylesheet used for producing the request root of the XML request document.

**Weight of Priority 1 Queue (Default = 33):** Weight attached to the Priority 1 queue.

**Weight of Priority 2 Queue (Default = 27):** Weight attached to the Priority 2 queue.

**Weight of Priority 3 Queue (Default = 20):** Weight attached to the Priority 3 queue.

**Weight of Priority 4 Queue (Default = 13):** Weight attached to the Priority 4 queue.

**Weight of Priority 5 Queue (Default = 7):** Weight attached to the Priority 5 queue.

### International Trade Management Response Rules

Use this form to set up partner response rules that the adapter and the Response Processor API uses to translate error types and error codes from the partner engines to your interpreted values.

#### To set up international trade management response rules

1. Navigate to the ITM Response Errors Classification form.

| ITM Partner | Error Type | Error Code | Interpreted Value |
|-------------|------------|------------|-------------------|
| Clearcross  | 2          | 102        | Data              |
| Clearcross  | 5          | 8          | Data              |
|             |            |            |                   |
|             |            |            |                   |
|             |            |            |                   |
|             |            |            |                   |
|             |            |            |                   |
|             |            |            |                   |



2. In ITM Partner, enter a partner.
3. In Error Type and Error Code, enter an error type and code.
4. In Interpreted Value, select the interpreted value for the combination of the error code and error type:
  - SYSTEM: System error
  - DATA: Data error
  - SUCCESS: No error condition
  - You cannot set the value OVERRIDE
5. Save your work.

## Regions and Zones

### Overview of Regions and Zones

If you have the Oracle Advanced Planning and Scheduling Suite installed, use regions and zones to group by geographical areas and save the effort of setting up point-to-point transit times.

You can:

- Group geographical areas into regions and set transit times from your warehouses to the regions. For example:
  - Create a region for San Francisco Bay U.S.A. and specify that it consists of the cities San Francisco, Oakland, and Berkeley.
  - Set up a transit time of two days from your New York U.S.A. warehouse to the San Francisco Bay U.S.A. region.
- Group regions into zones and set transit times from your warehouses to the zones to encompass a larger geographic area.

The Oracle Advanced Planning and Scheduling Suite uses this origin-destination information to plan and schedule shipment departure dates, arrival dates, and sourcing.

Region and zone terms are:

- **Region:** A geographical area, for example, a group of cities, states, provinces, or a country. Region information is hierarchical (postal codes belong to cities which belong to provinces which belong to countries), standard (defined by political and geographical boards), and is usually available through third-party vendors and standards agencies.

You can model regions at different levels of scale. A region can consist of countries, provinces/states, cities, or postal codes.

- **Sub-region:** A child of a region. For example, the sub-regions of the region Canada can be its provinces; the sub region of the region London can be its postal codes.
- **Zone:** A collection of regions, for example, a western zone. Zone information is unique to your business.
- **Regional transit times:** In-transit times specified between ship-from locations and locations, zones, and regions based on shipping methods. You can specify cost and load to track specifics of each shipping method.

When the Oracle Advanced Planning and Scheduling Suite plans shipments, it assumes that the transit time from your facility to all locations within the zone is the same. For example:

- You ship from Tokyo, Japan to customers in Manila, Philippines and Taipei, Taiwan.
- You place Manila and Taipei in zone A.
- You specify the regional transit time between your Tokyo facility and zone A as two days.
- Oracle Applications plans shipments from Tokyo to Manila for two days and shipments from Tokyo to Taipei for two days also.

The advantages of planning shipments in terms of regions and zones are:

- You enter and maintain in-transit and sourcing rules information between zones rather than between every ship-from/ship-to address combination.
- With less in-transit information, Oracle Shipping Execution finds the information that you need faster.
- The in-transit information automatically applies to new customers.
- For shipping quotes, you can more easily match your inter-zone shipment requirements to service provider shipping lanes.

### Setting Up

If you ship to multiple locations that are near to each other and you want to plan shipments by regions and zones:

- Determine the regions and sub-regions that support your the Oracle Advanced Planning and Scheduling Suite shipment planning, create them, and map address locations to them.
- Determine the zones that support your the Oracle Advanced Planning and Scheduling Suite shipment planning, create them, and assign regions to them.
- Specify the in-transit times between zones (regional transit time) and preferred ship method between zones.

Use two concurrent processes to map and load bulk geographical information. Use the forms for individual data entry and data correction.

## Order Processing

When calculating available-to-promise, the Oracle Advanced Planning and Scheduling Suite uses regional transit times.

When scheduling shipments using zones and regions, the Oracle Advanced Planning and Scheduling Suite:

- Consults the sales order line ship-from location, ship-to country, ship-to postal code, ship method, and customer request date.
- Determines the ship-from and ship-to zones.
- Determines the regional transit time between the zones. If you specify a shipping method, it determines that transit time. If you do not specify a shipping method in the sales order line, it determines the transit time of the default shipping method.
- Calculates the scheduled ship date from the available to promise date and the regional transit time.

If you have specified an in-transit time and shipping method for the specific ship-to location, the Oracle Advanced Planning and Scheduling Suite uses that information instead of the regional information.

## Setting Up Region and Zone Information

Use the following procedures to set up region and zone information through forms and through concurrent processes.

### To add regions

1. Navigate to the Regions and Zones form, Regions tabbed region.

The screenshot shows a software window titled "Regions and Zones" with a "Zones" tab selected. It contains a table with the following columns: Country, Country Code, State/Province, State/Province Code, City, City Code, Postal Code From, and Postal Code To. The table lists several regions, including France, Italy, Spain, and the United States (with sub-regions like California and Utah). The last row shows a region for France with postal code ranges from 1 to 10.

| Country       | Country Code | State/Province | State/Province Code | City          | City Code | Postal Code From | Postal Code To |
|---------------|--------------|----------------|---------------------|---------------|-----------|------------------|----------------|
| France        | FR           |                |                     |               |           |                  |                |
| Italy         | IT           |                |                     |               |           |                  |                |
| Spain         | SP           |                |                     |               |           |                  |                |
| United States | US           |                |                     |               |           |                  |                |
| United States | US           | California     | CA                  |               |           |                  |                |
| United States | US           | Utah           | UT                  |               |           |                  |                |
| France        | FR           |                |                     | Paris         | PRS       |                  |                |
| Italy         | IT           |                |                     | Lucca         | LCU       |                  |                |
| United States | US           | California     | CA                  | San Francisco | SFO       |                  |                |
| France        | FR           |                |                     | Paris         | PRS       | 1                | 10             |

At the bottom right of the window is a button labeled "Sub-Regions".

2. Enter the following information as available.
3. When you enter a region, you can specify only one new component.  
For example, if you enter country China, province/state Guangdong, and city Guangzhou, you must already have entered the region country China, province/state Guangdong. Use the list of values if you are unsure about existing information for each field.
4. Save your work.

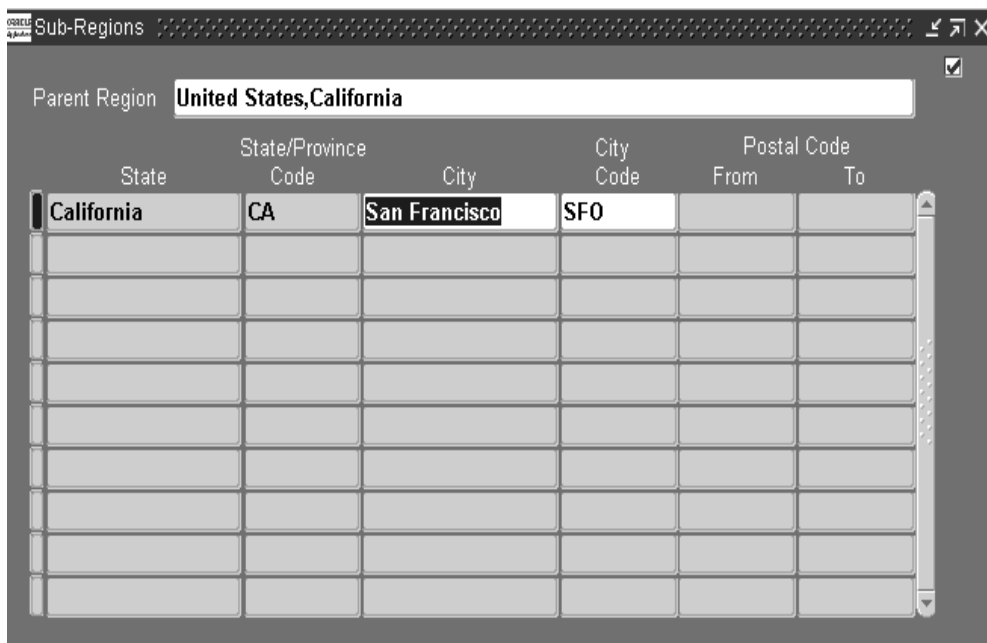
### To update regions

1. Navigate to the Regions and Zones form, Regions tabbed region.
2. From the menu bar, select Query > Enter
3. Enter search criteria.
4. From the menu bar, select Query > Run and view regions that match your search criteria.

5. Select one of the regions that displays and update the information.
6. Save your work. If you have changed a parent region, the region becomes assigned to a new parent.

**To add and update sub-regions**

1. Navigate to the Regions and Zones form, Regions tabbed region.
2. From the menu bar, select Query > Enter
3. Enter search criteria.
4. From the menu bar, select Query > Run and view regions that match your search criteria.
5. Select one of the regions that displays and click Sub-regions.



6. View existing sub-region information and add or change information

When you enter a sub-region, you can enter only one component and the region must exist. For example, you cannot change the region country United States

and province/state California and the sub-region city San Diego in one entry.  
Instead:

- Enter region country United States, province/state California.
- Query region country United States, province/state California and enter sub-region city San Diego.

### To add zones

1. Navigate to the Regions and Zones form, Zones tabbed region.

Regions and Zones

Regions Zones

Zone  Zone Level

**Zone Components**

| Country       | Country Code | State/Province | State/Province Code | City          | City Code | Postal Code From | Postal Code To |
|---------------|--------------|----------------|---------------------|---------------|-----------|------------------|----------------|
| United States | US           | Utah           | UT                  |               |           |                  |                |
| United States | US           | California     | CA                  | San Francisco | SFO       |                  |                |
|               |              |                |                     |               |           |                  |                |
|               |              |                |                     |               |           |                  |                |
|               |              |                |                     |               |           |                  |                |
|               |              |                |                     |               |           |                  |                |
|               |              |                |                     |               |           |                  |                |
|               |              |                |                     |               |           |                  |                |
|               |              |                |                     |               |           |                  |                |

2. In Zone Name, enter the zone name.
3. In the Zone Components region, enter information about the regions that you are assigning to the zone. You cannot assign a region and its parent regions to the same zone.
4. Save your work.

**To update zones**

1. Navigate to the Regions and Zones form, Zones tabbed region.
2. From the menu bar, select Query > Enter
3. Enter search criteria.
4. From the menu bar, select Query > Run and view zones that match your search criteria.
5. Update the zone name and components information.
6. Save your work.

**To search for regions and zones**

1. Navigate to the Regions and Zones form, and select a tabbed region.
2. From the menu bar, select Query > Enter.
3. Enter values or partial values for the elements on which you want to search.
4. From the menu bar, select Query > Execute.
5. View information about the regions or zones that match the search criteria.

**Entering transit times**

1. Navigate to the Transit Times form.



The screenshot shows the 'Inter-Location Transit Times' window. It contains a table with the following data:

| From Location | Description             | Destination Type | Destination  | Description             |
|---------------|-------------------------|------------------|--------------|-------------------------|
| M3 - Dallas   | Dallas Mfg site used in | Location         | M1 - Seattle | Seattle Mfg Plant 1 use |
| S1 - Chicago  | Chicago Subassembly F   | Location         | M1 - Seattle | Seattle Mfg Plant 1 use |
| S1 - Chicago  | Chicago Subassembly F   | Location         | M2 - Boston  | Boston Mfg Plant 2 use  |
| W1 - Camden   | W1 - Camden Distributic | Location         | 2403         | 100 Smallman Street     |
| W1 - Camden   | W1 - Camden Distributic | Location         | 2404         | 1000 Cedar Blvd         |

Below the table is the 'Ship Methods' section, which includes a table with the following data:

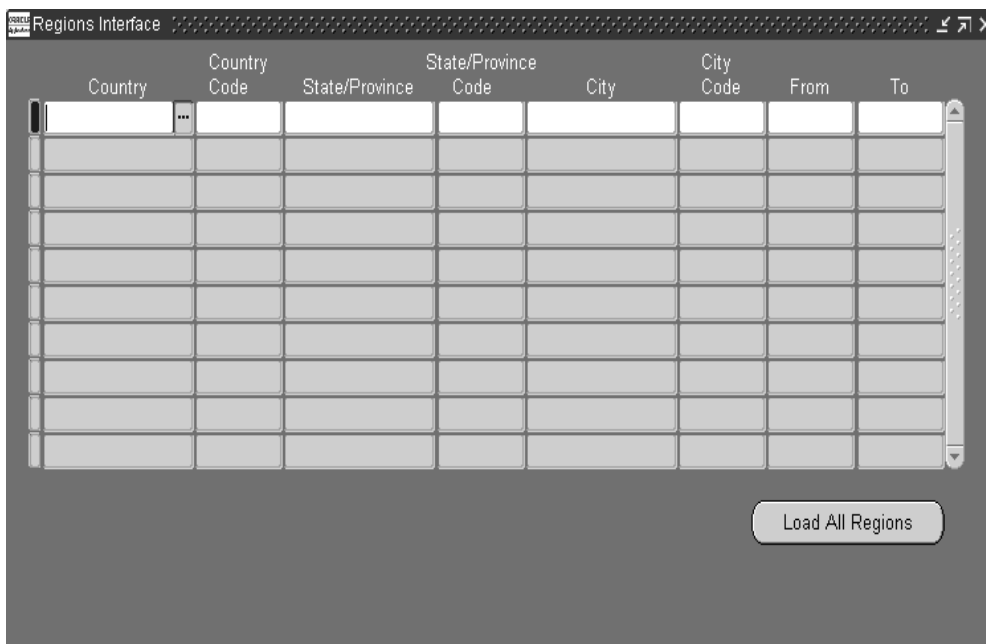
| Shipping Method | Intransit Time | Daily Capacity | Load Weight UOM | Cost Per Unit |   |
|-----------------|----------------|----------------|-----------------|---------------|---|
| GROUND          | 2              | 100            | Ea              | 300           | G |
|                 |                |                |                 |               |   |
|                 |                |                |                 |               |   |
|                 |                |                |                 |               |   |

2. Enter from location information
3. Select destination type and enter the destination information:
  - If you select Location, select the location from the list of values.
  - If you select Region, in the Select Regions window, use the lists of values to specify the region components.
  - If you select Zone, select the zone from the zone list of values.
4. In the Ship Methods region, in Shipping Method, enter each shipping method that you expect to use for this shipping lane

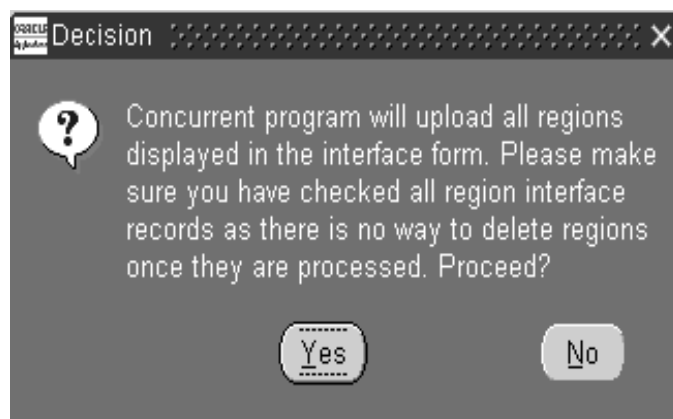
### To load regions from locations

1. Execute the Location to Region Mapping concurrent process. After it completes, check the log to verify the number of regions loaded and that there are no errors. For additional information, see *Oracle Shipping Execution User's Guide*, Reports, Documents, and Processes section.

2. Navigate to the Regions Interface form. Query the region information that you have mapped and verify it; remove any that you do not want to load.



3. Execute the Region Interface concurrent process by clicking Load All Regions and clicking OK. For additional information, see *Oracle Shipping Execution User's Guide*, Reports, Documents, and Processes section.





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## Shipping Migration

This chapter contains migration information about Shipping Execution from R10.7 to R11*i* and from R11 to R11*i*. Topics covered in this chapter include:

- [Overview](#) on page 26-2
- [Technical Migration R10.7 to R11\*i\*](#) on page 26-5
- [Technical Migration R11 to R11\*i\*](#) on page 26-6

## Overview

**Table 26–1 Shipping User Interface (UI) Entities Migration from R10.7 to R11i**

| Release 10.7                         |         | Release 11i                             |
|--------------------------------------|---------|---|
| Picking Headers                      | Maps to | Trips, Stops, Deliveries, Delivery Legs |
| Picking line<br>Picking line details | Maps to | Delivery details                        |

**Table 26–2 Shipping User Interface (UI) Entities Migration from R11 to R11i**

| Release 11                         |         | Release 11i                 |
|------------------------------------|---------|-----------------------------|
| Departures                         | Maps to | Trips, Stops, Delivery Legs |
| Deliveries                         | Maps to | Deliveries, Delivery Legs   |
| Packed Containers                  | Maps to | Containers/LPNs             |
| Delivery Lines                     | Maps to | Delivery Details            |
| Warehouse,<br>Customer/Vendor Site | Maps to | Locations                   |

## Functional Differences

**Ship Set Validation** In R10.7 and R11 ship sets are validated while Pick Releasing for unreleased lines and backordered lines.

In R11i, ship sets are validated while Ship Confirming a Delivery. The Order lines will be released with available quantity irrespective of their being in a ship set.

There is a parameter control Enforce Ship Sets & Ship Models. If this control is enabled (checked), ship set is validated at pick release. If this control is disabled (unchecked), ship set is validated at ship confirm.

Note: If you authorize the ship set to be broken then the remaining shipment is no longer part of the original ship set group. The remaining unshipped line quantities become disassociated from the ship set as individual lines.

**Ship Model Complete Validation** In R10.7 and R11, Ship Model Complete is validated at time of Pick Release for unreleased and backordered Models.

In R11i, Ship Model Complete is validated at Ship Confirm.

There is a parameter control Enforce Ship Sets & Ship Models. If this control is enabled (checked), ship model complete is validated at pick release. If this control is disabled (unchecked), ship model complete is validated at ship confirm.

**Inventory Controls** In R10.7 and R11, you cannot choose or update the Inventory Controls of the Pick Released items if OE Profile:Reservations = Yes.

In R11i, you can update the Inventory Controls of any item while Pick Confirming. (OE:Reservations are obsolete.)

**Ship Confirm Open Interface and Public API's** In R10.7 and R11, Ship Confirm Open Interface process can be submitted from the application menu.

In R11i, Ship Confirm Open Interface Application menu is replaced by Public API's.

The Shipping Execution 11i Public APIs are viewable on METALINK.

1. Sign on to Metalink and click Technical Libraries.
2. Click Apps 11i & Euro Info.
3. Click Documentation.
4. In the Distribution/Supply Chain area, click Order Management.
5. Click Oracle Order Management Suite APIs and Open Interfaces Manual - Release 11i to view the document. It is in .pdf format so you must have Adobe Acrobat installed to view it.

**Smallest Unit to be Ship Confirmed** In R10.7, Pick Slip is the smallest unit that could be Ship Confirmed.

In R11 and R11i, a Delivery is now the smallest unit that can be Ship Confirmed.

**Serial Number Entry** In R10.7 and R11, serial numbers are entered while Ship Confirming the order line for pre-specified serial controlled items.

In R11i, serial numbers need to be entered while Pick Confirming pre-specified serial controlled items. You can also enter and update serial numbers at ship confirm.

**Pick Slips, Batches and Deliveries** In R10.7, Consolidated Pick Slip and Open Batch Reports are available.

In R11, you can query open Deliveries and directly take action on them from within the Ship Confirm Delivery form. Pick Slip Reports remain available.

In R11i, you can query open Deliveries and directly take action on them from within the Transactions form. Pick Slip Reports remain available.

## Migration: Common Technical Considerations

WSH\_DELIVERY\_DETAILS contains all the lines which needs to be processed through Shipping Execution. SOURCE\_CODE = 'OE' identifies the lines imported from OE.

- WSH\_DELIVERY\_DETAILS.SOURCE\_HEADER\_NUMBER stores Order Number
- WSH\_DELIVERY\_DETAILS.SOURCE\_HEADER\_ID stores OE\_ORDER\_LINES\_ALL.HEADER\_ID
- WSH\_DELIVERY\_DETAILS.SOURCE\_LINE\_ID stores OE\_ORDER\_LINES\_ALL.LINE\_ID
- Freight Carrier information in ORG\_FREIGHT is upgraded to lookups (FND\_LOOKUP\_VALUES) with lookup\_type = 'SHIP\_METHOD'

Upgraded table information: ORG\_FREIGHT and SO\_PICKING\_RULES

- WSH\_CARRIER\_SHIP\_METHODS will store the link between Carrier and Ship Method. While upgrading each record in ORG\_FREIGHT will have a corresponding record in FND\_LOOKUP\_VALUES and WSH\_CARRIER\_SHIP\_METHODS.
- All document sets and the individual report will be upgraded for reference purposes. The User will be responsible for updating the document set lines to the equivalent new Reports manually.
- SO\_PICKING\_RULES is upgraded to WSH\_PICKING\_RULES, but the document\_set will be NULL, which has to be updated manually.

WSH\_DELIVERY\_DETAILS.RELEASED\_STATUS can have the following values:

- **Ready To Release** Line is booked but has not been submitted for Pick Release.
- **Released to Warehouse** Pick Release is started but not completed. Either no allocations were created or allocations have not been Pick Confirmed.
- **Backordered** Line is pick released but no allocation was created, or a partial allocation occurred. For example, an item with a delivery line of quantity 100 has 25 available for allocation. The original delivery line splits; the new line represents the unallocated portion with quantity 75 and status Backordered.



The original line represents the allocated portion with quantity 25 and status Staged.

- **Staged** Line is successfully pick released (detailed and pick confirmed). This occurs after pick confirm to indicate that the subinventory transfer from source location to staging location is complete. Lines remain staged until they are ship confirmed.
- **Shipped** Delivery to which the line is associated is Ship Confirmed.

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**Note:** If you create a container in the Shipping Transactions form, Oracle Shipping Execution creates a WSH\_DELIVERY\_DETAILS record with

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- **Cancelled** Sales order line is canceled.

## Technical Migration R10.7 to R11i

### Picking Headers, Deliveries and Trips

SO\_PICKING\_BATCHES\_ALL WSH\_PICKING\_BATCHES

WSH\_NEW\_DELIVERIES WSH\_DELIVERY\_ASSIGNMENTS

After upgrade every Closed Picking Header (in SO\_PICKING\_HEADERS\_ALL) is assigned a delivery\_id (generated from a sequence). Each of these Delivery is moved into WSH\_NEW\_DELIVERIES in R11i.

For each Delivery inserted into WSH\_NEW\_DELIVERIES a TRIP is created and a record is inserted into WSH\_TRIPS.

For each Delivery created a record is inserted into WSH\_DELIVERY\_LEGS, where the PICK\_UP\_STOP\_ID is the location\_id attached to the warehouse from where the line was shipped and the DROP\_OFF\_STOP\_ID is the location\_id of SO\_PICKING\_HEADERS\_ALL.SHIP\_TO\_SITE\_USE\_ID

For each TRIP created, two records are inserted into WSH\_TRIP\_STOPS, one with STOP\_LOCATION\_ID as the location id of the warehouse from which the line is shipped and the other is the location\_id of SO\_PICKING\_HEADERS\_ALL.SHIP\_TO\_SITE\_USE\_ID

### **Backordered Lines**

All Backordered lines in R10.7 are created as fresh line in WSH\_DELIVERY\_DETAILS with RELEASED\_STATUS = 'R' and ordered\_quantity = backordered\_quantity.

### **Pick Slip, Pack Slip, and Bill of Lading**

Pick Slip numbers initially stored in SO\_PICKING\_HEADERS\_ALL are NOT upgraded to R11i.

New Pick Slip Numbers are stored in MTL\_MATERIAL\_TRANSACTIONS and MTL\_MATERIAL\_TRANSACTIONS\_TEMP.

Number of Boxes entered while Ship Confirming a Pick Slip in R10.7 (stored in so\_picking\_headers\_all.number-of-boxes) is NOT upgraded and dropped during R11i upgrade process.

The field Number Of LPN in the Shipping Transactions form, Deliveries tabbed region. There is a script to upgrade the number\_of\_boxes in so\_picking\_headers\_all to number\_of\_LPN in WSH\_NEW\_DELIVERIES.

Packing Slips and Bill of Lading reports cannot be generated for SO lines upgraded from R10.7.

In R11i, a unique sequence number identifies each instance of the report. Initial steps are required to generate these reports in R11i.

Each line in SO\_PICKING\_LINE\_DETAILS that is attached to a Closed Picking Header is moved into WSH\_DELIVERY\_DETAILS.

## **Technical Migration R11 to R11i**

### **Deliveries and Delivery Legs**

Data from WSH\_DELIVERIES is moved into WSH\_NEW\_DELIVERIES where WSH\_DELIVERIES.DELIVERY\_ID = WSH\_NEW\_DELIVERIES.DELIVERY\_ID.

For every Delivery a record is created in WSH\_DELIVERY\_LEGS.

### **Departures and Trips**

Data from WSH\_DEPARTURES is moved into WSH\_TRIPS, where WSH\_DEPARTURES.DEPARTURE\_ID = WSH\_TRIPS.TRIP\_ID

For every Departure in Release 11, a record is created in WSH\_TRIP\_STOPS

### **Containers and Delivery Details**

Each Container in WSH\_PACKED\_CONTAINERS becomes a Container Instance i.e a record is inserted in WSH\_DELIVERY\_DETAILS with container\_flag = Y and source\_code = WSH.

For each Container in WSH\_PACKED\_CONTAINERS a record is inserted into WSH\_DELIVERY\_ASSIGNMENTS.

WSH\_CONTAINER\_LOAD will be upgraded to WSH\_CONTAINER\_ITEMS.

### **Report Sets and Usage Code**

WSH\_REPORT\_SETS is upgraded to WSH\_REPORT\_SETS, but the usage\_code is changed from PICK\_RELEASE\_DELIVERY to PICK\_RELEASE and SHIP\_CONFIRM\_DELIVERY to SHIP\_CONFIRM.

### **Pick Slip and Pick Slip Grouping Rules**

WSH\_PICK\_SLIP\_RULES is upgraded to WSH\_PICK\_GROUPING\_RULES

## **Data Not Upgraded**

### **Descriptive Flexfield**

The descriptive flexfield attribute values are upgraded but their definition is not. After an upgrade descriptive flexfields need to be redefined.

### **Document Sets**

The document sets should be redefined after the upgrade.

### **Profile Options**

The profile options used in 10.7 and 11.0 are discontinued.



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## Document Sequencing for Shipping

Topics covered in this chapter include:

- [Overview](#) on page 27-2
- [Document Categories](#) on page 27-2
- [Defining Document Categories](#) on page 27-3
- [Document Sequence](#) on page 27-5
- [Assign a Document Sequence to a Document Category](#) on page 27-6
- [Creating a Bill of Lading](#) on page 27-8
- [Creating a Packing List](#) on page 27-13

## Overview

Oracle Shipping Execution Release 11*i* provides the ability to generate shipping documents that are sequentially numbered according to specifications you define. This is a mandatory step to be able to create and print the above mentioned documents. The set up process for enabling document sequencing consists of three basis steps:

1. Creating a Document Category.
2. Creating a Document Sequence
3. Assigning a Document sequence to a Document category.

This chapter describes the process for setting up document sequencing and generating Packing Slips and Bills of Lading for deliveries.

## Document Categories

A category must be defined for each document you wish to create. In the case of the Bill of Lading document, you can create a Bill of Lading category for each Ship Method/Carrier you use. This would allow you to have a different Bill of lading sequence number for each Ship Method /Carrier. This helps avoid confusion when closing out shipments by providing a visual reference in the BOL number to a specific carrier. You can also define one BOL category for all Ship Methods/Carriers. In addition to creating document categories by Ship Method/Carrier, you can tie a category to a specific location. This provides the opportunity to have a different BOL sequence for the same carrier departing from a different locations. When defining a document sequence for the Packing Slip, you can create a category for every location or one category for all locations. **The document category is always specific to the application Oracle Shipping. You must always create the shipping document category from the Shipping set up menu. The document category will be visible in all applications and responsibilities where you access the Shipping Transactions form to generate BOL or Packing Slip numbers.**

You can create the document sequence and assign them in any Set up menu, as long as you always specify Oracle Shipping as the application.

Document categories cannot overlap by one/all locations or by ship method.

[Figure 27-1](#) depicts the form used to define a document category.

## Defining Document Categories

Navigate: Shipping -> Setup -> Documents -> Document Categories.

A Document Category Summary window will appear and list any Document Categories that have been previously defined.

To define a new category , click on new and the window in [Figure 27-1](#) will appear.

**Figure 27-1 Document Category Definition**

The screenshot shows a software window titled "Document Categories" with the following fields and options:

- Category Name:** MEC1 BOL
- Description:** BOL for DHL from V1
- Document:** Bill of Lading
- Enabled:**
- Category includes:**
  - Ship Methods:**  All  One DHL
  - Locations:**  All  One V1- New York City
- Sequence:**
  - Prefix:** MEC
  - Suffix:** TEST
  - Delimiter:** -
  - Default Appearance:** MEC-00000001-TEST

Information pertaining to the fields in the Document Category definition shown in [Figure 27-1](#) are as follows:

**Category Name** This is a free form field used to enter the name of the category you are defining. This is the name that will show up in the list of values when assigning the category to a sequence.

**Description** Enter text that describes the category you are defining. An example might be, Bill of Lading for Viking Freight from Whse V1.

**Document** From the list of values select the document type the document category will apply to.

**Ship Methods/ Document Types** If in the previously described document field you select Bill of lading, the prompt for this field will be Ship Method. Define the document category for a specific carrier by clicking the One radio button and selecting the carrier from the LOV that you want the document category to be applied to. Clicking the all radio button would result in the document category being applied to all carriers. If you select Packing Slip or Advanced Shipment Notice for the document field, the prompt for this field will be Document Type. For release 11i Customer Orders is the only sub-type supported and should be the only choice in the list of values.

**Locations** The document category you are defining can be applied to on a single location or all locations. This is the field where this is determined. Selecting the All radio button indicates the document category applies to all locations. Selecting the One radio button allows you to select a specific location from the LOV that you wish the document category to apply.

**Sequence** You can define a Prefix, Suffix and delimiter to the document category. The Prefix and Suffix fields are free form and any alpha numeric combination can be entered. Typical use is to represent an identity to the location, carrier, date etc. in which the document is generated. The delimiter can also be any character and simply separates the prefix and suffix from the actual generated number. The default appearance shows the user what the number will look like when it is generated.

## Summary Document Category

Set up your Document Category for each of the shipping reports

Navigate: Setup > Documents > Document Categories

1. Click New.
2. Enter a Category Name.
3. Enter a Description.
4. In the Document field, select the name of the report.  
(Note: In the Category Includes section, the area on the left will be titled differently depending on which report we are setting up).
5. In the Document Types section (for the Packing Slip), you can leave the default as 'All'.
6. In the Ship Methods section (for the BOL), you can leave the default as 'All'.



7. In the Locations section, you can leave the default as 'All'.

## Document Sequence

Once you have defined a Document Category, create a Document Sequence for the specific application and define the date range over which the sequence is valid. Navigate: Shipping -> Setup -> Documents -> Document Sequences.

**Figure 27–2 Document Sequence Definition**

| Name | Application     | From        | To          | Type      | Message                  | Initial Value [ ] |
|------|-----------------|-------------|-------------|-----------|--------------------------|-------------------|
| B0L1 | Oracle Shipping | 24-AUG-2000 | 24-AUG-2001 | Automatic | <input type="checkbox"/> | 1                 |
|      |                 |             |             |           | <input type="checkbox"/> |                   |
|      |                 |             |             |           | <input type="checkbox"/> |                   |
|      |                 |             |             |           | <input type="checkbox"/> |                   |
|      |                 |             |             |           | <input type="checkbox"/> |                   |
|      |                 |             |             |           | <input type="checkbox"/> |                   |
|      |                 |             |             |           | <input type="checkbox"/> |                   |
|      |                 |             |             |           | <input type="checkbox"/> |                   |
|      |                 |             |             |           | <input type="checkbox"/> |                   |
|      |                 |             |             |           | <input type="checkbox"/> |                   |

Information pertaining to the fields in the Document Sequence definition window are as follows:

**Name** Enter a name for the sequence you are creating. This will be a unique name that will identify this sequence in the application defined for a specific duration.

**Application** From the list of values, choose Oracle Shipping.

**Effective, From and To** Enter the first date you want the document sequence to become effective by clicking on the calendar LOV in the From field. Enter the date you want the document sequence to end by clicking on the calendar LOV in the To field.

**Type** Automatic sequentially assigns, by date and time of creation, a unique number to each document as it is generated.

**Message** Check the Message check box if you want each document to display a message (in the message line near the bottom of the screen) informing the user of the sequence name and value (number). This check box only applies to sequences with the automatic type of numbering. Messages appear only on form displays, and are not written to a request's log file.

Once a sequence is defined, the message choice cannot be changed. See the on-line help for details on this field.

**Initial Value** The initial value indicates the numeric value in which you wish to use when the first document is created. Enter a value for the first document in your sequence. This field only applies to sequences with automatic or gapless numbering type. The maximum sequence value is 1.0e+27.

If you leave this field blank, the first document is automatically assigned a value of '1'. Once a sequence is defined, this initial value cannot be changed. For example if you select 1 as the initial value, the first document that is created will consist of the prefix you defined in the document category, the delimiter you defined, the numeric value 0000001, and the suffix you defined.

## Summary Document Sequence

Set up your Document Sequence for each of the shipping reports.

Use the Shipping Execution Responsibility.

Navigate: Setup > Documents > Document Sequences

1. In the Name field, enter a name for the sequence.
2. In the Application field, select Oracle Shipping.
3. In the Effective From field, enter the Current Date.
4. For the Type, leave the default value as Automatic.
5. Check the Message check box.

## Assign a Document Sequence to a Document Category

Once you have defined a Document Category and a Document Sequence, the final step before you create a Bill of Lading or Packing Slip is to assign a document

sequence to a document category. Navigate: Shipping -> Setup -> Documents -> Assign Sequences. A document sequence must be assigned to a document category. The assign sequence form is also application and category specific.

**Figure 27-3 Assign Sequence to Category**

| Application     | Category | Start Date  | End Date    | Sequence |
|-----------------|----------|-------------|-------------|----------|
| Oracle Shipping | MEC1 BOL | 29.AUG.2000 | 29.AUG.2001 | BOL1     |
|                 |          |             |             |          |
|                 |          |             |             |          |
|                 |          |             |             |          |
|                 |          |             |             |          |
|                 |          |             |             |          |
|                 |          |             |             |          |
|                 |          |             |             |          |

For details on the contents of each field in this form, please see on-line help from the Sequence Assignments form.

## Summary Assign Category to Sequence

Assign Sequences for each of the shipping reports.

Use the Shipping Execution Responsibility.

Navigation Path: Setup > Documents > Assign Sequences

1. Navigate to the Document tab.
2. In the Application field, select Oracle Shipping.
3. In the Category field, enter the Document Category created in Step 1 above .
4. In the Set of Books field, select your organization.

5. For the Method, leave the default as Null.
6. Navigate to the Assignment tab.
7. In the Start Date field, specify the start date.
8. In the Sequence field, assign the Document Sequence created in Step 2.

## Creating a Bill of Lading

When the above three processes have been completed, you can create a Bill of Lading and or Packing Slip for a delivery. Both documents can be generated as part of a document set that can be run at the completion of ship confirmation, or the documents can be created individually from the document request menu. The documents should also be generated automatically when the user clicks Generate BOL and Create Packing List. A Delivery must meet the following prerequisites in order for a Bill of Lading to be created.

- The Delivery must be assigned to a trip.
- The trip must have a ship method.
- There must be a document category for bill of lading that matches the ship method and ship-from location and it must currently be effective and have a sequence.

To create and print a Bill of Lading, query the Delivery for which you want to print a Bill of Lading in the Shipping Transaction form. Click Detail to open the Delivery window showing a single record.

To make sure that the trip has a ship method, click the Path by Trip tab and enter the Ship Method for each trip. Save the changes before you continue.

Figure 27-4 Shipping Transactions Form

| {Name ###} | {Initial Ship from ###} | {Ultimate Ship to ##} |
|------------|-------------------------|-----------------------|
| 8211       | {V1- New York City }    | Chattanoog9065        |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |
|            |                         |                       |

{Actions } **Close** {G...} {Detail... }

{Deliveries \*\*\*\*\* }

**Figure 27-5 Delivery Window**

The screenshot shows a software window titled "Delivery - 8211". It contains several input fields and buttons for managing a delivery record. The fields are organized into sections:

- Header:** {Delivery }, {Legs ###}, {Packing Slip #}
- Basic Info:**
  - {Name ###} **8211**
  - {Organization #} **V1** {Vision Operations}
  - {Status #} **{Open}**
  - {Planned } {Exceptions }
- Ship Details:**
  - {Initial Ship from ###} **{V1- New York City }**
  - {Ship from Date ##} **06.04.2001 00:00:00**
  - {Ultimate Ship to ##} **Chattanooga9065**
  - {Ship to Date ##} **06.04.2001 00:00:00**
  - {Intermediate Ship to ###}
  - {Pooled Ship to ##}
  - {Waybill }
- Consignee & Freight:**
  - {Consignee } **Computer Service and Rental**
  - {Freight Terms #} **{Buyer Pays Freight}**
  - {Ship Method #}
  - {Freight Code #}
  - FOB#####+ **{Factory}**
  - {FOB Location #}
- Weight & Volume:**
  - {Gross Weight #} **1170** UOM+ **Lbs**
  - {Tare Weight #} **0**
  - {Net Weight } **1170**
  - {Volume #} **78** UOM+ **FT3**
- Other Fields:**
  - {Load Seq. }
  - {Lines Loading #}
  - {Additional Information #####}
  - {Trading Partner} ###  [  ]
- Actions:**
  - {Actions } **Calculate Weight/Vol**
  -

Next click on the legs tab within the Detail window.

**Figure 27-6 Delivery Legs**

The screenshot shows a software window titled "Delivery - 8211". At the top, there are three tabs: "{Delivery }", "{Legs ###}", and "{Packing Slip #}". Below the tabs is a table with five columns: "{Trip ###}", "{BOL Number }", "{Delivery }", "{Pick-up Location ##}", and "{Drop-off Locati". The first row of the table contains the following data: "50567", an empty field, "8211", "{V1- New York City }", and "Chattanooga90". Below the table are two buttons: "{Generate BO..." and "{Detail... }". At the bottom of the window, there is an "{Actions }" section with a dropdown menu currently set to "Calculate Weight/Vol" and a "{G..." button. To the right of the actions section is a "{Done ###}" button.

| {Trip ###} | {BOL Number } | {Delivery } | {Pick-up Location ##} | {Drop-off Locati |
|------------|---------------|-------------|-----------------------|------------------|
| 50567      |               | 8211        | {V1- New York City }  | Chattanooga90    |
|            |               |             |                       |                  |
|            |               |             |                       |                  |
|            |               |             |                       |                  |
|            |               |             |                       |                  |
|            |               |             |                       |                  |
|            |               |             |                       |                  |
|            |               |             |                       |                  |
|            |               |             |                       |                  |

Click Generate BOL.

A Bill of lading number will be generated and populated into the form base on the document sequence defined for the particular characteristics of the delivery.

**Figure 27–7 BOL Number Generated**



## Summary Generate Bill of Lading

Generating the Document Number – Bill of Lading.

To generate the BOL, click Generate BOL button in the Legs tab on the Delivery's Detail window.

Navigate: Shipping > Transactions > Transactions

1. Query your delivery.
2. Click the Delivery tab.
3. Click Details.
4. Click on the Legs tab.

A delivery must meet the following prerequisites in order for a Bill of Lading to be created:



- The delivery must be assigned to a trip
- The trip must have a ship method.

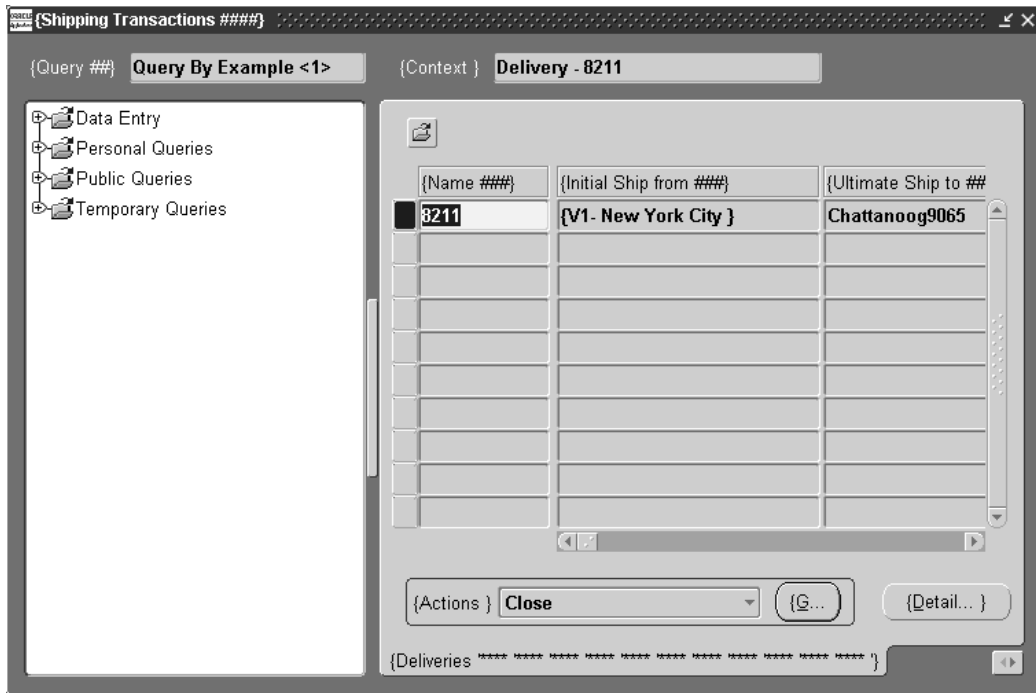
Another way to generate the document number for the BOL is during Ship Confirm, in the Autocreate Trip section, check the Create Bill of Lading check box and enter the Ship Method. This only applies if the delivery is not already assigned to a trip.

When you generate the document number for either of these reports, you may encounter an error message warning that a document sequence or a document category could not be found. This message usually means that the setup is incorrect. Verify that you have set up your document category and document sequences and that the trip for the delivery leg has a ship method.

## Creating a Packing List

You can create a Packing List at any point in the shipping process providing a delivery has been created and a delivery line has been assigned to the delivery.

Figure 27–8 Shipping Transactions Form



To create and print a Packing List, query the Delivery to print a Packing List in the Shipping Transactions form. Click Detail to invoke the delivery details window.

Figure 27-9 Delivery Details

The screenshot shows a software window titled "Delivery - 8211" with several tabs: "{Delivery }", "{Legs ###}", and "{Packing Slip #}". The main content area is divided into several sections:

- Header:** {Name ###} **8211**; {Organization #} **V1** **{Vision Operations}**
- Ship Information:** {Initial Ship from ###} **{V1- New York City }**; {Ultimate Ship to ##} **Chattanooga9065**; {Ship from Date ##} **06.04.2001 00:00:00**; {Ship to Date ##} **06.04.2001 00:00:00**
- Consignee:** {Consignee } **Computer Service and Rental**; {Ship Method #} ; {Freight Terms #} **{Buyer Pays Freight}**
- Weight and Volume:** {Gross Weight #} **1170** UOM+ **Lbs**; {Tare Weight #} **0**; {Net Weight } **1170**; {Volume #} **78** UOM+ **FT3**
- Status and Other:** {Status #} **{Open}**;  {Planned } ; {Exceptions } ; {Waybill } ; {Freight Code #} ; {FOB Location #} ; {Load Seq. } ; {Lines Loading #} ; {Additional Information #####} ; {Trading Partner ###}  [  ]

At the bottom, there is an {Actions } dropdown menu set to **Calculate Weight/Vol** and a {Done ###} button.

Next, click the Packing List tab.

**Figure 27–10 Generate Pack Slip**

The screenshot shows a software window titled "Delivery - 1141". At the top, there are three tabs: "Delivery", "Legs", and "Packing Slip". The "Packing Slip" tab is selected. The main area of the window contains a form with two distinct sections. The first section includes a text field labeled "Delivery Name" containing the value "1141" and an empty text field labeled "Packing Slip Number". The second section includes an empty text field labeled "Reason Of Transport" and an empty text field labeled "Description". Below these fields is a button labeled "Generate Pack Slip". At the bottom of the window, there is a bar containing an "Actions" dropdown menu currently set to "Close", a "Go" button, and a "Done" button.

The Packing List detail window opens with the delivery name populated in the form. Additional information required is the reason for transport. The description field is optional. Click Generate Pack Slip to generate the packing slip based on the document sequences you have set up.

**Figure 27–11** Generated Pack Slip Number

Delivery - 1141

Delivery   Legs   Packing Slip

Delivery Name **1141**

Packing Slip Number **MEC-1520-WH\_M1**

Reason Of Transport **Customer Order**

Description **Misc. Electronic Equipment**

Generate Pack Slip

Actions **Close**   Go   Done

## Summary Generate the Packing Slip

Before the reports will print, the document numbers will need to be generated.

To generate the Packing Slip, click Generate Pack Slip in the Packing Slip tab on the Delivery's Detail window.

Navigate: Shipping > Transactions > Transactions

1. Query your delivery.
2. Click the Delivery tab.
3. Click Details.
4. Click the Packing Slip tab.

Also, if the Require Pack Slip check box in the Shipping Parameters for the organization that you are shipping from is checked, then, when you ship confirm the delivery, the Packing Slip document number will automatically be generated.

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## Shipping Execution Reports, Documents, and Processes

Topics covered in this chapter include:

- [Overview](#) on page 28-2
- [Preliminary Setups](#) on page 28-2
- [Pick Slip Report](#) on page 28-6
- [Backorder Reports](#) on page 28-9
- [Open Deliveries Report](#) on page 28-9
- [Global Packing Slip Report](#) on page 28-10
- [Bill of Lading](#) on page 28-10
- [Master Bill of Lading Report](#) on page 28-10
- [Mailing Labels](#) on page 28-11
- [Commercial Invoice Report](#) on page 28-12
- [Import Delivery Lines](#) on page 28-12
- [Order Management Interface - SRS](#) on page 28-12
- [Inventory Interface - SRS](#) on page 28-12
- [Departure Ship Notice Outbound \(DSNO\)](#) on page 28-12

## Overview

To support the shipping process, the Shipping Transaction and Document Set reports are normally generated and printed automatically. Automatic printing can be setup at two different times--Pick Release and Ship Confirm. Reports can also be manually requested through an SRS concurrent process.

You can find descriptions of the reports and their submission and parameter information in the Oracle Shipping Execution User's Guide.

This provides preliminary setup information for reports and document sets as well as implementation information for the following:

- Pick Slip Report
- Backorder Reports
- Open Deliveries Report
- Global Packing Slip Report
- Bill of Lading
- Master Bill of Lading Report
- Mailing Labels
- Commercial Invoice Report
- Import Delivery Lines
- Order Management Interface - SRS
- Inventory Interface - SRS
- Departure Ship Notice Outbound (DSNO)

## Preliminary Setups

Define groups of shipping documents that can print to specified printers when you confirm shipments.

If your printers are not already defined, have the system administrator do so. See: *System Administrator's Guide*.

To set up document sequencing perform the following tasks:

- Define document sequences. See: *Defining Document Sequences in Shipping Execution User's Guide*.



- Define document categories. See: Defining Document Categories in *Shipping Execution User's Guide*.
- Assign document sequences to document categories. See: Assigning Document Sequences to Document Categories in *Shipping Execution User's Guide*.
- Define document sets. See: Defining Shipping Document Sets in *Shipping Execution User's Guide*.
- Choose printers. See: Choosing Printers for Shipping Documents and Labels in *Shipping Execution User's Guide*.

### Generate Document Numbers

When the set up processes have been completed, you can create Bills of Lading and Packing Slips. Both documents can be generated as part of a document set that can be run at the completion of ship confirmation or the documents can be created individually from the document request menu.

For additional information, see the topical essay on printing documents.

### Generate Bill of Lading Numbers

The Bill of Lading number can be generated in two ways

1. Click Generate BOL in the Legs tab page on Delivery Detail window.
2. At Ship Confirm, Check Create Bill of Lading if the Delivery is not assigned to any trip.

A Delivery must meet the following prerequisites in order for a Bill of Lading to be created.

- The Delivery must have a ship method.
- The Delivery must be assigned to a trip.
- The Delivery must have a waybill number.

To create and print a bill of lading, query the delivery for which you want to print a bill of lading in the Shipping Transactions form. Click on the Details button to invoke the delivery details window. From the Delivery Details window, click on the Legs tab. This will open a window that displays all the information pertaining to the leg of the delivery. Click on the Generate BOL button and the system will create a bill of lading number based on the document category/sequence that it has been assigned. You will be able to see the bill of lading number dynamically populate in the field on the form. At this point you can print the individual BOL by navigating to the Reports and Documents form and select the individual BOL to print.

### **Generate Packing Slip Numbers**

Click Generate Pack Slip in the Packing Slip tab page on the Delivery Detail window. You can enter two fields on the Packing Slip tab page--Reason of Transport and Description

## **Shipping Parameters Setups**

Attend to the following options on the Shipping Parameters form which relate to document printing. See: Defining Shipping Parameters, *Oracle Shipping Execution Implementation Manual*.

- In the Pick Release tabbed region: Print Pick Slip, Default Pick Release Document Set, Release Sequence Rule, and Pick Slip Grouping Rule
- In the Shipping Transactions tabbed region: Default Delivery Document Set

## **Using Text Attachments**

Attachments provide a way for you to add information in the form of text to the application data of a shipment. You can add text attachments to the following entities in Oracle Shipping Execution: a trip, stop, delivery, delivery line, and delivery leg.

The information from the application data can optionally be printed on the report or document associated with the shipment: for example, unpacking instructions entered on a delivery line can be printed on the Packing List intended for the recipient of the material; a text attachment for a delivery leg can be printed on the Bill of Lading or Vehicle Load Sheets for the carrier.

In addition to adding text messages, you can view, edit, and copy text attachments.

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**Note:** The text message you add cannot exceed 2000 characters.

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The Shipping Transactions window features an Attachments icon on the Applications toolbar that you can use to add text attachments to a trip, stop, delivery, delivery line, or delivery leg. To add a text attachment, choose the Attachments icon to display the Attachments window and add the text.

In some cases, documents such as invoices may already be assigned a default document that prints via custom report. In these cases, the invoice print program decides whether to print the attached document.

### Assigning the Attachment position (Header, Body, Footer) to a Report

Attachments can be printed at the top, bottom, or body of the report and can be set up in the Category Assignments windows in Oracle Order Management by navigating to the following path: Setup > Orders > Attachments > Document Categories.

Query the Document Category and then choose the Assignments button to display the Category Assignment window. You can then specify the attachment position (Header/Body/Footer). You must be assigned the Order Management Super User responsibility. For more information, see Overview of Attachments in the *Oracle Order Management User's Guide*.

---

**Note:** To set up the Document Categories and Category Assignments, navigate to the Document Categories window available from the Order Management Super User responsibility, Attachments submenu (Setup > Orders > Attachments > Document Categories).

To create document categories and assign document sequence rules, navigate to the Document Categories window available from the Order Management Super User responsibility, Documents submenu (Setup > Documents > Categories).

---

The following table identifies where the application data from the shipping text attachments are printed in the shipping reports or documents. For example, a text attachment for a delivery leg can be printed in the Bill of Lading for that delivery.

| Report/Document           | Text attachment(s) in application data and where it is printed on report/document:  |
|---------------------------|---|
| Bill of Lading            | Delivery leg attachments at the header/footer level.  |
| Commercial Invoice        | Order, order line attachments at the line level and delivery attachments at the header/footer level.  |
| Packing Slip              | Delivery line, order, order line attachments.   |
| Pick Slip                 | Order, order line, delivery, delivery line, trip attachments at line level (for each line) and delivery attachments at the header/footer level. |
| Vehicle Load Sheet Detail | Trip stop attachments at the line level and trip attachments at the header/footer level.  |

| Report/Document            | Text attachment(s) in application data and where it is printed on report/document: |
|----------------------------|--|
| Vehicle Load Sheet Summary | Trip attachments at the header/footer level.                                       |

For more information on setting up, viewing, editing, and copying text attachments, see the *Oracle Applications User's Guide*.

## Pick Slip Report

The Pick Slip Report prints all picking line details in a picking batch. The pick slip is used in conjunction with Pick Slip Grouping Rules and Pick Release to print consolidated pick slip reports.

The Pick slip report is printed at Pick Release time.

The lines released by pick release process are grouped in pick slips according to grouping rule (and grouping attributes of the grouping rule) and the associated pick methodology. The generated pick slips can be printed individually or in bulk depending on the number of lines pick released (user defined preference).

To define how orders are released to the warehouse for picking use Pick Slip Grouping Rules, Pick Release Rule, and Sequence.

### Pick Slip Grouping Rules

These Rules dictate how released order lines are grouped into individual pick slips. All lines showing the same value in the grouping criteria get grouped on the same pick slip.

List of pick slip grouping rules grouping criteria:

- Order number, Subindustry, Customer, Ship-To, Carrier, Trip Stop
- Delivery, Shipment Priority, Item, Locator, Lot, Revision

Navigate: Shipping > Setups > Picking > Define Pick Slip Grouping

When Oracle WMS is installed you can select from additional Grouping Rules:

- Order Picking: grouped by Order and Pick Slip number
- Zone Picking: grouped by Order and Zone
- Cluster Picking: task ordered by Locator

- Bulk Picking: grouped by Item and Locator

**Figure 28–1 Pick Slip Grouping Rules**

**Pick Slip Grouping Rules**

Pick Methodology: **Cluster Picking**

Rule Name: \_\_\_\_\_

Description: \_\_\_\_\_

Effective: 17-JAN-2002

**Group By**

|                                       |  |                                   |
|---------------------------------------|--|-----------------------------------|
| <input type="checkbox"/> Order Number | <input type="checkbox"/> Carrier           | <input type="checkbox"/> Item     |
| <input type="checkbox"/> Subinventory | <input type="checkbox"/> Trip Stop         | <input type="checkbox"/> Locator  |
| <input type="checkbox"/> Customer     | <input type="checkbox"/> Delivery          | <input type="checkbox"/> Lot      |
| <input type="checkbox"/> Ship To      | <input type="checkbox"/> Shipment Priority | <input type="checkbox"/> Revision |

## Release Rules

Sets of release rules can be custom defined to become easily selectable at pick release. Pick release is an action performed on order line that attempts picking/source inventory items from a warehouse prior to shipping. The rules will filter orders released to the floor according to preset parameters you have selected.

Navigate: Shipping > Setups > Picking > Define Release Rules.

**Figure 28–2 Release Rules**

The screenshot shows a window titled "Release Rules" with a dark header. Below the header, there are two input fields: "Rule" with the value "4986" and "Effective" with the value "05-APR-2001". Below these is a section titled "Release Criteria" with three tabs: "Order", "Shipping", and "Inventory". The "Order" tab is selected. Inside this tab, there are several input fields: "Order Type" (Standard), "Order Number" (4986), "Customer" (Computer Service and), "Item" (empty), "Orders" (Unreleased dropdown), "Ship Set" (empty), and "Ship-To" (empty). There is also a checkbox labeled "Prior Reservations Only" which is unchecked. At the bottom, there are two sections: "Scheduled Ship Dates" and "Requested Dates", each with "From" and "To" input fields.

### Release Sequence Rule

Use these rules to define in which order the eligible picking lines are allocated to the inventory during pick release. (Order Number, Invoice Value, Schedule/Departure Date, and Shipment Priority).

Navigate: Shipping > Setups > Picking > Define Release Sequence Rules.

**Figure 28–3 Release Sequence Rules**

Release Sequence Rules

Rule:

Description:

Effective Dates:  -  [  ]

**Release Priority**

|                           | Priority                       | Ascending             | Descending                       |
|---------------------------|--------------------------------|-----------------------|----------------------------------|
| Order                     | <input type="text" value="2"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Outstanding Invoice Value | <input type="text"/>           | <input type="radio"/> | <input type="radio"/>            |
| Schedule Date             | <input type="text"/>           | <input type="radio"/> | <input checked="" type="radio"/> |
| Departure Date            | <input type="text" value="1"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| Shipment Priority         | <input type="text"/>           | <input type="radio"/> | <input checked="" type="radio"/> |

The Pick Slip Report will list the set of parameters used during picking.

## Backorder Reports

The backorder reports are the Backorder Summary Report and the Backorder Detail Report.

In previous releases, there was a backlog summary/detail report which included unshipped orders. These backorder reports do not display information on all unshipped orders but only on backorders. Please refer to Oracle Order Management for backlog reporting information.

## Open Deliveries Report

Use it as:

- A daily list of deliveries that need processing and need ship-confirm
- A list of all deliveries that need processing and need ship-confirm
- A list of the customer orders that the warehouse is processing
- A list of pending orders that need processing at the end of a fiscal period to recognize revenue

- A list of deliveries with assigned lines that you need to lock in (status Planned)
- A list of deliveries that you may need to close

You can also view open deliveries in the Shipping Transactions form.

Do not add this report to a document set. Typically, you print it at the end of the day or on some other regular schedule.

## Global Packing Slip Report

The transport of goods can be related to sales orders, outside processing, drop shipments, consigned inventory, returns to suppliers, internal movements and the report is used to show that the goods do not belong to the carrier. In many countries, the packing slip is a common business practice, while in others, it is a mandatory business requirement to issue a shipping document for any shipment that leaves a company to a destination.

This report is EMEA standard compliant.

Before the Packing Slip can be printed, the document number will need to be generated. To generate the Packing Slip click on the Generate Packing Slip button in the Packing Slip tab from the Delivery's Detail window.

Navigation steps:

- Shipping > Transactions.
- Query the delivery.
- Click the delivery tab.
- Click the Details tab.
- Click the Packing Slip tab.
- Click Generate Pack Slip to generate the packing slip.

For additional related information refer to the section Document Sequencing for Shipping.

## Bill of Lading

The Bill of Lading acts as:

- A receipt to the Shipper for goods received by the Carrier.
- A contract between the Carrier and Shipper for the transportation of the goods.



- Evidence of the title and liability of goods in case of dispute.

This report is usually printed on pre-printed forms. It shows all sales orders that have been confirmed from a selected delivery. This report is either printed automatically at Ship Confirm time as part of the Shipping Document Set or manually.

In order for a Bill of Lading to be created the Delivery must meet the following prerequisites:

- The delivery must be assigned to a trip
- The trip must have a ship method.

Another way to generate the document number for the BOL is during Ship Confirm if the delivery is not already assigned to a trip. In the Autocreate Trip section, check the Create Bill of Lading check box and enter the Ship Method.

To create and print a Bill of Lading, query the Delivery for which you want to print a Bill of Lading in the Shipping Transaction form.

To make sure that the Trip has a Ship Method, click the Path by Trip tab and enter the Ship Method for each trip. Save these changes before continuing.

For additional related information refer to the section about Document Sequencing for Shipping.

## Master Bill of Lading Report

As the shipper, use it as a receipt for the goods sent with the carrier. As the carrier, use it as a summary of multiple deliveries going to the same location

You may need to create master bill of lading if a shipment has more than one delivery. Print individual bills of lading as well as the master bill of lading. The master bill of lading indicates, by commodity, the sum of all of the individual deliveries or stops of the vehicle.

Before you print a master bill of lading:

- Calculate weight and volume.
- Generate bills of lading for all the deliveries on the trip.

## Mailing Labels

The Mailing Labels should be routed to the specific device loaded with printable labels. Labels can be used in conjunction with containers created without a delivery association. Labels can identify: Customer Name, Ship to Address, Carrier name, Waybill number, and number of packages included in a shipment.

## Commercial Invoice Report

The commercial invoice, the primary document used for international trade, is a bill of goods from the seller to the buyer. It provides item description, value, and quantities shipped.

It is the responsibility of the importer to classify and value the goods and provide the information necessary to enable customs to properly assess duties and taxes, collect accurate statistics, and determine if the goods are subject to quotas, restraints, anti-dumping or countervailing duties, embargoes or other restrictions.

You can print order and line level notes on the commercial invoice. However, Shipping Execution maintains a two line maximum for notes at the header or footer to allow space for the fixed footer information that prints at the bottom of this report.

## Import Delivery Lines

This program imports sales order lines from Oracle Order Management as delivery lines to Oracle Shipping Execution.

You do not use this process on a regular basis as delivery lines are automatically imported when the Oracle Order Management workflow reaches the Awaiting shipping activity. This program is useful in:

- Configure-to-order environments
- Debugging automatic import failures

## Order Management Interface - SRS

This process updates sales order line shipped quantities after ship confirm. If this process is executing as part of the Interface Trip Stop process, it spawns the Inventory Interface - SRS and the Departure Ship Notice Outbound processes.

## **Inventory Interface - SRS**

This process updates inventory balances and relieves reservations after ship confirm.

## **Departure Ship Notice Outbound (DSNO)**

This program triggers the EDI DSNO process. It first verifies that Oracle e-Commerce Gateway is installed and the DSNO transaction profile is enabled.



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## Order Management Reports

This chapter contains information about Reports Migration from Order Entry to Order Management 11i. Topics covered in this chapter include:

- [Report Name Mapping](#) on page 29-2

## Report Name Mapping

Order Management 11i reports do not all have the same names as they did in Order Entry. Report name mapping is provided below along with a listing of new Order Management reports.

**Table 29–1 Report Name Mapping**

| <b>OE Report Name</b>              | <b>OM 11i Report Name</b>             | <b>Concurrent Program short name</b> | <b>Note</b> |
|------------------------------------|---------------------------------------|--------------------------------------|-------------|
| Cancelled Orders Report            | Cancelled Orders Report               | OEXOEOCS                             |             |
| Comprehensive Order Detail Report  | Comprehensive Order Detail Report     | OEXOECOD                             |             |
| Open Return Detail Report          | Credit Order Detail Report            | OEXOEOORD                            |             |
| Open Returns Report                | Credit Orders Report                  | OEXOEOORS                            |             |
| Standard Value Rules               | Defaulting Rules Listing Report       | OEXDERUL                             |             |
| Hold Source Activity Report        | Hold Source Activity Report           | OEXOHHSAA                            |             |
| Order Discount Detail Report       | Order Discount Detail Report          | OEXPRPRD                             |             |
| Order Discount Summary Report      | Order Discount Summary Report         | OEXPRPRS                             |             |
| Order/Invoice Detail Report        | Order/Invoice Detail Report           | OEXOEIOD                             |             |
| Order/Invoice Summary Report       | Order/Invoice Summary Report          | OEXOEIOS                             |             |
| Orders by Item Report              | Orders by Item Report                 | OEXOIEITR                            |             |
| Orders on Credit Check Hold Report | Orders on Credit Check Hold Report    | OEXOECCH                             |             |
| Outstanding Holds Report           | Outstanding Holds Report              | OEXOHHS                              |             |
| Security Rules Listing             | Processing Constraints Listing Report | OEXOEPCL                             |             |

**Table 29–1 Report Name Mapping**

| <b>OE Report Name</b>                      | <b>OM 11i Report Name</b>                                    | <b>Concurrent Program short name</b> | <b>Note</b>   |
|--|--|--------------------------------------|---|
| Returns by Reason Report                   | Returns by Reason Report                                     | OEXOEOORR                            |   |
| Sales Order Acknowledgment                 | Sales Order Acknowledgment Report                            | OEXOEAACK                            |   |
| Sales Order and Purchase Order Discrepancy | Sales Order and Purchase Order Discrepancy Report            | OEXPODIS                             |   |
| Salesperson Order Summary Report           | Salesperson Order Summary Report                             | OEXOESOS                             |   |
| Order Type Listing                         | Transaction Types Listing Report                             | OEXORDTP                             |   |
| Unbooked Orders Report                     | Unbooked Orders Report                                       | OEXOEU BK                            |   |
| new  | Internal Order and Purchasing Requisition Discrepancy Report | OEXIODIS                             |   |
| new  | Lines on Credit Check Hold Report                            | OEXOECCL                             |   |
| new  | Workflow Assignments Report                                  | OEXWFASG                             | workflow replaces all Cycle/ Action/ A approval reports |
| new  | Cancelled Orders Reason Detail Report                        | OEXOEOCR                             |   |
| new  | Credit Order Discrepancy Report                              | OEXCRDIS                             | Shows returns discrepancies in lot/serial numbers       |
| new  | OE-OM Order Line Transaction Count Comparison Report         | OEXOELCS                             |   |





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## Flexfield Migration

This chapter contains information about Flexfields Migration from Order Entry to Order Management 11i. Flex field definitions from OE are not upgraded to OM, only flex values from OE tables will be upgraded to OM/QP/WSH tables as mentioned below. Customers will need to create new definitions for corresponding OM/QP/WSH Flexfields. Topics covered in this chapter include:

- [Descriptive Flexfields](#) on page 30-2

## Descriptive Flexfields

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**Note :** For the Headings, Upg means 'Values Upgraded from OE to OM/QP/WSH'.

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**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b>  | <b>OM Flex</b>   | <b>Upg</b> | <b>Usage</b>   |
|---|--|------------|--|
| <p>Title: Additional Header Information</p> <p>Name: SO_HEADERS</p> <p>Table: SO_HEADERS_ALL</p> <p>Columns: Context, Attribute1.. 15</p>           | <p>Title: Additional Header Informations</p> <p>Name: OE_HEADER_ATTRIBUTES</p> <p>Table: OE_ORDER_HEADERS_ALL</p> <p>Columns: Context, Attribute1..15</p>  | Yes        | Descriptive Flexfield for Order Headers table.   |
| <p>Title: Additional Line Information</p> <p>Name: SO_LINES</p> <p>Table: SO_LINES_ALL</p> <p>Columns: Context, Attribute1.. 15</p>                 | <p>Title: Additional Line Attribute Information</p> <p>Name: OE_LINE_ATTRIBUTES</p> <p>Table: OE_ORDER_LINES_ALL</p> <p>Columns: Context, Attribute1.. 15</p>  | Yes        | Descriptive Flexfield for Order Lines table.   |
| <p>Title: Pricing Attributes</p> <p>Name: PRICING_ATTRIBUTES</p> <p>Table: SO_LINES_ALL</p> <p>Columns: Pricing_Context, Pricing_attribute1..15</p> | <p>Title: Pricing Contexts</p> <p>Name: QP_ATTR_DEFNS_PRICING</p> <p>Table: QP_ATTRIBUTE_DEFNS</p> <p>Columns: Pricing_Context, Pricing_Attribute1..100</p> <p>Application: Oracle Pricing (QP)</p> <p>Definition for Pricing Flex on the Line. Actual columns are stored in</p> <p>OE_ORDER_PRICE_ATTRIBS table.</p> <p><b>Note:</b> The Definition is also upgraded for this flex field.</p> | Yes        | Pricing Attributes Descriptive Flexfield. The OE flexfield Pricing Attribute is now replaced by the Pricing Flexfield Pricing Context. |

**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b>  | <b>OM Flex</b>   | <b>Upg</b> | <b>Usage</b>  |
|---|--|------------|---|
| <p>Title: Additional Industry Attributes</p> <p>Name: RLA_DEMAND_LINES_ALL</p> <p>Table: RLA_DEMAND_LINES_ALL</p> <p>Columns: Industry_Context, Industry_Attribute1..15</p> <p>Application: Oracle Release Management Kit(RLA)</p> <p>Definition for Industry Flex on Line. Columns are stored in SO_LINE_ATTRIBUTES table.</p> | <p>Title: Additional Line Industry Information</p> <p>Name: OE_LINE_INDUSTRY_ATTRIBUTE</p> <p>Table: OE_ORDER_LINES_ALL</p> <p>Columns: Industry_Context, Industry_Attribute1..30</p>                  | Yes        | Industry Attributes Descriptive Flexfield on Order Line.      |
| <p>Title: JG_SO_LINE_ATTRIBUTES</p> <p>Name: JG_SO_LINE_ATTRIBUTES</p> <p>Table: SO_LINE_ATTRIBUTES</p> <p>Columns: Global_Attribute_category, Global_attribute1..20</p> <p>Application: Regional Localizations (JG).</p>   | <p>Title: JG_OE_ORDER_LINES</p> <p>Name: JG_OE_ORDER_LINES</p> <p>Table: OE_ORDER_LINES_ALL</p> <p>Columns: Global_Attribute_category, Global_attribute1..20</p>                                       | Yes        | Globalization Descriptive Flexfield on Order Line.            |
| <p>Title: Additional Line Service Detail Info</p> <p>Name: SO_LINE_SERVICE_DETAILS</p> <p>Table: SO_LINE_SERVICE_DETAILS</p> <p>Columns: Context, Attribute1.. 15</p>   | <p>Title: Additional Line Service Detail Info</p> <p>Name: CS_LINE_INST_DETAILS</p> <p>Table: CS_LINE_INST_DETAILS</p> <p>Columns: Context, Attribute1.. 15</p> <p>Application: Oracle Service(CS)</p> | Yes        | Descriptive Flexfield for Service installation details table. |

**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b>  | <b>OM Flex</b>   | <b>Upg</b> | <b>Usage</b>   |
|---|--|------------|--|
| Title: Additional Sales Credit Information<br>Name: SO_SALES_CREDITS<br>Table: SO_SALES_CREDITS<br>Columns: Context, Attribute1.. 15            | Title: Additional Sales Credits Information<br>Name: OE_SALES_CREDITS_ATTRIBUTES<br>Table: OE_SALES_CREDITS<br>Columns: Context, Attribute1.. 15 | Yes        | Descriptive Flexfield for Sales Credits table.       |
| Title: Additional Hold Information<br>Name: SO_HOLDS<br>Table: SO_HOLDS<br>Columns: Context, Attribute1.. 15                                    | Title: Additional Hold Information<br>Name: OE_HOLD_DEFINITIONS<br>Table: OE_HOLD_DEFINITIONS<br>Columns: Context, Attribute1.. 15               | Yes        | Descriptive Flexfield for Hold Definitions table.    |
| Title: Additional Hold Authorization Info<br>Name: SO_HOLD_AUTHORIZATIONS<br>Table: SO_HOLD_AUTHORIZATIONS<br>Columns: Context, Attribute1.. 15 | Title: Additional Hold Authorization Info<br>Name: OE_HOLD_AUTHORIZATIONS<br>Table: OE_HOLD_AUTHORIZATIONS<br>Columns: Context, Attribute1.. 15  | Yes        | Descriptive Flexfield for Hold Authorizations table. |
| Title: Additional Hold Release Information<br>Name: SO_HOLD_RELEASES<br>Table: SO_HOLD_RELEASES<br>Columns: Context, Attribute1.. 15            | Title: Additional Hold Release Information<br>Name: OE_HOLD_RELEASES<br>Table: OE_HOLD_RELEASES<br>Columns: Context, Attribute1.. 15             | Yes        | Descriptive Flexfield for Hold Releases table.       |

**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b>   | <b>OM Flex</b>   | <b>Upg</b> | <b>Usage</b>   |
|--|--|------------|--|
| Title: Additional Hold Source Information<br>Name: SO_HOLD_SOURCES_ALL<br>Table: SO_HOLD_SOURCES_ALL<br>Columns: Context, Attribute1.. 15          | Title: Additional Hold Source Information<br>Name: OE_HOLD_SOURCES<br>Table: OE_HOLD_SOURCES_ALL<br>Columns: Context, Attribute1.. 15  | Yes        | Descriptive Flexfield for Hold Sources table.  |
| Title: Additional Note Addition Rule Info<br>Name: SO_NOTE_ADDITION_RULES<br>Table: SO_NOTE_ADDITION_RULES<br>Columns: Context, Attribute1.. 15    | Title: Additional Attachment Rule Elements Info<br>Name: OE_ATTACHMENT_RULE_ELEMENTS<br>Table: OE_ATTACHMENT_RULE_ELEMENTS<br>Columns: Context, Attribute1.. 15                          | No         | Descriptive Flexfield for Attachment Rules table.  |
| Title: Additional Order Number Source Info<br>Name: SO_ORDER_NUMBER_SOURCES<br>Table: SO_ORDER_NUMBER_SOURCES<br>Columns: Context, Attribute1.. 15 | Title: Define Sequences<br>Name: FND_DOCUMENT_SEQUENCES<br>Table: FND_DOCUMENT_SEQUENCES<br>Columns: Attribute_category, Attribute1.. 15<br>Application: Application Object Library(AOL) | No         | Descriptive Flexfield for 'Document Sequences' table.  |
| Title: Additional Freight Charge Information<br>Name: SO_FREIGHT_CHARGES<br>Table: SO_FREIGHT_CHARGES<br>Columns: Context, Attribute1.. 15         | Title: Additional Price Adjustment Information<br>Name: OE_PRICE_ADJUSTMENTS<br>Table: OE_PRICE_ADJUSTMENTS<br>Columns: Context, Attribute1.. 15   | Yes        | Descriptive Flexfield for Price Adjustments table. Definition is used for Price Adjustments / Freight and Special Charges. |

**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b>   | <b>OM Flex</b>  | <b>Upg</b> | <b>Usage</b>  |
|--|---|------------|---|
| Title: AETC / Allowances and Charges<br>Name: SO_FREIGHT_CHARGES_AC<br>Table: SO_FREIGHT_CHARGES<br>Columns: AC_Attribute_Category, AC_Attribute1.. 15 | Title: AETC / Allowances and Charges<br>Name: OE_PRICE_ADJUSTMENTS_AC<br>Table: OE_PRICE_ADJUSTMENTS<br>Columns: AC_Context, AC_Attribute1.. 15 | Yes        | AETC(Authorized Excess Transportation Charges) Descriptive Flexfield. |
| Title: Additional Line Detail Information<br>Name: SO_LINE_DETAILS<br>Table: SO_LINE_DETAILS<br>Columns: Context, Attribute1.. 15                      | None  | No         | Obsolete  |
| Title: Additional Order Hold Information<br>Name: SO_ORDER_HOLDS<br>Table: SO_ORDER_HOLDS_ALL<br>Columns: Context, Attribute1.. 15                     | None  | No         | Obsolete.   |
| Title: Additional Line Approval Information<br>Name: SO_LINE_APPROVALS<br>Table: SO_LINE_APPROVALS<br>Columns: Context, Attribute1.. 15                | None  | No         | Obsolete.   |
| Title: Additional Note Information<br>Name: SO_NOTES<br>Table: SO_NOTES<br>Columns: Context, Attribute1.. 15   | None  | No         | Obsolete.   |

**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b>  | <b>OM Flex</b> | <b>Upg</b> | <b>Usage</b> |
|---|----------------|------------|--------------|
| Title: Additional Note<br>Reference Information<br><br>Name: SO_NOTE_<br>REFERENCES<br><br>Table: SO_NOTE_<br>REFERENCES<br><br>Columns: Context,<br>Attribute1.. 15      | None           | No         | Obsolete.    |
| Title: Additional Note Usage<br>Information<br><br>Name: SO_NOTE_USAGES<br><br>Table: SO_NOTE_USAGES<br><br>Columns: Context,<br>Attribute1.. 15                          | None           | No         | Obsolete.    |
| Title: Additional Order<br>Approval Information<br><br>Name: SO_ORDER_<br>APPROVALS<br><br>Table: SO_ORDER_<br>APPROVALS<br><br>Columns: Context,<br>Attribute1.. 15      | None           | No         | Obsolete.    |
| Title: Additional Order<br>Cancellation Info<br><br>Name: SO_ORDER_<br>CANCELLATIONS<br><br>Table: SO_ORDER_<br>CANCELLATIONS<br><br>Columns: Context,<br>Attribute1.. 15 | None.          | No         | Obsolete.    |



**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b>  | <b>OM Flex</b> | <b>Upg</b> | <b>Usage</b> |
|---|----------------|------------|--------------|
| Title: Additional Security Rule Information<br>Name: SO_SECURITY_RULES<br>Table: SO_SECURITY_RULES<br>Columns: Context, Attribute1.. 15 | None           | No         | Obsolete.    |
| Title: Attribute Data Information<br>Name: ATTRIBUTE_DATA_INFORMATION<br>Table: SO_ATTRIBUTES   | None           | No         | Obsolete.    |
| Title: Attribute Value<br>Name: ATTRIBUTE_VALUE<br>Table: SO_ATTRIBUTE_VALUES   | None           | No         | Obsolete.    |
| Title: Additional Action Information<br>Name: SO_ACTIONS<br>Table: SO_ACTIONS   | None           | No         | Obsolete.    |
| Title: Additional Attribute Information<br>Name: SO_ATTRIBUTES<br>Table: SO_ATTRIBUTES  | None           | No         | Obsolete.    |
| Title: Additional Attribute Std Value Source In<br>Name: SO_ATTRIBUTE_STD_VALUE_SOURCES<br>Table: SO_ATTRIBUTE_STD_VALUE_SOURCES        | None           | No         | Obsolete.    |
| Title: Additional Attribute Use Information<br>Name: SO_ATTRIBUTE_USES<br>Table: SO_ATTRIBUTE_USES                                      | None           | No         | Obsolete.    |

**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b>   | <b>OM Flex</b> | <b>Upg</b> | <b>Usage</b> |
|--|----------------|------------|--------------|
| Title: Additional Cycle Information<br>Name: SO_CYCLES<br>Table: SO_CYCLES   | None           | No         | Obsolete.    |
| Title: Additional Entity Information<br>Name: SO_ENTITIES<br>Table: SO_ENTITIES  | None           | No         | Obsolete.    |
| Title: Additional Entity Use Information<br>Name: SO_ENTITY_USES<br>Table: SO_ENTITY_USES                                    | None           | No         | Obsolete.    |
| Title: Additional General Std Value Source Info<br>Name: SO_GENERAL_STD_VALUE_SOURCES<br>Table: SO_GENERAL_STD_VALUE_SOURCES | None           | No         | Obsolete.    |
| Title: Additional Object Information<br>Name: SO_OBJECTS<br>Table: SO_OBJECTS  | None           | No         | Obsolete.    |
| Title: Additional Results Information Name: SO_RESULTS<br>Table: SO_RESULTS  | None           | No         | Obsolete.    |
| Title: Additional Standard Value Rule Info Name: SO_STANDARD_VALUE_RULES<br>Table: SO_STANDARD_VALUE_RULES                   | None           | No         | Obsolete.    |

**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b>  | <b>OM Flex</b>  | <b>Upg</b> | <b>Usage</b>   |
|---|---|------------|--|
| Title: Additional Standard Value Rule Set Info<br>Name: SO_STANDARD_VALUE_RULE_SETS<br>Table: SO_STANDARD_VALUE_RULE_SETS | None  | No         | Obsolete.  |
| None  | Title: Additional Sales Credit Type Information<br>Name: OE_SALES_CREDIT_TYPES<br>Table: OE_SALES_CREDIT_TYPES<br>Columns: Context, Attribute1..15                                | NA         | Descriptive Flexfield for Sales Credits Types table. |
| None.   | Title: Trading Partner Flexfield<br>Name: OE_LINE_TP_ATTRIBUTES<br>Table: OE_ORDER_LINES_ALL<br>Columns: TP_Context, TP_Attribute1..15<br>This is the Trading Partner Flex Field. | NA         | Trading Partner Descriptive Flexfield on Order line. |

**Table 30–1 Descriptive Flexfields**

| <b>OE Flex</b> | <b>OM Flex</b>   | <b>Upg</b> | <b>Usage</b>   |
|----------------|--|------------|--|
| None           | Title: Additional Order Type Information<br>Name: OE_ORDER_TYPES<br>Table: OE_TRANSACTION_TYPES_ALL<br>Columns: Context, Attribute1.. 15             | NA         | Descriptive Flexfield for Transaction (Order and Line) Types table                           |
| None           | Title: Additional System Parameter Information<br>Name: OE_SYSTEM_PARAMETERS<br>Table: OE_SYSTEM_PARAMETERS_ALL<br>Columns: Context, Attribute1.. 15 | NA         | Descriptive Flexfield for OM Parameters table.   |
| None           | Title: Additional Customer-Item Settings<br>Name: OE_CUST_ITEM_ATTRIBUTES<br>Table: OE_CUST_ITEM_SETTINGS<br>Columns: Context, Attribute1.. 15       | NA         | Descriptive Flexfield for Shipping Tolerances Table. (Shipping Tolerances Form in OM Setup). |

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## Migrating Profile Options

This chapter contains information about migrating the Profile Options from Order Entry to Order Management 11i. The listing starts with the old profile options from Order Entry and maps them to new profiles in Order Management if they exist. New Order Management Profile Options are listed at the end of the table. For more information about these profile options and how they are used, please refer the *Basic Setup* chapter of this manual. Topics covered in this chapter include:

- [Profile Options](#) on page 31-2
- [System Parameters Setup](#) on page 31-9

## Profile Options

**Table 31–1 Profile Options**

| OE Profile Option (Old)                         | OM Profile Option (New)    | Description of the OM Profile Option  |
|---|----------------------------|---|
| WSH: Allow Future Departure Date                | N/A                        | No equivalent profile option in OM/WSH  |
| OE: Apply Order Adjustments to Service Lines    | N/A                        | No equivalent profile option in OM.   |
| OE: Configurator Display Mode                   | N/A                        | No equivalent profile option in OM.   |
| OE: Cycle Action Changes Affect Existing Orders | N/A                        | No equivalent profile option in OM.   |
| OE: Customer Relationships                      | OM: Customer Relationships | <b>Obsolete.</b> Replaced by a system parameter setup.  |
| OE: Debug Level                                 | OM: Debug Level            | This profile option determines the level of debug messages printed in a OE Debug log file.<br>To print all messages set it to 5 and for no messages set it to NULL. |
| OE: Default RMA Status                          | N/A                        | No equivalent profile option in OM.   |
| OE: Debug                                       | OM: Debug Level            | This profile option can also be used for getting the OM Debug file for concurrent programs.   |
| OE: Debug Trace                                 | N/A                        | No equivalent profile option in OM.   |
| OE: Default CP Selection Attribute              | N/A                        | No equivalent profile option in OM.   |
| OE: Discounting Privilege                       | OM: Discounting Privileges | Privileges to apply/Modify price adjustments (e.g. Discounts, Surcharges etc.) The possible values are: Unlimited, Full, Non-Overridable Only, None.                |
| OE: External Pricer Installed                   | N/A                        | No equivalent profile option in OM.   |
| WSH: Enforce Freight Carrier At Ship Confirm    | N/A                        | No equivalent profile option in OM/WSH  |
| OE: Force Valid Configurations                  | N/A                        | No equivalent profile option in OM.   |

Table 31–1 Profile Options

| OE Profile Option (Old)              | OM Profile Option (New)            | Description of the OM Profile Option   |
|--------------------------------------|------------------------------------|--|
| OE: GSA Discount Violation Action    | OM: GSA Discount Violation Action  | Controls what to do if the Pricing Engine returns a GSA Violation. Works with QP: Verify GSA Violations  |
| OE: Immediate Inventory Update       | N/A                                | No equivalent profile option in OM/WSH.  |
| OE: Included Item Freeze Method      | OM: Included Item Freeze Method    | It determines the date and time Order Management uses to determine the included items for a configuration's bill of material.  |
| WSH: Invoice Numbering Method        | OM: Invoice Numbering Method       | Determines whether invoices numbers are automatically generated or are mapped to the delivery name   |
| Tax: Invoice Freight as Revenue      | Tax: Invoice Freight as Revenue- 1 | If profile option TAX: Allow Tax Code Override is set to YES, and profile option TAX: Invoice Freight as Revenue is set to YES, then freight charges are treated as revenue lines, and Invoicing module passes along VAT tax information and sales credits for them. |
| Tax: Inventory Item for Freight      | Tax: Inventory Item for Freight- 1 | Invoicing module passes this item for freight charges treated as revenue lines.  |
| OE: Inventory Stock Location         | N/A                                | No equivalent profile option in OM.  |
| OE: Item Flexfield                   | OM: Item Flexfield                 | This profile option specifies the name of the flexfield structure of the System Items flexfield  |
| OE: Item Validation Organization     | OM: Item Validation Organization   | <b>Obsolete.</b> It has been replaced by System Parameters functionality.  |
| OE: Item View Method                 | OM: Item View Method               | The method to be used in the Order Management Order Form Options Window for item LOV. It controls the way the LOV for the items is displayed.  |
| SHP: Release Online Exception Report | N/A                                | No equivalent profile option in OM/WSH.  |
| SHP: Release Single Orders Online    | N/A                                | No equivalent profile option in OM/WSH.  |
| SHP: Release Online Pick Slip Report | N/A                                | No equivalent profile option in OM/WSH.  |
| OE: Reservations                     | N/A                                | No equivalent profile option in OM.  |

**Table 31–1 Profile Options**

| <b>OE Profile Option (Old)</b>         | <b>OM Profile Option (New)</b>  | <b>Description of the OM Profile Option</b>  |
|--|---------------------------------|--|
| OE: Schedule Date Window               | N/A                             | No equivalent profile option in OM.  |
| OE: Set of Books                       | OM: Set of Books                | <b>Obsolete.</b> OM Looks at Set of Books of the Account Receivable's setup for the Operating Unit. (Table: ar_system_parameters_all)  |
| WSH: Shipping Method                   | N/A                             | No equivalent profile option in OM/WSH   |
| OE: Source Code                        | OM: Source Code                 | This profile option identifies the source code that Order Management passes to Oracle Inventory during scheduling. The source code should be defined as the third segment of the Sales Order Flexfield to guarantee that each transaction is unique. |
| OE: Trans. Manager Debug Level         | N/A                             | No equivalent profile option in OM.  |
| OE: Tune for Large Number of Discounts | N/A                             | No equivalent profile option in OM.  |
| OE: Transaction Manager                | N/A                             | No equivalent profile option in OM.  |
| OE: Unit Price Precision Type          | OM: Unit Price Precision Type   | Currency Precision Type: Extended or Standard.   |
| OE: Verify GSA Violations              | QP: Verify GSA Violations       | Select YES to verify GSA Violations.   |
| OE: Validate Standard Line Item        | N/A                             | No equivalent profile option in OM.  |
| OE: Validate Option Line Item          | N/A                             | No equivalent profile option in OM.  |
| OE: Weight Unit Of Measure Class       | N/A                             | No equivalent profile option in OM.  |
| N/A                                    | OM: Administer Public Queries   | This profile option determines which responsibility is able to create and update public queries.   |
| N/A                                    | OM: Apply Automatic Attachments | The profile option controls whether rule-based attachments are applied without user intervention.  |



**Table 31–1 Profile Options**

| <b>OE Profile Option (Old)</b> | <b>OM Profile Option (New)</b>                 | <b>Description of the OM Profile Option</b>   |
|--------------------------------|--|---|
| N/A                            | OM: Auto Push Group Date                       | This profile option controls what happens if a user changes something on a line that is part of a group and that change causes the schedule date to change. If YES, then the date on all members of the group will be pushed.   |
| N/A                            | OM: AutoSchedule                               | This profile option controls the default setting for the use of autoscheduling. If YES, order lines will get scheduled at entry automatically.  |
| N/A                            | OM: Charging Privilege                         | This profile determines your ability to Apply/Modify/Delete freight and special charges on an order or order line. Unlimited, Full Access, View Only.   |
| N/A                            | OM: Context Responsibility for Upgraded Orders | This profile option is used to set applications context for deferred activities on upgraded orders and order lines.   |
| N/A                            | OM: Credit Card Privileges                     | This profile option limits the amount of credit card information displayed in the in the Sales Orders window. The authorization code and credit card number fields can be set to display only the last four digits.   |
| N/A                            | OM: Credit Memo Transaction Type               | While interfacing a RMA line for credit, this profile option value is transferred to Receivables if no value is defined for the credit memo transaction type (Receivables Transaction Type to be associated with the OM's Transaction Type in Transaction Type setup form). |
| N/A                            | OM: Credit Salesperson for Freight on Sales    | This profile specifies the default Salesperson to use in the Invoicing Interface when creating sales credits for Freight charge lines.  |
| N/A                            | OM: Cust Item Shows Matches                    | This profile option determines whether Order Management defaults the Item with the highest ranking item or shows the list of all the matched Internal item numbers when a customer item number is used and that customer item is cross-referenced to more than              |
| N/A                            | OM: Deactivate Pricing at Scheduling           | For internal use only.  |

**Table 31–1 Profile Options**

| <b>OE Profile Option (Old)</b> | <b>OM Profile Option (New)</b>              | <b>Description of the OM Profile Option</b>  |
|--------------------------------|---|--|
| N/A                            | OM: Debug Log Directory                     | The directory path of the OM debug log file. Specify the value from the session parameter “utl_file_dir” from v\$parameters.   |
| N/A                            | OM: Estimated Authorization Validity Period | This profile option determines the estimated number of days the authorization is valid. The default value is 21 days.  |
| N/A                            | OM: Invoice Source                          | This profile option is passed to Receivables if no value is defined for the transaction type.  |
| N/A                            | OM: Invoice Transaction Type                | While interfacing a Outbound line for invoicing, this profile option value is transferred to Receivables if no value is defined for the transaction type. (Receivables Transaction Type to be associated with the OM’s Transaction Type in Transaction type setup form). |
| N/A                            | OM: Log directory for generated packages    | No longer used.  |
| N/A                            | OM: Negative Pricing                        | Controls whether OM allows a negative list price or selling price to be entered as an override or determined by the pricing engine. QP has a similarly named profile that controls whether a negative price can be entered on a Price List.                              |
| N/A                            | OM: Non-Delivery Invoice Source             | This profile option value is transferred to Receivables if the OM: Invoice Numbering Method profile option is set to Delivery and the line is non-shippable.   |
| N/A                            | OM: Notification Approver                   | The profile information value is defaulted to the work flow item attribute - ‘Notification approver’ on the Sales Order and Line work items for upgraded orders. This enables you to send notifications (approval or FYI notifications) to this role.                    |
| N/A                            | OM: Order Date Type Code                    | No longer used.  |
| N/A                            | OM: Orders Purge Per Commit                 | Controls how often to commit during running of Order Purge concurrent job.   |

**Table 31–1 Profile Options**

| <b>OE Profile Option (Old)</b> | <b>OM Profile Option (New)</b>                  | <b>Description of the OM Profile Option</b>  |
|--------------------------------|---|--|
| N/A                            | OM: Over Return Tolerance                       | This profile option indicates the percentage by which a return line can be over-received. Any value greater than or equal to zero (0) is a valid value. This profile option is set at the site level. Default value is zero (0).   |
| N/A                            | OM: Over Shipment Tolerance                     | This profile option indicates the percentage by which an order line can be over-shipped. Any value greater than or equal to zero (0) is a valid value. This profile option is set at the site level. Default value is zero (0).  |
| N/A                            | OM: Overshipment Invoice Basis                  | This profile option determines whether to invoice the ordered quantity or the shipped quantity for an over shipment. Default value is shipped.   |
| N/A                            | OM: Party Totals Currency                       | The currency used by the Calculate Party Totals concurrent job that sums up order totals by Party. (R11.5.2)   |
| N/A                            | OM: Payment method for Credit Card Transactions | This profile option determines the primary payment method for a specific customer.   |
| N/A                            | OM: Reservation Time Fence                      | This profile option specifies how many days out into the future auto-scheduling should automatically reserve inventory.  |
| N/A                            | OM: Return Item Mismatch Action                 | This profile option controls whether a user can change data like item id on a referenced return line.  |
| N/A                            | OM: Return Unfulfilled Referenced Line Action   | <p>This profile option is used for returns to return unfulfilled lines. Default value is Allow. Choices include:</p> <p>Reject: Do not create return line if the reference line is non-fulfilled.</p> <p>Warning: Create return line with Warning if the referenced line is non-fulfilled.</p> <p>Allow: Create return line without Warning if the referenced line is non-fulfilled.</p> |

**Table 31–1 Profile Options**

| <b>OE Profile Option (Old)</b> | <b>OM Profile Option (New)</b>                    | <b>Description of the OM Profile Option</b>   |
|--------------------------------|---|---|
| N/A                            | OM: Risk Factor Threshold for Electronic Payments | This profile option determines whether the exceeds the authorization risk score threshold. Scores range from 1 to 100, 1referring to a risk free authorization and 100 referring to a high risk authorization. The default value is a score of 50.                |
| N/A                            | OM: Schedule Line on Hold                         | This profile option controls whether scheduling should attempt to schedule lines that are on hold.  |
| N/A                            | OM: Show Discount Details on Invoice              | This profile option determines whether the discount details are displayed on an invoice. Default value is No.   |
| N/A                            | OM: Show Line Details                             | This profile option determines whether the line details of a model are displayed in the Sales Orders window.  |
| N/A                            | OM: Under Return Tolerance                        | This profile option indicates the percentage by which a return line can be under-received for it to be considered fulfilled. Any value between zero (0) and 100 (both inclusive) is a valid value. This profile option is set at the site level. Default value is |
| N/A                            | OM: Under Shipment Tolerance                      | This profile option indicates the percentage by which an order line can be under-shipped for it to be considered fulfilled. Any value between zero (0) and 100 (both inclusive) is a valid value. This profile option can be set only at the site level. Default  |
| N/A                            | OM: Use Configurator                              | Set this profile to Y if you want to use the product configurator from OM.  |
| N/A                            | WSH: Allow Future Departure Date                  | This profile option determines whether you can enter a future departure date at ship confirm.   |
| N/A                            | WSH: Debug  | This profile option determines whether Oracle Shipping Execution provides additional messages or debug information to the user if system error occurs.  |
| N/A                            | WSH: Internet Proxy URL                           | This profile option allows your system to access UPS servers if there is a firewall at your site.   |

## System Parameters Setup

Order Management has converted Old Profile Options *OE: Item Validation Organization* and *OE: Customer Relationships* into System Parameters. These profile Options were available to setup at the Site Level.

Now you can set them up as System Parameters at the Operating Unit level. The setup screen is available under Order Management Super User responsibility. Navigate: Setup > Parameters. On opening, the default Operating Unit will display (MO: Operating Unit for the Responsibility). You can set the value for Item Validation Organization (Inventory Organizations) to define which Inventory Organization you can use to transact items in a given Operating Unit. The Customer Relationships flag for the Operating Unit defines whether a user can specify SHIP\_TO and BILL\_TO locations for related customers while entering orders.



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## Migrating Cycles to Workflow

This chapter contains information on how Order Types, Order Number Sources, Cycles and Cycle History for Order and Lines are migrated to Order Management.

Please refer to the White Paper “Using Workflow in Oracle Order Management” to understand how Order Management uses Workflow to process Orders and Lines. Please refer to the White Paper “Transaction Types in Oracle Order Management”.

- [Overview](#) on page 32-2
- [Upgrading Order Types](#) on page 32-2
- [Upgrading Order Number Sources](#) on page 32-3
- [Upgrade Strategy for Cycles and Cycle History](#) on page 32-5
- [Upgrading User Defined Cycle Data](#) on page 32-6
- [Upgrading Order Type - Cycle Assignments](#) on page 32-26
- [Upgrading Cycle History](#) on page 32-27
- [Post-Upgrade steps that affect the Cycle History Upgrade](#) on page 32-35
- [Cycles Upgrade and other Order Entry features](#) on page 32-38
- [Glossary](#) on page 32-39

## Overview

Order Management uses Workflow to implement Order Cycles functionality. This chapter discusses how each of the following is achieved:

- Upgrade of Order Types to Order and Line Transaction Types
- Upgrade of Order Number Sources to AOL Document Sequences
- Upgrade of user defined cycle data to Workflow design-time entities
- Upgrade of Order Type - Cycle Assignments to Transaction Type - Workflow assignments.
- Upgrade of cycle history for all open order and lines to Workflow Item Activity Status History.

## Upgrading Order Types

Order types in Order Entry served as a pool for defaulting sources and transactional controls. With Order Management a lot of the header attributes are available on the line and are controllable at that level. It follows that the application offer an entity similar to the order type for the Line; i.e. the line type. Order types and line types are both referred to as Transaction Types in Order Management.

The order types you defined in Order Entry are automatically upgraded to order transaction types in Order Management. Order types that have an order category 'R' or 'P' are upgraded to order transaction types of category ORDER. Order types that have an order category RMA are upgraded to order transaction types of category 'RETURN'. Order types that have do not have an order category specified are upgraded to order transaction types of category MIXED. When you create an Order using a Mixed Order Type, you can combine both order and return lines on it.

The upgraded order type has the same name as the original Order Type it was upgraded from. You can use an upgraded order type for creating new orders, provided you specify the header workflow process that it should use. See Also Users Guide for Defining Transaction Types.

For every order type that is upgraded, one or more line type(s) are also created as follows: For an upgraded order type of category ORDER a line type of category ORDER is created. The default outbound line type on the upgraded order type is set to this automatically created line type. For an upgraded order type of category RETURN a line type of category RETURN is created. The default inbound line type on the upgraded order type is set to this automatically created line type. For



an upgraded order type of category MIXED two line types; one of category ORDER and the other of category RETURN are created. The default outbound and inbound line types on the upgraded order type are set to the these automatically created line types respectively. You can use these line types for creating new lines, provided you define new workflow assignments for them. See Also - the user's guide for Defining Transaction Types.

The line types that the upgrade creates are named as follows:

`UPG_LINE_TYPE_XXX_nnn`

Where *xxx* stands for the category on the Line Type and *nnn* for the Order Type ID of the upgraded Order Type that this line type was created based on. After successfully upgrading to Order Management, you can change the names of these automatically created Line Types to something more user friendly.

- Example - In Order Entry you had defined an order type as follows:
- Name - International (Order Type ID - 1001)
- Category - Regular ('R')

After the upgrade you should see the following Order Transaction Type

- Name - International
- Category - Order ('ORDER')
- Default outbound line type - UPG\_LINE\_TYPE\_ORDER\_1001

You should also see the following Line Transaction Type

- Name - UPG\_LINE\_TYPE\_ORDER\_1001
- Category - Order ('ORDER')

## Upgrading Order Number Sources

In Order Entry, user defined order number sources controlled how your orders were numbered. When you defined an order number source, the application automatically created a database sequence object for it. You had to specify an order number source, when you defined an order type.

Order Management uses AOL Document Sequences for order numbering purposes. See Also - Order Numbering - Defining Document Sequences.

The upgrade to Order Management automatically migrates your active Order Entry number sources to AOL Document Sequences of type Automatic. It calls the AOL Document Sequence APIs to do so. The sequence is defined as follows:

- Application - Order Management
- Name of sequence - xxxxxx (where xxxxxx stands for the Order Number Source Name)
- Type of sequence - Automatic
- Start value - Current unused value of sequence tied to Order Number Source being upgraded
- Start date - Start Date on the Order Number Source being upgraded. If null, then current date
- End date - End Date on the Order Number Source being upgraded.

For every active Order Type that is upgrade, an AOL Document Sequence Category is also created, as follows:

- Application - Order Management
- Document Sequence Category Code - nnnn (where nnnn stands for the Order Type ID)
- Name - xxxxxxxx (where xxxxxxxx stands for the Order Type Name)
- Description - xxxxxxxx (where xxxxxxxx stands for the Order Type Description)
- Table - OE\_TRANSACTION\_TYPES\_ALL

The upgrade process also creates a document sequence assignment linking the document sequence to the document sequence category that was created. If an order number source was referenced by several order types, then multiple document sequence assignments are created linking the respective document categories to the document sequence.

**Example -** You have a order number source 'International Orders' defined. It is assigned to the Order Type 'International' (Order Type ID 1001).

The order number source 'International Orders' is upgraded to an AOL Document sequence of type 'Automatic'. This sequence is defined under the Order Management product with the name 'International Orders'. We have described before how the Order Type is upgraded. An AOL document sequence category is also created with the code of '1001.' This category is defined under the Order Management product with the name 'International'. A document sequence assignment is also created linking the category to the sequence.

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**Note:** The Profile Option 'Sequential Numbering' needs to be set at the application and responsibility level to be able to number your orders in Order Management. See Also Users Guide.

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## Upgrade Strategy for Cycles and Cycle History

The upgrade to Order Management uses the following strategy for upgrading cycle definition data and cycle history for orders and lines:

### Upgrading Cycle Definition Data

All custom actions, approvals and result lookups are upgraded to Workflow entities. In Order Entry all cycles were user-defined. Cycles that are used by any open Orders are upgraded to workflow processes. Workflow process definitions are created dynamically during the Upgrade. The upgrade process calls the Workflow APIs (WF\_LOAD APIs) to create workflow design time data.

### Upgrading Cycle History

Cycle history for all open orders and lines is upgraded to workflow status tables. To achieve this the upgrade starts appropriate header for all open orders and line flows for all open lines.

Now, functions that have already been executed in the Order Entry should NOT get re-executed during the upgrade.

E.g.: When you upgrade an order header that is booked and is eligible for closure (waiting for lines to close), it should not get re-booked in Order Management.

That is the header flow should skip activities that have already been executed and should reach functionally the same point in the flow that the Order was in its cycle before the upgrade. Thus on upgrade, a booked order waiting to close should be waiting inside the Close Order workflow sub-process, awaiting for its Line(s) to close.

This chapter discusses in detail how the following is achieved:

- Business functions that have already been executed in Order Entry, are skipped in Order Management
- Functionally the Order or line that is upgraded is in the same point in its Order Management flow as it was in its Order Entry cycle.

## Upgrading User Defined Cycle Data

The following section discusses how each of the cycle components are upgraded to Workflow.

### Upgrading Results and Cycle Action Results

The upgrade automatically creates data in WF\_LOOKUPS for those records in SO\_RESULTS that are referenced by custom actions (records in SO\_ACTION\_RESULTS). Based on the records in SO\_ACTION\_RESULTS, these results are automatically mapped to custom activities and notification activities.

The lookup is created under the OM Order Header workflow (OEOH) item type, if the action that a result was mapped was a header cycle action. The lookup is created under the OM Order Line (OEOL) workflow item type, if the action that a result was mapped was a line cycle action. A lookup type is created for every set of results used by a custom action or approval action.

The following naming convention is used for creating lookup types:

Lookup Type Code - UPG\_RT\_nn (Where nn stands for the Action ID)  
 Display Name - UPG\_RT\_xx (Where xx stands for the Action Name (first 26 characters))

The following naming convention is used for creating lookup codes:

Lookup Code - UPG\_RC\_nn (Where nn stands for the Result ID)  
 Meaning - XX (Where XX stands for the Result name)

Example: You have the following cycle results defined:

**Table 32–1 Cycle Results**

| Result Name | Result Description | Result Id |
|-------------|--------------------|-----------|
| Pass        | Approval Passed    | 1         |
| Fail        | Approval Failed    | 2         |

These are associated to a custom action Export Approval as follows:

**Table 32–2 Export Approval**

| Custom Action   | Custom Action ID | Result | Passing |
|-----------------|------------------|--------|---------|
| Export Approval | 1001             | Pass   | Yes     |
| Export Approval | 1001             | Fail   |         |

The upgrade will create a Workflow lookup type as follows:

**Table 32–3 Workflow Lookup Type**

| Meaning                 | Lookup Type Code |
|-------------------------|------------------|
| UPG_RT_Export_ Approval | UPG_RT_1001      |

The upgrade will create the following workflow lookups under the above lookup type

**Table 32–4 Workflow Lookup Type 2**

| Meaning | Description     | Lookup Code |
|---------|-----------------|-------------|
| Pass    | Approval Passed | UPG_RC_1    |
| Fail    | Approval Failed | UPG_RC_2    |

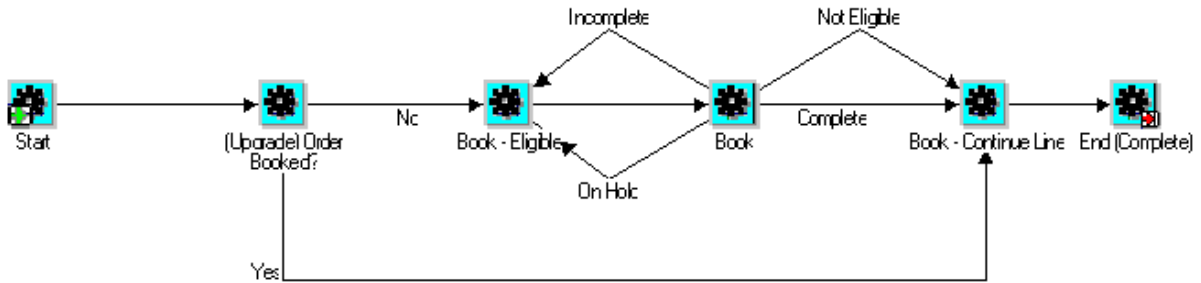
### Seeded Cycle Actions

Seeded cycle actions are not upgraded. Rather, Order Management comes seeded with upgrade specific versions of all seeded functional workflow sub-processes. The upgrade process uses these sub-processes as building blocks for creating order and line workflow process definitions based on the cycle definitions.

These upgrade specific functional sub-processes are designed to detect whether the order or line is already past the respective business functions. They are also designed such that no processing happens during the upgrade.

Example - (Upgrade ) Book - Order, Manual (UPG\_BOOK\_PROCESS\_ASYNC)

**Figure 32–1 Book - Order, Manual**



This is the upgrade specific version of the seeded 'Book - Order, Manual' sub-process.

It works as follows: If the Upgrade is running , the function '(Upgrade) Order Booked?' checks whether the Order is already booked. If not it completes with a 'No' and the flow will hit the Book – Eligible block. Else it completes with a 'Yes' and skips past the actual function that books an Order.

If the Upgrade is not running then the function '(Upgrade) Order Booked?' completes with a 'No'.

The following table indicates the seeded Order Management WF sub-processes that various Order Entry seeded cycle actions map to:

**Table 32–5 Header Cycle Actions**

| Cycle Action ID | Cycle Action           | WF Sub-process Internal Name | WF Sub-process Display Name     |
|-----------------|------------------------|------------------------------|---------------------------------|
| 1               | Booking                | UPG_BOOK_PROCESS_ASYNC       | (Upgrade ) Book - Order, Manual |
| 9               | Complete Order (Close) | UPG_CLOSE_ORDER_PROCESS      | (Upgrade) Close - Order         |

**Table 32–6 Line Cycle Actions**

| <b>Cycle Action ID</b> | <b>Cycle Action</b>   | <b>WF Sub-process Internal Name</b> | <b>WF Sub-process Display Name</b>       |
|------------------------|-----------------------|-------------------------------------|--|
| 1                      | Booking               | ENTER                               | * Enter - Line                           |
| 2                      | Pick Release          | UPG_SHIPPING_SUB                    | (Upgrade) Ship - Line                    |
| 3                      | Ship Confirm          | UPG_SHIPPING_SUB                    | (Upgrade) Ship - Line                    |
| 4                      | Back Order Release    | UPG_SHIPPING_SUB                    | (Upgrade) Ship - Line                    |
| 7                      | Receivables Interface | UPG_LINE_INVOICE_INTERFACE_SUB      | ** (Upgrade) Invoice Interface - Line    |
| 8                      | Complete Line (Close) | UPG_CLOSE_LINE_PROCESS              | (Upgrade) Close - Line                   |
| 11                     | Inventory Interface   | UPG_SHIPPING_SUB                    | (Upgrade) Ship - Line                    |
| 12                     | Demand Interface      | UPG_SCHEDULE_LINE                   | (Upgrade) Schedule - Line                |
| 13                     | RMA Interface         | UPG_RMA_RECEIVING_SUB               | (Upgrade) Return Receiving - Line        |
| 15                     | Manufacturing Release | UPG_MODEL_MFG_RELEASE               | (Upgrade) Manufacturing Release - Line   |
|                        |                       | UPG_CONFIGURATION_LINE              | *** (Upgrade) Create Supply Order - Line |
| 16                     | Service Interface     | UPG_SHIPPING_SUB                    | **** (Upgrade) Ship - Line               |
| 17                     | Purchase Release      | UPG_PUR_REL_LINE                    | (Upgrade) Purchase Release - Line        |

\* - This is used when a line action has Booking as a prerequisite.

\*\* - Additionally UPG\_FUFILLMENT\_SUB ((Upgrade) Fulfill - Line) is also added before the invoicing process if the original cycle had Ship-Confirm or RMA Interface cycle actions.

\*\*\* - This is used in the flow created specifically for the Configured Item Line

\*\*\*\* - Service Interface is obsolete in OM. Shipping behaves like a no-op for Service Lines

See Also -- for detailed descriptions of each of these sub-processes.

Cycle Action Pre-Requisites

Cycle action pre-requisites determined when an Order or Line became eligible for a certain cycle action. In Workflow transition information determines when a particular workflow activity is executed. The upgrade creates this information based cycle action pre-requisites. Appropriate 'AND' & 'OR' activities are also created depending on the grouping of the records via the group number.

### Custom Cycle Actions

Custom cycle actions are those actions that are not seeded and are not approvals actions. In Order Entry the processing for such a cycle action was done externally, and you needed to call C based Order Entry functions to move the Order or Line forward in its cycle based on the result of the custom action.

Such cycle actions are upgraded to special workflow block activities. The block activity is created under the workflow item type OM Order Header(OEOH), if the custom cycle action was a Header action. It is created under the workflow item type OM Order Line(OEOL), if the custom cycle action was a Line action.

The following naming convention is used when creating this special block activity:

Internal Name - UPG\_AN\_nn (Where nn stands for the ACTION ID)

Display Name - xxxxxxxxxxxx (Where xxxxxxxxxxxx stands for the Cycle Action Name)

This activity is defined to call the function OE\_WF\_UPGRADE\_UTIL.UPGRADE\_CUSTOM\_ACTIVITY\_BLOCK. An activity attribute is also created and it is set to the name of the S column (status column) that the custom cycle action was mapped to.

The procedure OE\_WF\_UPGRADE\_UTIL.UPGRADE\_CUSTOM\_ACTIVITY\_BLOCK does the following:

If the activity is executed when the Upgrade is running, then it retrieves the S Column name from its activity attribute. It then checks the S Column value for the order or line in Order Entry. If the S column has a value other than eligible (18) it completes the block with that value (using the upgraded workflow lookup code naming convention). If the S column has a value of 'eligible' (18) indicating that the order or line was eligible for the custom action, then it completes with 'NOTIFIED'.

If the block activity is executed when the Upgrade is not running then it will complete with 'NOTIFIED' to indicate that the order or line is eligible for external custom processing.

**After you have successfully upgraded to Order Management, you need to complete such special blocks for upgrade orders or lines using the Workflow API**



**WF\_ENGINE.CompleteActivityInternalName() after completing the external processing that the custom cycle action did.**

Example - A custom action is defined as following in Order Entry:

- Action ID - 1022
- Action Name - External Export Processing
- Result Table - SO\_HEADERS\_ALL
- Result Column - S11

It is used in a cycle International Ship. The cycle action becomes eligible once the Order is entered and it serves as a pre-requisite for the Pick Release Action.

The following records are defined for it in SO\_ACTION\_RESULTS:

**Table 32-7 SO\_ACTION\_RESULTS**

| Result Name | Result Id | Passing |
|-------------|-----------|---------|
| Pass        | 1         | Yes     |
| Fail        | 2         |         |

The cycle action is upgraded to a block activity that is defined under the workflow item type OM Order Header as follows:

- Internal Name - UPG\_AN\_1022
- Display Name - External Export Processing

It is tied to the Lookup UPG\_RT\_1022 that has the following two lookups:

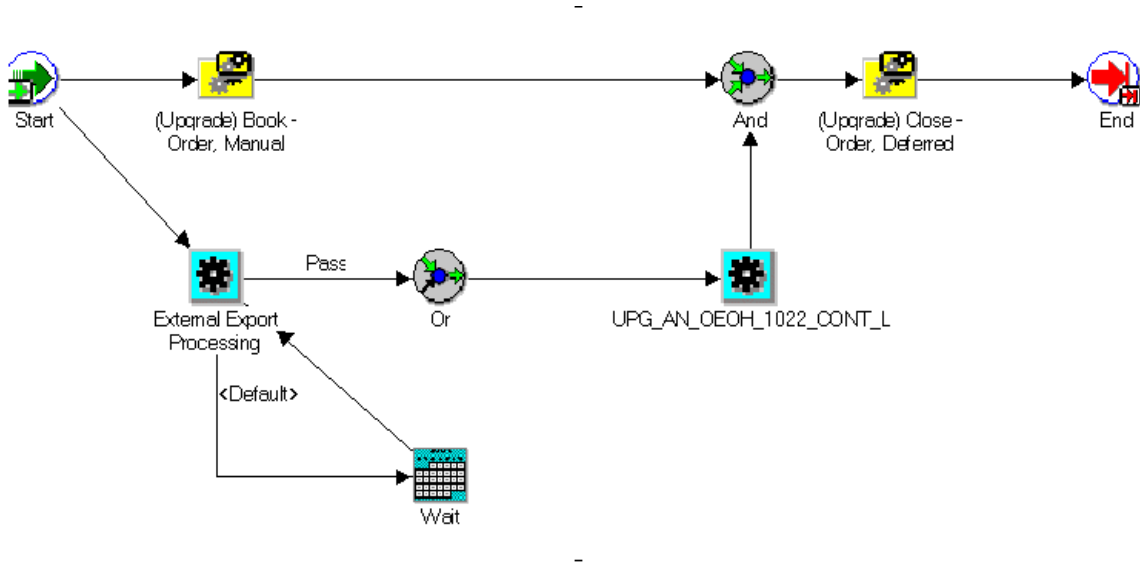
**Table 32-8 Lookups**

| Lookup Code | Lookup Meaning |
|-------------|----------------|
| UPG_RC_1    | Pass           |
| UPG_RC_2    | Fail           |

The activity attribute 'S\_COLUMN' on this block activity is set to the value 'S11'.

When the cycle that uses this activity is upgraded, the workflow process that is created will look as follows;

**Figure 32–2 Upgraded Cycle Activity Workflow**



In the above process the block activity 'External Export Processing' represents the upgraded cycle action. It calls the function `OE_WF_UPGRADE_UTIL.UPGRADE_CUSTOM_ACTIVITY_BLOCK`.

The function 'UPG\_AN\_OEOH\_1022\_CONT\_L' is created for handling the dependency of a Line action on this Header action.

When cycle history is upgraded, a header flows are started using this workflow process. If an Order was eligible for this custom action then the function 'External Export Processing' sets itself to 'NOTIFIED'.

If an Order was past this custom action with the 'Pass' result then the block completes with a 'Pass' (UPG\_RC\_1) thus transitioning to the continue-flow activity and then the flow transitions to the Close Order process. There it will wait for the lines to close.

If an Order was past this custom action with a 'Fail' result then the block will complete with a 'Fail' (UPG\_RC\_2) transitioning to the wait activity (via the default transition). Post-upgrade this transition will revisit the block activity, which will set itself to 'NOTIFIED' again. This transition back to the custom activity is done to mimic order cycles functionality, where an action when completed with a non-passing result could stay in that unprocessed state forever.

Now post-upgrade to handle orders that are eligible for this custom activity, you need to process these orders externally. To query orders that are eligible for this custom activity 'External Export Processing', you can query workflow item activity statuses as follows:

```
SELECT ITEM_KEY
FROM WF_ITEM_ACTIVITY_STATUSES_V
WHERE ITEM_TYPE = 'OEOH'
AND ACTIVITY_NAME = 'UPG_AN_1022'
AND ACTIVITY_STATUS_CODE = 'NOTIFIED'
AND SOURCE = 'R';
```

This query will return all the Orders (Header Ids) that are awaiting processing at this custom activity. On successfully completing the external processing you need to complete this block activity for each Order, to progress its flow.

You can do this by calling the Workflow API WF\_ENGINE.COMPLETEACTIVITYINTERNALNAME with the following parameters:

- Item Type - 'OEOH'
- Item Key - OE\_ORDER\_HEADERS\_ALL.HEADER\_ID for the Order that has been processed.
- Activity Name - 'UPG\_AN\_1022'
- Result Code - 'UPG\_RC\_1'

To handle the case where the Order fails the external processing, you can cancel the Order via the Sales Order Form, so that it can go ahead and close. You can also call the Process Order API Order (OE\_ORDER\_PUB.Process\_Order) to cancel an order. Please refer to the Open Interfaces Manual for details on using this public API.

## Approval Actions

Approval actions get upgraded to workflow notification activities. The upgrade also creates special pre-notification activities and message data for the notifications.

The notification and pre-notification activities are created under the workflow item type OM Order Header(OEOH) if the approval was a Order level approval action. They are created under the workflow item type OM Order Line (OEOL) if the approval was a Line level approval action.

The following naming convention is used when creating the notification activities:

- Internal Name - UPG\_AN\_nn (where nn stands for the Approval Action ID)

- Display Name - xxxxxxxxxxxx (Where xxxxxxxxxxxx stands for the Approval Action Name)

The activity is defined to be a high-cost activity to ensure that no notifications are sent when the upgrade is running.

The responder on the notification activity determines who the notification is sent to. This is set to default from the workflow item attribute Notification Approver. Please refer to the section “Post -upgrade steps that affect the Cycle History upgrade” for information on how this item attribute is set.

For every usage of the approval action in a cycle, a pre-notification activity is also created. The following naming convention is used in creating pre-notification activities:

**Internal Name** - UPG\_AN\_PNOT\_nnn (where nnn stand for the WF instance Id of the Notification activity it precedes.)

**Display Name** - UPG\_AN\_PNOT\_nnn (where nnn stand for the instance Id of the Notification activity it precedes.)

This activity is defined to call the PL/SQL Function - OE\_WF\_UPGRADE\_UTIL.UPGRADE\_PRE\_APPROVAL

An activity attribute is also created and it is set to the name of the S column (column status column) that the approval cycle action was mapped to.

The procedure OE\_WF\_UPGRADE\_UTIL. UPGRADE\_PRE\_APPROVAL does the following:

If the activity is executed when the Upgrade is running, then it retrieves the S Column name from its activity attribute. It then checks the S Column value for the order or line in Order Entry. If the S column has a value other than eligible (18) it completes with that value (using the upgraded lookup code naming convention).

If the S column has a value of ‘eligible’ (18) indicating that the order or line was eligible for the approval, then it completes with ‘Not Processed’. If the pre-notification activity is executed when the Upgrade is not running then it will complete with ‘Not Processed’.

The ‘Not Processed’ result from the pre-notification activity is transitioned to the respective notification activity.

A Notification activity needs to have a message tied to it. The upgrade creates a message for each approval, using the following convention:

- Display Name - xxxxxxxxxxxx (Where xxxxxxxxxxxx stands for the Approval action name)

- Message Subject - xxxxxxxxxxxx (Where xxxxxxxxxxxx stands for the Approval action name)

Message attributes are created that reference the seeded Header or Line Short Descriptor workflow item attributes, depending on whether this is a message for a Order level approval or a Line level approval.

- Example - An approval action is defined as following in Order Entry:
- Action ID - 1023
- Approval Action Name - Legal Approval
- Result Table - SO\_HEADERS\_ALL
- Result Column - S12

It is used in the cycle “International Bill-Only”. It becomes eligible once the Order is entered. It can complete with a Pending, Pass or Fail result. When it completes with a ‘Pass’, it serves as a pre-requisite for the Receivables Interface line action.

The following records are defined for it in SO\_ACTION\_RESULTS:

**Table 32–9 SO\_ACTION\_RESULTS**

| Result Name | Result Id | Passing |
|-------------|-----------|---------|
| Pass        | 1         | Yes     |
| Fail        | 2         |         |
| Pending     | 30        |         |

This approval action is upgraded to a notification activity under the workflow item type OM Order Header as follows:

- Internal Name - UPG\_AN\_1023
- Display Name - Legal Approval

It is tied to the Lookup UPG\_RT\_1023 that has the following two lookups:

**Table 32–10 UPG\_RT\_1023**

| Lookup Code | Lookup Meaning |
|-------------|----------------|
| UPG_RC_1    | Pass           |
| UPG_RC_2    | Fail           |

**Table 32–10 UPG\_RT\_1023**

|                   |                                 |
|-------------------|---------------------------------|
| UPG_RC_30         | PP Pending                      |
| N N NOT_PROCESSED | NOT_PROCESSED_NOTN_ UPG_AN_1023 |

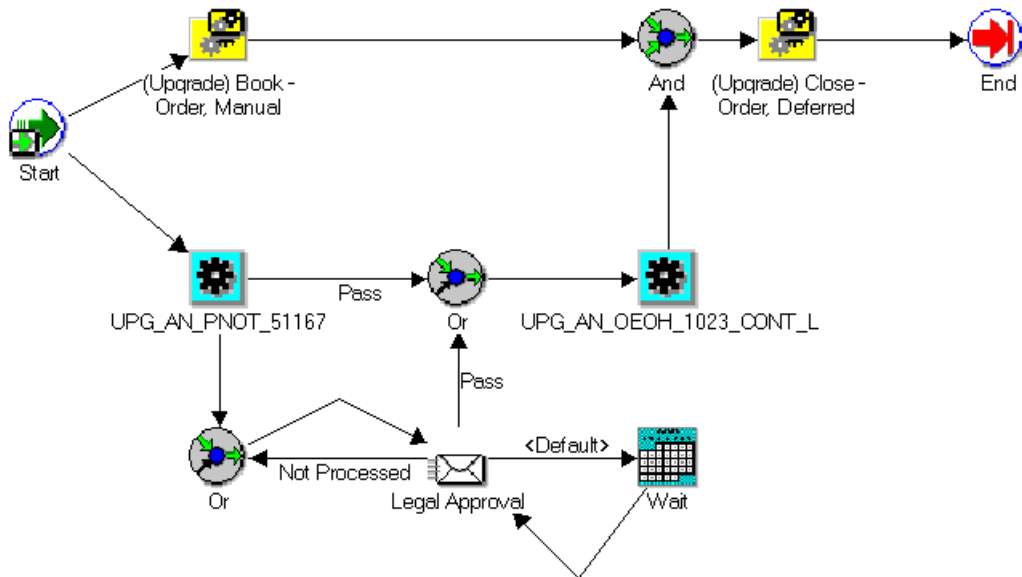
For every usage of the approval action in a cycle, a pre-notification activity is also created as follows:

- Internal Name - UPG\_AN\_PNOT\_51167
- Display Name - UPG\_AN\_PNOT\_51167

The activity attribute 'S\_COLUMN' on this pre-notification activity is set to the value 'S12'.

When the cycle that uses this approval is upgraded, the flow that is created will look as follows:

**Figure 32–3 Cycle with Upgraded Approval**



The Pre-notification Activity 'UPG\_AN\_PNOT\_51167' is placed before the Notification 'Legal Approval'. It calls the function OE\_WF\_UPGRADE\_UTIL.UPGRADE\_PRE\_APPROVAL.

If the Order is already past the approval with a 'Pass' result then the pre-notification also completes with a 'Pass', transitions the flow to the continuation activity 'UPG\_AN\_OEOH\_1023\_CONT\_L'.

If the Header is eligible for the Approval then the pre-notification activity completes with a 'Not Processed' transitioning it to the Notification Activity (via the 'Or').

If the Approval was completed with a result other than 'Pass' (the passing result), the pre-notification activity completes with that result transitioning to the notification activity (via the 'default' transition and Wait activity). Since the Notification Activity is created with a High Cost the flow is deferred when it reaches it. This transitioning back to the notification activity is done to mimic order cycles functionality, where an approval action when completed with a non-passing result could stay in that unprocessed state forever.

Post-Upgrade, you can respond to Notifications from the WF Notifications page. It is available off the Order Management menu. Notifications that the upgrade creates are all configured to go the role that is set via the profile option 'OM: Notification Approver'.

### Header and Line Action Dependencies

Order Entry cycles supported line actions having header actions as pre-requisites. In Workflow such parent-child co-ordination is achieved via wait-for-flow and continue-flow coordination activities. Coordination for Booking (Lines wait for Order to book) and Closure (Order waits for Lines to close) is handled by the upgrade specific versions of those seeded functional sub-processes.

However the following kinds of dependencies are handled dynamically when the cycle definitions are upgraded:

- Seeded Line actions having custom Header actions or approvals as pre-requisites
- Custom Line actions or approvals having custom Header actions or approvals as pre-requisites

For every such dependency two new activities are created. A continue flow activity at the Header level, that is placed immediately after the Header pre-requisite activity. It is named as follows:

- Internal/Display Name - UPG\_AN\_OEOH\_nn\_CONT\_L (Where nn stands for the Action ID of the pre-requisite action)

A wait for flow activity at the Line level, that is placed immediately before the dependent Line action. It is named as follows:

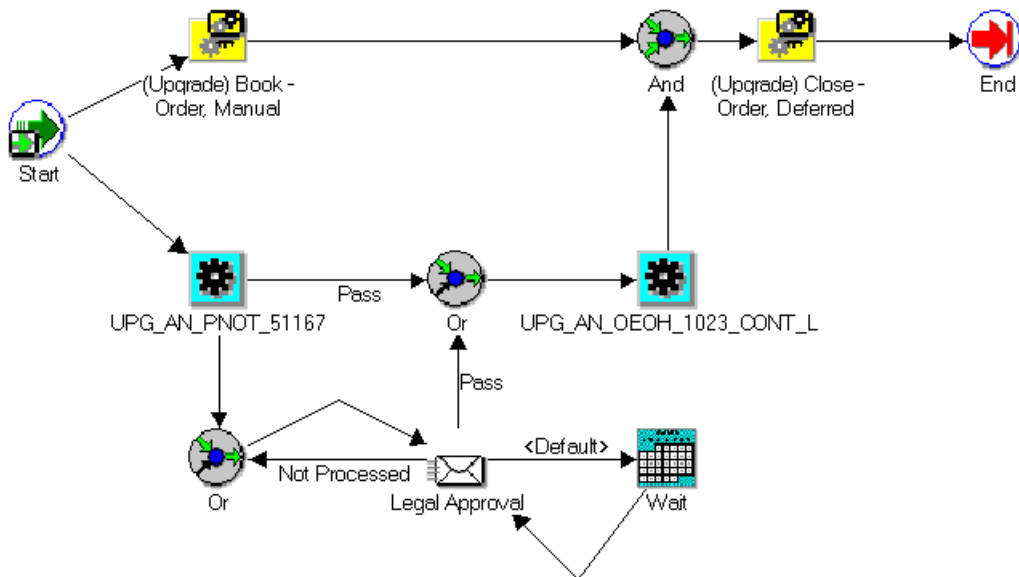
- Internal/Display Name - UPG\_AN\_OEOL\_nn\_WAIT\_FOR\_H (Where nn stands for the Action ID of the pre-requisite action)

Appropriate activity attributes are created for coordination. When more than 1 Line Action is dependent on the same Header action the code creates multiple wait-for-flow activities and then merges them, since WF supports only one Continue-flow activity linked to a single wait-for-flow activity.

Example - The cycle International Bill Only is defined such that the Line cycle action Receivables interface is dependent on the order being booked and the order having passed the Header level Legal Approval (Action ID is 1023).

When the cycle is upgraded the header workflow definition looks as follows:

**Figure 32-4 Upgraded Cycle - Header Workflow Definition**

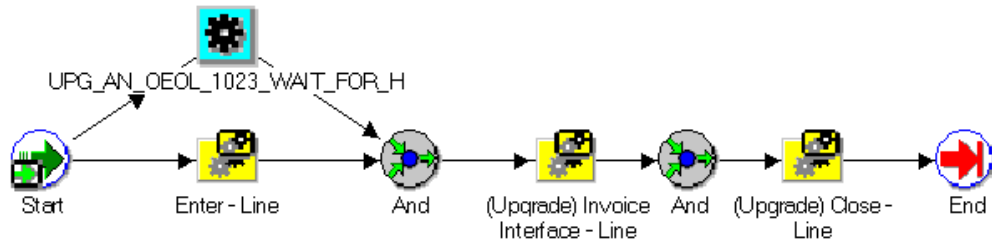




The activity UPG\_AN\_OEOH\_1023\_CONT\_L is positioned such that it is executed when the Notification Activity (Legal Approval) completes with a 'Pass' result. This is the continuation activity that signals the Line flows to continue.

The Line workflow definition looks as follows:

**Figure 32-5 Line Workflow Definition**



The 'Enter Line' activity is a seeded activity that handles Line dependency on Booking. It includes the coordination activity that makes the Line flow wait for Booking. The activity UPG\_AN\_OEOH\_1023\_WAIT\_FOR\_H is the WAIT\_FOR\_FLOW coordination activity that the Upgrade dynamically creates to handle the dependency on the Header Approval Action. As the process definition indicates both of these serve as prerequisites to Interface to Invoice Sub-process.

### Cycle Definitions

Order Entry did not seed any cycles. Every user defined cycle that is referenced by open orders or lines is upgraded in to a Header workflow process and a Line workflow process. A Cycle that has the Manufacturing Release Action is upgraded into 3 workflow processes. The third one is a Line workflow process that is specific only for the Configured Item Line.

The upgrade specific functional sub-processes, special block activities (for upgraded custom cycle actions), pre-notification and notification activities (for upgraded approval actions), coordination activities (for dependencies), 'and' and 'or' activities (for pre-requisite groupings) that are described in the previous sections are used as building blocks to define workflow process definitions. The

upgrade dynamically creates these process definitions based on the cycle definitions.

Header workflow process definitions are created based on all the header level cycle actions in the cycle. Line workflow process definitions are created based on all line level cycle actions in the cycle.

The following naming conventions are used to name these workflow processes:

- Header workflow process-
- Internal Name - UPG\_PN\_OEOH\_REG\_nn (Where nn stands for the Cycle Id)
- Display Name - UPG\_PN\_OEOH\_REG\_XXXXXXXXXX .. (Where xx stands for the Cycle Name)
- Line workflow process-
- Internal Name - UPG\_PN\_OEOL\_REG\_nn (Where nn stands for the Cycle Id)
- Display Name - UPG\_PN\_OEOL\_REG\_XXXXXXXXXX (Where xxx stands for the Cycle Name)
- Configured Item Line workflow process -
- Internal Name - UPG\_PN\_OEOL\_CFG\_nn (Where nn stands for the Cycle Id)
- Display Name - UPG\_PN\_OEOL\_CFG\_XXXXXXXXXX (Where xxx stands for the Cycle Name)

### **Cycle Definitions that are NOT upgraded**

Certain cycle definitions that were unsupported in Order Entry, have corrupt definitions or are extremely complex are not upgraded. If a cycle is not upgraded then any Open order referencing such a cycle is not upgraded either.

### **Workflow Process definitions are NOT created for the following kinds of cycles:**

1. A cycle that has no 'Complete Order' cycle action. Order Entry required that you include the actions of 'Complete Line' and 'Complete Order' action at the end of all your order cycles.

To upgrade open Orders referencing such a cycle, you can do one of the following:

Complete cancel the order thus closing it.

Add the 'Complete Order' Header action to the cycle definition. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

2. A cycle that has no 'Complete Line' cycle action. Order Entry required that you include the actions of 'Complete Line' and 'Complete Order' action at the end of all your order cycles.

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Completely cancel all the lines on the order thus closing them.

Add the 'Complete Line' cycle action to the cycle. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

3. A cycle that has the Order or Line Cancel Action. Order Entry DOES NOT support defining cycles with the Cancel Action in them. It DOES NOT provide a program or a form to process orders or lines that are eligible for the Cancel Action

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Verify that there are **NO** orders or lines eligible for the Cancel Action. And then take out the Cancel Action from the cycle. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

Recommendation: If you were using the line cancel action in a cycle to cancel back-ordered lines, you can use the Order Management Under-Shipment feature. By setting the under-shipment tolerances appropriately you can ship partially but fulfill completely (thus obviating the need to cancel the un-shipped portion). Refer to the Order Management User Guide for more information on Over-Under Shipments.

4. A Non-Ship Cycle that has the Inventory Interface Action

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Take out the Inventory interface action. This means that you have to manually decrement inventory for some transactions post-upgrade, unless you progress all open transactions past inventory interface before you upgrade. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

5. A Cycle that has both the RMA Interface Action and the Purchase Release Action

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Process all open Orders to closure and then take out the Purchase release Action from the cycle. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

Process all open Returns to closure and then take out the RMA interface Action from the cycle. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

6. A Cycle that has a Line Action with:

- 1. More than one group in its pre-requisites (OR condition) AND
- 2. One of the groups has more than one pre-requisite action (AND condition)

AND

3. Such a group has a header action as one or more of its pre-requisite actions

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Convert the 'AND' conditions to 'OR' conditions. This may not be feasible to do while retaining the same functionality. It will also result in some actions becoming eligible post-upgrade that would not have become eligible pre-upgrade (because an AND condition was not met). Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

7. A Cycle that does not have records in the table so\_action\_results for those actions - result combinations that serve as prerequisites for other actions in that cycle. This is a case of data corruption that can happen when you define cycles without using the Application Forms.

To upgrade open Orders referencing such cycles, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Create the required records in SO\_ACTION\_RESULTS via the 'Define Action Results' form.

8. A Cycle that has Header level actions dependent on Line level actions. Order Entry does not support such a definition.

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Take out the dependency of the Header level action from the Line Level action. Ensure that the header action is now dependent on some other Header level action. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

9. In Order Entry the cycle actions of Pick Release, Back Order Release and Ship-Confirm have to be used in a certain way. Not Supported - A Cycle that has the Ship-Confirm cycle action and it has as its pre-requisites actions other than Pick Release or Back Order Release.

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Ensure that all open lines using this cycle are before the Pick Release action. That is the line status columns for Pick Release, Back Order Release and Ship-Confirm have null values. If they are not, then process those lines to closure. AND then change the cycle definition so that the Ship-Confirm Action does not have as its pre-requisite an action other than Pick Release or Back Order Release. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

10. In Order Entry the cycle actions of Pick Release, Back Order Release and Ship-Confirm have to be used in a certain way. Not Supported - A cycle that has the Back Order release cycle action and it has as its pre-requisite an action other than Ship-Confirm.

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Ensure that all open lines using this cycle are before the Pick Release action. That is the line status columns for Pick Release, Back Order Release and Ship-Confirm have null values. If they are not, then process those lines to closure. AND then change the cycle definition so that the Back Order Release Action does not have as its pre-requisite an action other than Ship-Confirm. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

11. In Order Entry the cycle actions of Pick Release, Back Order Release, Ship-Confirm and Inventory Interface had to be used in a certain way. Not Supported - A cycle that has the Ship-confirm and Inventory Interface cycle actions and the Inventory Interface action has as its pre-requisites an action other than Ship-Confirm or Service Interface.

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Ensure that all open lines using this cycle are before the Pick Release action. That is the line status columns for Pick Release, Back Order Release, Ship-Confirm, Inventory Interface and Service Interface have null values. If they are not, then process those lines to closure. AND then change the cycle definition so that the Inventory Interface Cycle Action does not have as its pre-requisite actions other than Ship-Confirm or Service Interface. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

12. In Order Entry the cycle actions of Pick Release, Back Order Release, Ship-Confirm, Inventory Interface and Service Interface have to be used in a certain way. Not Supported - A cycle that has Ship-confirm OR Inventory Interface AND it also has Service Interface and the Service Interface action has as its pre-requisites actions other than Ship-Confirm or Inventory Interface.

To upgrade open Orders referencing such a cycle, you can do **one** of the following:

Process all orders through the order cycle and close them using the Close Orders program.

Ensure that all open lines using this cycle are before the Pick Release action. That is the line status columns for Pick Release, Back Order Release,

Ship-Confirm, Inventory Interface and Service Interface have null values. If they are not, then process those lines to closure. AND then change the cycle definition so that the Service Interface Cycle Action does not have as its pre-requisite actions other than Ship-Confirm or Inventory Interface. Verify that the 'Create Dynamic Where Clauses' Concurrent Program completes successfully.

A Pre-upgrade script (ontexc08.sql) is provide that identifies such **non-upgradable cycles**. You need to run this script before the upgrade and take corrective actions as needed. You need to then re-run the script to ensure that no exceptions are listed.

### Mapping of Cycle entities to Workflow

Cycle definition data maps to Workflow definitions data as follows:

**Table 32–11 Cycle Definition Data Mapping**

| <b>R11 Tables for Order Cycle Definition</b> | <b>R11i WF tables for Flow Definition</b> |
|--|---|
| SO_ACTIONS                                   | WF_ACTIVITIES                             |
| SO_ACTION_PRE_REQS                           | WF_ACTIVITY_TRANSITIONS                   |
| SO_ACTION_RESULTS                            | WF_ACTIVITIES, WF_LOOKUPS                 |
| SO_CYCLES                                    | WF_ACTIVITIES                             |
| SO_CYCLE_ACTIONS                             | WF_PROCESS_ACTIVITIES                     |
| SO_RESULTS                                   | WF_LOOKUPS                                |

Workflow is architected very differently from Cycles and hence the workflow process definitions that the upgrade creates are not optimal. The upgrade process follows certain heuristics to create process definitions that are functionally equivalent to the cycle definition. In doing so it creates extraneous 'and' and 'or' activities.

These upgraded workflow process definitions use the upgrade specific functional sub-processes, that have these additional activities that do special stuff when the cycle history is upgraded.

**For these reasons it is very strongly recommended that you DO NOT use these flows for processing new order and lines.**

## Upgrading Order Type - Cycle Assignments

Order Management has Transaction Types; Order Types and Line Types. Header workflow processes are assigned to Order Types. Line workflow processes are assigned to Order Type, Line Type and Item Type combinations. See Also Users Guide - Workflow Assignments for details.

We have described how Order Types are upgraded to Order and Line transaction types. The upgrade also creates workflow assignments for these transaction types. These workflow assignments are for use by the upgraded orders and lines only and hence are end dated. **To be able to use the upgraded Order and Line transaction types for new orders and lines, you need to define new workflow assignments.**

For every Order Type that is upgraded, a workflow assignment is created as follows:

**Table 32–12 Order Type - Created Workflow Assignments**

| Column       | Value  |
|--------------|--|
| Order Type   | Order Type that is upgraded  |
| Process Name | UPG_PN_OEOH_REG_xxx (where xxx stands for the cycle name that the Order Type referenced) |
| Start Date   | The Start Date on the original Order Type  |
| End Date     | sysdate (Since this assignment is for upgraded orders ONLY)                              |

For every new Line Type that is created for an upgraded Order Type a line workflow assignment is created as follows:

**Table 32–13 Line Type - Created Workflow Assignments**

| Column Name  | Value   |
|--------------|---|
| Order Type   | Order Type that is upgraded   |
| Line Type    | Line Type that is automatically created for this Order                                    |
| Item Type    | NULL  |
| Process Name | UPG_PN_OEOL_REG_xxx (where xxx stands for the cycle name that the Order Type referenced). |
| Start Date   | The Start Date on the original Order Type   |
| End Date     | sysdate (Since this assignment is for upgraded lines ONLY)                                |



If the cycle that the original Order Type references has Manufacturing Release, then we additionally create the following workflow assignment for supporting the Configured Item Line.

**Table 32–14 Configured Line Item - Created Workflow Assignments**

| Column Name  | Value  |
|--------------|--|
| Order Type   | Order Type that is upgraded  |
| Line Type    | Line Type that is automatically created for this Order                                     |
| Item Type    | Configured Item  |
| Process Name | UPG_PN_OEOL_CFG_xxx (where xxxx stands for the cycle name that the Order Type referenced). |
| Start Date   | The Start Date on the original Order Type  |
| End Date     | sysdate (Since this assignment is for upgraded lines ONLY)                                 |

## Upgrading Cycle History

Cycle History is upgraded to Workflow Status Tables **only for all Open Orders and Lines**. Upgrading cycle history is a very expensive operation and you are advised to run the Close Orders program to close all Orders/Lines that are eligible to close before the upgrade.

### Supported and Unsupported Cycle States

Order and Lines need to be in certain cycle states in order to be upgraded. A pre-upgrade script (ontexc07.sql) identifies Orders and Lines in unsupported cycle states. You need to run this script and handle the exceptions it lists. You can move such orders or line forward to a supported cycle state using Order Entry concurrent programs or forms.

### Cancellation Status History

In Order Management partial cancellation is supported as a direct update of the ordered quantity. Partial cancellation status is not tracked via Workflow. Cancellation history is stored in lines history table (OE\_ORDER\_LINES\_HISTORY).

When an Order or Line is fully cancelled its flow is automatically transitioned to the Close Order or Close Line activity and the Order or Line is closed. In Order Entry, an Order Header or Line were closed on full cancellation as well. This means that cycle history for fully canceled (hence closed)Orders/Lines is not upgraded.

## Null Cycle Statuses

A Null Status for any S Column is supported, since it indicates that the order or line has not reached that cycle action yet or its cycle does not have that cycle action in it.

## Seeded Partial Line Action Statuses

Order Management does not store partial statuses \*\*. In OM, when a Line is partially processed it splits, so that the processed part progresses in its own flow and the new line created awaits processing.

Example: A line is ship-confirmed partial. The system splits it into 2 lines. The original line will complete the Ship-Line activity and move on to fulfill and invoice interface. The new line created gets its own flow and will wait at the Ship-Line activity, awaiting to be picked and shipped. See Also the User's Guide for more information on Line Splits.

When an order line with a partial status is upgraded to Order Management, it is automatically split into multiple lines depending on the number of line details or picking line details that it is tied to.

\*\* - Invoice Interface is an exception here, it can partially invoice interface a line when all its required for revenue components are not fulfilled.

## Supported Header Seeded Cycle Action Statuses

The following table summarizes the supported state and unsupported cycle states for order headers.

**Table 32–15 Supported and Unsupported Cycle States for Order Headers**

| <b>S Column</b> | <b>Seeded Cycle Action</b> | <b>Unsupported Cycle States</b> | <b>Supported States other than null and not applicable(8 or 24)</b> | <b>Where is the Order flow after the upgrade?</b>           |
|-----------------|----------------------------|---------------------------------|---|---|
| S1              | Booking                    |                                 | 1 - Booked  | Will skip past actual Booking function                      |
|                 |                            |                                 | 5 - Partial   | Will be Book eligible                                       |
|                 |                            |                                 | 15 - Entered  | Will be Book eligible                                       |
|                 |                            |                                 | 18 - Eligible   | Will be Book eligible                                       |
| S4              | Cancel Order               |                                 | 11 - Complete   | Please look at above section on Cancellation Status History |

**Table 32–15 Supported and Unsupported Cycle States for Order Headers**

| <b>S Column</b> | <b>Seeded Cycle Action</b> | <b>Unsupported Cycle States</b> | <b>Supported States other than null and not applicable(8 or 24)</b> | <b>Where is the Order flow after the upgrade?</b>  |
|-----------------|----------------------------|---------------------------------|---|--|
|                 |                            |                                 |   | 8 or 24 not supported for S4 since Cancel Action cannot be used in a cycle.                      |
| S6              | Close/Complete             |                                 | 18 - Eligible   | In Order Management it would become eligible for closure. Will close once all lines have closed. |
|                 |                            |                                 | 10  | Status history not upgraded for Closed Orders  |

### Supported Order Line Seeded Cycle Action Statuses

The following table summarizes the supported state and unsupported cycle states for order lines.

**Table 32–16 Supported and Unsupported Cycle States for Order Lines**

| <b>S Column</b> | <b>Seeded Cycle Action</b> | <b>Unsupported Cycle States</b> | <b>Supported States other than null and not applicable(8 or 24)</b> | <b>Where is the line flow after the upgrade?</b>                                      |
|-----------------|----------------------------|---------------------------------|---|---|
| S2              | Pick Release               |                                 | 18 - Eligible   | This equates to 'Awaiting Shipping'   |
|                 |                            |                                 | 4 - Released, NO OPEN Pick Slips                                    | If not shipped, This equates to 'Awaiting Shipping'                                   |
|                 |                            |                                 | 5 - Partial   | Line is split as part of upgrade. If not shipped, This equates to 'Awaiting Shipping' |
| S3              | Back Order Release         |                                 | 18 - Eligible   | This equates to 'Awaiting Shipping'   |
|                 |                            |                                 | 5 - Partial   | Line is split as part of upgrade. If not shipped, This equates to 'Awaiting Shipping' |
|                 |                            |                                 | 4 - Released, NO OPEN Pick Slips                                    | If not shipped, This equates to 'Awaiting Shipping'                                   |

**Table 32–16 Supported and Unsupported Cycle States for Order Lines**

| <b>S Column</b> | <b>Seeded Cycle Action</b> | <b>Unsupported Cycle States</b> | <b>Supported States other than null and not applicable(8 or 24)</b> | <b>Where is the line flow after the upgrade?</b>   |
|-----------------|----------------------------|---------------------------------|---|--|
| S4              | Ship Confirm               | 18 - Eligible                   | 5 - Partial   | Line is split as part of upgrade. The Ship-confirmed Line will skip past Ship-Line. The other will be 'Awaiting Shipping'  |
|                 |                            |                                 | 6 - confirmed   | Will skip past 'Ship Line' activity.   |
|                 |                            |                                 | 7 - Backordered Complete  | This equates to 'Awaiting Shipping'  |
|                 |                            |                                 | 22 - Backordered Partial  | Line is split as part of upgrade. If not shipped, this equates 'Awaiting Shipping' else it will skip past Ship-Line.   |
|                 |                            |                                 |   |  |
| S5              | Receivables Interface      | 18 - Eligible                   |   | This equates to Invoice Interface eligible. If a line was partially invoiced due to unfulfilled Required For Revenue components then post-upgrade the invoice interface function will push it to the RFR block activity. |
|                 |                            |                                 | 9 - Interfaced to AR  | This will skip past the Invoicing Sub-process.   |
|                 |                            |                                 | 5 - Partial   | This equates to Invoice Interface eligible. If a line was partially invoiced due to unfulfilled Required for Revenue components then post-upgrade the invoice interface function will push it to the RFR block.          |
| S6              | Close/Complete             | 18 - Eligible                   |   | In OM it would become eligible for closure.  |
|                 |                            |                                 | 10- Closed  | Status History not upgraded for Closed Lines   |
| S8              | Inventory Interface        | 18 - Eligible                   |   |  |
|                 |                            | 13 - Interfaced Error           |   |  |

**Table 32–16 Supported and Unsupported Cycle States for Order Lines**

| <b>S Column</b> | <b>Seeded Cycle Action</b> | <b>Unsupported Cycle States</b> | <b>Supported States other than null and not applicable(8 or 24)</b> | <b>Where is the line flow after the upgrade?</b>   |
|-----------------|----------------------------|---------------------------------|---|--|
|                 |                            |                                 | 5 - Partial   | Line is split as part of upgrade. The Ship-confirmed Line will skip past Ship-Line. The other will be 'Awaiting Shipping'.       |
|                 |                            |                                 | 14 - Interfaced   | This equates to ship-confirmed (in a ship flow) and thus 'Awaiting fulfillment'.   |
| S9              | Cancel Line                |                                 | 5 - Partial   | Please look at above section on Cancellation Status History.   |
|                 |                            |                                 | 11 - Complete   | 8 or 24 not supported for S4 since Cancel Action cannot be used in a cycle.  |
| S25             | Service Interface          | 18 - Eligible                   | 14 - Interfaced   | Service Interface has no corresponding WF activity in Order Management.  |
| S26             | Purchase Release           |                                 | 18 - Eligible   | This equates to it being Purchase Release Eligible.  |
|                 |                            |                                 | 14 - Interfaced   | This equates to skipping Purchase Release and being eligible at the Ship-Line Block.   |
|                 |                            |                                 | 6 - Confirmed   | This will skip both Purchase Release and the Ship-Line Block.  |
|                 |                            |                                 | 5 - Partial   | The Line is split as a result of the upgrade. The received line will skip past ship-Line, the other will be "Awaiting Shipping". |
| S27             | Manufacturing Release      | 4 - released                    |   | .  |
|                 |                            | 20 - WO partially completed     |   |  |
|                 |                            | 21 - WO created                 |   |  |
|                 |                            | 23 - Configuration created      |   |  |

**Table 32–16 Supported and Unsupported Cycle States for Order Lines**

| S Column | Seeded Cycle Action | Unsupported Cycle States | Supported States other than null and not applicable(8 or 24) | Where is the line flow after the upgrade?  |
|----------|---------------------|--------------------------|--|--|
|          |                     |                          | 18 - Eligible  | For the Model Line, this equates to being Create Configuration Eligible. For the Class and Option Lines this equates to "Awaiting Fulfillment".  |
|          |                     |                          | 19 - Work Order Completed                                    | For the Model Line this equates to being ATO fulfillment eligible (Wait for CTO block). For the Class and Option Lines this equates to "Awaiting Fulfillment". For the configured item Line this equates to "Awaiting Shipping". |
| S28      | Demand Interface    |                          | eligible - 18  | This equates to scheduling eligible  |
|          |                     |                          | interfaced - 14  | This equates to will be eligible at for the next activity in the flow.   |
| S29      | RMA Interface       |                          | eligible - 18  | This equates to 'Wait for receiving'   |
|          |                     |                          | partially accepted - 16                                      | Line will be split as part of Upgrade. If not received, This equates to 'Wait for receiving', else it will be at eligible for the next activity.   |
|          |                     |                          | interfaced - 14  | If not received, This equates to 'Wait for receiving'  |
|          |                     |                          | completely accepted - 17                                     | It is past the Return Receipt sub-process  |

**Note:** For the Manufacturing Release cycle action, the Order Management upgrade process only upgrades lines in the following statuses: Eligible or WO Complete. If you cannot complete all your open work orders in time for the upgrade, you can do the following before the upgrade:

Request the ARU for bug 1504523.

For lines that are mfg release - released: Run the pre-upgrade script that the ARU provides.

For lines that are mfg-release - config created: You need to delink the config item and run the pre-upgrade script the ARU provides.

For lines that are mfg-release - wo open or partial(no shipped items) - You need to delink the WO, delink the item and run the pre-upgrade script that the ARU provides.

The script does the following: - It picks up scheduled ATO lines (model, class, option) that are mfg release - released and updates their cycle state to mfg release - eligible.

After running this update script you **should re-run the pre-upgrade script ontexc07.sql** to confirm that such lines no longer show-up in the exception report.

After successfully upgrading you can re-link the Config Items (via the "Link Item" action in the Sales Order Form), and link Work Orders (via the WIP Discrete Jobs form) back to the order lines.

### Supported Custom Action Statuses

The Order Management upgrade supports upgrading orders and lines that are eligible for OR past a custom action. As described before the custom action is upgraded to a special workflow block activity. If an order or line was eligible for a custom action, after the upgrade the flow for the order or line will be stopped at the corresponding block activity (which will be in a 'NOTIFIED' state).

If the order or line was past the custom action, then the block activity would get completed with that result.

Pending cycle states (have completed with a non-passing result temporarily) for custom actions are supported as well. In this case too after the upgrade, block activity will be in a 'NOTIFIED' state (after the Workflow Background Engine has run).

### Supported Approval Statuses

The Order Management upgrade supports upgrading orders and lines that are eligible for OR past an approval. As described before, approval actions are upgraded to WF notification activities. If an order or line was eligible for an approval, on upgrade the corresponding notification will be sent out(after the Workflow Background Engine runs).

If the order or line was past the approval action then the pre-notification activity completes with that result thus skipping the notification activity.

Pending approval states (have completed with a non-passing result temporarily) for approval actions are supported as well. In this case the notification will be re-sent (after the Workflow Background Engine runs).

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**Note:** Order and Line Approval History data (SO\_ORDER\_APPROVALS, SO\_LINE\_APPROVALS) is not upgraded. Order Management provides a special form that allows you to view this Order Entry data for upgraded orders and lines.

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### Flow Creation for Upgraded Orders and Lines

One of the last tasks that the Order Management Upgrade does is the flow creation for the upgraded order headers and lines. This is done to upgrade cycle status history to workflow status information.

For every order that was successfully upgraded to Order Management, the upgrade process does the following:

As we described before cycle definitions are upgraded to workflow processes definitions. A header flow is started for the Order Header, using the header workflow process that maps to the cycle it referenced in Order Entry. The Header ID is used as the item key for the header flow.

For every line on the order, a line flow is started using the line workflow process that maps to the cycle it referenced in Order Entry. The Line Id is used as the item key for the line flow.

Example: An Order has a standard item line. The order uses the cycle “International Bill - Only”. This is the cycle we discussed in the “Header and Line Action Dependencies”. The order is booked and eligible for the Legal Approval cycle action. The line is waiting for the Order level approval to complete. The cycle gets upgraded into a header workflow process (UPG\_PN\_OEOH\_REG\_International Bill-Only) and a line workflow process (UPG\_PN\_OEOL\_REG\_International Bill-Only). The upgrade process starts a header flow for the order using the process UPG\_PN\_OEOH\_REG\_International Bill-Only. The flow will stop at the notification activity “Legal Approval”. A line flow is started for the line will be waiting for the Legal Approval to complete (wait-for-flow coordination activity). After successfully upgrading when you start the Workflow Background Engine (see Also Users Guide for details), the notification will get sent out to the role specified in the profile option OM: Notification Approver.



After successfully upgrading you need to complete certain post-upgrade steps. In one of the post-upgrade steps, you need to run a script that updates workflow item attributes for all the upgraded orders and lines. The next section discusses this.

## Post-Upgrade steps that affect the Cycle History Upgrade

To be able to process upgraded orders and lines you need to complete all post-upgrade steps. Some steps involve the setting of certain profile options and others involve running an update script:

### Profile Option - OM: Context Responsibility for Upgraded Orders

In Order Management, for every Order and Line the following WF item attributes are set:

User ID (USER\_ID) - The user that created the Order/Line

Responsibility ID(RESPONSIBILITY\_ID) - The responsibility that was used to create the Order/Line

Application ID(APPLICATION\_ID) - The application that was in effect when the Order/Line was created.

These item attributes are used to set application context when deferred flows are picked up by the Background Engine for processing. The application context determines the Operating Unit (Org) the environment is pointing to and the profile options that are in effect.

Now for upgraded orders and lines, the first item attribute can be set based on the created\_by column on the Orders and Lines. However to set the other two you need to complete certain manual post-upgrade steps.

As part of your Order Management Implementation you will be setting up new Order Management responsibilities and assigning them to users that create and manage orders. A post-upgrade script (ontupg48.sql) lists all the unique Users (who have created Order/Lines) for each Operating Unit. Another post-upgrade script (ontupg49.sql) lists *exceptions*; Users who have multiple responsibilities pointing to an Operating Unit or no responsibilities at all. For the former case you need to set the *OM: Context Responsibility for Upgraded Orders* (to Yes) on ONE of the responsibilities. In the latter case you need to assign that user an appropriate responsibility that has all the required profiles set appropriately.

When the script (ontupg49.sql) lists no exceptions, it means that when you run the script (ontup255.sql in a later post-upgrade step) to update the workflow item

attributes, it can easily identify the *context* responsibility to use for every order and line, based on the user that created it and the operating unit it was created in.

Example:

A sample listing (ontupg48.lst) produced by the script ontupg48.sql:

Listings Report

**Table 32–17 Distinct Operating Unit Listing in OE**

| Org ID | Organization                |
|--------|-----------------------------|
| 204    | **US** Vision Operations US |
| 498    | Vision ADB                  |
| 600    | Vision Project Mfg          |

**Table 32–18 Users Who Created Orders or Lines and their Operating Units In OE**

| User ID | Name    | Org ID | Organization                 |
|---------|---------|--------|------------------------------|
| 1894    | NDSMITH | 498    | Vision ADB                   |
| 1894    | NDSMITH | 204    | **US** Vision Operations US  |
| 1737    | ECLARKE | 600    | Vision Project Manufacturing |
| 1001    | VISION  | 204    | **US** Vision Operations US  |
| 2501    | DMARTIN | 600    | Vision Project Manufacturing |

This example has 4 distinct Users who have access to 3 distinct Operating Units, in which they have created Orders or Lines. You can create 3 new Order Management or non-OM (if you plan to use a Custom Application on top of OM) responsibilities. The example indicates a Multi-Org installation, hence the MO: Operating Unit profile option has to be set to the appropriate value on each of these new responsibilities. Set the 'OM: Context Responsibility for Upgraded Orders' to 'Yes' on each of these responsibilities, thus flagging them for cycle history Upgrade usage. Set other profile options that need to be set for processing orders.

Now assign these new responsibilities appropriately to the 4 Users, so that they continue to have access to the same Orgs that they did in the previous release.

The user NDSMITH has access to two operating units, so you would assign him two different responsibilities. Both of which are flagged to be used as context responsibilities for the operating units that they are pointing to.

To validate the responsibilities settings for user/org combination which was done in this step, run the script `ontupg49.sql`. If you find any errors in the report produced by this script, correct the settings and re-run the script to ensure that the settings are correct.

### **Profile Option - OM: Notification Approver**

In Order Entry any user who had access to the Approve Orders form could approve an order or a line that was eligible for an approval. As discussed before, approval cycle actions are converted to workflow notification activities. Notifications that require a response need to be sent to a WF Role. See: Also *Oracle Workflow User's Guide* for more information on WF Roles.

The OM: Notification Approver Profile option setting determines, to whom these upgraded notifications are sent. You can set this profile option at the Site, Application, Responsibility or User level. It can be set to any Workflow role (Application Responsibility or User).

To get functionality akin to Order Entry Approvals, you can set it to an Application Responsibility. Setting this profile at a Responsibility level enables the user at a minimum to have a different approver role for a given Operating Unit.

If the profile OM: Notification Approver resolves to a null value for a given User, Responsibility and Application on an Upgraded Order or Line, then the notification will be sent to the SYSADMIN user.

As we described in the section on upgrading approval actions, the responder on the Notification Activity is set to default from the workflow item attribute Notification Approver. This workflow item attribute is set by a script (`ontup255.sql` in a later post-upgrade step), based on the value of the profile option OM: Notification Approver.

### **Updating WF Item Attribute Values for Upgraded Orders and Lines**

When Order Management starts a header or a line flow, it also sets certain workflow item attribute values. See Also "Order Management Workflow seed data" section for a list of all the seeded workflow item attributes.

When the upgrade starts flows for upgraded orders and lines, it sets some of these attributes. But to be able to set certain others, you need to complete certain manual post-upgrade steps and then run a script that will update these attributes.

As described before, you need to assign (Order Management) responsibilities to all the users that the post-upgrade script `ontupg48.sql` lists. You need to ensure that

the script `ontupg49.sql` lists no exceptions. You also need to set the OM: Notification Approver Profile option as required.

Now you can run the script `ontupg255.sql` that updates the following workflow item attributes for all upgraded order and line flows:

Responsibility ID(`RESPONSIBILITY_ID`)

Application ID(`APPLICATION_ID`)

Notification Approver(`NOTIFICATION_APPROVER`)

You should start the Workflow Background Engine for the Order Management workflow items (OM Order Header, OM Order Line) ONLY after you have successfully completed all the post-upgrade steps.

## Cycles Upgrade and other Order Entry features

### Cycles Upgrade and Security Rules

In Order Entry you could define security rules based on cycle state. The upgrade to Order Management does not upgrade user defined security rules for the following reasons:

- Order Management is much more flexible than R10/11 Order Entry. You are advised to review your Security Rules and decide whether you still need these with the new product.
- The Order Management Constraints Framework allow definition of Role based constraints. You may want to take advantage of that.
- The Order Management Data Model is very different from the Order Entry one and security rules cannot be automatically & unambiguously upgraded.

When you need to define constraints based on upgraded approvals, note the following:

The Processing Constraints Framework lets you define constraints based on workflow state. See Also - User Guide on the Processing Constraints Framework.

As described before, the upgrade notification processes are defined such that, the actual notification activity is skipped if the Order or Line was already past that approval action in Order Entry. This means that you cannot define constraints based only the notification activity. You also need to define it based on the pre-notification activity.

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Example: Payment Terms on the Order cannot be changed once it has passed the Legal Approval.

To support this the constraint needs to be defined with the following conditions:

- The order is past the Legal Approval Notification Activity with a 'Pass' result.
- OR
- The order is past the pre-notification Activity that precedes the Legal Approval with a 'Pass' result.
- The previous sections describe how notification and pre-notification activities are named.

### Cycles Upgrade and Holds

In Order Entry you could define generic or cycle action specific holds. The upgrade migrates all user defined hold definitions and other holds data. Cycle action specific holds that were based on non-seeded cycle actions get upgraded as generic holds. Cycle Action specific holds that were based on seeded cycle actions get upgraded to activity specific holds.

If an Order or Line was not getting processed in Order Entry on account of a Hold, it will get held up in Order Management as well on upgrade.

Example: An Order in the old system cannot book due to a generic hold on the Order. It remains booking eligible. On upgrade it is Booking eligible. When you attempt to book it, the operation will fail because of the generic hold.

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**Note:** Notification Activities do not honor Holds in Order Management. If you want your custom activities to honor holds, then your external process needs to check for holds. See Also "Using Workflow in Order Management".

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## Glossary

A flow is what the application starts for a order or a line. A flow is started using a specific workflow process.

A workflow process is made up of workflow activities or workflow sub-processes.

A workflow sub-process is made of workflow activities or more workflow sub-processes. A workflow sub-process is not defined as runnable which means that you cannot start a flow.



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## Using Workflow in Order Management

Topics covered in this appendix include:

- [Overview](#) on page A-2
- [Introduction](#) on page A-2
- [Functional Differences](#) on page A-2
- [R11i Features](#) on page A-4
- [Order Management Workflow Standards](#) on page A-11
- [Using WorkFlow in Order Management](#) on page A-17
- [Custominzing Order and Line Flows](#) on page A-35
- [Conclusion](#) on page A-44

## Overview

Businesses seek technologies to increase profitability and enhance competency. They hope to use such technologies to streamline and automate transaction flows, better manage exceptions and identify non-value added activities. Companies need software systems that can work in dynamic business environments, enable users to control business rules and increase transaction automation. These systems not only have to be flexible and but must also be easy to use.

Workflow technology supports automation and continuous improvement of business processes. It supports routing information of any type according to user-defined business rules. Business transactions, such as order placements or purchase requests that involve various controls, routings, and approvals, can be managed more efficiently by leveraging Workflow technology. This is the primary reason why, Oracle Order Management integrates with Oracle Workflow; to provide users with a comprehensive order processing and fulfillment system.

## Introduction

Oracle Order Entry (Release 11 and earlier) includes a feature called Order Cycles. This feature provides the flexibility in setting up different order processes to fit various business needs. Today, Order Management has greatly enhanced the order cycles functionality by replacing Order Cycles with Workflow. The goal is to give you the following benefits:

- Flexible and extensible order processing for all industry segments
- Automated transactions for reducing operation overhead
- Interactive decision support and exception handling

This paper explains functional differences between R11 Order Cycle and R11i Workflow. It also discusses Order Management Workflow features, Workflow standards, setup procedures, various means of processing orders and other useful tips.

## Functional Differences

In R11i Order Management, Workflow replaces Order Cycles. Order cycles, cycle actions and approval cycle actions are obsolete. You can define workflow processes that determine the series of activities executed in an order life cycle. Such workflow activities replace cycle actions. Workflow notification activities replace approval actions. The following table lists how cycle entities map to workflow in R11i:



| R11 Entity                | R11i Entity   |
|---------------------------|---|
| Order Cycle               | Workflow runnable process                               |
| Cycle Action              | Workflow activity, Workflow sub-process                 |
| Cycle Action Result       | Workflow activity result and look up                    |
| Cycle Action Prerequisite | Workflow Activity Transitions                           |
| Approval action           | Workflow Notification Activity that requires a response |

**Note:** Please check the *Workflow User's Guide(A85440-01)* for detailed information on workflow activities, sub-processes transitions and notifications.

Figure A-1 is an example of a generic order header workflow process:

**Figure A-1 Generic Order Header Workflow process**

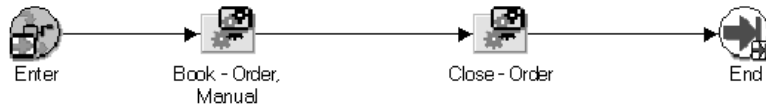


Figure A-2 is an example of a generic order line workflow process:

**Figure A-2 Generic Order Line Workflow process**

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## R11i/Features

### Flexible and extensible order processes

#### Order Header and Line WorkFlow processes

In R11i, an order and each of its lines follow different workflow processes, unlike R11 order cycles, where an entire order and all its lines followed the same cycle.

For example in R11i, an order header is entered, booked and then closed. Lines flow through line specific steps after the order is booked, such as scheduling, shipping, invoice interface, etc. Different lines on an order can follow different line flows, thus completing different activities. This means that return lines and sales order lines can be processed on the same order using different process flows. This can support requirements such as a Car Dealership, who on a single order sells a new car to a customer and accepts a trade-in on the customer's old car.

In R11 Oracle Order Entry, you can tailor cycles to your meet order processing needs by defining approval or custom cycle actions. Adding new approval actions is easy. However adding new custom actions is much harder, since that means you have to integrate with the C based utilities that help set the status columns and move the order or line forward. Secondly the number of custom actions or approvals you can define is limited, since the number of status columns (S columns) available is fixed.

Oracle Order Management eliminates both these drawbacks in 11i, by integrating with Workflow. Oracle Workflow provides Workflow Builder, a tool that lets you model your Ordering process graphically. Secondly, there is no limit on the number of custom function or notification activities you can define.

Oracle Order Management provides you with seeded functional activities and sub-processes. Using the Workflow Builder, you can define new function activities and notifications. These functional activities, notifications and sub-processes serve as building blocks for creating flows. The product comes seeded with several order and line flows. If these seeded flows do not meet your requirements you can define your own. Use these flows for processing orders and lines by assigning them to order and line transaction types.

#### Workflow enabling order and line business functions

If a business function is workflow enabled, you can control when it is going to occur by adding the appropriate activity or sub-process into a workflow process. You can also control how it is executed; whether the activity requires user intervention or

executes automatically, and the 'cost' of the activity. Expensive activities are best executed off-line.

You can find order header or line business functions that are workflow enabled, in the seeded OM workflow activities or sub-processes. Order Management (OM) comes seeded with the following workflow item types:

- OM Order Header (OEOH) - All Order Header level activities and sub-processes, are seeded under this WF Item type. Header flows are started using this item type, with the header ID as the Item Key. An order flow is started when an order header is created and saved.
- OM Order Line (OEOL) - All order line level activities and sub-processes, are seeded under this WF item type. Line flows are started using this item type, with the line ID as the item key. An order line flow is started when an order line is created and saved.
- OM Standard (OESTD) - Common functions and lookups are seeded under this item type. No flows are started using this item type.
- OM Change Order (OECHGORD) - Change Order Notification flows are started using this item type.

Some functions are seeded in multiple variants (Synchronous, Manual & Deferred). The following is a list of all the business functions that are Workflow enabled:

| Header level functions                         |                            |                                      |
|--|----------------------------|--------------------------------------|
| Activity or Sub-process name                   | Equivalent to Cycle Action | Concurrent program available in R11I |
| Book - Order, Manual<br>Book - Order, Deferred | Booking                    | No                                   |
| Close Order                                    | Close order                | No                                   |
| Header level Invoice Interface                 | N/A                        | No                                   |

| Line level functions   |  |  |
|--|--|--|
| Activity or Sub-process name   | Equivalent to Cycle Action                         | Concurrent program available in R11i                 |
| Schedule - Line<br>Schedule - Line, Deferred   | Demand Interface                                   | Yes **   |
| Invoice Interface - Line<br>Invoice Interface - Line, Deferred   | Receivable Interface                               | No   |
| Ship -Line, Manual   | Pick Release, Ship Confirm and Inventory Interface | Yes, to Pick Release                                 |
| Fulfill - Line   | N/A  | No   |
| Close - Line   | Close line   | No   |
| Purchase Release - Line, Manual<br>Purchase Release - Line, Deferred                                       | Purchase Release                                   | Yes  |
| Create Supply - Line   | N/A  | No   |
| Create Supply Order - Line<br>Create Configuration - Line<br>Create Configuration Manufacturing Data- Line | Manufacturing Release                              | Yes, to create Configuration, to create Work Orders. |
| Return Receiving - Line  | RMA Interface                                      | No   |

**Note:** For more details on the sub-process, please refer to the *Order or Line business processes that are workflow enabled* section, further down in this paper.

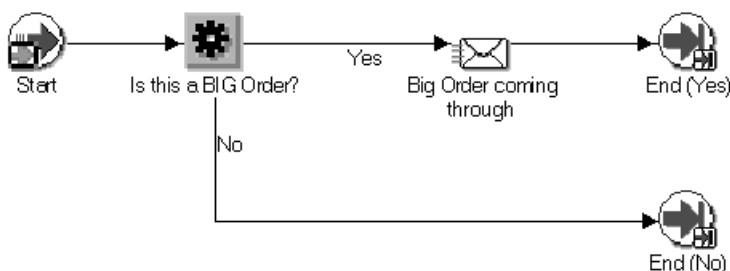
\*\* - The seeded sub-processes have been designed so that the concurrent program will pick up lines that did not schedule due to exceptions (holds, missing data etc.).

### Creating customized workflow activities/sub-processes

Order processes can be dynamic and complex. Companies in different industries or regions often have different business needs and rules for fulfilling orders. Instead of providing flows and activities to meet every possible business rule and need, Order Management integrates with Workflow to provide easy customizing capability.

Oracle Workflow provides a complete set of PL/SQL APIs and public views that can be used to make any application function workflow enabled. For example, your business makes a big floor announcement if an order whose total value exceeds a certain amount, is booked. You can create custom sub-process that checks the order total and sends FYI notifications to a group of people.

**Figure A-3 Sub-process that checks Order Totals and sends out a Notification.**



The function activity Is this a BIG Order checks whether the Order value exceeds a certain amount (set via an activity attribute). If it does, then it completes with a Yes and an FYI notification is sent to a certain application Responsibility.

Appendix E lists the PL/SQL API that the function activity calls. Use this sub-process in a header flow after the seeded Book - Order, Manual sub-process and assign it to an Order Type.

The notification activity this sub-process uses is defined to be an FYI notification. That is there is no result type associated with it. However you can also design this sub-process so the notification requires a response, i.e. it is an approval notification. The sub-process could then meet the requirement where an order whose value

exceeds a certain amount needs a special approval before it can proceed. To ensure that the lines on the order wait for the approval, you need to coordinate the order and line flows using the workflow continue-flow and wait-for-flow activities as described in the following section. .

Note: Please refer to the *Using Workflow in Order Management* section for examples of defining approval notifications. Refer to the section *Customizing Order and Line Flows* for more examples of customizations. Refer to the *Oracle Workflow Userss Guide (A85540-01)* for details on defining Response and FYI Notification Activities).

### Process Dependencies

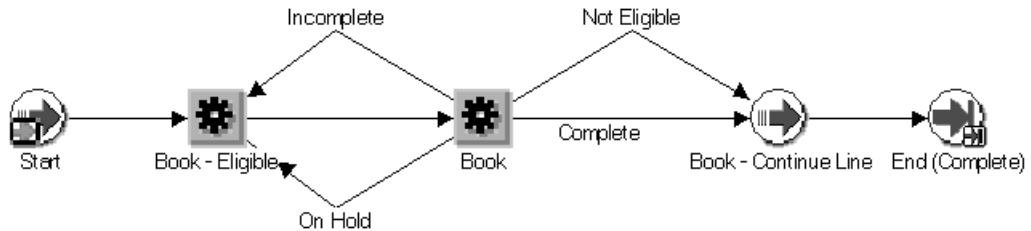
Oracle Workflow provides utilities to build dependencies between parent and child workflow processes. Here are some examples of dependencies:

Order lines should wait for the order to book before progressing in their individual Line flows.

All order lines should close before the order header closes.

Order Management creates all order flows as parent flows. Line flows for the lines on an order are created as child (detail) flows.

Native WF utilities Wait For Flow and Continue Flow are used to support this kind of order (parent) - line (child or detail) coordination. To coordinate orders and lines for Booking the Continue Flow (Book - Continue Line) activity is included as part of the Order Booking Sub-process ([Figure A-4](#)). It is configured (via activity attributes) to continue the line activity that is waiting for the order to book. The Wait For Flow (Wait for Booking) activity is included in the Enter - Line sub-process in the line flow ([Figure A-5](#)). It is configured (via activity attributes) to wait for the Continue Flow inside the seeded booking process. This ensures that the line flow waits for the header level booking sub-process to complete.

**Figure A-4 Order Booking Sub-process****Figure A-5 Enter Line Sub-process**

You may need similar coordination for other business functions. For example, all order lines should wait for a custom order level Legal Approval to complete before progressing in their individual Line flows. To support this, you also need to use Wait-for-flow and Continue-Flow activities and configure them based on your custom approval activity (Notification).

Note: Please Refer to the *Oracle Workflow User's Guide* (A85540-01) for details on using coordination activities.

## Automated, Deferred and Manual Transactions

Workflow activities can be executed automatically by the Workflow engine. Instead of pulling orders by running batch processes, the Workflow engine can push orders forward. This is called synchronous or automatic execution mode.

As opposed to the synchronous mode, a workflow activity can be set to require user intervention. This is called manual execution mode. A workflow activity can also be set-up to be executed by the Workflow background engine in order to save on-line transaction time. This is called deferred execution mode. Automatic and deferred modes are natively supported by Workflow. Order Management gives you the manual mode for more flexibility.

For example, if you use the seeded Schedule- Line sub-process (Figure A-6) in a line flow, an order line automatically schedules after the order header is booked. You can setup an expedited order process where several activities are performed sequentially (synchronously) without user intervention.

If you use the seeded Book - Order, Manual sub-process (Figure A-7) in a header flow, the order will book only when requested (by clicking the 'Book' button OR via the Progress Order LOV in the R11i Sales Order form).

If you use the seeded Book - Order, Deferred sub-process (Figure A-8) you do not need to explicitly request for the order to book. Rather the order will book when Workflow Background Process concurrent program will process the deferred activity. (See: *Setup Workflow Background Engine* in later section).

In the Order Management Workflow Standards section, we discuss how to implement business functions in synchronous, deferred, and manual modes.

## Interactive decision support and exception handling

Notification functionality is new in R11i and can be used for handling business exceptions and approval requests. As described before, you can setup a notification that requires a sales manager's approval when booking orders over a certain dollar amount. The role assigned to the Notification Performer, determines whom the notification is sent to.

By default, users can view their own notifications in Order Management. The 'Notifications' menu entry in the Order Management Menu launches the Workflow Notification Viewer Web Page. Users can setup the Workflow notification viewer to view notifications using a web interface or receive notifications as e-mails in plain text.

Note : Please refer to *Setup approval notification and OM: Notification Approver* in later section for details on notification features.



## Order Management Workflow Standards

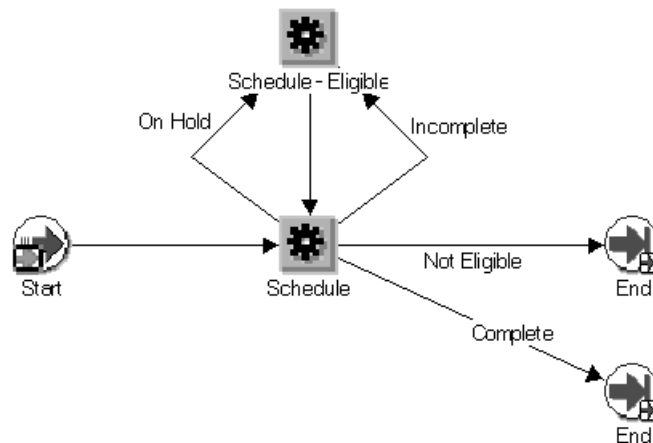
Most Order Management functions are seeded in one or more variants (Automatic/Synchronous, Manual or Deferred). The following section discusses how these variants are designed.

### Synchronous - Implementing a business function that is automatically executed.

In a synchronous mode, the function executes automatically. It requires no user intervention.

Example - The seeded Schedule - Line sub-process

**Figure A-6 Automatic Scheduling sub-process**



If you create a Line that uses this Scheduling sub-process flow, then the Line will schedule as soon as the Order books. If Scheduling cannot complete due to Holds or other expected errors then the flow will transition to the Schedule-Eligible activity. Run the Schedule Order Concurrent program to re-process such lines or complete them via the Progress Order LOV on the Sales Order form.

## Manual - Implementing a Business Function that Requires User Intervention.

To enable a function to be completed manually, you need to place special block activity before the actual function activity. This special block activity needs to call the function `OE_STANDARD_WF.STANDARD_BLOCK` and NOT the `WF_STANDARD.BLOCK`. This ensures that Orders or Lines awaiting at this special activity shows up in the Progress Order LOV, in the Sales Order form.

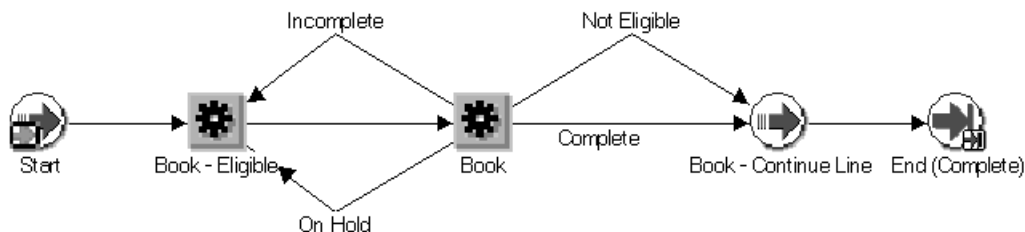
It is recommend that you follow the following naming conventions to name this special block activity:

Internal Name - 'FuncName\_ELIGIBLE' (eg: BOOK\_ELIGIBLE)

Display Name - 'Function Name - Eligible' (eg: Book - Eligible)

Example - The seeded Book - Order, Manual sub-process.

**Figure A-7 Manual Booking Sub-process**



The Book - Eligible activity calls the function `OE_STANDARD_WF.STANDARD_BLOCK`. If you create an Order with an Order Type using this Booking sub-process in its Header flow, its flow will stop at the Book - Eligible activity. The Progress Order LOV on the Sales Order form shows that this order is eligible for Booking. Book such an order either by clicking OK on the LOV or by clicking Book on the Sales Order form.

## Deferred - Implementing a Business Function that is Executed Off-line.

Oracle Workflow lets you associate a cost to a function activity. This refers to the processing time it takes to execute an activity. Assign complex, long running activities a high cost. In normal processing, the Workflow Engine completes the

execution of a single activity before continuing to a subsequent activity. Activities with a high cost may be appropriate candidates for background processing.

The default threshold for the Workflow Engine is 50 hundredths of a second. When a flow comes across an activity whose cost is higher than the threshold, it is deferred to the background.

Cost can also be relative in terms of the business flow that is being executed. For example, a few Order Entry clerks are dedicated to taking orders from habitual, long time customers. Since all the standard information for these customers is already set-up, you want the order to be entered as quickly as possible into the system, with no waiting by the clerk to book, before moving on to the next order or customer. In this case you would want to defer the booking process.

Now let's say other Order Entry clerks deal with new first-time customers. In this case, you want the order to be booked online so that the clerk can get additional required information from the customer or can be informed about credit check related issues.

To give you such flexibility, Order Management uses the Workflow API `WF_ENGINE.Defer_Thread` to defer a flow to the background. Instead of defining an activity to be high cost, it enables variants of business functions that are deferred and those that are not. This increases flexibility in designing your flows.

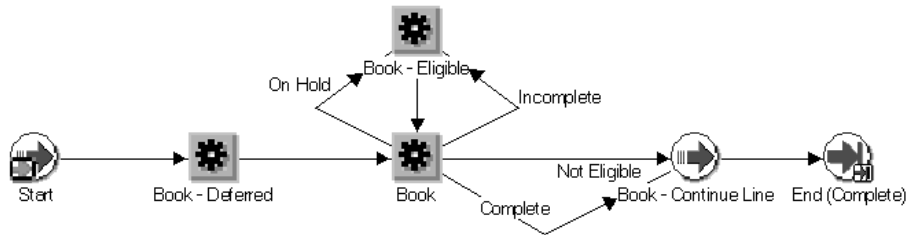
Thus you can use the seeded Book - Order, Deferred sub-process for processing orders from longtime customers, but use the seeded Book - Order, Manual sub-process for processing orders from new customers. Note that both these sub-processes use the same Book function activity.

The naming convention followed for activities that call the `WF_ENGINE.Defer_Thread` is as follows:

Internal Name - *FunctionName\_DEFER* (e.g.: `BOOK_DEFER`)

Display Name - *Function Name - Deferred* (e.g.: `Book - Deferred`)

Example - The seeded Book - Order, Deferred sub-process

**Figure A-8 Deferred Booking Sub-process**

In this sub-process, the activity Book -Deferred calls the WF API WF\_STANDARD.DEFER\_THREAD to defer the flow to the background. When the Workflow Background Engine picks up this deferred flow, it executes the 'Book' activity, booking the order.

## Naming Conventions

Order Management follows certain naming convention for creating WF processes, sub-processes, activities, etc. It is not necessary that you follow the same conventions. However doing so, will make all OM WF data (seeded and custom) appear consistent to the end user.

Here, we discuss only the display name naming conventions. Unlike internal names, display names can be changed after Workflow data is created. Users can see these display names in both Workflow builder and in the Workflow monitor when viewing the order or line status. For internal name naming conventions, please refer to *Oracle Order Management User's Guide*.

Order Management follows the following naming convention for Display Names:

### Process Flow

Format: Order/Line Flow - XXX

e.g.

| <b>Name</b>                                       | <b>Description</b>   |
|---|--|
| Order Flow - Generic                              | Generic order header flow that can go with any line flow for standard item, model, return. |
| Order Flow - Generic, with header level invoicing | Generic order header flow that includes header level invoice activities.                   |
| Line Flow - Generic                               | Generic sales order line flow that supports all item types except the Configured Item.     |
| Line Flow - Return for credit only                | Return line flow for issuing credit only.  |

### Sub-Process

Format: Function - Order/Line, Manual/Deferred

| <b>Name</b>              | <b>Description</b>                                 |
|--------------------------|--|
| Book - Order, Manual     | Automatic booking header level sub-process         |
| Book - Order, Deferred   | Deferred booking header level sub-process          |
| Invoice Interface - Line | Automatic Invoice Interface line level sub-process |

### Function Activity

Format: Function - Eligible/Deferred/Continue/Wait

| <b>Name</b>          | <b>Description</b>   |
|----------------------|--|
| Book                 | The actual booking function activity                             |
| Book - Eligible      | Booking eligibility block  |
| Book - Deferred      | Activity to defer Booking  |
| Book - Continue Line | Booking coordinating activity to continue the waiting line flows |
| Wait for Booking     | Line coordinating activity that waits for the Order to Book.     |

## Activity Results

Most Order Management function activities use the standard seeded lookup OM Sub-Process Results, handles Holds. This lookup has the following result codes: Complete, Incomplete, On Hold, and Not Eligible.

A function activity completes with the 'Complete' result when it executes successfully. E.g.: When the seeded Book function successfully books an order, it will complete with a 'Complete' result.

A function activity completes with the Incomplete result when it runs into expected errors that it is built to handle. The Incomplete result normally transitions to an Eligibility block or a Wait Activity. E.g.: When the seeded Book function finds that the order header does not have a Customer specified, it will complete with an Incomplete result and transition to the Book -Eligible activity. You can then provide the missing information and attempt to re-book the order via the Book button or the Progress Order LOV.

A function activity completes the On Hold result when it runs into a generic or activity specific Hold. The On Hold result normally transitions to an Eligibility block or a Wait Activity. E.g.: When the seeded Book function finds there is generic hold on the order, it will complete with an On Hold result and transition to the Book -Eligible activity. You can provide the missing information and attempt to re-book the order via the Book button or the Progress Order LOV.

A function activity completes with the Not Eligible result when it does not make sense for the Order Header or Line to be processed by that activity. E.g.: When the seeded Schedule activity processes a Service Item Line, it completes with a Not Eligible result and transitions to the end of the scheduling sub-process.

It is important to note that only on a successful completion (Complete or Not Eligible result) of a business function, does a flow exit out of the respective functional sub-process. Hence most function high-level sub-processes (those that can be used in runnable flows) use the seeded lookup OM Sub-Process Success Results. This lookup has the result codes: Complete, Not Eligible.

All seeded flows are built using the Default transitions to move a flow forward, as opposed to having separate transitions for the Complete and the Not Eligible results. The assumption is that in either case the sub-process has completed processing and the flow can move forward.

## Default Error Process

All Order Management seed WF data is defined to use the Retry Only error process. This process determines the notification flow that Oracle Workflow starts when a workflow activity runs into an unexpected error.

With any new OM WF data, specify this error process as the default. If an error process is not specified, Oracle Workflow does not start a notification flow in case the activity runs into an unexpected error. If you specify a default error process

other than Retry Only, the user who receives the error notification has the option of skipping or aborting the erred activity. This can result in data corruption. **Order Management does not support specifying a default error process other than Retry Only error process.**

Note: Please refer to Handling Errors section for details on how unexpected errors are handled.

## Access Control

All Order Management seed WF data is locked at the access level of 20. Work at an access level of 100. To customize, make copies of the seeded processes and then make the necessary modifications.

The following data is not locked:

Item Attribute - OM WF Administrator

Message Bodies

## Using WorkFlow in Order Management

### Set up

Things to do before using Workflow with Order Management:

Setup Order Management WF Administrator Workflow item attribute

Review seeded OM WF data and define Workflow processes via the Workflow builder

Setup approval notifications and OM: Notification Approver

Setup Workflow assignments for order/line transaction types

Setup the WF background Engine

#### Setup 'Order Management WF Administrator' WF item attribute

Assign a responsibility (role) to the Order Management Workflow item attribute Order Management WF Administrator for unexpected error handling. An order progressing along a flow can run into unexpected errors (Rollback segment errors, Data integrity errors etc.).

Whenever an unexpected error occurs, a notification is sent (please refer to Workflow error process in the *Oracle Workflow User's Guide*) to the responsibility

assigned to Order Management WF administrator item attribute. The WF activity that generated the error is marked to be in an error state.

Set this item attribute via the WF builder. The item attribute is available for Order Management Workflow items OEOH (OM order header), OEOL (OM order line) and OECHORD (OM Change Order) and needs to be set for all three. The item attribute default value is SYSADMIN.

In the Workflow builder, click on any of the OM Workflow items (OEOH, OEOL or OECHORD). Under the Attribute, find Order Management WF administrator. Right click on it and select Properties to open the properties window. In the Attribute tab, there is a Default region. Assign a responsibility in the Value field. If you can't see any other responsibilities in the LOV, you'll need to load roles from the database by going to the menu bar File and select Load roles from database.

Note: Please refer to the section *Error Handling* on details on how errors are handled.

### **Review seeded OM WF data and Define Workflow processes via the Workflow Builder**

Before processing orders in Order Management, setup the order header/line workflow processes, just like you setup order cycles in R11 Order Entry. Order Management comes with several seeded order and line workflow processes. It is recommend you do the following:

Review the seeded flows, activities, notifications, etc. Check whether the seeded data meets your business needs.

Create custom activities, notifications, and any other components needed to build flow processes to meet your specific business requirements.

Use the seeded runnable flows as examples to create your own flows, using seeded and/or custom sub-processes/activities. You can also copy a seeded workflow process to create a new workflow process and modify this newly, copied workflow process according to your business requirements.

**Suggestion:** Build a few complex flows to accommodate various business scenarios, or build several simple flows to handle the different business process needs and use them appropriately via Transaction Type Workflow Assignments. You need to balance performance with user convenience. A complex flow will have more condition checking and branching to handle various scenarios, so the performance cost will be higher. However, creating many simpler flows relies on the user to pick the right Order Type/Line Type when entering orders.

**Note:** Please see the Appendix for seeded R11i *Workflow processes*.



## Setup approval notification and OM: Notification Approver

Workflow Notifications in R11i replace R11 Approval functionality. To support the Approval requirements, define Notification Activities that require a response. When an order or line flow comes across such an activity, the WF Engine sends out a notification to the approver and request a response. The approver can either approve, decline, or forward the notification to another approver.

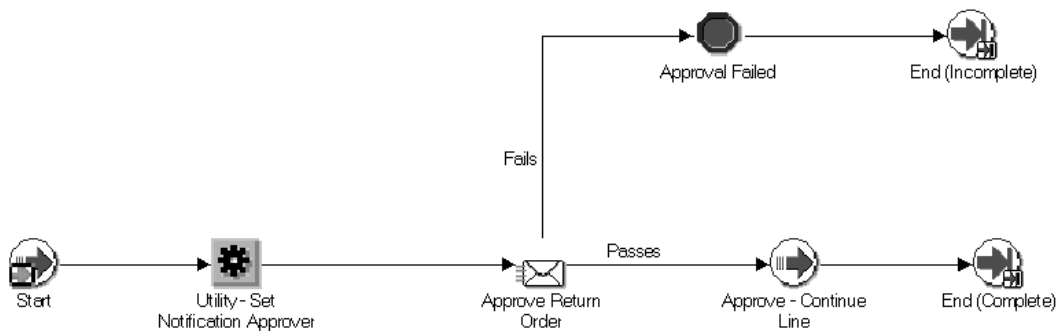
In R11 Order Entry, any user who had access to Approve Orders form could perform an approval. In R11i Order Management, there are a couple of ways to determine who gets an Approval Notification :

When you add the notification activity to a workflow process, set the Performer to be of type Constant and assign a value (WF Role) to it. This is a static approver for this notification for any order or line using this workflow process. The notification will always go to the same recipient (WF Role).

When you add the notification activity to a workflow process, set the Performer to be of type Item Attribute and assign the value Notification Approver to it. In this case, the responder of the notification is the value indicated by the NOTIFICATION\_APPROVER Workflow Item attribute.

With R11i, when an order or line is created, this WF item attribute is set based on the value of the Profile Option OM: Notification Approver. When the notification is sent, the recipient is derived based on the value of the Notification Approver item attribute. The same notification can go to different recipients for different orders/lines.

Or, set the value of this Workflow item attribute dynamically based on one of the following values: OM: Notification Approver profile option value, Created By of the order or line. To do this, place the seeded order Management Workflow utility 'Set Notification Approver' in a workflow process before the notification activity.

**Figure A–9 Return Approval Sub-process**

Set its activity attribute Source to one of the following: Profile Approver, Created By, or Order Created By. When this activity is executed, it will dynamically set the WF Item Attribute 'Notification Approver' for that Order or Line to the appropriate role value. The notification will be sent to that role.

Define custom activities that dynamically determine the Approver. It is recommended that you use the Notification Approver Item attribute as a place holder to store the value, as opposed to defining additional item attributes. The responder on the Notification Activity defaults from the Notification Approver Item attribute.

When defining notification message bodies, you can use the following seeded Order Management Workflow item attributes to provide context:

Header Short Descriptor - This returns the order type and order number.

Line Short Descriptor - This returns the order type, order number, and line quadruplet (Line number, shipment number, option number, service number).

Use these as default values for your message attributes and then use the message attributes in the body of the message.

e.g. This return order (&RMA\_HDR\_SHORT\_DESCRIPTOR) requires your approval.

In this example, the message attribute RMA\_HDR\_SHORT\_DESCRIPTOR has the WF item attribute Header Short Descriptor as its default value.

Again, define additional item attributes. Set them using custom function activities and use them for message context. However note that having too many workflow

item attributes defined can deteriorate performance, since a database row is created for the order or line for every item attribute defined.

Use the seeded Approval Failed block defined under OM: Standard (OESTD) to manage failed approvals. Transition failure results to this block to ensure that the flow does not progress any further. You can then manually cancel the Order or Line that failed the approval.

### **Setup Workflow assignments for order/line transaction types**

Note: Please refer to the Transaction Types White Paper for detailed information on defining Transaction types and setting up workflow assignments .

Now, how do you get an Order or a Line to start a particular workflow process? You set up workflow assignments for Order and Line transaction types. This is very similar to associating order cycles to order types in R11 Order Entry.

In R11i, in addition to order types, there are line types. Both order and line types are setup using the Transaction Types form. When defining an order type, assign a header workflow to it. E.g. set up a Standard order Type. Assign the seeded Order Flow - Generic to it. When create an order with the Standard order type, the order header will start a flow using the Order Flow - Generic workflow process.

Since each line follows its own flow, you also need to setup workflow assignments at the Line Type level. Line level workflow processes are assigned based on an order type, line type, and item type combination. Do the following:

Setup Line and Order Types in the Transaction Type form

Query up a particular Order Type

Click Assign Line Flows

Assign a line workflow process for a combination of Order type, Line type, and Item type. If you leave item type field empty, any type of item will be able to use this line flow assignment.

E.g. If you setup the following assignment:

Standard Order Type + Standard Line Type + Standard Item -> Line Flow - Generic

When you create an Order using the Standard order type, add a Line using the Standard line type for a standard item, it will start a flow using the Line Flow -Generic workflow process.

Figure A-10 Transaction Types Form

Oracle Applications - DEV115

File Edit View Folder Tools Window Help

ORACLE

Transaction Types

Transaction Type: **Bill-Only** Assign Line Flows

Description: **Used for orders with no shippable items**

Effective Dates: **04/07/1997**

Transaction Type Code: **ORDER**

Order Category: **Order**

Order Workflow: **Standard Order Header**

Main Shipping Finance

Document

Agreement Type:

Default Return Line Type: **Stan**

Default Order Line Type:

Agreement Required  P

Pricing

Price List: **Cor**

Enforce L

Credit Check Rule

Ordering:

Shipping:

Line Workflow Assignments

Order Type: **Bill-Only**

Assign Workflow Processes

| Line Type | Item Type     | Process Name  | Start Date | End Date |
|-----------|---------------|---------------|------------|----------|
| Standard  | Standard Item | Standard Line | 01/01/1999 |          |
|           |               |               |            |          |
|           |               |               |            |          |
|           |               |               |            |          |
|           |               |               |            |          |
|           |               |               |            |          |
|           |               |               |            |          |
|           |               |               |            |          |
|           |               |               |            |          |
|           |               |               |            |          |

Cancel OK

Record: 1/1 List of Valu... <OSC> <DBG> 1920 :1

### Setup the WF background Engine

The Workflow Background Engine processes deferred activities, wait activities and timed out activities. You need to schedule the Workflow Background Process concurrent program to re-submit periodically. When scheduling the concurrent program, please specify Order Management work item types as parameter so that it only picks up activities specific to Order Management work items.

**Note:** Refer to the *Oracle Workflow User's Guide* (Part Number A85440-01) for information on the Workflow Background Engine.

## Order or Line Business Processes that are Workflow Enabled

### Booking

In R11i, Booking an Order is workflow enabled. There are several ways to book an order. You can use the Book - Order, Deferred process for certain types of Orders and the Book - Order, Manual for others. You can also create you own Booking process. For example, you may want to control when the Order books, but defers it to the background. You can also add an order-level approval before the Booking process in a header flow.

Order Management uses native WF co-ordination activities to ensure that order lines wait for the order to book before progressing. A seeded sub-process Enter - Line is provided at the line level; this is configured to wait for the seeded Booking function to complete before progressing ([Figure A-3](#)).

### Scheduling

In R11i, the Scheduling function allocates supply to demand and makes the Order line visible to MRP (as demand). Order Management provides two variations on Scheduling. One performs synchronously. The other is deferred. In both cases exceptions are routed to the Schedule - Eligible block activity. You can progress lines that are at this activity using the Schedule Orders Concurrent program or the Progress Order LOV. You can also define your own custom sub-process, to restrict Scheduling to occur only via the concurrent program (by placing the Schedule - Eligible activity before the 'Schedule' activity).

**Note:** Please refer to the *Scheduling White Paper* for more details.

### Create Supply

The seeded Create Supply sub-process has the intelligence to route Order Lines differently based on the item type and whether sourcing is internal or external. Use this sub-process when defining line flows that need to support different types of items. For example, it branches ATO model lines through the Create Configuration process; or branches externally sourced lines to the Purchase Release process.

**Note:** The Create Supply sub-process can handle all kinds of lines except the Configured Item Line.

## **ATO Processing**

The entire ATO process is now workflow enabled. There are various seeded sub-processes to support functions such as creating the configuration item, the BOM & routings, calculating lead time and rolling-up cost, creating the work order, etc. The processing needed for handling the configuration item is separated from the ATO Model.

The seeded Line Flow - Generic can handle all kinds of lines except the Configured Item Line. The seeded flow 'Line Flow - Configuration' supports processing for Configured Item Lines.

## **Ship**

The functionality provided by the cycle actions of Pick Release, Back Order Release, Ship Confirm and Inventory Interface is now delivered via the seeded Ship - Line, Manual sub-process. Each of the shipping functions are not Workflow enabled in R11*i*. In fact the Ship activity is a block activity that waits until the line is picked, shipped and interfaced to Inventory and Shipping communicates that information to Order Management.

Once a Line hits this block activity, manually pick and ship the line using the Shipping transaction forms.

## **Purchase Release**

The seeded Purchase Release sub-process interfaces information to Purchasing when order lines need to be drop-shipped. There are two variations of this process Purchase Release - Line, Manual and Purchase Release - Line, Deferred. The first, requires manual intervention. You can Purchase Release the Line either via the Progress Order LOV from the Sales Order form or by running the Purchase Release Concurrent Program. The second, Purchase Release - Line, Deferred, defers the Purchase Release activity to the background. When the WF Background Process Concurrent Program is run, it picks up deferred activities and processes them.

## **Return Receipt**

The Returns receipt and acceptance function is workflow enabled using block activities. Returns are received using Oracle Purchasing Receipt functionality. Purchasing looks at a view based on Return Lines to determine what is eligible for receiving. It then communicates information to Order Management regarding receipt and acceptance against those lines.

## **Fulfillment**

In R11 Order Entry the Receivables Interface Concurrent program had built-in intelligence to not interface lines that were not fulfilled. For example, the ATO Model, Class and Option lines would not interface to Receivables until the Configured item was shipped.

Order Management enhances this functionality of Fulfillment and separates it from the function that interfaces to Invoicing. Ship-confirmation, Purchase Release Receipt and Returns Receipt are supported as fulfillment events, out of the box. Fulfillment is also workflow enabled and the seeded Fulfill activity ensures that lines do not move forward in their flows until they are fulfilled. You can define your own fulfillment sets and put Lines in them. The fulfillment functionality ensures that they all go past the 'Fulfill' activity together. ATO and PTO configurations are viewed as native fulfillment sets by the application.

When you define custom line flows, ensure that you configure the Fulfill activity appropriately by setting its activity attributes.

## **Invoice Interface**

The seeded Invoice Interface - Line sub-process interfaces line information to Invoicing. Order Management can also interface all lines on Order to Invoicing at the same time via the seeded sub-process Header level Invoice Interface - Order. Use the seeded Order Flow Order Flow - Generic with Header Level Invoice Interface along with the seeded Line Flow 'Line Flow - Generic with Header Level Invoice Interface' to interface the entire order to Invoicing.

The creation of the invoice is still controlled by the Auto Invoice concurrent program. Setup Invoicing Grouping Rules if you want to create one invoice for the entire order.

The application still supports Invoicing only after Shipping. There is nothing to prevent you from creating a workflow process that interfaces to Invoicing before the Line is shipped. However if a line using such a flow is partially shipped, Invoicing data will be pointing only to the original line. Secondly, various seeded constraints go into effect once a line is Invoice interfaced, Eg.: You cannot cancel a line once it is interfaced to Invoicing. This will prevent you from canceling a line that is shipped and ready to invoice. There are also legal issues to consider when recognizing revenue before product ships.

## **Close Order and Close Line**

Closing Orders and Lines is workflow enabled. The seeded Close - Order sub-process uses native WF co-ordination activities (wait for Flow) to ensure the

order header closes after all the lines have closed. It is designed to close the order at the end of the month.

The seeded Close - Line closes the line and uses the native WF activity Continue-Flow to communicate to the waiting header Close process.

**Note:** The Service Interface Concurrent Program is obsolete with R11i. Order Management calls CRM APIs whenever an Order is created or updated.

## Moving Orders and Lines forward in their flows

How do you progress an order or line along its flow? As stated above, there are three modes in which business functions could be executed: Synchronous, Manual or Deferred.

When an order (or line) is created, the application starts a header (or line) flow. The Workflow engine will push the order/line ahead for synchronous activities. The flow stops when it hits block activities, notification activities or wait activities. The flow gets deferred to the background when it hit a high-cost activity or an activity that explicitly defers the flow to the background.

### Synchronous Completion

In this mode, once a flow is started or re-started (after it has stopped) the WF activities are executed synchronously or online until it reaches the end of the flow or reaches some kind of a block activity or is deferred.

Example - Create a line that uses the seeded Line Flow - Generic. This has the seeded Schedule - Line sub-process (Figure A-5). Provided that there are no holds, the booked order line(s) will automatically schedule. The flow will then continue on to the Ship activity, making the line eligible for Pick Release.

### Manual Completion

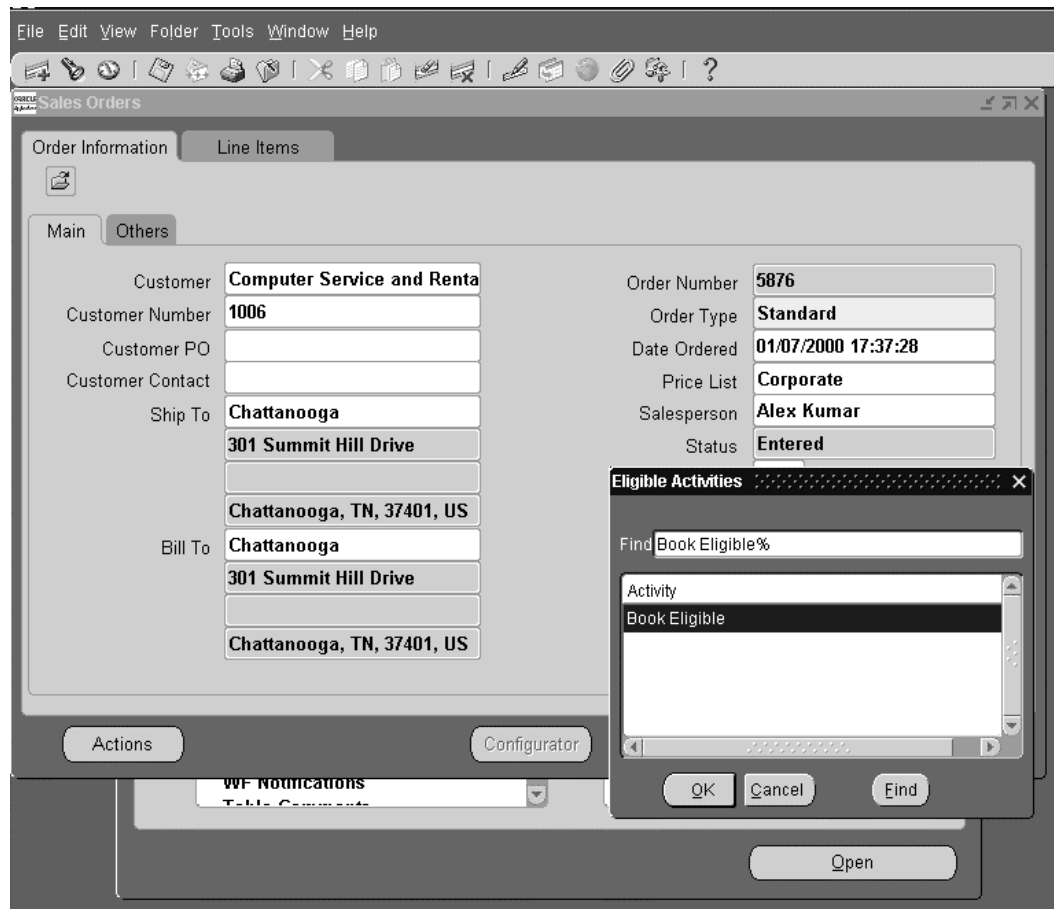
If the order/line hits an Eligibility Block like the one discussed in the section on Implementing a manual function in Order Management, then you can move the order/line forward via the Progress Order LOV (can be accessed from Action button). This LOV displays the functions that the order or line is eligible for (and can be manually completed).

The following (Figure A-9), shows the case where an order is eligible for Booking. The flow for that order is the seeded Book - Order, Manual sub-process (Figure A-4). The order is currently stopped at the Book - Eligible block. The Progress Order LOV displays that the order is eligible for Booking. Clicking OK on



the LOV, will trigger completion of the Book -Eligible block, the flow will move to the Book activity and execute it, thus booking the order.

**Figure A-11 Progress Order LOV; available from the Sales Order Form**



Some seeded Eligibility Blocks can be completed en-mass by running the following concurrent programs:

- Schedule Orders
- Purchase Release

- AutoCreate Configuration Items
- AutoCreate Final Assembly Orders

Some other block activities can be completed by performing certain specific actions.

Thus if a line is waiting at the Ship activity, Pick Release the line and then Ship Confirm to move it forward. If a return line is stopped at the Wait for Receiving activity, receive the goods against that return line (and accept them) to move forward.

If a order or line flow stops because it is awaiting a user response on a Notification Activity, respond to the Notification to re-start the flow.

### Deferred Completion

A order or line flow can also stop because the flow was deferred to the Background Engine. For example, create an order that uses a flow that has the seeded Book - Order, Deferred sub-process (Figure A-6). When the flow reaches the Book - Defer activity, the Order flow is deferred to the background. Run the Workflow Background Engine Process concurrent program to pick up such deferred flow and continue processing.

Fulfillment is deferred in all the seeded line flows. Schedule the Workflow Background Engine Process concurrent program to run at periodic intervals to be able to fulfill and invoice interface lines. The Workflow Background Engine also processes Wait activities and Timed-Out activities.

## Tracking order status

R11 Order Entry tracks cycle status via the S and S Date columns on Order Headers and Lines. In R11i Order Management workflow status is stored Workflow entities; in WF\_ITEM\_ACTIVITY\_STATUSES and WF\_ITEM\_ACTIVITY\_STATUSES\_H tables. The Workflow Engine maintains state information and history for work items (orders & lines) in these tables. Some core status information (Booking, Open/Close, Fulfillment etc.) is de-normalized onto the base Order Management entities.

So how do you know where an order or line is in its flow? There are a couple of ways:

### Order and Line Summary status

The status field on order and line tabs in the Sales Order form and Order Organizer, shows where an order or line is in its flow.

The header status displays one of the following values based on where the order header is in its flow: Entered, Booked, Closed, or Canceled.

The line status displays one of the following values based on where the order line is in its flow: Entered, Booked, Awaiting Shipping, Awaiting Receipt, Picked Partial, Picked, Shipped, Received, Awaiting Fulfillment, Fulfilled, Invoice Interfaced, Invoice Interfaced Partial.

Status for the Configuration Line will additionally show the following information: BOM and Routing Created, Config Item Created.

Status for configuration and ATO Item lines will additionally show: Production Eligible, Production Open, Production Partial, Production Complete, depending on where the line is in its line flow.

### **Workflow Activity Status Page**

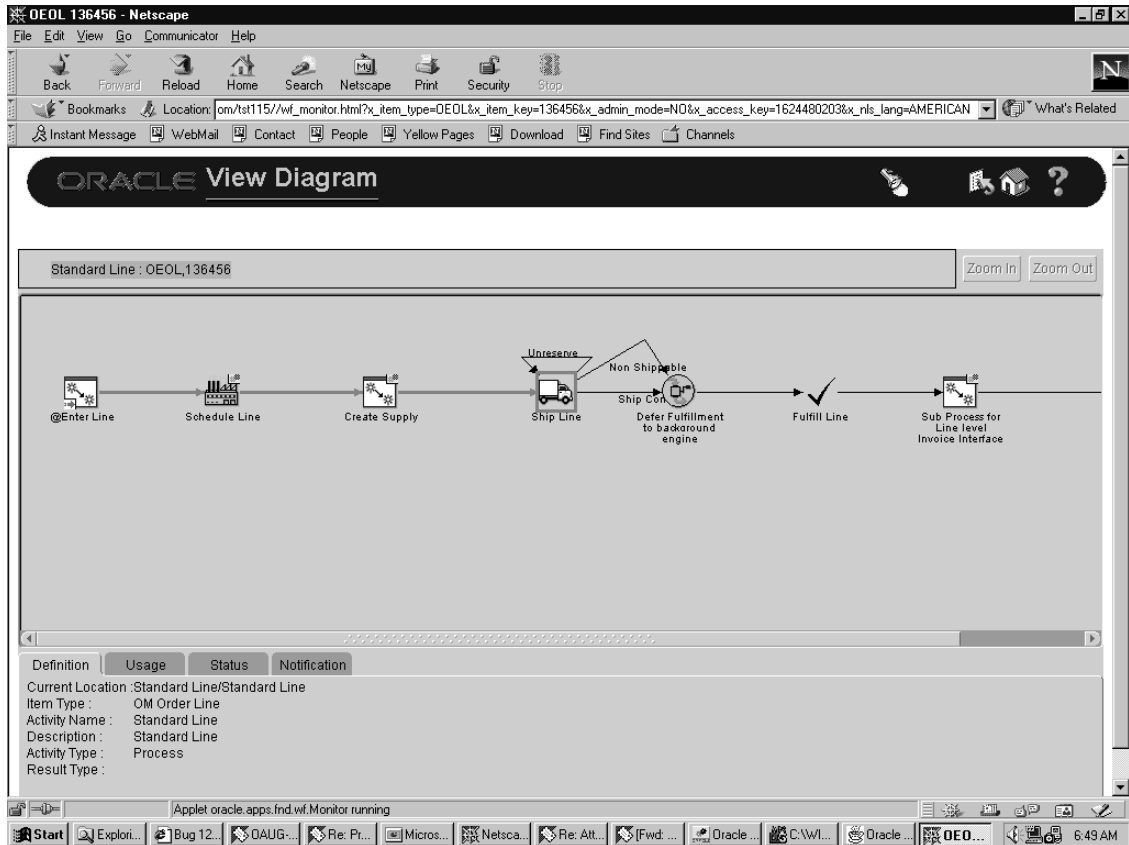
You can launch the Workflow Status page from the Tools menu from the Sales Order Form/Order Organizer. A browser window is launched to display the Workflow status history in a tabular format. It displays detailed information on when an activity was completed, which activity is currently active etc. You can use filters on this page to only view status information for certain kinds of activities (eg: Response Notifications, FYI Notifications, Functions, etc.).

**Figure A-12 Workflow Status Page, available from the Sales Order Form**

| Status   | Who             | Parent Activity | Activity                    | Started*           | Duration             | Result   |
|----------|-----------------|-----------------|-----------------------------|--------------------|----------------------|----------|
| Active   | Workflow Engine |                 | Standard Line               | 27-APR-01 09:02:32 | 10 Hours 42 Minutes  |          |
| Complete | Workflow Engine | Standard Line   | @Enter Line                 | 27-APR-01 09:02:32 | 2 Minutes 55 Seconds |          |
| Complete | Workflow Engine | @Enter Line     | @Line Flow Wait for Booking | 27-APR-01 09:02:33 | 2 Minutes 53 Seconds |          |
| Complete | Workflow Engine | @Enter Line     | End                         | 27-APR-01 09:05:26 | 0 Seconds            |          |
| Complete | Workflow Engine | Standard Line   | Schedule Line               | 27-APR-01 09:05:27 | 11 Seconds           |          |
| Complete | Workflow Engine | Schedule Line   | Start                       | 27-APR-01 09:05:27 | 0 Seconds            |          |
| Complete | Workflow Engine | Schedule Line   | Line Scheduling             | 27-APR-01 09:05:27 | 11 Seconds           | Complete |
| Complete | Workflow Engine | Schedule Line   | End                         | 27-APR-01 09:05:38 | 0 Seconds            |          |
| Complete | Workflow Engine | Standard Line   | Create Supply               | 27-APR-01 09:05:38 | 0 Seconds            |          |
| Complete | Workflow Engine | Create Supply   | Start                       | 27-APR-01 09:05:38 | 0 Seconds            |          |
| Complete | Workflow Engine | Create Supply   | Branch on Source Type       | 27-APR-01 09:05:38 | 0 Seconds            | Stock    |
| Complete | Workflow Engine | Create Supply   | End                         | 27-APR-01 09:05:38 | 0 Seconds            |          |

## Workflow Monitor

From the Status Page, you can launch the Workflow Monitor, via the View Diagram button. This gives you a graphical representation of where an order or line is in its flow. The progress of flow is highlighted in green. You can select individual components of the flow, and the tabs at the bottom will display information about the selected activity/sub-process. You can also zoom in/out of sub-processes using the buttons in the right-hand corner.

**Figure A–13 Workflow Monitor, available from the Status Page**

## Public Status APIs

Order Management also provides you with Public PL/SQL APIs to query order and line workflow status.

The package `OE_HEADER_STATUS_PUB` provides status information for order headers for Booking, Cancellation and Close status.

The package `OE_LINE_STATUS_PUB` provides status information for Order Lines for Cancellation, Configuration Creation, Close, Drop-Ship Receipt, Fulfillment, Invoice Interface, Pick Release, Return Receipt, Scheduling, Shipping, and Work Order Management.

These APIs are overloaded with the following generic signature:

```
GET_FUNCTION_STATUS (ENTITY_ID IN NUMBER, STATUS OUT VARCHAR2)
```

```
GET_FUNCTION_STATUS(ENTITY_ID IN NUMBER STATUS OUT VARCHAR2,  
DATE_COMPLETED OUT DATE)
```

Where `FUNCTION` stands for the actual function that you are querying status information for. `ENTITY_ID` stands for either `HEADER_ID` or `LINE_ID` depending on whether the functions is returning order or line status information. Pass the `HEADER_ID` or `LINE_ID` to the API for the order or line that you are querying status for.

These APIs allow you to retrieve status information or status and date (when the function was completed) information for an order header or line. The APIs return a Y when a order or line has completed a specified business function, an N when a order or line has not completed a specified business function and a P when a order or line has partially completed a specified business function (eg: Invoiced Interfaced partial on account of unfulfilled Required for Revenue components).

Example - To check whether a certain order is booked, you can call the booking status API as follows:

```
OE_ORDER_HEADER_PUB.GET_BOOKED_STATUS(12345, l_result);
```

In this case the `header_id` for the order whose booking status you are querying is 12345. `l_result` is declared as a variable of type `VARCHAR2`.

If the order is booked, then after this call, `l_result` will have a value of Y, if the order isn't booked then `l_result` will have a value of N.

If you want to query both the booking status and the date the order was booked, you can call the booking status API as follows:

```
OE_ORDER_HEADER_PUB.GET_BOOKED_STATUS(12345, l_result, l_result_  
date);
```

If the order is booked then the `l_result_date` will indicate the date the order was booked.

## Workflow and other OM function areas

### Cancellations

Cancellations is not workflow enabled in Order Management. However when you fully cancel an order or a line, its flow is stopped and transitioned to the Close Order or Line activity. The order or line summary status will indicate the order or line is canceled.

### Holds

In R11 Order Entry, you define generic or cycle action specific holds. Cycle actions honor both kinds of holds. In Order Management, you can define and apply generic or activity specific Holds (based on workflow activities). Header and line flows honor both kinds of holds. A flow that comes across a hold does not proceed unless that hold is removed.

For example, you cannot Book an order that has a generic order level hold or a Booking specific hold. The Book activity posts messages indicating that a hold exists. It then completes with an On Hold result and transition back to the Book - Eligible activity.

You can define custom workflow activities that honor holds. Order Management provides Public APIs (OE\_HOLDS\_PUB) that apply holds, check whether an order or line is on hold and remove holds. You can also seed lookups (Holdable Header Activities, Holdable Line Activities) based on custom workflow activities and define holds based on them.

### Processing Constraints

In R11 Order Entry you defined security rules based on cycle actions. In R11i Order Management, the Processing Constraints Framework provides you with enhanced security rules functionality. You can define processing constraints based on flow state or custom PL/SQL APIs. The application checks constraints before every update/delete/insert operation. If the Constraints are status based, the framework logic looks at WF status tables or status information de-normalized onto the base Order Management entities. The product comes seeded with various constraints and you can define additional constraints.

Example: Cannot delete an Order Line, once the Order is booked,

Example: Cannot change quantity, once Line is past some custom approval.

Since the Processing Constraints Framework looks at Workflow status tables, you can define constraints based custom activities as well.

## Error handling

There are two kinds of errors that Order and Line flows can run into; Expected errors and Unexpected errors.

### Expected Errors

These are errors that business processes expect to run into and handle.

**Example:** Booking requires that a Customer is specified on the Order. If you attempt to Book an Order that does not have a Customer specified, the application will display an appropriate message and the Order will not book. The seeded WF activity Book will complete with an Incomplete result.

When an activity completes via the Sales Order Form, i.e. the activity is synchronous or is manually completed via the Progress Order LOV, the Processing Messages window pops up to display messages that indicate the errors.

When an activity is processed by the Background Engine, i.e. the activity is deferred, these error messages are stored in the Order Management processing message table. View these messages via the Processing Messages window using either the Concurrent Program request number, or the Workflow activity (Book) and/or by Order or Line Basis.

When an activity is completed via a concurrent program, its output file lists all the error messages that were posted.

### Unexpected Errors

Unexpected errors are errors that a business process does not expect under normal circumstances. Eg: Database errors such as running out of rollback segments, Data integrity errors.

In this case, the activity errors out and Oracle Workflow starts the default error process - Retry Only. This is seeded WF error process. The activity that ran into the unexpected error gets marked with an Error status (in WF\_ITEM\_ACTIVITY\_STATUSES) and a notification listing the details is sent to the role specified in the OM Workflow Administrator item attribute.

Once the problems have been corrected the administrator can choose the Retry option on the notification and complete it. This triggers a retry of the erred activity. The Administrator can also choose to retry the activity from the Workflow Monitor.

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**Note:** Refer to *Setup Order Management WF Administrator WF item attribute* section on how you can set this WF Item attribute.

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## Purging Workflow Status Information

Oracle Workflow provides a Concurrent program that lets you purge workflow status information for flows that have completed. If the high volume of workflow status information is affecting performance negatively, run this Concurrent program to delete WF status history data for Closed Orders (and their closed Lines) whose flows have completed.

However if you run this concurrent program, **you should be aware of the following:**

You will no longer be able to view Workflow status information for closed orders.

Most of the core Order Management status information (like open, booked, fulfilled etc.) is de-normalized onto the base OM entities. Most seeded processing constraints work off these base columns. Seeded constraints prevent updating closed Orders/lines. However, if you had defined custom constraints based on workflow activity statuses, they would no longer apply (since the WF status information is deleted).

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**Note:** Order Purge functionality is provided with Order Management. The Purge Orders concurrent program lets you purge selected closed orders and their workflow history.

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## Customizing Order and Line Flows

You can customize Order or Line Workflow processes via the Workflow builder. Again you should be working at an access level of 100. You can copy seeded runnable processes, change the internal & display names and then modify them as needed. Any new runnable Order or Line flows can be used by assigning them to Order or Line types via the Define Transaction Types form.

### Guidelines

We recommend the following guidelines when you define custom data:

- When defining runnable order or line flows, use the seeded functional sub-processes as opposed to using the function activities.

Example: When defining a header flow, use one of the seeded Booking processes as opposed to the seeded Book function activity.

The functional sub-processes are designed to handle exceptions and sometimes to additional stuff.

You could use specific function activities when the seeded flows also use them.

Example: All the seeded line flows that support fulfillment use the function activity Fulfill.

- Adhere to the following rules
  - All order header flows should have the Close Order sub-process. All line flows should have the Close Line sub-process.
  - If the header or the line flow (used with the header flow) is using any of the seeded functional sub-processes then; the order header flow should have the Booking sub-process and the line flow should have the Enter sub-process (to ensure that lines wait for the order to book). If Close Order and Close Line are the only seeded sub-processes you are using in your header or line flows then you do not need to include the Booking sub-process in the Header flow and you do not need to include the Enter sub-process in the Line flow.
  - Do not design a line flow such that the line interfaces to Invoicing before it ships. See the section Order or Line processes that are workflow enabled - Invoice Interface for details.
  - Include the functions sub-processes that represent the processing you would like the order or line to go through. Thus if a line needs be interfaced to Invoicing, you need to ensure that its flow has a sub-process that does that.
  - Some WF activities need to be configured to be used, via setting its activity attributes. You need to set the activity attributes when such an activity is placed in a process. Example - Fulfillment activity, The activity to set the Notification Approver.
  - If you add order level approvals that need to be honored by all lines on an order, then you may need to ensure that new lines are not added to the order once it is past that header approval (via custom constraints).
- Always specify `RETRY_ONLY` as the default error process for any custom WF data.
- If you copy a seeded functional sub-process and change its definition (eg: add a custom activity in between seeded activities, delete a seeded activity etc.) and use it in new order or line flows, then this sub-process is considered a **custom sub-process**. Oracle does not guarantee that such a custom sub-process will provide the same functionality as the seeded sub-process. Secondly, when the

seeded functional sub-process is altered to provide enhanced functionality, the custom sub-process will not automatically be changed.

Hence instead of customizing the seeded functional sub-process, you should create a different activity or sub-process that does the custom processing. You can then place this new activity or sub-process before or after the appropriate seeded functional sub-process in a runnable Order or Line flow.

## Examples

You can do simple to very complex customizations using Oracle Workflow. You can design order - line co-ordination based on custom activities. You can define your custom activities such that they honor holds. You can define custom activities such that they can be completed via the Progress Order LOV. You can also define constraints based on your custom activities and how they were completed.

- Standard Items and PTO Only - Your business does not do ATO processing and it does not drop-ship lines. The seeded Order Management flows are designed to handle different kinds of items. You can copy and modify these to exactly suit your requirements, thus making them more efficient.

You can copy the flow “Line Flow - Generic” to a new one, change its internal and display name. You can then remove the sub-process Create Supply - Line from this new definition (Figure A-13). This sub-process internally calls other sub-processes based on whether the item is built and whether the line is internally or externally sourced. Since you only deal with Standard items and PTOs and you do not source from an external vendor, your line flows do not need this sub-process.

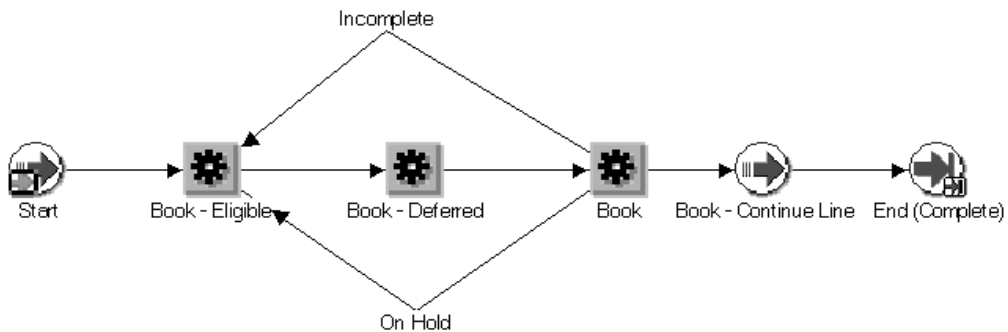
**Figure A-14** Line Flow - Standard Items Only



- Deferred Booking that is manually controlled - You want your Order Entry clerks to be able to control when an order is booked, however you do not want them to have to wait while the order books. Order Management does not seed a sub-process that supports this exact variant, however you can very easily

create such a sub-process. Using the seeded activities Book -Eligible, Book -Deferred, Book, and Book - Continue Line, you can create a new Booking sub-process. Branch the transitions for the Incomplete and On Hold results back to the Book - Eligible activity. Create an order header flow that uses this booking process and assign it to an Order Type.

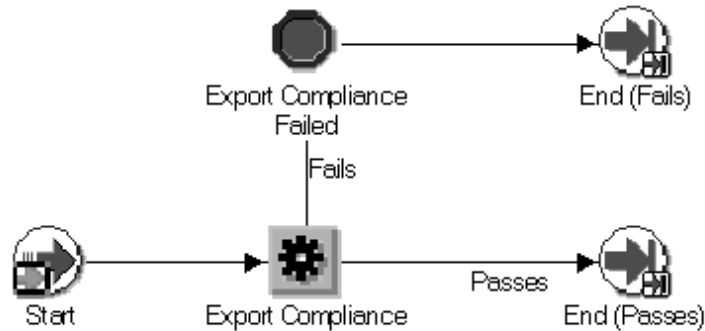
**Figure A-15** Book - Order, Manual and Deferred



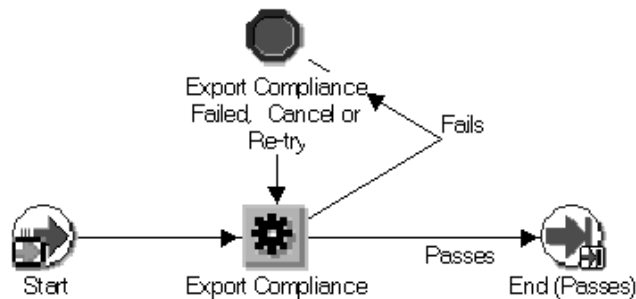
- Custom external processing - Your business sells to foreign nations and hence needs to comply with export regulations. You use Export Compliance software from an external vendor that ensures that you are compliant. You need to integrate with this software so that it checks that an order line is export compliant before it can be processed further.

There are many different ways to achieve this:

Define a workflow function activity Export Compliance that calls a PL/SQL API that integrates with your Export Compliance software (Figure A-15). If the Order line is export compliant then it completes with a Passes result. In case of failure it completes with a Fails result and transitions to a failure block(WF\_STANDARD.BLOCK), that ensures that the flow does not move forward. You would then need to manually cancel the line.

**Figure A-16** *Export Compliance sub-process that uses a function activity*

Alternatively you could also code the cover for the Export Compliance activity such that, in case of failure it transitions the flow to a Block activity that calls the API OE\_STANDARD\_WF.STANDARD\_BLOCK (Figure A-16). Users who have the authority to deal with such lines can either cancel the line or complete the necessary procedures to make the line compliant. In the latter case, they would be able to progress the line from the Progress Order LOV(from the Sales Order Form). The sub-process is designed such that it performs the compliance check again.

**Figure A-17** *Export Compliance sub-process that allows a re-try*

If the Export Compliance call is expensive you can defer it by setting its cost to be higher than the WF Threshold.

If you think it is more efficient to process Lines for export compliance en-masse, you can design the sub-process as follows:

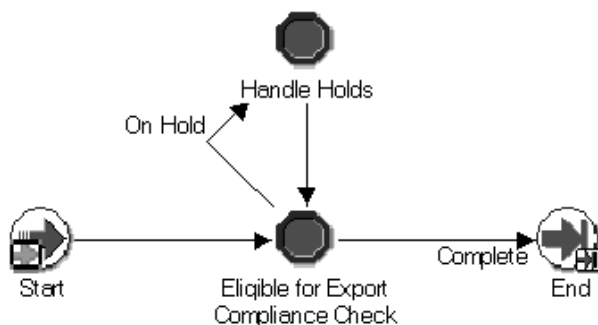
**Figure A-18** *Export Compliance sub-process that is externally completed*



The block activity *Eligible for Export Compliance Check* calls the API `WF_STANDARD.BLOCK`. You can write a concurrent program that can pick up lines that are eligible for “Export Compliance”; that is it queries lines that are awaiting at the block activity *Eligible for Export Compliance Check* by looking at *WF Item Activity Statuses* view. It then integrates with the export compliance software and processes them. If they fail export compliance, the concurrent program can call the *Order Management Process Order* API (`OE_ORDER_PUB.Process_Order`) to cancel such lines. If they pass export compliance, it can complete the block activity using *WF Engine* APIs (`WF_ENGINE.COMPLETE_ACTIVITY`).

You could refine it further (Figure A-18); in cases where completing some additional procedures could make an Order Line compliant, the concurrent program could put the Line on Hold, using the *Order Management Hold* APIs). In such cases the flow transitions with a *On Hold* result to an eligibility block. Authorized Users could complete required procedures and release the Hold. They could then complete the *Handle Holds* block activity via the *Progress Order* LOV. You can also set a time-out interval (e.g. 1 day) on the block activity, this will automatically trigger its completion after the specified time. In case it is deemed that there is anything that can be done to make this Order Line export compliant, the user could cancel the line. This will force the flow to closure.

**Figure A-19** Export Compliance sub-process that handles holds.



As you can see, using Order Management and Workflow you can solve this business requirement in many different ways. You could enhance this process further, by adding notifications activities.

Once you have defined one or more sub-processes to meet your needs, you need to use it/them in a line flow(s) and assign the flow(s) to a Line Type(s).

Oracle Workflow also lets you define activities that call external functions. It uses Oracle Advanced Queues functionality to achieve this.

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**Note:** Refer to the *Oracle Workflow User's Guide* (Part Number A85440-01) for more information on the WF APIs and on defining function activities of type PL/SQL and External. Refer to the *Open Interfaces Manual* (Part Number - A83746-01) for information on the calling the Process Order API.

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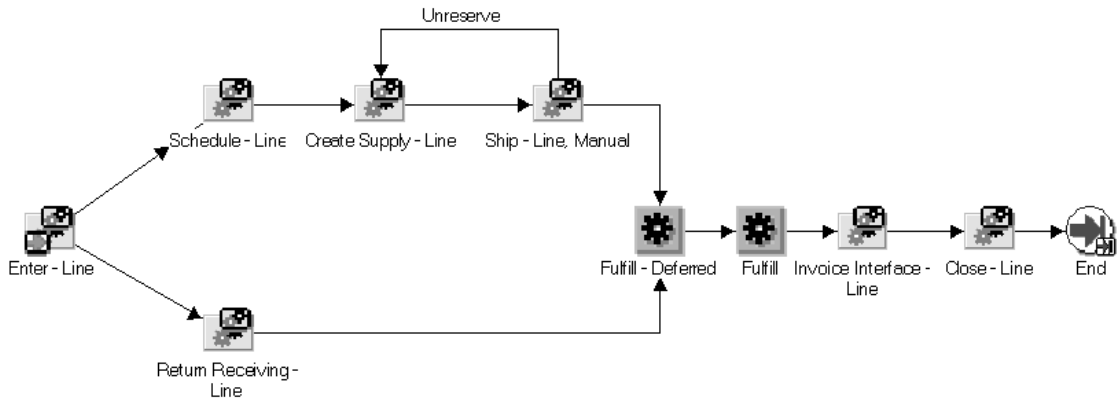


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- Defining a flow that can be used for both Outbound(order) and Inbound(return) Lines:

Order Management does not seed a generic flow that can support both order and return lines. However, if you wanted to do so for some reason, you can do so using the seeded sub-processes. However this should be done with caution as Workflow does not function identically to Cycles.

**Figure A-20** INCORRECT Flow to support both Order and Return Lines

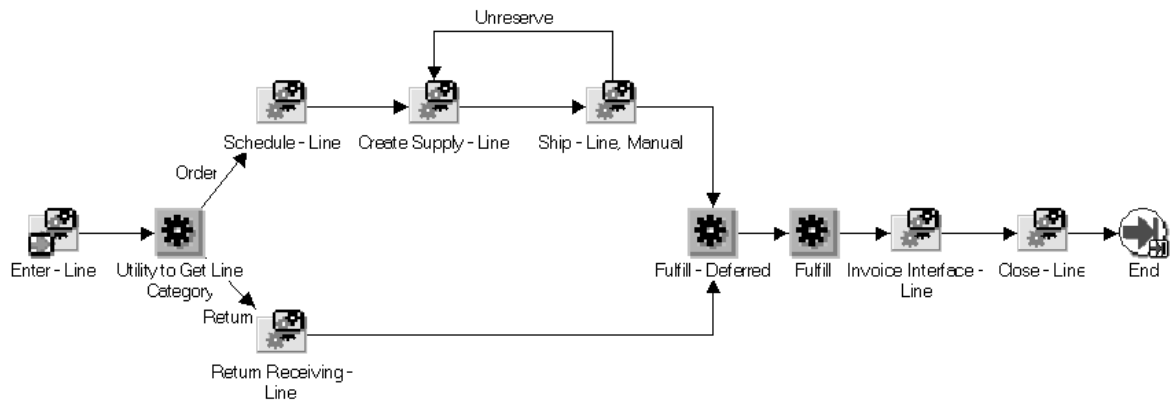


The above flow WILL NOT work correctly, since once a line is booked, WF randomly picks which transition to process first. It then processes it all the way till it can go no further. So for an outbound Line using this flow, if the branch 'Returns receiving' is first processed, it will get marked as "Not Eligible" and hit the "Fulfill -Defer" activity (to defer thread) and stop. Then the WF Engine starts executing the other branch; the line will schedule and hit the "Ship - Line, Manual" sub-process, where it will stop and wait to get picked and shipped. However the Background Engine could pick up the deferred thread and execute the "Fulfill" activity. This activity will error out since the fulfilling event for the order line "Ship-Confirmation" is not yet complete.

For this to work correctly you need to define the flow as follows:



**Figure A-21** CORRECT Flow to support both Order and Return Lines



After booking the line flow branches based on the Line Category ensuring that only one of the branches are (Order or Return) executed runtime. The activity Utility to get Line Category is seeded OM: Order Line Work Item.

## Caveats

While you get immense flexibility when designing order and line flows with Oracle Order Management and Oracle Workflow, we recommend that you do so wisely. It is recommended that you acquire training in using Oracle Workflow, before you customize Order Management Workflow processes.

We also recommend that you keep in mind the following:

- When Order Management sends you patches for bug fixes or new releases, it will affect *only* the seeded OM data. You should carefully review any WF patches you receive. You need to look at the changes made, and decide whether you need to change your custom processes accordingly.

Example - You define a custom booking process (Figure A-13). Patches that update the definitions of the Book-Order, Manual and Book-Order, Deferred will not affect the definition of this custom booking process. However if Order Management sends out a patch that changes the definition of the seeded Book activity, your custom process will also pick up the updated definition since it is referencing this seeded activity.

Example: Currently the seeded Book function internally calls the Credit Checking API. With a future release Order Management release, this may be changed such that credit checking/payment verification is WF enabled. The API that seeded Book function will be changed to not call the credit checking API. And the seeded Booking processes will be changed to include the credit checking /payment verification workflow activities. Now when you get this patch, you need to review it and modify your custom booking process accordingly. If you do not, then your custom booking process will not do credit checking (since it references the updated book function that no longer calls credit checking).

- You may define new workflow item attributes for the seeded Order Management Work items. However you should keep in mind that Oracle Workflow creates a row for every item attribute whenever a flow is started using a workflow item type (irrespective of whether the item attribute has a value) and this can affect performance negatively. Hence we recommend that you define new workflow item attributes judiciously.

Example: You define 10 new item attributes under the item type "OM: Order Line". You define new workflow activities that set values for these attributes and you use them in your notification activities. Now whenever you create an Order Line, Workflow will create 10 additional rows in WF\_ITEM\_ATTR\_VALUES for these new attributes.

Order Management uses the primary key (Header\_id/Line\_id) for the Order/Line as the workflow item key when it starts Order/Line flows. You can use this in your function activities to get more information about a order or line.

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**Note:** Look at the appendix for an example of a PL/SQL based function activity.

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## CONCLUSION

Oracle Order Management's use of Workflow provides you with powerful order processing and fulfillment capabilities. You need to understand the capability that Oracle Workflow provides and the seeded functionality that Order Management provides to design the best order processing flows for your business. By configuring flows that are flexible and optimal, you can significantly improve your order fulfillment times, thus increase your profitability.

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## Data Model Overview

This document intends to give you a very high level overview of the Order Management suite data model, key modules, and its integration points. Additionally it discusses at a high level how Oracle Order Management differs from Oracle Order Entry. Topics included are:

- [Order Management Overview](#) on page B-2
- [The Order Management Tables](#) on page B-3
- [KEY Order Management Modules](#) on page B-29
- [Shipping Execution Overview](#) on page B-41

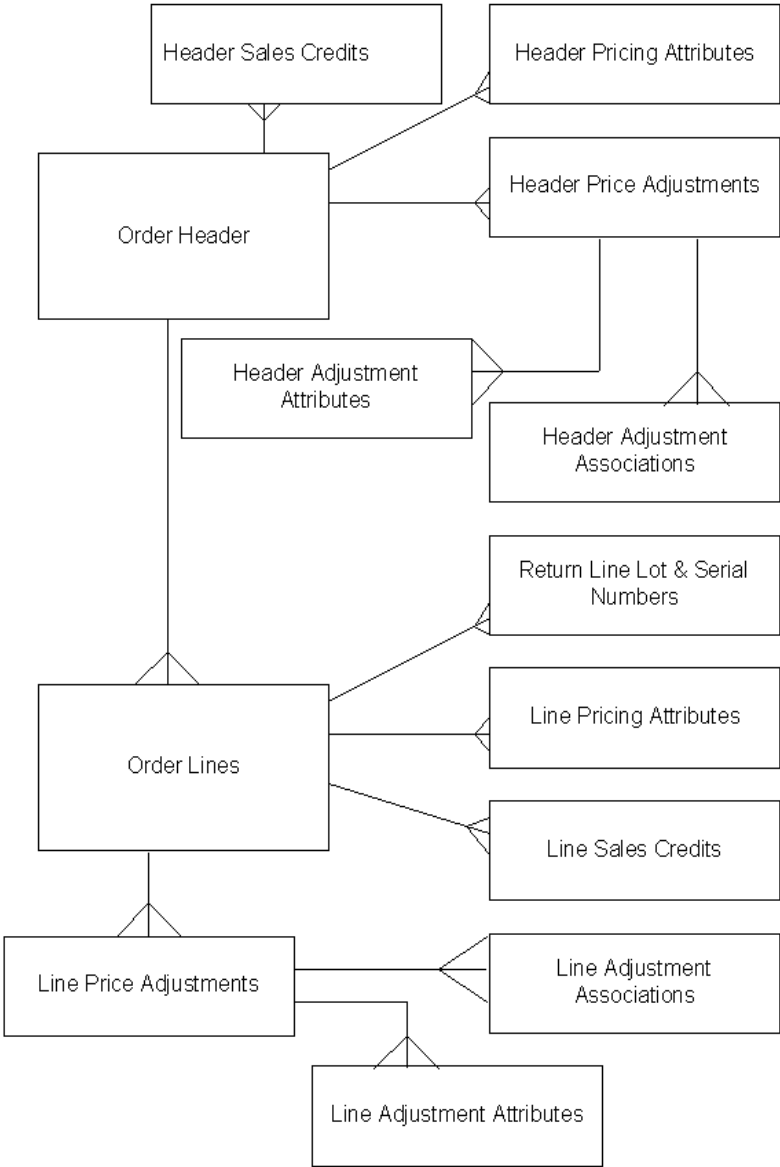
## Order Management Overview

Order Management has done a great job in simplifying the data model while giving more granular control of the data. The Sales Order is modeled as a business object comprised of the following entities:

Order Header, Header Sales Credits, Header Price Adjustments, Header Pricing Attributes, Header Adjustment Attributes, Header Adjustment Associations, Order Lines, Line Sales Credits, Line Price Adjustments, Line Pricing Attributes, Line Adjustment Attributes, Line Adjustment Associations and Lot Serial Numbers. Most of the attributes in the Header table are moved to the lines table. Some attributes like Bill To which used to be only at the header level is now at the line level, Meaning you can bill lines on the same sales order to different bill to sites.

The following diagram represents OM data model on high level.

# The Order Management Tables



| <b>Column</b>                | <b>Description</b>  | <b>Used By</b>        |
|------------------------------|---|-----------------------|
| ACCOUNTING_RULE_ID           | Foreign Key to RA_RULES   | Invoicing             |
| AGREEMENT_ID                 | Agreement   | Pricing Contracts     |
| BOOKED_DATE                  | Date when Order was Booked  | Booking               |
| BOOKED_FLAG                  | Indicates whether order is booked   | Booking               |
| CANCELLED_FLAG               | Indicates whether entire order is canceled  | Cancellations         |
| CHANGE_SEQUENCE              | Controls sequence in which updates are done                                       | EDI Integration       |
| CHECK_NUMBER                 | Number of Check used to make payment on Order                                     | Invoicing             |
| CONVERSION_RATE              | Rate of currency conversion.  | General               |
| CONVERSION_RATE_DATE         | Date for the rate used for currency conversion.                                   | General               |
| CONVERSION_TYPE_CODE         | Type of conversion used for currency conversion                                   | General               |
| CREDIT_CARD_APPROVAL_CODE    | Credit Card Approval Code   | I-Payment Integration |
| CREDIT_CARD_APPROVAL_DATE    | Credit Card Approval Date   | I-Payment Integration |
| CREDIT_CARD_CODE             | Credit Card Code  | I-Payment Integration |
| CREDIT_CARD_HOLDER_NAME      | Credit Card Holder's name   | I-Payment Integration |
| CREDIT_CARD_NUMBER           | Credit Card Number  | I-Payment Integration |
| CREDIT_CARD_EXPIRATION_DATE  | Credit Card Expiration Date   | I-Payment Integration |
| CUST_PO_NUMBER               | PO Number in the customer system which the customer specifies when placing order. | Pricing Contracts     |
| CUSTOMER_PREFERENCE_SET_CODE | Determines default set: Arrival or Ship   | Scheduling            |
| DELIVER_TO_CONTACT_ID        | Contact person for the organization that the product is finally delivered to.     | General               |

| Column                  | Description  | Used By               |
|-------------------------|--|-----------------------|
| DELIVER_TO_ORG_ID       | Organization / individual that would be the end consumer of the goods. Also delivery confirmations may be done using the deliver_to. Defaults to the order line. | General               |
| DEMAND_CLASS_CODE       | Demand Class   | Planning              |
| EARLIEST_SCHEDULE_LIMIT | Inner limit of Schedule Date Window  | Scheduling            |
| EXPIRATION_DATE         | Future Use   | Future Use            |
| FIRST_ACK_CODE          | Acknowledgment Code that is sent to the EDI trading partner when the order is acknowledged the first time  | EDI Integration       |
| FIRST_ACK_DATE          | The first day the order was acknowledged   | EDI Integration       |
| FLOW_STATUS_CODE        | Order Header flow status summary   | General               |
| FOB_POINT_CODE          | Point of ownership transfer  | General               |
| FREIGHT_CARRIER_CODE    |  | Shipping Integration  |
| FREIGHT_TERMS_CODE      | Freight Term Code, could be Absorb, buyer Pays, Cost to Charge, Fixed Charge   | Shipping Integration  |
| HEADER_ID               | Unique identifier for an order - system generated id.  | Process Order         |
| INVOICE_TO_CONTACT_ID   | Contact person for the organization that will foot the bill.   | Invoicing Integration |
| INVOICE_TO_ORG_ID       | Organization that should be invoiced for the order / who would pay for the order. Defaults to the order line.  | Invoicing Integration |
| INVOICING_RULE_ID       | Foreign Key to RA_RULES  | Invoicing Integration |
| LAST_ACK_CODE           | Acknowledgment Code that is sent to the EDI trading partner when the order was last acknowledged   | EDI Integration       |

| <b>Column</b>             | <b>Description</b>   | <b>Used By</b>        |
|---------------------------|--|-----------------------|
| LAST_ACK_DATE             | Last Date the order was acknowledged   | EDI Integration       |
| LATEST_SCHEDULE_LIMIT     | Outer limit of Schedule Date window  | Scheduling            |
| LOCK_CONTROL              | Internal Use   | Process Order         |
| OPEN_FLAG                 | Indicates whether order is open  | General               |
| ORDER_CATEGORY_CODE       | Category of Order (ORDER, RETURN or MIXED). Defaults from Order Type.  | General               |
| ORDER_DATE_TYPE_CODE      | Indicates whether Customer is ordering based on ship date or arrival date.   | Scheduling            |
| ORDER_NUMBER              | User displayed order number.   | Order Numbering       |
| ORDER_SOURCE_ID           | Foreign key to oe_order_sources. This field will be used by OI to point to the order source e.g EDI, Service etc.  | Order Import          |
| ORDER_TYPE_ID             | Foreign key to OE_Transaction_Types.   | General               |
| ORDERED_DATE              | Date on which order was placed.  | General               |
| ORG_ID                    | Organization that is taking the order. (same as sold_from_org_id).   | General               |
| ORIG_SYS_DOCUMENT_REF     | Used by Order Import - this field will contain the document number from the legacy or external Order Entry system.   | Order Import          |
| PACKING_INSTRUCTIONS      | Packing Instruction  | Shipping Integration  |
| PARTIAL_SHIPMENTS_ALLOWED | Flag to indicate whether partial quantities may be shipped for lines belonging to the order (when set to 'Y') or whether it should follow the all or none rule. (when set to 'N'). | Shipping Integration  |
| PAYMENT_AMOUNT            | Advance payment made by Customer   | Invoicing Integration |
| PAYMENT_TERM_ID           | Foreign Key to RA_TERMS  | Invoicing Integration |
| PAYMENT_TYPE_CODE         | Indicates type of Payment  | Invoicing Integration |



| <b>Column</b>                 | <b>Description</b>   | <b>Used By</b>                 |
|-------------------------------|--|--------------------------------|
| <b>PRICE_LIST_ID</b>          | Foreign key to oe_price_lists. Indicates which price list should be used for the order.  | Pricing                        |
| <b>PRICING_DATE</b>           | Date on which order was priced.  | Pricing                        |
| <b>REQUEST_DATE</b>           | Request Shipping / Arrival date communicated by the customer.  | Defaulting Source              |
| <b>RETURN_REASON_CODE</b>     | Defaulting source for Return Reason on the Line.   | RMA                            |
| <b>SALES_CHANNEL_CODE</b>     | Sales Channel that was the source for this Order.  | Reporting                      |
| <b>SALESREP_ID</b>            | Foreign key to RA_SALESREP   | Sales Credits, Tax Integration |
| <b>SHIP_TO_CONTACT_ID</b>     | Contact person for the organization that the products have been shipped to.  | Defaulting Source              |
| <b>SHIP_TO_ORG_ID</b>         | Organization to which the order items were sent to and would take ownership of the product. Defaults to order lines.   | Defaulting Source              |
| <b>SHIP_TOLERANCE_ABOVE</b>   | Upper tolerance level for line quantities (expressed as percent of the originally ordered quantity). When quantities are shipped within this tolerance level, this wont be considered as over shipment.  | Defaulting Source              |
| <b>SHIP_TOLERANCE_BELOW</b>   | Lower tolerance level for line quantities (expressed as percent of the originally ordered quantity). When quantities are shipped within this tolerance level, this wont be considered as under shipment. | Defaulting Source              |
| <b>SHIPMENT_PRIORITY_CODE</b> | Shipment Priority  | Defaulting Source              |
| <b>SHIPPING_METHOD_CODE</b>   | Freight Carrier + Service Level  | Defaulting Source              |
| <b>SOLD_FROM_ORG_ID</b>       | Organization that took the order ( same as org_id).  | General                        |

| Column                  | Description  | Used By  |
|-------------------------|--|--|
| SOLD_TO_CONTACT_ID      | Contact person for the organization that products have been sold to. Defaults to the order line. | General  |
| SOLD_TO_ORG_ID          | Organization that the goods/services are sold to. Company that placed the order.                 | General  |
| SOURCE_DOCUMENT_ID      | Based on the source document type, this would be a foreign key to an oracle application table .  | Copy Orders, RLM Integration, Internal orders, CRM             |
| SOURCE_DOCUMENT_TYPE_ID | Foreign key to oe_order_sources  | Copy Orders, RLM Integration, Internal Orders, CRM Integration |
| TAX_EXEMPT_FLAG         | Tax exempt indicator   |  |
| TAX_EXEMPT_NUMBER       | Tax exemption certificate number   |  |
| TAX_EXEMPT_REASON_CODE  | Tax exemption reason   |  |
| TAX_POINT_CODE          |  |  |
| TRANSACTIONAL_CURR_CODE | Currency code to be used for order transactions.   | General  |
| UPGRADED_FLAG           | Flag to indicate whether this record was upgraded from OE  | Upgrade  |
| VERSION_NUMBER          | Not currently used.  | Not used   |

Order types in Order Entry served as a pool for defaulting sources and transactional controls. With Order Management a lot of the header attributes are available on the line and are controllable at that level. It follows that the application offer an entity similar to the order type for the Line; i.e. the line type. Order types and line types are both referred to as Transaction Types in Order Management.

The order types you defined in Order Entry are automatically upgraded to order transaction types in Order Management. Order types that have an order category 'R' or 'P' are upgraded to order transaction types of category ORDER. Order types that have an order category RMA are upgraded to order transaction types of category 'RETURN'. Order types that have do not have an order category specified are upgraded to order transaction types of category MIXED. When you create an Order using a Mixed Order Type, you can combine both order and return lines on it. Order Line SO\_LINES\_ALL & SO\_LINE\_DETAILS & SO\_HEADERS\_ALL => OE\_ORDER\_LINES\_ALL

The new Order Line is functionally and technically very different from its R11 Order Entry counterpart. It has attributes from `so_headers`, `so_order_lines`, `so_line_details` and more.

Order Management offers Line level independence; a lot of the Order attributes are now available on the Line and each Line follows its own flow that allows it to be processed independently.

- In Order Entry a shipment was different from the (shipment parent) line, now every Order Line is a Shipment. The Line quintuplet (Line Number, Shipment Number, Option Number, Component Number, Service Number) is displayed as 1.1.1.1.1 on the Sales Order Form.
- In Order Entry the line followed the same cycle as the Order Header it belonged to. Now a line follows a flow that is different from that of the Header. Each Line on an Order can follow a different flow, depending on the Workflow assignment tied to its Line Type.
- Ordered Quantity on the Line indicates Open quantity as opposed to the original ordered quantity. Cancellation is modeled as a decrement in the ordered quantity along with an increment in the canceled quantity. User and System defined processing constraints define the point in the Order flow, where Cancellations functionality becomes effective. That is you can define the point, where onwards you are required to provide a reason to reduce (cancel) the ordered quantity. The application records history for ordered quantity changes whenever a reason code is provided.
- Many of the Header attributes are now available on the line and their values can be different from that of the Header - e.g. price list, Salesperson, payment terms, shipping and packing instructions, agreement, invoice to, etc.
- Scheduled Order Lines are viewed as demand by the Advanced Planning System.
- Ordering can be based on requested ship or arrival date. Delivery lead time is used to determine the schedule ship date and it can be user specified.
- When lines were partially processed in Order Entry, they reflected partial cycle states. Now an Order Line splits on partial processing. Order Management splits a line at the following activities - Ship-Confirmation, Return Receipt and Drop-ship receipt, when it is partially processed.

Order Entry did not support decimal quantities. Now decimal quantities are supported both for standard items and configurations (with 11 $\dot{i}$ ). The application also supports ordering, pricing and shipping in different UOMs.

- With Order Management, shipping tolerances are supported. The tolerance value can be defaulted and adjusted at the line level.
- Order Lines can be entered using the Internal item number or the Customer - Item number of one the Generic Item numbers (UPC, EAN, JAN, CLED). Additionally you can define your own cross-reference types in Inventory and use those to specify an item.
- Lines can be priced based on a date different from the creation date. The pricing date is exposed enabling you to re-price based on different dates until the Line is invoiced.
- Returns can be entered using Serial number information in addition to the original Order, Invoice or Purchase Order.

### Technical Notes

Order Management schema is simplified compared to the Order Entry model. There are fewer tables, although each table is wider to offer enhanced functionality.

- Shipments, Options, Included Items Lines and Configuration Item Lines are all stored in OE\_ORDER\_LINES\_ALL.
- Every line is a shipment and is identified via a line number and a shipment number. The user visible line number ties together all shipments belonging to a Line. To split a shipment further, you can use the Split Lines window. The LINE\_SET\_ID internally ties together shipments from an original line. In Order Entry only a single attribute on SO\_LINES\_ALL stored the numbering. Depending on the kind of line, it stood for either the line number, the shipment number, the option number or the service line number. Now these are all de-normalized on to the line entity, you have separate columns for all of these. Additionally component number helps track included items under a given Line.
- The Category code on the line indicates whether it is an inbound ('RETURN') or an outbound ('ORDER') one. It defaults from the Line Transaction Type.
- Every line that is a part of the configuration, will have the TOP\_MODEL\_LINE\_ID pointing to the top Model. The Model line will have the TOP\_MODEL\_LINE\_ID value set to itself. The LINK\_TO\_LINE\_ID points to immediate parent for a line in a configuration. ITEM\_TYPE\_CODE identifies a item to be a STANDARD, MODEL, CLASS, OPTION or INCLUDED ITEM. For a subassembly (an ATO model within a PTO), the options, classes and included items under the subassembly will have it's ATO\_LINE\_ID column to point to its ATO Model line.

- Order Entry used S and S Date columns to store Order Cycle Status. Order Management uses workflow to track status. Some core statuses are de-normalized onto the Line - Open/Closed, Booked, Fulfilled. Some other columns can be used to derive specific status information e.g.: A not null Shipped\_quantity indicates that an outbound line is past shipping. The FLOW\_STATUS column stores the Line Flow Summary Status, and its value changes as the Line progresses in its flow. The API OE\_LINE\_STATUS\_PUB provides information about various functional statuses and when a line activity was completed.
- Order Entry used SVRID columns to manage defaulting attribute values and cascading attribute changes. Order Management uses the PL/SQL based Defaulting Framework to provide default values for records and it does not retain an audit trail of how an attribute was defaulted.

The following table describes OE\_ORDER\_LINES\_ALL in alphabetical order. Columns that are new in this release are in BOLD. The table also has the regular Descriptive Flex, Global Descriptive, Industry Attribute Flex, Trading Partner Flex and Standard Who Columns

| Column                  | Description  | Used By           |
|-------------------------|--|-------------------|
| ACCOUNTING_RULE_ID      | Accounting rule, Foreign Key to RA_RULES   | Invoicing         |
| actual_arrival_date     | actual date when the item arrived at the ship_to location                                      | Fulfillment       |
| ACTUAL_SHIPMENT_DATE    | Will be used to track the Actual Shipment Date   | Scheduling        |
| AGREEMENT_ID            | foreign key to OE_AGREEMENTS   | Pricing Contracts |
| ARRIVAL_SET_ID          | Foreign key to OE_SETS   | Sets              |
| ato_line_id             | Points to the ATO parent line  | Configurations    |
| Authorized_TO_SHIP_FLAG | Used by Release Management   | RLM Integration   |
| auto_selected_quantity  | Used by Oracle Configurator. Indicates the qty selected by the system when an item is selected | Configurations    |
| BOOKED_FLAG             | Indicates whether line is booked   | Booking           |
| CALCULATE_PRICE_FLAG    | Indicates whether this line can be re-priced   | Pricing           |
| CANCELLED_FLAG          | Indicates whether entire line is canceled  | Cancellations     |

| <b>Column</b>              | <b>Description</b>  | <b>Used By</b>        |
|----------------------------|---|-----------------------|
| CANCELLED_QUANTITY         | Quantity canceled   | Cancellations         |
| CANCELLED_QUANTITY2        | Quantity canceled in secondary UOM for Lines using Process Manufacturing                    | Process Manufacturing |
| CHANGE_SEQUENCE            | Controls sequence in which updates are done   | EDI Integration       |
| COMMITMENT_ID              | Commitment that this Order is used against.   | Invoicing             |
| COMPONENT_CODE             | Identifier of component within an exploded bill   | Configurations        |
| component_number           | Included item sequence within a model or class.   | Configurations        |
| COMPONENT_SEQUENCE_ID      | Bill of materials component (option) or bill (top model) identifier                         | Configurations        |
| CONFIG_DISPLAY_SEQUENCE    | Will not be used/Obsolete   | Configurations        |
| CONFIG_HEADER_ID           | Foreign key to Configurator schema  | Configurations        |
| CONFIG_REV_NUMBER          | Foreign key to Configurator schema  | Configurations        |
| CONFIGURATION_ID           | Not used  | Not used              |
| CREDIT_INVOICE_LINE_ID     | The invoice line that a Return Line applies credit to                                       | Returns, Invoicing    |
| CUST_MODEL_SERIAL_NUMBER   | Vehicle ID number (VIN)   | RLM Integration       |
| CUST_PO_NUMBER             | Customer Purchase Order number  | RLM Integration       |
| CUST_PRODUCTION_SEQ_NUMBER | Used by RLM   | RLM Integration       |
| CUSTOMER_DOCK_CODE         | A specific delivery location at the ship-to destination.                                    | RLM Integration       |
| CUSTOMER_ITEM_NET_PRICE    | Reference Information. Contains Customers net price, if specified while importing an order. | Order Import          |
| CUSTOMER_JOB               | Customer job number   | RLM Integration       |

| Column                   | Description   | Used By              |
|--------------------------|---|----------------------|
| CUSTOMER_LINE_NUMBER     | Reference Information. Contains customers line number, if specified while importing an order.   | Order Import         |
| CUSTOMER_PAYMENT_TERM_ID | Reference Information. Contains Customers payment term, if specified while importing an order.  | Order Import         |
| CUSTOMER_PRODUCTION_LINE | Customer Production line - a specific delivery location at the ship-to destination.   | RLM Integration      |
| CUSTOMER_SHIPMENT_NUMBER | Reference Information. Contains customers shipment number, if specified while importing an order  | Order Import         |
| CUSTOMER_TRX_LINE_ID     | Not Used  | Not used             |
| DELIVER_TO_CONTACT_ID    | Contact person for the organization that the product is finally delivered to.   | General              |
| DELIVER_TO_ORG_ID        | Organization / individual that would be the end consumer of the goods.  | General              |
| DELIVERY_LEAD_TIME       | Time it takes the reach the item from the SHIP_FROM to SHIP_TO org.   | Scheduling           |
| DEMAND_BUCKET_TYPE_CODE  | Bucket Type designator (e.g. discrete, weekly, monthly) associated with the order line. Validated against FND_LOOKUPS_TYPE = RLA_DEMAND_SUBTYPE | RLM Integration      |
| DEMAND_CLASS_CODE        | Demand Class  | General              |
| DEP_PLAN_REQUIRED_FLAG   | Indicates whether departure planning required for this shipment   | Shipping Integration |
| earliest_acceptable_date | Earliest Date when the customers is ready to received the item  | Scheduling           |

| Column                    | Description   | Used By                           |
|---------------------------|---|-----------------------------------|
| END_ITEM_UNIT_NUMBER      | Uniquely identifies which bill of material to be used for building a specific Model/Unit Number effectivity controlled item   | Project Manufacturing Integration |
| explosion_date            | Date when the Bill is exploded  | Configurations                    |
| FIRST_ACK_CODE            | Acknowledgment Code that is sent to the EDI trading partner when the line is acknowledged the first time  | EDI Integration                   |
| FIRST_ACK_DATE            | The first day the line was acknowledged   | EDI Integration                   |
| FOB_POINT_CODE            | Point of ownership transfer   | General                           |
| FREIGHT_CARRIER_CODE      | Freight Carrier   | Shipping Integration              |
| FREIGHT_TERMS_CODE        | Freight Term Code, could be Absorb, buyer Pays, Cost to Charge, Fixed Charge  | Freight and Special Charges       |
| FULFILLED_FLAG            | Flag indicating whether the line is fulfilled   | Fulfillment                       |
| FULFILLED_QUANTITY        | Quantity fulfilled  | Fulfillment                       |
| FULFILLED_QUANTITY2       | Quantity fulfilled in secondary UOM   | Process Manufacturing             |
| FULFILLMENT_METHOD_CODE   | Fulfillment Method Code   | Fulfillment                       |
| HEADER_ID                 | Foreign key to OE_ORDER_HEADERS. Header ID of the order to which the line belongs   | General                           |
| INTMED_SHIP_TO_CONTACT_ID | Stores the Intermediate Ship To contact person information for the organization that the products have been shipped to. Same kind of validation as the ship_to_contact_id | RLM Integration                   |



| Column                        | Description  | Used By                    |
|-------------------------------|--|----------------------------|
| INTMED_SHIP_TO_ORG_ID         | Stores the Intermediate Ship to organization to which the items are sent to before reaching the final destination and will be validated against the org and address for the given customer. Same kind of validation as the ship_to_org_id. | RLM Integration            |
| INVENTORY_ITEM_ID             | Foreign key to MTL_SYSTEM_ITEMS. Inventory Item  | General                    |
| INVOICE_INTERFACE_STATUS_CODE | Indicates status of Invoice Interface activity   | Invoicing                  |
| INVOICE_TO_CONTACT_ID         | Contact person for the organization that will foot the bill.   | General                    |
| INVOICE_TO_ORG_ID             | Organization that should be invoiced for the order / who would pay for the order.  | Invoicing                  |
| INVOICED_QUANTITY             | Quantity interfaced to invoicing   | Invoicing                  |
| INVOICING_RULE_ID             | Invoicing rule, Foreign Key to RA_RULES  | Invoicing                  |
| ITEM_IDENTIFIER_TYPE          | To distinguish different types of items (internal, customer and generic items)   | Item Management            |
| ITEM_REVISION                 | Revision of item being returned  | Returns                    |
| ITEM_TYPE_CODE                | Line Item Type (can be model, class, standard etc.)  | Configurations, Scheduling |
| LAST_ACK_CODE                 | Acknowledgment Code that is sent to the EDI trading partner when the line was last acknowledged  | EDI Integration            |
| LAST_ACK_DATE                 | Last Date the line was acknowledged  | EDI Integration            |
| latest_acceptable_date        | Latest Date when the customers is ready to received the item   | Scheduling                 |
| LINE_CATEGORY_CODE            | Signifies whether this is a 'ORDER' or 'RETURN' . Defaulted from the line type.  | Transaction Types          |

| <b>Column</b>            | <b>Description</b>   | <b>Used By</b>         |
|--------------------------|--|------------------------|
| LINE_ID                  | System generated ID  | General                |
| LINE_NUMBER              | Line sequence number within the order                          | General                |
| LINE_SET_ID              | Foreign key to OE_SETS. Ties all shipments in a Line           | Split Line Processing  |
| LINE_TYPE_ID             | Foreign key to OE_LINE_TYPES                                   | Transaction Types      |
| LINK_TO_LINE_ID          | System generated identifier of immediate parent component line | Configurations         |
| LOCK_CONTROL             | Internal use   | Process Order          |
| MARKETING_SOURCE_CODE_ID | Foreign key reference to CRM table AMS_SOURCE_CODE.            | CRM Integration        |
| MFG_LEAD_TIME            | Manufacturing Lead Time  | APS Integration        |
| model_group_number       | Not used   | Not Used               |
| MODEL_REMNANT_FLAG       | Indicates whether model has partially shipped components       | Split Lines Processing |
| OPEN_FLAG                | Indicates whether line is open                                 | Close Line             |
| OPTION_FLAG              | Indicator whether line is an option in a configuration         | Configurations         |
| OPTION_NUMBER            | Option sequence number within the model line                   | General                |
| ORDER_QUANTITY_UOM       | Unit of measure for the quantity ordered                       | General                |
| ORDER_SOURCE_ID          | Source of Order Line   | Order Import           |
| ORDERED_ITEM             | Generic or Customer Name of Ordered Item                       | General                |
| ORDERED_ITEM_ID          | Ordered Item ID  | General                |
| ORDERED_QUANTITY         | Open Quantity ordered  | General                |
| ORDERED_QUANTITY2        | Open quantity ordered in the secondary UOM                     | OPM Integration        |
| ORDERED_QUANTITY_UOM2    | Secondary Unit of measure for Ordered qty.                     | OPM Integration        |

| Column                         | Description  | Used By                  |
|--------------------------------|--|--------------------------|
| ORG_ID                         | Operating Unit to which this line belongs.                                 | General                  |
| ORIG_SYS_DOCUMENT_REF          | Original document reference for the order in external system               | Order Import             |
| ORIG_SYS_LINE_REF              | Original line information for the line of the order in external system     | Order Import             |
| ORIG_SYS_SHIPMENT_REF          | Original shipment information for the line of the order in external system | Order Import             |
| OVER_SHIP_REASON_CODE          | Reason for over-shipment   | Over/UnderShipment       |
| OVER_SHIP_RESOLVED_FLAG        | Used for reporting on over-shipments                                       | Over/UnderShipment       |
| PACKING_INSTRUCTIONS           | Instructions for packing   | Shipping Integration     |
| PAYMENT_TERM_ID                | Payment term, Foreign Key to RA_TERMS                                      | Pricing Contracts        |
| PLANNING_PRIORITY              | Planning Priority passed to Planning                                       | APS Integration          |
| PREFERRED_GRADE                | Grade requested by Customer  | Process Manufacturing    |
| PRICE_LIST_ID                  | Foreign key to OE_PRICE_LISTS. Price list                                  | Pricing                  |
| PRICING_DATE                   | Date on which line was priced.   | Pricing                  |
| PRICING_QUANTITY               | Quantity in Pricing UOM  | Pricing                  |
| PRICING_QUANTITY_UOM           | UOM in which the item is priced  | Pricing                  |
| PROJECT_ID                     | Project associated with this transaction                                   | Project Mfg. Integration |
| PROMISE_DATE                   | Date promised to customer to receive the item                              | Scheduling               |
| RE_SOURCE_FLAG                 | Internal Use   | Scheduling               |
| REFERENCE_CUSTOMER_TRX_LINE_ID | Original invoice line the return line refers to                            | Returns                  |
| REFERENCE_HEADER_ID            |  | s                        |
| REFERENCE_LINE_ID              |  | s                        |

| Column                    | Description   | Used By                        |
|---------------------------|---|--------------------------------|
| REFERENCE_TYPE            |   | s                              |
| REQUEST_DATE              | Date requested by customer to receive the item  | Scheduling                     |
| RESERVED_QUANTITY         | Quantity reserved for this line.  | Sourcing                       |
| RETURN_ATTRIBUTE1 ....    | Return Attribute descriptive flexfield segment ....   | s                              |
| RETURN_ATTRIBUTE15        | Return Attribute descriptive flexfield segment  | s                              |
| RETURN_CONTEXT            | Return Attributes descriptive flexfield structure defining column   | s                              |
| RETURN_REASON_CODE        | Reason for return   | Returns                        |
| REVENUE_AMOUNT            | Not used  | Not Used                       |
| RLA_SCHEDULE_TYPE_CODE    | Source of requirement to determine replacement eligibility and hierarchy for the netting logic. Validated against FND_LOOKUPS.LOOKUP_TYPE = RLA_SCHEDULE_TYPE | RLM                            |
| SALESREP_ID               | Foreign key to RA_SALESREPS   | Sales Credits, Tax Integration |
| schedule_arrival_date     | Date the system has calculated as to when the item will arrive at the ship_to location  | Scheduling                     |
| SCHEDULE_SHIP_DATE        | Date planned for shipping the item  | Scheduling                     |
| schedule_status_code      | Indicates whether a item is sourced, demanded or reserved   | Scheduling                     |
| SERVICE_COTERMINATE_FLAG  | Identifies whether the service can be coterminated  | CRM Integration                |
| SERVICE_DURATION          | Internal Use  | CRM Integration                |
| SERVICE_END_DATE          | End Date for Service  | CRM Integration                |
| SERVICE_NUMBER            | Service Line Number   | CRM Integration                |
| SERVICE_PERIOD            | Period used for Service (year, month etc.)  | CRM Integration                |
| SERVICE_REFERENCE_LINE_ID | Identifies the immediate parent line to which the service is attached   | CRM Integration                |

| Column                      | Description   | Used By             |
|-----------------------------|---|---------------------|
| SERVICE_REFERENCE_SYSTEM_ID | Stores the system id for either reference type like order or customer product   | CRM Integration     |
| SERVICE_REFERENCE_TYPE_CODE | Identifies the service reference type. Typical values are Order and Customer Product  | CRM Integration     |
| SERVICE_START_DATE          | Start Date for Service  | CRM Integration     |
| SERVICE_TXN_COMMENTS        | Comments for the service transaction  | CRM Integration     |
| SERVICE_TXN_REASON_CODE     | Reason for the service transaction  | CRM Integration     |
| SHIP_FROM_ORG_ID            | Organization from where order was shipped out.  | Scheduling/Shipping |
| ship_model_complete_flag    | Indicates whether a PTO options have to be shipped together or not.   | Configurations      |
| SHIP_SET_ID                 | Foreign key to OE_SETS  | Sets                |
| SHIP_TO_CONTACT_ID          | Contact person for the organization that the products have been shipped to.   | General             |
| SHIP_TO_ORG_ID              | Organization to which the order items were sent to and would take ownership of the product.   | General             |
| SHIP_TOLERANCE_ABOVE        | Upper tolerance level for line quantities (expressed as percent of the originally ordered quantity). When quantities are shipped within this tolerance level, this wont be considered as over shipment. | Over/under shipment |
| SHIP_TOLERANCE_BELOW        | Lower tolerance level for line quantities (expressed as percent of the originally ordered quantity). When quantities are shipped within this tolerance level, this wont be considered as over shipment. | Over/Under Shipment |
| SHIPMENT_NUMBER             | Shipment sequence number within the line  | General             |

| <b>Column</b>            | <b>Description</b>  | <b>Used By</b>                         |
|--------------------------|---|--|
| SHIPMENT_PRIORITY_CODE   | Indicates the urgency with which the item should be shipped to the customer   | General                                |
| SHIPPABLE_FLAG           | Indicates whether the line is shippable   | Shipping Integration                   |
| SHIPPED_QUANTITY         | Quantity shipped  | Shipping Integration                   |
| SHIPPED_QUANTITY2        | Quantity Shipped in secondary UOM   | OPM Integration                        |
| SHIPPING_INSTRUCTIONS    | Special instructions for Shipping   | Shipping Integration                   |
| SHIPPING_INTERFACED_FLAG | Indicates that the shipment has been Delivery Planned   | Shipping Integration                   |
| SHIPPING_METHOD_CODE     | Freight Carrier + Service Level   | Pricing Contract, Shipping Integration |
| SHIPPING_QUANTITY        | Shipping Quantity of Ordered quantity in shipping UOM   | Shipping Integration                   |
| SHIPPING_QUANTITY2       | Shipping Quantity of Ordered quantity in secondary shipping UOM   | OPM Integration                        |
| SHIPPING_QUANTITY_UOM    | UOM in which the item is shipped  | Shipping Integration                   |
| SHIPPING_QUANTITY_UOM2   | Secondary UOM in which item is shipped  | OPM Integration                        |
| SOLD_TO_ORG_ID           | Organization that the goods/services are sold to.<br>Company that placed the order.                                   | Internal use                           |
| SORT_ORDER               | Sorting sequence for the component within the bill.   | Configurations                         |
| SOURCE_DOCUMENT_ID       | Foreign key to an application table, e.g.: in case of copy, it points to oe_order_headers                             | Copy Orders, RLM, Internal Orders      |
| SOURCE_DOCUMENT_LINE_ID  | Depending on the source, this is a foreign key to an application table, in case of copy, it points to oe_order_lines. | Copy Orders, RLM, Internal Orders      |
| SOURCE_DOCUMENT_TYPE_ID  | Foreign key to oe_order_sources.  | Copy Orders, RLM, Internal Orders      |

| Column                      | Description   | Used By                  |
|-----------------------------|---|--------------------------|
| source_type_code            | Indicated whether the item is to be built, dropshipped or it can be found in stock. | Scheduling               |
| SPLIT_BY                    | Indicates User who initiated the Split  | Split Lines Processing   |
| SPLIT_FROM_LINE_ID          | Indicates it is split shipment  | Split Lines Processing   |
| TASK_ID                     | Task associated with this transaction   | Project Mfg. Integration |
| TAX_CODE                    | Tax code associated with the rate user has specified                                |                          |
| TAX_DATE                    |   |                          |
| TAX_EXEMPT_FLAG             | Indicator whether the line is tax exempt.   |                          |
| TAX_EXEMPT_NUMBER           | Tax exemption certificate number  |                          |
| TAX_EXEMPT_REASON_CODE      | Tax exemption reason  |                          |
| TAX_POINT_CODE              |   |                          |
| TAX_RATE                    |   |                          |
| TAX_VALUE                   | Estimated value of tax on this line   |                          |
| TOP_MODEL_LINE_ID           | Id of Top Parent Line in Configuration  | Configurations           |
| UNIT_LIST_PERCENT           | Price List Percent of the Item  | Pricing                  |
| UNIT_LIST_PRICE             | Price per unit of the item as it is on the price list                               | Pricing                  |
| UNIT_LIST_PRICE_PER_PQTY    | Unit List Price per pricing quantity  | Pricing                  |
| UNIT_PERCENT_BASE_PRICE     | Base Price used for percent based pricing   | Pricing                  |
| UNIT_SELLING_PRICE          | Price per unit of the item that is charged to the customer                          | Pricing                  |
| UNIT_SELLING_PRICE_PER_PQTY | Unit Selling Price per pricing quantity   | Pricing                  |

| Column                  | Description  | Used By         |
|-------------------------|--|-----------------|
| UPGRADED_FLAG           | Indicates whether this is an upgraded Line             | Upgrade         |
| VEH_CUS_ITEM_CUM_KEY_ID | Used by RLM  | RLM Integration |
| VISIBLE_DEMAND_FLAG     | Flag to indicate to MRP to look at the line as demand. | Scheduling      |

## Sales Credits

SO\_SALES\_CREDITS => OE\_SALES\_CREDITS

The Order Management Sales Credit entity is identical to its Order Entry counterpart. Order and Line Sales Credits are stored in oe\_sales\_credits

The following table describes OE\_SALES\_CREDITS in alphabetical order. The table also has the regular Descriptive Flex and the Standard Who Columns.

| Column                | Description  |
|-----------------------|--|
| DW_UPDATE_ADVICE_FLAG | Not Used   |
| HEADER_ID             | Foreign Key to OE_ORDER_HEADERS_ALL  |
| LINE_ID               | Foreign Key to OE_ORDER_LINES_ALL  |
| LOCK_CONTROL          | Internally used  |
| ORIG_SYS_CREDIT_REF   | Used by Order Import   |
| PERCENT               | Used to distribute revenue Sales Credits across Sales Reps                                       |
| SALES_CREDIT_ID       | System Generated ID  |
| SALES_CREDIT_TYPE_ID  | Foreign Key to OE_SALES_CREDIT_TYPES. Determines whether this is a revenue (quota) sales credit. |
| SALESREP_ID           | Foreign Key to RA_SALESREPS_V  |
| WH_UPDATE_DATE        | Not Used   |

## Price Adjustments

SO\_PRICE\_ADJUSTMENTS => OE\_PRICE\_ADJUSTMENTS



This entity stores Order and Line price adjustments information. It stores the benefits offered at header, line or group of lines. Benefits can be discounts on other items, item upgrade, terms substitution, coupons, discounts, surcharges etc. This table has a lot more columns than SO\_PRICE\_ADJUSTMENTS to support the capabilities offered by Advanced Pricing. The entity also stores information for tax, freight and special charges.

The following table describes OE\_PRICE\_ADJUSTMENTS in alphabetical order. Columns that are **new** in this release are in **BOLD**. The table also has the regular Descriptive Flex and the Standard Who Columns.

| Column                  | Description  |
|-------------------------|--|
| AC_ATTRIBUTE1 ....      | Additional Charges Descriptive Flex  |
| AC_ATTRIBUTE15          | Additional Charges Descriptive Flex  |
| AC_CONTEXT              | Context for Additional Charges Descriptive Flex  |
| ACCRUAL_CONVERSION_RATE | Conversion Rate used in accruals   |
| ACCRUAL_FLAG            | Indicates of the adjustment is accrued   |
| ADJUSTED_AMOUNT         | Stores the Adjusted Amount at the adjustment level   |
| APPLIED_FLAG            | Indicates, if the adjustment has been applied to the order line. Used for storing manual discounts , which are not yet applied by the user |
| ARITHMETIC_OPERATOR     | Qualifies the value in operand, ( % , Amount, Lump sum or a New Price)   |
| AUTOMATIC_FLAG          | Indicates whether this is an automatic adjustment  |
| BENEFIT_QTY             | Quantity Accrued   |
| BENEFIT_UOM_CODE        | UOM of Benefit Quantity  |
| CHANGE_REASON_CODE      | User entered reason code for making a change to the adjustment value   |
| CHANGE_REASON_TEXT      | Free form text for the reason code   |
| CHANGE_SEQUENCE         | Controls sequence in which updates are done  |
| CHARGE_SUBTYPE_CODE     | Sub-Type of Charge   |
| CHARGE_TYPE_CODE        | Type of Charge   |
| COST_ID                 | Foreign Key to WSH_FREIGHT_COSTS   |

| <b>Column</b>                | <b>Description</b>  |
|------------------------------|---|
| CREDIT_OR_CHARGE_FLAG        | Indicates whether the adjustment record is a credit or charge to a customer.  |
| DISCOUNT_ID                  | Foreign key to OE_DISCOUNTS   |
| DISCOUNT_LINE_ID             | Foreign Key to OE_DISCOUNTS   |
| ESTIMATED_FLAG               | Flag indicating whether the charge amount is estimated or fixed.  |
| EXPIRATION_DATE              | Expiration Date of Coupon   |
| HEADER_ID                    | Foreign Key to OE_ORDER_HEADERS_ALL   |
| INC_IN_SALES_PERFORMANCE     | Flag indicating whether the charge should be included in Sales Performance calculation.                                       |
| INCLUDE_ON_RETURNS_FLAG      | Indicates , if the adjustment is returnable.  |
| INVOICED_FLAG                | Flag indicating whether the charge is invoiced or not.  |
| LINE_ID                      | Foreign Key to OE_ORDER_LINES_ALL   |
| LIST_HEADER_ID               | Header Id of the Modifier   |
| LIST_LINE_ID                 | Line Id of the Modifier   |
| LIST_LINE_NO                 | Line Number of the Modifier   |
| LIST_LINE_TYPE_CODE          | Line Type of the Modifier (Indicates whether record represents price adjustment and type of price adjustments tax or charge). |
| LOCK_CONTROL                 | Internal Use  |
| MODIFIED_FROM                | Used for storing value of the item code or term, which was upgraded   |
| MODIFIED_TO                  | Used for Storing Value of the item code or term, to which an item was upgraded  |
| MODIFIER_LEVEL_CODE          | Stores the modifier level: Order, Line or Line group  |
| MODIFIER_MECHANISM_TYPE_CODE | Not Used  |
| OPERAND                      | Stores the Adjustment value ,<br>Qualified by Arithmetic Operator   |
| ORIG_SYS_DISCOUNT_REF        | Original System Discount Reference  |
| PARENT_ADJUSTMENT_ID         | Not Used  |

| Column                       | Description   |
|------------------------------|---|
| PERCENT                      | Not Used  |
| PRICE_ADJUSTMENT_ID          | Primary Key   |
| PRICE_BREAK_TYPE_CODE        | Indicates the type of price breaks – point or range   |
| PRICING_GROUP_SEQUENCE       | Used in price calculation   |
| PRICING_PHASE_ID             | Pricing phase in which this adjustment was created  |
| PRINT_ON_INVOICE_FLAG        | Indicates whether adjustment is to be printed on the invoice                                      |
| PRORATION_TYPE_CODE          | For future use  |
| RANGE_BREAK_QUANTITY         | Breakup of Order line quantity, used when the price break is of type range                        |
| REBATE_PAYMENT_SYSTEM_CODE   | Rebate Payment Code   |
| REBATE_TRANSACTION_REFERNCCE | Reference for rebate transaction  |
| REBATE_TRANSACTION_TYPE_CODE | Rebate Transaction Type code from QP_LIST_LINES   |
| REDEEMED_DATE                | Date of an accrual was redeemed   |
| REDEEMED_FLAG                | Indicates if the accrual is redeemed  |
| SOURCE_SYSTEM_CODE           | Source System which generated this Adjustment   |
| SPLIT_ACTION_CODE            | Not Used  |
| SUBSTITUTION_ATTRIBUTE       | Indicates the type of terms upgrade given. Holds the flex-structure segment name for context TERM |
| TAX_CODE                     | Tax Code for a Tax Group record   |
| TAX_EXEMPT_FLAG              | Not Used  |
| TAX_EXEMPT_NUMBER            | Not Used  |
| TAX_EXEMPT_REASON_CODE       | Not Used  |
| UPDATE_ALLOWED               | Indicates if this adjustment is over-ridable  |
| UPDATED_FLAG                 | Flag to indicate if the user has modified this row  |

## Pricing Attributes

Pricing Attributes from SO\_LINES\_ALL => OE\_ORDER\_PRICE\_ATTRIBS

With Order Management, Order and Line pricing attributes are stored in a different entity. The Order and Line Pricing Attributes Descriptive Flex Definitions are based off this table. You now have 100 pricing attribute columns. With Advanced Pricing you can use multiple descriptive flex contexts for a given Order Line. With Basic pricing, when entering an Order you can select only one Context (excluding the Item and Volume Contexts which have special meaning).

The following table describes OE\_ORDER\_PRICE\_ATTRIBS in alphabetical order. The table also has the regular Descriptive Flex and the Standard Who Columns.

| Column                 | Description  |
|------------------------|--|
| HEADER_ID              | Foreign key to OE_ORDER_HEADERS_ALL                                  |
| LINE_ID                | Foreign key to OE_ORDER_LINES_ALL                                    |
| PRICING_CONTEXT        | Context Column for Pricing Descriptive Flex                          |
| PRICING_ATTRIBUTE1 ... | Pricing Related Descriptive Flexfield segment                        |
| PRICING_ATTRIBUTE100   | Pricing Related Descriptive Flexfield segment                        |
| FLEX_TITLE             | Flex_name of the flex Structure to which the pricing_context belongs |
| ORDER_PRICE_ATTRIB_ID  | Primary Key  |
| OVERRIDE_FLAG          | Override the search engine selection for "Asked for promotion/deals" |
| LOCK_CONTROL           | Used Internally  |

## Adjustment Attributes

This is a new entity in Order Management. It stores the information on the qualifiers and pricing attributes a price adjustment line qualified for.

The following table describes OE\_PRICE\_ADJ\_ATTRIBS in alphabetical order. The table also has the regular Descriptive Flex and the Standard Who Columns.

|                     | Description   |
|---------------------|---|
| COMPARISON_OPERATOR | Operators such as '=', '>', '<' used for comparison |
| FLEX_TITLE          | Flex_name to which the pricing_context belongs.     |

---

|                         |  |
|-------------------------|--|
| LOCK_CONTROL            | Internal Use                                   |
| PRICE_ADJ_ATTRIB_ID     | Primary Key                                    |
| PRICE_ADJUSTMENT_ID     | Foreign Key to OE_PRICE_ADJUSTMENTS            |
| PRICING_ATTR_VALUE_FROM | Value of the qualifier or pricing Attribute    |
| PRICING_ATTR_VALUE_TO   | Value of the qualifier or pricing Attribute    |
| PRICING_ATTRIBUTE       | Pricing Related descriptive flex-field segment |
| PRICING_CONTEXT         | Context for Descriptive Flexfield segment      |

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## Adjustment Associations

This is a new entity in Order Management. It stores the association information between Order lines and price adjustments. One price adjustment might be result of benefit on another order line or a group of order lines might be responsible for a benefit.

The following table describes OE\_PRICE\_ADJ ASSOCS in alphabetical order. The table also has the regular Descriptive Flex and the Standard Who Columns.

---

| Column              | Description                                     |
|---------------------|---|
| LINE_ID             | Foreign key to OE_ORDER_LINES_ALL               |
| LOCK_CONTROL        | Internal use                                    |
| PRICE_ADJ_ASSOC_ID  | Primary Key                                     |
| PRICE_ADJUSTMENT_ID | Foreign Key to OE_PRICE_ADJUSTMENTS             |
| RLTD_PRICE_ADJ_ID   | Adjustment id related to<br>price_adjustment_id |

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## LOT and Serial Numbers

This is a new entity in Order Management. It stores lot and serial number information for return lines. Order Management lets you create returns using the original serial number as a reference. If you create a return using the original Order or Invoice as a reference and the item being returned was under serial number control, the application automatically pulls up serial number information from Oracle Inventory.

The following table describes OE\_LOT\_SERIAL\_NUMBERS in alphabetical order. The table also has the regular Descriptive Flex and the Standard Who Columns.

| <b>Column</b>      | <b>Description</b>                            |
|--------------------|---|
| FROM_SERIAL_NUMBER | The start point in a range of serial numbers. |
| LINE_ID            | Foreign key to oe_order_lines_all             |
| LINE_SET_ID        | Foreign key to oe_sets                        |
| LOT_NUMBER         | Lot number                                    |
| LOT_SERIAL_ID      | Primary key                                   |
| QUANTITY           | Number of serial numbers in the range.        |
| TO_SERIAL_NUMBER   | The end point in a range of serial numbers.   |

### **Installation Base**

#### **SO\_LINE\_SERVICE\_DETAILS => CRM**

Installation base data from SO\_LINE\_SERVICE\_DETAILS moves to Customer Relationship Management (CRM) through the CS application program interface

### **Freight Charges**

#### **SO\_FREIGHT\_CHARGES => OE\_PRICE\_ADJUSTMENTS**

The freight charges in Order Entry is migrated as Price Adjustments (Header Charges)

### **Cancellations History**

#### **SO\_ORDER\_CANCELLATIONS => OE\_ORDER\_LINES\_HISTORY**

The history table in OM stores a picture of line entity before a cancellation. The history is recorded for the complete line.

### **Drop Ships**

#### **SO\_DROP\_SHIP\_SOURCES => OE\_DROP\_SHIP\_SOURCES**

Data from OE drop ship sources are moved to OE\_DROP\_SHIP\_SOURCES. This may be in a one to many relation, depending on the number of lines created in OM from each OE line.

### **Holds and Releases**

**SO\_HOLD\_SOURCES\_ALL => OE\_HOLD\_SOURCES\_ALL**

**SO\_HOLD\_RELEASES => OE\_HOLD\_RELEASES**

**SO\_ORDER\_HOLDS\_ALL => OE\_ORDER\_HOLDS\_ALL**

## **KEY Order Management Modules**

### **Cancellations**

In Order Entry you could perform cancellations on the line via the Cancel Orders Form. The point in the order processing flow when Orders or lines could not be deleted but had to be canceled was fixed (at Booking). You could not perform cancellations on a standard item Line once it was pick-released. The ordered quantity on the line was not reduced to reflect a cancellation, only the canceled quantity was incremented. Order Entry tracked the cancellation action via a S column.

Cancellations with Order Management is a lot more flexible. You can partially cancel a line by directly changing the ordered quantity on the line. The system seeded constraints preventing cancellations for standard item line are moved further down in the order processing flow to ship-confirmation or invoice interface (for no-ship flows). You can define more restrictive constraints if you need to.

In Order Management, Cancellations is not tracked via workflow. The canceled quantity on the line indicates, whether any cancellations have been performed on the Line. The canceled flag on the Order and Line indicate whether they have been fully canceled. On a full cancellation, the Header or Line flow is forced to the respective close activity.

The application also lets you set-up rules that determine when a decrement in the ordered quantity is viewed as a cancellation. You are required to provide a cancellation reason only when you are canceling and the canceled quantity on the line is incremented by the appropriate amount. A picture of the old record is captured whenever a reason code is provided with a quantity change. This is stored in OE\_ORDER\_LINES\_HISTORY.

### **Defaulting Framework**

In Order Entry the C based Standard Value Rule Sets feature provided the means to default order attributes with values from various sources. You could define defaulting rule sets and tie them to Order Types. Not only were these rules used to

provide default values for a record the first time around, but they were also used to clear and re-default values on existing child records when a parent record was updated. E.g.: Changing the warehouse on the Line could change the warehouse on the line details, if the user had set-up the rule as such.

Order Management provides enhanced functionality with the PL/SQL based Defaulting Framework. Order attributes are defaulted based on generated PL/SQL Defaulting Rules. You can define a set of rules **for each attribute** on the order header or line, and you can define the **conditions** for when to use each rule.

Updates to records do not cause a cascading effect on existing child record. E.g.: Changing the warehouse on the Order Header does not change the warehouse on existing Order Lines. This obviates the need to store to track the exact rule that was used to default a value the first time around. You can use the mass change feature to update a certain value for a set of records. E.g.: You can use the Mass Change feature to change the warehouse on all the lines of an Order to a different value.

The Defaulting Framework depends on the AK dictionary for object, object relationship and attribute definitions. Various objects can serve as defaulting sources; such as same record, related record, profile options, custom APIs etc. Defaulting Rules can be applied based on user defined conditions.

## Fulfillment

In Order Entry the Invoice Interface function determined whether a line had been 'fulfilled' before interfacing it to invoicing. Thus non-shippable lines in a configuration would not invoice interface until their shippable components had shipped.

With Order Management this functionality is managed and further enhanced by the Fulfillment feature. Fulfillment is workflow enabled and driven off fulfillment events and sets that are system or user defined. Configurations are implicitly treated as fulfillment sets by the application. The following fulfillment events are seeded:

- Ship-Confirmation
- Purchase Release Receipt
- Return Receipt

You can define your own fulfillment event activities and configure the seeded Fulfillment activity to recognize them. You can also put an Order line in one or more fulfillment sets. Such a line will progress past the fulfillment activity only when the all the members of the fulfillment set(s) it is a member of have been fulfilled.



Columns on the Order Line (fulfilled flag, fulfilled quantity) indicate whether a Line has been fulfilled and the quantity that has been fulfilled. Over & Under shipment can result in a fulfillment quantity that is different from the Ordered quantity. The Over & Under Shipment tolerances control whether a line is considered fulfilled in cases of over or under shipment.

### **Mass Change**

This is a new feature with Order Management. Mass Change lets you to update attribute values against selected record sets. In R11, changes to attributes could cascade across object boundaries based on Defaulting Rule controls. This was confusing and often perceived as inconsistent. Mass Change lets you explicitly select the record set that you wants to update and apply a change to it.

You can also perform certain actions such as copying, re-pricing, scheduling, applying holds with record sets using this feature.

### **Processing Constraints Framework**

In Order Entry the C based Security Rules feature controlled what actions were allowed on the order object at various points in its cycle. You could define security rules that were universally applicable, based on seeded conditions.

With the PL/SQL based Processing Constraints Framework, Order Management provides enhanced and more flexible security functionality. You can define constraint conditions based on various sources including Workflow Activity Statures and custom APIs. Additionally constraints can be defined against responsibilities using both inclusion and exclusion rules.

The Framework depends on AK dictionary for object and attribute definitions. Order Management checks constraints for every update, insert and delete operation on the Sales Order object.

Order Management comes with fewer seeded and less stringent system constraints, thus giving you more flexibility. You can define additional or more stringent constraints to better suit your business needs. Some constraints are seeded for backwards compatibility but can be deleted.

For e.g.

The application can handle deletion of a line until it is shipped, fulfilled, invoice interfaced or closed. However there are the following constraints:

- Line cannot be deleted, once the Order is booked is seeded to support upgrading customers; it can be deleted to better suit your business requirements.
- If a constraint prevents you from performing a certain action, you have the option of sending a notification to somebody who does have the authority to perform that action.

## Sets

In Order Entry you could put lines in Ship Sets, indicating that they need to be shipped together. Pick Release honored ship sets.

Order Management lets you define Ship or Arrival sets. The latter lets you determine which lines should arrive together. Pick Release does not look at Ship or Arrival sets to determine what can be released. At Ship-Confirmation you are informed if your are breaking a ship set (and allowed to do so). If you partially ship lines from a Ship Set, they are automatically dropped from the Ship Set. When any of the lines from a Ship or Arrival Set is ship-confirmed the set is automatically closed.

In Order Entry when you broke a Line into shipments, the original line was marked as a Shipment Parent Line (line\_type\_code = "PARENT") and ignored from that point on. The shipment lines (line\_type\_code = "DETAIL") were processed by the application.

In Order Management there is no Shipment Parent entity. Every Line that is created is a shipment, and has both a Line and a Shipment Number. To break an existing Shipment Line further into multiple shipments you need to Split it. Splitting a Line creates a Line Set, with all the line records that were split from the original line pointing to the Line Set (via the line\_set\_id). The attributes that need to be common across such lines are stored on the Line Set (Item, Ordered Quantity UOM, Shipping tolerances). Line Sets are only created for outbound top level lines (standard item line, Kit Line, Top Model Lines).

Order Entry maintained partial cycle statuses on a line when it was processed partially. In Order Management when a Line is partially processed the application splits it. All the child entities split as well, including the line flow. The fully processed part progresses along its flow and the partially processed part awaits processing in its flow.

Partial processing at the following points triggers a Line Split:

- Ship-Confirmation
- Drop- Ship Receipt

- **Return Receipt**

Partial processing of configurations can result in proportional or non-proportional splits. In the latter case the application also creates a remnant set that has both processed and unprocessed lines.

Order Management also lets you create Fulfillment Sets. A line in a Fulfillment Set will progress will be marked Fulfilled only when the all the members of the fulfillment set(s) it is a member of have been fulfilled.

Set definitions are stored in OE\_SETS. Membership in a Line Set, Ship Set and Arrival sets is de-normalized onto the Order Line. Since a given Order Line can be in one or more fulfillment set, fulfillment set membership is stored in OE\_LINE\_SETS.

### **System Parameters**

Some controls that drive application processing need to be definable at an Operating Unit level. In Order Entry such controls were defined as profile options. You had to set up such profile options at a responsibility level and ensure that they were consistently set-up across responsibilities pointing to the same Operating Unit.

Order Management simplifies the set-up of such controls via the System Parameters entity. You now need to define the following controls via the OM System Parameters form:

- **Item Validation Organization**
- **Customer Relationships Enabled Flag**

Order Management looks at Oracle Receivables set-up to determine your Set of Books and does not require you to set the value redundantly via an OM specific profile option.

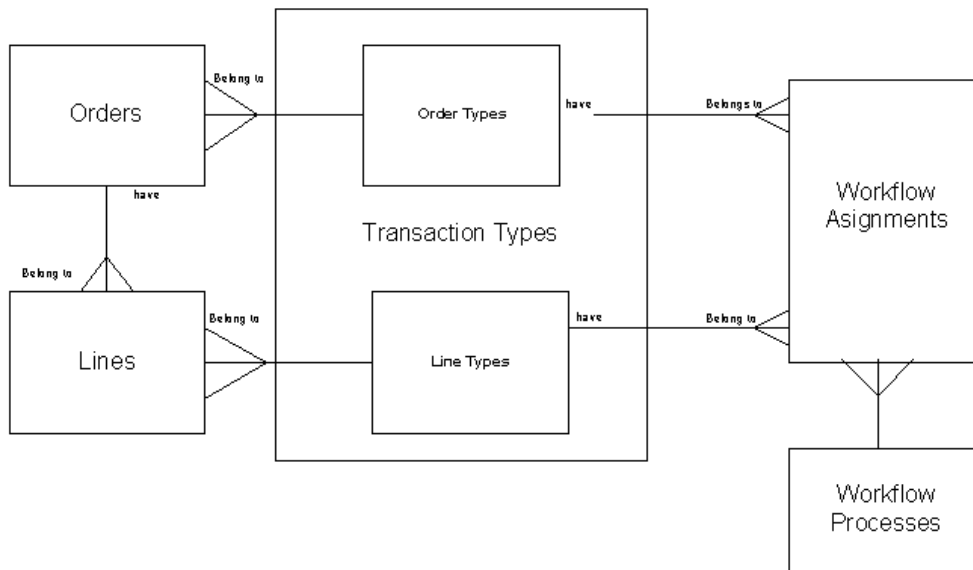
### **Transaction Types**

Order Types in Order Entry served as a pool for defaulting sources and transactional controls. With Order Management a lot of the Header attributes are available on the Line and are controllable at that level. It follows that the application have an entity similar to the Order Type for the Line; i.e. the Line Type.

Transaction Types stores both Order Types and Line types. Most of the Transaction Type attributes are common to the two types. However there are some controls that are available only at the Header level (e.g.: Order Numbering controls) and some only at the Line level (e.g.: A control that dictates whether a Line is sourced internally or externally). The category code on the Order Transaction type (ORDER,

RETURN, MIXED) lets you control whether you want to mix outbound and inbound lines on a given Order.

Transaction Types also let you control the workflow that the Order Header or Line follows. You assign a Header workflow to an Order type and a Line workflow to a Order Type, Line Type and Item type combination. This means, that on the same Order you can have lines with different Line types following different flows. This lets you determine which Line types can be combined with a certain Order type.



## Integration Points

Processing an Order requires integration with many other business areas. In Order Entry most of these integration points were implemented via concurrent programs that ran off-line.

With Order Management most of the integration points with other Oracle products are implemented via PL/SQL based APIs.

### AK - Common Modules

AK serves as a common runtime dictionary for both the Defaulting and Processing Constraints Frameworks. These modules use AK for object and attribute

information. AK replaces the functionality provided by SO\_OBJECTS and SO\_ATTRIBUTES in R11 Order Entry.

Additionally Order Management uses the following tables to extend the AK data model to support Usage functionality:

OE\_AK\_OBJECT\_EXT

OE\_AK\_OBJ\_ATTR\_EXT

## **AOL**

Order Management uses the following AOL features

**Document Sequences** - Order Entry used Order Number Sources for order numbering. It let you define sequences that were used to automatically number Orders and Returns. You assigned an Order Number source to an Order Type.

Order Management uses the AOL Document Sequences feature to meet Order Numbering requirements. This lets you number Order and Returns using Manual, Automatic or Gapless sequences.

You can define Document Sequences using the AOL Define Document Sequences form. When you define an Order Transaction Type, the application automatically creates a Document Sequence Category of the same name. You can assign a pre-defined sequence to one or more Document Sequence Categories, using the AOL Sequence Assignments form. When an Order is created, Order Management calls AOL Document Sequence APIs to number the Order.

**Attachments** - In Order Entry you could define Notes and addition rules regarding when they were attached to an Order or Line. You had to manually choose to add the eligible Notes to the Order or Line. You could also define how the Notes were printed on various Reports. Database triggers were used to duplicate Note definition data in AOL.

Order Management drives off the AOL Attachment functionality enabling you to attach images and web pages (in addition to short or long text). It also offers multi-lingual Document capability. Attachment definition and usage data is stored only in AOL.

Automatic Addition rule definitions are stored in Order Management (OE\_ATTACHMENT\_RULES, OE\_ATTACHMENT\_RULE\_ELEMENTS). In addition to the attributes (Customer, Ship-to, Invoice-to, Order Type, Item, PO #) that were previously available, you can now define rules based on the Order Category, Line Category and Line Type.

The Profile Option OM: Apply Automatic Attachments determines whether rule based attachments are automatically applied (without User intervention).

### **Configurator**

Order Management integrates with Oracle Configurator to support ordering and validation of configurations. The Configurator window is a Java Applet that can be launched from the Sales Order form. Order Management communicates with Oracle Configurator via XML messaging. See: Oracle Configurator Developer User's Guide.

### **CRM**

Order Entry had a separate entity: SO\_LINE\_SERVICE\_DETAILS to store install base information associated with product sales order lines. You had to run the Service Interface concurrent program to then communicate the install base information to Oracle Service. This program is now obsolete.

Order Management integrates with the various CRM products (iStore, TeleSales, Quotes, etc.) via Order Capture. Any changes to the Order Object are communicated on-line to Order Capture via the ASO\_ORDER\_FEEDBACK\_PUB.UPDATE\_NOTICE API. Order Capture in turn publishes the information to a queue that all the interested CRM products poll.

### **CTO**

To support processing of configured items, Order Entry integrated with Oracle BOM and WIP. You needed to run various concurrent programs to (Manufacturing Release, AutoCreate Configuration Items, and AutoCreate Final Assembly Orders) to manage configurations.

In Order Management these business functions are Workflow enabled. The product is seeded with workflow processes to create the Configuration Item, BOM, Routings, Work Orders and Flow Schedules. If you choose to process lines en mass you can do so by running the AutoCreate Configuration and AutoCreate Final Assembly concurrent programs. The Manufacturing Release concurrent program is now obsolete.

### **Inventory Management**

Order Management integrates with Oracle Inventory Management in the following areas:

Managing reservations - Order Management calls Inventory's reservation APIs to manage reservations. You can create reservations to on-hand quantities from the

Sales Orders form. You can also go to Inventory reservation form from the Sales Orders form and create a reservation to any level of inventory (sub-inventory, locator, lot).

When supply is created for a ATO configuration (for a configuration item), it is reserved to a Work Order. This reservation gets transferred to on-hand when the work order is completed, thus reserving the Order line to on-hand.

For every Order created, Order Management creates a record in MTL\_SALES\_ORDERS, an entity that Inventory uses to manage demand from various sources. Reservation information is stored in MTL\_RESERVATIONS. Reservation records for order Lines point to both MTL\_SALES\_ORDERS and OE\_ORDER\_LINES\_ALL.

Customer-Item Cross reference - You can use Oracle Inventory to set-up Customer Items and Customer Item Cross reference information. You can then place orders using those pre-defined customer item identifiers. Order Management calls the Inventory API INV\_CUSTOMER\_ITEM\_GRP to derive the internal item based on the specified customer item, ship-to site and the warehouse on the Order Line.

The Item Identifier Type on the Order Line indicates the Cross-reference Type that was used for placing the order. The Ordered Item tracks identifier that was used to place the order.

### **IPayment**

Order Entry had attributes on the Order to store Credit Card information but that information was neither encrypted, validated or interfaced to Receivables. Order Management encrypts Credit Card information. It integrates with Oracle IPayment to validate this information and get Credit Card authorizations. This information is then interfaced to Receivables.

### **Purchasing**

Order Management integrates with Oracle Purchasing in the following function areas:

Return Receipts - Order Entry used Inventory's receipt functionality to manage returns. Order Management uses the Oracle Purchasing Receipt functionality to handle Return receipts. When an item is received, Purchasing calls Order Management to indicate delivery and to get COGS information. When an item is accepted and delivered to Inventory, Purchasing calls Order Management (OE\_RMA\_RECEIVING) to indicate acceptance. Fulfillment of the Return line is driven off the acceptance event. The RMA Interface concurrent program is obsolete with Order Management.

Purchasing looks at the view `OE_PO_ENTER_RECEIPTS_VIEW` to determine the Order Lines to expect Return receipts against. This view returns lines that are booked, receivable and are waiting at the Wait for Receiving block activity.

Internal Orders - Oracle Purchasing uses Order Import to create internal orders. Purchasing calls the Process Order API to communicate changes in the requisition to Order Management. Order Management calls a Purchasing API (`PO_SUPPLY`) to communicate changes in the internal order to Purchasing.

Drop-Ship Orders - Order Management integrates with Purchasing to fulfill drop-ship orders. It populates the PO requisitions interface table with information for order lines that need to be fulfilled via an external source. Purchasing calls Order Management APIs (`OE_DROP_SHIP_GRP`) to communicate information about the requisition, purchase order and receipts.

## Receivables

Order Management integrates with Oracle Receivables in the following function areas:

Invoice Interface - In Order Entry, you had to run the AR Interface concurrent program to interface invoicing information to Oracle Receivables. In Order Management this is workflow enabled. The seeded Invoice Interface - Line workflow sub-process populates the Receivables interface table. You run AutoInvoice to create invoices. The Receivables Interface concurrent program is now obsolete.

Order Management also supports Header level invoicing via the seeded Invoice Interface - Order.

Tax - Order Entry did not store the estimated tax on the Order, rather it was calculated runtime when you viewed an Order on the Sales Order Form.

Order Management calls the Global Tax Engine APIs to default the Tax Code (`ARP_TAX.GET_DEFAULT_TAX_CODE`) and to calculate estimated tax (`ARP_PROCESS_TAX.SUMMARY`) for the order Line. The estimated tax value is now stored on the line and re-calculated only when any of the attributes affecting tax change. Information about the tax value is also stored as Line Price Adjustments.

The Tax Engine looks at the view `OE_TAX_LINES_SUMMARY_V` to calculate the estimated tax value for an Order Line.



## Shipping Execution

In release 11, Oracle Shipping looked at Order Entry tables to select order lines eligible for pick release. It then based ship confirmation eligibility on picking detail information.

Now, Order Management provides APIs to Shipping to view lines that are eligible for delivery planning, picking and shipping.

The view `OE_DELIVERY_LINES_V` returns all open, booked, shippable lines that are not interfaced to Shipping. When an Order Line reaches the Ship Line workflow activity, Order Management calls Shipping APIs to indicate that a line is pick eligible and communicate changes to the line once it is interfaced to Shipping. When a delivery is ship-confirmed, Shipping calls OM APIs to communicate the event, triggering the line flow to move forward.

## Supply Chain ATP/Advanced Planning System

Order Management uses Advanced Supply Chain Planning to check the availability of ordered items and schedule order lines. Scheduled Order Lines are viewed as demand by the Advanced Planning System.

To check availability or schedule an order line (scheduling checks availability and consumes supply if there is any available), Order Management calls an MRP API (`MRP_ATP_PUB.CALL_ATP`). MRP checks for item availability (or group availability if a group of lines is passed) and returns back the results. The API also sources the line (find a ship from location) when a ship from location is not specified. A source will only be returned if there are sourcing rules set up in MRP.

To ascertain open demand Planning looks at the view `MTL_DEMAND_OM_VIEW`, based off `OE_ORDER_LINES`. This returns open (un-shipped) lines whose visible to MRP flag is set to Y. The visible to MRP flag is set to Y, when a line is scheduled.

You can perform scheduling one of several ways with Order Management. Auto-scheduling lets you schedule a line when it is entered into the system. Scheduling is workflow enabled; the seeded workflow process `Schedule - Line` performs scheduling for a line. Controls on the Transaction Type determine the level of scheduling that is performed on a line.

The Demand Interface concurrent program is now obsolete.

## Workflow

Order Entry used Cycles functionality to process Orders. The product came seeded with certain cycle actions. You could define approval actions easily and define cycles using these along with the seeded cycle actions. Adding custom actions was

harder since that involved calling the C based cycle functions. You were limited with respect to the number of approvals or custom actions you could define and use.

Order Management uses Workflow to manage Order and Line processing. PL/SQL based Workflow is a natural replacement for Order Cycles functionality. It provides a Graphical User Interfaces for defining activities, notifications, flows and viewing flow status. There are no limits on the number of custom functions or notifications you can define.

Additionally it provides the following features:

- In-built flexibility - You can easily define new custom functions or flows using the Workflow Builder.
- Support for notifications - Approval functionality is supported via Notification activities. You can easily define notifications via the Workflow builder and use them in flows. Notifications can be accessed via any electronic mail application or the Notifications web page.
- Coordination between parent-child flows - This aids in synchronizing Header and Line flows. Thus you can have lines wait for the Order header to complete a certain header activity or have the Header wait for all lines to complete a certain line activity.
- A built-in on-line/background mode with a user-definable threshold - This lets run certain activities (e.g.: Credit Checking) off-line.

Every Order Header and Line entered into the system starts a workflow. Order Headers follow Header flows and Order Lines follow Line flows. The product comes seeded with several Order and Line flows. Every business function is workflow enabled and the product comes seeded with functional workflow sub-processes.

Order Headers are mapped to the OM Order Header workflow item type (OEOL). Order Lines are mapped to the OM Order Line workflow item type (OEOL). The Workflow Engine APIs are used to create, start and manage flows. The Order Type tied to an Order determines the Header flow it starts. The Order Type, Line Type and Item type determines the Line flow a Line starts.

The FLOW\_STATUS column on Order headers and Lines provides summary information about the flow. Its value changes as the Order or Line progresses in its respective flow. You can also use the Public query APIs (OE\_HEADER\_STATUS\_PUB, OE\_LINE\_STATUS\_PUB) to get information regarding various functional statuses and when an Order or Line activity was completed.

The Workflow builder is available on the Windows (NT and 95) platform. You can use this graphical tool to define flows. The Workflow monitor is a Java based tool that can be launched from the Sales Order form. It lets you graphically monitor a workflow's progress as well and view its transaction history.

## Oracle Order Management Conclusion

Order Management has been architected to be very flexible, dynamic, and easy to use. The product and all of its integration points are PL/SQL based, that makes it easily customizable. You can use features such as Workflow, the Processing Constraints, and Defaulting Framework to tweak the product to suit your specific order processing requirements without heavy customizations.

## Shipping Execution Overview

This section lists the key tables in Oracle Shipping Execution. Consult the Oracle Shipping Execution eTRM for complete information on the entities and for an entity-relationship diagram.

### Key Tables

**WSH\_DELIVERY\_ASSIGNMENTS:** Assigns delivery details to a delivery and/or a parent delivery detail (LPN).

**WSH\_DELIVERY\_DETAILS:** Contains delivery lines and LPNs

**WSH\_DELIVERY\_LEGS:** Maps deliveries to their pick up and drop off stops.

**WSH\_NEW\_DELIVERIES:** Contains delivery records.

**WSH\_PICKING\_BATCHES:** Contains the batches for Pick Release.

**WSH\_PICKING\_RULES:** Contains the picking rules for defaulting Pick Release options.

**WSH\_TRIP\_STOPS:** Contains trip stop records.

**WSH\_TRIPS:** Contains trip records.



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## Using Credit Cards and iPayment

Topics covered in this appendix include:

- [Overview](#) on page C-2
- [Introduction](#) on page C-2
- [Background](#) on page C-2
- [Features Provided](#) on page C-3
- [Set Up Required](#) on page C-6

## Overview

In Release 11 and earlier, the Oracle Order Entry product contained fields in the Order Header to hold credit card information. However, Order Entry did not provide credit card authorization or pass credit card information to Receivables. In this era of Web stores and Business-to-Customer selling, the ability to accept and authorize credit card payments has become vitally important. With Release 11*i*, Oracle Order Management delivers greatly expanded functionality to handle credit checking and payment authorization. In particular, you can now indicate that an order is being paid using a credit card, and authorize those transactions through Oracle's iPayment product.

## Introduction

Oracle Order Management in Release 11*i* offers enhanced functionality in the area of payment verification. You can use a credit card to pay for items on an order, and obtain authorization from the issuing institution through the iPayment server product. This paper explains the many features of Oracle Order Management's credit card solution, including the key setup options and how they work, and offers some insight into how you could use them in your company.

## Background

Credit Checking and Credit Card authorization are both ways of attempting to ensure that your company will receive payment for the goods that are being ordered. Credit Checking validates sales order values against credit limits you define on the customer record. During, Credit Card authorization is a program, iPayment, electronically calls the credit card company for an authorization code. Either method begins with Verify Payment. Verify Payment is called to determine if the payment type is Credit Card or Other. If it is Credit Card, iPayment goes to work. If the payment type is not Credit Card, then Credit Checking is done.

Since Release 11, Oracle Receivables has contained functionality to enable users of Web Customers and other web front-ends to capture and account for credit card payments. Before Order Management was enhanced to provide credit card data to AR, Receivables obtained credit card information through a pre-processor that ran before Autoinvoice Import. That pre-processor read Order Entry and iPayment tables to obtain the necessary data to do the credit card capture functions. The credit card features of Order Management eliminate the need to run Receivables' pre-processor, but still relies on Receivables to do all the accounting and collection activities required to process actual credit card payments.

## Features Provided

Oracle Order Management provides features to enable you to accept a credit card as a method of payment for an order. You can enter or select one credit card per order to be used for paying for the entire order amount.

## iPayment Process

A simple iPayment example:

During Order Header entry, choose a payment TYPE of Credit Card.

The customer's primary credit card number, expiration date and cardholder's name default in from Accounts Payable tables. You can override the primary credit card, choosing from other credit cards that have been set up in AP Bank Accounts for this customer, or enter a new credit card information.

Enter the rest of the order information, including all the line information and book the order.

Order Management will call the iPayment server to obtain authorization for the full amount of the order, including tax and freight and other charges.

iPayment returns an approval or a denial, along with a risk code. The authorization code is recorded on the order header, and the order proceeds in its workflow. If authorization is denied or an unacceptably high risk factor is returned, Order Management places the order on hold until the problem is resolved.

The order is picked and shipped, and during Invoice Interface, the credit card information is passed to Receivables. AR handles the funds capture and all accounting transactions.

## Types of Authorizations

There are three types of authorizations that can be done from Order Management.

A credit card can be authorized automatically, as described above. For this to occur, the order type must be setup for credit checking at Booking or at Shipping. The authorization will occur automatically during the Payment

A credit card can also be authorized on-line, by choosing the Authorize Payment order action from the Action button on the Sales Order form. If this is done, authorization is attempted using the iPayment interface, and the results are processed the same as for automatic authorization.

Problems, such as those with hardware, software, servers or networks, may require an authorization to be obtained manually. An authorization might be obtained via a telephone call, or a dial-up device. In that case, the authorization code can be entered on the Order Header, and the order will be considered authorized.

### **Timing of Authorization**

If there is a Booking Credit Check Rule set up for the order type, the authorization call to iPayment takes place at Booking. A second authorization can occur during Pick Release if a Shipping Credit Check Rule is set up for the order and if no previous unexpired or uncaptured authorization exists on the order. For Drop Shipment orders, the second authorization evaluation occurs during Purchase Release. If the value of the order increases after the Booking authorization, an attempt is made to void the first authorization, and then another authorization for the full value of the order will take place at the time the order changes are saved.

### **Authorization Results**

The authorization call to iPayment returns a success or failure, as well as a risk code. See the section following on Risk Management to understand how risk code is handled. A successful authorization will return an authorization code and authorization date to be stored on the order header. The authorization code can be viewed by users with appropriate security. If an authorization fails, the order is placed on Credit Card Failure hold. If the authorization was done on-line or at Booking, you will be notified of the failure via a message. Respond by changing the credit card number at the header and then re-authorizing, using the Action button.

### **Returns and Mixed Orders**

In Order Management, you can use a credit card as a Payment Type on returns and also on mixed orders; orders containing both outbound and return lines. In the case of mixed orders, the amount authorized is the total amount of the outbound order lines, not the net of outbound and inbound. For pure return orders, a credit card number can be recorded, but no authorization is needed or done. The credit card information is passed to Receivables for returns, although AR is as of this writing (October 2000) unable to process credit card refunds. When AR code has been enhanced to process credit card refunds, no changes will be needed in Order Management to use that feature. Until such time, it is recommended to process credit card refunds manually or to choose a different payment type for returns.



## Copy Orders

Copy Orders has been enhanced in Order Management to give a choice whether or not to copy credit card information when an order header is being copied. There is a checkbox on the Copy Header window called Credit Card details where you can indicate your desire to copy. Data to be copied are Credit Card Number, Card Holder's Name, Credit Card Type and Expiration Date. This checkbox is enabled only when you have All or Limited credit card privileges, as set in the profile option. The checkbox is seeded as unchecked to allow users to make a conscious decision to copy such information.

## Order Changes and Partial Shipments

Credit card authorization is obtained for the total order amount. If order changes after authorization result in the total order amount being decreased, no further authorization occurs. If the order total increases, a new authorization is done for the total amount. A call is made to iPayment to void the previous authorization, but not all of the partner networks that iPayment interfaces with support the void transaction. Therefore it is possible that excess funds will be blocked if multiple authorizations occur.

If an order is authorized and only partially shipped, the shipped amount may go to Receivables for capture before the backordered quantities ship. If that occurs, Receivables captures only the amount of the shipped lines, using the original authorization code. An authorization code can only be used once for a capture transaction. When the remainder of the order is Shipped (Pick Released), a check is made to see if there is an unexpired and uncaptured authorization on the order. If not, then the remaining amount is authorized again. See the examples below for further clarification.

## Holds

There are two new holds seeded in Order Management for Credit Card processing. They are Credit Card Authorization Failure which is applied if authorization fails, and Credit Card High Risk which is applied if authorization is successful but the risk score was higher than the threshold set in the profile option. Both of these holds can be released manually, but can be reapplied automatically if a subsequent authorization fails. These holds can be removed with a manual authorization.

## Risk Management

iPayment has a Risk Management feature (Oracle iRisk) that can help manage exposure to questionable transactions. Oracle iRisk allows you to define any number of risk factors to verify the identity of your customers, assess their credit

rating, and manage risk in a secure online environment. Set up these factors and a risk calculation formula when you set up iPayment. Authorizations from Order Management use the default risk formula setup in iPayment. Authorization returns a risk score, in addition to an authorization code. The score can range from 0 to 100, with 0 referring to a risk free transaction and 100 referring to a high risk authorization. If the risk score exceeds the risk threshold you have set up in the corresponding profile option, the order is automatically placed on Credit Card High Risk hold.

### Importing Orders and CRM Integration

You can import orders with a payment type of credit card. There are columns in the header interface tables for all of the credit-card related data. You can import orders that are already authorized by populating the authorization code and authorization date columns. This supports the business case where you might have a legacy system or some other feeder system that has already done the authorization sending orders into Order Management for fulfillment.

Similarly, orders coming from CRM or other front-end systems that have been pre-authorized can be entered into Order Management via the Process Orders API. Those orders will not be re-authorized, unless re-authorization is needed at Shipping or because of increases in the order value after authorization.

## Set Up Required

To use credit card authorization in Order Management, you must install and set up the iPayment server which in turn communicates with the credit card provider networks. In addition, create at least one Credit Check Rule in Order Management and set up your order transaction types to use Credit Checking. Credit Card authorization will not occur automatically unless Credit Checking is called. Following are other key setups required or that affect the operation of credit card authorization.

### Profile Options

There are several new Order Management profile options that effect the processing of credit cards. Here is what they are and how they work:

**OM: Credit Card Privileges** – this profile, updateable at the site, application and responsibility level, controls the view and update privileges for credit card information on orders. Possible values are:

**All** – view the complete credit card number and authorization code on the Order Header and the Order Summary window, and have full update capabilities. This means you can type in new credit card numbers, and obtain manual and online authorizations.

**Limited** – view the credit card number and authorization code on the Order Header and the Order Summary window in a masked fashion – only the last four digits are displayed. You do have full update capabilities, similar to those of a user with All privileges.

**None** – view only the credit card number and authorization code on the Order Header and the Order Summary window in a masked fashion – only the last four digits are displayed. In addition, you cannot key in credit card numbers or obtain manual or online authorizations. This is the default.

**OM: Estimated Authorization Validity Period** – this profile represents the number of days an authorization is expected to remain valid. Since all of the various iPayment vendors do not provide an expiration date for authorizations, it is necessary to set a default number of days. The actual expiration time for authorizations varies by credit card provider. The default for this profile is 21 (days). When Verify Payment is called at Shipping, the code checks to see if the original authorization has expired. If it has, it will obtain another authorization. If it has not, it will not re-authorize. The expiration is computed by adding this profile option to the authorization date and comparing to the system date.

**OM: Risk Factor Threshold for Electronic Payments** – This profile is a value between 1 and 100, and represents the cutoff point where orders that authorize with a risk factor will be placed on Credit Card High Risk hold. The default is 50. For example, assume an order authorizes successfully, but returns a risk factor of 51. Since its risk code is above the threshold of 50, it will go on hold. See the section above on Risk Management.

**OM: Payment Method for Credit Card Transactions:** this profile option represents the default payment method used by the Invoice Interface to pass to Receivables for orders that have a payment type of credit card. It is used if the customer does not have a primary payment method recorded. There is no default, but this profile must be populated prior to interfacing orders with credit cards to Receivables. There is a LOV for this profile, and validation is against all active payment methods in AR where the payment type is Credit Card.

## Bank Accounts

When you select a Payment Type of Credit Card on the order header, the primary bank account for the customer in Accounts Payable provides default information

for credit card number, cardholder's name and expiration date. A LOV on the credit card number field on the order header will be based on AP's bank account table where `branch_id = 1` (this is AP's convention for indicating a credit card type of bank account). You can key in a different credit card number to be used, and when the data is saved (committed) to the database, that account will be created as a new bank account for the customer in AP.

### Lookups

There are several OM lookups that are used by Credit Card authorization. There is an OM lookup for **Credit Card Type** – this is seeded with the most common credit card types such as AMEX, Visa, etc. You can extend this list. **Payment Type** is another OM lookup. It is seeded with Credit Card, Cash and Check and cannot be extended. iPayment integration logic in OM is triggered when Payment Type = Credit Card.

### iPayment Setup

There is an entire manual devoted to implementing the iPayment server. Several critical things to setup that influence Order Management are the risk management factors and formula and the merchant bank account. Other setup information can be found in the *Oracle iPayment Implementation Guide*, part number A86047-01.

## Reports

There are no new or existing reports in Order Management that list credit card information.

## Watch Out For

Here are some limitations you need to understand:

### Credit Checking Must be Active

As stated previously, credit checking must be active for the order type you are using with credit cards. The calls to iPayment for authorization are included in the Verify Payment code, which is only called if there is a credit checking rule on the order type. Credit card authorization does not care about the payment **terms** on the order or lines, or whether the customer or bill-to has credit checking turned on.

## Encryption

In Order Management, credit card information is masked from view by unauthorized users, based on the setting of the **OM: Credit Card Privileges** profile option. This occurs in the User Interface only. Credit card information is not encrypted in the database at this time. Restrict direct access to the database to prevent access to sensitive information stored.

## Multiple Authorizations

If a second or subsequent authorization is needed to an order with an unexpired and uncaptured authorization, Order Management calls iPayment to void the previous authorization. However, not all of the credit card system integrators that iPayment uses have support for the void transaction. Because of this, it is possible that excess funds may remain blocked for a credit card until such time as the earlier authorization expires. Order Management only allows one active authorization per order at any given time.

## What if iPayment isn't Installed?

If iPayment is not installed, but a payment type of credit card is entered on the order, the Verify Payment code will not return an error or place the order on hold. Credit Checking will not occur either, since the Credit Card authorization code will be invoked instead. The Authorize Payment action on the Action button will not be available. The only way to authorize a credit card without iPayment (or without a customization) is to do a manual authorization, and enter the authorization code. In effect, if you don't have iPayment installed, the credit card fields on the order header are for information only. Credit card data is passed to Receivables, however, even if iPayment is not installed.

If you don't have iPayment installed and you don't want to take the risk of people entering credit card information that is then not used, you can set up a Processing Constraint to prohibit users from saving data to the credit card fields.

## Debugging Tips

If you are experiencing problems getting the iPayment integration to work in your environment, it can be very helpful to support if you generate a log file of what is happening. Here are specific steps to generate a debug file while reporting iPayment integration issues -

1. Log into the application using a new session
2. Open the sales order form and query the order

3. From Tools menu click on Debug,
4. Choose Turn Debug On
5. From Tools menu click on Debug again
6. Choose Initialize Debug Cache
7. From Tools menu click on Debug yet again
8. Choose Write to a File

Note the default file name – you cannot change it. Debug messages will be logged into this file.

Perform the steps which are failing - in this case it may be payment authorization through booking/ picking/ manual.

9. Turn debug off
10. Provide the debug file to Oracle Support.

### Examples

The following examples assume an order type that has a Credit Check Rule assigned for both Booking and Shipping. Assume also the **OM: Estimated Authorization Validity Period** profile has been left to default to 21 days.

**Simple order:** consider the case of a simple order that is authorized at Booking, pick released and shipped complete within one week with no changes to the order. One authorization is obtained for the entire order at Booking. No further authorization at Shipping occurs, because an unexpired and uncaptured authorization existed. The entire order interfaces to Receivables at one time. Receivables does the funds capture against the original authorization code.

**Partial Shipment:** this order consists of one line for a quantity of 10 with an extended amount of \$1000. The authorization obtained at Booking is for \$1000. Only 3 of the quantity of 10 is picked and ship confirmed and interfaced to Receivables. The remaining 7 were backordered. What occurs when the remainder of the order is pick released depends on whether Receivables has captured against the original authorization. If so, AR captures \$300 against the first authorization. At Pick Release of the remainder of the order, a new authorization is obtained for \$700 – the amount uncaptured. If AR has not done a funds capture at the time of the second Pick Release, OM will not reauthorize if the original authorization had not expired. Whether or not an authorization has had funds captured is determined by calling an iPayment API.

**Cancellations:** consider the same order as in Partial Shipments above. However, after Booking but before interface to Receivables, the order is canceled. If the entire order is canceled, OM will attempt to void the initial authorization. If the credit card provider does not support the void transaction, the authorization will be left to expire. On the other hand, if the order is partially canceled, the part that is shipped and interfaced to Receivables will capture against the original authorization code but for the amount shipped. The remainder (amount canceled) will never authorize, as it has been canceled.

**Mixed Order:** this order consists of one outbound line for \$200 and one return line with a value of \$50. Therefore the order total is the net or \$150. The authorization at Booking will authorize for the full \$200.

### Migration/Upgrade

There is no special upgrade performed for orders containing credit card information. Old Order Entry orders with credit card information will have the credit card data copied to the upgraded order. If the new upgraded order goes through Booking or Shipping and there is a credit check rule on the order type, then authorization will be attempted.

### Future Plans

There have been numerous enhancements requested to the basic credit card functionality that is provided in Order Management. Among the ones being considered for future releases are:

- Multiple credit cards at the header.
- Multiple credit cards at the line.
- Multiple payment types at the header
- Database encryption of credit card information
- Report on credit card orders/ authorizations/ holds
- Background/ batch processing for authorization

### Availability

The functionality associated with Order Management Credit Card authorization was available in May of 2000 with the release 11i initial release. Receivables will be making code changes necessary to process credit card refunds in a post-11i patch.

## **Conclusion**

Oracle Order Management's new functionality to handle credit card authorization enables orders to be accepted from many new channels, including web stores. Order Management helps you by seamlessly obtaining the authorization for orders where a credit card is used as the payment vehicle, and passing the necessary information to Receivables for actual funds capture.



# D

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## Defaulting Rules

Topics covered in this appendix include:

- [Overview](#) on page D-2
- [Introduction](#) on page D-2
- [Background](#) on page D-2
- [Functional Differences](#) on page D-3
- [Watch Out For](#) on page D-9
- [Migration/Upgrade from SVRS](#) on page D-10
- [Example](#) on page D-11
- [Conclusion](#) on page D-12

## Overview

Defaulting rules enable field values on forms to populate automatically. They do not need to be keyed in manually. In Release 11 and earlier, the Oracle Order Entry product contained a feature called Standard Value Rule Sets (SVRS) where you defined how you wanted order attributes to be defaulted. In Release 11*i* Order Management, we have a new defaulting paradigm called 'Defaulting Rules', which offers somewhat differing functionality. This paper outlines the key differences between SVRS and the new Defaulting Rules, with tips on how to use the new, more powerful features.

## Introduction

Users familiar with Order Entry's Standard Value Rule Sets might look at Order Management's new Defaulting Rules framework and wonder what happened here?' The user interface looks very different look and feel. The functionality seems to behave somewhat differently from the SVRS. The R11*i* Order Management User's Guide gives a good explanation of the new forms and fields, but there are nuances of setup and use that are not obvious to the non-technical reader or user.

This paper attempts to explain the key functional differences between the SVRS in Order Entry and the Defaulting Rules in Order Management, and offer some insight into making the rules work for you.

## Background

Standard Value Rule Sets provided great functionality for Order Entry users. But they were very much tied to the architecture and functionality of the Order Entry product. You could define sets of rules and attach them to order types. There was a hard-coded list of sources for each particular data field. It was difficult to extend or customize the rules.

In Order Management, the product architecture has been updated and the product functionality greatly expanded. Every functional area had to be re-designed and re-coded. Some of the enhancements that users had been requesting in the area of SVRS could not be accommodated without revamping the entire structure of defaulting. The design goal was to create a defaulting framework that other products could use, too, since most applications need similar capabilities. So the decision was made to design a more generic solution for defaulting. The Defaulting Rules Framework is the result of that re-design.

## Functional Differences

To an Order Entry/Management user or implementer, the biggest difference from SVRS is that with Defaulting Rules, you define a set of rules for each attribute on the order header or line, and you define the conditions for when to use each rule. This forces you to think of each attribute individually, instead of within the context of an order type. But once you start thinking of attributes in this way, the new framework seems more straightforward and intuitive.

The new framework also brings somewhat more flexibility in where you can default from and to, as well as a way for you to invoke your own PL/SQL package to perform more complex logic.

## Key Enhancements

Some of the great new enhancements that this framework allows are:

- the ability to default the Order Type
- the ability to define defaulting rules for returns and return lines - they used to be hard-coded.
- the ability to define formulas to create the defaulted data - see the Sources of Values section below.
- a clear distinction between 'defaulting' behavior and 'cascading' - see the Watch Out For section below.

## Terminology

Since Defaulting Rules are now generic, and potentially can be used by other Oracle applications, we're using more generic names for the things you default from and to. Attributes and Entities are the things you default to. 'Sources' are where things default from. See the Sources of Values section below on all the various places you can default from.

## Attributes and Entities in Order Management

An Entity in this context is a group of related attributes that roughly correspond to a table or a form in Order Management. So we have entities of Order Header, Order Line, Order Price Adjustment, Line Price Adjustment, etc. Entities correspond to blocks in the old SVRS.

An Attribute is a field or column that belongs to that entity. Therefore, the ordered unit of measure is an attribute of the Order Line entity. Attributes correspond to fields in the old SVRS. When you query up the Defaulting Setup form for a particular entity, you'll see a list of all the attributes for which you can define defaulting rules. As in OE, you will not be able to define defaulting rules for descriptive flexfields, since their defaulting is controlled by AOL's flexfield routines.

## Conditions

Conditions are rules set up that to control when a particular group of default sources will be looked at. Define one or more condition validation templates *per entity* based on common business rules to meet your business needs. Then you can use them over and over for the attributes of that entity. For example, you might set up a condition template for all return lines, or another one for all internal order lines. The ALWAYS condition is seeded for each entity. When defining a set of Conditions and using them in rules, be sure to place the ALWAYS condition last in the Precedence for Defaulting Conditions.

### Defining Condition Validation Templates

Once you query up the entity that you want to work with in the Defaulting Setup form (use the flashlight icon to get the LOV of available entities), press the Defaulting Condition Template button to get to the form to define the conditions. You'll see a form that lists all the conditions already defined for this entity. To add a new condition, go to a blank line (or use the green + icon to create a blank line) and key in a name and description for your new condition.

- The lower half of the form is where you enter the details of the condition you are defining or viewing.
- The Group Number is an arbitrary number used to control and, and or conditions. Indicate that rules are to be connected by an and rule by giving them the same group number, whereas rules to be connected by or should be given different group numbers.
- In the Attribute column, choose from the list of attributes on which a condition can be based. Available attributes that show up here are ones **from this entity** that have the 'Include in Building Defaulting Conditions checkbox checked on the Defaulting Setup - Entity Attributes form. The only attributes that have this checkbox checked are ones that are the source for a dependency relationship. See section on Dependencies below. You cannot add to this list of attributes.
- In the Operator column, choose an operator from equal, not equal, greater than, less than, not greater than or not less than.

- In the Value String column, key in (or choose from the LOV) the actual value you want to compare to.

## Sequence of Defaulting

On the main Defaulting Setup screen, where all the attributes of the entity are listed, there is a column called Defaulting Sequence. This number determines the order in which attribute defaulting takes place. When attributes have equal sequence numbers, defaulting takes place alphabetically. All the attributes are seeded with a sequence of 50. You can change these sequences, if you need defaulting to happen in some different order. For example, you might define a sourcing rule that says default attribute A on the line from attribute B on the same line. In this case, you need to insure that the Attribute B gets its value before A is defaulted, or the rule will not work as expected.

## Sources of Values

Sources are places where values can be defaulted **from**. Defaulting Rules provide a variety of sources that can be used in building your defaults. Most of them will be familiar to users of Oracle Order Entry.

**Constant Value** - is simply a text string that will be used.

**Profile Option** - is the value of a profile option. This can be a system provided profile option, or a new profile option that you've defined just to provide a defaulting value.

**Same Record** - is the value of another attribute on the same entity (or record) as the attribute you are defining the rule. For example, you might set up the Promise Date to default from the Request Date on the same line.

**Related Record** - is the value of another attribute on a related entity (or record). For example, you might set up the Ship Method on the line to default from the Ship Method on the header. Or some attribute on the order header might default from an attribute on the related customer record.

**System Variable** - is the value of a system (server) variable, such as System Date. For this type of source (and this type only), you can use an expression containing a formula, for example, sysdate + 7.

**PL/SQL API** - is where you provide your own routine to provide the default. There are a few seeded defaulting rules that use this - for example, defaulting of the currency on the order header from the set of books (SOB) is seeded this way. Look

at this attribute for an example of how to specify a PL/SQL API or look in the Rule Based Defaulting Framework HLD for technical details.

**Others** - there are several esoteric source types relating to the Web App Dictionary definitions for this attribute. Most people won't want to use these. They are documented in the Rule Based Defaulting Framework HLD.

### Defining Sourcing Rules

Once you query up the entity that you want to work with in the Defaulting Setup form and have defined your Conditions, you are ready to define your Sourcing Rules. Select the attribute you want to work on, and then click on the Defaulting Rules button to get to a form called Attribute Defaulting Rules. This form lists all the conditions and rules that have been previously defined for this attribute. To add a new condition and its rules, go to a blank line in the Defaulting Conditions section of the form (or use the green + icon to create a blank line), key in a precedence and choose from conditions you have already defined. (The precedence controls the sequence in which the conditions are evaluated.)

The lower half of the form is where you enter the details of the rule you are defining or viewing for this condition. This set of defaulting rules will be used if its corresponding Defaulting Condition is TRUE.

- The Sequence here controls the order in which the system attempts to locate a default.
- In the Source Type column, choose from the list of Source Types as described above.
- In the Default Source Value column, specify the attribute or value you want to use for the source. Selection choices here depends on the Source Type you have selected. There is a good table in the Setup section of the *Oracle Order Management R11i User's Guide* that explains the various options per Source Type. What you'll see in this field is a flexfield whose context is based on the Source Type. Then you can choose among pre-seeded possible source attributes.

Similar to what occurred in Order Entry, there are similar restrictions to defaults. The data type has to match that of the attribute you are defaulting, and the source relationship has to be pre-defined.

## Dependencies

Some attributes are dependent upon the value of other attributes on the same record. If an attribute is changed, either by the user or by the system, any other attribute that are dependent on it will be cleared and then re-defaulted. For

example, the Price List is dependent on Agreement. If the Agreement is changed, the Price List will be cleared and re-defaulted. As of September, 2000, this functionality was changed so that if the redefaulting did not result in a new value for the dependent field, and there was a value previously, the old value will be retained.

In the initial implementation of Defaulting Rules, dependencies are hard-coded. See the Rule Based Defaulting Framework HLD for a list of which dependencies have been provided. An enhancement request has been logged to provide a form to allow users to create their own dependencies. Until such time as that enhancement is provided, if you need to create additional dependencies, you can code a simple customization to package OE\_Dependencies (the file name is OEXUDEPB.pls). Remember, however, that dependencies can be established only among attributes on the same entity, not across entities. For an experienced coder, the code modifications are relatively easy.

For example, the following code indicates that payment term, invoice to and price list are dependent on sold to:

```
l_index := OE_HEADER_UTIL.G_SOLD_TO_ORG * G_MAX ;
g_dep_tbl(l_index) := OE_HEADER_UTIL.G_PAYMENT_TERM;
g_dep_tbl(l_index +1 ) := OE_HEADER_UTIL.G_INVOICE_TO_ORG;
g_dep_tbl(l_index +2 ) := OE_HEADER_UTIL.G_PRICE_LIST;
```

If you want to add another attribute - currency - as a dependent attribute, then add the following line after the above code:

```
g_dep_tbl(l_index +3 ) := OE_HEADER_UTIL.G_TRANSACTIONAL_CURR;
```

If, on the other hand, you want to create a dependency for a source attribute that doesn't already have any, then it takes a little more work. For example, if you want to make Shipping Method on the header dependent on Shipment Priority, then you need to add a line for the source attribute as above and also modify another entity specific utility package.

Add the following code in Load\_Entity\_Attributes:

```
l_index := OE_HEADER_UTIL.G_SHIPMENT_PRIORITY * G_MAX ;
g_dep_tbl(l_index) := OE_HEADER_UTIL.G_SHIPPING_METHOD;
```

Then add the following statement in OE\_Header\_Util.Clear\_Dependent\_Attr

(file: OEXUHDRB.pls). If you're want a change in the Shipment Priority on the order line to also affect Shipping Method on the order line entity, code similar to the following needs to be added to OE\_Line\_Util.

```
IF NOT OE_GLOBALS.Equal(p_x_header_rec.shipment_priority_code
    ,p_old_header_rec.shipment_priority_code)
THEN
    l_index := l_index + 1.0;
    l_src_attr_tbl(l_index) := OE_HEADER_UTIL.G_SHIPMENT_PRIORITY;
END IF;
```

Similarly, you can remove dependencies if there are some hard-coded that you do not want.

## Controlling Changes

In Order Entry SVRS, there used to be two checkboxes on each rule line to control changes to an attribute. You could check whether or not to allow users to override a defaulted value (Override Allowed) and you could control whether the rules should re-default over user-specified values (Override User-Specified Values). These checkboxes often were viewed to be confusing and to operate inconsistently. Order Management's Defaulting Rules solved that problem by getting rid of those checkboxes. Instead, you control who can change data (and when) using the new Processing Constraints framework, regardless of how or whether an attribute was defaulted. In addition, you have the ability when defining Processing Constraints to indicate that you want the system to be able to update an attribute, but a user cannot make changes.

The only time that Defaulting Rules result in a change to an existing attribute on an entity is when that attribute has a dependency on another attribute that has been changed.

## Reports

There is a new report in Order Management that lists the Defaulting Rules you have set up. It replaces the old OE Standard Value Rules Listing. The report is called Defaulting Rules Listing, and it has parameters to allow you to limit the listing to a specific object (entity), attribute or condition.



## Watch Out For

Here are some differences and limitations that you will need to understand:

### Creating Conditions

Conditions give you powerful flexibility in designing how you will implement defaulting rules for your company. However, there are a few behaviors to take into consideration when creating Conditions.

#### What Attributes can you use?

Be aware that Conditions you create for an entity can only be based on attributes that belong to that entity. Therefore, for example, you cannot set up a Condition for a line attribute based on the order type because order type is a header attribute. You'll have to examine carefully your business rules so you can state Conditions in terms of attributes on the same level. Fortunately, in Order Management, most attributes (with few exceptions such as order type and currency) at the header are also present at the line level. Even the sold-to customer is present as a line-level attribute, even though the software enforces that the customer is the same throughout an order. This way, the customer can be used in a condition template for the line.

#### Sequencing of Attributes Used in Conditions

Sequencing of defaulting of attributes plays an important role in the correct design of Conditions and Sourcing Rules. If you create a rule for attribute X based on a Condition using attribute Y, you must be sure that attribute Y gets defaulted before attribute X, or your Condition will not evaluate true. For example, if you define a Condition for defaulting the Unit of Measure by using the Customer, it will only work if you ensure Customer gets defaulted before UOM. And even then, it will only work for the initial defaulting of the UOM field. And that is because of Dependencies.

#### Dependencies of Attributes Used in Conditions

So you must also regard dependencies when you are building Conditions. If a Condition involving attribute Y is used to setup the defaulting rule for attribute X, then the rule will work during subsequent updates of attribute Y only if attribute X is dependent on attribute Y. So in the UOM and Customer example above, if you later change the Customer on the order, the UOM will not re-default based on the new customer, because UOM is not dependent on Customer.

## Defaulting vs. Cascading

In Order Management, a clear and unambiguous distinction has been made between defaulting and cascading, that will cause behavior different from what we have become used to in R11 Order Entry. In OE, defaulting and cascading were intermixed, making it sometimes difficult to predict what might happen when an attribute at one level was changed. In OM, the defaulting logic will come into play only when the record is initially created (when you click on a new record on the form), or when an attribute upon which this attribute is dependent is changed. Cascading, on the other hand, means replicating the value of an attribute down to lower level entities. We do not perform cascading in Order Management. If you want to change the value of attributes on existing rows, you need to use the new mass change capability, where you multi-select the rows you want to change, and then change them.

How do these concepts get applied? Here's an example. Assume you have a defaulting rule set up to default a line-level attribute such as Ship Method from the header to the line. Create an order with several lines and use Ship Method A for the header (and therefore the lines). Then you want to change the ship method to Ship Method B. Changing this attribute at the header will result in any subsequent new lines getting Ship Method B defaulted onto them. The existing lines that have Ship Method A will not get changed to B as a result of your changing the header attribute. You will need to use mass change to do that. The good news is that the user has explicit and unambiguous control over what lines get changed.

## Migration/Upgrade from SVRS

Because of the magnitude of the changes to the fundamental architecture between SVRS and Defaulting Rules, the decision was made to not upgrade any user-defined SVRS. Defaulting Rules have been seeded that provide equivalent functionality to the R11 seeded SVRS. There is a good table in Appendix E of the *Oracle Order Management R11i User's Guide* that lists all attributes of the Order Header and Order Lines entities, and what the seeded defaulting rule is for each of those attributes.

Users of Order Entry who created their own Standard Value Rules or customized the seeded rule sets will need to carefully review the logic behind their changes or customizations, and create equivalent Defaulting Rules for the attributes affected. Typically a user will need to create Conditions corresponding to their particular business need, and then create Defaulting Rules using those Conditions for the necessary attributes.

## Example

This is how you can use Defaulting Rules. Let's take the example of a very common business need - the need to default the Order Type based on customer (sometimes) and otherwise based on user. This was something that could not be done using SVRS in Order Entry. Order Type was one of those things that always had to be keyed or selected from an LOV. But in Order Management, you can write rules to default the Order Type.

Here's the business requirement:

Some of your customers have such special processing requirements, that you have a special order type set up just for them - all their orders generally are of that order type. As a matter of fact, a bill-to location or a ship-to location of a customer might even need to have its own special order type. However, for the general case, you would like users in various departments to always enter orders of a particular type - Domestic CSRs might enter orders of Order Type 'Domestic', whereas your Export Department personnel might enter orders of Order Type 'International'.

Here's how you'd do this:

First, create a new custom profile option that you'll have the system administrator use to specify the default order type for different responsibilities or users.

Second, create defaulting rules for entity: Order Header, attribute: Order Type. Use the seeded condition ALWAYS, as you want to just set up one set of rules. Have the defaulting precedence be:

|          |                       |   |
|----------|-----------------------|---|
| <b>5</b> | <b>Related Record</b> | <b>Invoice-to: Order Type</b>           |
| 10       | Related Record        | Ship-to: Order Type                     |
| 15       | Related Record        | Customer: Order Type                    |
| 20       | Application Profile   | OMX: xxxxxxxx (your new profile option) |

Finally, for customers with special order type needs, store their special order type in their Customer, ship-to or bill-to record as required. You would leave this field null for most customers, to let the profile option be used.

As a customer is entered on an order, the defaulting code will look first at the customer bill-to site for a default order type, then to the ship-to record, then to the customer header, and finally to the new profile option.

For a closer look at exactly how to perform these setup steps, see the Defaulting Demoshield in the OM Toolbox. It contains an example of setting up these exact rules.

## Conclusion

Oracle Order Management's use of the new Defaulting Framework provides powerful defaulting capabilities, if you know how to use them. You need to thoroughly understand Conditions and Dependencies so that you can design how your defaulting should occur. With correct definition and use of Defaulting Rules, you can significantly reduce the amount of data that has to be keyed upon entering an order, thus speeding input time and reducing keying errors.

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# Using Processing Constraints

Topics covered in this appendix include:

- [Overview](#) on page E-2
- [Introduction](#) on page E-2
- [Background](#) on page E-3
- [Functional Differences](#) on page E-3
- [Migration/Upgrade from Security Rules](#) on page E-16
- [Examples](#) on page E-17
- [Conclusion](#) on page E-20

## Overview

Processing Constraints allow Order Management implementers to control changes to sales orders. In Release 11 and earlier, the Oracle Order Entry product contained a feature called Security Rules that allowed you to control whether changes could be made to certain characteristics of an order after certain cycle steps had been reached. In Release 11*i* Order Management, we have a new security paradigm called 'Processing Constraints', which offers somewhat differing functionality. This chapter describes the new Processing Constraints framework in detail.

## Introduction

Processing constraints are rules that allow you to control who can change what and when.

- You can control who can make changes based on responsibility. A constraint (rule) may apply to all responsibilities, to only a list of constrained responsibilities or to all except a list of authorized responsibilities.
- You can control more than just what can be updated. The following operations can be controlled: Create, update, delete, cancel, and split all at the entity level. For example, given a set of conditions you may not want to allow a user to create a new order line. You can also control the update operation down to the attribute level. For example, given a set of conditions, you could choose to allow update to the warehouse field of an order line but not to the price list field.
- You can control changes to six entities. An entity roughly corresponds to a table or form. The entities you can control in Order Management are the order header, order line, order sales credit, line sales credit, order price adjustment and line price adjustment.
- You can control the changes based on a group of conditions. The conditions must be collectively true for the constraint to fire or prevent the changes. The conditions may be based on either the state of a workflow activity (where the entity is in the flow) or a value in a table. A condition may also be based on a custom API, which means that you can call your own PL/SQL code to evaluate the condition.

Multiple conditions can be combined using either AND logic (all the conditions must be true) or OR logic (at least one of the conditions must be true.)

A custom message can display when an attempt is made to violate a constraint.

This paper discusses the differences between Processing Constraints and the functionality in Order Entry that it replaced - Security Rules. It describes in detail the implications of selected values in following forms: Processing Constraints, Validation Templates and Record Sets. Finally, set up for processing constraints is demonstrated using the following business examples:

- No one can change the customer purchase order at the line level; your company requires that one sales order can relate to only one customer purchase order.
- No one can add a line to an order after any of the lines on the order have been invoice interfaced.
- A reason is required to cancel an order line after it has been booked.
- Only the Customer Service Manager can change the discount percentage on an order line after the line has been shipped.
- Require all return orders, identified by order type = Return, are shipped to a central returns processing facility.

## Background

Security Rules provided the functionality that Order Entry users needed to control changes to orders. However, they had certain limitations both in the philosophy and in implementation.

In Order Management, the product architecture has been totally redone and the product functionality has been greatly expanded. Every functional area had to be re-designed and re-coded. Most of the enhancements that users had been requesting in the area of security rules could not be accommodated without revamping the entire structure. The design goal was to create a processing constraints framework usable by other products in future releases, since many applications need similar capabilities. So the decision was made to design a more generic solution for controlling changes. The Processing Constraints Framework is the result of that re-design.

## Functional Differences

To an Order Entry/Management user or implementer, the biggest difference between security rules and processing constraints is a philosophical one. The philosophy behind security rules was to prevent data inconsistencies or confusion. As a result the seeded security rules were very restrictive, and many companies did not need to create any additional security rules. The philosophy behind processing

constraints is the opposite. The designers decided that the implementer knows better than the developer what the user should be allowed to change, therefore the seeded processing constraints are not very restrictive. The only constraints that are seeded are the ones that prevent data integrity problems. For instance, you can't change the price on an order after it has been invoiced.

The new processing constraints framework has many more features and is much more flexible than security rules.

## Key Enhancements

Some of the enhancements that this framework provides are:

- the ability to control changes based on who is trying to make them (by responsibility)
- the ability to define constraining conditions based on the state of related objects (for example, define a constraint on a line based on the state of the order)
- the ability to control changes based on the value of a field - see Validation Templates section below
- the ability to call custom PL/SQL code to determine whether a condition is true
- the ability to constrain operations at any point in the process flow. In prior releases you could only control operations for certain hardcoded cycle actions.

## Terminology

Processing Constraints are very powerful and setting them up is not difficult. However, there are many new terms that you need to understand.

**Entity** - a group of related attributes that roughly correspond to a table or a form in Order Management. The entities that can be managed using processing constraints are Order Header, Order Line, Order Price Adjustment, Line Price Adjustment, Order Sales Credit, and Line Sales Credit. Entities correspond to 'objects' in the old security rules.

**Attribute** - a field or column that belongs to an entity. For example, the ordered unit of measure is an attribute of the Order Line entity. Attributes correspond to fields in the old security rules.

**Operation** - an action that you can take on an entity. The operations that can be controlled by processing constraints are Create, Update, Delete, Cancel and Split.



**Processing Constraints Framework** - a generic facility that will enable you to define processing constraints for application entities and attributes. It includes the set of APIs that will enable you to query the existence of any constraint against the operations you wish to perform on that entity or its attributes

**Validation Template** - names a condition and defines the semantics of how to validate that condition. These validation templates can be used in the processing constraints framework to specify the conditions for a given constraint.

**Record Set** - A record set is a set of records that are bound by some common attribute values (for example all lines on an order). In the processing constraints framework, when you define constraining conditions, you may specify a record set to be validated for a given condition as defined by its validation template.

**Scope** - Given a record set and a condition, the scope (Any/All) defines how the validation should be performed on records of the record set. All will require the validation to be TRUE for every record in the set where Any will require the validation to be TRUE for at least one record in the set.

**Conditions** - The test(s) which must be passed for a constraint to be active. For example, a condition for a constraint might be that the order is booked.

## Defining Processing Constraints

The best way to discuss setting up processing constraints is to look at the forms and go through the fields. Let's begin with the main form, the Processing Constraints Form, shown in [Figure E-1](#)

**Figure E-1 Processing Constraints and Conditions tab**

The screenshot shows the 'Processing Constraints' form. At the top, the 'Application' is set to 'Oracle Order Management' and the 'Entity' is 'Order Line'. Below this is a table of constraints:

| Operation | Attribute          | User Action | System Changes | User Changes | Seeded?                             |
|-----------|--------------------|-------------|----------------|--------------|-------------------------------------|
| UPDATE    | Line Type          | Not Allowed |                |              | <input checked="" type="checkbox"/> |
| UPDATE    | Order Quantity Uom | Not Allowed |                |              | <input checked="" type="checkbox"/> |
| UPDATE    | Ordered Quantity   | Not Allowed |                |              | <input checked="" type="checkbox"/> |

Below the constraints table is the 'Conditions' section, which is currently on the 'Applicable To' tab. It contains a table of validation conditions:

| Group # | Scope | Validation Entity | Record Set | Not                      | Validation Template | Seeded?                             |
|---------|-------|-------------------|------------|--------------------------|---------------------|-------------------------------------|
| 1       | Any   | Order Line        | Line       | <input type="checkbox"/> | Booked              | <input checked="" type="checkbox"/> |
|         |       |                   |            | <input type="checkbox"/> |                     | <input type="checkbox"/>            |
|         |       |                   |            | <input type="checkbox"/> |                     | <input type="checkbox"/>            |

At the bottom of the form, there is a 'User Message' field containing the text 'Line is Booked'.

To access this form, from the Order Management Super User navigation menu select Setup -> Rules -> Security -> Processing Constraints.

Notice that the form is divided into several regions. The top region has fields for the Application and the Entity. For this paper, the application that we use will always be Oracle Order Management. Since the Processing Constraints Framework was designed for use in multiple applications, we expect other applications to access these forms in future releases. For now, only the six OM entities are the valid values for the entity field. This is used for querying - you cannot create new entities. When you query an entity you will see all the constraints defined against that entity.

The Constraints region is where most of the details of a processing constraint are defined. The region enables you to view the seeded constraints (you cannot change

the seeded constraints), view or update the constraints that were created for your company and create new constraints.

The Operation field can have the values of Create, Update and Delete for any of the entities, Cancel for Order Header and Order Line entities, and Split for the Order Line Entity.

The Attribute field can only be used if the operation selected is UPDATE. You may enter a value here, and the constraint will only apply to that field. For instance you may define a constraint that affects only the warehouse field on the order line. If the Attribute field is left blank the constraint will be in effect for all the attributes of the entity. For instance, you may define a constraint which prevents updates to any of the fields of an order line.

The Action field allows you to select the action to be taken if the constraining conditions are met. The possible values are:

*Not Allowed* - This is the default value. The user is not allowed to perform the operation.

*Require Reason* - The user can perform the operation if a reason is provided. This action is currently supported only for the Cancel operation or for the Update operation with the attribute 'Ordered Quantity.' When Audit Trail functionality is implemented in a future release it will allow the use of this action for the Update operation with any attribute. The list of reasons is an extensible Order Management Quick Code named CANCEL\_CODE.

Use the System Changes field to indicate if system changes are allowed even if the constraining conditions are met. The system changes here refer to an attribute initially getting a default value or being re-defaulted when a source attribute changes. This is applicable only for attribute or field level UPDATE operations. The possible values are:

- *Never after Insert* - System changes are allowed to this field ONLY if the entity has not yet been saved to the database. This is the default value.
- *Always* - System changes are always allowed on the attribute

Use the User Changes field to indicate when the user performing the operation is constrained. This is applicable only for attribute or field level UPDATE operations. The possible values are:

- *Never after Insert* - User can change this field ONLY if the entity has not yet been saved to the database. This is the default value.
- *Always* - User can never enter a value for this attribute, even if the entity (for example an order) is being created for the first time.

The Seeded? Field indicates whether the constraint was included with the OM system as it was installed. Seeded constraints are included because they prevent data integrity problems. Seeded constraints cannot be updated; operation, field, action or the list of responsibilities attached to these constraints cannot be modified. However, additional validation conditions can be included as long as they do not have the same group number.

The bottom section of the form has two tabbed regions - the Conditions region and the Applicable to region.

The Conditions region allows you to define the condition(s) that must be true for the constraint to fire. Unless the group of conditions are true, the constraint will not be active.

The Group Number field determines whether AND or OR logic is used to combine conditions. For conditions that should together evaluate to TRUE (AND conditions), enter the same group number. Define OR conditions by using different numbers.

The Scope field is evaluated with the Record Set field to determine if the condition is true. The possible values are:

- *ANY* - If the record set on this validation condition can select multiple records, then this condition should be TRUE for AT LEAST ONE of the records. For example you can evaluate a condition against any line on an order - "If any line on the order is canceled..."
- *ALL* - If the record set on this validation condition can select multiple records, then this condition should be TRUE for ALL the records. For example you can evaluate a condition against all lines on an order - "If all lines on the order are canceled...."

The Validation Entity is the one for which the condition is evaluated. The validation entity can be the constrained entity (displayed in the Entity region) or any related entity. For example, the constrained entity could be an order line and the constraint could be evaluated based on characteristics of the validation entity order header.

Select the Record Set and based on the selected scope, the conditions will be evaluated for any or all of the records in the set. An example of a seeded record set is a ship set. You may define additional record sets as needed. NOTE: if the validation entity on the condition is different from the constrained entity, then only the record set based on the primary key for the validation entity will be available in the LOV.

Check the NOT Box to create a NOT condition. For example if the condition is Booked , checking this flag will evaluate the condition 'NOT Booked'.

Select the Validation Template to defines how this condition is to be evaluated. A section on defining validation templates follows.

The Seeded? Box is checked for the conditions that were included with the OM system as it was installed. These conditions cannot be updated. Also, the user cannot define new AND conditions with the same group number as a seeded condition.

The User Message is displayed when an attempt is made to violate a constraint. The message is specific not just to the constraint but also to the specific condition that was violated. For example, you might create a user message of line has been booked. If the constraint was not to allow update of the item field on the order line if the line had been booked, the complete error message displayed at run time would be:

'You are not allowed to update the item; line has been booked'.

The following screen shows the Processing Constraints form again, this time with the Applicable To tab selected. Use this tab to define which responsibilities the constraint applies to.

**Figure E–2 Processing Constraints and Applicable tab**

The screenshot shows the 'Processing Constraints' window with the following details:

- Application:** Oracle Order Management
- Entity:** Order Line
- Constraints Table:**

| Operation | Attribute        | User Action   | System Changes | User Changes | Seeded?                             |
|-----------|------------------|---------------|----------------|--------------|-------------------------------------|
| UPDATE    | Ordered Quantity | Require Re... |                |              | <input type="checkbox"/>            |
| UPDATE    | Ordered Quantity | Require Re... |                |              | <input type="checkbox"/>            |
| UPDATE    | Ordered Quantity | Not Allowed   |                |              | <input checked="" type="checkbox"/> |
- Applicable To:**
  - All responsibilities
  - Authorized responsibilities
  - Constrained responsibilities
- Release Management List:**
  - Release Management

If the button for All Responsibilities is selected, then the constraint will apply to all users. No one will be able to perform the constrained action. All seeded constraints are applicable to all responsibilities.

If you select the Authorized Responsibilities button, then only the responsibilities that you list will be allowed to perform the action. All other users will be stopped from performing the action by the constraint.

If you select the Constrained Responsibilities button, then all users except for the responsibilities defined will be able to perform the action. The users that you list will be stopped from performing the action by the constraint.

There are two other forms that are used in setting up processing constraints. These are the Validation Templates form and the Record Sets form. The validation

templates and record sets you create, as well as the seeded ones can be used in the Processing Constraints form as described above.

## Defining Validation Templates

*Figure E-3 Validation Template*

The screenshot shows the 'Validation Templates' form for 'Oracle Order Management'. It contains a table of validation templates and a section for defining validation semantics.

| Entity     | Template Name | Seeded?                             | Short Name | Description                  | Validation Type       |                       |                       |
|------------|---------------|-------------------------------------|------------|------------------------------|-----------------------|-----------------------|-----------------------|
|            |               |                                     |            |                              | WF                    | API                   | Col                   |
| Order Line | ATO           | <input checked="" type="checkbox"/> | ATO        | is ATO                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Order Line | ATO Component | <input checked="" type="checkbox"/> | ATOCOMP    | Options and classes under an | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Order Line | Booked        | <input checked="" type="checkbox"/> | BOOKED     | Line Booked                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Order Line | Cancel Line   | <input checked="" type="checkbox"/> | CANLINE    | Cancel Line                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Order Line | Closed        | <input checked="" type="checkbox"/> | CLOSED     | Line Closed                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| Column   | Validation Op | Value String |
|----------|---------------|--------------|
| ATO Line | Is Not Null   |              |
|          |               |              |
|          |               |              |

To access the Validation Templates form, shown in [Figure E-3](#), from the Order Management Super User navigation menu select Setup -> Rules -> Security -> Validation Templates.

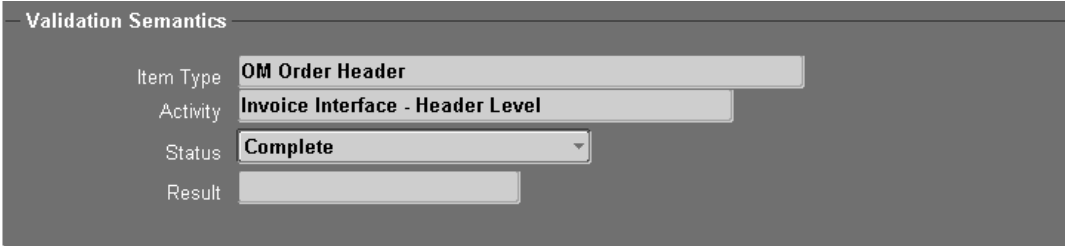
This form is also divided into several regions. The top region has only the Application field.

The Validation Templates region has one row for each validation template, and each row has several fields. The Entity field will be one of the six OM entities. You will be checking this entity to determine if the condition is true. Give the validation template a name in the Validation Name field, a short name in the Short Name field and a description in the Description field. These are user defined. The short name

cannot be changed once the validation template has saved. The Seeded? Box is checked if the validation template is seeded by Oracle development. Seeded validation templates cannot be modified by the user.

The Validation Type field is a group of radio buttons with the possible values of WF, API and COL. The available fields in the Validation Semantics region of the form change depending on the selection that you make from this group. If you select WF, then the validation is based on the status of a workflow activity. An example of this is the seeded validation template Booked that is based on the status of the Booked activity of the order header workflow. If you select API, then PL/SQL code is called to evaluate whether the validation template is true. There are several seeded validation templates that call APIs including the Lines Exist template that determines if lines have been entered for an order. If you select COL then validation is based on the value of a field. For example, the condition will be true if the field order type has a value of Standard.

**Figure E-4** Validation Semantics for Validation Type WF



| Validation Semantics |                                  |
|----------------------|----------------------------------|
| Item Type            | OM Order Header                  |
| Activity             | Invoice Interface - Header Level |
| Status               | Complete                         |
| Result               |                                  |

[Figure E-4](#) depicts the Validation Semantics for Validation Type WF. The Item Type field is for display purposes only and shows the workflow item type associated with the entity. The Activity field is the name of the workflow activity for which you are checking the status. The Status and Result fields are the attributes of the workflow activity that will make the validation template return a true value. In [Figure E-4](#), the validation template would be true if the order header had an activity called Invoice Interface - Header Level which had completed with any result.



**Figure E-5 Validation Semantics for Validation Type API**

The screenshot shows a dialog box titled "Validation Semantics". It has two input fields: "PL/SQL Pkg" with the value "OE\_TRANSACTION\_TYPES\_PKG" and "Procedure" with the value "VAL\_ORD\_CHANGE".

**Figure E-5.** Depicts the Validation Semantics for Validation type API. Enter the validation semantics for validating the API for return value TRUE. (This may be used for complex validations.)

*Database Package* - Enter name of the data package

*Procedure Name* - Enter the name of the API

All validation APIs should be written with a framework defined signature format

PROCEDURE YourValidationAPI

```
(p_application_id in number,
p_entity_short_name in varchar2,
p_validation_entity_short_name in varchar2,
p_validation_tmplt_short_name in varchar2,
p_record_set_short_name in varchar2,
p_scope in varchar2,
x_result out number);
```

x\_result returned should be 1 if the condition is valid and should be 0 if condition is NOT valid.

The procedure should push all error messages (if any) into OE\_MSG\_PUB Stack. It can reference the record being constrained by referring to the global record variable in the entity's constraint API package. The naming conventions are as follows.

Entity's constraint API package Name :

ApplicationShortName\_Entity\_Short\_Name\_PCFWK

(e.g. OE\_HEADER\_PCFWK)

global record variable name: g\_record

(e.g. for the entity HEADER, the variable name will be OE\_HEADER\_PCFWK.g\_record )

**Figure E-6 Validation Semantics for Validation Type COL**

| Column               | Validation Op | Value String |
|----------------------|---------------|--------------|
| Source Document Type | = (Equal To)  | Internal     |
|                      |               |              |
|                      |               |              |

**Figure E-6.** Depicts the Validation Semantics for Validation Type COL. Enter the Column Name in the Column field. The Validation operation can be one of the following:

= (Equal To)

<> (Not Equal To)

Is Null

Is Not Null

The Value String can be any value. An example of validation semantics for a column is:

Column - Order Type

Validation - = (Equal To)

Value String - Standard

This would return TRUE for all orders with type Standard. Note that it wouldn't work if you typed a value string of STANDARD (it must match exactly).

## Defining Record Sets

The form for creating record sets is depicted in [Figure E-7](#). This form is also divided into several regions.

Figure E-7 Record Sets

The screenshot shows the 'Record Sets' dialog box for the 'Oracle Order Management' application. It contains a table of record sets and a section for matched columns.

| Entity              | Seeded?                             | Record Set    | Short Name | Description                       | Based On Primary Key?               |
|---------------------|-------------------------------------|---------------|------------|-----------------------------------|-------------------------------------|
| Order Line          | <input checked="" type="checkbox"/> | Configuration | CONFIG     | Line Configuration                | <input type="checkbox"/>            |
| Order Line          | <input checked="" type="checkbox"/> | Line          | LINE       | Order Line                        | <input checked="" type="checkbox"/> |
| Order Line          | <input checked="" type="checkbox"/> | Order         | ORDLINS    | All lines for one order           | <input type="checkbox"/>            |
| Order Line          | <input checked="" type="checkbox"/> | Ship Set      | SHIPSET    | Ship Set                          | <input type="checkbox"/>            |
| Order Price Adjustm | <input checked="" type="checkbox"/> | Order         | HDRADJS    | Price Adjustments for one order h | <input type="checkbox"/>            |

Matched Columns For Record Selection

| Column |
|--------|
| Header |
|        |
|        |
|        |
|        |

The top region has the name of the application, Oracle Order Management.

The Record Sets region has a row for each record set. The Entity field will be one of the six OM entities. Each record in the record set will be of this entity. For example you can make a record set of lines or orders. The Seeded? Box is checked if the record set is seeded by Oracle development. This flag is not modifiable by the user, and the seeded record sets cannot be modified by the user.

Give the record set a name in the Record Set field, a short name in the Short Name field and a description in the Description field. These are user defined. You cannot change the short name once the record set has been saved. Select the Primary Record Set? Box if this record set is selected using the primary key. There can be only one primary record set for a given entity.

At the bottom of the form is the Matched Columns for Record Selection region. Enter the name of the columns that match from the validated record so that multiple rows can be selected from the validated entity's table. For example,

matching the Header ID and Ship Set Number of the order lines entity will select all order lines in the same ship set.

## Concurrent Program

Creation of new validation templates or record sets, require the Create Validation Packages concurrent program to run. Run this program from the Tools option on the menu bar of either the Validation Templates or Record Sets form or from the navigation menu by selecting Setup -> Rules -> Generate Constraints Package.

## Report

A report, Processing Constraints Listing, lists defined Processing Constraints. It replaces the old OE Security Rules Listing. It has the following parameters:

**Entity** - The entity that is constrained.

**Attribute** - The attribute that is constrained. Enabled only if an entity is selected for the previous parameter.

**Operation** - The operation that is constrained. Enabled only if the attribute parameter is not selected.

**Validation Entity** - Only include constraints that have conditions based on this validation entity. Enabled only if the entity parameter is selected.

**Record Set** - Only include constraints that have conditions set up for this record set. Enabled only if the validation entity parameter is selected.

**Validation Template** - Only include constraints that have conditions using this validation template. Enabled only if the validation entity parameter is selected.

**Seeded** - If this field is left blank, both seeded and non-seeded constraint conditions are listed. If you select Yes only seeded conditions are listed. If you select No only non-seeded conditions are listed.

All of these parameters are optional. If none are specified, the report will include all values the report.

## Migration/Upgrade from Security Rules

Because of the magnitude of the changes to the fundamental architecture between Security Rules and Processing Constraints, the decision was made to not upgrade any user-defined Security Rules. Because of the inherent differences between Processing Constraints and Security Rules, the seeded processing constraints do not

mimic the seeded OE Security Rules. See the Functional Differences section of this document for more details. In release 11*i* the only processing constraints that are seeded are the ones which are required to ensure data integrity.

Companies that are implementing Order Management will need to spend more time evaluating their Processing Constraints setup than companies that implemented Order Entry. Companies that are upgrading from Order Entry to Order Management should include some time in their upgrade project plan for setting up the Processing Constraints.

## Examples

Let's see how you can use Processing Constraints to meet real business needs. Here are the setup steps and results for the five business scenarios mentioned at the beginning of this paper.

No one can change the customer purchase order at the line level; your company requires that one sales order can relate to only one customer purchase order.

Navigate to the processing constraints form. Find the constraints for the application Oracle Order Management and the entity Order Line. Add a new line in the constraints region with the following values -

| Operation | Attribute   | User Action |
|-----------|-------------|-------------|
| UPDATE    | Customer PO | Not Allowed |

Save the constraint. This is the simplest type of constraint to create. It applies to all responsibilities in all conditions. The user will receive a message when they try to change the purchase order number for a line.

No one can add a line to an order after any of the lines on the order have been invoice interfaced.

Navigate to the processing constraints form. Find the constraints for the application Oracle Order Management and the entity Order Line. Add a new line in the constraints region with the following values -

| Operation | Attribute | User Action |
|-----------|-----------|-------------|
| CREATE    | [Blank]   | Not Allowed |

In the Conditions region, enter a line with the following information

| Group #      | Scope | Validation Entity | Record Set | Validation Template |
|--------------|-------|-------------------|------------|---------------------|
| [Any Number] | Any   | Order Line        | Order      | Invoice Interfaced  |

For the user messages enter - A line on the order has been invoiced.

Save the constraint. This constraint has a condition, so it will only be activated if the condition is true. The condition will be true if any of the lines on the order have been invoice interfaced. This constraint is a good example of a using a record set. It applies to all responsibilities. The user will receive a message when they try to create a new line for an order with lines which have been invoice interfaced. The message will say The order line cannot be created because: A line on the order has been invoiced. Notice that the error message includes the user message that you entered for the condition.

A reason is required to cancel an order line after it has been booked.

Navigate to the processing constraints form. Find the constraints for the application Oracle Order Management and the entity Order Line. Add a new line in the constraints region with the following values -

| Operation | Attribute | User Action    |
|-----------|-----------|----------------|
| CANCEL    | [Blank]   | Require Reason |

In the Conditions region, enter a line with the following information

| Group #      | Scope | Validation Entity | Record Set | Validation Template |
|--------------|-------|-------------------|------------|---------------------|
| [Any Number] | Any   | Order Line        | Line       | Booked              |

For the user messages enter - The order has been booked.

Save the constraint. This constraint has a condition, so it will only be activated if the condition is true. The condition will be true if the order has been booked. It applies to all responsibilities. All users will be required to enter a reason when they cancel a line which has been booked.

Only the Customer Service Manager can change the discount percentage on an order line after the line has been shipped.

Navigate to the processing constraints form. Find the constraints for the application Oracle Order Management and the entity Line Price Adjustment. Add a new line in the constraints region with the following values -

| Operation | Attribute | User Action |
|-----------|-----------|-------------|
| UPDATE    | Percent   | Not Allowed |

In the Conditions region, enter a line with the following information

| Group #      | Scope | Validation Entity | Record Set | Validation Template |
|--------------|-------|-------------------|------------|---------------------|
| [Any Number] | Any   | Order Line        | Line       | Ship Confirm        |

For the user messages enter - This line has been shipped

Go to the Applicable to tab and select the Authorized Responsibilities radio button. Enter Customer Service Manager in the table below the radio buttons.

Save the constraint. This constraint has a condition, so it will only be activated if the condition is true. The condition will be true if this line has been shipped. It applies to all responsibilities except for the Customer Service Manager responsibility. (Note that this is not a seeded responsibility. This example assumes the responsibility was created using the System Administrator Define Responsibility functionality). Any user not logged in under the Customer Service Manager responsibility will receive a message when they try to change a discount percentage for a line which has been shipped. The message will say "The percent cannot be updated because: This line has been shipped."

Your company requires that all return orders, identified by order type = Return, are shipped to a central returns processing facility.

This example assumes that you have used the defaulting rules framework to create a rule that will default the warehouse to Wichita for all the lines on orders of type Return. For details on how to create a defaulting rule, see the white paper Using Defaulting Rules in Oracle Order Management.

To create the constraint, first create a new validation template for orders with an order type of Return. Navigate to the validation templates form. Find the validation templates for the application Oracle Order Management. Enter a new line for the in the validation templates region with the following information:

| Entity       | Template Name | Short Name | Description          | Validation Type |
|--------------|---------------|------------|----------------------|-----------------|
| Order Header | Return Order  | RETURN     | Order of type Return | COL             |

In the validation semantics region enter the following

| Column     | Validation Op | Value String |
|------------|---------------|--------------|
| Order Type | = (Equal To)  | Return       |

Now navigate to the constraints form to create a constraint using the new validation template. Find the constraints for the application Oracle Order Management and the entity Order Line. Add a new line in the constraints region with the following values -

| Operation | Attribute | User Action |
|-----------|-----------|-------------|
| UPDATE    | Warehouse | Not Allowed |

In the Conditions region, enter a line with the following information

| Group #      | Scope | Validation Entity | Record Set | Validation Template |
|--------------|-------|-------------------|------------|---------------------|
| [Any Number] | Any   | Order Header      | Order      | Return              |

For the user messages enter - All returns are processed in Wichita

Save the constraint. This constraint has a condition, so it will only be activated if the condition is true. The condition will be true if the order type is Return, because this is the way you created the validation template. (This assumes that your company has created a Transaction Type for an order with a name of Return). It applies to all responsibilities. Any user who tries to change the warehouse on an order line will receive a message which says The warehouse cannot be updated because: All returns are processed in Wichita.

## Conclusion

Oracle Order Management's use of the new Processing Constraints Framework provides powerful security capabilities, if you know how to use them. With correct



definition and use of Processing Constraints, you can tailor the Oracle Order Management to provide the amount of control that your company needs.



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## Using Transaction Types

Topics covered in this appendix include:

- [Overview](#) on page F-2
- [Introduction](#) on page F-2
- [Background](#) on page F-2
- [Functional Differences](#) on page F-2
- [Migration/Upgrade from Order Types](#) on page F-8
- [Example](#) on page F-8
- [Conclusion](#) on page F-12

## Overview

Release 11*i* of Oracle Order Management is fully integrated with the Oracle Workflow product. Workflow is a magical product which provides graphical tools that allow non-programmers to define flexible business flows to precisely model their business processes.

In order to capture the power of workflow in the workhorse module of Oracle Order Management the implementers must define Transaction Types.

## Introduction

This discusses the differences between the implementation of Transaction Types in Order Management and Order Types in previous releases of Order Entry. It describes the setup steps required to create a new transaction type, including creating the order transaction type, the line transaction type, associating the appropriate workflows and assigning the document sequence. Then it goes through a detailed example.

## Background

In Order Entry release 11 and prior Order Cycles controlled the processing steps for an order. Order Cycles have been replaced by Workflow in Order Management release 11*i*.

In Order Entry release 11 and prior Order Types were used to determine an orders Order Cycle. They were also used as a source for defaulting information on orders and to establish certain processing controls, including invoicing controls. Order Types have been replaced by Transaction Types in Order Management Release 11*i*. Both orders and lines have transaction types. The transaction types determine what workflow the order and line will have and are still used as a source for defaulting and to establish processing controls.

## Functional Differences

As previously mentioned one of the primary differences between order types and transaction types is that transaction types work with workflow as opposed to order cycles. There are transaction types associated with both orders and order lines. Order numbers are now controlled by assigning an AOL document sequence to your order type. Creating document sequences and assigning them to order types

are two separate steps in Order Management, and neither can be done directly from the transaction types form.

## Key Enhancements

Some of the great new enhancements of Transaction Types/Workflow are:

- Since each line has its own workflow, each line on an order may follow a different flow. This allows you to have both order and return lines on the same order.
- You can create new workflow activities from custom PL/SQL code. This makes it very easy to extend OM.
- A workflow process can have subprocesses.
- A workflow process can have an unlimited number of activities. Order Cycles could have no more than 30 actions.
- There is no limit to the number of custom workflow activities that can be defined in Order Management.
- You can view the status of the workflow on an order or order line in either tabular or graphical format. In graphical format you can see not only the activities that the workflow has completed but also the activities that still require completion.

## Terminology

**Transaction type** is the generic term that refers to both Order Transaction Types and Line Transaction Types in Order Management. This is not to be confused with the Receivables Transaction Type, which is a completely different object.

The **transaction type code** may have values of Order or Line and determines whether the transaction type is an order transaction type or a line transaction type. In this document order type is used synonymously with order transaction type and line type is used synonymously with line transaction type.

A **document sequence** is a range of numbers that can be used for an order type and is defined by a numbering method (automatic, manual or gapless) and the beginning order number.

A **document category** is a specific type of document such as a sales order or a purchase order. These are used in many Oracle applications for key entities. In Order Management when you create an order transaction type the system

automatically creates a document category with the same name. This is used to assign the numbering sequence to the order type.

### **Defining Line Transaction Types**

The Define Transaction Types form is used to define both order and line types. Define your line types first. You should define line types for both order lines and return lines. To access the form from the order management navigation menu choose Setup -> Transaction Types -> Define. Enter a name for the line type in the Transaction Type field. Note that this name must be unique; you cannot create an order type and a line type with the same name. Enter LINE for the Transaction Type Code. Enter either Order or Return for the Order Category depending on whether your new line type is for sales lines or return lines. Many of the other fields on this form as well as the assign line flows button are not applicable to line types so when you enter the transaction type code they will become inaccessible. The inaccessible fields include Order Workflow, Default Return Line Type, Default Order Line Type, Agreement Required, Purchase Order Required, Credit Check Rule for Ordering and Credit Check Rule for Shipping.

The Agreement Type field is used for validation on the order line. If you enter an agreement type here, you can only use agreements of this type on sales order lines. If the field is blank you may enter agreements of any type. If you want to use the line type for a defaulting source you may enter a Price List on the Main tab. The Enforce List Price flag will determine whether a user can apply a manual discount to the line at the time of order entry.

On the Shipping tab the autoschedule flag is inaccessible because it only applies to order types. The inspection required flag determines whether inspection is required when return lines are received. The Scheduling level controls the way scheduling works at the time of order entry for lines of this type. The rest of the fields can be used for defaulting.

The Finance tab fields contain information which affects the interfaces with the financial applications. The Invoicing Rule and Accounting Rule fields are used as defaulting sources for the sales order, and this information on the sales order is passed to Autoinvoicing. For the fields Invoice Source, Non-Delivery Invoice Source, and Receivables Transaction Type these values are required for interfacing to Receivables but they are not on the sales order header or line. When the invoice interface activity in the workflow is executed the system will look for a value in the following order: line transaction type, order transaction type, profile option. If no value is found the invoice interface activity will fail. The Cost of Goods Sold Account can be used by the Account Generator function of the inventory interface when a line is ship confirmed.

## Defining Order Transaction Types

Next, define your order type. To access the form from the order management navigation menu choose Setup -> Transaction Types -> Define. Enter a name for the order type in the Transaction Type field. Again, this name must be unique; you cannot create an order type and a line type with the same name. Enter ORDER for the Transaction Type Code. Enter the value Mixed, Order or Return for the Order Category. If you enter Order the order type can only have lines with transaction type of ORDER. If you enter Return the order type can only have lines with transaction type of RETURN. If you enter MIXED the order can have lines with either transaction type. We will skip the Order Workflow field, the Assign Workflows button, the Default Return Line Type field and the Default Order Line Type field until the next section.

The Agreement Type field is used for validation on the order. If you enter an agreement type here, you can only use agreements of this agreement type on sales orders of this order type. If the field is blank you may enter agreements of any type. The Agreement Required and Purchase Order Required are used for validation. If the box is checked then these fields will be required on all orders of this type when the order is booked. If you want to use the order type as a defaulting source for Price List on the order you may enter a Price List on the Main tab. The Enforce List Price flag will determine whether a user can apply a manual discount to the order at the time of order entry. The Credit Check rules for ordering and shipping determine whether credit check will occur for this order type. If the fields are blank, no credit checking will occur for orders of this type.

On the Shipping tab the autoschedule flag determines whether scheduling will try to autoschedule the lines on orders of this type. The inspection required flag is not accessible (it only applies to lines). The rest of the fields can be used for defaulting.

The Finance tab fields are used for information which affects the interfaces with the financial applications. The Currency and Currency Conversion Type can be used as defaulting sources for the order header. The Invoicing Rule and Accounting Rule fields are used as defaulting sources for the sales order line, and this information on the sales order is passed to Autoinvoicing. For the fields Invoice Source, Non-Delivery Invoice Source, and Receivables Transaction Type these values are required for interfacing to Receivables but they are not on the sales order header or line. When the invoice interface activity in the workflow is executed the system will look for a value in the following order: line transaction type, order transaction type, profile option. If no value is found the invoice interface activity will fail. The Cost of Goods Sold Account is used by the inventory interface when a line is ship confirmed.

## Assigning Workflows to Transaction Types

This is the step that attaches the magic of workflow to the practical reality of order management.

The first thing you need to do is select appropriate workflows for your order type and line types. Several header and line workflows are seeded. You can perform all standard OM processing including orders, returns, drop ship orders, orders for configured items and orders for assemble to order items using only seeded workflows. You may also define your own workflows if you need additional steps (such as notifications) or additional processes. Not all order workflows can be used with all line workflows. Some workflow steps between an order and line are dependent on each other. For example, the order flow with header level invoicing has a step which waits for a continue activity in the line flow with header level invoicing to complete. If you do not use order and line flows which are designed to work together you can have orders or lines that either complete activities when you are not ready for them to complete or which will never complete.

The order type alone determines the order workflow. In the define transaction types form for the order type, enter the order workflow that you have selected. This is the name of the process in the workflow builder. Save the order type. (If you don't save, you won't be able to select the order type in the next step).

The combination of the order type, the line type and the item type determine the workflow that a line will have. For this reason, you define the line workflows from the order type workflow definition form. Press the Assign Line Flows button. Enter the order type. For each combination of line type and item type that you want to use with this order enter a line in the Assign Workflow processes form. The line types are the ones that you defined. The item types are based on the definition of the items in the inventory module and include values such as standard item, kit, and PTO model. If you leave the item type blank the workflow process that you define will be used for all item types. (Exception: If you use the configure to order process, you must specifically assign a workflow to the configured item type; the configured item will not use a workflow where the item type field is blank.) The process name is the name of the workflow process as defined in the workflow builder. You must enter a start date for each line flow definition. Note: Once documents have been created using an order type you cannot change the associated workflow assignments. Therefore if you need to change the workflows assigned to a transaction or disable a transaction you must enter an end date for the existing assignment, and if appropriate enter a new assignment for the for the new workflow.



Finally you may enter a Default Order Line Type and a Default Return Line Type on the order transaction form. These values can be used as sources for defaulting the line type to orders of this order type.

### **Creating a Document Sequence**

OM uses the AOL document sequence functionality for numbering orders. You must define at least one document sequence to be used for your order types (unless you are upgrading from a previous release of Order Entry in which case your document sequences will be upgraded), and you may use it for all your order types. For instance, you could define an automatic sequence beginning with 1 and assign it to all your order types. Then each new order that you enter will receive the next number in the sequence. Alternatively, you may define multiple document sequences and use different ones with different order types. One sequence could be used with your domestic orders which begins with 1 and another sequence could be used for your international orders which begins with 10000. The number ranges would be separate and order types easily identifiable.

To create a document sequence from OM navigate to Setup -> Documents -> Define. Give the document sequence a name. Enter Oracle Order Management for the application. Enter an effective from date, select the numbering type (automatic, manual or gapless) and assign an initial value.

### **Assigning a Document Sequence to the Order Transaction Type**

To assign your order type to a document sequence navigate to Setup -> Documents -> Assign. On the Document tab enter Oracle Order Management in the Application field and the order type in the Category field. Select the set of books. Enter Manual in the method field if the number sequence is manual, otherwise enter Null. On the assignment tab enter the start date and the sequence that you defined for your order type in the previous step. Note that you cannot change the assignment for an order type and set of books. To change the assignment you must assign an end date to the existing assignment and create a new one for the new assignment. You cannot have more than one assignment for the same date range, document type and set of books.

## **Reports**

There is a report available which will print the setup information for your transaction types. It is called the Transaction Type Listing Report and you can print for one transaction type by name, a range of transaction types by name, only order

transaction types, only line transaction types or any combination of these parameters.

## Migration/Upgrade from Order Types

If you are a customer upgrading from a previous release of Order Entry to Order Management your existing order types will be upgraded to new order and line transaction types. Your existing order cycles will be upgraded to new order and line workflow processes. Do not use these upgraded workflows for your new orders. They include many activities which check for status and are necessary for upgraded orders but are very inefficient for new orders. As part of the upgrade you should set up the flows associated with your upgraded transaction types as either seeded or custom flows which were created for new OM orders.

Also note that your existing order number sources are upgraded to document sequences. Document sequence categories are created for your upgraded order types, and these are assigned to the correct sequences, so you shouldn't need to do anything to these.

## Example

Now let's create a new order type with associated line types, assign the workflow processes, and create and assign a document sequence. Then we'll be ready to enter an order.

Here's how you'd do this:

**First, create a line type for your order lines.** Navigate to Setup -> Transaction Types -> Define. Create a new transaction type with the following information. (Any fields not in this table should be left blank).

| Tab      | Field                  | Value                        |
|----------|------------------------|------------------------------|
| Main     |                        |                              |
|          | Transaction Type       | Standard                     |
|          | Description            | Standard Order Line          |
|          | Effective Dates - From | [Today's Date]               |
|          | Transaction Type Code  | LINE                         |
|          | Order Category         | Order                        |
| Shipping | Scheduling             | Allow all scheduling actions |

| Tab     | Field                                       | Value   |
|---------|---|---------|
| Finance | Credit Method for Invoices with Split Rules | Prorate |
|         | Credit Method for Split Term Invoices       | Prorate |

**Next, create a line type for your return lines.** On the same form create a new transaction type with the following information. (Any fields not in this table should be left blank).

| Tab      | Field                                       | Value                          |
|----------|---|--------------------------------|
| Main     |   |                                |
|          | Transaction Type                            | Return with Receipt and Credit |
|          | Description                                 | Standard Return Line           |
|          | Effective Dates - From                      | [Today's Date]                 |
|          | Transaction Type Code                       | LINE                           |
|          | Order Category                              | Return                         |
| Shipping | Scheduling                                  | Allow all scheduling actions   |
| Finance  | Credit Method for Invoices with Split Rules | Prorate                        |
|          | Credit Method for Split Term Invoices       | Prorate                        |

**The last transaction type that you need to create is the order transaction type.** On the same form create a new transaction type with the following information. (Any fields not in this table should be left blank).

| Tab  | Field                  | Value   |
|------|------------------------|---|
| Main |                        |   |
|      | Transaction Type       | Mixed   |
|      | Description            | Standard Order with both Order and Return Lines |
|      | Effective Dates - From | [Today's Date]                                  |
|      | Transaction Type Code  | ORDER   |

| Tab      | Field                                       | Value                        |
|----------|---|------------------------------|
|          | Order Category                              | Mixed                        |
| Shipping | Scheduling                                  | Allow all scheduling actions |
| Finance  | Invoicing Rule                              | ADVANCE INVOICE              |
|          | Accounting Rule                             | IMMEDIATE                    |
|          | Credit Method for Invoices with Split Rules | Prorate                      |
|          | Credit Method for Split Term Invoices       | Prorate                      |
|          | Receivables Transaction Type                | Invoice                      |

**Now assign your workflows to your transaction types.** You should still be on the define transaction type form for the Mixed order type. Add the following information to this form:

| Tab  | Field                    | Value                          |
|------|--------------------------|--------------------------------|
| Main |                          |                                |
|      | Order Workflow           | Order Flow - Generic           |
|      | Default Return Line Type | Return with Receipt and Credit |
|      | Default Order Line type  | Standard                       |

Save your order transaction type so that you will be able to use it in the next step.

Click **Assign Line Flows** and enter the following information on the **Line Workflow Assignments** form:

|        | Field        | Value               |
|--------|--------------|---------------------|
|        | Order Type   | Mixed               |
| Line 1 |              |                     |
|        | Line Type    | Standard            |
|        | Item Type    | [Blank]             |
|        | Process Name | Line Flow - Generic |
|        | Start Date   | [Today's Date]      |

| Field        | Value                                      |
|--------------|--|
| Line 2       |  |
| Line Type    | Return with Receipt and Credit             |
| Item Type    | [Blank]                                    |
| Process Name | Line Flow - Return for Credit with Receipt |
| Start Date   | [Today's Date]                             |

**Create a document sequence for Orders.** Navigate to Setup -> Documents -> Define. Enter the following information:

| Field               | Value                   |
|---------------------|-------------------------|
| Name                | Mixed Orders Sequence   |
| Application         | Oracle Order Management |
| Effective From Date | [Today's Date]          |
| Type                | Automatic               |
| Initial Value       | 1                       |
| Start Date          | [Today's Date]          |

**Finally, assign the order type to the document sequence.** Navigate to Setup -> Documents -> Assign. Enter the following information:

| Tab        | Field        | Value                                      |
|------------|--------------|--|
| Document   |              |  |
|            | Application  | Oracle Order Management                    |
|            | Category     | Mixed [This is the name of the order type] |
|            | Set of Books | [The set of books for the order type]      |
| Assignment |              |  |
|            | Start Date   | [Today's Date]                             |

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Sequence

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Mixed Orders Sequence

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You should now be able to enter an order of type Mixed and process both order and return lines through invoicing.

## Conclusion

This should give you the information that you need to begin setting up transaction types. For additional information on transaction types, using workflow in Order Management, defaulting, etc. see the Oracle Order Management User's Guide. For additional detailed information on Workflow see the Oracle Workflow Guide.

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## Customer Agreements

Topics covered in this appendix include:

- [Overview](#) on page G-2
- [Introduction](#) on page G-2
- [Business Needs](#) on page G-2
- [Major Features](#) on page G-3
- [Set up](#) on page G-5
- [Entering Orders Using Agreements](#) on page G-7
- [Reports](#) on page G-7
- [Using Agreements with Commitments](#) on page G-8
- [Example](#) on page G-8
- [Migration/Upgrade](#) on page G-10
- [Conclusion](#) on page G-10

## Overview

Customer Agreements are Order Management/Advanced Pricing entities that allow you to record special pricing, discounts and other terms that you have set up with your customers. In Release 11 and earlier, the Oracle Order Entry product contained a feature called Agreements whose main use was to serve as a defaulting source for various order attributes. In Release 11*i* Order Management and Advanced Pricing have significantly enhanced the scope of customer agreements. This paper shows you all the features of the new improved Customer Agreements, and how they can help you manage your relationships with your customers.

## Introduction

Users familiar with Order Entry's Agreements will be pleasantly surprised by the wealth of new features contained in the new Customer Agreements. All the functionality that was present in Release 11 has been retained, but much more has been added. The R11*i* Order Management User's Guide gives a good explanation of the setup forms and fields, but doesn't completely explain how you would use agreements within the Order Management environment .

This paper attempts to explain all the key functional points regarding Agreements included in Order Management and Advanced Pricing, and offer some insight into putting them to use.

## Business Needs

Oracle Order Management and Advanced Pricing provide you with the features you need to meet and exceed your requirements around customer agreements. With release 11*i*, you can:

- Record customer agreements.
- Classify agreements into different types for easy reporting, and control agreement availability by order type.
- Assign various terms to the agreements, including freight terms, freight carrier, payment terms, salespersons, invoicing rules and accounting rules.
- Use agreements as a source for defaulting information on sales orders.
- Make revisions to the original terms of the agreement, and maintain those changes and their reasons using separate revision numbers.



- Attach an already existing standard or agreement price list to the agreement or define new prices that can only be used via this or other agreements. Define the items in an agreement price list using customer part numbers as well as inventory item numbers. Attach optional price breaks by quantity.
- Set effectivity dates for agreement terms.
- Assign agreements to customer commitments.

## Major Features

To satisfy the above business needs, Oracle Order Management and Advanced Pricing have delivered Customer Agreement functionality with the following set of features:

### Agreement Types and Agreements

You can create Agreements and classify them by Agreement Types.

Agreement Types can be used to limit which agreements can be entered on particular order types.

Agreements can be defined to be generic agreements, which means they can be used by any customer, or customer family agreements, which means they can be used by the customer you enter on the Agreement form and all of their related customers.

Agreements and Agreement Types are set up using forms from Oracle Advanced Pricing. These forms are generally accessible via the Order Management menus. See the section on Set Up below for more details about how to set up Agreements and Agreement Types.

### Price Lists and Agreements

There are two flavors of Agreements, differentiated by the type of Price List associated with them. They are Standard Agreements and Pricing Agreements. You indicate which type of Agreement you are creating by choosing a Price List Type on the Pricing tab of the Pricing Agreements setup form. Once you have saved an agreement, you cannot change it from one type to another, although you can change the price list associated with it.

**Standard Agreements** are agreements with basically the same functionality as was in R11 Order Entry. These types of Agreements are associated with standard price lists, and those price list lines are viewed and maintained using the regular Price

List Line setup User Interface. You would use Standard Agreements when you want the agreement to bring in special terms and conditions, but use prices that can be available to other orders.

**Pricing Agreements** are agreements that are associated with Agreement Price Lists. Agreement Price Lists can only be entered, viewed and maintained using the Pricing Agreements form. Agreement Price Lists can be shared among Pricing Agreements, but cannot be used by orders not associated with a Pricing Agreement. Oracle Advance Pricing automatically creates a qualifier for the Agreement Price List of the Agreement Number, so that it cannot be used by non-agreement order lines. You would use Pricing Agreements when you had special pricing that you wanted to be used only with an agreement, and not be available for other types of orders. You can enter Agreement Price List lines by specifying a customer item number, as well as an inventory item identifier, if you wish to price this way. If you make a change to prices on an Agreement Price List (which you have to do using the Agreement form), then those changes affect all Pricing Agreements that use that Agreement Price List (since the Agreement Price List can be shared among multiple Pricing Agreements).

### Track Revisions to Agreements

You now have the ability to create different revisions (versions) of Agreements. There is a revision number on the Agreement header, and when a significant change occurs to an agreement, you can end-date the previous revision and create a new revision. This is all controlled manually – you decide when a change warrants a new revision. You can optionally record a reason for the revision when you create it. Revision Reason is a Pricing Lookup code. There can only be one revision of an Agreement active at any one time. For Pricing Agreements (which are the agreements that use Agreement Price Lists), you can also create revision numbers and enter revision reasons at the price list line level.

### Use Agreements on Orders

When you enter or import an order for a customer, you can reference an agreement at the header level or at the line level. An agreement at the header only serves as a defaulting source for the agreement at the line level. You can reference different agreements for different lines on the order, if you need to. You can choose generic agreements or agreements that have been set up for the customer on the order or its related customers. The agreement at the line can serve as a defaulting source for various other agreement data, such as freight terms, payment terms, invoicing and accounting rules, etc. depending on how you have set up your defaulting rules.

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## Set up

### Define Agreement Types

You define Agreement Types by using the Lookups menu item under the Pricing sub-menu. Once the Oracle Pricing Lookups form opens, find the QP\_Agreement\_Types Lookup Type using the flashlight icon, and then enter whatever Agreement Types you want to define.

### Define Agreements

You define Agreements by choosing the Pricing Agreements menu item under the Pricing sub-menu. The Oracle Order Management User's Guide gives thorough information about the form and all the fields on the form, so that information will not be duplicated here. Information about which fields are optional, and what those fields do, is not to be found in the User's Guide, so it is presented here.

**Customer** is an optional field on the Agreement. If you enter a customer, then this agreement is valid only for that customer and its related customers. If you do not enter a customer, then any customer can use the agreement. If you don't enter a customer, then fields such as Contact, Invoice-to location and Invoice Contact cannot be entered, and you cannot enter agreement lines using a customer item number.

Fields such as Purchase Order, Salesperson, Freight Carrier, Freight Terms, Invoicing Rule and Accounting Rule are not required, but if entered, can serve as defaulting sources for the order lines that use this agreement.

**Agreement Type** is not required, but it should be used if you want to restrict order types to certain agreement types, or if you want to do reporting by agreement type. See below discussion on Order Transaction Types.

**Price List Type** is how you say whether you are creating a Standard Agreement or a Pricing Agreement. Price List Type is required and cannot be changed once the agreement header has been saved.

**Price List** is where you pick an existing price list to be referenced by this agreement, or, if you are creating a Pricing Agreement, you can create a new price list here and give it a name. The LOV for Price List is restricted by the Price List Type you entered. This is where you can create a new Agreement Price List.

**Currency** is a required field on the agreement header, and there can only be one currency per agreement. If you have agreements that can be used in other currencies, you need to create different agreements. The currency defaults from the

price list you select, or you set it here if you are creating a new Agreement Price List.

**Accounting and Invoicing Rule Override Flags** – check either or both of these checkboxes if you want the Invoicing Activity to use the accounting and/or invoicing rule from the order line (which may have been changed by defaulting or by the user). If the boxes are unchecked, the Invoicing Activity will get the rule or rules from the Agreement, even if they have been changed on the order line.

## Define Order Transaction Types

When you define your order types in Order Management using the Transaction Types form, there are two Agreement-related controls you can choose.

There is a check box called Agreement Required – as you might suspect, if you check this box, an agreement is required to be entered on orders of this order type. The presence of an agreement at the Order Header is validated at the time of Booking.

There is also a place on the Transaction Types form in the Document block of the Main tab where you can select an Agreement Type. If you select an Agreement Type here, users will be limited to entering agreements of this type on orders of this order type. This is handy if you need to segment your orders and agreements by line of business, and you want users of one order type to only have visibility to a certain subset of agreements. If you do not need to restrict agreement access during order entry, leave this field blank when you define the order type. Then Order Management will let you choose from any agreement type when entering orders for this order type.

## Defaulting Rules and Processing Constraints

Order Management comes seeded with defaulting rules that default Agreement at the order line from Agreement at the order header. In addition, various line level attributes such as accounting rule, invoicing rule, price list, freight and payment terms have seeded defaulting rules whose first source sequence is the corresponding attribute on the Agreement. This means that typically, without your having to do anything special, non-null agreement attributes will default into order lines that use those agreements. In addition to this, there is a defaulting dependency defined between these fields and the agreement, which means that if you change the agreement at the line, all those dependent fields will be cleared and re-defaulted. See the Oracle White Paper on 'Using Defaulting Rules in Order Management' for more information about how to create Defaulting Rules and how dependencies work.

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If you use agreements, and you want to prevent a user from overriding any of the terms or the price list that came from the agreement, then you'll want to set up some Processing Constraints that prevent users from modifying those attributes. For example, you might set up an agreement with special payment terms. You could define a Validation Template for Processing Constraints that says something like agreement exists on line, and then define a constraint that says a user cannot change the payment terms on the line if the condition agreement exists is true. Be sure to allow the system to make changes, in case the agreement is changed so that defaulting can re-default. See the Oracle White Paper on 'Using Processing Constraints in Order Management' for more information about how to create Processing Constraints and Validation Templates.

## Entering Orders Using Agreements

### Sales Order UI

Note that in the Sales Order User Interface, agreement is a hidden field on the order header default folder for the other tab. If you intend to use agreements heavily, you might want to show this field using folder tools. Agreement at the line level is a visible field in the default lines folder, pricing tab.

### Sales Order Entry

Entering orders against your agreements is easy and straightforward. Enable the Agreement attribute at the Order Header, if you intend to use the same agreement for all order lines. Then use the LOV on this column to select the agreement. Order Management will list in the LOV all generic agreements and the customer family agreements that are defined for the customer you've entered on the Order Header. The Defaulting Rules that have been seeded will carry the agreement name down to each line, and will also copy agreement terms to the corresponding line attributes.

## Reports

As of this writing, there is no Advanced Pricing or Order Management report specifically for Agreements or Agreement Activity.

Several Order Management reports print the agreement if it is present on an order. These reports include the Sales Order Acknowledgment, the Order Discount Summary, the Comprehensive Order Detail Report and the Salesperson Order Summary Report.

The Order Discount Summary and the Salesperson Order Summary Report allow you to select orders to print based on the Agreement on the Header.

## Using Agreements with Commitments

Commitments are Receivables transactions that record prepayments for a customer. When you create a commitment in Receivables, you can reference an Agreement. You would do this if, for example, the prepayment was only for certain items for which you have a firm pricing agreement with the customer. There is a column on the order line to reference a commitment when you want to indicate that a line is to be paid by drawing down the commitment. Commitment is a hidden field in the pricing tab of the line default folder of the Sales Order form.

When you enter an order in Order Management, if there is an agreement on the line, then the LOV for the Commitment field will be restricted to those commitments that reference that agreement and that have a balance greater than zero. If the line does not reference an agreement, then the Commitment LOV will show all commitments for this customer and its related customers, regardless of whether the commitment reference an agreement.

Both the agreement and the commitment are passed to Receivables during Invoice Interface.

## Example

Let's see how you can use Agreements in real life. Let's look at an example of using a Standard Agreement (R11 type) and then one using a Pricing Agreement.

Here's the first business requirement:

You have millions of lines in your corporate price list, and you use that price list for all your customers. You enter into an Agreement with one customer, Customer A, to give them a particular discount and special payment terms and freight terms when they order from you during a certain period of time and ask for a particular agreement code.

Here's how you would do this:

1. Create an agreement (Agreement A) and specify Customer A as the Customer on the agreement header. Choose an agreement type if you want to report by agreement type. Enter effectivity dates for the agreement, which will limit the time when the agreement can be used. Go to the Pricing tab and choose Standard Price List for the Price List Type, and then choose Corporate as the Price List to use. Select the freight terms you want to give with this agreement.

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On the Payment tab, enter the Payment Terms you want to give. Leave all other fields null.

2. Create a pricing modifier for the discount that you want to give with this agreement. Set it up to apply automatically. Create a qualifier of Agreement A for this modifier.
3. Modify the default folder for the Sales Order form, header other tab to show the Agreement field.
4. Enter orders for this Customer, and select Agreement A as the agreement to apply for orders when the customer asks for that agreement code. The seeded defaulting rules will cause the freight terms and payment terms from Agreement A to default to the order. As you enter lines, the discount created in step 2 will be automatically applied to the prices.

## A Second Example:

You enter into an Agreement with one customer, Customer B, to give them a particular pricing on a small group of items, as well as special payment terms and freight terms when they order from you during a certain period of time and ask for a particular agreement code. These prices are not available to other customers.

Here's how you could do this:

1. Create an agreement (Agreement B) and specify Customer B as the Customer on the agreement header. Choose an agreement type if you want to report by agreement type. Enter effectivity dates for the agreement, which will limit the time when the agreement can be used. Go to the Pricing tab and choose Agreement Price List for the Price List Type, and then type in a new price list name as the Price List to use. Select the freight terms you want to give with this agreement. On the Payment tab, enter the Payment Terms you want to give. Leave all other header fields null.
2. Go to the lower section of the Agreement form and enter price list lines for the items you are pricing using this agreement. You can enter price breaks for the items, if that is part of the pricing you want to give for this agreement.
3. Modify the default folder for the Sales Order form, header other tab to show the Agreement field.
4. Enter orders for this Customer, and select Agreement B as the agreement to apply for orders when the customer asks for that agreement code. The seeded defaulting rules will cause the freight terms and payment terms as well as the new agreement price list from Agreement B to default to the order. As you

enter lines, the pricing created in step 2 will get automatically applied to the lines.

## Migration/Upgrade

Agreements from R11 and earlier are being upgraded to Standard Agreements, as defined above.

## Conclusion

Oracle Order Management and Advanced Pricing give you powerful new features to enable you to manage the Pricing Agreements you set up with your customers. You can continue to use Agreements as they existed in R11 by defining Standard Agreements, or you can take advantage of a tighter control over items and pricing by using Pricing Agreement functionality.



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# Freight and Special Charges

## Overview

Oracle Order Management release 11i provides customers with extensive ability to assess freight and other charges on orders. Charges can be associated with the order as a whole, or can be assessed on specific lines. Charges can be set up so that they are automatically applied as orders are entered based on business rules you set up, or charges can be applied manually. These charges can be viewed and modified from the Sales Order form by users with appropriate security. Costs that are associated with shipment of goods can be captured during the shipping process and can be passed through to orders as charges, if desired.

Previous versions of Oracle Order Entry had extremely limited functionality in the area of freight and special charges. Oracle Order Management now has powerful and flexible features that should be capable of supporting nearly every business' requirements for assessing these charges. The trade-off is in complexity of setup.

This chapter will discuss the capabilities of the new freight and special charge model in Order Management, and will offer tips and examples on how to set up the charges to perform common charge scenarios. In particular, the setup of the automatic conversion of costs to charges is detailed.

## Introduction

The process of applying charges and capturing freight costs is now divided between the Order Management and Shipping Execution modules. Order Management applies Freight or other Charges to the customer invoice whereas Shipping captures all Freight Costs incurred on a shipment of goods

Freight and Special Charges are defined as the amount applied to the customer invoice for movement of a shipment to a destination or for other miscellaneous

reasons. Freight and Special Charges may be assessed for the order header or order line. The user has the ability to apply the charges to the order manually, via order import, through the Process Order open API or automatically based on the charges setup. At the time of order entry, some of the freight and special charges that will be applied on the order may be known. Other charges can be applied later in the order process, depending on user setup and business practices. Freight and Special Charge Types that are seeded include freight, handling, insurance, export fees and miscellaneous charges. All freight and special charges are passed to Receivables to be invoiced.

Freight Costs are actual expenses incurred by the shipper while transporting a shipment. The Freight Cost Types that are seeded include freight cost, handling, insurance, administrative fees and export duty. Shipping Execution allows users to input costs incurred on the shipment of goods using the Shipping Transaction Form or through the Shipping Open Interface. Once the ship confirmation process completes, any costs input are transferred to Order Management for storing on the order, and they can be converted to charges based on rules the user specifies. Freight costs captured at shipping are not invoiced to the customer.

Freight charges can be automatically derived from the freight cost. The freight charge represents the amount passed on to the customer receiving the shipment. The freight charge can be equivalent to the freight cost or a greater amount, i.e. freight cost plus a markup. Other ways commonly used to assess freight charges are based on predetermined fixed amount for each order or for each item or tiered amounts based on total order amount, ship method, priority, freight terms and a host of other variables.

## Background

Companies assess charges, both for freight and for handling and other purposes, in many and varied ways. Policies for assessing charges can vary within the same company based on customer, size of order, destination, weight, and numerous other factors. Whereas some companies pass through actual shipping costs to their customers, other companies use 'shipping and handling charges' as an opportunity to increase revenues. In most cases, companies would like these policies to be implemented by the software without requiring manual intervention by an order taker or clerk. Especially in an eBusiness environment, where orders are entered in a self-service mode through iStore or other web front-ends, the user cannot be expected to input their own freight and special charges. The goal is to have orders processed in as hands-off a process as possible.

In order to provide maximum flexibility for calculating and applying charges, the Order Management design team decided to make use of the rich functionality already available within the Advanced Pricing product to implement the Freight and Special Charges feature. We therefore are using Pricing Modifiers to model Charges, and Pricing Qualifiers to model the rules for applying those Charges. And we make use of a Pricing Formula to model the passing through of Freight Costs to Charges. All of this can be accomplished with the Basic Pricing part of Advanced Pricing that comes with Order Management; it is not necessary to separately license Advanced Pricing to implement Freight and Special Charges features. As a result, to use Freight and Special Charges in Order Management, it is necessary to do the setup of these Charges using the Pricing setup forms, specifically Modifiers, Qualifiers and Pricing Formulas. The user interface for this setup is somewhat challenging due to the extreme flexibility of function that Advanced Pricing offers. This paper will show you how to set up a few simple common cases, but won't attempt to explain every detail about every option. To implement more complex business rules for assessing charges, the reader is encouraged to study the Oracle Advanced Pricing User's Guide for information about all the various fields and features that are available.

## Process Flows

Here are several common business flows, from a high level, that should help explain the process in a general sense. Of course, the trick to making all of this happen is setup, so after we look at these flows, we'll explore in detail the setup that drives charges and the cost to charge conversion.

### **Typical Sales Order with Automatic Charges**

The basic flow for applying Freight or Special Charges to an order starts in the Sales Order form. A user creates an order and enters the lines. When saving the lines, the freight and special charges are automatically applied to the order line based on the setup done by the customer. Once charges have been applied to the order header and line, the user can see the total charges in the total area of the main tab of the Order Header, and a total of charges for each line in the CHARGES column on the Sales Order Lines form, Pricing tab. In addition a user can view, modify or add manual charges by clicking the ACTION button on the Sales Order form and selecting CHARGES. In the Charges window that pops up, the user will be able to see in detail all applied Freight and Special Charges. If the charge has the OVERRIDE ALLOWED box checked, then the user can modify the charge.

## **Entering Costs and Converting Them to Charges**

Once you are ready to ship the order, you have the ability to key any costs associated with the line or delivery. When ship confirmation processes (and specifically when the Order Management Interface processes), those costs will be transferred to the order line as price adjustments. And then the conversion of the costs into charges will be triggered, provided the COST to CHARGE conversion setup has been done. The converted charges will be applied to the line, and then those charges will get invoiced with the order line. Once the line is invoiced, the user will not be able to apply any new charges to the order line.

## **Sales Order with Manual Charges**

The flow for adding charges manually is similar to the flow for automatic charges. The user enters the order header and lines. Automatic charges may be applied, depending on how the setup was done. The user can also manually apply any non-automatic charges if he or she has appropriate security. To do that, select the header or line that you want to apply charges to, and using the ACTION button, selects CHARGES. In the Charges window that pops up, the user can go to a blank line and select from a LOV any manual charge that the order or line qualifies for. Security for manual charges is based on the profile option: OM: Charging Privilege. If the profile is set to None, the user will only have viewing access to charges and cannot apply manual charges. If set to Full Access, the user can apply manual charges and modify overrideable charges. If set to Unlimited Access, the user can apply manual charges and even modify non-overrideable charges.

## **Invoicing and Taxation**

All charges are invoiced. Line level charges are invoiced with the line they are attached to. Header level charges are invoiced with the first line that is invoiced for that order. Header charges that are added after some lines have been invoiced will be invoiced with the next line that is interfaced to Invoicing. Charges are sent individually to Receivables as invoice header level freight charges, although AR summarizes them into one freight line for the Invoice. Taxes on charges are not calculated at this time during order entry, even if charges are taxable in the jurisdiction. If it is necessary for charges to be taxed, the user should set the TAX: Invoice Freight as Revenue profile option to Yes and also set up a dummy Freight item in Inventory that is taxable and specify it in the TAX: Inventory Item for Freight profile option. Then OM's Invoicing Integration will send the charges to Receivable's Autoinvoice as Lines with that Inventory Item on them, rather than as Freight. There the charges can be taxed as required and revenue accounting for the charges using AutoAccounting can be done.

## Returns

There are a few considerations regarding charges for return lines.

- First, you can set up Freight and Special Charges that will be charged on return lines or orders; these are typically such things as restocking fees, return handling fees etc. These charges are set up just like any other charges, though you would most likely create rules (qualifiers) for applying these charges so that they apply only to return lines (line category = return).
- Secondly you may or may not want to refund charges that the customer paid on the original order that is being returned. Users can define which charges are refundable by checking the Refundable Flag (INCLUDE ON RETURNS checkbox) when the Charge Modifier is set up. If the return line is created referencing an existing order line, any refundable charges associated with the original line will be automatically applied as a negative charge on the return. If the user creates a new return line without a reference to any existing line, then the user will have to manually apply any refundable charges.

## Backorders

There is a profile option that controls whether or not charges will be applied to backordered lines on an order. Some companies by policy do not charge freight or special charges on backorders, while other companies do. The profile OM: Charges for Backorders controls this functionality. Set it to YES if you want backordered lines to be assessed charges. The default is NO. Please note that you can set this profile only at the site level.

## Charges Setup

As we said earlier in this paper, Freight and Special Charges in Order Management are set up using the forms and features of Advanced Pricing. Charges are considered to be pricing Modifiers, and they have their own special modifier list type; it's called Freight and Special Charge List. The user defines a charge list, and creates list lines for each type of charge (i.e. handling, freight, miscellaneous) that he/she wants to have applied to the order or order lines. A user can also qualify the modifier, which means certain tests or qualifications must be met first before the modifiers are applied to the order or order lines. For example, does this particular customer get these freight charges? Does the order amount justify (qualify for) these attractive Freight Terms? Or does the size of the order (amount or quantity) dictate standard freight cost conversion with markup?

## Terminology

Before we get into details of setting up Modifiers and Qualifiers, there are a few terms to get straight. There are Freight Charges, Freight Costs, Cost Types, Charge Types, sub-types, lookups, Freight Terms etc. and all these terms sound alike. However, to set up your charges and especially to get the Cost to Charge conversion working correctly, it is important that you understand what each of these is and what they do.

Let's start with the Freight Costs: they are the simplest to understand and set up.

Freight Costs, in general, are costs incurred in the shipment of goods. Within Order Management and Shipping Execution, they are the costs input at Ship Confirmation that reflect money your company pays for the movement of goods. Like most things within Oracle Applications, you have to CLASSIFY the Freight Costs by Freight Cost Types; these are general descriptors used to categorize the types of costs incurred. OM seeds the following Freight Cost Types: Duty, Handling, Insurance, Export, Freight, and Administration. Freight Cost Types are just Lookups; you can set up additional Freight Cost Types by navigating to: Shipping > Setup > Lookups. Use the flashlight icon and select FREIGHT\_COST\_TYPE to view the existing list.

Next you have to NAME the Freight Costs you are going to use. The Freight Cost Names are associated with a Freight Cost Type. For example, the freight cost type Export might include the following Names: harbor maintenance fee, ad valorem tariffs, import quota tariff. These are the Names that the shipping clerk will see in the Shipping Transaction Form when Freight Costs are entered. You set up Freight Cost Names by navigating to Shipping > Setup > Freight > Define Freight Cost Types. Press Control+F11 to view existing freight cost names. On a blank line, enter a new Name, choose a Freight Cost Type, Currency and Amount. The Amount entered here will default in the Freight Costs form at ship confirmation when that particular Freight Cost Name is selected in the Cost Type field. At ship confirm, the user has the option of accepting this default Amount, or entering a different amount.

That was the easy part. Now we get to defining Freight Charges and their terminology. Freight and Special Charges are what you charge your customer for shipping goods or for other services. Advanced Pricing provides a lookup called Freight Charge Types and seeds one called Miscellaneous. Associated with each Freight Charge Type are Freight Charge sub-types, which are also lookups with lookup type equal to the name of the Freight Charge Type. Look at the one with lookup type of MISCELLANEOUS; this is where you should define any charges that you might want to assess that won't be converted from Shipping costs. These sub-types along with the Freight Cost Types (not Names) described show up as Charge Names when you define your Freight and Special Charge modifiers.

Finally there are Freight Terms. Freight Terms is an attribute of the order header and line and it is driven from an Order Management Quickcode (lookup) with lookup type of FREIGHT\_TERMS. There is a good explanation of the seeded Freight Terms in the Order Management User's Guide. There is absolutely no functionality inherent in Freight Terms in Order Management but Freight Terms can be used as a qualifier for applying charges, as we shall see in the examples that follow.

### **Defining Pricing Modifiers for Freight and Special Charges**

The user has to set up modifiers that define how to apply charges to orders. A modifier's function is to define what the charges are (their name, how they are calculated, what level they apply to) and how to apply them, either automatically based on qualifiers or manually by a user. There are several different ways you can tell the system to calculate charges:

- Fixed LUMPSUM amount: A fixed charge amount (e.g., \$10.00 handling fee)
- Fixed AMOUNT per Pricing Quantity: A fixed amount charge per pricing quantity (e.g. \$1.00 charge for each item ordered)
- Fixed PERCENTAGE: A fixed percentage of the List Price of the item (e.g. 5% handling fee).
- FORMULA: A formula to calculate the charge (i.e., Insurance Cost \* Constant). The basic components of the formula can be a PRICING ATTRIBUTE and NUMERIC CONSTANT, to return a numeric value. The user can attach the formula to the Freight Charge modifier.

If you set up charges to apply at the Order Header level, only Lumpsum or Formula types of calculations are allowed.

### **Business Scenario 1: Create a simple freight charge and apply it to an order**

Assume your company always wants to automatically assess a Freight Charge of \$39.99 to all orders, and also a Handling Charge of \$10.00. Certain users can change the amount of the charges at entry.

For this scenario, we will be using the lumpsum calculation method for the charges. Navigate to the Pricing Modifier setup form by using the menu path: Pricing > Modifiers. Choose a MODIFIER TYPE of Freight and Special Charges List. Choose a NUMBER and a NAME for your Modifier List that you will be able to recognize; the Number does not have to be numeric. Check the AUTOMATIC box to make the modifier be automatically applied to the order. Finally, select the CURRENCY, START and END DATES and a DESCRIPTION for the modifier.

At this time, we could add Qualifiers for the whole list if we wanted all of these charges applied only to orders or lines with certain attributes. For this first scenario, we will not be using any qualifiers. The freight charges will always be applied, no matter what.

Next, we need to enter one modifier line for Freight Charges and another one for the Handling Charges. You enter modifier lines in the Modifiers Summary Tab in the lower half of the Modifiers form. Enter a user-defined MODIFIER NUMBER for the first line. Choose the LEVEL of Order or Line to indicate whether you want the modifier to be applied at the order or line level. For this example, choose 'Order'. The MODIFIER TYPE of Freight/Special Charges will be selected. Optionally, enter a Start and End Date. Check the AUTOMATIC flag to apply the charges without user intervention. Set the OVERRIDE flag to Yes to allow authorized users to change the amount of the charge once it's applied. You must choose a PRICING PHASE; this controls when the charge will be applied. Choose 'Header Level Charges' for Order Level modifiers and Line Charges for Line Level modifiers. There are a bunch of other attributes on this tab that are not relevant to the examples we're showing; you can read the Advanced Pricing User's Guide if you want to know what they do. Here's this form with data filled in for this modifier.

Advanced Pricing - Define Modifier

New

Advanced

Type: Freight and Special charge Li    Number: Scenario1     Active

Name: Scenario1    Version:     Automatic

Currency: USD    Start Date:    -    [ ]

Description: Scenario 1 for white paper    [ ]

List Qualifiers

Modifiers Summary    Discounts/Charges    Promotion Upgrades    Promotion Terms    Coupons    Price Breaks\*

| Modifier No | Level | Modifier Type | Start Date | End Date | Print On Invoice                    | Automatic                           | Override                            | Pricing Phase       |
|-------------|-------|---------------|------------|----------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------|
| 26414       | Order | Freight/Spec  |            |          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Header Level Charge |
| 26415       | Order | Freight/Spec  |            |          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Header Level Charge |
|             |       |               |            |          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |                     |
|             |       |               |            |          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |                     |
|             |       |               |            |          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |                     |

Exclude    Pricing Attributes    Line Qualifiers    Define Details\*



Next, move to the Discounts/Charges Tab and enter the charge details. In the CHARGE NAME field, select Freight Costs, INCLUDE ON RETURNS can be checked or not depending on whether or not you want this charge copied to returns created from these orders, choose APPLICATION METHOD of Lumpsum and enter a VALUE of \$39.99.

Similarly, we will enter another modifier line for the Handling Charge. Enter a second line within the Modifiers Summary tab region with settings similar to those for the first line. Then, in the Discounts/Charges tab region enter the Charge details as follows: CHARGE NAME is Handling Costs, INCLUDE ON RETURNS can be checked or not, APPLICATION METHOD again is Lumpsum and the VALUE is \$10.00.

Here's a picture of this form and tab with this data filled in:

The screenshot shows the 'Advanced Pricing - Define Modifier' window with the 'Advanced' tab selected. The form contains the following fields and values:

- Type: Freight and Special charge Li
- Number: Scenario1
- Name: Scenario1
- Currency: USD
- Description: Scenario 1 for white paper
- Active:
- Automatic:

Below the form is a table with the following data:

| Modifier No | Level | Modifier Type | Charge Name    | Include On Returns                  | Formula | Application Method | Value | Accrue                   |
|-------------|-------|---------------|----------------|-------------------------------------|---------|--------------------|-------|--------------------------|
| 26414       | Order | Freight/Spec  | Freight Costs  | <input checked="" type="checkbox"/> |         | Lumpsum            | 39.99 | <input type="checkbox"/> |
| 26415       | Order | Freight/Spec  | Handling Costs | <input checked="" type="checkbox"/> |         | Lumpsum            | 10    | <input type="checkbox"/> |
|             |       |               |                | <input type="checkbox"/>            |         |                    |       | <input type="checkbox"/> |
|             |       |               |                | <input type="checkbox"/>            |         |                    |       | <input type="checkbox"/> |

At the bottom of the window are buttons for 'Exclude', 'Pricing Attributes', 'Line Qualifiers', and 'Define Details\*'. A 'List Qualifiers' button is also present near the top right of the form area.

That's all there is to it. We have now successfully entered a basic Freight and Special Charge modifier with one line detailing Freight Charges and one line for Handling Charges.

If you want to apply a modifier like this, which is set up without any qualifiers, then you must be sure to set the Pricing Profile option 'QP: Blind Discount Option' to Yes.

### Applying Automatic Order Level Charges on an Order

To see this modifier at work, create a new order within the Oracle Order Management responsibility by choosing the menu path Orders, Returns > Sales Orders. Enter the order header information including, Customer, Order Type (e.g., Standard), Price List, Ship To & Bill To Addresses and Salesperson. Move to the Lines Tab, enter any Item with a quantity of 1. Save the order. Go back to the Order Main tab and you will see in the Totals area Charges of \$49.99 which is the sum of the \$39.99 Freight Charge and the \$10.00 Handling Charge.

To see the applied charges, select the Actions button > Charges from the Header region. You will see the two applied freight charges with the

- Charge Name = Freight Costs and amount = \$39.99.
- Charge Name = Handling Costs and amount = \$10.00.

| Charge Name    | Type    | Rate (%) | Amt / Unit | Charge | Fixed                    | Auto                                | Overridabl                          |
|----------------|---------|----------|------------|--------|--------------------------|-------------------------------------|-------------------------------------|
| Freight Costs  | FREIGHT |          |            | 39.99  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Handling Costs | HANDLIN |          |            | 10.00  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                |         |          |            |        | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                |         |          |            |        | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                |         |          |            |        | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                |         |          |            |        | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |

Charge Total 49.99

Attributes Apply Cancel

If the user has appropriate security (based on the setting of the OM: Charging Privilege profile option), he or she can override the amount of either charge by keying over it, entering a REASON and COMMENTS, and clicking the APPLY button.

## Applying Manual Order Level Charges on an Order

What if your company doesn't want to automatically apply charges to every order and instead you want the order entry clerk to choose what orders to charge? How would you do that?

To make this happen, you have to change the setup of the previous Modifier; just uncheck the AUTOMATIC checkbox at the modifier list header and lines. Then enter a new order and line like we already did and save it. You will see that now no charges have been applied automatically.

To apply the freight and handling charges manually, select the Actions button > Charges from the Order Header. Click a new line in the Charges form, select the CHARGE NAME = Freight Costs from the list of values. A charge named Freight Cost of \$39.99 will appear. Now, click on another new line in the Charges form, select the CHARGE NAME = Handling Cost from the list of values. A charge named Handling Cost of \$10.00 will appear.

If you are unable to apply charges manually: 1) check to make sure the profile option, OM: Charging Privilege is set to Full Access or Unlimited Access, and 2) check to make sure that QP: Blind Discount Option is set to Yes (all modifiers with no qualifiers will be considered if Blind Discount is set to Yes). To verify these profile settings, navigate to: Edit > Preferences > Profile and query those profiles.

To verify that the manual application of the freight and special charges has occurred, look at the Total Charges on the Order Main tab or click the ACTIONS button and select CHARGES. A total of \$49.99 will be in the totals area, and the Freight Costs of \$39.99 and Handling Costs of \$10.00 will appear in the Charges window. Since these charges were applied manually, the FIXED checkbox will be checked automatically on the Charges window, indicating that those charges should not be changed by the system.

## Business Scenario 2: Use qualifiers

Assume your company always wants to automatically assess a Freight Charge of \$39.99 to all orders with Freight Terms of Prepay & Add, and a Handling Charge of \$10.00 for those same orders.

### Setting up Automatic Order Level Charges with Qualifiers

For this scenario, we will be adding simple qualifiers to the charge list we set up in the previous scenario. Access the Modifier Form and query the modifier list that was set up in the last section. Now we will make two changes to the modifier lines. First we will mark them as Automatic again and then specify qualifiers for them.

When you set up qualifiers for modifiers, you can do it by specifying the qualifiers at the Modifier list header level or at the list line level. The Qualifiers specified at the list header level will apply to all modifier lines defined in that list. This can be useful to specify common business rules at the list header only once. Any Qualifiers specified at the list line level are specific to that particular modifier line. Use this if you need unique rules for applying one of the Charges but not all of them on a list.

For this scenario, we will set up header level qualifiers which will apply to both of our charges in this list. Press the LIST QUALIFIERS button on the top part of the Modifier form and a window will pop-up. This window will display any predefined qualifier groups you may have already set up. For this scenario, do not select any of these; press OK instead. Another window will be displayed to let you enter new qualifiers. Enter: GROUPING NUMBER = 1, QUALIFIER CONTEXT = Order, QUALIFIER ATTRIBUTE = Order Category, accept the default for PRECEDENCE, OPERATOR is = and VALUE FROM = Order. Similarly enter the second qualifier for Freight Terms. When you're done, the Header Level Qualifiers window should look like this:

| Group | Grouping Number | Qualifier Context | Qualifier Attribute | Precedence | Operator | Value From   | Value From |
|-------|-----------------|-------------------|---------------------|------------|----------|--------------|------------|
|       | 1               | Order             | Order Category      | 480        | =        | ORDER        | Order      |
|       | 1               | Terms             | Freight Terms       | 640        | =        | Prepay & Add | Seller pa  |
|       |                 |                   |                     |            |          |              |            |
|       |                 |                   |                     |            |          |              |            |
|       |                 |                   |                     |            |          |              |            |
|       |                 |                   |                     |            |          |              |            |
|       |                 |                   |                     |            |          |              |            |
|       |                 |                   |                     |            |          |              |            |

Buttons: Cancel, OK, Copy Group

The grouping number uses the typical Oracle convention to indicate and conditions. Qualifiers with the same grouping numbers denote the and condition whereas different grouping numbers denote the or condition. QUALIFIER CONTEXT is just a grouping of attributes, and QUALIFIER ATTRIBUTE is the specific attribute within the Context that is used in the rule to be compared to the VALUE using the OPERATOR. See the Advanced Pricing User's Guide for an up-to-date list of seeded Qualifier Contexts and Attributes or just look at what shows up in the LOV. If you want to add your own Qualifier Contexts or Attributes, it is possible to do that but

explaining how is beyond the scope of this paper. See the Oracle Advanced Pricing User's Guide for how to do this.

If you are using a qualifier for the first time, you must run a concurrent program under the Pricing Responsibility called Build Sourcing Rules to get Pricing to recognize this qualifier.

### **Applying a Qualified Automatic Order Level Charge to an Order**

Create a new order as usual. Specify the FREIGHT TERMS as Prepay and Add on the header. Move to the Lines Tab and enter a line or two and save your order. You should see the two charges applied automatically at the order header level just as we did in Scenario 1 before. Verify that the charges are correct by looking at the Order Main tab, charges total and by choosing the Charges Action to see details of the charges.

You can verify that the qualifier is working by entering another order with a different Freight Terms, and seeing that the charges are not applied.

### **Business Scenario 3: Case Study**

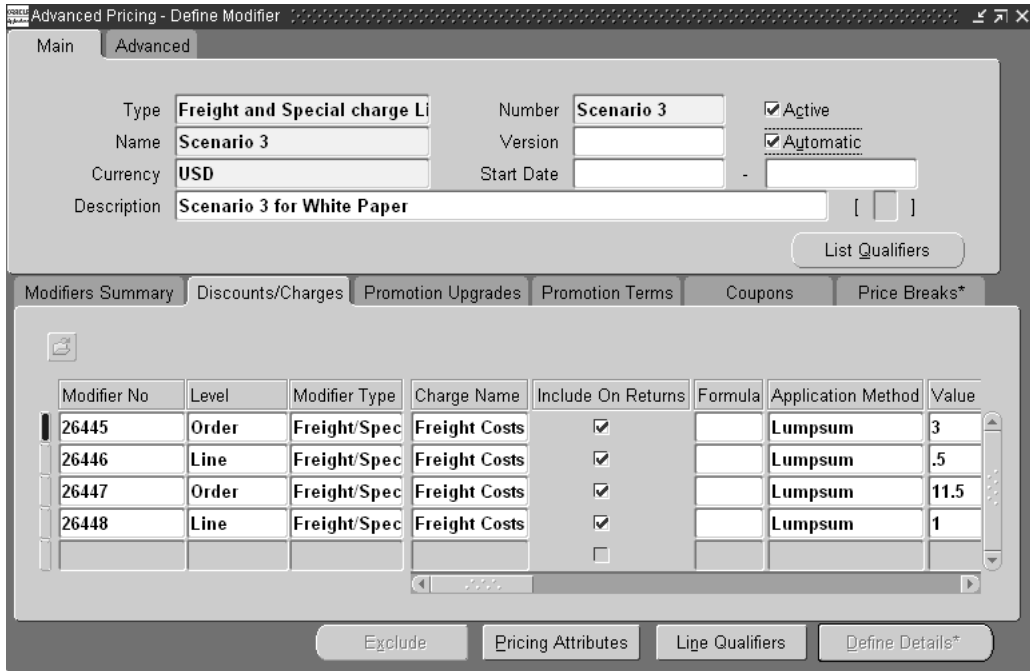
The company's freight policy is defined as follows:

- On each REGULAR delivered ORDER there will be a charge of \$3.00 applied automatically for freight.
- There will be an additional freight charge of \$0.50 per quantity for REGULAR deliveries.
- For SPECIAL deliveries there will be a charge of \$11.50 per order and an additional \$1.00 per quantity.

The differentiation between REGULAR and SPECIAL deliveries are dependent on the carrier or transport company. It will be modeled as Shipment Priority at the Order Header.

There are various ways that this can be implemented. One simple way is to set up one Freight and Special Charges List with automatic application, with list lines qualified by Shipment Priority. Set up a new Freight and Special Charges List with the AUTOMATIC box checked. Do not assign any List Qualifiers. Then enter four list lines, the first two qualified by Shipment Priority equal to REGULAR and the second two qualified by Shipment Priority equal to SPECIAL. For each pair of list lines, one will be at Order level and will be calculated as a Lumpsum and the other will be at Line level and will be an Amount per quantity. For all of these, the CHARGE NAME would be Freight Costs.

Here's a picture of the Modifiers form Discount/Charges tab for this set of modifier lines.



The qualifiers would look like these; the second qualifier is to ensure that these charges are applied only on order lines and not on return lines.

**Table H-1 Line Level Qualifiers**

| Grouping Number | Qualifier Context | Qualifier Attribute    | Precedence       | Operator | Value From |
|-----------------|-------------------|------------------------|------------------|----------|------------|
| 1               | Order             | Shipment Priority Code | <accept default> | =        | Regular    |
| 1               | Order             | Line Category          | <accept default> | =        | Order      |

### **Applying Automatic Order and Line Level Freight Charges on an Order**

Create a new order as usual. Specify the SHIPMENT PRIORITY as REGULAR on the header. Move to the Line Items Tab and enter several lines and save your order. You should see the header charge of \$3.00 applied and you should also see line charges of 0.50 per item for each line. Verify that the charges are correct by looking at the charges total on the Order Main tab, and also by looking at the total charges for each line in the Lines tab, Pricing tab.

You can verify that the qualifier is working by entering another order with a SHIPMENT PRIORITY of SPECIAL, and seeing that the higher charges are applied; \$11.50 at the header and \$1.00 for each unit of quantity on the lines.

So far we've been dealing with Charges applied or entered during order entry. Next we see how to automatically convert Freight Costs entered at Ship Confirmation to Freight Charges.

### **Setting up Freight and Special Charges For COST to CHARGE Conversion**

Refer back to the terminology section if you get confused by terms in this section. After you define any Freight Cost Names in Shipping Execution, any costs entered at Ship Confirmation are transferred to Order Management and are available for the COST to CHARGE conversion process. You can convert the exact cost amount to the charge amount, or you can do it with a markup or markdown.

The cost to charge conversion described here applies line level charges only. Costs always come across to Order Management from Shipping as line level price adjustments. It is possible to convert these costs into order level charges using a user-defined pricing attribute for Order Level Costs and a custom sourcing rule to sum up the line-level costs. See the Appendix of this document for an example describing this setup in more detail.

To make the conversion process work (even if you are doing a straight cost conversion with no markup), you must set up a Pricing Formula specifying the conversion algorithm, and then use that Formula when you set up the Charge Modifier. For example, suppose you want a markup of 30% to be applied to the cost to get the final charge (e.g. freight cost + 30%). Begin by setting up the Pricing Formula using the navigation path: Pricing > Pricing Formulas > Formula Setup. Type in a NAME that will describe your formula, enter a DESCRIPTION, EFFECTIVE DATES (optional), and the FORMULA equation. In this case we'll use the equation  $1*2$  which means to multiply step 1 by step 2. Then in the Formula Lines block of the form, we'll define those steps as Pricing Attribute Freight Costs multiplied by a Numeric Constant of 1.3. So using this formula, the system will take

the freight cost (step 1) assigned at ship confirmation and multiply by the numeric constant of 1.3 (130%) (step 2) which will equal the final freight charge. Here's how the Pricing Formula form will look when it's filled out.

Advanced Pricing - Pricing Formulas

Name:

Description:

Effective Dates:  -

Formula:

**Formula Lines**

| Formula Type      | Pricing Attribute Context | Pricing Attribute | Component | Step | Reqd Flag                |
|-------------------|---------------------------|-------------------|-----------|------|--------------------------|
| Pricing Attribute | Pricing Attribute         | Freight Cost      |           | 1    | <input type="checkbox"/> |
| Numeric Constant  |                           |                   | 1.3       | 2    | <input type="checkbox"/> |
|                   |                           |                   |           |      | <input type="checkbox"/> |
|                   |                           |                   |           |      | <input type="checkbox"/> |
|                   |                           |                   |           |      | <input type="checkbox"/> |
|                   |                           |                   |           |      | <input type="checkbox"/> |
|                   |                           |                   |           |      | <input type="checkbox"/> |
|                   |                           |                   |           |      | <input type="checkbox"/> |

Factors

Now you need to create a new Charge Modifier List that uses this formula. Navigate to the Modifier screen: Pricing > Modifiers. Enter the TYPE as Freight and Special Charges List. Enter a NUMBER and a NAME. Check the AUTOMATIC box. Finally, select the CURRENCY, START and END DATES and add a DESCRIPTION for the modifier. Next enter modifier lines for the charge list. Enter a MODIFIER NUMBER. Choose the LEVEL = Line. Select the MODIFIER TYPE as Freight and Special Charges. Optionally, enter a START and END DATE. Check the AUTOMATIC flag to apply the charges automatically. Then move to the Discounts/Charges Tab and enter the charge details. In the CHARGE NAME field, select Freight Costs, APPLICATION METHOD is Lumpsum and specify the FORMULA you just created.

Now you must set up list level qualifiers which will apply to this modifier list. Press the LIST QUALIFIERS button on the list header and enter some qualifiers similar to the ones in this table:



**Table H-2 Header Level Qualifiers**

| Grouping Number | Qualifier Context | Qualifier Attribute | Precedence       | Operator | Value From |
|-----------------|-------------------|---------------------|------------------|----------|------------|
| 1               | Order             | Line Category       | <accept default> | =        | Order      |
| 1               | Order             | Shipped Flag        | <accept default> | =        | Yes        |
| 1               | Order             | Shippable Flag      | <accept default> | =        | Yes        |

These qualifiers will make sure that these charges will be applied to Order Lines only when shipping occurs. (Shipped Flag = Yes). You can add any other qualifiers that make sense to your business, too, such as limiting these freight charges to certain customers or orders with particular Freight Terms, etc.

Apart from these list level qualifiers, you will need to create a line level qualifier for each modifier line in your list. This qualifier will link the Freight Cost Type entered at Ship Confirm to this Charge.

Select the modifier line with CHARGE NAME = Freight Cost, and click the LINE QUALIFIERS button and enter: GROUPING NUMBER = 1, QUALIFIER CONTEXT = Order, QUALIFIER ATTRIBUTE = Freight Cost Type Code, PRECEDENCE = accept default, VALUE FROM = Freight.

**Table H-3 Line Level Qualifier**

| Grouping Number | Qualifier Context | Qualifier Attribute    | Precedence       | Operator | Value From |
|-----------------|-------------------|------------------------|------------------|----------|------------|
| 1               | Order             | Freight Cost Type Code | <accept default> | =        | Freight    |

With the Formula and this Modifier created, you can now convert Shipping Cost into a Freight Charge. To try this, you will need to create a new order that matches the qualifiers (such as Customer or Freight Terms) you set up for your Charges.

### Assigning Actual Freight Costs at Ship Confirmation

Once you have booked and pick released the order (using autocreate deliveries to simplify the process), you then enter the actual Freight Costs in the Shipping Transaction Form when you do ship confirmation. To perform this task, navigate to

the menu: Shipping > Transactions. Query up the lines of your order. Within the Lines/Containers tab of the Shipping Transaction Form, select the Actions button > Freight Costs and choose GO. Enter the COST TYPE = Freight Costs, CURRENCY CODE = USD and type in an AMOUNT (e.g., \$15.00). Now ship confirm the delivery. (Be sure you enter the Freight Costs before you do the Ship Confirm action; if you do the ship confirm first, then it's too late to add the freight costs.) The actual Charges will be calculated based on the formula and the Freight Costs you just entered. If you have deferred the OM Interface at Ship Confirm, then you may not see the charges until after that interface has run.

### Confirm Freight Costs to Freight Charges Conversion

Now navigate back to the Sales Order Pad and query up your order. You will see the Freight Charge = \$19.50 (15 + 30% of 15) on the Main tab.

### Freight Costs Not included as Freight Charges

Inevitably, some freight costs are incurred after Ship Confirm which cannot be invoiced to the customer. For example, a truck shipment is delayed at the customer's dock during unloading and the carrier assesses the shipper a detention charge. Since the cutoff point for passing through freight costs occurs at the time of Ship Confirm, there is no possibility of invoicing the customer for this extra charge except manually.

## Other Business Scenarios

Several other common business scenarios are provided to assist you in better understanding the setups required to map freight costs to freight charges.

### Business Scenario 4: Standard Handling Charge

In this scenario, a distributor of music CDs wants to assess a standard handling charge of \$1.99 per CD.

Navigate to the modifier form: Pricing > Modifiers. Enter this information:

**Table H-4 Pricing Modifiers: Heading**

| Type              | Number         | Name           | Automatic  |
|-------------------|----------------|----------------|------------|
| Freight and Spec. | <user defined> | <user defined> | <selected> |

On the first line of the Modifiers Summary tab, enter this:

**Table H-5 Pricing Modifiers: Modifiers Summary Form**

| Level | Modifier Type | Automatic  | Override   | Phase        |
|-------|---------------|------------|------------|--------------|
| Line  | Freight/Spec  | <selected> | <selected> | Line Charges |

Next, click on the Discounts/Charges tab and enter this:

**Table H-6 Pricing Modifiers: Discounts/Charges Form**

| Charge Name    | Application Method | Value |
|----------------|--------------------|-------|
| Handling Costs | Amount             | 1.99  |

By using an application method of Amount, the pricing engine will assess a handling charge of \$1.99 for each item ordered. If instead we had used “Lumpsum” as the application method, the pricing engine would assess a handling charge of \$1.99 per line (or per order if we had used an Order level modifier). Next, click on the LINE QUALIFIERS button and enter this:

**Table H-7 Pricing Modifiers: Qualifiers -- Line Level**

| Grouping Number | Qualifier Context | Qualifier Attribute | Precedence       | Operator | Value From |
|-----------------|-------------------|---------------------|------------------|----------|------------|
| 1               | Order             | Line Category       | <accept default> | =        | Order      |

The setup for this modifier is completed. A handling charge of \$1.99 will be automatically applied to each item ordered. To verify that the Handling charge is functioning properly, navigate to the Sales Order Pad and enter a new order. Enter one line with a quantity of 10. Click the Action button and select Charges. The Charges window should show a Handling Charge of \$19.99.

### **Business Scenario 5: Freight cost markup applied to all invoices with freight terms of prepay & add**

A shipper wishes to assess a Freight markup of \$50 per line for all shipments with freight terms of Prepay and Add. The markup will be assessed against the actual freight cost input by the Shipping Department. Since the Freight costs will not be available until the order is shipped, the company wants customer to see an

estimated Freight Charge of \$300 on each line of the order, which will be replaced with the actual charge after shipping. In addition, a standard Handling Charge of \$10 will be added to each line of the order. All charges will be applied at the line level.

In this example, you need to set up a formula and a modifier with qualifiers.

First, set up the pricing formula and name it “Freight XX”. Navigate to Pricing > Pricing Formulas > Formulas Setup. Enter this:

**Table H-8 Pricing Formulas Form: Heading**

| Name       | Description   | Formula |
|------------|---------------|---------|
| Freight XX | Freight Costs | 1 + 2   |

In the Formula Lines region, enter this:

**Table H-9 Pricing Formulas Form: Lines**

| Formula Type      | Pricing Attribute Context | Pricing Attribute | Component | Step |
|-------------------|---------------------------|-------------------|-----------|------|
| Pricing Attribute | Pricing Attribute         | Freight Cost      | <blank>   | 1    |
| Numeric Constant  | <blank>                   | <blank>           | 50        | 2    |

A pricing attribute can be anything used to price the item, from volume to item to freight cost. The purpose of setting up this formula is to apply a markup to the freight cost assigned at shipping. In this formula, the system will take the freight cost (step 1) assigned at ship confirmation and add \$50 (step 2) which equals the final freight charge.

Now, when the formula Freight XX is selected in any pricing modifier, the \$50 will be added to the Freight Cost at the line or header level, as defined in the modifier.

Second, set up the pricing modifier for freight and special charges that should appear on the order. Navigate to: Pricing > Modifiers. Enter this:

**Table H-10 Pricing Modifiers: Heading**

| Type              | Number         | Name           | Automatic  |
|-------------------|----------------|----------------|------------|
| Freight and Spec. | <user defined> | <user defined> | <selected> |

Next, select the Modifier Summary tab. On the first line, we will use the Freight XX formula in the modifier. Enter this:

**Table H-11 Pricing Modifiers: Modifiers Summary Form**

| Level | Modifier Type | Automatic  | Override | Phase        |
|-------|---------------|------------|----------|--------------|
| Line  | Freight/Spec  | <selected> | <clear>  | Line Charges |

Now, select the Discounts/Charges tab. Enter this:

**Table H-12 Pricing Modifiers: Discounts/Charges Form**

| Charge Name   | Formula    | Application Method | Value   |
|---------------|------------|--------------------|---------|
| Freight Costs | Freight XX | Lumpsum            | <blank> |

Note that the FORMULA used is the one you set up in the Pricing Formulas form. The VALUE column is null because the freight cost amount will be input by the Shipping Department at ship confirm.

Two more modifier lines must be created; one line for Freight Charges and one line for Handling Charges. These lines will set up standard default amounts for these charges in case Shipping neglects to enter actual freight costs. In the Modifier Summary tab, enter the Freight charge line information like this:

**Table H-13 Pricing Modifiers: Modifiers Summary Form**

| Level | Modifier Type | Automatic  | Override | Phase        |
|-------|---------------|------------|----------|--------------|
| Line  | Freight/Spec  | <selected> | <clear>  | Line Charges |

In the Discount/Charges tab, enter the Freight Charge line information like this:

**Table H-14 Pricing Modifiers: Discounts/Charges Form**

| Charge Name   | Formula | Application Method | Value |
|---------------|---------|--------------------|-------|
| Freight Costs | <blank> | Lumpsum            | 300   |

Repeat the same process for the Handling Charge. Enter the following: MODIFIER NO. = Null, LEVEL = Line, MODIFIER TYPE = Freight and Special Charge, START DATE = Null, END DATE = Null, AUTOMATIC = checked, OVERRIDE = unchecked. In the Discount/Charges tab, enter the information as: CHARGE NAME = Freight Costs, FORMULA = Null, APPLICATION METHOD = Lumpsum, VALUE = 10. This modifier line will modify the invoice to include an amount of \$10 as a Handling Charge per order. The standard Handling Charge will be assessed automatically; no manual input is required at order entry or ship confirm.

The completed Modifiers Summary form should appear like this:

**Table H-15 Pricing Modifiers: Modifiers Summary Form**

| Level | Modifier Type     | Automatic  | Override   | Phase        |
|-------|-------------------|------------|------------|--------------|
| Line  | Freight and Spec. | <selected> | <clear>    | Line Charges |
| Line  | Freight and Spec. | <selected> | <selected> | Line Charges |
| Line  | Freight and Spec. | <selected> | <clear>    | Line Charges |

The completed Discount/Charges form should appear like this:

**Table H-16 Pricing Modifiers: Discounts/Charges Form**

| Charge Name   | Formula    | Application Method | Value   |
|---------------|------------|--------------------|---------|
| Freight Costs | Freight XX | Lumpsum            | <blank> |
| Freight Costs | <blank>    | Lumpsum            | 300     |
| Handling Cost | <blank>    | Lumpsum            | 10      |

Next, you need to set up list qualifiers and line qualifiers. In this example, the List Qualifier is used to apply the modifier to orders with Freight Terms of Prepay and Add. The Line Qualifiers allow the pricing engine to apply the modifier to the order lines according to the processing status (e.g., shippable, shipped, etc.). Prior to ship confirm the order status is shippable and the standard freight charge (\$300) will appear on the order entry Charges form. When the order status changes to shipped

after ship confirm, the actual freight cost plus the \$50 markup will apply. The Line Qualifiers are the triggers for this functionality.

To set up the List Qualifier as described, click on the LIST QUALIFIER button on the Modifier Definition form. The Qualifiers Group form appears, click OK. Enter the following:

**Table H-17 List Qualifiers: Header Level Qualifiers**

| Grouping Number | Qualifier Context | Qualifier Attribute | Precedence       | Operator         | Value From     |
|-----------------|-------------------|---------------------|------------------|------------------|----------------|
| 1               | Terms             | Freight Terms       | <accept default> | <accept default> | Prepay and Add |

The order must pass this List Level Qualifier before it will even look at the Line Level Qualifiers. Line qualifiers add more detailed requirements for the order to qualify for the Freight Charge. To set up the Line Qualifiers for this example, select the first modifier line and click on the LINE QUALIFIER button. The Qualifiers Group form appears, click OK. The Qualifier - Line Level Qualifiers form will appear. Enter this information as qualifies for the 'cost to charge conversion modifier line:

**Table H-18 Line Level Qualifiers: Line 1**

| Grouping Number | Qualifier Context | Qualifier Attribute    | Precedence       | Operator | Value From |
|-----------------|-------------------|------------------------|------------------|----------|------------|
| 1               | Order             | Shippable Flag         | <accept default> | =        | Yes        |
| 1               | Order             | Line Category          | <accept default> | =        | Order      |
| 1               | Order             | Shipped Flag           | <accept default> | =        | Yes        |
| 1               | Order             | Freight Cost Type Code | <accept default> | =        | Freight    |

For Line 1, a grouping number is used because there are more than one line qualifier that has to pass in order to apply the freight charge to the order. The table for Line 1 is read as follows: the Shippable Flag on the line must be Yes, AND, the Line Category on the line must be Order, AND, the Shipped Flag on the line must be Yes, AND, the Freight Cost Type Code on the Order must be Freight. All of these qualifiers must be true to apply the qualifier to the line.

To set up the Line Qualifier for the \$300 estimated charge, select the second modifier line and click on the LINE QUALIFIER button. The Qualifiers Group form appears, click OK. The Qualifier - Line Level Qualifiers form will appear. Enter the following to create the qualifiers to apply to lines with Line Category of Order and for Shippable lines that have not been shipped:

**Table H-19 Line Level Qualifiers: Line 2**

| Grouping Number | Qualifier Context | Qualifier Attribute | Precedence       | Operator | Value From |
|-----------------|-------------------|---------------------|------------------|----------|------------|
| 1               | Order             | Line Category       | <accept default> | =        | Order      |
| 1               | Order             | Shipped Flag        | <accept default> | =        | No         |
| 1               | Order             | Shippable           | <accept default> | =        | Yes        |

To set up the Line Qualifier for the Handling Charge, select the third modifier line and click on the LINE QUALIFIER button. The Qualifiers Group form appears, click OK. The Qualifier - Line Level Qualifiers form should appear. Enter this information to apply the Handling Charge to outbound lines (Line Category = Order) that are shippable:

**Table H-20 Line Level Qualifiers: Line 3**

| Grouping Number | Qualifier Context | Qualifier Attribute | Precedence       | Operator | Value From |
|-----------------|-------------------|---------------------|------------------|----------|------------|
| 1               | Order             | Line Category       | <accept default> | =        | Order      |
| 1               | Order             | Shippable           | <accept default> | =        | Yes        |

The setup for formulas and modifiers in this example is finally completed.

To verify that the setup for these Freight and Handling charges is functioning properly, navigate to the Sales Order Pad and enter a new order. Click on the Others tab and verify that the FREIGHT TERMS are Prepay and Add; this is so the list qualifier will be satisfied. Click on the Lines tab and enter a line. Click the ACTION button and select Charges. The charges should show the estimated freight charge of \$300 and the handling charge of \$10. These amounts are the default values set up in



the modifier. When the actual freight costs are input by the Shipping Department at ship confirm, then the freight charge will change.

Book your order.

Now, navigate to the Shipping Transactions form and enter actual freight costs, then ship confirm the order. Navigate to: Shipping > Transactions and find your order. Click the Actions box and select Launch Pick Release and click GO button. Also, make sure to autocreate a delivery either at picking or before ship confirming the order. Once a delivery is created, click the Delivery tab. If your order line does not appear, use the Query Manager (flashlight icon) to find your order. When the order line appears, click on the Actions box again and select Freight Costs and press the GO button. Here is where you enter the actual freight costs for the shipment. Set Cost Type = Freight and enter an Amount = 200 and click DONE. Note if you enter any other cost types here, they will not appear as a freight charge because you did not set up any other charges in the modifier for cost conversion. We did set up a charge for Handling but it is not set for cost conversion.

Now, click on the Actions box again and select Ship Confirm and click on the GO button.

Return to the Sales Order Pad and find your order. Notice that the Charges Line total is now \$260. This amount is Freight = \$250 (actual freight charge + \$50 markup from the pricing formula), Handling = \$10.

In this example, the estimated Freight Charge of \$300 went away after shipping, since the Shipped Flag = No qualifier on that modifier line is no longer satisfied. This means that if the Shipping Department neglects to input a Freight Cost, the estimated charge would still disappear, because of this qualifier. If instead you wanted the \$300 charge to stay on the order even if the Freight Cost was not entered, then you should remove that second line of the qualifier for the estimated charge. Then, if the Freight Cost was not entered, the \$300 charge would remain. If however a Freight Cost was entered, the resulting charge from the formula would replace the \$300 charge if that charge was larger than \$300.

## Troubleshooting

There are a few things to watch out for when you try to implement Charges and particularly the Cost to Charge conversion.

### Qualifiers Not Working

If you've set up some qualifiers for your charges and they don't seem to be working, try running the Pricing Report called Build Sourcing Rules. Every time you use a

new qualifier that you haven't previously used, you are supposed to run this program. See the Oracle Advanced Pricing User's Guide for information about what this program does.

### **Fixed vs. Estimated Charges**

A common business case is to set up the Charges to apply estimated charges automatically at order entry with the expectation that they will be replaced with actual charges when the order is ship confirmed. To do this, you might set up a Charge Modifier that applies an automatic charge at entry, qualified by the line being shippable but in status entered. Later, when the cost to charge conversion occurs at ship confirm time, the converted actual charge will overwrite the estimated charge. This can be controlled by using the FIXED checkbox on the Sales Order form Charges window. If you don't want an applied charge to be overwritten by the system, at cost to charge conversion or by any subsequent pricing calls, check the FIXED box on the Charges window. Charges that are manually applied or any automatic charges that are manually overridden get the FIXED box checked automatically. The FIXED box should not be confused with the OVERRIDABLE box, a view-only checkbox which controls whether a user can manually change the amount of the charge.

### **Name Confusion**

The names you use are critical to getting cost to charge conversion working. It's easy to get them confused. You enter costs in the Shipping Transaction Form using the FREIGHT COST NAMES defined in Shipping Execution, each of which belongs to a particular FREIGHT COST TYPE. It is the FREIGHT COST TYPE that you need to use as the qualifier for the Charge Modifier line, however, not the Name. In Order Management, you never really see the Freight Cost Names except at Ship Confirm. To keep things simple, you might want to just have one Freight Cost Name for each Freight Cost Type, and have it be the same name.

Also, if you define additional Freight Cost Types (the lookups) (with their Freight Cost Names and amounts) thinking you can then convert them into charges, this can be done. But you have to tell Pricing that the new Freight Cost Type is to be used as a Pricing Attribute (so you can put it in a formula); otherwise you won't see it in the pricing attributes LOV in the formula, and so you won't be able to use it. Please refer to the Advanced Pricing User's Guide for how to create a new Pricing Attribute.

## Multiple Automatic Charges

If you have multiple automatic Freight and Special Charge lists set up, then ONLY ONE charge for each Charge Type and Sub-Type combination will be used by Order Management. Which one will it be?

Which charge gets applied depends on INCOMPATIBILITY GROUP, PRECEDENCE and PHASE on the modifier. If the INCOMPATIBILITY GROUP is null (not specified) on the modifier, then the largest freight charge for each distinct/unique combination of charge type/sub-type will get applied to the order/line. If the INCOMPATIBILITY GROUP is not null, then within a particular PHASE and a particular INCOMPATIBILITY GROUP, the freight charge with the highest PRECEDENCE will be selected by the Pricing Engine if the INCOMPATIBILITY RESOLVE CODE is set to Precedence for the phase. If there is more than one freight charge eligible within a particular INCOMPATIBILITY GROUP in a particular PHASE and the PRECEDENCE is the same or if the INCOMPATIBILITY RESOLVE CODE is set to Best Price for the phase, then the smallest charge will get selected. Amongst these selected freight charges, Order Management applies the largest freight charge for each unique combination of charge type/sub-type to the order and line.

If you are using Basic Pricing, then you can only use an INCOMPATIBILITY RESOLVE CODE of Best Price. If you have licensed Advanced Pricing, then you can choose to use an INCOMPATIBILITY RESOLVE CODE of Precedence.

## Pro-Rating the Costs

If you enter Costs in ship confirm at the Delivery Level, the costs that transfer back to the lines in OM are pro-rated to all the lines of the delivery, based on weight (if present) or volume (if present) or quantity shipped on each line. Refer to the Shipping Execution User's Guide for how to get weight and/or volume on delivery details.

## Cost to Charge Conversion Not Working

Did you enter the cost?: If you don't enter Costs in ship confirm, then the cost to charge conversion will not occur. If you enter a cost of zero, then the conversion will take place based on the formula you set up. So if you want the charge to be Cost plus \$50 and you enter a zero cost, then the charge generated will be \$50. But if you don't enter a cost at all, then no charge will be put on the order.

Included items?: Is the line you're trying to get the charges onto an included item in a PTO kit or model? If so, you won't be able to get the charges to convert easily. The reason for this is that the costs come to OM from Shipping as line level price

adjustments, and the SHIP pricing event triggers the Freight and Special Charges modifier to be applied; since included items are not priced, this doesn't happen. Your only recourse to getting a cost-to-charge conversion working on an included item is to use an order level modifier, mentioned in the Important Note in the section on setting up cost-to-charge conversion. See a Supplement in this appendix for an example of setting up an order level cost-to-charge modifier.

Check the Phase: The phase which you selected when you set up the cost-to-charge conversion modifier line has to be one that is executed during the SHIP pricing event. If you are using Basic Pricing, use the Line Charges phase. If you are using Advanced Pricing, you can still use Line Charges or other phases that you may define. If you choose some other phase, then the phase that you use for the modifier line should be one that has the SHIP event associated with it. You can check this by querying up the phase in the Event Phases Form. (Navigation Path is Setup -> Event Phases under Pricing Manager responsibility.) Also make sure that the phase has freeze override flag checked. Please check the Advanced Pricing User's Guide to learn more about how to use this form.

Did the OM Interface run?: If you defer running the interfaces (checkbox on Ship Confirm), the OM Interface may not have run yet. Be sure it has completed.

Did the cost to charge still not work?: Finally, you can run a debug utility. This utility will help you or Support see whether the cost got to Order Management and if so, why it didn't get converted to a charge properly. It will spool the debug output to a file, where you can view the results.

To use this debug utility, you will need to know the line\_id (order line id) of the order line for which the freight charge (cost to charge conversion) is not coming through. You can figure this out by using the menu option: HELP-> DIAGNOSTICS -> EXAMINE, after querying up the order line. You also need to know the list\_line\_id (modifier line id) of the modifier that you set up to do the cost to charge conversion. You can figure this out by using the menu option: HELP-> DIAGNOSTICS -> EXAMINE, after querying up the freight charge modifier, navigating to the lines block and selecting the modifier line that you want to examine.

This debug utility will do the following things:

- Check if cost was inserted by Shipping.
- Check that the phase freeze\_override flag is not 'N'.
- Check that the qp\_list\_header\_phases table is populated.
- Check if sourcing (attribute mapping) happened. If it did not, you need to run the Build Sourcing Rules concurrent request.

- Check if line is an included item of a model; if it is, the charge will not be created.
- Check if Charge\_Type\_Code matches the Cost Type Code being selected at Ship Confirm. It will also print out all other costs that have been passed to OM.
- Check if this line has been Inventory Interfaced and OM Interfaced.

## Conclusion

Freight and Special Charges as well as Freight Cost functionality, can now be used to implement all kinds of complex business policies. But to make them work, you have to understand the capabilities and the complex setup required. This appendix has outlined the differences between freight charges and freight costs as well as provided information that you need to begin setting up and using Freight and Special Charges within Order Management.

## Supplement 1: Seeded Freight and Special Charge Types

| Lookup Code    | Lookup Type          | Description   |
|----------------|----------------------|---|
| HANDLING       | FREIGHT_COST_TYPE    | Charges applied for Handling and packaging of goods |
| INSURANCE      | FREIGHT_COST_TYPE    | Charges applied for Insured Shipment                |
| EXPORT         | FREIGHT_COST_TYPE    | Charges applied for Export/Import of goods.         |
| DUTY           | FREIGHT_COST_TYPE    | Charges applied for duties                          |
| FREIGHT        | FREIGHT_COST_TYPE    | Freight movement charges                            |
| ADMINISTRATION | FREIGHT_COST_TYPE    | Administrative Charges                              |
| MISCELLANEOUS  | FREIGHT_CHARGES_TYPE | Any miscellaneous Charges                           |

## Supplement 2: Order Level Cost to Charge Conversion

One way to get costs converted to an order level charge is to create a user-defined pricing attribute for order level costs, and then create a custom sourcing rule to source that attribute by summing up the line level costs. Finally, use that attribute in the formula that converts cost to charge.

You must fully license Advanced Pricing to do this setup. There is discussion underway to make this available to users of Basic Pricing.

Here are the steps:

First, create a new pricing attribute and call it Order Freight Costs. This has not been seeded by Oracle Pricing. Pricing\_Attribute23 can be used provided it has not been used already in context: Pricing Attributes. Define Pricing\_Attribute23 as Order Freight Costs under context: Pricing Attributes in the Pricing\_Contexts flexfield defined under the application: Oracle Pricing.

Next, in order for a formula to use this new attribute, a sourcing rule must be defined for pricing\_attribute23. The Navigation Path is Pricing: Setup: Attribute Mapping. Setup the sourcing rule for Pricing Attribute23 under Pricing Attributes context in the following way:

Src type: FN API

Package: CUSTOMER\_PKG1

Function: get\_order\_level\_cost\_for\_FREIGHT('FREIGHT', g\_hdr.header\_id)

You will need to write code for the function get\_order\_level\_cost\_for\_FREIGHT. Here is sample code for this function, or you can write your own function to source this attribute.

```
Function get_order_level_cost_for_FREIGHT(p_cost_type_code IN VARCHAR2,  
                                           p_header_id in number) return number is
```

```
    l_cost_amount number:= 0;  
begin  
    select sum(adjusted_amount)  
    into l_cost_amount  
    from oe_price_adjustments  
    where list_line_type_code = 'COST'  
    and header_id = p_header_id
```

```

and charge_type_code = p_cost_type_code
and nvl (invoiced_flag, 'N') = 'N'
and line_id in (select ool.line_id
                from oe_order_lines_all ool
                where ool.header_id = p_header_id
                and nvl(ool.invoice_interface_status_code, 'NO') =
'NO');

return l_cost_amount;

exception
    when no_data_found then
        return l_cost_amount;

end;
```

Next you have to setup a formula using this Pricing Attribute. Here's how this setup might look:

Formula Header:

- Name: Order Cost
- Formula: 1

Formula Line:

- Step: 1
- Formula Line Type: Pricing Attribute
- Pricing Attribute Context: Pricing Attributes
- Pricing Attribute: Order Freight Costs (for example, Pricing\_Attribute23)

Lastly, create a Freight & Special Charges Modifier that uses this formula. The Modifier would look like this:

Modifier Header:

- Type: Freight and Special Charges List

- Number: Ord\_Freight\_Cost
- Name: Order Level Freight Cost.
- Currency: USD
- Version: 1.0
- Active: <checked>
- Automatic: <checked>

Modifier Line:

- Level: Order
- Name: Freight Costs
- Automatic: <checked>
- Application Method: Lumpsum
- Pricing Phase: Header Level Charges
- Formula: OrderCost



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# Scheduling

Topics covered in this appendix include:

- [Overview](#) on page I-2
- [Introduction](#) on page I-2
- [Background](#) on page I-2
- [Functional Differences](#) on page I-2
- [Watch Out For](#) on page I-15
- [Example](#) on page I-16
- [Conclusion](#) on page I-18

## Overview

The scheduling feature of Oracle Order Management enables you to determine when items will be available to promise to a customer, schedule the shipment or arrival of order lines based on this availability, and reserve on-hand inventory to sales order lines. These scheduling activities can be performed on individual order lines or groups of order lines such as ship sets, arrival sets, and configurations.

## Introduction

Oracle Order Management (OM) works closely with Oracle Advanced Planning and Scheduling (APS) and Oracle Inventory to provide scheduling functionality. The features are provided in a variety of ways allowing OM users to tailor their processes to meet the needs of their business.

The features that are provided under the umbrella term of scheduling are:

- Calculating Available-to-Promise (ATP)
- Scheduling
- Reserving

Unschedulering and unreserving functionality is also provided. This paper covers how scheduling works in Order Management and how to set up OM, APS and Inventory to achieve your scheduling goals.

## Background

Oracle Order Entry release 11 and before (OE) included some scheduling functionality. The terminology, as well as the way that scheduling is implemented in OM release 11*i* is quite different.

## Functional Differences

The data model for OE included order headers, order lines, and other fragmentary tables such as schedule details and picking line details. For a line to be “scheduled” meant that it had been processed by the demand interface concurrent program and a record of the demand was in the MTL\_DEMAND table. Once this happened, the line was seen as demand by Oracle’s planning applications such as Material Requirements Planning (MRP) and Master Production Schedule (MPS). In OM the schedule details table no longer exists. If a line requires more than one set of schedule details (such as schedule date or warehouse) the line is split into multiple

lines. Also, the MTL\_DEMAND table no longer exists. An order line represents demand and is visible to the planning applications when the VISIBLE\_DEMAND\_FLAG is set to yes. This flag is set when the line is scheduled.

## Key Enhancements

Some of the great new enhancements to scheduling in OM are:

- the ability to schedule at multiple points - either manually or automatically as the line is entered, when the order is booked, or later using a background process
- the ability to determine the best warehouse for an order line using sourcing rules
- the ability to define by customer whether the “request date” is the requested ship date or requested arrival date
- the ability to automatically set the scheduled ship and arrival dates based on the calculated ATP date
- the ability to define a shipping network and determine the number of days required for delivery based on the transit time
- the ability to automatically reserve on-hand inventory to order lines
- the ability to control, based on order transaction type, the level of scheduling which should occur
- the ability to view availability for multiple warehouses at one time
- the ability to group lines into arrival sets which may be shipped from different warehouses on different days but should arrive at the customer site on the same day

## Terminology

Understanding the following terms will help you understand how scheduling works in OM.

**Actual Arrival Date** - The date the order line arrives at the customer site.

**Actual Ship Date** - The date the order line is shipped. This date is recorded by the ship confirm action.

**Arrival Set** - A set of order lines which arrive at the same time at the destination.

**Available to Promise (ATP)** - The quantity of current on-hand stock, outstanding receipts and planned production not already committed to sales orders or other sources of demand.

**ATP Date** - The date that a requested quantity will be available to promise.

**Delivery Lead Time** - Time (in days) for items to reach the customer once they are shipped.

**Demand** - Requests which consume inventory such as sales orders. Discrete manufacturing work orders and flow manufacturing schedules place demand for component items, and sales orders place demand for finished goods.

**Promise Date** - The date on which you agree you can ship the products to your customer or that your customer will receive the products. This field is for tracking purposes only. It may be defaulted from the schedule ship date or the schedule arrival date.

**Request Date** - The date the customer requests that the products be either shipped or received.

**Reservation** - A guaranteed allotment of product to a specific sales order. Once reserved, the product cannot be allocated to any other source of demand. Also known as a hard reservation.

**Reservation Time Fence** - Time (in days) before the schedule date, within which a line should be automatically reserved.

**Schedule Arrival Date** - The date returned by the system on which your customer can receive the products.

**Schedule Ship Date** - The date returned by the system on which you can ship the products.

**Ship Set** - A set of lines which will be shipped together from the same warehouse to the same location.

**Sourcing** - Selecting the warehouse for the order lines.

**Supply** - Incoming inventory. Some Oracle transactions that generate supply are purchase orders, discrete manufacturing work orders and flow manufacturing schedules.

## Calculating Available to Promise (ATP)

Oracle Order Management allows users to tell their customers when items will be available based on current on-hand inventory plus the expected incoming supply

and outgoing demand. Calculating ATP requires as input the item, the order quantity, the order quantity unit of measure and the request date. In general the user will enter the item and order quantity on every order line. The request date and order quantity unit of measure may be defaulted or manually entered. ATP may be calculated for a single line, a group of lines, or a complete order. The results for a single line are displayed in a single column in a small window. The results for multi-line ATP are displayed in a table. In both formats, the following information is displayed:

**Warehouse** - Either the warehouse on the order line or, if the warehouse on the order line was blank, the best warehouse as selected by the sourcing rules.

**Available** - The order quantity, if ATP was successful. The available quantity, which will be less than the order quantity, if ATP was not successful.

**On-hand** - The quantity that is currently in the warehouse.

**Reservable** - The on-hand quantity minus the quantity that is already reserved to other sources of demand.

**Request Date** - The date on the order line.

**Available date** - The date that the ordered quantity will be available. It could be the request date if the order quantity is available on the request date, or it might be a future date when the order quantity will be available

**Error Message** - Any error that occurred in calculating ATP. For example, if the Check ATP flag for the item is not selected then this field will display ATP not applicable.

At the bottom of the Availability window there is a Global Availability button. Pressing this button will open the supply chain ATP form which has the list of warehouses where the item is enabled. The user can select the warehouses for which they would like to see the availability, and the system will return the availability in all the selected warehouses. This feature is only available if the APS module is installed.

After ATP is calculated the user can see how the results were derived by going to the tools menu and selecting the option Scheduling -> Scheduling Results.

ATP will be automatically calculated during scheduling, and may be calculated manually by pressing the Availability button on the line items tab of the sales order form.

There are several setup steps required for ATP calculations to work. ATP rules must be defined to determine the sources of supply and demand which are included in the calculation. The ATP rules must be associated with items and/or inventory

organizations. Also, the data collection program must be run. There is a requirement for ATP calculations to be very fast; some customer service representatives will need to give this information to customers on the phone. However, considering all the possible sources of supply and demand for an ATP calculation can be very complex. Therefore, a concurrent process known as data collection must be run to summarize the supply and demand picture. This program is part of the Oracle Advanced Planning and Scheduling application. The ATP calculation is then performed on the summary tables. For details about setting up ATP rules and running the data collection program, see the setup section of this document.

## Scheduling

Scheduling is an action performed on an order line or a group of lines. The action does the following -

- Determines the source (warehouse) for the order line. If the warehouse is entered on the line, either manually or using defaulting rules, the scheduling action uses the requested warehouse and the other scheduling results are based on it. If the warehouse is blank, the scheduling action determines the best warehouse based on the sourcing rules.
- Determines the schedule ship date, the schedule arrival date, the delivery lead time and the shipping method.
- Makes the line visible to the planning applications and consumes supply for the item. When a line is successfully scheduled the `VISIBLE_DEMAND_FLAG` is set to Yes.
- If the reservation time fence is set and the schedule ship date is within the reservation time fence, automatically reserves the line.

The request date may be either the requested ship date or the requested arrival date depending on the request date type of the customer. If the customer's request dates are requested arrival dates, the scheduling action calls MRP's scheduling API with the requested arrival date. The API returns the first date on or after the requested arrival date that the items could arrive at the customer location, and enters that date into the scheduled arrival date field for the line(s). The schedule ship date is calculated by subtracting the delivery lead time (number of days for items to reach the customer once they ship) from the schedule arrival date. If the shipping network has not been defined for this combination of locations, the delivery lead time will be considered 0 days and the schedule ship date and schedule arrival date will be the same.

If a user enters a schedule ship date on the order line before performing the schedule action, when the schedule action occurs the system tries to schedule on that date. If it can't, the schedule action fails.

You can define for each customer the delivery window in days that they will accept by entering the latest schedule limit on the customer form. When you enter an order line, the latest acceptable date is calculated by adding the latest schedule limit to the request date. When the scheduling action occurs, the schedule date will only be returned if it is between the requested date and the latest acceptable date. If it is not within this range, the scheduling action fails. For example, suppose that you have a customer who only accepts orders that ship within 5 days of the request date. You would enter 5 in the latest schedule limit fields on the Order Management tab of the customer form. When you enter an order line, if the request date is September 10, the latest acceptable date would be September 15. When the scheduling action occurs, if the schedule date returned is not in the date range of September 10 through September 15, the schedule request fails.

You can control whether OM schedules lines on hold by using the profile option OM: Schedule lines on Hold. If an order or line is on hold and this profile option is No, then the scheduling action fails.

The scheduling action can be invoked in multiple ways. You can schedule from the sales order form by having autoschedule turned on, or by manually choosing to schedule using the right mouse button menu or the tools menu. You can schedule multiple orders using the Scheduling concurrent program or the Order Backlog Workbench. You can schedule using a workflow activity either immediately or in deferred mode.

**Autoschedule** - The line is scheduled when it is saved. A line can be saved manually by the user or will automatically be saved when the user leaves the line. If either the Autoschedule check box on the order transaction type is checked or the OM: Autoschedule profile option is Yes, the sales order will be opened in Autoschedule mode. You can turn Autoschedule on or off from the sales order form by going to the Tools menu. Note that if autoschedule is turned on the availability window is automatically displayed when the sales order form is opened. The user can close the availability window, but the lines will still be autoscheduled unless the autoschedule check box on the tools menu is unchecked.

**Manual** - You can access the scheduling sub menu either by selecting schedule from the list of activities on the tools menu or by placing your cursor on a line and pressing the right mouse button. Selecting schedule from these menus will trigger the scheduling action. If the action is selected from the order header tab, all the lines on the order will be scheduled. If the action is selected from the lines tab, it applies only to the line or group of lines selected.

**Scheduling Concurrent Program** - This program selects all lines which are eligible for scheduling and attempts to schedule them. The user can select orders based on the order number.

The program does the following for each order selected:

- Check for a hold on the order. If there is a hold, and if the profile option OM: Schedule Lines on Hold is No, it skips the order. If the profile is Yes, it continues with the next step.
- Select the lines of the order and lock them. If locking fails, the program places a message in the message stack and skips the order.

For each line of the order

1. Check the workflow status. The line should be eligible for scheduling.
2. Check to see if the item requires scheduling. Service lines and option classes are examples of lines which do not require scheduling.
3. Check for a hold on the line. If there is a hold, and if the profile option OM: Schedule Lines on Hold is No, the line will be skipped.
4. Set the action on the line to OESCH\_ACT\_SCHEDULE. Add it to the list of lines to be scheduled.
5. Call the Process Order API to process the lines. Process Order API calls Schedule Line API which will schedule each line. For more about these API's, see the *Oracle Manufacturing Open Interfaces* manual.

If there are any messages in the message stack, read them and store them in the OE\_MESSAGES table and also print the message in the log file.

If scheduling was successful, complete the scheduling workflow activity with a result of COMPLETE so that the line can progress to the next activity.

If scheduling was not successful, complete the workflow activity with the result of INCOMPLETE. The line can then be scheduled manually by progressing the order from the sales order form (press the Action button and select Progress Order) or automatically in the next run of the scheduling concurrent program

You can submit the scheduling concurrent program from the OM navigation menu by choosing Orders, Returns -> Schedule Order.

**Order Backlog Workbench** - This tool allows you to easily manage existing order lines that need to be rescheduled. It is especially useful in situations where the expected available supply changes dramatically. It allows the user to select orders for scheduling, process them in a simulated scheduling mode, review the results,



and commit the changes when they are satisfied. Note that the lines must be successfully scheduled before they can be processed using this tool. For details on the order backlog workbench, see the Oracle Order Management User's Guide.

**Workflow** - The seeded scheduling workflow activity should be used in the workflow process for your order lines. In the Line Flow - Generic seeded flow, the schedule activity is a synchronous activity immediately after booking. With this type of process, scheduling will occur immediately after booking and any scheduling errors will be seen by the person who is booking the order. If the scheduling activity is deferred it will occur after the workflow background process runs and any error messages will be available in the process messages window. For details on configuring workflow for OM, see the white paper entitled Using Workflow in Oracle Order Management.

## Reserving

In Oracle Order Management, you can reserve on-hand inventory to a sales order. Reserved inventory cannot be used for any other purpose. The reserved quantity for a sales order line is displayed on the shipping tab. You may reserve part or all of the ordered quantity.

A line must be scheduled before it can be reserved. If you try to reserve an unscheduled line, the system will first try to schedule the line. If the line is successfully scheduled then the system will try to reserve it.

There are two ways to reserve from the sales order form. You can select reserve from the scheduling option under the tools menu or select reserve from the scheduling sub menu which is displayed when you press the right mouse button. If you are on an order line the line will be reserved. If you are on the header, all the lines will be reserved.

Reservations are performed automatically whenever a line is scheduled and the schedule date is within the reservation time fence. For example, suppose the today's date is November 25<sup>th</sup>. An order line is scheduled for December 1<sup>st</sup>, which is 6 days away. If the reservation time fence is 10, the line will be reserved because  $6 < 10$ . If the reservation time fence is 2, the line will not be reserved because  $6 > 2$ . If the reservation time fence is NULL, then lines will not be automatically reserved. The reservation time fence is set using the profile option OM: Reservation Time Fence.

When you create reservations manually on the sales order form or automatically using the reservation time fence, the items are reserved at the warehouse level with no inventory details specified. You can specify inventory details for a reservation by using inventory's reservation details form. To access the form from the sales

order form, go to the tools menu and select scheduling. From the list of options select Reservation Details. A form will appear which allows you to reserve by lot, revision, subinventory and/or locator. You can only access the reservation details form for lines that are scheduled.

## Unreserving and Uncheduling

You can unreserve lines that have been partially or completely reserved. The inventory which was allocated to the line will become available for other orders, but the line will still be scheduled so it will be visible as demand to the manufacturing applications. The system will automatically unreserve a line if it is deleted or canceled.

When the user unchedules a line the system will both unreserve and unschedule it. Uncheduling the line sets the `VISIBLE_DEMAND_FLAG` to No so that the line is no longer visible as demand to the manufacturing applications.

A user can unreserve or unschedule by choosing these options from the scheduling submenu of the tools menu or by choosing the scheduling option when you press the right mouse button.

## Scheduling Groups of Lines

When you call one of the scheduling functions, OM may perform the function on only the line(s) in the call or on that line and a group of related lines. Scheduling treats the following groups as scheduling sets or sets which need some kind of scheduling activity to take place together on all the lines of a set.

- Assemble to Order (ATO) Models
- Ship Model Complete (SMC) Pick to Order (PTO) Models
- Ship Sets
- Arrival Sets

Scheduling processes the lines of the set together and applies the rules required to honor the set. If lines are in a ship set they will be scheduled from the same warehouse and will have the same ship date, ship to and ship method. User created ship sets, ATO models and SMC PTO models are all ship sets. All lines in a user created arrival set will have the same arrival date and ship to organization.

The following table shows the behavior for each scheduling function with each type of line group.

| <b>Line Group Type</b>                 | <b>Calculate ATP</b>  | <b>Schedule</b>   | <b>Reserve</b>               |
|--|---|---|------------------------------|
| Standard Line (not in any set)         | That Line   | That line   | That line                    |
| Standard Line (in ship or arrival set) | Whole Set   | Whole set   | That line                    |
| ATO Model                              | All options under it  | All options under it  | Cannot reserve               |
| ATO Class                              | Whole configuration   | Whole configuration   | Cannot reserve               |
| ATO Option                             | Whole configuration   | whole configuration   | Cannot reserve               |
| PTO Model (Ship Model Complete)        | Whole configuration   | Whole configuration   | That line                    |
| PTO Model (non-Ship Model Complete)    | Model and its included items                                      | Whole configuration, but each line will be scheduled separately | Model and its included items |
| PTO Class (non-Ship Model Complete)    | Class and its included items                                      | Class and its included items                                    | Class and its included items |
| PTO Options (non-Ship Model Complete)  | Only the option   | Only the option   | Only the option              |
| Included Item                          | Cannot calculate ATP for this by itself; calculate for the parent | Cannot schedule this by itself; schedule the parent             | That line                    |
| Service Line                           | Cannot calculate ATP  | Cannot schedule   | Cannot reserve               |

You can manually request scheduling for more than one line at a time by multi-selecting the lines. From the sales order form, select each line by pressing the Ctrl key and clicking the mouse. The selected lines will be highlighted. The scheduling activity that you request will be executed for the lines that you selected, plus any lines that are required to be scheduled with them because they are in the same group. The lines that are multi-selected that are not in a scheduling group will be processed independently.

## Changing Scheduled Lines

OM has many features to help manage scheduled lines when the lines are changed.

When a scheduled line is changed, the system reschedules the line. For example, if you change the ordered quantity or the warehouse, the system reschedules based on this new information.

When a new line is inserted into a scheduling group (such as a ship set or a configuration) that is scheduled the system will first try to schedule the new line with the same attributes as the other lines in the scheduling group. If that fails, then it checks the value of the profile option Auto Push Group Date. If the value is No, the line is inserted but not scheduled. If the value is Yes, the system tries to reschedule the whole set. If rescheduling the whole set fails, the line is inserted but not scheduled. Exception: If the line is part of an ATO configuration or a ship model complete PTO configuration, and scheduling the group of lines together fails, then the line will not be inserted.

When a user cancels a line which has been scheduled or reserved, the system unschedules the lines and removes the reservations. If a scheduled line is partially canceled, the system cancels scheduling information in this order:

1. Cancel the quantity which is scheduled but not reserved.
2. If the quantity requested for cancellation needs for reservations to be canceled the system finds the reservations and cancels them one at a time until the reserved quantity is no longer more than the remaining uncanceled quantity. The most cancelable reservations (the ones with the least details) is canceled first and the most detailed reservations is canceled last.

OM also handles the situation when scheduled lines are split. Scheduling is an all-or-nothing proposition; either the complete line is scheduled or none of the line is scheduled. So if a scheduled line is split then both of the new lines are scheduled.

A line may be partially reserved, so OM must determine which of the new lines get the reserved quantity. This depends on whether the split was initiated by the user or by the system.

Lines may be split because of a user request, for instance if the customer requests shipment on more than one date. If a partially reserved line is split by a user, the first new line gets as much of the reserved quantity as it needs, then the second line, etc. For example, suppose that a line has order quantity of 10 and reserved quantity of 3. If the line is split into two lines with order quantities of 6 and 4, the first new line will have a reservation for 3 and the second new line will not have any reservation. If an order line has order quantity of 10 and reserved quantity of 7, and the line is split into two lines with ordered quantities of 6 and 4, then the first line will have a reserved quantity of 6 and the second line will have a reserved quantity of 1.

Lines are split by the system when a partial quantity is ship confirmed. In this case the shipped line will have a reserved quantity of 0 (it doesn't need reservations any more) so any remaining reserved quantity belongs to the unshipped line(s).

## Setup

For scheduling to meet the needs of your business, several things must be set up correctly. Many of these setup steps are mentioned throughout this paper, but they are all recapped here.

Several fields on the Order Management tab of the **customer definition** form affect the way scheduling works.

**Request Date Type** - Possible values are arrival and ship. If the value is arrival then the request date and promise date will be considered arrival dates by the system; if the value is ship then they will be considered ship dates. The request date type can be defaulted from the customer information to the order, and the user can change it on the order if required.

**Latest Schedule Limit** - This field can contain any numeric positive integer value. When you enter an order line, the latest acceptable date will be calculated by adding the latest schedule limit to the request date. When the scheduling action occurs, the schedule date will only be returned if it is between the requested date and the latest acceptable date. If it is not within this range, the scheduling action fails.

The following **profile options** affect scheduling functionality:

**OM: Schedule Lines on Hold** - Possible values are yes and no. If this field is yes, the scheduling action processes order lines even if the order or line is on hold. If no the scheduling action will fail.

**OM: Autoschedule** - Possible values are yes and no. If this field is yes the availability window is displayed when the sales order form is opened and scheduling occurs automatically as each order line is saved.

**OM: Reservation Time Fence** - This may be any positive integer numeric value. When a line is scheduled it is also automatically reserved whenever the schedule date is within the reservation time fence.

**OM: Auto Push Group Date** - Possible values are yes and no. If the value is yes and a line is added to a scheduled configuration, and the new line cannot be scheduled on the date that the rest of the configuration is scheduled, then the system will try to reschedule the complete configuration at a different time. If the

value is no and the new line cannot be scheduled, then scheduling for the new line will fail and the rest of the configuration will not be affected.

**MRP:ATP Assignment Set** - This can be any valid assignment set which is defined in the MRP application. It specifies the assignment set that will be used for calculating ATP. Assignment sets are mentioned later in this section.

**INV: Capable to Promise** - Possible values are Enable Product Family ATP and CTP; Enable Product Family ATP; Enable ATP; Enable PL/SQL based ATP with Planning Output; and Enable PL/SQL based ATP without Planning Output. This profile option indicates whether and how to enable the CTP calculation. For ATP to work in OM, the value must be Enable PL/SQL based ATP without Planning Output.

**ATP Rules** are created in the Inventory module. They indicate which sources of supply and demand to consider when calculating ATP. They can be assigned to inventory organizations and items. If an ATP rule is assigned to an item that is used. If the ATP rule for the item is blank, then the ATP rule for the inventory organization is used. For details on defining ATP rules see the Oracle Inventory User's Guide.

You must define **sourcing rules** if you want ATP to determine the warehouse for your order lines. Once sourcing rules are defined, they must be assigned to particular items, categories and/or inventory organizations. You do this using **assignment sets**. See the Oracle Master Scheduling/MRP and Oracle Supply Chain Planning User's Guide for details on defining sourcing rules and creating assignment sets.

For scheduling to work in OM you must successfully run the **data collection** concurrent request set. As previously stated, calculating ATP must happen almost instantaneously, but searching through all the possible sources of supply and demand to calculate ATP is very complex. Therefore, a concurrent process known as data collection must be run to summarize the supply and demand picture. The ATP calculation is then performed on the summary tables. To run the data collection request set, choose Scheduling -> Collect Data from the OM navigation menu. There are two programs in the request set. Enter parameters for both and submit the set. The Planning Data Pull program has a parameter named Complete Refresh. If this is yes, then the collection will select all scheduling related information from the relevant tables. If it's no, then only the updated information will be selected. For details on running the data collection programs see the Oracle Advanced Supply Chain Planning and Oracle Global ATP Server User's Guide.

The **scheduling level on the order transaction type** determines what type of scheduling is allowed. The possible values for this setting are ATP Only, No

Reservations and Allow All Scheduling Actions. If the value is ATP Only then you will not be able to schedule or reserve lines on the order. If the value is No Reservations then you can perform all scheduling functions except for reserving inventory. If the value is Allow All Scheduling Actions or NULL then all scheduling functions can be performed.

Finally, if you want to calculate arrival dates based on the time required for shipment from a warehouse to a customer location via a specified ship method, you must define your **shipping network**. See the Oracle Inventory User's Guide for details on defining your shipping network.

## Choosing Not to Use Scheduling

There are ways that you can turn off some or all of the scheduling functionality of order management. If you want lines to be visible as demand to the manufacturing applications but do not want to perform an ATP check on them then you can set the Check ATP flag of the item to No. You would do this for items where you assume that the item is always available. When the scheduling action is called for a non-ATP item, the system will still perform the sourcing action to determine the warehouse if one is not specified. It will not check ATP but will copy the request date into the schedule date field. The line will become visible to the manufacturing applications as demand on the requested/schedule date.

If you don't want your order lines to be visible as demand to the manufacturing applications, do not schedule the lines. You can control this by setting the scheduling level of the order transaction type. The possible values for this setting are ATP Only, No Reservations and Allow All Scheduling Actions. If you set the value to ATP Only then you will not be able to schedule or reserve lines on the order. If you have an order transaction type defined with a scheduling level of ATP Only then you must not have the scheduling activity in any of the line level workflow processes.

If you set the value to No Reservations then you will be able to ATP the ATP-able items and schedule all items, but you will not be able to create reservations from the sales order form. If you set the value to Allow All scheduling Actions, or if the value is NULL then you can calculate ATP, schedule and reserve lines on the order.

## Watch Out For

Here are some limitations that you will need to understand:

The schedule dates returned by MRP have only the day, and not the time, therefore automatic scheduling in OM can only be at the day level. The OM

date fields have time capability, so you can enter the time on request dates, promise dates, etc. but the scheduling function will ignore them

Global Availability functionality (calculating availability across warehouses) can only be used if you purchased the Advanced Planning and Scheduling (APS) module. The other scheduling functions are available with the shared install of APS which is included in the purchase of OM.

If scheduling is called with a request date that is before today's date then ATP will be calculated using today's date and not the request date. If for some reason (for example a non-ATP item) a schedule date is returned for a past date, the system will not automatically reserve the item even if it is within the reservation time fence.

There are some limitations to using the reservation details form.

You cannot multi-select lines and go to the reservation details form.

You cannot go to the reservation details form from the orders block.

You cannot use this form to reserve more than the ordered quantity.

You cannot use this form to modify reservations for a configured item created for an ATO configuration.

## Migration/Upgrade

In OE Release 11 and before, scheduling information for a line was stored in the table SO\_LINE\_DETAILS. In R11i, this table no longer exists and the scheduling information for a line is stored in the main line information table, OE\_ORDER\_LINES. During the migration from OE to OM, a record is created in OE\_ORDER\_LINES for each combination of SO\_LINES\_ALL and SO\_LINE\_DETAILS. If the status in SO\_LINE\_DETAILS was DEMANDED, the new line will be scheduled (VISIBLE\_DEMAND\_FLAG = Yes.) If the status in SO\_LINE\_DETAILS was RESERVED, the new line will be scheduled and a record will be created in the MTL\_RESERVATIONS table for the reservation.

## Example

The following 3 examples illustrate the use of these features.

### Example 1

The warehouse for the order is defaulted from the ship to site. A shipping network is defined for this warehouse/ship to combination with the shipping method of



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UPS ground, and the transportation lead time is 5 days. The customer requests the shipment as soon as possible, so the request date is entered as today's date. On-hand inventory is available to fulfill the order. Autoschedule is on, and the reservation time fence is 5 days.

The user enters an order line with the item, quantity and request date. When the line is saved, because autoschedule is on, it is automatically scheduled for the requested warehouse with a schedule ship date of today and a schedule arrival date of today plus 5 days. Because the schedule ship date is within the reservation time fence the line is also automatically reserved.

### Example 2

No warehouse is defaulted or entered for the order. No shipping network is defined for the customer. The customer requests the shipment as soon as possible, so the request date is entered as today's date. There is no inventory available to fulfill the order, but there is a work order scheduled for completion in 10 days, and your ATP rule includes work orders as a source of supply. Autoschedule is off, but the line level workflow process has the scheduling activity immediately after booking as a synchronous activity.

The user enters an order line with the item, quantity and request date and saves the line. Because autoschedule is off, no scheduling action occurs at this time. The user enters additional lines and then books the order. As soon as the order is booked, the scheduling activity from the workflow executes. The warehouse is determined by the sourcing rules. The schedule ship date is today + 10 days (the day that the work order is scheduled to complete.) The schedule arrival date is the same as the schedule ship date, because the shipping network is not defined for this combination of customer, warehouse and ship method.

### Example 3

The warehouse is defaulted from the customer ship to site. No shipping network is defined for the customer. The customer requests the shipment as soon as possible, so the request date is entered as today's date. There is no inventory available to fulfill the order, and there are no work orders or purchase orders for the items. Your ATP rule specifies an infinite supply time frame of 30 days. The customer has a Latest Schedule Limit of 10 days. Autoschedule is off, but the line level workflow process has the scheduling activity immediately after booking as a synchronous activity.

The user enters an order line with the item, quantity and request date and saves the line. Because autoschedule is off, no scheduling action occurs at this time. The user

enters additional lines and then books the order. As soon as the order is booked, the scheduling activity from the workflow executes. The ATP date is calculated to be today + 30 days because of the infinite supply days of the ATP rule. However, the Earliest Acceptable Date is today + 10 days because of the customer setup. So the scheduling activity fails, the user sees an error message, and the line remains at the workflow activity of Schedule - Eligible until a source of supply can be created or until the Latest Acceptable Date is changed. Then the line can be scheduled by either manually progressing the line or running the scheduling concurrent program.

## Conclusion

OM provides powerful and flexible scheduling capabilities which are tightly integrated with other Oracle applications such as Inventory and APS. Using these features successfully requires an understanding of the business process, the features and the required setup across the applications.

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# Carrier-Ship Method Relationship and Setup

Topics covered in this appendix include:

- [Overview](#) on page J-2
- [Difference Between Release 11 and Release 11i](#) on page J-2
- [Freight Carriers](#) on page J-3
- [Ship Method](#) on page J-4
- [Carrier- Ship Method Relationship](#) on page J-7
- [Find a Carrier-Ship Method Relationship](#) on page J-9
- [Assign a Ship Method](#) on page J-10

## Overview

Oracle Shipping Execution Release 11*i* provides the ability to assign a Ship Method to a Freight Carrier for a specific Organization according to specifications defined by the user. Ship Method is intended to define the mode and service available for a specific carrier. Establishing a relationship between the Freight Carrier and the Ship Method is a mandatory step prior to assigning a Ship Method to an order or delivery. The set up process for enabling Carrier-Ship Method relationships consists of three basic steps:

- Create freight carrier
- Create ship method, and
- Assign a ship method to a freight carrier

This appendix describes the process for setting up Carrier-Ship Method relationships for orders and deliveries.

This method applies to the initial releases of Release 11*i*. In later releases of Release 11*i*, the functionality changed and is described in the Shipping Execution Setup chapter, Defining Freight Carrier Ship Method Relationships. Consult the Oracle Shipping Execution Features Matrix on Metalink for more release information.

## Difference Between Release 11 and Release 11*i*

In Release 11, Oracle Shipping assigned only a Freight Carrier to an order or delivery. When querying Freight Carriers from the Sales Order form, the List of Values returned all defined Freight Carriers whether or not a particular carrier was available in that organization. The define Freight Carriers form and define Ship Method form remain the same in both Release 11 and Release 11*i*. In Release 11, the Ship Method was not associated with a Freight Carrier. Ship Methods were used in the Inter-org Shipping Methods window to associate Ship Methods with lead times. These lead times were used by MRP. Ship Methods were often defined as a mode and or service and were not carrier specific. As an example, Ground, Express, or Air.

In Release 11*i*, the user still has the ability to define a Freight Carrier and a variety of Ship Methods however they now can be linked to form a unique relationship which is assigned by organization. The user no longer has to sort through an exhaustive list of available Freight Carriers only to find that the one selected is not valid within the organization he or she is operating in. In Release 11, if a user defined the Freight Carrier as UPS, there was only one choice. Now, a user can define UPS as a Freight Carrier and create a relationship between multiple Ship

Methods to differentiate mode and service. As an example, a user could define UPS Next Day Air, UPS Two Day Air, UPS International, and UPS Ground as Ship Methods. Once these Ship Methods have a relationship with an organization and a Freight Carrier, they can be used for shipments. It is also possible to associate different document sets with each Carrier-Ship Method combination in Release 11i.

## Freight Carriers

### Defining Freight Carriers

Currently, the applications product captures the Freight Carrier code in two different places. These are going to be standardized into one lookup. The application supports organization specific Freight Carrier codes which store the distribution account for invoicing. Navigation to this set up form consists of Shipping -> Setup -> Freight-> Define Freight Carriers. (Can also be reached through Inventory -> Setup -> Freight Carriers.)

A Freight Carriers Summary window will appear and list any Freight Carriers that have been previously defined. To define a new carrier, click on new (File -> New or + icon) to create a new line. The following window illustrates the new line.

**Figure J-1 Freight Carriers**

| Carrier Name   | Description          | Distribution Account | Inactive After | [ ] |
|----------------|----------------------|----------------------|----------------|-----|
| 11iBeta        | Beta Test Carrier    | 01.520.7220.0000.000 |                |     |
|                |                      |                      |                |     |
| 11iSupport     | Support Test Carrier | 01.520.7220.0000.000 |                |     |
| DAIHAN Express | DAIHAN Express       | 01.520.7220.0000.000 |                |     |
| DHL            | DHL Worldwide        | 01.520.7220.0000.000 |                |     |
| FEDEX          | Federal Express      | 01.520.7220.0000.000 |                |     |
| MLL            | MLL TEST             | 01.520.7220.0000.000 |                |     |

Information pertaining to the fields in the Freight Carriers definition window are as follows:

**Carrier Name** This is a free form field used to enter the name of the carrier you are defining. This is the name that will show up in the list of values when assigning the relationship between ship method and carrier. Freight Carriers must be defined for each organization in which they will be utilized.

**Description** Enter text that describes the carrier you are defining. An example might be, United Parcel Service.

**Distribution Account** In the Distribution Account field, select the general ledger distribution account associated with using this carrier. (mandatory field)

This account can be used when you perform an inter-organization transfer and specify freight costs.

**Inactive After** Optionally, you can select an Inactive Date. When the Inactive Date starts, the carrier cannot be assigned to any functions until it is reactivated. An example might be, the end date for the current service contract between UPS and Oracle.

**Descriptive Flexfield** A feature used to collect information unique to your business. You determine the additional information you need and descriptive flexfield lets you customize your application to your needs without additional programming.

## Ship Method

Once you have defined a Freight Carrier, you must create a Ship Method and define the date range over which the Ship Method is valid. The Ship Method should be defined to be used in conjunction with a specific Freight Carrier within that organization. Navigation consists of : Inventory -> Setup -> Organizations -> Shipping Methods.

To define a new Ship Method, click on new (File -> New or + icon) to create a new line. The following window illustrates the newly created Ship Method.

**Figure J-2** Defining a new Ship Method in the Ship Method Lookup window.

The screenshot shows the 'SHIP METHOD Lookups' window. At the top, there are four input fields: 'Type' (SHIP\_METHOD), 'User Name' (SHIP\_METHOD), 'Application' (Oracle Inventory), and 'Description' (Ship Method). To the right is an 'Access Level' section with three radio buttons: 'User' (unselected), 'Extensible' (selected), and 'System' (unselected). Below these is a table with columns: Code, Meaning, Description, Tag, From, To, and Enabled. The table contains several rows of ship methods, including '11i SUPPORT Overnight Shipment', '11iBETA 11iBeta', '11i ESSAY Topical Essay Exam', 'AIR Air Freight', 'AIRWAY AIRWAY', 'ABBITTUAL Abbittual', 'AIRBORNE Airborne', 'BNAF BNAF', 'CC AIR Airway', and 'CONSOLIDAT CONSOLIDATED'.

| Code        | Meaning            | Description            | Tag | From        | To | Enabled                             |
|-------------|--------------------|------------------------|-----|-------------|----|-------------------------------------|
| 11i SUPPORT | Overnight Shipment | Support Test Carrier   |     | 18-DEC-2001 |    | <input checked="" type="checkbox"/> |
| 11iBETA     | 11iBeta            | Beta Test Carrier      |     | 20-APR-2001 |    | <input checked="" type="checkbox"/> |
| 11i ESSAY   | Topical Essay Exam | 11i Essay Ship Method  |     | 31-DEC-2001 |    | <input checked="" type="checkbox"/> |
| AIR         | Air Freight        | Use Air Freight as Car |     | 14-MAY-1997 |    | <input checked="" type="checkbox"/> |
| AIRWAY      | AIRWAY             |                        |     |             |    | <input checked="" type="checkbox"/> |
| ABBITTUAL   | Abbittual          | Abbittual Transportes  |     | 20-APR-2001 |    | <input checked="" type="checkbox"/> |
| AIRBORNE    | Airborne           | Airborne Express       |     | 20-APR-2001 |    | <input checked="" type="checkbox"/> |
| BNAF        | BNAF               | Burlington Northern A  |     | 20-APR-2001 |    | <input checked="" type="checkbox"/> |
| CC AIR      | Airway             | CC Airway Transport    |     | 13-DEC-2001 |    | <input checked="" type="checkbox"/> |
| CONSOLIDAT  | CONSOLIDATED       |                        |     |             |    | <input checked="" type="checkbox"/> |

Information pertaining to the fields in the Ship Method Lookup window are as follows:

**Type, User Name, Application, and Description** These four fields contain seeded values that cannot be changed

**Access Level** This option group determines whether you can add new Ship Methods or modify existing Ship Methods of this type. The three levels are:

**User** - No restrictions on adding or modifying Ship Methods are enforced.

**Extensible** - New Ship Methods may be added, but you can only modify or disable seeded Ship Methods if the application of your responsibility is the same as the application of this Ship Method.

**System** - Only Ship Method meanings and descriptions may be modified.

**Code** Enter a unique alphanumeric code describing the Ship Method you are creating. This will be a unique name that will identify this sequence in the application defined for a specific duration. You can define a maximum of 250 Ship Methods for a single Ship Method type. Inventory uses this value in the list of values for the Shipping Method field in the Inter-org Shipping Methods window. This is foreign key to FND\_LOOKUP\_VALUES\_VL. Form will check entered value with LOV. (mandatory field)

You cannot change the values in this field after saving them. To remove an obsolete Ship Method you can either disable the code, enter an end date, or change the meaning and description to match a replacement code.

**Meaning** Enter a short, descriptive statement to further define the Ship Method. When you enter a valid Ship Method meaning into a displayed window field, Ship Method stores the corresponding Ship Method into a hidden field. Ship Method automatically displays the meaning in your Ship Method field whenever you query your window. For example, the Ship Method Y displays the meaning Yes but stores the Ship Method value Y in a hidden field. Maximum, 80 characters. (mandatory field)

**Description** You can display the description along with the meaning to give more information about your Ship Method. If you use windows specialized for a particular Ship Method type, the window uses this description in the window title. Maximum, 240 characters.

**Tag** Optionally enter in a tag to describe your Ship Method. The tag can be used to categorize lookup values. Maximum, 30 characters.

**Effective, From and To** Enter the first date you want the Ship Method to become effective by clicking on the calendar LOV in the From field. Enter the date you want the Ship Method to end by clicking on the calendar LOV in the To field.

If you enter an Effective To date you cannot use the Ship Method after this date. Once a Ship Method expires, you cannot define Shipping Networks\* using the Ship Method, but can query networks that already use the Ship Method. If you do not enter an end date, the Ship Method is valid indefinitely.

**Enabled** Indicate whether the Ship Method is enabled. The enabled flag is used to indicate whether or not the Ship Method is valid for a specific organization. A Ship Method must be enabled before you can define Shipping Networks using it. If the enabled flag is not checked, the Ship Method will not be available for that particular organization or Shipping Network. If you disable a Ship Method you cannot use it



in Shipping Networks, but you can query networks that already use the Ship Method.

- **Shipping Networks:** Inter-organization shipping network information describes the relationships and accounting information that exists between a shipping (from) organization that ships inventory to a destination (to) organization.

Depending on the function security assigned to your responsibility, you can define a Shipping Network between the current organization and another organization or between any two organizations. The function security assigned to your responsibility determines whether you have the ability to define shipping networks for all organizations or just the current organization.

**Descriptive Flexfield** A feature used to collect information unique to your business. You determine the additional information you need and descriptive flexfield lets you customize your application to your needs without additional programming.

## Carrier- Ship Method Relationship

Once you have defined a Freight Carrier and a Ship Method, the final step before you can assign a Ship Method to an order or delivery would be to establish the relationship by linking a Ship Method to a Freight Carrier. A Ship Method **must** be assigned to a Freight Carrier to be available within an organization. The Carrier-Ship Method Relationship form is organization specific. The same Ship Method can be assigned to the same Freight Carrier in multiple organizations. However, a Ship Method can not be used more than once within an organization. As an example, Troy Facility is my organization. I have defined UPS as a carrier and UPS Ground Service as a Ship Method. I have linked the carrier and ship method as a relationship. UPS Ground can not be set up again for the same organization (Troy Facility). Navigation to perform this process is: Shipping -> Setup -> Freight-> Define Carrier Ship Methods.

To establish a Carrier-Ship Method relationship, utilize the List of Values in each field to create the new, unique relationship for that organization. The following window illustrates a new entry. The Freight Carrier, UPS, can be assigned to multiple Ship Methods within the same organization.

**Figure J-3 Assign Ship Method to Freight Carrier.**

| Ship Method        | Organization | Freight | Service Level | Web Enabled              | Enabled                             |
|--------------------|--------------|---------|---------------|--------------------------|-------------------------------------|
| ML SUPPORT OVER V1 | V1           | UPS     |               | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| Service Level | Description            |
|---------------|------------------------|
| 2DA           | 2nd Day Air            |
| 2DM           | 2nd Day Air AM         |
| 3DS           | 3 Day Select           |
| STD           | Canada Standard        |
| GND           | Ground                 |
| 1DA           | Next Day Air           |
| 1DP           | Next Day Air Saver     |
| 1DM           | Next day Air Early AM  |
| XPD           | Worldwide Expedited    |
| XPR           | Worldwide Express      |
| XDM           | Worldwide Express Plus |

Information pertaining to the fields in the Carrier-Ship Method relationship definition window are as follows:

**Ship Method** Carrier specific style/method of freight movement. i.e. mode/service: FEDEX Next AM Air, YELLOW ground. (mandatory field) User can choose a value from LOV or enter data directly. Form will check entered value with LOV. This is a foreign key to FND\_LOOKUP\_VALUES\_VL.

**Organization** This qualifies as the organizations where the ship method is available. It also serves as a foreign key to the organization in ORG\_FREIGHT. (mandatory field)

**Freight** Freight Code which identifies a carrier. User can choose a value from LOV or enter data directly. Form will check entered value with LOV. This is a foreign key to ORG\_FREIGHT.

**Service Level** This allows the user to specify service levels ONLY when the Freight Code is UPS. This attribute is only applicable to UPS is because Oracle has an integration established with UPS that it does not have with other carriers.

**Web Enabled** The web enabled flag is used by Oracle iStore to determine which ship methods they want to offer the web user.

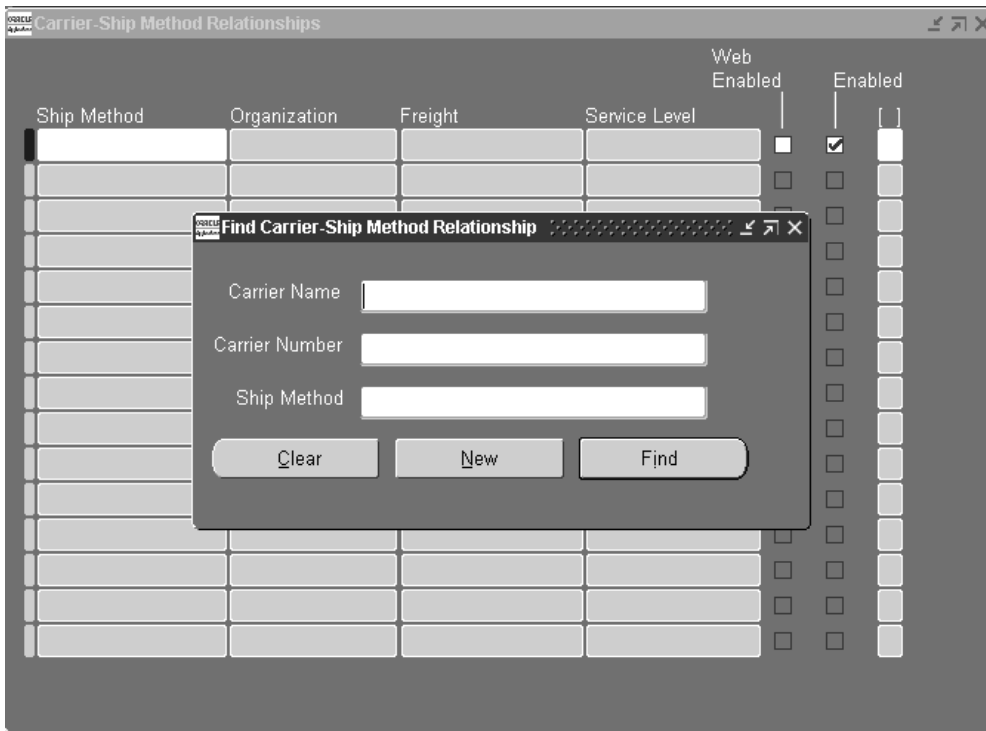
**Enabled** Indicate whether the Carrier-Ship Method relationship is enabled. The enabled flag is used to indicate whether or not the relationship is valid for a specific organization. If the enabled flag is not checked, the Carrier-Ship Method relationship will not be available for that particular organization.

**Descriptive Flexfield** A feature used to collect information unique to your business. You determine the additional information you need and descriptive flexfield lets you customize your application to your needs without additional programming.

## Find a Carrier-Ship Method Relationship

You may want to determine whether or not a Carrier-Ship Method relationship exists within a specific organization. You can search for existing Carrier-Ship Method relationships in the same window using the Find icon (flashlight) to show the window and determine your search criteria: Carrier Name, Carrier Number or Ship Method. Any one field or combination of fields can be utilized to define the search. The following window illustrates the search criteria.

Figure J-4 Find Carrier-Ship Method Relationship



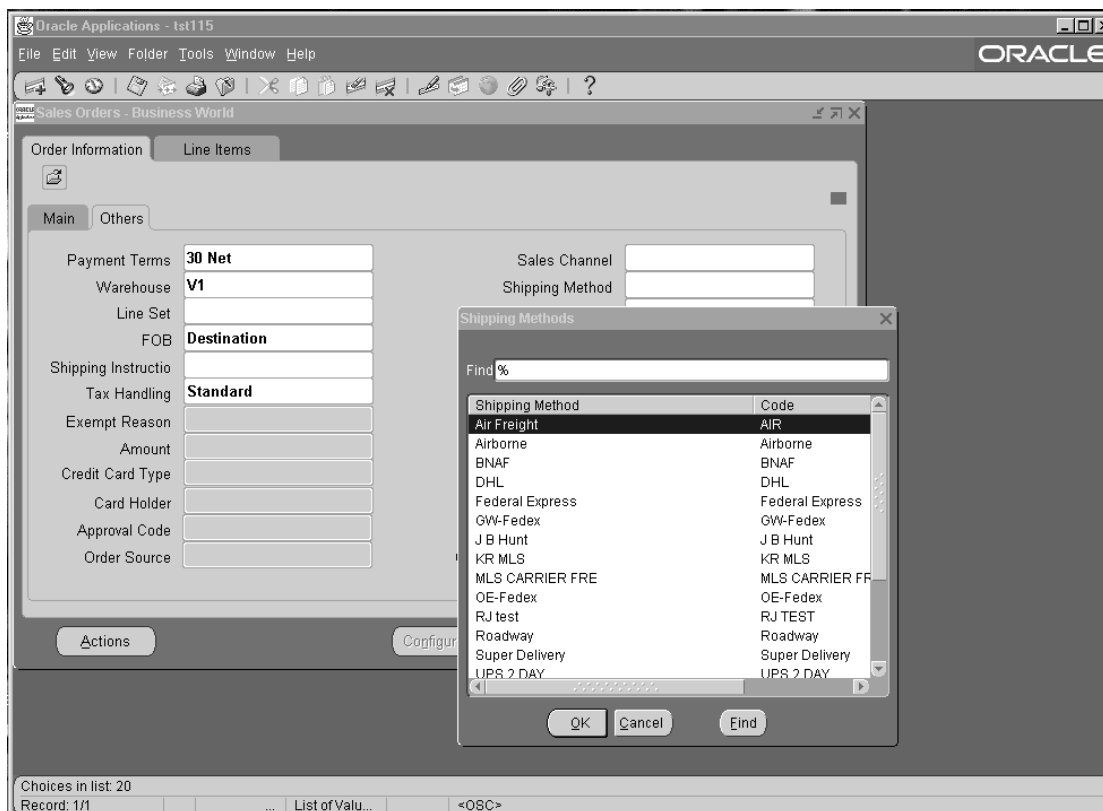
## Assign a Ship Method

Ship Method can be assigned at any time prior to Ship Confirm. Once a delivery has been Ship Confirmed, the Ship Method can not be changed. Ship Method is a prerequisite in order to create a Bill of Lading for a delivery.

Carrier-Ship Method relationship can be defaulted at the time of order entry at the header level depending on the defaulting rules you have established. It can also be entered at the time of order entry (Shipping Method field) at the header or line level but is not a mandatory in order to Book an order. If Order Management captures the Ship Method, Shipping Execution can determine the appropriate freight code (based on the defined relationship) which can subsequently be used in Invoicing. The following window illustrates the Carrier Ship Method relationship List of

Values available at the time of order entry from the Others tab on the Sales Order form.

**Figure J-5** Order Management 'Others' tab, Shipping Method LOV at the header level.



The following window illustrates the Ship Method field (Carrier-Ship Method) at the line level on the Shipping tab within the Sales Order form. This field is view only and defaults from the Sales Order.

**Figure J-6 Order Management, Sales Order form, Shipping tab, Ship Method at the line level.**

The screenshot shows the Oracle Order Management interface for a sales order. The window title is "Sales Orders (50296) - Business World". The "Shipping" tab is selected, and the "Default" profile is active. The order total is 15,836.19. The main table displays the following data:

| Line | Ordered Item | Qty | Shipping Method | Shipment Priority | Freight Terms | Shipping Instruction | Packing Inst |
|------|--------------|-----|-----------------|-------------------|---------------|----------------------|--------------|
| 1.1  | AS54888      | 10  |                 |                   | Prepay & Add  |                      |              |
|      |              |     |                 |                   |               |                      |              |
|      |              |     |                 |                   |               |                      |              |
|      |              |     |                 |                   |               |                      |              |
|      |              |     |                 |                   |               |                      |              |
|      |              |     |                 |                   |               |                      |              |
|      |              |     |                 |                   |               |                      |              |
|      |              |     |                 |                   |               |                      |              |
|      |              |     |                 |                   |               |                      |              |
|      |              |     |                 |                   |               |                      |              |

Summary information at the bottom of the table:

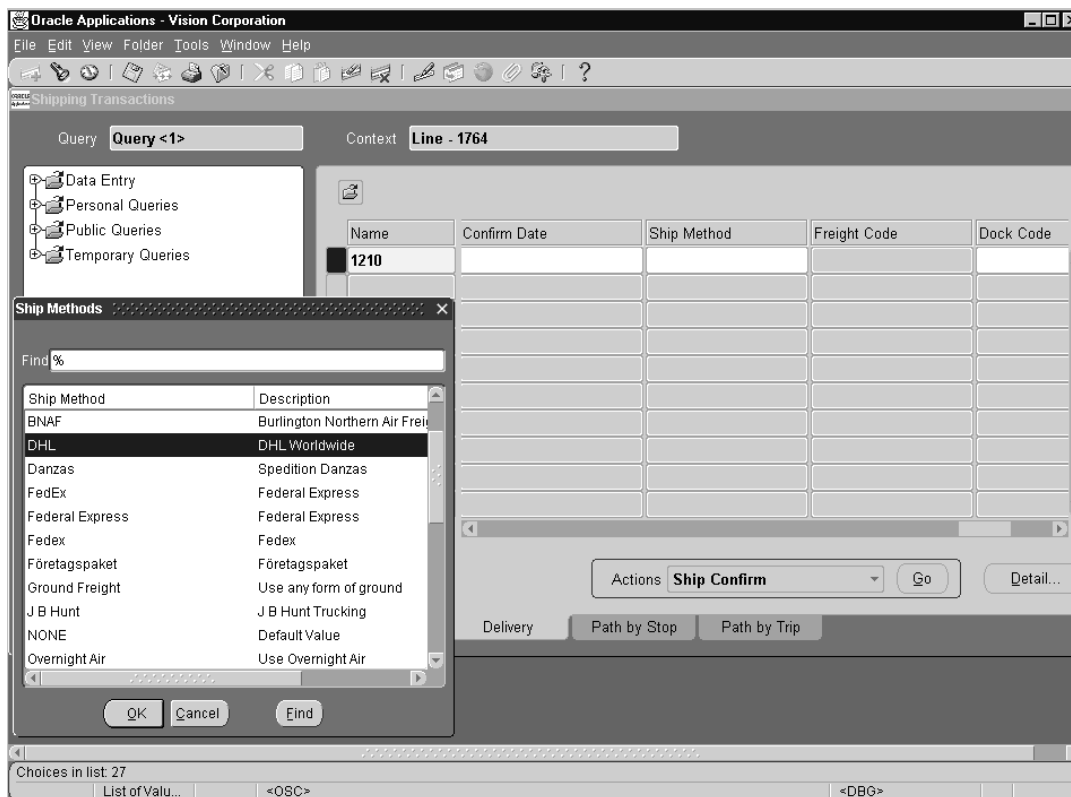
- Line Total: 14,391.00
- Line Qty: 10
- Description: Sentinel Standard Desktop

Buttons at the bottom of the form include: Actions, Configurator, Availability, and Book Order.

The following window illustrates the Ship Method field (Carrier-Ship Method) on the Deliveries tab within the Shipping Transaction form.

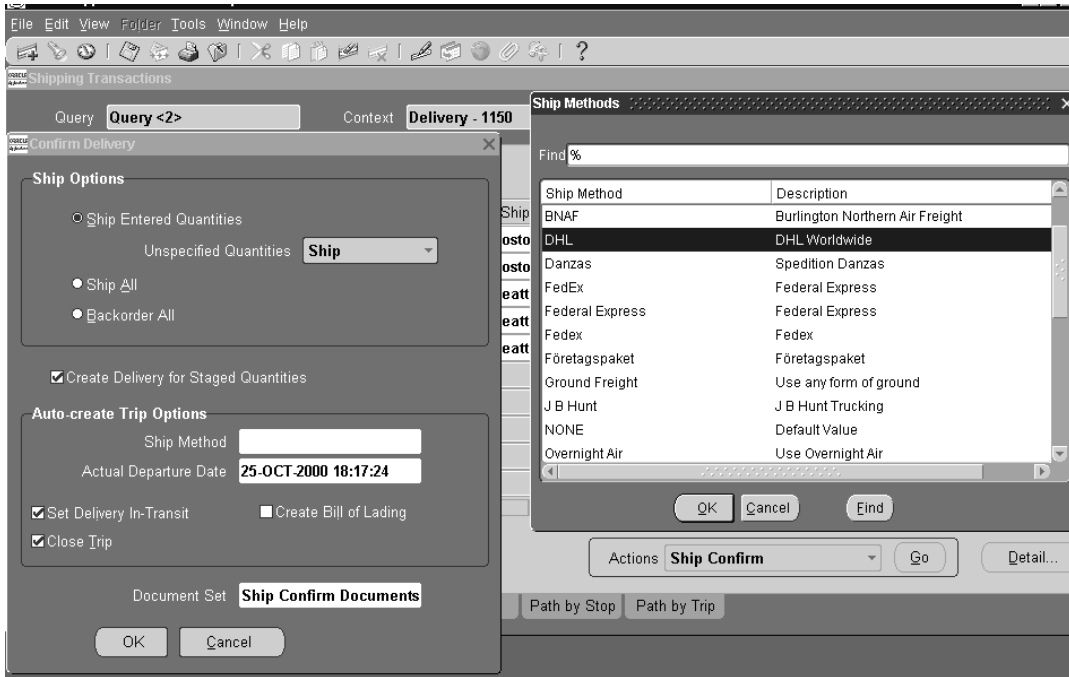
Ship Method field (and LOV) from the Deliveries tab in the Shipping Transaction form.

Figure J-7 Ship Method LOV



You will be unable to change the Ship Method after Ship Confirm, this is the last opportunity to enter the Ship Method for the delivery. The following window illustrates the Ship Method field (Carrier-Ship Method) in the Auto-Create Trip Options box on the Confirm Delivery form.

**Figure J-8 Ship Method field in Auto-create Trip Options box on the Confirm Delivery form**



If Ship Method is changed anywhere within the Shipping Transaction form, the new ship method will appear in the sales order in the Additional Order Information window and the Additional Line Information window, Deliveries tab.

## Defaulting Ship Method in Sales Order

You can set a default rule for ship method so that the value entered at the Sales Order header level will populate the line level entries. To establish this defaulting rule navigate to: Setup > Rules > Defaulting, then click the Flashlight icon and select Order Line. In the Attributes list, scroll down to Shipping Methods. Place the cursor on the Shipping Methods line and click Defaulting Rules. The following window illustrates the proper setup for ship method within defaulting rules. The ship method shown within the Other tabbed region (header level) will not pass to the line level unless this default is set. The line level ship method passes to the Shipping Transactions form.



The screenshot shows the 'Attribute Defaulting Rules' window for 'Oracle Order Management'. The 'Entity' is 'Order Line' and the 'Attribute' is 'Shipping Method'. A checkbox is checked below the entity/attribute fields.

**Defaulting Conditions**

| Precedence | Defaulting Condition | Enabled                             | Seeded                              |
|------------|----------------------|-------------------------------------|-------------------------------------|
| 0          | ALWAYS               | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 1          | ALWAYS               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|            |                      | <input type="checkbox"/>            | <input type="checkbox"/>            |
|            |                      | <input type="checkbox"/>            | <input type="checkbox"/>            |
|            |                      | <input type="checkbox"/>            | <input type="checkbox"/>            |

**Default Sourcing Rules**

| Sequence | Source Type    | Default Source/Value         |
|----------|----------------|------------------------------|
| 10       | Related Record | Order Header.Shipping Method |
|          |                |                              |
|          |                |                              |
|          |                |                              |

## Business Scenario

This business scenario explains the behavior of the ship method functionality. In this example, an order with three lines is entered and booked using DHL as the ship method. If you query the lines in the Shipping Transaction form, Line Detail level shows ship method as DHL. The DHL value is grayed out to indicate it is view only (protected from update) since it is defaulted from the sales order.

Progress the lines so that the status indicates Staged and the Delivery Name is assigned.

At the Delivery Detail level (Delivery tab > Detail button > Delivery tab), change ship method to something other than DHL, for example, enter a ship method of UPS. Notice that if you go back to the Line tab and select the Detail button, the ship method is still DHL and that this is expected behavior.

Now, at the Ship Confirm window, you can view the new ship method UPS. Here you have your last chance to change the ship method. After ship confirmation, the ship method selected becomes part of the permanent record for the delivery and

order. If you change the ship method while ship confirming, then the Delivery Detail information is updated to show the new ship method following ship confirm.

At the Sales Order window, you can view the ship method applied at ship confirm in either of two ways:

- At the header level, select Actions then Additional Order Information and view the Deliveries tab.
- At the line level, select Actions then Additional Line Information and view the Deliveries tab.

Notice that within the Line Items window that the ship method still shows the original ship method of DHL. This is expected behavior that allows the Customer Service Rep to have a record to compare the requested ship method with the actual ship method used by the Shipping Department.

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# Containerization in Shipping Execution

Topics covered in this appendix include:

- [Overview](#) on page K-2
- [Setup Steps](#) on page K-2
- [Creating Containers](#) on page K-14
- [Packing Items into Containers](#) on page K-15
- [Additional Functionality](#) on page K-21

## Overview

Containerization in Release 11*i* has been made more flexible and easy to use. Whereas planning containers and actually assigning items to containers took place in two separate forms in Delivery-based Shipping in Release 11, all planning and assigning of items to containers takes place in one form, the Shipping Transactions Form, in Release 11*i*.

There are a number of ways in which you can pack items into containers. Auto-Pack allows you to automatically pack items into specific types of containers. Auto-Pack Master allows you to automatically pack items into a specific container type and also automatically pack the container into another type of container. You can manually pack items into previously created containers. You can also pack items into previously created containers using the Packing Workbench, which allows for packing equal quantities of lines into multiple containers and also for packing full quantities of lines into one container at a time.

- Aside from the actual packing of line items into containers, you can also:
- Create multiple containers using a specified prefix, numeric string, and a suffix.
- Assign serial numbers to containers.
- Define the order in which you want to place items into containers.

Oracle Warehouse Management System handles other container functionality not available in Shipping Execution, including:

- Transactable Containers out of Inventory - treat containers as a subinventory/storage location within your warehouse.
- Receiving Full Containers - receive containers from a shipment and automatically receive all items within the containers into inventory.
- Dimensions - specify height, width, and length of containers and items.

## Setup Steps

Before you can begin packing lines into containers, you need to define weights and volumes for the items that will be involved in the packing process. You also need to create container types, create vehicle types, define container-load relationships, specify your Shipping Parameters, and optionally default Master and Detail containers for customer items. You must perform the following setup steps in the following sequence before you can use all functionality pertaining to containers in Shipping Execution.

## Define Container Item and Vehicle as Item Types

Navigate to the Item Types window (Inventory > Setup > Items > Item Types).

**Figure K-1 Application Utilities: Item Type Lookups**

| Code      | Meaning             | Description           | Tag | From        | To | Enabled                             |
|-----------|---------------------|-----------------------|-----|-------------|----|-------------------------------------|
| AA        | Asset Activity      | EAM Asset Activity    |     |             |    | <input checked="" type="checkbox"/> |
| AG        | Asset Group         | EAM Asset Group       |     |             |    | <input checked="" type="checkbox"/> |
| AI        | ATO item            |                       |     |             |    | <input checked="" type="checkbox"/> |
| AOC       | ATO Option Class    |                       |     |             |    | <input checked="" type="checkbox"/> |
| ATO       | ATO model           |                       |     |             |    | <input checked="" type="checkbox"/> |
| CAP       | Capital Item        | Capital Spares        |     | 15-AUG-1997 |    | <input checked="" type="checkbox"/> |
| CHARGABLE | Chargeable Item     | Item Charged to Patie |     | 25-JAN-2001 |    | <input checked="" type="checkbox"/> |
| CN        | Container item      |                       |     |             |    | <input checked="" type="checkbox"/> |
| COL       | Collateral          |                       |     | 07-MAY-1997 |    | <input checked="" type="checkbox"/> |
| CON       | Consulting and Trai |                       |     |             |    | <input checked="" type="checkbox"/> |

Define the Code as CN (or something meaningful to you), the Meaning as Container item (or container), and select the Enabled toggle to allow use of this container item. You can specify a Description, Start Date, and End Date if required.

Define another Code as VH (or something meaningful to you), the Meaning as Vehicle, and select the Enabled toggle. You can specify a Description, Start Date, and End Date if required.

## Define Container Types

Navigate to the Container Types window (Inventory > Setup > Items > Container Types).

**Figure K-2 Application Utilities: Container Type Lookups**

| Code       | Meaning             | Description            | Tag | From        | To | Enabled                             |
|------------|---------------------|------------------------|-----|-------------|----|-------------------------------------|
| ALC        | Airline Container   | Airline Container      |     | 14-MAY-1997 |    | <input checked="" type="checkbox"/> |
| BIN        | Bin                 | Standard Bin           |     | 14-MAY-1997 |    | <input checked="" type="checkbox"/> |
| BOX        | Box                 | Corrugated Box         |     | 13-MAY-1997 |    | <input checked="" type="checkbox"/> |
| CONTAINER  | Overseas Freight Co | 24 ft Overseas Freight |     | 14-MAY-1997 |    | <input checked="" type="checkbox"/> |
| CRATE      | Standard Crate      | Standard Crate         |     | 14-MAY-1997 |    | <input checked="" type="checkbox"/> |
| LG CONTAIN | Large Container     | 40 ft Container        |     | 27-FEB-2002 |    | <input checked="" type="checkbox"/> |
| PALLET     | Pallet              | 36X48 Pallet           |     | 14-MAY-1997 |    | <input checked="" type="checkbox"/> |
| PLLT4048   | Pallet 40x48        | 40X48 Pallet           |     | 22-FEB-2002 |    | <input checked="" type="checkbox"/> |
| PLN        | Cargo Plane         | Cargo Plane            |     | 14-MAY-1997 |    | <input checked="" type="checkbox"/> |
| RACK       | Rack                | Transport Rack         |     | 14-MAY-1997 |    | <input checked="" type="checkbox"/> |

Define the Code for the container type (ALC or BOX, for example), a meaning (Airline Container or Box, for example), and select the Enabled toggle. You can specify a Description, Start Date, and End Date if required.

## Create a Container Item

Navigate to the Master Item window (Inventory > Items > Master Items).

Define the name of the container (Wood Pallet, for example) you want to create (in the Item field).

In the Main tab, define the User Item Type as Container.

Figure K-3 Master Item

The screenshot shows the 'Master Item (V1)' window with the 'Physical Attributes' tab selected. The form contains the following data:

- Organization:** V1 Vision Operations
- Item:** A1 DOM
- Description:** A1 Domestic Airline Container
- Display Attributes:** Master (selected), Org, All
- Weight:** Unit of Measure: Pounds, Unit Weight: 1000
- Volume:** Unit of Measure: Cubic foot, Unit Volume: 425
- Dimensions:** Unit of Measure, Length, Width, Height (all empty)
- Container:**  Container,  Vehicle, Container Type: Airline Container, Internal Volume: 393, Maximum Load Weight: 13300, Minimum Fill Percent: 75
- Type:**  Collateral Item,  Event (D),  Equipment,  Electronic Format,  Downloadable (G),  OM Indivisible (J)

In the Physical Attributes tab, define the weight unit of measure, unit (tare) weight, volume unit of measure, unit volume, container type, internal volume, maximum load weight, minimum fill percentage, and select the Container toggle. If the Percent Fill Basis Shipping Parameter is set to Weight or Volume, Shipping Execution will use the weights or volumes you define for containers and items to calculate how many items will fit into containers.

Unit Volume for a pallet is the total space occupied by the pallet when loaded (e.g. 5' x 3.3' x 4' = 66 c.f.), while Internal Volume for the pallet is equal to the space occupied by the pallet itself (e.g. 0.5' x 3.3' x 4' = 6.6 c.f.). Examples of Container Types include pallet, tote, box, etc. Although you can enter dimensions, this measure is not used within Shipping Execution. However, dimensions are used within Oracle Warehouse Management (WMS) enabled organizations. Ignore entering dimensions unless you intend to purchase a license for WMS.

Select the Organization Assignment option from the Tools menu to display the Organization Assignment window. Select the Assigned toggle for each organization

for which you want the container to be active. Alternatively, select **Assign All** to assign this container to all organizations and save your work.

Optionally, navigate to the **Inventory** tab and click the **Inventory Item** check box. This action will also set the **Stockable** check box and **Transactable** check box. Next, define the **Serial Generation** as **At Sales Order Issue** if you want to assign serial numbers to the container in the **Shipping Transactions** form.

Navigate to the **Order Management** tabbed region. Click on the **Shippable** and **OE Transactable** check boxes.

Repeat these steps for each type of container you want to create.

## Create a Vehicle

Navigate to the **Master Item** window (**Inventory > Items > Master Items**).

Define the name of the vehicle (**Cargo Plane**, **Truck**, etc.) you want to create (in the **Item** field).

In the **Main** tab, define the **User Item Type** as **Vehicle**.



Figure K-4 User Item Type

Master Item (V1)

Organization: V1 Vision Operations

Item: PLCARGO

Description: Cargo Plane

Display Attributes:  Master  Org  All

Main | Inventory | Bills of Material | Asset Management | Costing | Purchasing | Receiving | **Physical Attributes**

**Weight**

Unit of Measure: Pounds

Unit Weight: 90000

**Volume**

Unit of Measure: Cubic foot

Unit Volume: 10800

**Dimensions**

Unit of Measure: [ ]

Length: [ ]

Width: [ ]

Height: [ ]

**Container**

Container  Vehicle

Container Type: [ ]

Internal Volume: 10800

Maximum Load Weight: 266000

Minimum Fill Percent: 75

**Type**

Collateral Item  Electronic Format

Event (D)  Downloadable (G)

Equipment  OM Indivisible (J)

In the Physical Attributes tab, define the weight unit of measure, unit (tare) weight, volume unit of measure, unit volume, internal volume, maximum load weight, minimum fill percentage, and select the Vehicle toggle. If the Percent Fill Basis parameter is Quantity, Shipping Execution uses the quantity you defined in container-load relationships to fill the containers (see the section Setup Container-Load Relationships for Containers and Items).

Select the Organization Assignment option from the Tools menu to display the Organization Assignment window. Select the Assigned toggle for each organization for which you want the container to be active. Alternatively, select Assign All to assign this type of vehicle to all organizations and save your work.

Repeat these steps for each vehicle you want to create.

## Define Physical Attributes for Items to Include in Containers (Load Items)

Navigate to the Master Item window (Inventory > Items > Master Items).

Query an existing Item Name or define a new Item Name.

**Figure K-5 Query/Define a New Item Name**

The screenshot shows the 'Master Item (V1)' application window. At the top, the 'Organization' is 'V1 Vision Operations', the 'Item' is 'AS54888', and the 'Description' is 'Sentinel Standard Desktop'. The 'Display Attributes' section has radio buttons for 'Master', 'Org', and 'All'. Below this is a navigation bar with tabs: 'Main', 'Inventory', 'Bills of Material', 'Asset Management', 'Costing', 'Purchasing', 'Receiving', and 'Physical Attributes'. The 'Physical Attributes' tab is selected, showing several input fields and checkboxes. The 'Weight' section includes 'Unit of Measure' (Pounds) and 'Unit Weight' (30). The 'Volume' section includes 'Unit of Measure' (Cubic foot) and 'Unit Volume' (2). The 'Dimensions' section has 'Unit of Measure' and fields for Length, Width, and Height. The 'Container' section has checkboxes for 'Container' and 'Vehicle', and fields for 'Container Type', 'Internal Volume', 'Maximum Load Weight', and 'Minimum Fill Percent'. The 'Type' section has checkboxes for 'Collateral Item', 'Event (D)', 'Equipment', 'Electronic Format', 'Downloadable (G)', and 'OM Indivisible (J)'.

In the Physical Attributes tab, define the weight unit of measure, unit (tare) weight, volume unit of measure, and unit volume. Defining weights and volumes for your items enables you to calculate the weight and volume for your containers and deliveries. If the Percent Fill Basis Shipping Parameter is set to Weight or Volume, Shipping Execution will use the weights or volumes you define for containers and items to calculate how many items will fit into containers.

If you are creating a new item, make sure to define the item as shippable and transactable.

Select the Organization Assignment option from the Tool menu to display the Organization Assignment window. Select the Assigned toggle for each organization for which you want the item to be active.

Alternatively, select Assign All to assign this type of vehicle to all organizations and save your work.

## Setup Container-Load Relationships for Containers and Items

Navigate to the Container-Item Relationships window (Order Management > Shipping > Setup > Container-Load Details). The purpose of setting the container-load relationship is to establish a link between item and container type or two types of containers. This allows the auto-pack and auto-pack master functionality to perform automatic packing.

**Figure K-6 Container Item Relationships**

The screenshot shows the 'Container-Item Relationships (V1)' window. It features a table with columns for 'Container' and 'Load'. The 'Container' column has sub-columns for 'Item' and 'Type'. The 'Load' column has sub-columns for 'Item', 'UOM', 'Maximum Quantity', and 'Preferred Flag'. Below the table is an 'Item Description' section with fields for 'Container' and 'Load' descriptions.

| Container    |               | Load     |     |                  |                                     |
|--------------|---------------|----------|-----|------------------|-------------------------------------|
| Item         | Type          | Item     | UOM | Maximum Quantity | Preferred Flag                      |
| 01 PC CN     | Large Contain | 01 PC KH | Ea  | 400              | <input type="checkbox"/>            |
| KH-Container | Large Contain | 01 PC KH | Ea  | 400              | <input type="checkbox"/>            |
| PC BOX       | Box           | 01 PC KH | Ea  | 1                | <input checked="" type="checkbox"/> |
|              |               |          |     |                  | <input type="checkbox"/>            |
|              |               |          |     |                  | <input type="checkbox"/>            |
|              |               |          |     |                  | <input type="checkbox"/>            |
|              |               |          |     |                  | <input type="checkbox"/>            |
|              |               |          |     |                  | <input type="checkbox"/>            |
|              |               |          |     |                  | <input type="checkbox"/>            |
|              |               |          |     |                  | <input type="checkbox"/>            |

**Item Description**

Container:

Load:

Select the Container Item for which you want to define a relationship, select the Load Item you want to load into the Container, and define the Maximum Quantity of the Load Item that you can load into the Container. You can specify container-item relationships or container-container relationships.

Continue creating container-load relationships for all containers and items you plan to use. Container-load relationships are used for packing whenever the Percent Fill Basis Shipping Parameter is set to Quantity and also when you use the Auto-Pack and Auto-Pack Master features to pack items into containers.

Select the Preferred Flag toggle to use the container-load relationship as the preferred relationship between items and containers (and containers and

containers). You could potentially have multiple load-relationships between items and different containers. When you select the Preferred Flag toggle for a container-load relationship, Auto-Pack and Auto-Pack Master will use the Preferred relationship when packing that item. For example, if you have two container-load relationships for ItemA—one with ContainerA, which is the preferred container, and one with Container B—the maximum load defined in the relationship with ContainerA will be used when you select Auto-Pack or Auto-Pack Master for packing ItemA. You must set the Preferred Flag for one of the Container-Load Relationships you have for an item in order to use Auto-Pack or Auto-Pack Master for that item. If you do not set the Preferred Flag for one of the relationships for an item, you will receive an error message.

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**Note:** You must define container-load relationships for each warehouse.

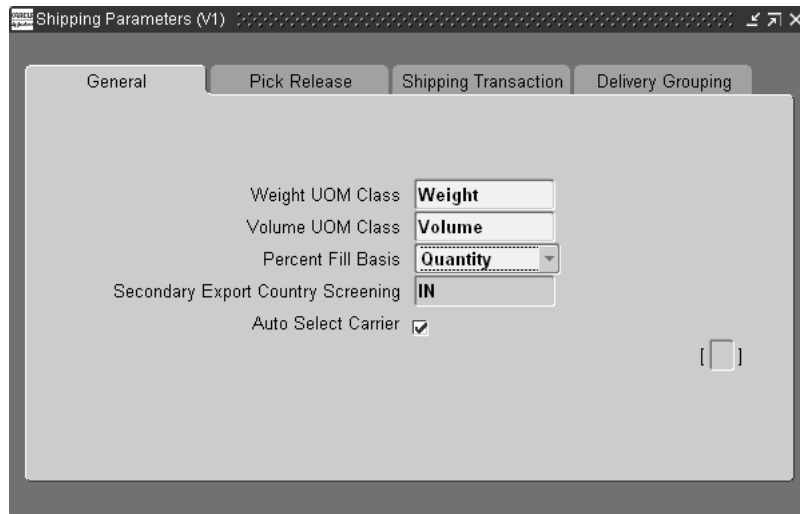
---

---

Save your work.

## Define Shipping Parameters

Navigate to the Shipping Parameters window (Order Management > Shipping > Setup > Shipping Parameters).

**Figure K-7 Shipping Parameters**

The screenshot shows a window titled "Shipping Parameters (V1)" with four tabs: "General", "Pick Release", "Shipping Transaction", and "Delivery Grouping". The "General" tab is active. The following parameters are visible:

- Weight UOM Class:
- Volume UOM Class:
- Percent Fill Basis:
- Secondary Export Country Screening:
- Auto Select Carrier:

There is also an empty rectangular box in the bottom right corner of the dialog.

Select the Percent Fill Basis you want to be used to determine whether or not containers have met their minimum fill percentage. Select from Quantity, Weight, or Volume. For example, if you define a container-load relationship in which CONTAINERA can hold quantity 5 of ITEMA, you select Quantity in this field, and you define the minimum fill percentage for CONTAINERA to be 75 percent, you must have at least quantity 4 of ITEMA in CONTAINERA to meet your minimum fill percentage. If you select Weight or Volume, the Percent Fill is calculated based on the weight or volume (physical attributes) you have defined for your items.

**Figure K-8 Shipping Parameters: Shipping Transaction**

The screenshot shows the 'Shipping Parameters (V1)' window with the 'Shipping Transaction' tab selected. The window contains the following fields and options:

|                               |                        |
|-------------------------------|------------------------|
| Default Delivery Document Set | Ship Confirm Documents |
| Weight / Volume Calculation   | Automatic              |
| Enforce Packing in Containers | Yes                    |
| Container Inventory Control   | Optional               |
| Goods Dispatched Account      | 01-740-7610-0000-000   |
| Freight Class Category Set    |                        |
| Commodity Code Category Set   |                        |

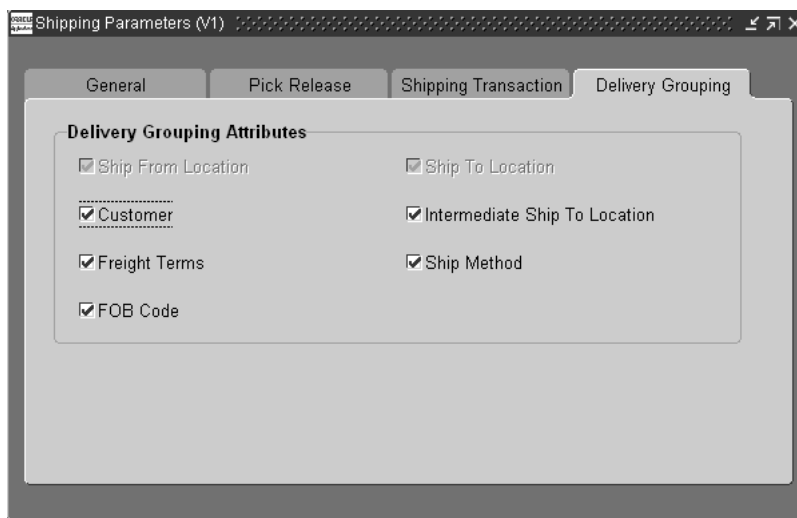
**Across All Organizations**

|                     |                          |                        |                                     |
|---------------------|--------------------------|------------------------|-------------------------------------|
| Enforce Ship Method | <input type="checkbox"/> | Allow Future Ship Date | <input checked="" type="checkbox"/> |
| Defer Interface     | <input type="checkbox"/> |                        |                                     |

Set the Enforce Packing in Containers display list to Yes if you want OE/Shipping to display an error message during Ship Confirm when you try to ship a delivery that contains unpacked delivery lines.

You must define shipping parameters for each warehouse.

**Figure K-9 Shipping Parameters: Delivery Grouping**



The Delivery Grouping Attributes determine how your delivery lines will be grouped into deliveries. Your lines are also packed into containers using the same grouping attributes. Ship From and Ship To are mandatory, the rest of the attributes are optional.

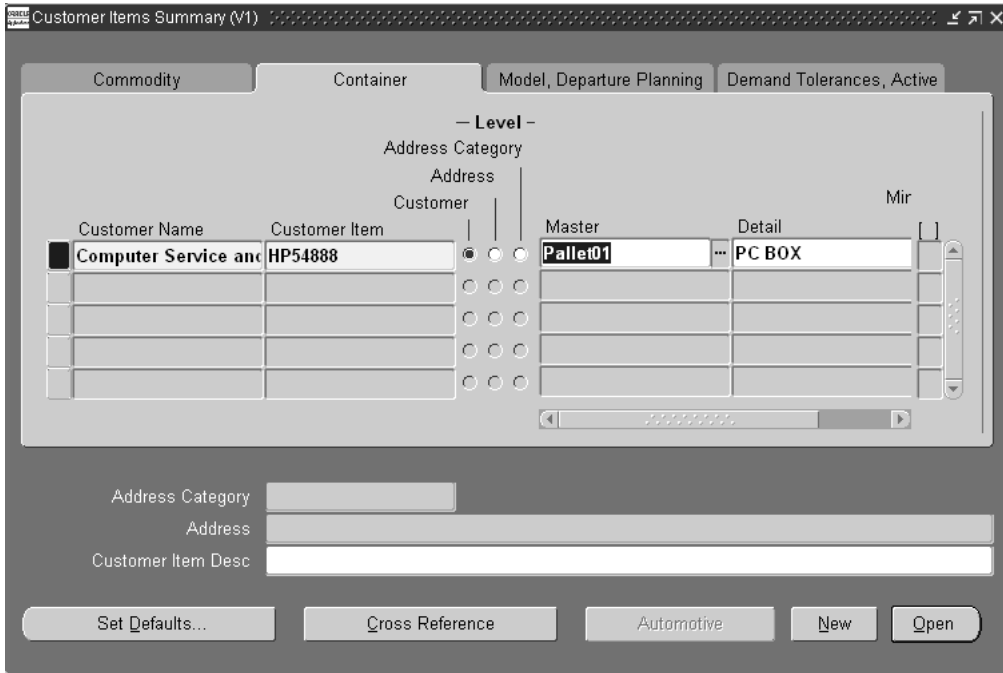
Save your work.

## Define Default Containers for Customer Items

This section does not apply to standard items. Use the information in this section if you are using customer items.

Navigate to the Customer Items Summary window (Order Management > Inventory > Items > Customer Items > Customer Items).

**Figure K-10 Customer Items Summary**



Query your customer item and define default Master and Detail containers in the Containers tab. These containers will default in the Master and Detail fields in the Shipping Transaction Form when you query the item associated with your customer item. When you Auto-Pack, these containers will be used to pack the items. If a container-load relationship is defined for the item and the detail container (and for the detail and master containers) and the Percent Fill Basis is set to Quantity, Shipping Execution will use the Container-Load Relationship to determine the required number of containers. If no relationship is defined, the weight and volume of the items and the maximum load weight or volume for the container will determine how the items are packed into containers (and containers into containers).

## Creating Containers

You can automatically or manually create containers. Containers are created automatically when using the Auto-Pack and Auto-Pack Master functionality by



using a defined Container-Load Relationship between a type of container and an item. Shipping Execution uses the container type, the item, and the defined maximum quantity of the item that will fit in the container and automatically create the required number of containers with automatically generated names. However, to manually pack items into containers using the Pack and Packing Workbench functionality, you must manually create containers.

You create containers using the Create Containers option on the Actions menu in the Lines/Containers tab in the Shipping Transactions Form. This option displays the Create Containers form in which you define: the organization which contains the type of container you want to use, the type of container you want to pack your items into, the total number of containers you want to create, the prefix that you want to be used in the name of the container, the starting number for the string of containers you are creating, the width of the numeric string (numeric portion) used in naming the containers, and the suffix that will be used in the naming of the containers. For example, if you specify PC as the prefix, 1 as the starting number, 3 as the Pad to Width for the numeric string, BX as the suffix, and you are creating 5 containers, the resulting created containers would be named: PC001BX, PC002BX, PC003BX, PC004BX, and PC005BX. If you set the Pad to Width as 4, you would get PC0001BX, PC0002BX, PC0003BX, PC0004BX, and PC0005BX.

Once created, you can select the containers from a List of Values that displays when you choose the Pack option in the Shipping Transactions Form. You can also query up existing (created) containers using the Query Manager (via the Containers or Lines and Containers options).

## Packing Items into Containers

There are several methods in which you can pack items into containers:

- You can manually pack items into an existing container (Pack option).
- You can automatically pack an item into a container (Auto-Pack).
- You can automatically pack an item into a container, and pack that container into another (parent/Master) container (Auto-Pack Master).
- You can automatically pack equal quantities of multiple items into multiple containers (Equal Packing in the Packing Workbench).
- You can automatically pack line items into a container until you fill the container or use all of the items, and then continue packing the next line into the next container (Full Packing in the Packing Workbench).

## Manual Packing

Manual Packing involves packing items into containers that have already been created using the Create Container action in the Lines/Containers tab in the Shipping Transactions Form. Manual Packing can be accomplished by selecting the line (in the Lines/Containers tab in the Shipping Transaction Form) that you want to pack into the container and choosing the Pack option from the Actions list, which displays a List of Values containing previously created containers.

Manual Packing does not use a Container-Load Relationship when packing, but the weight, volume, and percent fill (based on the setting for the Percent Fill Basis Shipping Parameter) are calculated to determine whether or not the items will fit into the container. A warning message will display if the total weight and volume of the items is greater than the available capacity of the container. A warning will also display if the minimum fill percentage is not attained. The warning message can be ignored if desired.

You might want to use this method of packing if you have several items (maybe pencils, paper clips, and pads of paper) that are heading to the same customer and the customer does not care about what type of container is used. So, you could query up your delivery lines in the Shipping Transaction Form (using the Query Manager), multi-select your lines, choose Pack from the Actions list, and then select the container you have created from the resulting List of Values.

## Auto-Packing

Auto-Pack is an option on the Actions list in the Lines/Containers tab in the Shipping Transaction Form that will automatically calculate and create the number of containers required to pack all of the items and then pack all of the items into the created containers. Auto-Pack Master behaves identically to Auto-Pack except that it goes one step further and packs the created detail containers into one or more parent (master) container(s). If you have multiple Container-Load Relationships set up for the same item (with different containers), Auto-Pack will look at the Preferred toggle on the Container-Item Relationships window to determine which relationship to use. You must define one of the Container-Load Relationships for your items as the Preferred relationship. If you do not toggle on the Preferred Flag for one of your Container-Load Relationships, you will receive an error when you try to use Auto-Pack or Auto-Pack Master for that item.

There are two different ways to specify the type of container to be used when using Auto-Pack or Auto-Pack Master: specify a Master and/or Detail container for a customer item, or set up a Container-Load Relationship between the item(s) and container(s). If you are Auto-Packing a customer item with a pre-defined Master

and/or Detail association (set up in the Customer Item Summary window), then Auto-Pack will use those container types to create the containers required and pack the customer item. To determine how many containers are needed, Auto-Pack will use the Percent Fill Basis Shipping Parameter. If Percent Fill Basis is set to Quantity, Auto-Pack will look for Container-Load Relationships set up for the item and the Detail Container, as well as for the Detail Container and the Master Container. If these Container-Load Relationships are not set up, then Auto-Pack will use the weights and volumes for the item and the available capacities defined for the containers.

For example, let's say your customer preferred that you pack the monitors that you make into a cardboard box (one in each box) and that you pack twelve cardboard boxes (containing the monitors) on a pallet for shipment. You can assign the specific cardboard box (type of container) as the detail container for the customer item and the pallet as the Master Container for the customer item in the Customer Item Summary window. When the order is booked and the line is pulled into (imported into) Shipping Execution and viewed in the Lines/Containers tab in the Shipping Transactions Form, the cardboard box and the pallet container types will default into the Master and Detail fields for the line. When you run Auto-Pack for this line and Percent Fill Basis set to Quantity, Auto-Pack uses the Container-Load Relationship set up for the item and the container. If no Container-Load Relationship is set up, Auto-Pack uses the weight and volume and container capacity for the item and container to calculate the required number of containers. Once the number of containers is calculated, the containers are created and the items are packed into the containers. Then, the total number of Master containers are calculated based on the number of Detail containers created, and the appropriate number of Detail containers are placed into the appropriate Master container. So, if you set up a Container-Load Relationship where a maximum of 1 monitor fit in 1 cardboard box and 12 cardboard boxes fit on one pallet and your customer ordered 24 monitors, the 24 monitors would be placed in 24 cardboard boxes (1 in each box) and then 12 cardboard boxes would be placed on each of the 2 pallets that were created.

For any other type of item you are Auto-Packing, you must have a Container-Load Relationship set up. If you try to Auto-Pack items into a container and no Container-Load Relationship is established, you will receive an error message. Auto-Pack will use the Container-Load Relationship to determine the type of container to needed to pack the item. The setting of the Percent Fill Basis Shipping Parameter is used to determine how many containers are going to be needed to pack all of the items. If the Percent Fill Basis Shipping Parameter is set to Quantity, the Maximum Quantity defined for the Container-Load Relationship (being used to determine the type of container) will be used to calculate the necessary number of

containers. If Percent Fill Basis is set to Weight or Quantity, the Physical Attributes (weight and quantity) that are defined for the item and container are used to calculate the total number of required containers. Once the type of container is determined and the required number of containers are calculated, Auto-Pack/Auto-Pack Master creates those containers and packs the items into the containers. For example, let's say you had a Container-Load Relationship set up so that 6 of ItemA fit into ContainerA and Percent Fill Basis was set to Quantity. If you have a delivery line with a quantity of 12 of ItemA and you run Auto-Pack, Shipping Execution will create two containers, split the line into two lines with a requested quantity of 6, and pack the first split line into the first container and pack the second split line into the second container.

Auto-Pack Master packs not only an item into a container (Detail Container in this scenario), but it will also pack the Detail Container into a Master Container. For example, let's say you had a delivery line with a quantity of 12 of ItemA and a Container-Load Relationship set up so that 6 of ItemA will fit into ContainerA and 2 of ContainerA will fit into ContainerB (and Percent Fill Basis is set to Quantity). If you run Auto-Pack Master, the line will be split into 2 lines of 6, the first line will be packed into the first container, the second line will be packed into the second container, and the two Detail Containers (2 ContainerAs) will be packed into ContainerB.

## Packing Workbench

The Packing Workbench allows for two different methods of packing: Equal Packing and Full Packing. As the name suggests, Equal Packing involves packing equal amounts of items from one or many lines into one or many containers. Full Packing involves packing the entire quantity of one delivery line into one or many containers, and then packing the entire quantity of the next delivery line into one or many containers. If the entire quantity of the first line does not fill a container, items from the next delivery line will be added to the container with available space until it is filled.

To use the Packing Workbench, you must select the delivery lines and the containers in the Lines/Containers tab in the Shipping Transactions Form that you want to pack and then select Packing Workbench from the Actions list. So, you must have queried up lines and previously created containers or you must have queried up lines and then created new containers. When selecting lines in the Shipping Transactions form to use in the Packing Workbench, you can use the Packing Calculator (accessed by clicking on the bar on the far right hand side of the Shipping Transactions Form or by selecting Packing Calculator from the Tools menu) to determine whether or not the lines might be able to fit in the containers

you have selected. The Available Capacity region shows how much weight and volume the containers that you have selected can hold and the Item Total region shows the total weight and volume for all of the lines you have selected.

Once you have selected your lines and containers and have selected Packing Workbench from the Actions list, the Packing Workbench displays containing your selected containers on one tab and your selected lines on the other tab. You can see the total Available Capacity for the containers and the weights and volumes for the items on the left side of the Packing Workbench. By default, you will notice the Pack toggle next to your lines and containers is selected. If you turn the Pack toggle off for a container or line, then that line or container will not be used for packing and, hence, the Available Capacity and Item Total regions will be updated accordingly.

### Equal Packing

The first method of packing within the Packing Workbench is Equal Packing. The best way to explain Equal Packing is by giving an example. Let's say your customer ordered 10 computer monitors and 10 keyboards. The order would consist of two lines, one for 10 monitors and one for 10 keyboards. Once the order is booked, you can query your lines in the Shipping Transactions Form. If you wanted to pack one of each item into a container, you would create 10 containers (using a container type that was large enough to hold one of each item). You would then select your two lines and your ten containers and pull them into the Packing Workbench. Once in the Packing Workbench, select the Equal Packing Method and choose the Pack button. The Packing Workbench will split the two lines into ten lines for each item and pack 1 monitor and 1 keyboard into each container. So you will end up with 10 containers that have 1 monitor and 1 keyboard in each.

There is a potential drawback to using Equal Packing. When you use Equal Packing, lines are split evenly so that equal quantities will be packed into the selected containers. Container-Load Relationships and weight and volume limitations within containers are not used when packing the items equally into containers. In other words, the lines are split and packed into the containers prior to performing weight and volume validations. Validations based on weight and volume do take place to determine whether or not the containers are over-packed (weight or volume exceeds maximum weight or volume for a container), resulting in the display of Warning messages, but not until after the lines are split. Once the lines are split, you cannot return the lines to their original status (if one line for quantity of 6 was split into two lines for quantity of 3, you cannot return the two lines into one line for quantity of 6). So, if you split the lines and find out that you

really want to pack them differently, you will have to pack the resulting split lines rather than the initial pre-split lines.

### **Full Packing**

Full Packing involves taking items in a delivery line and packing them completely into one container, then taking the next line and packing its entire quantity. If the items in the first delivery line do not completely fill the first container, the items in the second delivery line will be added to the first container until it is filled. If all of the items in the second delivery line were not used to fill the first container, then the remaining items are packed into the second container.

For example, let's say you had two delivery lines, one consisting of 10 of ItemA and one consisting of 10 of ItemB, and you wanted to pack them into three containers. If the Percent Fill Basis Shipping Parameter was set to Quantity, the Packing Workbench would use the Container-Load Relationship set up to determine the maximum number of items that could fit in the first container. If Percent Fill Basis was set to Weight or Volume, the Packing Workbench would use the weight and volume defined for the item and the maximum load weight or volume defined for the container to calculate the total number of items that could fit in the first container. Let's say Percent Fill Basis is set to Quantity and a Container-Load Relationship is established that says that 5 of ItemA will fit in the first container. Five of ItemA will be placed in the first container, then the Packing Workbench calculates the total number of ItemAs that will fit into the second container. If a Container-Load Relationship is set up so that 10 of ItemA will fit in the second container, the Packing Workbench will place the remaining 5 of ItemA in the second container. The Packing Workbench then calculates that the container is only fifty percent filled, so the Packing Workbench will look at a Container-Load Relationship set up for ItemB and the second container. If the Container-Load Relationship for ItemB and the second container was defined so that 4 of ItemB will fit, the Packing Workbench takes fifty percent of the total defined Container-Load Relationship (2 of ItemB) and packs that quantity into the second container. This leaves us with 8 of ItemB. The Packing Workbench then looks at the Container-Load Relationship between ItemB and the third container. If 10 of ItemB fits into the third container, the Packing Workbench will pack the remaining 8 in the third container.

## Additional Functionality

### Assigning Serial Numbers to Containers

You can assign serial numbers to your containers. When you create your containers in the Master Items window, you can define your containers as requiring serial numbers by navigating to the Inventory tab and choosing At Sales Order Issue in the Generation field in the Serial region. Once you create your containers in the Shipping Transactions Form, you can assign serial numbers to your containers. Since containers are not transacted items (containers are not stored in inventory), you are not required to enter a serial number even though the container is serialized.

If you assign a container (Detail Container) to another container (Master Container), the serial number of the Master Container will automatically default into the Master Serial Number field for the Detail Container. If you change the serial number for the Master Container, which will automatically change the Master Serial Number for the Master Container, Shipping Execution will automatically update the Master Serial Numbers for all Detail Containers assigned to that Master Container.

### Generating a Loading Sequence for Deliveries/Containers

You must have imported order lines with a defined Production Sequence Number or you must have entered a Customer Production Sequence Number in Others tab in the Lines region of the Sales Orders window. Generating a loading sequence is optional. You would only generate a loading sequence when you wanted to place items in a container or on a delivery in a certain order. For example, if an automotive manufacturer's assembly line needed specific items in a certain order, they might want to have items shipped to them placed in a certain order in the container or delivery so that they could remove the items in the most efficient order for their assembly line. The loading sequence is printed on the Vehicle Load Sheet Detail report.

Navigate to the Shipping Transactions Form. Choose the Delivery tab (a delivery must exist), then click the Details button. In the 'Loading Lines' field, select a loading pattern. You can select from Forward (1, 2, 3, 4), Reverse (4, 3, 2, 1), Forward-Inverted (2, 1, 4, 3), and Reverse-Inverted (3, 4, 1, 2).

Loading sequence determines the order in which the delivery lines are placed in the container or the delivery, depending on whether or not you have defined a Detail Container for the delivery line. If you have specified a Detail Container, the loading sequence determines the order in which the delivery line is placed into the

container. If you have specified a Master Container or if you have not specified any container for the delivery line, the loading sequence will determine the order in which the delivery line will be placed in the vehicle.

Select Generate Loading Sequence from the Actions list.

If you have ITEMA with a Production Sequence Number of 1 and ITEMB with a Production Sequence Number of 2 and you select Reverse as your Lines Loading order, ITEMB would have a Loading Order Number of 1 and ITEMA would have a Loading Order Number of 2 (ITEMB would be loaded first and ITEMA would be loaded second).

If a Customer Production Sequence Number is not assigned to the delivery line, you can enter a Loading Sequence to determine the order in which the delivery line will be loaded into the container or delivery.



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# Roles and Users Security

## Shipping Execution Roles and Users

Roles and Users is a set of security features released in Shipping Execution 11i to secure the graphic user interface with fine granularity centered around Shipping user roles.

Prior to this, security was limited to the menu level by which user gained access to a screen. Since 11i the Shipping Transactions form integrates all Shipping functionality across organizations from a single menu entry. In some cases, the standard security is no longer suitable. Roles and Users fills this gap.

By implementing Roles and Users, system administrators can control individual user actions and data entity access for each Shipping form.

## Setting Up Roles and Users

### **New vs. Upgrade Considerations**

The security defaults differently on New and Upgraded installations.

### **Upgrade Installation**

This is the most common situation. A customer is upgrading from a prior version of Oracle Applications and is installing Oracle Shipping 11i or later.

In this case all existing Application users are automatically granted full privileges. The security is therefore transparent to upgraded users.

However new shipping users created after the Application upgrade are granted a view-only restrictive access.

### **New Installation**

A new installation means that a customer is installing Oracle Shipping Execution with no preexisting users.

In this case all Application users are new and are therefore automatically granted a minimal view only access.

To gain adequate access, a system administrator should assign users to their matching shipping tasks as defined by a system role. Individual Shipping privileges will remain restricted until users are granted a role.

To prevent users not involved with Shipping from gaining the default view-only access, simply remove the Shipping Execution option from the list of system menu.

The Roles and Users release does not support changing the View-Only or other default privileges.

### **Defining Roles**

Shipping managers or system administrators can provide access to specific Shipping functions by modeling user responsibilities and creating Shipping Roles.

Each Role is defined as a combination of Data access type and Action list options.

### **Data Access**

Three levels of data access are provided for Trips, Stops, Deliveries, and Lines:

- Edit: no data restriction to query, edit or save data.
- View: Query and browse are allowed but data can not be committed.
- None: no data access. Provides the highest security. This option may be used to streamline menus.

In a View-Only mode users can not save entries or changes. However in this case Action processing does still alter data. To prevent unwanted data changes purposefully edit the list of Actions.

### **Action Controls**

There are over 60 actions defined for Trips, Stops, Deliveries and Lines.

Actions Controls either enable or disable the Shipping Transactions form Action poplist and Tools menu bar option.

Disabling access to the Pick Release action prevents access from both the Shipping Transactions form and from the Tools menu bar.

Disabling actions can be used to streamline the shipping options by reducing irrelevant user options.

See screen captures under section *Creating a Role*.

### **Role Definition Samples**

This section is a sample of five generic shipping roles and four administrative roles:

- 1: Transportation Manager
- 2: Shipping Manager
- 3: Shipping Supervisor with Picking
- 4: Shipping Clerk without Picking
- 5: Customer Service Representative
- A1: All re-upgrade users
- A2: New users
- A3: Default values for custom created roles
- A4: Any expired grant

There are four tables with sample security setup for:

- Trips
- Stops
- Deliveries
- Delivery Lines and Containers

In each table, the Entity Level row uses the following abbreviations:

- E: Full Edits
- V: View only limited
- D: Disabled

In each table, the other rows (the Actions rows) use the following abbreviations:

- E: Enabled
- D: Disabled

**Table L-1 Role Definition Samples for Trips**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| ENTITY LEVEL               | E             | E             | V             | V             | V             | E              | V              | V              | D              |
| Plan                       | E             | D             | D             | D             | D             | E              | D              | D              | D              |
| Unplan                     | E             | D             | D             | D             | D             | E              | D              | D              | D              |
| Freight costs              | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Launch pick release        | E             | E             | E             | D             | D             | E              | D              | D              | D              |
| Print document set         | E             | D             | D             | D             | D             | E              | D              | D              | D              |
| Calculate weight/volume    | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Resolve exceptions form    | E             | E             | D             | D             | D             | E              | D              | D              | D              |
| Pick release form          | E             | E             | E             | D             | D             | E              | D              | D              | D              |

**Table L-2 Role Definition Samples for Stops**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| ENTITY LEVEL               | E             | E             | V             | V             | V             | E              | V              | V              | D              |
| Plan                       | E             | D             | D             | D             | D             | E              | D              | D              | D              |
| Unplan                     | E             | D             | D             | D             | D             | E              | D              | D              | D              |
| Freight costs              | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Calculate weight/volume    | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Launch pick release        | E             | E             | E             | D             | D             | E              | D              | D              | D              |
| Print document set         | E             | D             | D             | D             | D             | E              | D              | D              | D              |

**Table L-2 Role Definition Samples for Stops**

| Entity Level/Action     | Role 1 | Role 2 | Role 3 | Role 4 | Role 5 | Role A1 | Role A2 | Role A3 | Role A4 |
|-------------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| Resolve exceptions form | E      | E      | E      | D      | D      | E       | D       | D       | D       |
| Pick release form       | E      | E      | E      | D      | D      | E       | D       | D       | D       |
| Update status           | E      | E      | E      | D      | D      | E       | D       | D       | D       |

**Table L-3 Role Definition Samples for Deliveries**

| Entity Level/Action       | Role 1 | Role 2 | Role 3 | Role 4 | Role 5 | Role A1 | Role A2 | Role A3 | Role A4 |
|---------------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| ENTITY LEVEL              | E      | E      | V      | V      | V      | E       | V       | V       | D       |
| Plan                      | E      | D      | D      | D      | D      | E       | D       | D       | D       |
| Unplan                    | E      | D      | D      | D      | D      | E       | D       | D       | D       |
| Freight costs             | E      | E      | E      | E      | D      | E       | D       | D       | D       |
| Launch pick release       | E      | E      | E      | D      | D      | E       | D       | D       | D       |
| Auto-pack                 | E      | E      | E      | E      | D      | E       | D       | D       | D       |
| Auto-pack master          | E      | E      | E      | E      | D      | E       | D       | D       | D       |
| Pack                      | E      | E      | E      | E      | D      | E       | D       | D       | D       |
| Calculate weight/volume   | E      | E      | E      | E      | D      | E       | D       | D       | D       |
| Generate loading sequence | E      | E      | E      | D      | D      | E       | D       | D       | D       |
| UPS rate and service      | E      | E      | E      | E      | D      | E       | D       | D       | D       |
| UPS time in transit       | E      | E      | E      | E      | D      | E       | D       | D       | D       |
| UPS address validation    | E      | E      | E      | E      | D      | E       | D       | D       | D       |

**Table L-3 Role Definition Samples for Deliveries**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| Print document set         | E             | E             | E             | E             | E             | E              | D              | D              | D              |
| Assign to trip             | E             | E             | E             | D             | D             | E              | D              | D              | D              |
| Unassign from trip         | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Auto-create trip           | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Ship confirm               | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Reopen                     | E             | E             | E             | D             | D             | E              | D              | D              | D              |
| Close                      | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Pick release form          | E             | E             | E             | D             | D             | E              | D              | D              | D              |
| Resolve exceptions form    | E             | E             | E             | D             | D             | E              | D              | D              | D              |
| Generate BOL               | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Generate packing slip      | E             | E             | E             | E             | D             | E              | D              | D              | D              |

**Table L-4 Role Definition Samples for Delivery Lines and Containers**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| ENTITY LEVEL               | E             | E             | V             | V             | V             | E              | V              | V              | D              |
| Freight costs              | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Launch pick release        | E             | E             | E             | D             | D             | E              | D              | D              | D              |
| Split line                 | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Auto-create deliveries     | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Assign to delivery         | E             | E             | E             | E             | D             | E              | D              | D              | D              |

**Table L-4 Role Definition Samples for Delivery Lines and Containers**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| Unassign from delivery     | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Auto-create trip           | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Auto-pack                  | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Auto-pack master           | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Create containers          | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Pack                       | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Unpack                     | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Packing workbench          | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Calculate weight/volume    | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| UPS rate and service       | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| UPS tracking               | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| UPS time in transit        | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| UPS address validation     | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Pick release form          | E             | E             | E             | D             | D             | E              | D              | D              | D              |
| Resolve exceptions form    | E             | E             | E             | E             | D             | E              | D              | D              | D              |
| Packing calculator         | E             | E             | E             | E             | D             | E              | D              | D              | D              |

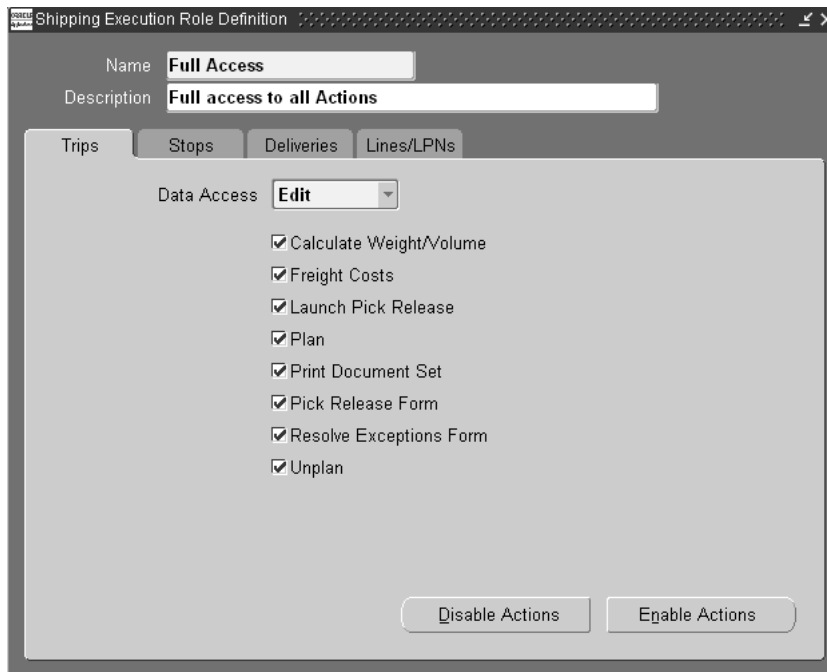
Blank Role definition templates are available in the Templates section.

### Creating a Role

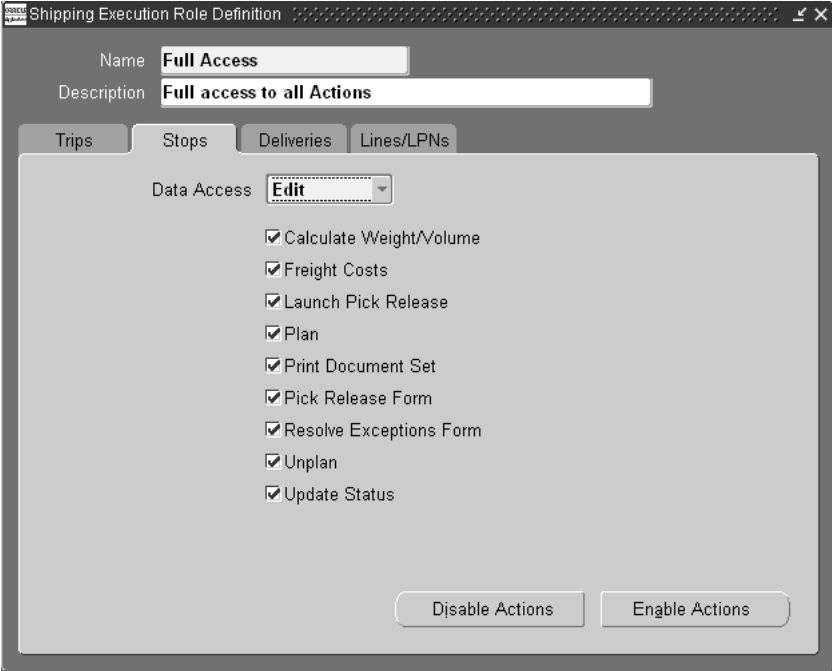
Creating a Shipping user role involves either copying an existing role or alternatively creating one from the ground up.

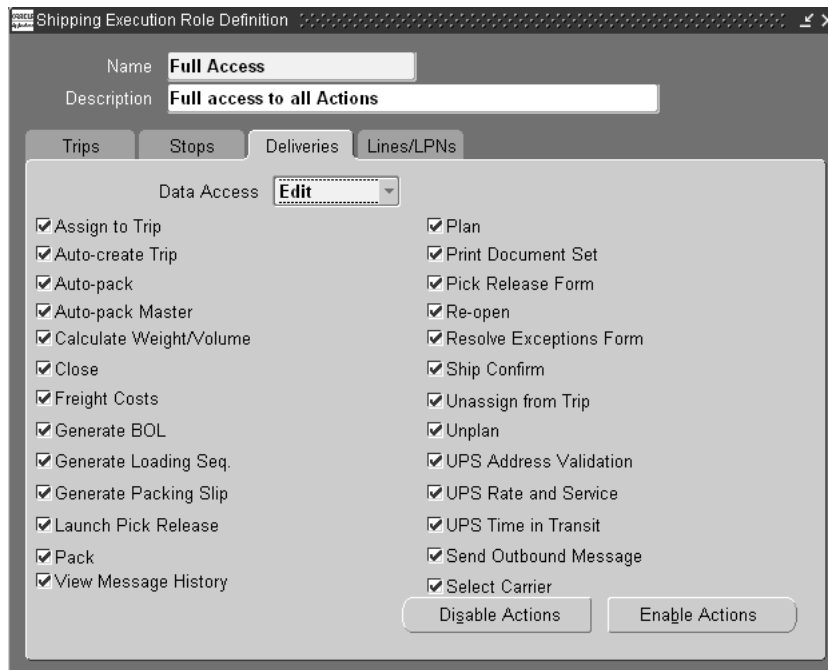
To copy an existing role please refer to that specific section. Saved roles cannot be altered. Therefore existing roles can only be copied and saved with a new name before being assigned.

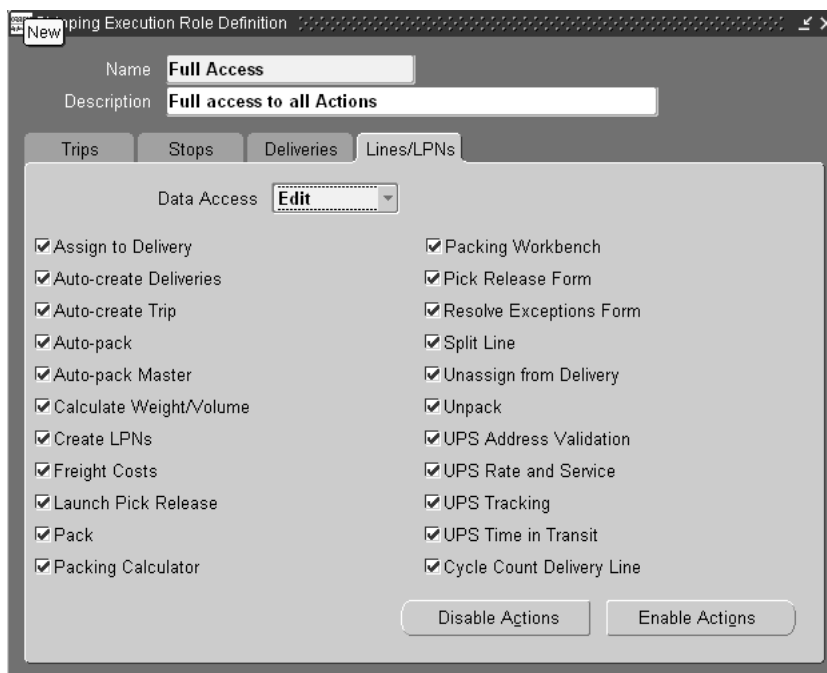
Disabling the Pick Release action prevents access from both the Transactions form and from the Tools menu bar.











## Granting Roles

### Grant Definition

A Shipping Grant is a set of user access and action privileges defined by the combination of a shipping role, a system user, a warehouse organization and an effective date range. Basically a Grant is the connection between a system Role and a User.

Shipping access privileges are granted to users by assigning a shipping Role to a system User effective from a Start Date until an optional End Date within an optional Organization.

To navigate to the grant management set of screens: Shipping > Setup > Grants and Roles Definitions > Grants. Two buttons are provided on the Grant form to conveniently View or Define roles.

When multiple grants are used for a particular user, the resulting grant is the union of all other active grants. Consequently, you should consider with caution granting a user with multiple overlapping grants.

The resulting union of grants is a access to the most organization and most warehouses with the highest access:

- Single organization grant: The resulting union of effective grants in one organization is an access to one organization with the highest access.
- Multiple organization grant: If at least one of the effective grants allows access to all organizations, the resulting union will give access to all organizations with the highest access.

Further grants details are covered in the forth coming sections.

| User     | Role              | Org. | Start Date  | End Date    |
|----------|-------------------|------|-------------|-------------|
| VISION   | 03-27-2002        | M1   | 27-MAR-2002 | 27-MAR-2002 |
| VISION   | 03-27-2002        |      | 27-MAR-2002 | 27-MAR-2002 |
| VISION   | LN                | V1   | 13-FEB-2002 |             |
| VISION   | Full Access       | V1   | 09-APR-2002 | ...         |
| VISION   | New Priv          | V1   | 22-MAR-2002 |             |
| VISION   | TEST1             |      | 27-MAR-2002 |             |
| VISION   | Upgrade Role      |      | 06-SEP-2001 |             |
| VISION   | VISION_EVERYTHING | V1   | 27-MAR-2002 |             |
| VISITOR  | Upgrade Role      |      | 31-MAY-2001 |             |
| VJAMESON | Upgrade Role      |      | 31-MAY-2001 |             |

### New User's Default

By default a new user with no existing grant is safely limited to a View-Only role until a grant is defined and assigned.

### Upgrade Default

Existing users upgraded to 11i are granted a full access privilege so that upgrading the Shipping Application does not lock users out of the forms. In that instance new users added after the upgrade are granted a default view-only access.

**Start Date Field**

The Start Date field can be used to activate a grant either on today's date or on a later date. So Grants may be created ahead of time for employees coming on board or Grants can be created the first day of employment.

**End Date Field**

Employment at will: To create an open ended grant, leave the end date value blank.

Last day of employment: To terminate a user's grant enter a present or future end date.

Employment extension: Grants with future end dates can be updated even after being saved. A future end date can be changed.

Employment history: Expired grants can not be altered. Passed end dates freeze grants into view-only history records.

**Single Grant for All Organizations**

The warehouse value is optional. A blank warehouse value effectively grants a user the same role across all organizations. This type of grant should be used when only one grant is in use. You could use this type of grant to bypass all security (Grant a super user role to all warehouses.

Use caution when granting roles for all warehouse organizations to prevent overlapping grants.

**Single Grant Per Organization**

Generally a user should only have a single active grant per warehouse or the least amount practical. Roles and Users gives you the ability to grant precisely the privileges required. Try to define roles that match well users responsibilities so no duplicate grants need to be assigned. If a user responsibilities are across two existing roles, you should create an new more appropriate role with all particular job attributes. Then create a grant definition based on that role.

**Overlapping Grants**

Users can also be granted overlapping roles across warehouses or within the same organizations. The union of overlapping active role privileges in a warehouse controls the user's data access and actions. Administrators should be cautious when creating overlapping grants.

The resulting user grant being the union of all user active grants, user may get more access than originally intended.

Positive example: This example is an illustration of how all-organization overlapping grants can benefit grant management at times:

- Grant 1 - John has been a Picker in M1 organizations since January until an open end date.
- Grant 2 - John will be the Picking Supervisor in M1 and V1 from April 1st until April 14th

In this example, John is normally a Picker in the M1 warehouse. John's boss is taking time off, so John will be the acting Picking Supervisor for two weeks for both M1 and V1 organizations.

Due grant 1 and grant 2 overlap, John will also be a Picker in V1 for two weeks. However this is really a minor issue because John will already be granted Picking privileges through the temporary Picking Supervisor grant. (Assuming Picking Supervisor can Pick as well)

Negative example: This example is an illustration of draw back condition with overlapping grants across all-organization:

- Grant 1: Joe is the Shipping Manager in M1 from August 1st to August 31st.
- Grant 2: Joe is the Shipping Supervisor in M1 from January to open end date
- Grant 3: Joe is a Picker in all Orgs at all times (blank warehouse & end date)

In this example, because of grant 3, Joe has access to all organizations for picking at all times and will enjoys the supervisor's privileges for all organizations starting in January. For one month of August, he gets the manager's privileges in all organizations.

Dealing with multiple effective grants: You can limit or eliminate overlapping grants by following these guidelines:

- Non warehouse specific overlapping grant - Fragment the grant that is not warehouse specific to limit the problem to one warehouse overlap only.
- Warehouse specific overlapping grant - Merge roles used in the overlapping warehouse. Create a single role more appropriate than the default union of both grant roles.

Avoiding multiple effective grants: Rather than dealing with multiple active grants here is how you can prevent that condition:

- Keep the number of active grants minimal by creating many tailored roles.
- When creating new grants deactivate some existing ones to prevent grant overlap

- Grant multiple warehouses only when a single user grant exist.

### Multiple Shipping Roles

A user can simultaneously have many grants for multiple warehouses to reflect distinct privileges. The grants referred to here are not overlapping. This is a preferred method of using multiple grants.

Example:

- Grant 1: Joe Shipping Manager in M1 since May 15th.
- Grant 2: Joe Shipping Supervisor in M3 since January 1st.

The resulting grant privilege is exactly as defined by the two grants. The grant union being empty there is no overlapping condition.



| Org. | Start Date  | End Date    | Role Description                   | Organization Name     |
|------|-------------|-------------|------------------------------------|-----------------------|
| M1   | 27-MAR-2002 | 27-MAR-2002 | New role as of 03-27-2002          | Seattle Manufacturing |
| M1   | 15-MAY-2002 |             | Privileges for Shipping Manager    | Seattle Manufacturing |
| M3   | 01-JAN-2003 |             | Privileges for Shipping Supervisor | Dallas Manufacturing  |
|      |             |             |                                    |                       |
|      |             |             |                                    |                       |
|      |             |             |                                    |                       |
|      |             |             |                                    |                       |
|      |             |             |                                    |                       |
|      |             |             |                                    |                       |
|      |             |             |                                    |                       |

Buttons: Define Role, View Role

### Updating Grants & Roles

Grant edits are limited to End date forward or backward selection. Typically only Oracle System Administrators responsibility can manage grants. Dates can only be defined in a new grant based on the superseded one.

Role edits are not allowed directly. Once committed a role definition is final. Roles defined in the system can not be deleted or modified, view-only mode. To enter role

changes use the copy method to create a new role then define a new grant using the new role.

We recommend to define roles carefully since error correction can be time consuming. To enter changes you will have to first create a new role then second create all new grants based on that role.

### **Grant Activity Date**

Grants validity dates can only be extended or shortened until the grant End Date is passed. After the last hour of the end date the grant expires. Once expired a grant is no longer editable. A user assigned to an expired grant loses the associated warehouse access.

To extend a temporary shipping worker, you should edit the end date of the current grant before expiration. Post expiration you need to define a new grant by copying the expired one. Refer to editing grants.

### **Finding Grants**

Grants are found rapidly with details using the Find Grant form. This enhanced form is accessed by opening the View Find or menu bar Flashlight icon. It provides extras fields not available on the main grant form (Effectivity and Organization span) Additionally you may also use the standard methods Query by Example or Find All methods instead.

Steps to find a grant:

- Open the grant form by navigating to Shipping >Setups >Grants and Roles >Grants.
- Open the Find Grants form by navigating to View >Find or clicking on the flashlight icon.
- Enter specific filter information in the form. (See screen capture)
- Select the Find button to launch the search
- Matching grants are displayed directly in the Shipping Execution Grant form
- Close the Find Grant form



### Copying Grants

The following fields can not be edited for an existing grant: User name, Role, Warehouse organization. Consequently to update a grant you should copy a current grant or copy a close match of the target grant.

Steps to copy a grant:

- Open the grant form by navigating to Shipping >Setups > Grants and Roles > Grants.
- Find a matching grant (see Finding Grants)
- Highlight your grant selection
- Insert a new blank grant record by navigating to File > New
- Copy the grant record by navigating to: Edit > Duplicate > Record Above. This should have copied the source grant we initially picked.
- Change the grant definition at once to define the new access. Be sure all changes are final before saving the new record. Grants entered in the system can not be edited.
- Finally once all changes are final, commit the record.

### Finding Roles

The number of existing roles on the system grows rapidly. Searching for roles efficiently can be time saving. There are currently two ways to find roles. Select a method according to your preferences: speed vs. details see pros and cons.

The find methods are presented from fast to detailed.

**Find:** Provides rapid access to role based on a limited criteria.

- Enter the Role screen
- Select the task bar Flashlight or navigate to the menu: View > Find.
- Make a selection using either Name or Description fields.

**Find All:** Provides a rapid way to review all roles in details.

- Enter the Role screen
- Select the Find All option under menu View.
- Use the keyboard arrow keys to scroll through all existing roles.
- Clicking on a tab for more details will select the role and end the current search.

### **Updating a User Role**

Roles can not be directly edited. Instead you can edit a copy of an existing role. If the role you need to assign does not already exist in the system, you can create a new one from the ground up. Refer to chapter on Role creation. The easiest method is to copy a near matching role.

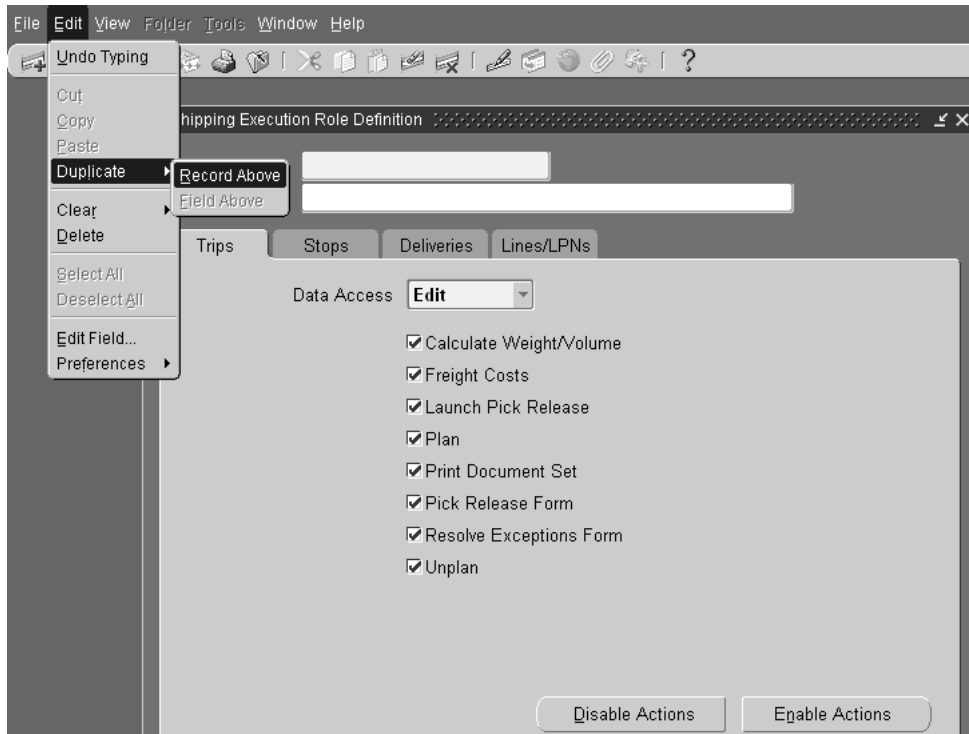
Logically once the new role is created you will want assign it to users. To start using a new role define a new user grant. Role definition for existing Grants is a read only field.

### **Copying Roles**

For security purposes, saved system roles can not be edited. Consequently to update a user role you should copy the existing role to create a new one:

- Finding and selecting a matching role will populate the role form in view only mode.
- Select menu or task bar option: File >New - This will insert a new role record.
- Select menu option Edit > Duplicate record above from the Shipping Execution Role definition. This will copy the source role we initially picked. (See screen capture below)
- Change all responsibilities settings at once to define the new job description. Be sure all changes are final before saving the new record. Roles entered in the system can not be edited.

- Enter a distinctive value in the role Name field within the Shipping Execution Role Definition
- Select Save from the menu to save the new role.
- Grant the new role to one or many users. See section on Granting Roles.



## Using Roles and Users

Implementing this design controls users access only to the options consistent with their tasks defined by roles. This in turn secures Shipping data by selectively hiding or displaying view-only or in full edit mode. The Shipping Transactions form navigation menus entries can be restricted to options defined for individual user role.

### **User Status**

User access falls within on of these different Roles and Users statuses:

- Pre-Upgrade users: retain unrestricted access to Shipping Execution
- New users: have a default view-only browsing privilege with not actions enabled.
- Active users: transactions are controlled by a role definition activated by a grant.
- Expired users: are denied access to the specific Shipping warehouse and are limited to any of their grant remaining active if any.
- Future users: are notified and denied access.

### **Expired Users**

The Shipping Roles and Users design has no direct security impact outside Shipping Execution. So a user with all expired Shipping privileges is not prevented from accessing any other Oracle Application responsibilities. General access is remains managed at the System Administration level not at Shipping fine grain security level.

### **Disabling Shipping Security**

In the unlikely event you want to disable the Roles and Users security on an existing instance:

1. Create a super user role with all actions enabled in Edit mode
2. Grant all users that super user role.

### **Access to Setup Menu**

The Roles and Users setup administration menu should be made available only to Shipping administrators or System Administrators.

Shipping Super Users managing employees access to Shipping should have the Roles and Users Setup option part of their system profile under Shipping Execution. Clearly other system users should not.

## **Glossary**

**Shipping Role:** Shipping duties defined by an Action access list and Data access to model a user Shipping Execution privileges.

**Shipping Grant:** User access and actions privilege defined by the combination of a shipping role, a system user, an organization and an effective date range.

**Privileges:** A set of Shipping functions a user can perform as part of his work responsibilities.

**Entities:** Oracle Shipping entities are defined as Trips, Stops, Deliveries and Lines/Containers.

**Edit/View/None:** Data access control options used in combination with Actions to help define a user role.

## Templates

Use the following role templates to help define customized roles in the course of implementation.

Five generic shipping roles and four administrative roles:

- 1:
- 2:
- 3:
- 4:
- 5:
- A1: All re-upgrade users
- A2: New users
- A3: Default values for custom created roles
- A4: Any expired grant

There are four tables with sample security setup for:

- Trips
- Stops
- Deliveries
- Delivery Lines and Containers

In each table, the Entity Level row uses the following abbreviations:

- E: Full Edits

- V: View only limited
- D: Disabled

In each table, the other rows (the Actions rows) use the following abbreviations:

- E: Enabled
- D: Disabled

**Table L-5 Role Definition Samples for Trips**

| Entity Level/Action     | Role 1 | Role 2 | Role 3 | Role 4 | Role 5 | Role A1 | Role A2 | Role A3 | Role A4 |
|-------------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| ENTITY LEVEL            |        |        |        |        |        | E       | V       | V       | D       |
| Plan                    |        |        |        |        |        | E       | D       | D       | D       |
| Unplan                  |        |        |        |        |        | E       | D       | D       | D       |
| Freight costs           |        |        |        |        |        | E       | D       | D       | D       |
| Launch pick release     |        |        |        |        |        | E       | D       | D       | D       |
| Print document set      |        |        |        |        |        | E       | D       | D       | D       |
| Calculate weight/volume |        |        |        |        |        | E       | D       | D       | D       |
| Resolve exceptions form |        |        |        |        |        | E       | D       | D       | D       |
| Pick release form       |        |        |        |        |        | E       | D       | D       | D       |

**Table L-6 Role Definition Samples for Stops**

| Entity Level/Action | Role 1 | Role 2 | Role 3 | Role 4 | Role 5 | Role A1 | Role A2 | Role A3 | Role A4 |
|---------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| ENTITY LEVEL        |        |        |        |        |        | E       | V       | V       | D       |
| Plan                |        |        |        |        |        | E       | D       | D       | D       |
| Unplan              |        |        |        |        |        | E       | D       | D       | D       |
| Freight costs       |        |        |        |        |        | E       | D       | D       | D       |

**Table L-6 Role Definition Samples for Stops**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| Calculate weight/volume    |               |               |               |               |               | E              | D              | D              | D              |
| Launch pick release        |               |               |               |               |               | E              | D              | D              | D              |
| Print document set         |               |               |               |               |               | E              | D              | D              | D              |
| Resolve exceptions form    |               |               |               |               |               | E              | D              | D              | D              |
| Pick release form          |               |               |               |               |               | E              | D              | D              | D              |
| Update status              |               |               |               |               |               | E              | D              | D              | D              |

**Table L-7 Role Definition Samples for Deliveries**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| ENTITY LEVEL               |               |               |               |               |               | E              | V              | V              | D              |
| Plan                       |               |               |               |               |               | E              | D              | D              | D              |
| Unplan                     |               |               |               |               |               | E              | D              | D              | D              |
| Freight costs              |               |               |               |               |               | E              | D              | D              | D              |
| Launch pick release        |               |               |               |               |               | E              | D              | D              | D              |
| Auto-pack                  |               |               |               |               |               | E              | D              | D              | D              |
| Auto-pack master           |               |               |               |               |               | E              | D              | D              | D              |
| Pack                       |               |               |               |               |               | E              | D              | D              | D              |
| Calculate weight/volume    |               |               |               |               |               | E              | D              | D              | D              |
| Generate loading sequence  |               |               |               |               |               | E              | D              | D              | D              |

**Table L-7 Role Definition Samples for Deliveries**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| UPS rate and service       |               |               |               |               |               | E              | D              | D              | D              |
| UPS time in transit        |               |               |               |               |               | E              | D              | D              | D              |
| UPS address validation     |               |               |               |               |               | E              | D              | D              | D              |
| Print document set         |               |               |               |               |               | E              | D              | D              | D              |
| Assign to trip             |               |               |               |               |               | E              | D              | D              | D              |
| Unassign from trip         |               |               |               |               |               | E              | D              | D              | D              |
| Auto-create trip           |               |               |               |               |               | E              | D              | D              | D              |
| Ship confirm               |               |               |               |               |               | E              | D              | D              | D              |
| Reopen                     |               |               |               |               |               | E              | D              | D              | D              |
| Close                      |               |               |               |               |               | E              | D              | D              | D              |
| Pick release form          |               |               |               |               |               | E              | D              | D              | D              |
| Resolve exceptions form    |               |               |               |               |               | E              | D              | D              | D              |
| Generate BOL               |               |               |               |               |               | E              | D              | D              | D              |
| Generate packing slip      |               |               |               |               |               | E              | D              | D              | D              |

**Table L-8 Role Definition Samples for Delivery Lines and Containers**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| ENTITY LEVEL               |               |               |               |               |               | E              | V              | V              | D              |
| Freight costs              |               |               |               |               |               | E              | D              | D              | D              |



**Table L-8 Role Definition Samples for Delivery Lines and Containers**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| Launch pick release        |               |               |               |               |               | E              | D              | D              | D              |
| Split line                 |               |               |               |               |               | E              | D              | D              | D              |
| Auto-create deliveries     |               |               |               |               |               | E              | D              | D              | D              |
| Assign to delivery         |               |               |               |               |               | E              | D              | D              | D              |
| Unassign from delivery     |               |               |               |               |               | E              | D              | D              | D              |
| Auto-create trip           |               |               |               |               |               | E              | D              | D              | D              |
| Auto-pack                  |               |               |               |               |               | E              | D              | D              | D              |
| Auto-pack master           |               |               |               |               |               | E              | D              | D              | D              |
| Create containers          |               |               |               |               |               | E              | D              | D              | D              |
| Pack                       |               |               |               |               |               | E              | D              | D              | D              |
| Unpack                     |               |               |               |               |               | E              | D              | D              | D              |
| Packing workbench          |               |               |               |               |               | E              | D              | D              | D              |
| Calculate weight/volume    |               |               |               |               |               | E              | D              | D              | D              |
| UPS rate and service       |               |               |               |               |               | E              | D              | D              | D              |
| UPS tracking               |               |               |               |               |               | E              | D              | D              | D              |
| UPS time in transit        |               |               |               |               |               | E              | D              | D              | D              |
| UPS address validation     |               |               |               |               |               | E              | D              | D              | D              |
| Pick release form          |               |               |               |               |               | E              | D              | D              | D              |
| Resolve exceptions form    |               |               |               |               |               | E              | D              | D              | D              |

**Table L-8 Role Definition Samples for Delivery Lines and Containers**

| <b>Entity Level/Action</b> | <b>Role 1</b> | <b>Role 2</b> | <b>Role 3</b> | <b>Role 4</b> | <b>Role 5</b> | <b>Role A1</b> | <b>Role A2</b> | <b>Role A3</b> | <b>Role A4</b> |
|----------------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| Packing calculator         | E             | E             | E             | E             | D             | E              | D              | D              | D              |

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## Transfer of Delivery Line Reservations to Cycle Count

### Overview

This appendix describes the new action of transferring delivery line quantities to Cycle Count in Oracle Shipping Execution. Until now, the Shipping Execution application removed the reservations for backordered lines and returned the reserved quantity to available inventory. The benefit of this new action is that a user has the option to transfer the reservation on a Pick Released item to Cycle Count and simultaneously backorder the delivery line which helps keep available system inventory accurate.

### Introduction

Maintaining an accurate accounting of shippable inventory is important for all businesses. In Release 11i, transfer of delivery line reservations to cycle count is introduced so that the shipping staff can better manage discrepancies in inventory balances. As unexpected situations occur while staging orders in the warehouse, such as, an item is damaged or physical inventory is out of balance with system inventory, then shipping staff can transfer a reservation for a quantity to Cycle Count so that future reservations cannot be placed against those items.

### Business Need

When a delivery line is staged, an inventory reservation exists for the quantity on that line. If circumstances occur that require the user to backorder, then the quantity is backordered and the reservation for that inventory is removed. Other orders can now be processed against that inventory. However, sometimes the user may wish to backorder a quantity but not want the quantity returned to available inventory.

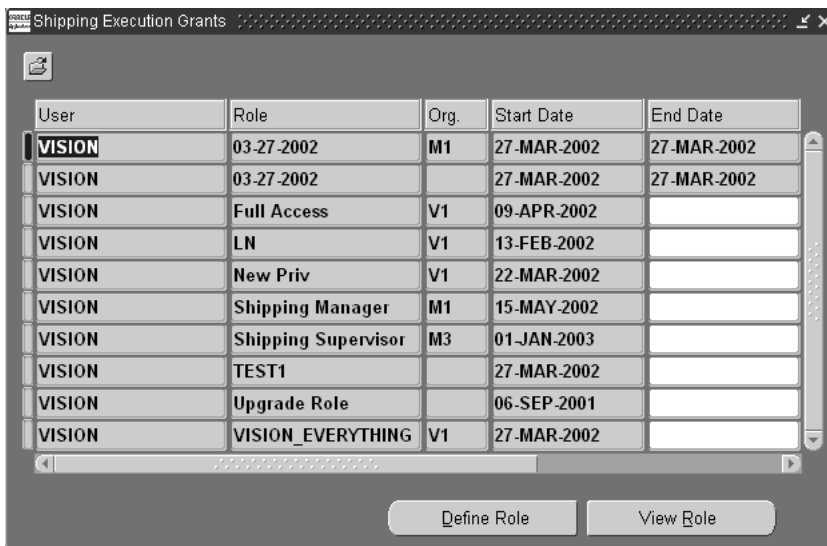
For example, assume the available system inventory equals 20 and you have a delivery line with a requested quantity of 20 but physical inventory is depleted after picking a quantity of 17. In this situation, the shipping staff would use the new 'Transfer to Cycle Count' feature to transfer the reservation for three missing items into cycle count so that available inventory balance in the system remains at zero. Transfer to Cycle Count functionality allows this type of adjustment for inventory reservations.

Prior to the availability of the cycle count feature, if you backordered any quantity from a delivery line, then that quantity became available within inventory for future reservations and there was no means of blocking out that quantity to prevent future reservations being placed against it. As a result, that 'non-shippable' inventory became instantly available again and the system would pick against it during the next pick release. Therefore, warehouse staff might try to fulfill an order with the same missing quantity infinite times until accounting made a special effort to adjust the system inventory for this item.

## Using the Feature

### **Enabling Cycle Count in Roles and Users Security**

To use this full functionality, you must have the Roles and Users security privilege for Cycle Count Delivery Line. This security privilege appears on the Shipping Execution Role Definition form, Lines/LPNs tabbed region and may require the assistance of your systems administrator.

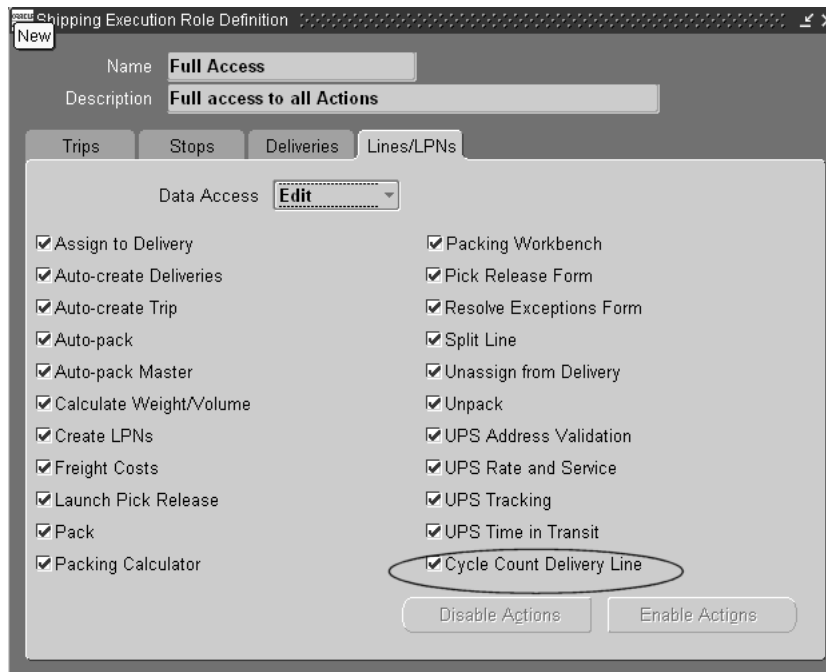


The screenshot shows a window titled "Shipping Execution Grants" with a table of data. The table has five columns: User, Role, Org., Start Date, and End Date. The first two rows have "VISION" as the user and "03-27-2002" as the role. The remaining rows have "VISION" as the user and various roles like "Full Access", "LN", "New Priv", "Shipping Manager", "Shipping Supervisor", "TEST1", "Upgrade Role", and "VISION\_EVERYTHING". The start and end dates range from 27-MAR-2002 to 06-SEP-2001. Below the table are two buttons: "Define Role" and "View Role".

| User   | Role                | Org. | Start Date  | End Date    |
|--------|---------------------|------|-------------|-------------|
| VISION | 03-27-2002          | M1   | 27-MAR-2002 | 27-MAR-2002 |
| VISION | 03-27-2002          |      | 27-MAR-2002 | 27-MAR-2002 |
| VISION | Full Access         | V1   | 09-APR-2002 |             |
| VISION | LN                  | V1   | 13-FEB-2002 |             |
| VISION | New Priv            | V1   | 22-MAR-2002 |             |
| VISION | Shipping Manager    | M1   | 15-MAY-2002 |             |
| VISION | Shipping Supervisor | M3   | 01-JAN-2003 |             |
| VISION | TEST1               |      | 27-MAR-2002 |             |
| VISION | Upgrade Role        |      | 06-SEP-2001 |             |
| VISION | VISION_EVERYTHING   | V1   | 27-MAR-2002 |             |

Navigate to: Shipping > Setup > Grants and Role Definitions > Grants

Within the Shipping Execution Grants form, query your user name to verify which role(s) you have been assigned. By placing the cursor on the line with the role you wish to view and clicking on the View Role button, you can see the Role Definition form.



At the Lines/LPNs tab, the Cycle Count Delivery Line must be checked and the Data Access field set to 'edit' before the cycle count feature will appear in the Shipping Transactions form for your use. If your current Role, as defined by this form does not have the Cycle Count feature enabled, then a new role must be created and assigned to you. The system will not allow you to enable this feature within the current role. For additional information, see Roles and Users Security.

### Transferring Reservations to Cycle Count

The transfer of reservations to cycle count feature is available through the Shipping Transactions form.

Cycle counting can only be performed on a delivery line with a picked status of Staged/Pick Confirmed. If any other line status appears on the delivery line, then you must progress the delivery line before attempting to use the cycle count feature.

There are two methods that can be used for transferring delivery line reservations to Cycle Count:

- Transfer to Cycle Count window

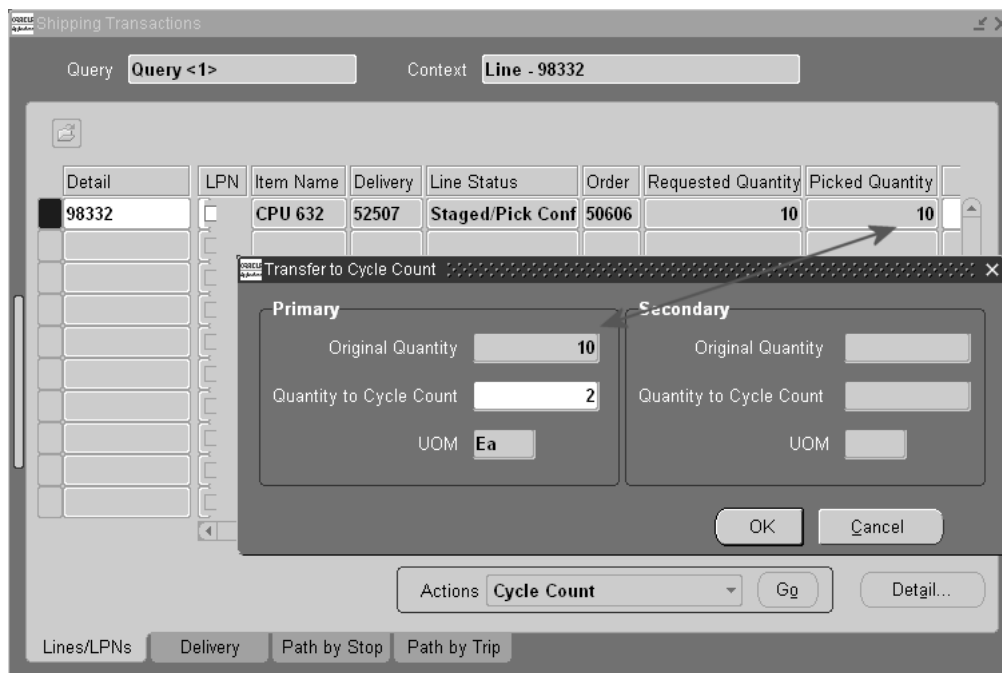
- Confirm Delivery window

### Using the Transfer to Cycle Count Action to Transfer Delivery Line Reservations

The 'Transfer to Cycle Count' Action is new. If the security privilege was correctly setup as described earlier, then you can access a new window by placing the cursor on the target delivery line and, in the Action menu, select Cycle Count and click the GO button.

As an example, if you are processing a staged delivery line with picked quantity of 10, and 2 of the items are damaged while being moved, then you may want to transfer 2 delivery line items to cycle count. In the 'Transfer to Cycle Count' window, enter the quantity to cycle count and click OK.

Notice that the Original Quantity in the Transfer to Cycle Count window defaults from the Picked Quantity; not the Requested Quantity.

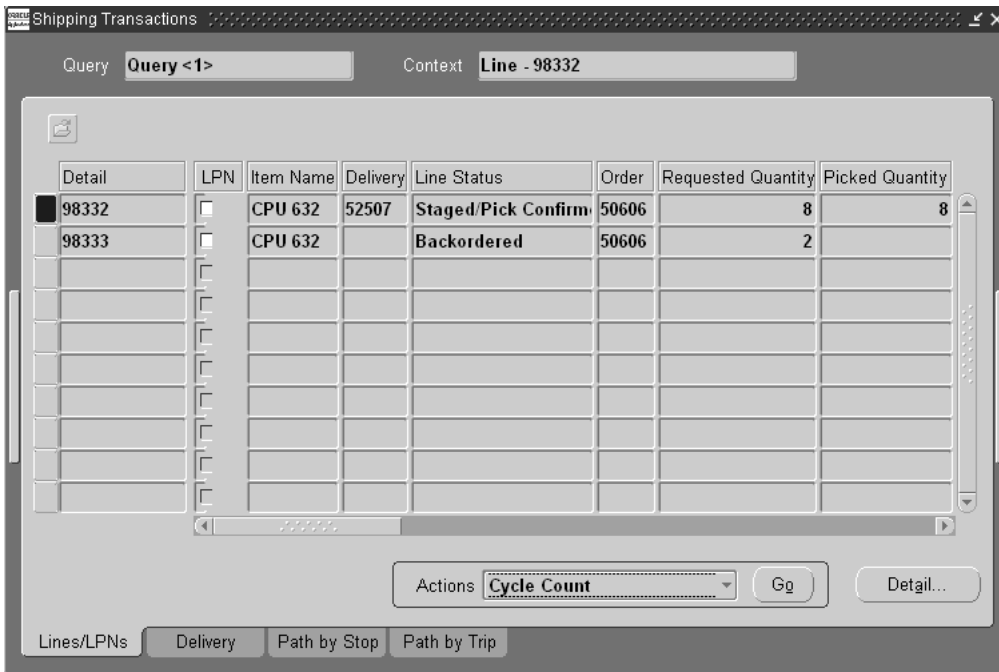


Operations Process Manufacturing (OPM) uses the 'Secondary' area in the Transfer to Cycle Count form. Primary and secondary quantities exist when the shipper sells

an item using one unit of measure but processes the same item using a secondary unit of measure. For example, a poultry customer may order 8 chickens and the poultry processor sells the chicken by the pound.

After you click OK to submit this information, the cycle count functionality:

- Splits the delivery line into two delivery lines, one with quantity eight and one with quantity two.
- Leaves the delivery line with quantity eight as a staged delivery.
- Backorders the delivery line with quantity two and transfers its reservation to cycle count (occurs in the background).



The maximum reservations quantity that you can transfer to cycle count is equal to the Requested Quantity.

### Using the Confirm Delivery Window to Transfer Reservations to Cycle Count

You can also transfer reservations to cycle count during ship confirmation by specifying either:



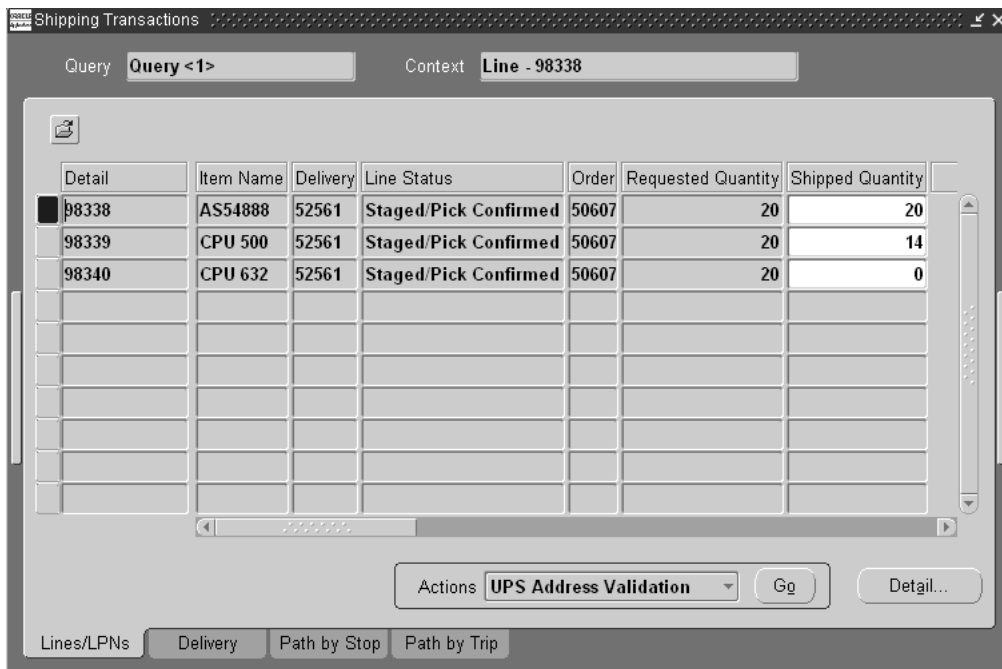
- Cycle count all (the entire quantity)
- Cycle count unspecified quantities

To cycle count the entire quantity of the delivery line, select the delivery tab and at the Actions menu, select ship confirm to display the confirm delivery window. In the Ship Options area, select the radio button for 'Cycle Count All' then click OK. The result is that the entire reserved quantity for the delivery is transferred to cycle count and the delivery line status is changed to backordered.

The screenshot shows a 'Confirm Delivery' dialog box with the following fields and options:

- Ship Options:**
  - Ship Entered Quantities
  - Unspecified Quantities:
  - Ship All
  - Backorder All
  - Cycle Count All (indicated by an arrow)
- Create Delivery for Staged Quantities
- Send Shipment Advice
- Auto-create Trip Options:**
  - Ship Method:
  - Actual Departure Date:
  - Set Delivery In-Transit
  - Create Bill of Lading
  - Close Trip
  - Defer Interface
- Document Set:
- Buttons: OK, Cancel

To cycle count unspecified quantities you use a two-step process. This functionality assumes that you want to group any quantity not shipped and transfer the line quantities into another status (staged, backordered, cycle counted). First, in the Lines/LPNs tab, you enter a 'Shipped Quantity' equal to or less than the 'Requested Quantity'. In this example, three delivery lines each containing a requested quantity of 20 are being transacted. Shipped quantities of 20, 14, and 0 are manually entered into the Shipped Quantity fields.



Shipping Transactions

Query **Query <1>** Context **Line - 98338**

| Detail | Item Name | Delivery | Line Status           | Order | Requested Quantity | Shipped Quantity |
|--------|-----------|----------|-----------------------|-------|--------------------|------------------|
| 98338  | AS54888   | 52561    | Staged/Pick Confirmed | 50607 | 20                 | 20               |
| 98339  | CPU 500   | 52561    | Staged/Pick Confirmed | 50607 | 20                 | 14               |
| 98340  | CPU 632   | 52561    | Staged/Pick Confirmed | 50607 | 20                 | 0                |
|        |           |          |                       |       |                    |                  |
|        |           |          |                       |       |                    |                  |
|        |           |          |                       |       |                    |                  |
|        |           |          |                       |       |                    |                  |
|        |           |          |                       |       |                    |                  |
|        |           |          |                       |       |                    |                  |
|        |           |          |                       |       |                    |                  |
|        |           |          |                       |       |                    |                  |
|        |           |          |                       |       |                    |                  |

Actions **UPS Address Validation** Go Detail...

Lines/LPNs Delivery Path by Stop Path by Trip

Secondly, in the Delivery tab, Actions menu, you select ship confirm and GO. In the Confirm Delivery form, if you select Ship Entered Quantities and in the 'Unspecified Quantities' LOV select Cycle Count then when you ship confirm only the 'Shipped Quantity' is confirmed. The balance of delivery lines, where the Shipped Quantity was less than the Requested Quantity will get backordered and the reservation for that quantity will transfer to cycle count.

**Confirm Delivery**

**Ship Options**

Ship Entered Quantities      Unspecified Quantities

Ship All

Backorder All

Cycle Count All

Ship  
Backorder  
Stage  
CycleCount

Create Delivery for Staged Quantities       Send Shipment Advice

**Auto-create Trip Options**

Ship Method

Actual Departure Date

Set Delivery In-Transit       Create Bill of Lading

Close Trip       Defer Interface

Document Set

OK Cancel

Results of this action are shown on the following screen shot of the Shipping Transactions form. The backorder values would appear differently if any of these items has a undershipment tolerance.

| Detail | Item Name | Delivery | Line Status | Order | Requested Quantity | Shipped Quantity |
|--------|-----------|----------|-------------|-------|--------------------|------------------|
| 98338  | AS54888   | 52561    | Shipped     | 50607 | 20                 | 20               |
| 98339  | CPU 500   | 52561    | Shipped     | 50607 | 14                 | 14               |
| 98340  | CPU 632   |          | Backordered | 50607 | 20                 |                  |
| 98368  | CPU 500   |          | Backordered | 50607 | 6                  |                  |

When the ship confirm occurs, then five events are kicked off for this example.

1. The partially filled delivery line splits into two lines.
2. The fulfilled portion of the delivery line is ship confirmed.
3. The unfulfilled delivery line quantity of six is backordered.
4. Simultaneously, quantities of six and twenty are transferred to cycle count reservations (occurs in the background).
5. The delivery line receiving its requested quantity is ship confirmed.

### Using Transfer to Cycle Count and Over Picking

Over picking an order quantity creates a slightly different outcome when transferring reservations to cycle count. In this example, the requested quantity is 10, but the warehouse staff decided to pick 15 items. Notice that when the 'Transfer to Cycle Count' window opens, the original quantity shows the picked quantity. Suppose that three items are damaged during the physical move to the staging area. So we enter a quantity to cycle count of three and click OK.

The screenshot displays the 'Shipping Transactions' application window. At the top, the 'Query' field contains 'Query <4>' and the 'Context' field contains 'Line - 74623'. Below this is a table with the following data:

| Detail | Item Name    | Delivery | Line Status   | Order | Requested Quantity | Picked Quantity | Shipped |
|--------|--------------|----------|---------------|-------|--------------------|-----------------|---------|
| 74623  | TC-2-AS54888 | 11273    | Staged/Pick C | 52634 | 10                 | 15              |         |

A 'Transfer to Cycle Count' dialog box is open in the foreground. It has two main sections: 'Primary' and 'Secondary'. The 'Primary' section contains the following fields:

- Original Quantity: 15
- Quantity to Cycle Count: 3
- UOM: Ea

The 'Secondary' section is currently empty. At the bottom of the dialog are 'OK' and 'Cancel' buttons. Below the dialog, the 'Actions' dropdown menu is set to 'Cycle Count', with 'Go' and 'Detail...' buttons next to it. At the very bottom of the application window, there are buttons for 'Lines/LPNs', 'Delivery', 'Path by Stop', and 'Path by Trip'.

Notice the results do not show a backordered line. Since the picked quantity of 12 exceeds the requested quantity of 10, a backorder is unnecessary and does not occur. However, the reservation for three items does transfer to cycle count in the background.

| Detail | Item Name    | Delivery | Line Status   | Order | Requested Quanti | Picked Quantity | Shipped |
|--------|--------------|----------|---------------|-------|------------------|-----------------|---------|
| 74623  | TC-2-AS54888 | 11273    | Staged/Pick C | 52634 | 10               | 12              |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |
|        |              |          |               |       |                  |                 |         |

Query **Query <4>** Context **Line - 74623**

Actions **Cycle Count** Gg Detail...

Lines/LPNs Delivery Path by Stop Path by Trip

In another version of this over picking scenario, consider what would happen if seven items were damaged during the move and the reservations transferred to cycle count. The line would split with eight items staged and two items backordered, which represent the difference between the requested quantity and the quantity staged. In the background, a reservation for the seven damage items is transferred to cycle count.

### Viewing Line Quantities Transferred to Cycle Count

You can view the reservations transferred to Cycle Count for each item by navigating to: Inventory > On-hand Availability > Reservations. Within this form, accounting staff should periodically review the cycle count inventory, adjust inventory, and clear these reservations, as necessary.

The screenshot displays two SAP windows. The top window, titled 'Find Reservations', has the following fields:

- Organization: V1
- Item: Vision Operations
- Need by Dates: [Empty]
- Supply Source Type: [Empty]
- Demand Source Type: Cycle Count

The bottom window, titled 'Item Reservation window', shows a table of reservation lines. The 'Demand' tab is selected. The table has the following columns: Organization, Item, Type, Header Number, Need By Date, UOM, and Quantity. The data is as follows:

| Organization | Item       | Type        | Header Number | Need By Date | UOM | Quantity |
|--------------|------------|-------------|---------------|--------------|-----|----------|
| V1           | AS54888    | Cycle Count |               | 14-FEB-2002  | Ea  | 5        |
| V1           | AS54888    | Cycle Count |               | 14-FEB-2002  | Ea  | 10       |
| V1           | AS54888    | Cycle Count |               | 14-FEB-2002  | Ea  | 15       |
| V1           | AS54888    | Cycle Count |               | 18-FEB-2002  | Ea  | 3        |
| V1           | AS54888    | Cycle Count |               | 19-FEB-2002  | Ea  | 8        |
| V1           | AS54888    | Cycle Count |               | 19-FEB-2002  | Ea  | 24       |
| V1           | KS-AS54888 | Cycle Count |               | 20-MAR-2002  | Ea  | 1        |

### Using Other Features with Cycle Count

When transferring delivery line reservations to cycle count, the user needs to understand what impact, if any, other active features will have in response to the transfer. The other features mentioned in this section include: serial numbered items, ship sets and ship models.

### Transferring Serial Numbered Items to Cycle Count

When you transfer delivery line reservations to cycle count and the line items are serial numbered, then the cycle counting function does not consume the serial number. The serial number is returned to the pool so that the number can be reused.

In other words, when the delivery line is backordered during the cycle counting process, the serial number is not transferred with the reservation to cycle count and the serial number is not attached to backordered line items.

The serial number is returned to the serial number pool regardless of how the serial number generation feature is set up (e.g., At Receipt, At Sales Order Issue, or Predefined) within the master item inventory.

### **Transferring Ship Sets and Ship Models to Cycle Count**

Transferring reservations to cycle count that include part of a ship set or a ship model should cause a warning message to appear that acknowledges that this action will break the ship set if you proceed.



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# Change Orders Information Management

## Order Line Change Management in Shipping

In the course of business, Customer Sales Representatives (CSR) are requested to enter sales order changes in Oracle Order Management (OM) or Oracle Project Contracts. Changes are required when customers ask to change quantity or shipping information, reschedule or cancel a sales order.

The OM Change Management in Shipping design improves the synchronization of Delivery Lines and reservations with the order lines when they are changed.

Prior to the Order Management Change Management design, changes to pickable orders were allowed as long as the orders were not booked or interfaced with Oracle Shipping Execution. However, once the orders were interfaced into Shipping and Pick Released, changes to the sales orders were limited.

The objective of the Line Change Management design is to allow most of the sales order changes up until the Delivery lines are Staged or Ship Confirmed.

Only changes entered after the sales order lines are Booked and interfaced with Shipping Execution (Shipping) are validated by the change logic in Shipping. Order Attribute changes propagate in Shipping based on the Shipping change logic.

The following table lists sales order line changes resulting from Order Management updates. The change category letters correspond to Shipping Execution change logic as follows:

- A: Change in Quantity
- B: Change Organization, Inventory and Unschedule
- C: Change in Schedule Date
- D: Change in Ship Sets or Arrival Sets

- E: Change in Delivery Grouping Attributes

**Table N-1 Order Management Changes and Categories**

| <b>Order Management Change</b>                        | <b>Change Categories</b> |
|---|--------------------------|
| Cancel an order line                                  | None                     |
| Split an order line                                   | None                     |
| Ordered quantity (increase and decrease)              | A                        |
| Change a line item or UOM                             | None                     |
| Change the requested schedule date (earlier or later) | C                        |
| Change the scheduled shipment date                    | C                        |
| Unschedule a sales order                              | B                        |
| Changes to ship sets or arrival sets                  | D                        |
| Ship from organization                                | B, E                     |
| Change subinventory                                   | B                        |
| Intermediate ship-to organization                     | E                        |
| Change ship-to location                               | E                        |
| Deliver-to organization                               | E                        |
| FOB code  | E                        |
| Freight carrier name                                  | E                        |
| Sold-to organization                                  | E                        |
| Currency code   | None                     |
| Freight terms   | E                        |
| Shipping method                                       | E                        |
| Attributes related to ATO, PTO, and Kit               | None                     |
| Customer dock code                                    | None                     |
| Customer production sequence number                   | None                     |
| Customer PO number                                    | None                     |
| Deliver-to contact                                    | None                     |
| Intermediate ship-to contact                          | None                     |

**Table N-1 Order Management Changes and Categories**

| Order Management Change | Change Categories |
|-------------------------|-------------------|
| Shipment priority       | None              |
| Ship-to contact         | None              |

### Change Logic

Before changes can be considered, all line imports and line splits must be processed. The WSH\_INTERFACE holds in any order the 3 types of entries from Order Management interface API call:

- Requests to Import lines and create matching deliveries (I - Import)
- Split existing Delivery Lines (S - Split)
- Order Management changes request to Update Shipping Attributes (U - Update)

Shipping scans all entries through WSH\_INTERFACE to process Order Management entries in the proper order.

The Shipping change validation logic is initiated for interface lines where the action flag value is set to U for Update.

When a change is requested, the attribute change category is evaluated to determine what type of validation and action is needed to successfully update the Shipping attributes.

### Order and Delivery Status Mapping

The following table shows the correlation between Sales Orders in Order Management and the related Shipping Deliveries status. Changes to sales order lines not interfaced from Order Management to Shipping are not restricted by Shipping. For sales order lines interfaced from Order Management to Shipping, changes are allowed based on attributes updates if the deliveries are not closed. No changes are allowed for Confirmed or Shipped deliveries if the interface between Shipping and Order Management has not run to update the sales orders.

**Table N-2 OM-WSH Changes and Status Mapping**

| Sales Order Header | Order Line Detail | Changes                            | Delivery Status | Delivery Line         |
|--------------------|-------------------|------------------------------------|-----------------|-----------------------|
| Entered            | Entered           | Yes                                | n/a             | n/a                   |
| Booked             | Awaiting Shipping | Based on type of attribute changes | Open            | Ready to release      |
| Booked             | Awaiting Shipping | Based on type of attribute changes | Open            | Released to warehouse |
| Booked             | Awaiting Shipping | Based on type of attribute changes | Open            | Backordered           |
| Booked             | Picked            | Based on type of attribute changes | Open            | Staged/Pick Confirmed |
| Booked             | Shipped           | Based on type of attribute changes | Confirmed       | Shipped               |
| Booked             | Shipped           | n/a                                | In transit      | Shipped               |
| Booked             | Closed            | n/a                                | Closed          | Shipped               |

## Change Management Core Functionalities

### OM-WSH Interface to Import Attribute Changes

Order Management initiates a change by passing updated sales order data to Shipping and setting the interface Action flag to the Update value.

Shipping processes all interface data by:

- Importing order lines to create Delivery line details for newly inserted records. (I)
- Processing Split request for existing Delivery lines. (S)
- Shipping change validation determines what attributes have been changed (U)

Based on the attributes changed, distinct validations are applied to propagate the order changes to Shipping Delivery lines.

### **Shipping Attribute Change Validation Logic**

The change validation logic is initiated for WSH\_INTERFACE.Update\_Shipping\_Attributes lines where the Action Flag is set to U.

The distinct attribute changes that need validation are classified in the following categories

- Change in Quantity
- Change Organization, Inventory, and Unschedule
- Change in Schedule Date
- Change in Ship Sets or Arrival Sets
- Change in Delivery Grouping Attributes

Changes to other attributes are propagated if the Delivery status is not Shipped or Staged/Pick Confirmed.

Existing and new inventory Reservations are managed by Shipping as detailed in the following section.

### **Inventory Reservations Logic**

The Inventory Reservation logic was redesigned so shipped quantities can always be matched with existing reservations during Inventory interface after Ship-confirmation. The Reservations tables are part of the Oracle Inventory product. Inventory internal Applications Program Interfaces (APIs) are used to create, update, or cancel Reservations stored in the Inventory tables. These APIs are called by Order Management and Shipping code to manage Reservations and Reservations splitting.

Reservation management by Order Management and Shipping:

- When an Order is booked, the Order Management code creates Reservations by calling Inventory APIs.
- After the Order lines are interfaced in Shipping, existing Inventory Reservations are managed in Shipping by calling Inventory APIs.
- Order Management does not update Reservations with changes after Booking. Instead, Shipping updates, creates, or deletes Reservations for changes originated in Order Management.
- Overpicked quantities do not have existing Reservations when orders are interfaced. Shipping creates additional reservations so all Picked inventory items can be tied to the reservation.

### **Delivery Line Split**

When an interfaced Order line is split, Order Management requests a Delivery line split by setting the OM-WSH interface API action flag to S for Split.

As Shipping splits a Delivery line it also synchronizes the Inventory Reservations splits and the Move Order Lines.

Split is allowed for Delivery lines not Ship Confirmed.

- Delivery lines Released to Warehouse are reset to Ready to Release and their Move Order Lines are canceled.
- Reservations are split.
- Both proportional and non-proportional splits retain and split original serial numbers.

### **OM and INV-WMS Interfaces Flip**

Until this release, the Inventory interface ran before the Order Management interface at Ship Confirm time. Now, for invoicing reliability, the interface sequence is flipped so Order Management is updated first.

## **Setups**

There are no mandatory setups to enable the new Change Management functionality. Order Management provides Constraints that can be customized during implementation. These Constraints are used to prevent sales order changes after the associated Delivery lines have been Pick Confirmed in Shipping.

If you choose to remove these constraints, it is recommended that you implement a two-step shipping process (Confirm/Close Delivery then Ship Confirm) or to always make sure the Deliveries are Ship Confirmed as soon they are loaded or picked up by the carrier. If the system is not accurately updated in real-time, changes may be allowed after the deliveries are far-gone.

### **OM Constraints**

Order Management provides constraints at Pick Confirm for users who physically ship Deliveries before confirming them in the system. Without these constraints, this Shipping process may allow changes between the time items are shipped and the ship confirmation update in the system.

By default these constraints are active to disable order line changes after Pick confirm step. Once the Delivery Lines have been pick confirmed/staged in

Shipping, Order Management users are not allowed to change, cancel or split order lines.

### Disabling Constraints

Some users require changing order lines after the Delivery is pick confirmed/staged and until the ship confirmation stage. The system supports flexibility of removing some or all the Order Management- Shipping constraints.

Users who alter the Shipping constraints, should adopt the two step ship-confirm process: close deliveries then ship-confirm.

Note: in the event the system was not updated and changes are committed after the Deliveries are physically shipped, users may have to handle exceptions manually (revert changes, move inventory, and adjust inventory).

### Changing Defaults

To access the Order Management constraints window follow these steps:

1. Log on to Order Management Super User responsibility
2. Navigate to: Setup ->Rules ->Security ->Processing Constraints
3. Enter Query Application = Oracle Order Management
4. Enter Entity = Order Line

### List of OM Constraints at Pick Confirm

The Order Management constraints control four types of Order line changes once Deliveries are Ship-Confirmed:

- Update order line
- Cancel order line
- Delete order line
- Split order line

In turn, Order line Update is controlled for 22 different Shipping Attributes as shown in this table.

**Table N-3 ON-WSH Constraints**

| Actions | Fields             |
|---------|--------------------|
| Update  | Authorized to Ship |

**Table N-3 ON-WSH Constraints**

| <b>Actions</b> | <b>Fields</b>                    |
|----------------|----------------------------------|
| Update         | Customer                         |
| Update         | Customer PO                      |
| Update         | Customer PO Line Number          |
| Update         | Deliver To Contact               |
| Update         | Deliver To Org                   |
| Update         | FOB Point                        |
| Update         | Freight Carrier                  |
| Update         | Freight Terms                    |
| Update         | Item Type                        |
| Update         | Order Quantity UOM               |
| Update         | Ordered Quantity                 |
| Update         | Packing Instructions             |
| Update         | Request Date                     |
| Update         | Schedule Arrival Date            |
| Update         | Schedule Ship Date               |
| Update         | Ship To                          |
| Update         | Ship To Contact                  |
| Update         | Shipment Priority                |
| Update         | Shipping Instructions            |
| Update         | Subinventory (cannot be removed) |
| Update         | Warehouse                        |
| Cancel         | Not allowed if pick confirmed    |
| Delete         | Not allowed if pick confirmed    |
| Split          | Not allowed if pick confirmed    |



## Exception Messages

The following new messages have been created to provide feedback to Order Management users when an order line change is rejected.

### **Update Not Allowed**

Message: The update is not allowed because the source line is under WMS control.

This message is returned if the update cannot be executed because the source line is under WMS control.

### **Update Cannot Split Quantities**

Message: The source line cannot be split because quantity conversion has an error.

This message is returned if the update is rejected because the source line cannot be split due to a quantity conversion issue. This exception happens when the result of a split would create a null or negative quantity.

### **Attribute Update Not Allowed**

Message: The update requested cannot be executed now because the source line has at least one Delivery Line that is in a confirmed Delivery or has been shipped.

This message is returned when the update cannot be executed because the source order line is only partially eligible for a change. The Order line is associated at least with a confirmed Delivery Line or has already been shipped. For a change to be allowed all Delivery Lines related to the source order line must be eligible for the change.

### **Invalid Source Code**

Message: The Source code 'Source\_code\_name\_string' is not recognized.

This message is returned when a Delivery Line update was rejected because it was requested by a product other than Order Management. The source code allowed is restricted to 'OE'. Other products cannot request Shipping changes.

### **Invalid Packing Condition Caused by Shipment Attribute Change**

Message: One or more shipment attributes have been changed for Delivery Line &DETAIL. Please manually unassign the Delivery Line from container &CONTAINER\_ID.

This packing exception message is returned when Order Management has changed at least one non-enforced Shipment Attribute for a Delivery line packed in a container (LPN).

The update was executed but may require an additional manual step to unassign the Delivery line from the LPN. The message provides the Delivery line detail and the LPN ID to manually unassign the Delivery Line from it.

## Frequently Asked Questions

### **How are inventory reservations handled?**

Order Management creates Inventory Reservations by calling internal Inventory APIs before interfacing Sales Order lines into Shipping.

Reservations can no longer be updated through Order Management forms. Instead changes to Inventory Reservations are done automatically when a Sales Order change is entered. Reservations can be created and manually updated through the Inventory Reservations form.

Shipping manages Reservation changes for all lines interfaced to Shipping that have reached an Order Management workflow status of Awaiting Shipping. Reservation changes for allocated or staged lines are allowed through Backordering.

### **Do overpicked quantities have reservations?**

Yes, Shipping creates Reservations for Overpicked Delivery Line quantities. Initially Overpicked quantities do not have matching Reservations. Shipping creates additional material Reservations so the whole picked inventory is effectively reserved.

### **How do individual serial numbers and ranges get split?**

Shipping splits serial numbers ranges and assigns individual numbers when splitting Delivery Lines with serially controlled items. Serial numbers already assigned to items are kept during splitting. When splitting Delivery Lines, Shipping handles splits then updates the MTL\_SERIAL\_NUMBERS\_TEMP table. The serial numbers are exploded at Inventory Interface time. Serial numbers assigned to Backorders are deleted during split changes.

### **What happens when OM makes a change to a shipping delivery grouping attribute?**

The result of changing a Delivery Grouping Attribute depends if the Attribute changed is enforced. There are two types of Grouping attributes: mandatory and optionally enforced. Shipment Attributes are a sub-category of Optional Attributes.

There are five optionally enforced Shipping Delivery Grouping Attributes. The first four are Shipment Attributes:

- Customer Name
- Freight Terms
- FOB Code
- Ship Method
- Intermediate Ship To Location

There are two mandatory Grouping attributes: Ship From Location and Ship To Location.

When Order Management requests to change any of the mandatory or optional attributes, Shipping will check the Shipping Parameters' Grouping Attributes to identify any optional attributes to enforce and perform the following actions:

- If the line is assigned to a Delivery group, the Delivery Line will be unassigned from the Delivery. Additionally, if the line is packed in a LPN, a packing exception will be returned. In both cases, the system will automatically unassign the line from the Delivery and the LPN.
- If none of the Attributes changed are enforced, the system will make the change and the Delivery Line will not be unassigned. Also, if at least one Shipment Attribute is changed, an invalid packing exception will be logged for the Delivery Line if it is packed in a container (LPNs). An exception message will remind the user to unassign the Delivery Line manually.

### **What happens to the requested quantity when OM requests an ordered quantity change?**

Shipping looks up all the Delivery lines related to the source order line in a sequence governed by the line status and makes changes to the Requested Quantity if possible.

The line status order ranking criteria is as follow:

- Delivery line status: Not assigned, OPEN, Closed/Confirmed/In Transit.

- Packed status of the line: Not packed, packed.
- Planned status of the Delivery: Unplanned, Planned.
- Released status of the lines and associated flag status:
  - Ready to Release (R)
  - Non-transactable/pickable (X)
  - Backordered (B)
  - Released to warehouse (S)
  - Staged (Y)
- Ascending order of the requested quantity of the line.

### **How are changes in source line quantity propagated to the delivery line requested quantity?**

For the related source order line, Shipping looks up the Delivery lines in the sequence described and makes a decision as follows.

#### **Increase in Quantity**

Line is updatable: The line is updated if it is unassigned from a Delivery or if the Delivery is Opened, line is not packed in a LPN container, Delivery (if present) is unplanned and the line release status is one of Not Ready to be released, Ready to be released and Non Transactable.

New Delivery line: For all cases except updatable Delivery Line as mentioned, a new Delivery Line is created with the increased quantity.

#### **Decrease in Quantity**

Ship partial updatable: Lines requested quantity is updatable except for any line part of a shipped Delivery (confirmed, closed or in transit). In that case the requested reduction in quantity can be accepted only if it is not more than the sum of those lines which are not shipped.

Move order line update: The Inventory Move Order Line needs to be updated for lines in status Released to Warehouse.

Multiple lines: The shipment lines are looked up in sequence and their requested quantities are reduced until the sum of the reduced quantity reaches the requested reduction in the source line quantity.

Exceptions: An exception is logged along with the reduction in requested quantity for the shipment lines that are either staged, part of a planned Delivery, or packed in a container.

### **What happens if Order Management tries to make changes to a ship confirmed delivery?**

Changes to Shipped Confirmed or Closed Delivery lines are not allowed. Instead a sales order line quantity increase creates a new Delivery line.

### **How does Shipping handle a change in allocated/picked ship set delivery line?**

For a Ship Set Delivery line Allocated or Picked, the Order Management change request is fulfilled according to the Shipping parameter Enforce Ship Set at Picking.

- If Ship Set integrity is enforced, the change is not allowed for Allocated or Picked lines.
- If Ship Set is not enforced, then the change is allowed even if it breaks the Ship Set.

### **What happens during an organization change?**

When a Delivery Line is transferred to a different organization, the Move Order Line (MOL) is reset to Ready to Release for the target Organization. The Reservations in the original organization are deleted

Inventory Reservations are created in the target Organization.

### **How are reservations are handled during split line requests?**

During a Delivery line Split request the change logic retains and splits existing Inventory Reservations. Reservations are associated with the Delivery details. The Delivery lines are sequenced according to their release status so that the shipped/staged lines with the specified inventory control will retain their reservations. The Delivery Lines not yet associated with a Reservation (Ready to Release, Backordered, or Released to Warehouse) have their reservations split arbitrarily.

### **What happens to changes on partially shipped deliveries (split lines)?**

What happens when a change is requested for an Order line that spans across two or more Deliveries, one of which is Ship Confirmed or Closed but not OM interfaced? Regardless of other Delivery Lines eligibility for changes, no changes

are allowed until the Order Management interface has updated the source Order line. This is to prevent data corruption since the source order line has not been updated by the shipped line. The change request can be manually resubmitted successfully once the source order line has been updated by the shipped Delivery Line.

### **Are non-proportional split changes supported?**

Yes both Order Management and Shipping support non-proportional Splits. The Delivery lines are kept synchronized with the Order Lines during Order Management non-proportional set splits by propagating changed attributes to the Ship Set Delivery Lines.

## **Order is Booked/Scheduled**

Once eligible booked sales order are interfaced from Order Management to Shipping Execution. The Delivery Lines are accessible from the Shipping Transactions form. The initial Delivery Line status is “Ready to Release”.

### **Change the Organization or Subinventory**

These changes are supported; changes can be made with no restriction.

### **Change a Line Item**

Changing customer item is supported as long as the Inventory item is not changed on a existing Delivery Line. There is no change restriction if there is no Delivery Line.

### **Cancel an Order Line**

This change is supported. The Delivery Lines are set as Canceled.

### **Decrease Delivery Line Quantity**

This change is supported. The Delivery Line quantity is reduced.

### **Increase Delivery Line Quantity**

This change is supported. The Delivery Line quantity is increased accordingly.

### **Move the Schedule Date Later or Earlier**

This change is supported. The Delivery detail is updated with the new scheduling information.

**Unschedule a Delivery Line**

This change is supported. The Delivery Line status is set to Ready to Release.

**Changes to a Ship Set**

If the Enforce Ship set Shipping parameter is active, changes to Ship sets are allowed in Order Management before the inventory is allocated or before the Delivery Lines are picked. There are change restrictions if the order is either Saved or Booked but has not been released to Shipping Execution.

**Change Ship-to Location**

This change is supported if the Delivery line is not assigned to Delivery or a container. If the Delivery line is assigned, an exception is logged and the Delivery Line is assigned from the Delivery.

**Split an Order Line**

This change is supported. The Delivery line detail is split.

## Delivery Lines are Pick Released

The following details show how the order changes are supported after Delivery lines get Pick Released. The inventory is allocated when a Move Order is created during pick release.

**Change the Organization or Subinventory**

These changes are supported. The Delivery Move Order allocation status is changed to canceled, the Delivery detail is updated with the new organization and the status is reset to Ready to Release. New reservations are created.

**Change a Line Item**

This change is not directly supported. An item cannot simply be changed for a different one at this stage. The CSR will need to cancel the order line. A new order line should be created with the replacement item.

**Cancel an Order Line**

This change is supported. The Delivery Line is set to status Canceled and the Move Order line is deleted.

### **Decrease Delivery Line Quantity**

This change is supported identically for Backordered lines. The Move Order line quantity is updated and if applicable, the extra serial numbers are unassigned.

### **Increase Delivery Line Quantity**

This change is supported. A new Delivery detail with status Ready to Release is created for the extra quantity. A new material Reservation is added.

### **Move the Schedule Date Later or Earlier**

This change is supported. The Delivery detail is updated with the new scheduling information.

### **Unschedule a Delivery Line**

This change is supported. The Move Order Line status is set to Canceled and the Delivery detail status is changed to Ready To Release.

### **Change Within a Ship Set**

This change is supported unless the Ship set profile option is set to Enforce Ship Set in Shipping. The Delivery details are updated with the changes.

### **Change Ship-to Location**

This change is supported if the Delivery line is not assigned to Delivery or a container. If the Delivery line is assigned, an exception is logged and the Delivery Line is assigned from the Delivery.

### **Split an Order Line**

This change is supported. The Delivery line detail is split.

## **Delivery Lines Released to Warehouse**

This status reflects that the Move Order lines were created and the Delivery lines have been released to the warehouse. Lines may have been successfully allocated but not pick confirmed.

In this step, the inventory items are picked from inventory location. The picking operation ends with a Pick confirmation to progress the Delivery Line to Staged status.



**Change the Organization or Subinventory**

These changes are supported. The Delivery Move Order allocations are deleted, the Delivery detail is update with the new organization, and the status is reset to “Ready to Release”. New reservations are created.

**Change a Line Item**

This change is not directly supported. An item cannot simply be changed for a different one at this stage. The order line will have to be canceled. A new order line should be created with the replacement item.

**Cancel an Order Line**

This change is supported. The Delivery details are set as Canceled and the Move Order line is deleted.

**Decrease Delivery Line Quantity**

This change is supported. The Move Order line quantity is updated and if applicable, the extra serial numbers are unassigned.

**Increase Delivery Line Quantity**

This change is supported. A new Delivery detail with status Ready to Release is created for the extra quantity. A new Reservation assignment is added.

**Move the Schedule Date Later or Earlier**

This change is supported. The Delivery detail is updated with the new scheduling information.

**Unschedule a Delivery Line**

This change is supported. The Move Order Line is deleted and the release status of the Delivery detail is changed to Ready To Release.

**Change Within a Ship Set**

This change is supported unless the Ship Set profile option is set to Enforce Ship Set in Shipping. Both the Delivery details and the Move order lines are updated with the changes.

### **Change Ship-to Location**

This change is supported if the Delivery line is not assigned to Delivery or a container. If the Delivery line is assigned, an exception is logged and the Delivery Line is unassigned from the Delivery.

### **Split an Order Line**

This change is supported. The Delivery line detail is split.

## **Staged Delivery Lines**

Occurs after Pick Confirm to reflect the subinventory transfer from source inventory location to staging area has completed. The picked items have been dropped in the staging inventory area. Delivery Lines remain Staged until they are Ship Confirmed.

### **Change the Organization or Subinventory**

These changes are supported. The inventory control information is cleared and the Delivery detail is set to status Ready to Release. An exception is logged.

### **Change a Line Item or Unschedule a Delivery Line**

This change is not directly supported. An item cannot simply be changed for a different one at this stage. The order line will have to be canceled. A new order line should be created with the replacement item.

### **Cancel an Order Line**

This change is supported. The Delivery Lines are set to Canceled and an exception is logged.

### **Decrease Line Quantity**

This change is supported. The Move Order line quantity is adjusted, if applicable the serial numbers are unassigned. An exception is logged.

### **Increase Delivery Line Quantity**

This change is supported. A new Delivery detail with status Ready to Release is created for the extra quantity. A new Reservation is created.

### **Move the Schedule Date Later or Earlier**

This change is supported. The Delivery detail is updated with the new scheduling information.

**Unschedule a Delivery Line**

This change is supported. The status of the Delivery detail is changed to become Ready to Release.

**Change Within a Ship Set**

This change is supported unless the Ship Set profile option is set to Enforce Ship Set in Shipping. The Delivery details are updated with the changes.

**Change Ship-to Location**

This change is supported if the Delivery line is not assigned to Delivery or a container. If the Delivery line is assigned, an exception is logged and the Delivery Line is unassigned from the Delivery.

**Split an Order Line**

The Delivery Lines are split and remain in Staged status.

## Ship Confirmed, In Transit, or Closed

Note that companies who choose to support order changes after staging should ship confirm all deliveries in the system as they are moved across the loading dock or before. Ship confirming deliveries after loading or departure can allow users to make changes based on outdated status.

The customer should ship confirm deliveries at the point when order changes should no longer be allowed through the system. This may be as the inventory is moved through the loading dock or when a seal is applied to the truck trailer door . Failure to update the order status while the order is being loaded will mislead CSRs to believe the Delivery is still in house when it is actually in transit.

**Delivery at the Loading Dock**

The deliveries have not been and should not be loaded on board the truck.

**Delivery On Board the Truck at the Loading Dock**

The truck should be unloaded or if not practical the Delivery drop-off should be canceled and dropped off back at the pick up stop.

**Delivery Truck In Transit**

The Delivery carrier should be called and asked not to deliver the goods or turn the truck around.

**Delivery Dropped Off**

An RMA should be issued, the Delivery should be returned. A separate replacement order should be created.

**Summary**

In this section, you can find status tables to quickly capture the results of an Order Management change.

Sales order line changes in Order Management are not allowed if any related delivery line is either Confirmed or Shipped AND the interface from Shipping to Order Management has not run yet.

**Table N-4 Shipping Actions for a Requested Quantity Change**

| <b>Detail Status</b>                                | <b>Packed</b> | <b>Planned</b> | <b>Sequence of Selection</b> | <b>Increase Line Quantity</b>                   | <b>Decrease Quantity (but not to zero)</b>   | <b>Decrease Quantity to Zero</b> |
|---|---------------|----------------|------------------------------|---|--|----------------------------------|
| Line unassigned from a delivery or delivery is open | No            | No             | Not Ready to be released     | Increase fully, consider no more shipment lines | Decrease requested quantity; if not sufficient for the change request, proceed to the next shipment line | Cancel delivery details          |

**Table N-4 Shipping Actions for a Requested Quantity Change**

| <b>Detail Status</b>                                | <b>Packed</b> | <b>Planned</b> | <b>Sequence of Selection</b>             | <b>Increase Line Quantity</b>   | <b>Decrease Quantity (but not to zero)</b>   | <b>Decrease Quantity to Zero</b> |
|---|---------------|----------------|--|---|--|----------------------------------|
| Line unassigned from a delivery or delivery is open | No            | No             | Ready to be released or non-transactable | Increase fully, consider no more shipment lines                       | Decrease requested quantity; if not sufficient for the change request, proceed to the next shipment line | Cancel delivery details          |
| Line unassigned from a delivery or delivery is open | No            | No             | Backordered                              | New delivery detail with full change, consider no more shipment lines | Decrease requested quantity; if not sufficient for the change request, proceed to the next shipment line | Cancel delivery details          |

**Table N-4 Shipping Actions for a Requested Quantity Change**

| <b>Detail Status</b>                                | <b>Packed</b> | <b>Planned</b> | <b>Sequence of Selection</b> | <b>Increase Line Quantity</b>   | <b>Decrease Quantity (but not to zero)</b>  | <b>Decrease Quantity to Zero</b>  |
|---|---------------|----------------|------------------------------|---|---|---|
| Line unassigned from a delivery or delivery is open | No            | No             | Released to warehouse        | New delivery details with full change, reservations are created       | <ul style="list-style-type: none"> <li>- Update move order line</li> <li>- Unassign serial numbers</li> <li>- Decrease requested quantity; if not sufficient for the change request, proceed to the next shipment line</li> </ul> | <ul style="list-style-type: none"> <li>- Delete move order line</li> <li>- Cancel delivery details</li> </ul> |
| Line unassigned from a delivery or delivery is open | No            | No             | Staged/Pick Confirmed        | New delivery detail with full change, consider no more shipment lines | <ul style="list-style-type: none"> <li>- Log exception</li> <li>- Decrease requested quantity; if not sufficient for the change request, proceed to the next shipment line</li> </ul>   | <ul style="list-style-type: none"> <li>- Log exception</li> <li>- Cancel delivery details</li> </ul>          |

**Table N-4 Shipping Actions for a Requested Quantity Change**

| <b>Detail Status</b>                                | <b>Packed</b> | <b>Planned</b> | <b>Sequence of Selection</b>               | <b>Increase Line Quantity</b>   | <b>Decrease Quantity (but not to zero)</b>  | <b>Decrease Quantity to Zero</b>               |
|---|---------------|----------------|--|---|---|--|
| Line unassigned from a delivery or delivery is open | No            | Yes            | Any other than canceled                    | New delivery detail with full change, consider no more shipment lines                                       | - Log exception<br>- Decrease requested quantity; if not sufficient for the change request, proceed to the next shipment line | - Log exception<br>- Cancel delivery details   |
| Line unassigned from a delivery or delivery is open | Yes           | Any            | Any other than canceled                    | New delivery detail with full change, consider no more shipment lines                                       | - Log exception<br>- Decrease requested quantity; if not sufficient for the change request, proceed to the next shipment line | - Log exception<br>- Cancel delivery details   |
| Delivery is confirmed, in transit, or closed        | Any           | Any            | Status is closed; create a new sales order | After Order Management Interface run, new delivery detail with full change, consider no more shipment lines | Reject, return eligible quantity, and rollback  | Reject, return eligible quantity, and rollback |

**Table N-5 OM Changes vs. Shipping Actions**

| <b>Action</b>  | <b>Booked or Scheduled</b>  | <b>Pick Released</b>  | <b>Reservations Allocated</b>  | <b>Pick Confirmed or Staged</b>  |
|--|---|---|--|--|
| Change organization  | Make change   | <ul style="list-style-type: none"> <li>- Delete move order line</li> <li>- Update delivery detail with new warehouse</li> <li>- Delivery detail should be Ready to Release</li> </ul> | <ul style="list-style-type: none"> <li>- Set Status on the move order line to canceled</li> <li>- Make delivery detail Ready to Release and change</li> <li>- Clear inventory control information</li> <li>- OM deletes reservation and recreates</li> </ul> | <ul style="list-style-type: none"> <li>- Make change</li> <li>- Log exception</li> <li>- Unassign if needed</li> <li>- Clear inventory information</li> <li>- Make delivery detail Ready to Release</li> </ul> |
| Change subinventory  | Make change   | <ul style="list-style-type: none"> <li>- Delete move order line</li> <li>- Update delivery detail with the new subinventory</li> </ul>  | <ul style="list-style-type: none"> <li>- Set Status on the move order line to canceled</li> <li>- Make delivery detail Ready to Release and change</li> <li>- Clear inventory control information</li> </ul>   | <ul style="list-style-type: none"> <li>- Make change</li> <li>- Log exception</li> <li>- Unassign if needed</li> <li>- Clear inventory information</li> <li>- Make delivery detail Ready to Release</li> </ul> |
| Change inventory line item (only Customer Item can be changed) | Change not allowed in Order Management with delivery in that status | Change not allowed in Order Management with delivery in that status   | Change not allowed in Order Management with delivery in that status  | Change not allowed in Order Management with delivery in that status  |



**Table N-5 OM Changes vs. Shipping Actions**

| <b>Action</b>                         | <b>Booked or Scheduled</b>   | <b>Pick Released</b>  | <b>Reservations Allocated</b>   | <b>Pick Confirmed or Staged</b>  |
|---------------------------------------|--|---|---|--|
| Unschedule                            | Set delivery detail released status to Ready to Release                        | -Delete move order line<br>- Update delivery detail released status as Ready to Release and change                      | - Set Status on the move order line to canceled<br>- Make delivery detail Ready to Release and change | - Make change<br>- Log exception<br>- Unassign if needed<br>- Reset status to Ready to Release |
| Schedule date change: Date pulled in  | Update delivery detail with new scheduling information                         | Update delivery detail with new scheduling information  | Update delivery detail with new scheduling information  | Update delivery detail with new scheduling information   |
| Schedule date change: date pushed out | - Update delivery detail with new scheduling information<br>- Log an exception | - Update delivery detail with new scheduling information<br>- Log an exception  | - Update delivery detail with new scheduling information<br>- Log an exception                        | - Update delivery detail with new scheduling information<br>- Log an exception                 |
| Increase quantity                     | Increase delivery details quantity   | - Create new delivery detail with status Ready for Release for the extra quantity<br>- Create new assignments if needed | <blank>   | <blank>  |

**Table N-5 OM Changes vs. Shipping Actions**

| <b>Action</b>                    | <b>Booked or Scheduled</b>   | <b>Pick Released</b>  | <b>Reservations Allocated</b>   | <b>Pick Confirmed or Staged</b>  |
|----------------------------------|--|---|---|--|
| Decrease quantity or cancel line | <ul style="list-style-type: none"> <li>- Decrease quantity</li> <li>- Set delivery details status to canceled if delivery detail is completely canceled</li> </ul> | <ul style="list-style-type: none"> <li>- Decrease quantity and update move order line</li> <li>- Unassign and unmark serial number if needed</li> <li>- Set delivery details status to canceled if delivery detail is completely canceled</li> <li>- Delete move order line if completely canceled</li> </ul> | <ul style="list-style-type: none"> <li>Decrease quantity and update move order line</li> <li>- Unassign and unmark serial number if needed</li> <li>- Set delivery details status to canceled if delivery detail is completely canceled</li> <li>- Delete move order line if completely canceled</li> </ul> | <ul style="list-style-type: none"> <li>- Decrease quantity</li> <li>- Log exception</li> <li>- Unassign and unmark serial number if needed</li> <li>- Set delivery details status to canceled if delivery detail is completely canceled</li> </ul> |
| Ship set                         | Make change  | <ul style="list-style-type: none"> <li>- Update delivery details</li> <li>- Update move order lines if enforce ship set</li> </ul>  | Update delivery details   | Update the set   |
| Split line                       | Make change and split delivery details   | Make change, split delivery details and unrelease (set to Ready to Release)   | Make change, split delivery details and unrelease (set to Ready to Release)   | Make change and split delivery detail  |
| Delivery grouping attributes     | Make change and split delivery details   | Make change, split delivery details and unrelease (set to Ready to Release)   | Make change, split delivery details and unrelease (set to Ready to Release)   | Make change and split delivery detail  |

**Table N-5 OM Changes vs. Shipping Actions**

| <b>Action</b>                                     | <b>Booked or Scheduled</b>  | <b>Pick Released</b>  | <b>Reservations Allocated</b>   | <b>Pick Confirmed or Staged</b>   |
|---|---|---|---|---|
| Organization, implicit, mandatory                 | If assigned to delivery or container, log an exception and unassign from delivery   | If assigned to delivery or container, log an exception and unassign from delivery   | If assigned to delivery or container, log an exception and unassign from delivery   | If assigned to delivery or container, log an exception and unassign from delivery   |
| Ship from location, implicit, mandatory           | If assigned to delivery or container, log an exception and unassign from delivery   | If assigned to delivery or container, log an exception and unassign from delivery   | If assigned to delivery or container, log an exception and unassign from delivery   | If assigned to delivery or container, log an exception and unassign from delivery   |
| Ship to location, implicit, mandatory             | - If not assigned to delivery or container, make change.<br>- If assigned to delivery or container, log an exception and unassign from delivery | - If not assigned to delivery or container, make change.<br>- If assigned to delivery or container, log an exception and unassign from delivery | - If not assigned to delivery or container, make change.<br>- If assigned to delivery or container, log an exception and unassign from delivery | - If not assigned to delivery or container, make change.<br>- If assigned to delivery or container, log an exception and unassign from delivery |
| Intermediate ship to location, implicit, optional | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   |
| Customer, explicit, optional                      | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   |
| Freight terms, implicit, optional                 | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   |
| FOB code, explicit, optional                      | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   |
| Ship method, explicit, optional                   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   | If enforced, unassign from the delivery   |

**Table N-5 OM Changes vs. Shipping Actions**

| <b>Action</b>   | <b>Booked or Scheduled</b>              | <b>Pick Released</b>   | <b>Reservations Allocated</b>           | <b>Pick Confirmed or Staged</b>         |
|---|---|--|---|---|
| Carrier, explicit   | If enforced, unassign from the delivery | If enforced, unassign from the delivery  | If enforced, unassign from the delivery | If enforced, unassign from the delivery |
| Delivery, implicit, mandatory when assigned to delivery           | If enforced, unassign from the delivery | If enforced, unassign from the delivery  | If enforced, unassign from the delivery | If enforced, unassign from the delivery |
| Legend for delivery grouping attributes                           | If enforced, unassign from the delivery | If enforced, unassign from the delivery  | If enforced, unassign from the delivery | If enforced, unassign from the delivery |
| Implicit: Automatically included, not part of shipping parameters | Mandatory: Always Yes                   | Optional: Can be Yes or No, usually set for each organization in the shipping parameters | <blank>                                 | <blank>                                 |

### **Order Management & Inventory Interface Flip**

The Trip Stop Interface sequence was flipped so sales orders can be invoiced regardless of any Inventory interface exception. Generally issuing invoices is more important than keeping an accurate on-hand quantities.

Previously the Inventory interface had to complete first before the Order Management interface could run.

Currently the new Change Order Information functionality enables the Order Management interface to correctly split Inventory reservations for shipped and unshipped lines. The Inventory interface no longer needs to run first to consume shipped Delivery lines Inventory reservations.

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# Multimodal and Consolidated Shipments

## Introduction

This appendix presents two business scenarios:

- Multimodal shipment: An order needs to ship via different modes before arriving at its final destination.
- Consolidated shipment: An order sources from various locations needs to be staged at an intermediate location before arriving at its final destination.

## Definitions

**Consolidation:** The collection of packages to be either dropped-off in a set or to share transportation costs. Consolidations may include shipments for an individual Ship to location or for multiple different customers within the same vicinity.

**Ship confirmation:** To enter shipped quantity and inventory controls for specific shippable lines. You can ship confirm the same delivery/trip repeatedly until you close the delivery/trip. Once it is closed, no more changes can be made into a delivery/trip.

**Ship-to location:** The delivery point for consolidated shipments, gathered from multiple locations, that will be shipped to an intermediate and/or ultimate ship to location.

**Delivery:** A set of order lines to be shipped to a customer's ship-to location on a given date in a given vehicle. Multiple deliveries can be grouped into a single trip. A single delivery may include items from different sales orders and may include backorders as well as regular orders.

**Ship Confirm:** A process in Shipping Execution which allows you to identify shipped quantities, assign inventory control information for released lines, assign

freight charges, and specify whether or not to backorder unfulfilled quantities of released line items.

**Trip planning:** The process of planning the necessary vehicles and grouping the scheduled shipments that will be included in a given trip. Planning the trip requires consideration of vehicle load capacities, container capacities and, in certain cases, the loading order for the customer's specified unload order.

**Trip:** An instance of a specific Freight Carrier departing from a particular location containing deliveries. The carrier may make other stops on its way from the starting point to its final destination. These stops may be for picking up or dropping off deliveries.

**Stop-off:** A location at which the trip is due for a pick-up or drop-off.

**Shipment:** An individual package sent to a customer. Thus, a shipment might contain an entire order, if all items in that order are pick released and packed together. A shipment might contain just part of an order that is pick released and packed. A shipment might also contain only part of a released order line, where some of the items on the picking slip are not in stock.

**Ultimate ship-to location:** The final destination of a shipment.

## Business Scenario 1: Multimodal Shipment

### Overview

When a customer's order needs to ship via different modes (i.e., air, ocean, truck) to arrive at the final destination, multimodal shipping must be used. This business process starts when your company receives an order from your customer, the items are picked, and you need to ship them using multiple modes of transportation.

Once the order line reaches the Order Management workflow Shipping Activity, Order Management calls Shipping Execution to identify the line as ready to import. When shipping imports the order line, Shipping Execution picks the items and autocreates a delivery. Once a delivery has been created, it can be assigned to the corresponding carriers via Trips. Shortly after assigning the Delivery to the Trips, the Delivery can be shipped.

A few quick setup steps can be followed to execute this scenario. Setting defaults in the Organization and Shipping Parameters will allow the streamlined Pick process to occur. Trips can be created to represent multiple carriers either before the order has been placed or during the order flow from entered to shipped.

## Required Setup

To accomplish Multimodal Shipment, the following setups are required:

### Organization Parameters

Navigate: Order Management > Shipping > Setup > Organization Parameters. On the ATP, Pick, Item-Sourcing tab, ensure that the Pick Confirm Required check box is unchecked. This will allow Inventory to automatically pick confirm each move order line.

### Shipping Parameters

Navigate: Order Management > Shipping > Setup > Shipping Parameters. On the Pick Release tab, check Autocreate Deliveries to use the Delivery Grouping Rules you have defined to group delivery lines into deliveries. Check Auto Allocate to use the Picking Rules that you have defined in Inventory to determine the source.

If you prefer to manually create a Delivery ahead of time to assign Delivery Lines to, the Autocreate Deliveries box must be unchecked.

### Delivery Grouping tab

You can define delivery grouping rules, based on conditions that make sense to your business process. Ship from location and Ship to location are mandatory. These are the additional conditions: customer, freight terms, FOB code, intermediate ship to locations, and ship method.

### Picking Rules

Navigate: Inventory > Setup > Rules > Picking. When you define an item you choose a picking rule to determine the order in which revisions, lots, subinventories, and locators are picked for sales orders. Shipping Execution submits requests to Inventory, which uses the information you enter in the Picking Rules window to generate pick lists for sales orders. If you choose None for any of the criteria fields, Inventory ignores that criterion. For example, if you choose None for Revision, Inventory picks units of an item without regard to revision levels. Inventory looks at the picking criteria in the order in which they appear in the Picking Rules window. Then, Inventory looks at the options (except for None options) for each criterion in the order in which they appear beneath each criterion.

### Defaulting Rules

Navigate: Order Management > Setup > Rules > Defaulting Ship Method, Freight Terms and FOB are fields which appear on the Order Header that could be helpful

to default during order entry. They may also be entered or the defaults overridden at the time the order is created. These fields can be entered until the Delivery has been Ship Confirmed. Once the Delivery has been Ship Confirmed, changes can not be made to the mentioned fields.

### Define Location

Navigate: Inventory > Setup > Organizations > Locations

An intermediate address can be assigned to a trip once a Location has been defined. This address will be used as the Pick-up or Drop-off location defined when a Delivery is assigned to a Trip. Upon saving the newly created Location, the system will generate a number which corresponds to the Location. In many cases, the Location may represent a Port or an Airport.

### Process Steps

1. Enter and Book order

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**Note:** Import Delivery Lines must occur before order lines are visible in Shipping as Delivery Lines. This can be triggered manually or as a concurrent process that can be set to run at specific time intervals. Navigate: Shipping > Interfaces > Run > Import Delivery Lines (choose Order Management as the Parameter).

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2. Launch Pick Release. There are several ways to launch Pick Release however the most streamlined method would be to set up Pick Release to run as a concurrent process. Navigate: Shipping > Release Sales Orders > Release Sales Orders SRS.

Other methods for launching Pick Release are:

From the Shipping Transactions form select a specific Delivery Line for Pick Release by selecting one or multi-selecting many Delivery Lines, then Navigate: Action > Launch Pick Release and click Go. (You can pick release by LPN(s) and once created, Deliveries, Stops and Trips can also be submitted for Pick Release through the Shipping Transactions form).

Additionally, you can bring up the Release Sales Order form while in the Shipping Transactions form by using the Tools menu and selecting the Pick Release form.

Finally, Pick Release can be run manually. Navigate: Shipping > Release Sales Orders > Release Sales Orders.



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**Note:** When Pick Releasing using the Release Sales Order form, any of the defaults set in the Organization and Shipping Parameters can be overridden for that particular Pick Release.

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3. Create Trips Navigate: Order Management > Shipping > Transactions. By default, you will be on the Trips tab. To create a Trip, click Detail and populate the information. At minimum, Name and Ship Method. Save each Trip.

### **An Example**

When a delivery requires transportation on multiple carriers, the creation of a Trip is required for each carrier.

Figure 32–6 Create Trip 2 to follow Trip 1

**Trip - ML Trip 2**

**Trip**

Name **ML Trip 2** Status **Open**

Ship Method **SEA** Activity

Freight Code

Planned

Exceptions

**Vehicle**

Organization

Item Name

Number Prefix Number

Arrive after Trip **ML Trip 1**

Routing Instructions [ ]

Actions **Calculate Weight/Vol** Go Done

### Assign Delivery to Trips

Using the Query Manager in the Shipping Transactions form, find the order, click on the Delivery tab, select Assign to Trip and click Go to assign the Delivery to each newly created Trip. See [Figure 32–7](#)

Figure 32-7 Assign Delivery to Trip 2 (same procedure for each Trip)

The screenshot shows a dialog box titled "Assign Deliveries to Trip". At the top, it says "Trip ML Trip 2". Below this, there are two sections for stops:

- Pick-up Stop:** Includes a checkbox for "New" (unchecked), a "Location" field, and "Planned Arrival Date" and "Planned Departure Date" fields.
- Drop-off Stop:** Includes a checkbox for "New" (checked), a "Location" field containing "ML Airport - CDG", and "Planned Arrival Date" and "Planned Departure Date" fields.

At the bottom of the dialog are "OK" and "Cancel" buttons.

**View the Stops**

From the Shipping Transactions form, click the Path by Stop tab and verify that there are two stops associated with each Trip. See [Figure 32-8](#)

Figure 32–8 View Path by Stop tab

| Location        | Trip      | Status | Activity          | Planned Arrival Date |
|-----------------|-----------|--------|-------------------|----------------------|
| M1- Seattle     | ML Trip 1 | Open   | Awaiting Pickup   | 18-DEC-2000 00:00:00 |
| ML Port of NY   | ML Trip 1 | Open   | Awaiting Drop off |                      |
| M1- Seattle     | ML Trip 2 | Open   | Awaiting Pickup   | 18-DEC-2000 00:00:00 |
| ML Airport - CI | ML Trip 2 | Open   | Awaiting Drop off |                      |
| M1- Seattle     | ML Trip 3 | Open   | Awaiting Pickup   | 18-DEC-2000 00:00:00 |
| Nanterre1065    | ML Trip 3 | Open   | Awaiting Drop off |                      |

### Ship Confirm the Delivery

Navigate: Order Management > Shipping > Transactions, choose the Delivery tab, highlight the desired Delivery, select Actions, choose Ship Confirm and click Go, the Ship Confirm window will appear. Click Ok to complete the process. Process Order API runs after the delivery has been Ship Confirmed.

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**Note:** The options in the Auto-create Trip Options box are grayed out.

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Update the status of the stops to Closed.

Inventory Interface will be submitted when the Pick-up Stop has been Closed. The delivery lines will now be available to the Receivables Interface.

## Business Scenario 2: Consolidated Shipment

This scenario presents a solution in support of a process where items on a customer order are sourced from different geographical locations. The shipments containing the items are to be merged or consolidated at an intermediate location with the final delivery being made to the customer's ultimate ship to destination.

The release 11i data model supports the ability for a user to create a multileg shipment and to manage the activities at each stop along the shipment's journey.

A sales order is placed for two items: a desktop CPU and a monitor. The order lines are booked and scheduled in Order Management. The inventory for the desktop CPU resides in the M1 inventory organization and the Monitor resides in V1 inventory organization.

The objective is to create a plan that enables the shipments of the individual items to be made from their respective inventory organizations, merge or consolidate at an intermediate distribution center location, and deliver to the customer's ultimate ship to location as a single shipment.

### Creating Trips

Once the order is booked, the order lines are imported into Shipping Execution where the Transportation Planner has visibility to the lines. At this point, the planner creates Trip 1 (consisting of Carrier and vehicle information) for the desktop CPU located in Warehouse 1 in Seattle, WA. The key element depicting the Trip is the ship method. The creation of the Trip can be done in a variety of ways depending on your business process.

- Autocreate Trip: When a Trip is created using the Autocreate Trip functionality, 2 stops are created. The first stop consists of the location where the shipment is picked up, (Ship From) and the second stop is the location where the shipment is dropped off (Ship To). In the business scenario we're describing, an intermediate stop needs to be defined and assigned to the Trip 1.
  - Navigate to the Shipping Transactions form and the Query Manager.
  - Enter criteria for the lines to ship
  - Multi-select lines
  - Click Action, Select Autocreate Trips, and click Go. Oracle Shipping Execution creates trips, creates pick up and dropoff stops, autocreates deliveries, and assigns deliveries to trips.

- **Create Trip Manually:** One of the two processes described would need to be performed in order to create Trip 2 for the Monitor originating from Warehouse V1 located in New York, and an ultimate destination of Chattanooga, TN. In the case of a manually created Trip, deliveries could either be auto created or manually created and subsequently assigned to the Trip.
  - Navigate to the Shipping Transactions form and the query tree.
  - Click Data Entry to expand the tree.
  - Double-click Trip Data Entry.
  - On the Trip form, enter Name, Ship Method, and Vehicle Info.
  - Click Done.

The screenshot shows the 'Trip - New' form with the following data entered:

|                                      |                          |                                   |      |
|--------------------------------------|--------------------------|-----------------------------------|------|
| Name                                 | Trip 1                   | Status                            | Open |
| Ship Method                          | Viking Freight           | Activity                          |      |
| Freight Code                         |                          | Service Level                     |      |
| Mode of Transport                    |                          | <input type="checkbox"/> Planned  |      |
| <input type="checkbox"/> Consolidate |                          | Exceptions                        |      |
| <b>Vehicle</b>                       |                          |                                   |      |
| Organization                         | M1 Seattle Manufacturing | Truck 100 w/Sleeper for long haul |      |
| Item Name                            | TR300LH                  | Number                            |      |
| Number Prefix                        |                          |                                   |      |
| Arrive after Trip                    |                          |                                   |      |
| Routing Instructions                 |                          |                                   | [ ]  |

At the bottom of the form, the 'Actions' dropdown is set to 'Calculate Weight/Vol', and the 'Done' button is visible.

## Creating Locations and Stops

### Creating Locations

In order to perform the merge or consolidation of the shipments originating from warehouse M1 and V1, a stop must be defined to represent the Distribution Center in Troy Michigan. In this scenario, this is a non-Oracle location. A stop is a location within your network where a shipment can be picked up or dropped off. The location of the Distribution Center also must be set up in inventory in order to be used when defining a stop. Navigation to Location definition is as follows.

Inventory>Set up>Organizations>Locations

The screenshot shows the Oracle Location definition form. The 'Name' field is 'Troy DC' and the 'Description' field is 'Distribution Center Troy MI'. The 'Inactive Date' field is empty, and the 'Global' checkbox is checked. The 'Address Details' tab is selected, showing 'Address Style' as 'United States' and an empty 'Address' field. An 'Extra Inform...' button is located at the bottom left of the form.

Enter a name description and inactive date if applicable. When you click in the Address field, another window will pop to allow the user to enter detail address information for the location. Once the location is defined, the Distribution Center can be define as a stop and ultimately assigned as intermediate stops to Trip 1 and Trip 2

### Creating Stops

Now that the Location for the Distribution Center is defined, it can be used when defining the intermediate stop for Trips 1 and 2.

To create and assign Trip 1 with the intermediate Stop I.E. Distribution Center Location, the following process can be followed.

- Navigate to the Shipping Transactions form and the query tree.
- Click Data Entry to expand the tree.
- Double-click Stop Data Entry.
- On the Stop form, select Loc and Trip from their lists of values.
- Enter Planned Arrival and Departure Dates.
- Click Done.

The screenshot shows a software window titled "Stop - Troy:3704". The window contains a form with the following fields and values:

- Location: Troy:3704
- Trip: Trip 1
- Seal Code: 123456
- Departure Fill %: [Empty]
- Status: Open
- Activity: [Empty]
- Exceptions: [Empty]
- Sequence: [Empty]
- Planned Dates**
  - Arrival: 08-APR-2002 00:00:00
  - Departure: 08-APR-2002 00:00:00
- Actual Dates**
  - Arrival: [Empty]
  - Departure: [Empty]
- Departure Weight**
  - Gross: [Empty]
  - Tare: [Empty]
  - Net: [Empty]
  - UOM: [Empty]
- Departure Volume**
  - Volume: [Empty]
  - UOM: [Empty]
- [Trading Partner]
- [ ]
- Actions: Update Status (dropdown) Go (button)
- Done (button)

The same process should be followed for Trip 2.

At this point of the consolidation solution, a delivery has been created for the material being sourced from Warehouse M1 and the delivery has been assigned to Trip 1. A delivery has also been created for the material being sourced from Warehouse V1 and the delivery has been assigned to Trip 2. The intermediate stop



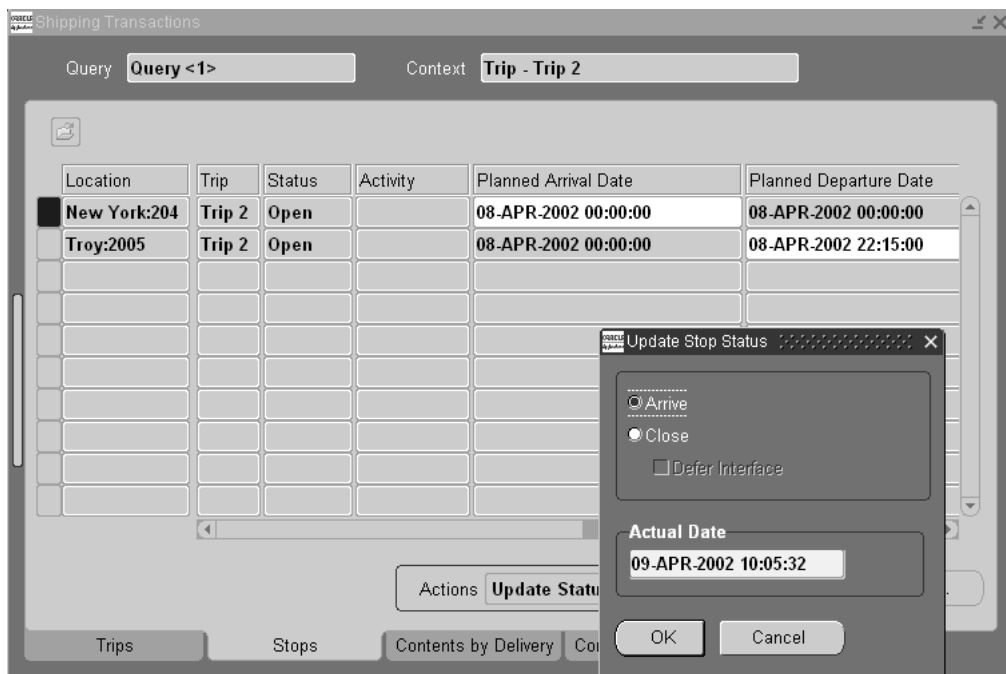
I.E. Distribution Center Troy Michigan has also been defined and assigned to Trip 1 and Trip 2.

A Stop consisting of the Location of the distribution center has been assigned to Trip 1 and Trip 2. The data at this point is represented in the following table.

**Table O-1 Trip Information**

| Trip | Pick up        | Dropoff |
|------|----------------|---------|
| 1    | M1 Seattle WA  | Troy DC |
| 2    | V1 New York NY | Troy DC |

This screen represents similar data to Trip 2 described in our business scenario. The Trip is awaiting pick up at M1 warehouse.



The solution at this point is represented by a Trip 1 originating at warehouse M1 (Seattle) and dropping off at the Troy distribution center and Trip 2 originating from warehouse V1 (New York) and dropping off at the Troy distribution center stop.

The final step is to create a Trip 3 that originates at the Troy Distribution center, assign the deliveries that are on Trip 1 and 2 to Trip 3 and have the final drop off be the customers ultimate ship to destination.

To create trip 3:

- Navigate to the Shipping Transactions form and the query tree.
- Click Data Entry to expand the tree.
- Double-click Trip Data Entry.
- On the Trip form, enter Name, Ship Method, and Vehicle Info.
- Click Done.

To create trip 3:

- Navigate to the Shipping Transactions form and the Query Manager.
- Query the deliveries from trip 1 and trip 2.
- Click Action and select Assign to Trip.
- Select trip 3, select New Location.
- In Pickup Location, enter DC; in Dropoff Location, enter Cust.

This screen shot depicts what the delivery from warehouse V1 (New York) would look like in the planned consolidation. At this point the entire process is just a plan. The execution steps are described in the next section.

Shipping Transactions

Query **Query <2>** Context **Line - 74057**

All

| Location      | Trip   | Status | Activity          | Planned Arrival Date | Planned Departure D  |
|---------------|--------|--------|-------------------|----------------------|----------------------|
| Troy:2005     | Trip 3 | Open   | Awaiting Pickup   | 09-APR-2002 00:00:00 | 09-APR-2002 08:15:00 |
| Chattanooga:1 | Trip 3 | Open   | Awaiting Drop off | 09-APR-2002 23:30:00 | 09-APR-2002 23:40:00 |
| New York:204  | Trip 2 | Open   | Awaiting Pickup   | 08-APR-2002 00:00:00 | 08-APR-2002 00:00:00 |
| Troy:2005     | Trip 2 | Open   | Awaiting Drop off | 08-APR-2002 00:00:00 | 08-APR-2002 22:15:00 |

Actions **Update Status** Go... Detail... (J)

Lines/LPNs Delivery Path by Stop Path by Trip

## Executing the Shipments

### Pick Releasing the Trip

Since the shipments are originating from two separate locations, it is assumed that the execution processes would be performed independently. However, a single user can execute the releases from both locations. What has been done up to this point is just a plan. The plan cannot take effect until actual inventory is allocated to the deliveries and trips. At the highest level, this can be accomplished by pick releasing the trip. The individual delivery can be pick released as well.

- Navigate to the Shipping Transactions form and the Query Manager.
- Query Trip 1.
- Click Action, select Launch Pick Release, and click Go.

The same process is performed at warehouse V1 for Trip 2

Pick Slips will print at each of the warehouses indicating the items to be picked for their respective Trips.

There are many options as part of the Shipping Execution set up steps to allow each organization to set up how picking is done. For example, Pick Slip Grouping Rules can be used to determine how released lines are grouped on to Pick Slips. (See Implementation Manual Setup Steps).

Once the Trips from each warehouse are released, a bill of lading and Packing List can be generated for each delivery in the Trip. The Bill of Lading can be generated at Ship Confirmation as part of the Ship Confirm Doc Set or it can be generated before Ship Confirm using the following process.

- Navigate to the Shipping Transactions form and the Query Manager.
- Query the delivery.
- Click Details.
- Navigate to Delivery Legs tabbed region.
- Click Generate BOL.

Document Categories and Document Sequences must be Set up before Bills of Lading or Packing Slips can be generated, (See Implementation Manual)

The Bill of Lading for Trip 1 and Trip 2 will indicate the Ship From Address as the M1 and V1 locations and the Ship To Address of the Distribution Center.

The actual intermediate ship to field has limited functionality in release 11i. In order to take full advantage of it, the order line must already contain the intermediate ship to information before being imported into shipping execution. I.E. If the Shipment from Warehouse M1 had the intermediate ship to information on the line prior to it's being imported into shipping execution, and there wasn't an intermediate stop assigned to the M1 trip, the bill of lading would print with three addresses. 1) The Ship from Address of warehouse M1, The intermediate address indicated on the shipment line, and the ultimate ship to of Chattanooga TN.

In the scenario we're defining, if intermediate ship to was used, the bill of lading for Trip 1 would print with the Ship from address of warehouse M1, an intermediate address of the Troy DC and the final ship to of the Troy DC. For Trip 1 the ultimate destination for Trip 1 is the Troy DC.

A packing list can be generated prior to ship confirmation similar to the Bill of lading. The following process can be used to generate the Packing List.

- Navigate to the Shipping Transactions form and the Query Manager.

- Query the delivery.
- Click Details.
- Navigate to Packing List tabbed region.
- Click Generate Packing List.

### Ship Confirming the Trip

The next step in the consolidation process is to Ship Confirm Trip 1 and Trip 2. This must be done at inventory organization M1 and V1 in order to recognize revenue, decrement inventories, update Order Management and initiate the receivables interface to generate invoices.

The following screen depicts how the Trip originating in the M1 (Seattle) warehouse would look prior to Ship Confirmation and closing the stop at M1. In this example the Trip is named Trip 1.

Shipping Transactions

Query  Context

| Location      | Trip   | Status | Activity          | Planned Arrival Date | Planned Departure D  |
|---------------|--------|--------|-------------------|----------------------|----------------------|
| Troy:2005     | Trip 3 | Open   | Awaiting Pickup   | 09-APR-2002 00:00:00 | 09-APR-2002 20:15:00 |
| Chattanooga:1 | Trip 3 | Open   | Awaiting Drop off | 09-APR-2002 23:30:00 | 09-APR-2002 23:40:00 |
| Seattle:207   | Trip 1 | Open   | Awaiting Pickup   | 08-APR-2002 00:00:00 | 08-APR-2002 00:30:00 |
| Troy:2005     | Trip 1 | Open   | Awaiting Drop off | 08-APR-2002 12:00:00 | 08-APR-2002 12:30:00 |
|               |        |        |                   |                      |                      |
|               |        |        |                   |                      |                      |
|               |        |        |                   |                      |                      |
|               |        |        |                   |                      |                      |
|               |        |        |                   |                      |                      |
|               |        |        |                   |                      |                      |

Actions

- Navigate to the Shipping Transactions form and the Query Manager.

- Query Trip 1.
- Click Action, select Ship Confirm, and click Go.

Closing the stop sets the trip to an In Transit status.

### **Changing Stop Status**

At this point in the process, it is assumed that the delivery from the M1 warehouse and the delivery from the V1 warehouse are on the carrier's truck and in transit to the Troy Distribution Center.

In order to perform the next step in the process, a communication mechanism must be in place that lets the Oracle user know that the shipment has reached the Troy Distribution Center.

When the user is notified that the shipment has reached the Distribution Center, the following process can be used to update the stop.

- Navigate to the Shipping Transactions form and the Query Manager.
- Query Stop Distribution Center.
- Click Action, select Update Status, and click Go.
- Select Arrive and click OK.

The same process should be performed for Trip 2 once it reaches the Troy Distribution Center.

The arrive step indicates the drop off of the trip. The deliveries from M1 Warehouse and V1 warehouse are now at the Troy Distribution Center.

Since the deliveries were assigned to trip 3 in the planning process, All that has to be done is print the new bill of lading for the final leg from the Troy DC to Chattanooga TN. To generate a bill of lading to the final destination the following process can be used.

- Navigate to the Shipping Transactions form and the Query Manager.
- Query Trip 3.
- Click Contents by Delivery.
- Navigate to the Click on Detail tabbed region.
- Navigate to the Legs tabbed region.
- Click Generate BOL.

Once the bill of lading from the Troy Distribution Center to The final drop off in Chattanooga is printed, the Troy Distribution Center stop can be closed. Updating the status of the stop closes the stop. Use the following process to close the stop.

- Navigate to the Shipping Transactions form and the Query Manager.
- Click Stops.
- Select the stop for Troy Distribution Center.
- Click Action, select Update Status, and click Go.
- Select Close.





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# Line Status in the Oracle Order Management Suite

## Introduction

Oracle Order Management and Shipping Execution Release 11i provides line status to best reflect the stage of the process for the order line and delivery line.

Oracle Shipping Execution has expanded the status offering with the addition of four new statuses: Released to warehouse, Backordered, Staged/Pick Confirmed, and Shipped. This appendix will cover the flow and definitions of the order line and delivery line status from time of order entry to invoice. Additionally, a table is provided at the back of this document to serve as a quick reference for viewing Actions and associated line status within the Order Organizer, Sales Order form, and Shipping Transactions form.

## Standard Line Status Flow (also includes PTO)

Oracle Order Management captures the order line status in the Sales Order Pad on the Line Items Main tab in the status field and in the Order Organizer on the Summary and Line tabs. Oracle Shipping Execution displays the delivery line status in the Shipping Transactions form on the Lines/LPN Main tab in the Line Status field. For a standard flow the statuses are:

Begin by placing the order in Order Management (OM):

- Entered (OM): Order is saved but not booked.
- Booked (OM): Order is booked.
- Scheduled (OM): A user can customize the Workflow to show the Scheduled status which indicates that the order line has been successfully scheduled.

When the ship line logic starts, the order line status changes to Awaiting Shipping.

- Awaiting Shipping (OM): Order is booked but lines not yet picked.
- Open (OM): This status of a delivery on the Additional Line Information form indicates that none of the delivery lines associated with that delivery have been ship confirmed.

Navigating to Shipping Execution, the delivery line status flow is:

- Ready to Release (SE): Order line is booked and passed to Shipping Execution. It is now a delivery line which is eligible for Pick Release.
- Submitted for Release (SE) and Released to Warehouse (SE): Pick Release has started but not completed. Either no allocations were created or allocations have not been Pick Confirmed.
- Released (SE): Pick Release ran successfully. The action translated the delivery lines into move order lines in Inventory. The move order lines are allocated and pick confirmed. Once a delivery is created, the delivery and its associated delivery lines are eligible for Ship Confirm.
- Backordered (SE): The delivery line is pick released but no allocations were created or partial allocations occurred. As an example, if a delivery line has a quantity of 100, and at pick release only 25 are available for allocation, the original delivery line splits to create a new line (quantity of 75) for the unallocated portion with a status of Backordered. The quantity on the original delivery line changes to 25 to reflect the allocated portion with a status of Staged/Pick Confirmed.
- Staged/Pick Confirmed (SE): The delivery line is successfully pick released. It occurs after pick confirm to indicate subinventory transfer from source location to staging location is complete. Lines remain staged until they are ship confirmed.

Both Backordered and Staged/Pick Confirmed statuses provide the ability to perform opportunistic cross-docking for warehouse organizations with Oracle Warehouse Management System (WMS) installed.

- Shipped (SE): This line status indicates that the delivery associated with the delivery lines is ship confirmed.
- Interfaced (SE): This line status indicates that the delivery associated with the delivery line is ship confirmed and the OM Interface and Inventory Interface concurrent processes have completed.

- **In Transit (SE):** This delivery status indicates that the delivery associated with the line is ship confirmed and the pick up stop is closed.
- **Confirmed (SE):** This delivery status indicates that the delivery line is either shipped or backordered and the trip stops are open.

Navigate back to Order Management and query the order which results in OM pulling updated Pick Release information from Shipping Execution:

- **Picked (OM):** Pick release has completed normally (both allocation and pick confirm). The delivery associated with the delivery line(s) may have also been Ship Confirmed but the Delivery may not be set in transit and the Trip may not be closed.
- **Picked Partial (OM):** This status occurs when a delivery line is not allocated the full quantity during Pick Release and Ship Confirm has not occurred.

The delivery line splits during Ship Confirm and the information passes to Order Management through the Process Order API. The order line splits to reflect the changes that occurred during the Shipping process. As an example, a customer orders quantity 50. There are 20 on hand in inventory. The delivery line splits into two delivery lines and therefore represents two order lines in Order Management. The order line with quantity 20 has the status of Picked or Shipped depending on whether or not the delivery line is Ship Confirmed, the Delivery set in transit, and the Trip closed. The second order line with a quantity of 30 has status of Awaiting Shipping.

Shipping Execution pushes status information to Order Management once Ship Confirm is complete:

- **Shipped (OM):** The delivery associated with the line is Ship Confirmed. The Delivery status is set to In transit. This status appears in the Additional Line Information at the Pick Status field.
- **Awaiting Fulfillment (OM):** Not all shippable lines in a fulfillment set or a configuration are fulfilled. This is a synchronization step within the Workflow process.
- **Fulfilled (OM):** All lines in a fulfillment set are fulfilled.

Fulfillment Sets are defined as a group of order lines that get fulfilled together. Items that are not shippable can be in fulfillment sets with shippable items, and then will not be fulfilled (and therefore invoiced) until the shippable items are fulfilled. A line can belong to either a ship set or an arrival set, but can belong to multiple fulfillment sets.

- **Interfaced to Receivables (OM):** Invoice Interface has been launched. Order Management writes information to Receivables tables.
- **Partially Interfaced to Receivables (OM):** This status is used in a PTO flow and indicates that the particular PTO item is required for revenue.
- **Closed (OM):** Closed indicates that the line is closed. It does not necessarily indicate that the line is interfaced to Accounts Receivable (AR) since you must close line activity in a no-bill flow.
- **Canceled (OM):** Indicates that the line is completely canceled. No further processing will occur for this line.

### **Scenario**

The following scenario will emulate a Standard customer order from the first customer call to the invoice. The line status will assist the customer service agent on the Shipper's side to answer the questions of the Customer.

### **Entered Status (OM)**

A customer calls and begins placing an order with the customer service representative. The customer is unclear whether or not the order is complete and indicates that he/she will call back to finish placing the order. The customer service representative saves the order to capture the current information but will not book the order because the customer has indicated that the order is not complete. Both the Order Header and the Order Lines associated with the customer call will have the status of Entered once the order is saved. The line on the order exists in the system and can be queried when the customer calls back to complete the order. The following window illustrates the Sales Order form with a status of Entered.

Sales Orders (52609) - Computer Service and Rentals

Order Information    Line Items

Order Total    **11,075.00**

Main    Pricing    Shipping    Addresses    Returns    Services    Others

| Line | Ordered Item | Unit Selling Price | Request Date         | Schedule Ship Date | Status  | On |
|------|--------------|--------------------|----------------------|--------------------|---------|----|
| 1.1  | AS54888 ...  | 1,000.00           | 09-APR-2002 11:35:53 |                    | Entered |    |
|      |              |                    |                      |                    |         |    |
|      |              |                    |                      |                    |         |    |
|      |              |                    |                      |                    |         |    |
|      |              |                    |                      |                    |         |    |
|      |              |                    |                      |                    |         |    |
|      |              |                    |                      |                    |         |    |
|      |              |                    |                      |                    |         |    |
|      |              |                    |                      |                    |         |    |
|      |              |                    |                      |                    |         |    |

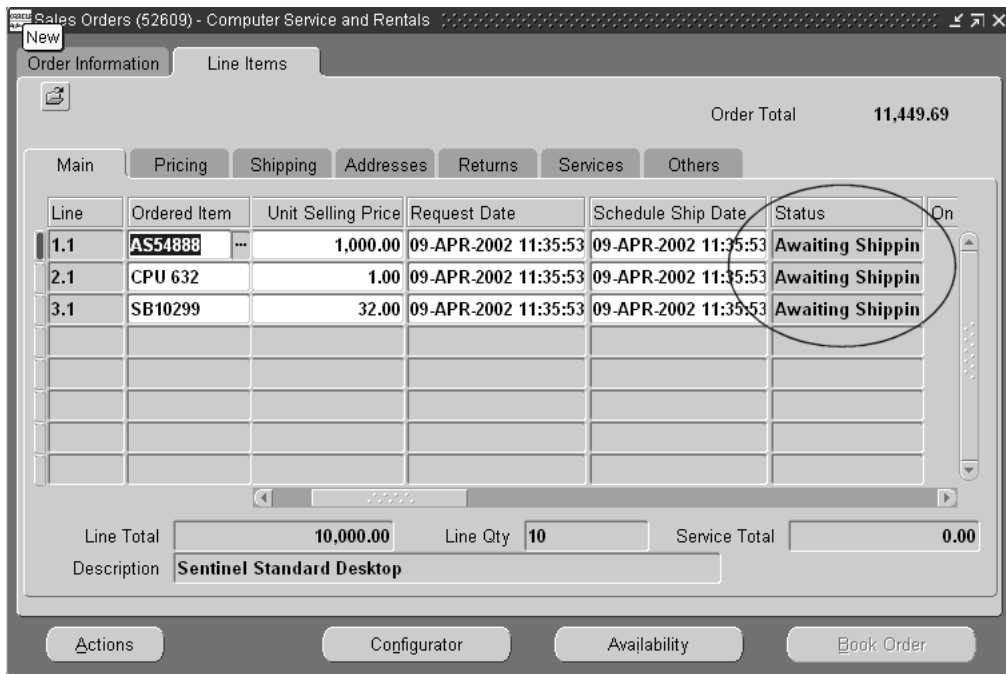
Line Total    10,000.00    Line Qty    10    Service Total    0.00

Description    Sentinel Standard Desktop

Actions    Configurator    Availability    Book Order

### Booked Status (OM)

The customer service representative receives a second call the customer and adds two additional lines to the order. The customer indicates that the order is complete so the user Books the order. The following window illustrates the Sales Order form with a status of Awaiting Shipping.



The Order Information tabbed region shows that the order status is Booked.

Sales Orders (52609) - Computer Service and Rentals

Order Information    Line Items

Main    Others

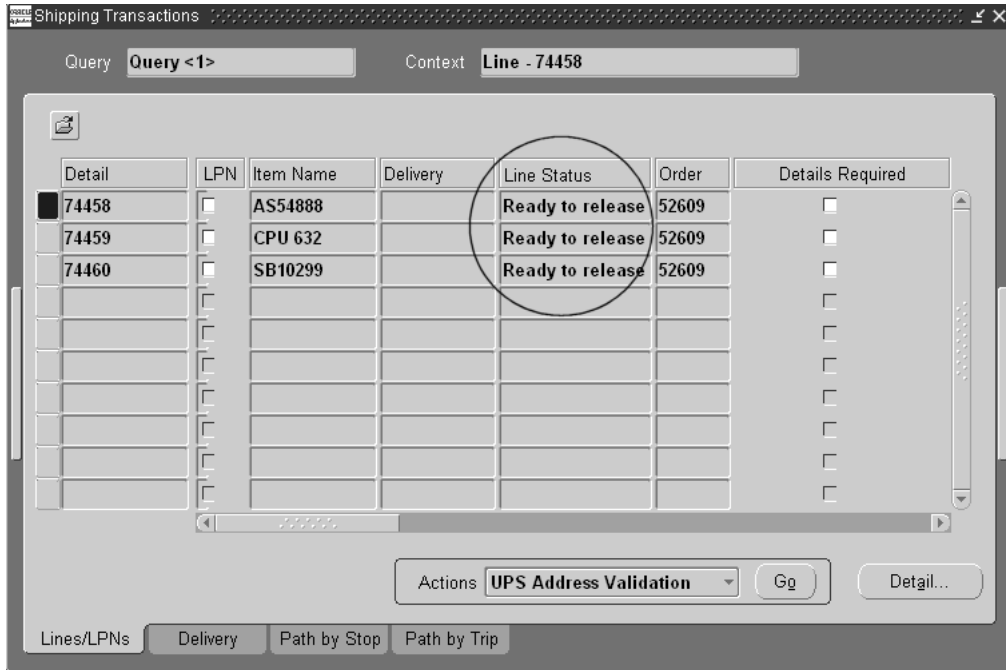
|                  |                           |              |                      |
|------------------|---------------------------|--------------|----------------------|
| Customer         | Computer Service and I... | Order Number | 52609                |
| Customer Number  | 1006                      | Order Type   | Order Only           |
| Customer PO      |                           | Date Ordered | 09-APR-2002 11:35:46 |
| Customer Contact | Brown, Gerry MR.          | Price List   | Corporate            |
| Ship To Location | Chattanooga (OPS)         | Salesperson  | Green, Ms. Suzanne   |
|                  | 301 Summit Hill Drive     | Status       | Booked               |
|                  |                           | Currency     | USD                  |
|                  | Chattanooga, TN, 37401, U | Subtotal     | 10,069.00            |
| Bill To Location | Chattanooga (OPS)         | Tax          | 830.69               |
|                  | 301 Summit Hill Drive     | Charges      | 550.00               |
|                  |                           | Total        | 11,449.69            |
|                  | Chattanooga, TN, 37401, U |              |                      |

Actions    Configurator    Availability    Book Order

### Ready to Release Status (SE)

Once the order has been booked, the information passes to Shipping Execution. Order lines appear as delivery lines. Initially, it is a one to one ratio of order line to delivery line.

The customer service agent calls the warehouse to ensure that the order that was just booked has appeared in Shipping Execution. The warehouse clerk queries the delivery lines by the order number provided by the customer service representative and indicates that the Line Status is Ready to Release indicating the delivery lines are eligible for Pick Release. The customer service representative has been assured that the booked order lines are visible in the Shipping Transactions form and are ready for the next step, Pick Release. The following window illustrates the Ready to Release status on the Lines/LPNs tab in the Shipping Transactions form.



### Staged/Pick Confirmed and Released to Warehouse Statuses (SE)

The warehouse clerk launches Pick Release. Upon querying the delivery lines by order number, the warehouse clerk will see that the Pick Release status is: Staged/Pick Confirmed for those delivery lines that have received allocation and Pick Confirmed successfully and Released to Warehouse for delivery lines that require a manual Pick Confirm or have not been allocated. The following window illustrates the Staged/Pick Confirmed and Released to Warehouse statuses on the Lines/LPNs tab in the Shipping Transactions form.



Shipping Transactions

Query **Query <2>** Context **Line - 74458**

| Detail | LPN | Item Name | Order | Delivery | Line Status           | Requested Quantity | Shippe |
|--------|-----|-----------|-------|----------|-----------------------|--------------------|--------|
| 74458  |     | AS54888   | 52609 | 11229    | Staged/Pick Confirmed | 10                 |        |
| 74459  |     | CPU 632   | 52609 | 11230    | Staged/Pick Confirmed | 5                  |        |
| 74460  |     | SB10299   | 52609 | 11231    | Released to Warehouse | 2                  |        |
|        |     |           |       |          |                       |                    |        |
|        |     |           |       |          |                       |                    |        |
|        |     |           |       |          |                       |                    |        |
|        |     |           |       |          |                       |                    |        |
|        |     |           |       |          |                       |                    |        |
|        |     |           |       |          |                       |                    |        |

Actions **UPS Address Validation** Go Detail...

Lines/LPNs Delivery Path by Stop Path by Trip

### Picked and Awaiting Shipping Statuses (OM)

The customer who placed the order calls up and wants to know the status, the customer service representative queries up the order in the Order Organizer and finds that the status of the lines are Picked and Awaiting Shipping. The customer service representative is equipped to report that two of the order lines are processing smoothly as they have been picked from their source location and transferred to the staging location within the warehouse. The customer service representative can also inform the customer that the third order line has been released to the warehouse. The following window illustrates the Picked and Awaiting Shipping statuses on the Line Items Main tab in the Sales Order form.

| Line | Ordered Item | Unit Selling Price | Request Date         | Schedule Ship Date   | Status           | On |
|------|--------------|--------------------|----------------------|----------------------|------------------|----|
| 1.1  | AS54888      | 1,000.00           | 09-APR-2002 11:35:53 | 09-APR-2002 11:35:53 | Picked           |    |
| 2.1  | CPU 632      | 1.00               | 09-APR-2002 11:35:53 | 09-APR-2002 11:35:53 | Picked           |    |
| 3.1  | SB10299      | 32.00              | 09-APR-2002 11:35:53 | 09-APR-2002 11:35:53 | Awaiting Shippin |    |

Order Total: 11,449.69

Line Total: 10,000.00    Line Qty: 10    Service Total: 0.00

Description: Sentinel Standard Desktop

### Closed and Picked Status (OM)

The warehouse clerk has just Ship Confirmed the delivery associated with the delivery lines corresponding to the customer's order. The warehouse clerk used the check boxes on the Ship Confirm form to automatically set the delivery in transit and close the trip. Order Management will be updated through the Process Order API and the order lines which previously had the status of Picked will now show a status of Closed.

The customer calls back to check the status of the order, the customer service representative can tell the customer the date(s) that two of the order lines physically shipped from the warehouse. The customer service representative can also inform the customer that the third order line has been Picked, indicating that the next function is to ship the product. The following window illustrates the Closed and Picked statuses on the Line Items' Main tab in the Sales Order form.

For a short time immediately following ship confirm, the order line status will show as 'Shipped' while OM interfaces with Receivables so that the customer can be

invoiced. When the interface to Receivables is completed the line status in Order Sales form changes to Closed.

Sales Orders (52609) - Computer Service and Rentals

Order Information Line Items

Order Total **11,449.69**

Main Pricing Shipping Addresses Returns Services Others

| Line | Ordered Item | Unit Selling Price | Request Date         | Schedule Ship Date   | Status | On |
|------|--------------|--------------------|----------------------|----------------------|--------|----|
| 1.1  | AS54888      | 1,000.00           | 09-APR-2002 11:35:53 | 09-APR-2002 11:35:53 | Closed |    |
| 2.1  | CPU 632      | 1.00               | 09-APR-2002 11:35:53 | 09-APR-2002 11:35:53 | Closed |    |
| 3.1  | SB10299      | 32.00              | 09-APR-2002 11:35:53 | 09-APR-2002 11:35:53 | Picked |    |
|      |              |                    |                      |                      |        |    |
|      |              |                    |                      |                      |        |    |
|      |              |                    |                      |                      |        |    |
|      |              |                    |                      |                      |        |    |
|      |              |                    |                      |                      |        |    |
|      |              |                    |                      |                      |        |    |

Line Total **10,000.00** Line Qty **10** Service Total **0.00**

Description **Sentinel Standard Desktop**

Actions Configurator Availability Book Order

## ATO Line Status Flow

A customer calls up Computer ABC and orders a laptop computer with a 56k modem and 64 mb of memory. This order will be processed as an Assemble to Order item. The line status flow will be:

- Entered
- Booked
- Create Configuration Item Eligible:
  - Booked (item, options, option classes)
  - BOM and Routing Created (configuration item)
- Create Supply Order Eligible:

- Booked (item)
- BOM and Routing Created (configuration item)
- Awaiting Fulfillment (options and option classes)
- Import Delivery Lines:
  - Booked (item)
  - Configuration Item Created: The configuration item, bills of material and routing have been created and the line is eligible for creating production orders (Production Eligible).
  - Production Open (configuration): A work order has been linked to the order line.
  - Awaiting Fulfillment (options and option classes)
- Release the job in WIP:
  - Production Partial (configuration): Production has been partially completed.
- Complete the job in WIP:
  - Production Complete (configuration): Entire production is complete.
- Pick Release
  - Ready to Release (SE)
  - Staged/Pick Confirmed (SE)
- Ship Confirm
  - Staged/Pick Confirmed (SE)
  - Fulfilled
- Invoice
  - Closed

## Bill Only Line Status Flow

A customer calls up to place an order for Service which is a non-shippable item. The line status flow of this order will be:

- Entered

- Booked
- Invoiced
- Closed

## Returns Line Status Flow

- Entered
- Booked
- Awaiting Return Disposition: Item requires inspection before Purchasing can create a receipt.
- Awaiting Return: Purchasing creates a receipt of the item.
- Returned: Item has been received and accepted.

## Drop Ship Line Status Flow

- Entered
- Booked
- Purchase Release: Item requires inspection before Purchasing can create a receipt.
- Awaiting Receipt: Purchasing creates a receipt of the item.
- Interfaced to Receivables
- Closed

## Order and Delivery Line Statuses

These tables show the status of order lines and delivery lines after you perform certain actions. They show information for the Order Organizer, Sales Order form, Shipping Transactions form for deliveries and delivery lines, and Shipping Transactions form for stops and trips.

These are the table notes:

- (1): Occurs when pick release has started but not completed. Either no allocations were created or allocations are not yet pick confirmed.
- (2): Occurs when demand interface is turned on and interface has not started.

Here is an example of how to read the lines in the table:

Immediately after you autocreate a delivery, the status of all the entities will be as listed in the Create Trip column of the table.

- The Order Organizer Summary form will show the status of Booked
- The Order Organizer Lines form will show the status of Awaiting Shipping
- The Order Information Main tab of the sales order pad will show the status of Booked
- The Line Items tab of the sales order pad will show the status of Awaiting Shipping
- The Delivery tab of the Additional Line Information window will show the status of Open
- The Pick Status tab of the Additional Line Information window will show the status of Ready to Release
- The Trip Status tab of the Additional Line Information window will show the status of Open
- The Delivery Line Status of the Shipping Transactions form will show the status of Ready to Release
- The Delivery Status of the Shipping Transactions form will show the status of Open
- The Stop Status of the Shipping Transactions form will show the status of Open
- The Stop Activity Status at Origin and Destination on the Shipping Transactions form will show the status of N/A
- The Trip Status of the Shipping Transactions form will show the status of Open
- The Trip Activity of the Shipping Transactions form will show the status of N/A

**Table P-1 Status: Order Organizer**

| Action      | Summary | Lines             |
|-------------|---------|-------------------|
| Enter order | Entered | Entered           |
| Book order  | Booked  | Awaiting Shipping |
| Create trip | Booked  | Awaiting Shipping |

**Table P-1 Status: Order Organizer**

| Action                  | Summary | Lines             |
|-------------------------|---------|-------------------|
| Autocreate delivery     | Booked  | Awaiting Shipping |
| Assign delivery to trip | Booked  | Awaiting Shipping |
| Pick release delivery   | Booked  | Awaiting Shipping |
| Pick release delivery   | Booked  | Picked            |
| Pack line               | Booked  | Picked            |
| Ship confirm            | Booked  | Closed            |
| Ship confirm            | Booked  | Closed            |
| Backorder line quantity | Booked  | Awaiting Shipment |

**Table P-2 Status: Sales Order Form**

| Action              | Order Information Main Tabbed Region | Line Items Tabbed Region | Additional Line Information: Delivery Status | Additional Line Information: Pick Status | Additional Line Information: Trip Status |
|---------------------|--------------------------------------|--------------------------|--|--|--|
| Enter order         | Entered                              | Entered                  | n/a  | n/a                                      | n/a                                      |
| Book order          | Booked                               | Awaiting Shipping        | Open   | Ready to Release                         | n/a                                      |
| Create trip         | Booked                               | Awaiting Shipping        | Open   | Ready to Release                         | Open                                     |
| Autocreate delivery | Booked                               | Awaiting Shipping        | Open   | Ready to Release                         | Open                                     |

**Table P-2 Status: Sales Order Form**

| <b>Action</b>           | <b>Order Information Main Tabbed Region</b> | <b>Line Items Tabbed Region</b> | <b>Additional Line Information: Delivery Status</b> | <b>Additional Line Information: Pick Status</b> | <b>Additional Line Information: Trip Status</b> |
|-------------------------|---|---------------------------------|---|---|---|
| Assign delivery to trip | Booked                                      | Awaiting Shipping               | Open  | Ready to Release                                | Open  |
| Pick release delivery   | Booked                                      | Awaiting Shipping               | Open  | Released to Warehouse (1)                       | Open  |
| Pick release delivery   | Booked                                      | Picked                          | Open  | Staged/Pick Confirmed                           | Open  |
| Pack line               | Booked                                      | Picked                          | Open  | Staged/Pick Confirmed                           | Open  |
| Ship confirm            | Booked                                      | Shipped (2)                     | Closed  | Shipped   | Closed  |
| Ship confirm            | Booked                                      | Closed                          | Closed  | Shipped   | Closed  |
| Backorder line quantity | Booked                                      | Awaiting Shipping               | Open  | Backordered                                     | n/a   |

**Table P-3 Status: Shipping Transactions Form for Deliveries and Delivery Lines**

| <b>Action</b>       | <b>Delivery Line: Line Status</b> | <b>Delivery Status</b> |
|---------------------|-----------------------------------|------------------------|
| Order entered       | n/a                               | n/a                    |
| Order booked        | Ready to Release                  | n/a                    |
| Create trip         | n/a                               | n/a                    |
| Autocreate delivery | Ready to Release                  | Open                   |



**Table P-3 Status: Shipping Transactions Form for Deliveries and Delivery Lines**

| Action                  | Delivery Line: Line Status | Delivery Status |
|-------------------------|----------------------------|-----------------|
| Assign delivery to trip | Ready to Release           | Open            |
| Pick release delivery   | Released to Warehouse (1)  | Open            |
| Pick release delivery   | Staged/Pick Confirmed      | Open            |
| Pack line               | Staged/Pick Confirmed      | Open            |
| Ship confirm            | Shipped                    | Confirmed       |
| Backorder line quantity | Backordered                | Confirmed       |
| Close stop              | Shipped                    | In Transit      |
| Arrive stop trip        | Shipped                    | In Transit      |
| Close final stop        | Shipped                    | Closed          |

**Table P-4 Status: Shipping Transactions Form for Stops and Trips**

| Action        | Stop Status | Stop Origin Activity | Stop Destination Activity | Trip Status | Trip Activity |
|---------------|-------------|----------------------|---------------------------|-------------|---------------|
| Order entered | n/a         | n/a                  | n/a                       | n/a         | n/a           |
| Order booked  | n/a         | n/a                  | n/a                       | n/a         | n/a           |
| Create trip   | n/a         | n/a                  | n/a                       | Open        | n/a           |

**Table P-4 Status: Shipping Transactions Form for Stops and Trips**

| <b>Action</b>           | <b>Stop Status</b> | <b>Stop Origin Activity</b> | <b>Stop Destination Activity</b> | <b>Trip Status</b> | <b>Trip Activity</b> |
|-------------------------|--------------------|-----------------------------|----------------------------------|--------------------|----------------------|
| Autocreate delivery     | n/a                | n/a                         | n/a                              | n/a                | n/a                  |
| Assign delivery to trip | Open               | Awaiting pickup             | Awaiting drop off                | Open               | Remaining            |
| Pick release delivery   | Open               | Awaiting pickup             | Awaiting drop off                | Open               | Remaining            |
| Pick release delivery   | Open               | Awaiting pickup             | Awaiting drop off                | Open               | Remaining            |
| Pack line               | Open               | Awaiting pickup             | Awaiting drop off                | Open               | Remaining            |
| Ship confirm            | Open               | Awaiting pickup             | Awaiting drop off                | Open               | Remaining            |
| Backorder line quantity | Open               | Awaiting pickup             | Awaiting drop off                | Open               | Remaining            |
| Close stop              | Closed             | Picked up                   | Awaiting drop off                | Open               | On Board             |
| Arrive stop trip        | Arrived            | Picked up                   | Awaiting drop off                | Open               | Unloading            |
| Close final stop        | Closed             | Picked up                   | Dropped off                      | Closed             | Complete             |

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# Managing Material Picking Waves

## Introduction

Oracle Applications Release 11i provides new flexibility and control for managing material picking waves. The pick release and picking process is a whole integrated business flow involving Supply Chain Reservations, Shipping Execution, Move Orders, and Directed Picking Rules. Together, these features allow you to manage staging locations, report inventory inaccuracies and shortages detected during picking, view potential shortages and backorders prior to ship confirmation and take advantage of cross docking opportunities. The new picking process is also customizable, allowing each organization to determine the level of control they need over inventory management. Picking entities are also available with a full suite of APIs, to allow you to easily integrate third party systems and mobile devices for enhanced flexibility.

## Key Features

The new material picking flow relies on several features new to Release 11i. For further information on each of these features, please refer to the Oracle Inventory Users Guide.

### Move Orders

A Move Order is a request for a subinventory transfer or account issue. In Release 11i, Move Orders could be created manually or automatically through Inventory replenishment mechanisms such as Min-Max Planning, Replenishment Counts or Kanban Card signals. With the introduction of Oracle Order Management, the Pick Release process now creates Move Orders. These Pick Wave Move Orders are pre-approved requests for subinventory transfers to bring material from its source locations in the warehouse to a staging subinventory.

### **Supply Chain Reservations**

Supply Chain Reservations provide the ability to globally manage the reservations between any supply and demand source. The supply source is available on hand inventory. The demand requirements are initiated by sales orders. Reservations created for sales orders are automatically updated and transferred for you as the Move Order is released and transacted.

### **Picking Rules**

Move Orders will use the Picking Rules set up in Oracle Inventory to locate the material required to fulfill the Move Order Line. Together with item-subinventory defaults (required if the staging subinventory is locator controlled), the Picking Rules suggest the staging transfer transaction lines with appropriate source information that will be required to obtain enough material in the staging location for the delivery. The process by which the Picking Engine generates these transaction line suggestions is called Allocating.

### **Staging Locations**

The destination subinventory on the Pick Wave Move Order is the staging location into which the picked material should be deposited. Each organization should designate at least one staging subinventory. Each batch created at pick release will have the same destination staging subinventory. The default staging subinventory and locator to be used for all Pick Wave Move Orders are specified through Oracle Shipping Execution's Shipping Parameters form. This location can be changed at Pick Release. To model different staging lanes within the staging area, facilities may choose to either create different subinventories or designate staging lane locators within one Staging subinventory.

## **Configuring Your Picking Process**

You can now determine the number of pick release steps the system will prompt them to employ in order to move material from Pick Release to Ship Confirmation. These steps are:

- Pick Release
- Move Order Line Allocating
- Move Order Line Pick Confirmation
- Ship Confirmation

## Pick Release

Oracle Shipping Execution's Pick Release process creates Move Order. One order is created per pick release batch per organization. Thus if you pick release across multiple organizations, one move order is generated in each facility. One Move Order line is generated for each order line included in the picking batch. That Move Order line will include the item, quantity, the staging location (the destination subinventory and locator) and a source subinventory and locator if one was specified on the sales order line or on the Release Sales Orders form.

## Allocating

In order to release the Move Order lines created at Pick Release to the warehouse and print pick slips the lines must be allocated. The process by which the Picking Engine generates transaction line suggestions is called "Allocating". The allocating process for a Pick Wave Move Order Line also creates a high level (organization level) Reservation for the item(s) if no Reservations previously existed. You can choose to do this immediately after the Move Order Lines are created or to postpone this step until a later point in time. Postponing the allocation process might be employed by organizations that pick release across multiple warehouses but prefer to allow each warehouse to determine when to release their order lines to the floor. Allocating the order lines immediately after they are created is called auto-allocation. Postponing the allocation process is referred to as manual-allocation. You can set up a default detailing mode in the Shipping Execution organization parameters. This default can be overridden at each Pick Release.

## Pick Confirmation

The Move Order Line Details (transaction lines) created by the detailing process must be transacted to confirm the material drop-off in staging. This process is called Pick Confirmation. Pick confirmation executes the subinventory transfer that moves the material from its source location in the warehouse into the Staging location. Pick Confirmation automatically transfers the high level Reservation to a detailed Reservation (including lots, subinventory and locators) in the Staging location. At pick confirmation, you can report a missing quantity or change the transaction line if the picker chose to use material from a different lot, serial, locator or subinventory. If an organization picks rarely deviate from the suggested picking lines and the overhead of requiring a Pick Confirmation is unmanageable, the Pick Confirm transactions can occur immediately after the lines are detailed. This option is called auto pick confirm. You can set up a default Pick Confirm policy in the Inventory organization parameters. This default can be overridden at each Pick Release. Note that even if an automatic pick confirm is employed, the material is

only transacted to the Staging subinventory and reserved. You can still manage any discrepancies found by deleting the reservation and transacting the material back to its original subinventory. If mobile devices such as bar code scanners are used to perform Inventory transactions, it is suggested that you use manual pick confirmation for greatest inventory accuracy and control.

### **Ship Confirmation**

The material picking process ends when the items are ship confirmed out of Inventory. Ship confirming the items removes the existing Reservations and performs the sales order issue transaction. You may choose to ship confirm only part of the Sales Order quantity. In this case, the balance of the sales order may be backordered. Backordering at Ship Confirm automatically splits the Sales Order into two lines. The first line represents the shipped quantity. The second line represents the backordered quantity. The backordered line is automatically Pick Released by Oracle Shipping Execution. A Move Order line is automatically generated for the backordered quantity.

### **Serial Numbers**

Detailing can suggest Serial Numbers to be transacted to fulfill the Pick Wave Move Order Line. You can change the suggested serial numbers if the picker chose different serials. Some organizations, however, may choose to not suggest serial numbers and require the pickers to enter the numbers they have selected. This option is enabled using a Profile Option. The option is called INV: Allocate Serials. If you choose not to allocate serial numbers, any Pick Wave Move Order line for a serialized item will not be automatically pick confirmed and the picker will have to enter the serial numbers before the material is transacted into staging and becomes eligible for Ship Confirmation. Thus if all orders should be automatically pick confirmed, the profile option must be set to Yes. No reservations are placed on the specific serial numbers that are pick confirmed so if the picker chooses a serial number that was not recommended by the system, you can perform a subinventory transfer to move the correct serial number to the staging location and then perform another subinventory transfer to move the erroneous serial number back into the storage location. At Pick Confirmation, Oracle Shipping Execution collects the serial numbers that were transacted into Staging and assigns them to the appropriate Delivery Line. It is no longer necessary to enter serial numbers at Ship Confirmation unless a change occurs and you have decided to ship different units than those suggested.

## Reservations

The material picking process also manages Supply Chain Reservations for you. If no reservation was created prior to pick release through Oracle Order Management or Oracle Inventory, a high level (organization wide) reservation is placed on the item for that sales order. When the move order is transacted at pick confirmation, that reservation is transferred to a detail level (including locators, lots, revisions and the staging subinventory) reservation in the staging location. It is thus advisable to make the staging locations a reservable subinventory.

## Changes to Picking Process

The Detailing and Pick Confirm processes are new to Oracle Applications Release 11i. The changes were designed to provide increased flexibility and to provide greater inventory accuracy. Some organizations may prefer to continue managing their picking process as it had been done prior Release 11i. To bypass the additional steps check the Auto Allocate box in the Shipping Parameters form, do not check the Pick Confirmation Required box in the Inventory Organization Parameters form and set the Inventory Profile INV: Allocate Serials to Yes.

## Exception Management

The new Material Pick Wave functionality also gives warehouse and facility managers visibility to potential shortages and backorders before Ship Confirmation occurs and enables Opportunistic Cross Docking.

## Identifying Potential Shortages

If the Detailing process was unable to locate enough material to fulfill the Move Order Line, a shortage situation exists. The Move Order Line stores both the requested quantity and the quantity that has been sourced by the detailing process. If the requested quantity exceeds the sourced quantity, a potential shortage exists. Users can view these shortages through the Oracle Inventory View Potential Shortages form and the Oracle Inventory Shortage Summary Report. A short Move Order line can be re-detailed through the Move Order Transaction form or by Re-releasing the Sales Order through Pick Release.

## Reporting Inventory Inaccuracies

An inventory inaccuracy in a warehouse could result in a shortage condition. In this event, a picker will be unable to pick the complete quantity. If the picker was not able to pick the line as suggested, he or she may enter the quantity they were unable to locate in the missing quantity field in the Move Order Line Details, through the Move Order Transaction form. Entering a missing quantity will change the sourced

quantity on the Move Order Line so that a potential shortage will exist. The Move Order Line can be re-detailed in the same form allowing the system to direct the picker to another location in inventory to find more material.

When a missing quantity is reported through this form, Oracle Inventory will transfer the reservation that exists for that quantity to a Cycle Count reservation. This will not create a cycle count header but the reservation will ensure that future detailing processes do not direct pickers to the material that is reported as missing. A cycle count performed on that item in that location will consume the Reservation. If automatic pick confirmation is used, a picker cannot report a missing quantity in the Move Order Transaction form. A cycle count quantity can still be entered at Ship Confirm. A cycle count reservation will still be created but it will now be for the item in the staging location. Unfortunately, by then, the inventory inaccuracy had started in the warehouse and has now been extended to also exist in Staging. The reservation will not prevent the detailing process from directing pickers to the original source of the accuracy problem.

### **Opportunistic Cross Docking**

If, during the Detailing process, there was not enough material available to stage for the sales order, a shortage situation exists. Upon the receipt of another supply of the item, you will receive a Shortage Message. For more information on the Shortage Message functionality, please refer to the Oracle Inventory User's Guide. The Shortage Message alerts you of the cross docking opportunity. At this point, the material can be expedited to the staging location rather than delivered to a storage area. You can complete the receipt and deliver the material directly to Staging or receive into a receiving dock location and direct a picker to get material from the receiving area and deposit it directly to the outbound staging location. The Move Order Line can then be re-detailed through the Move Order Transaction form and the reservations will be automatically updated to include the newly received items. A pick slip can be reprinted to include the material at the dock.

### **Order Cancellations**

With the new material picking process, a sales order can now be canceled after it has been pick released without requiring you to backorder in Oracle Shipping Execution. If an order quantity is reduced after pick released, any requested and detailed quantities on the Move Order line are reduced accordingly and any Reservations that exist for the Sales Order will be updated to reflect the new order quantity. These changes are made automatically and require no intervention from you.



## Further Reading

Detailed discussions of each of the features discussed can be found in the Oracle Applications Users Guides. For further information on Supply Chain Reservations, Move Orders and Shortage Messages and Reporting, please refer to the Oracle Inventory Users Guide. For information on Pick Release, Ship Confirmation and Deliveries, please refer to the Oracle Shipping Execution Users Guide. These guides outline the fields, functions and transactions required to execute the business processes discussed.



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# Backorders

## Introduction

The purpose of this appendix is to describe the functional flow of the Backorder process in Release 11i Shipping Execution. The Backorder status of the Delivery line was introduced with the offering of the WMS Inventory Cross Docking functionality in Release 11i. The primary reasons behind this feature are to: 1) provide Order Management with better visibility to the status of a shipment line, and, 2) provide cross docking capability within the WMS system against backordered delivery details upon receiving new material. When Cross Dock was integrated into the Shipping product, the system gained new `RELEASED_STATUS` values, including Backordered status. Statuses of, Not Ready for Release, Ready to Release, Released (to WMS), Backordered, Staged and Shipped are visible at the line level.

The development of the cross docking solution and the addition of the backordered status provides the benefit of having all the backorder logic in one place (Ship Confirm) instead having the code in two places, Ship Confirm for completely backordering a delivery, and in the OM interface for partially shipped lines. Moving the backorder logic to ship confirm provides quick turnaround when pick releasing partially or completely backordered delivery lines. Once the backordered delivery lines are staged, a user can reopen a confirmed delivery to include backordered lines before setting the delivery to intransit.

In addition, other source systems with backordering requirements can make a generic call to the backorder API.

## Release Statuses

This table depicts the release statuses.

**Table R-1 Release Statuses**

| <b>Release Status</b> | <b>Description</b>     |
|-----------------------|------------------------|
| N                     | Not Ready for Release  |
| R                     | Ready for Release      |
| S                     | Submitted to Warehouse |
| B                     | Backordered            |
| Y                     | Staged/Pick Confirmed  |
| X                     | Not Applicable         |
| D                     | Canceled               |
| C                     | Shipped                |

The user sees the description rather than the release status code when viewing delivery lines. The statuses are also visible in the Oracle Order Management sales order pad; click Action, select Additional Information, then navigate to the Deliveries tab.

These are the status descriptions and a examples of when you see them on delivery lines:

- **Not Ready for Release:** This status occurs when a delivery line is manually imported into Shipping Execution using the Import Delivery Line program prior to the line reaching the shipping workflow in OM.
- **Ready for Release:** This status occurs when an order line has reached the Shipping Workflow activity in Order Management meaning the line has been booked, scheduled and imported into Shipping Execution.
- **Submitted to Warehouse:** This status is displayed when Pick Release is run. The Pick Release process creates a Move Order Header & Mover Order Line in Inventory. This is a common status for users that perform a two-step pick release process. This status indicates that inventory allocation has occurred however pick conformation has not yet taken place.
- **Backordered:** The status of Backordered is assigned to a line under the following circumstances:

The Pick Release process attempted to allocate inventory to the line and all or a partial quantity of the item was not available. In this case the system automatically backorders the discrepant quantity.

At Ship confirm the user enters a shipped quantity for an item that is less than the original requested quantity.

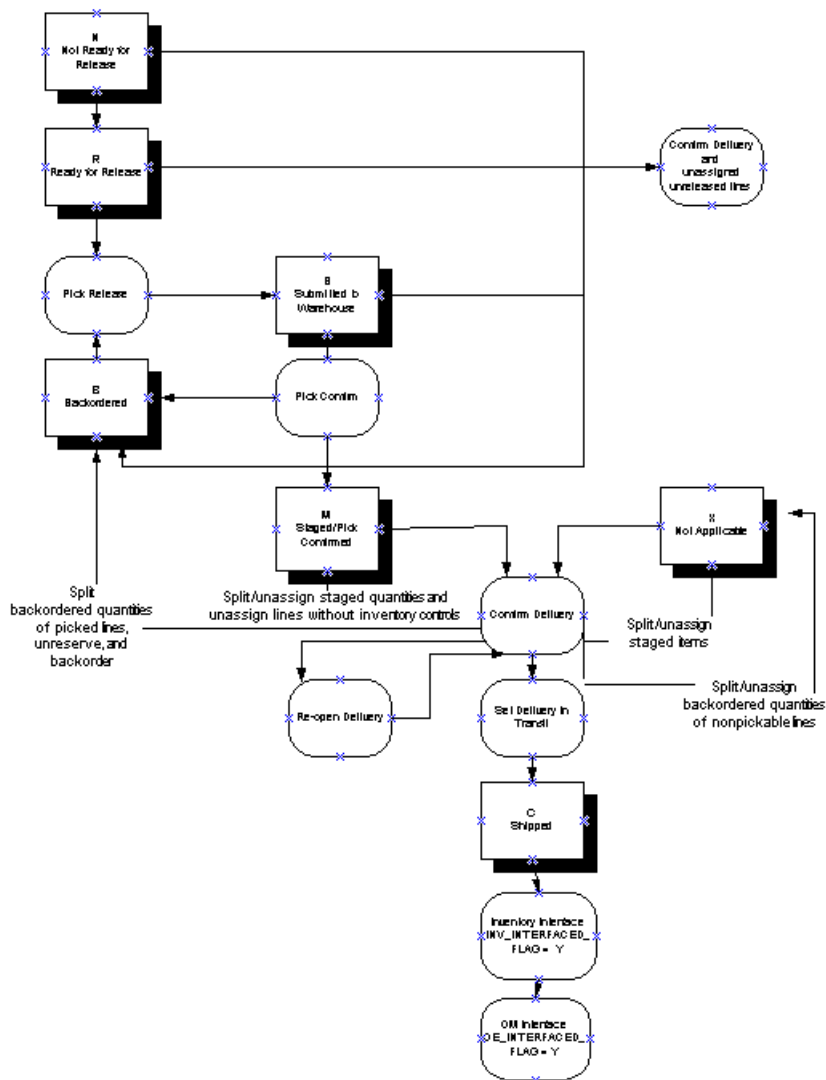
The user Backorders and entire delivery.

The user records a missing quantity by transferring a reservation to cycle count.

- **Staged/Pick Confirmed:** The line receives the status of staged once inventory has been allocated and pick confirmed. The allocation step and the pick confirmation step can be done manually or automatically based on business needs. This is determined by a set up step in Shipping Parameters.
- **Shipped:** The Shipped status indicated that the delivery that the line is assigned to has been set to intransit and that the OM and Inventory interfaces have run.
- **Not Applicable:** The Not Applicable status applies to non-shippable order lines. An example would be lines that are invoiced but not physically shipped. Items such as service and warranty would have statuses of Not Applicable.
- **Canceled:** The canceled status applies when the order line has been canceled in OM.

This diagram depicts the delivery detail status flow.

**Figure R-1 Delivery Detail Status Flow**



## Backorder at Pick Release

One way a delivery line detail can receive a picking status of Backordered is by auto-backorder. When the system determines insufficient inventory exists at the time of inventory allocation, it automatically splits the line if partial quantities are released and changes the status to Backordered for the unreleased quantity.

### Picking Steps

1. Pick Release Creates Pick Wave Move Order Header.
2. Pick Release Creates Move Order Line.
3. Move Order Line is Allocated at Pick Release or at Subsequent Step.
4. Inventory updates Shipping with results of allocation. If a shortage exists (the quantity requested is greater than the quantity allocated on the move order line) Shipping Performs the Auto-backorder Routine.

### Auto-backorder Routine

1. Split delivery line.

The detailed quantity remains on the original line. The status of the original line is progressed (if the status was Submitted for Release, it becomes Released. If the status was Released it becomes Staged/Pick Confirmed. If the status was Staged/Pick Confirmed it becomes Shipped).

The difference between the requested quantity and the detailed quantity is indicated on the second line (the new line resulting from the split). The status of the new line is Backorder. The new delivery line will have no value in its move order line reference field (a new move order line for this delivery line will be created when the delivery line is pick released).

2. Update the Move Order Line. Shipping will call Inventory to change the requested quantity on the move order line. The new requested quantity should equal the allocated quantity.

## Backorder at Ship Confirmation

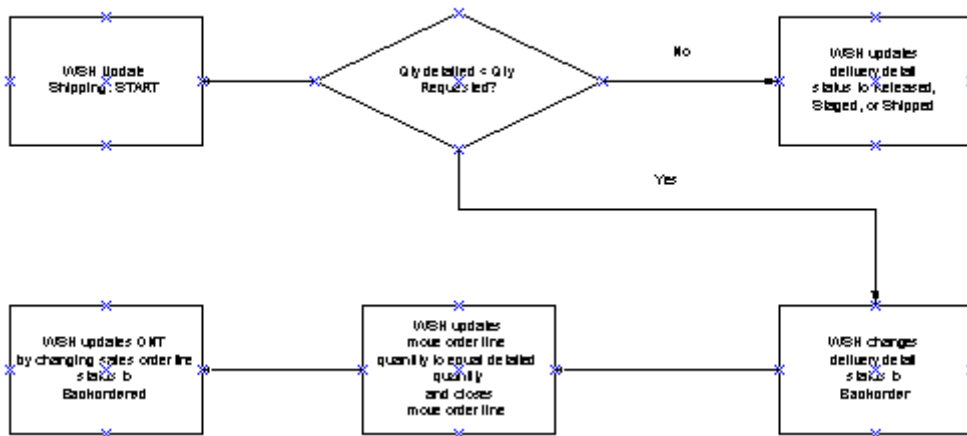
Backordering also happens at Ship Confirmation either by backordering the entire delivery, in which case all delivery lines that are associated with the delivery will receive a picking status of backordered. Or the user can enter a shipped quantity of less than the requested quantity to backorder a partial quantity of the items being shipped.

### Picking Steps

1. Pick release creates pick wave move order header and lines
2. Move order line is detailed
3. Move order line is pick confirmed
4. Delivery is backordered at ship confirmation
5. If status of planned, keep LPN and delivery assignment. Otherwise, unpack if packed.
6. Change line status to backordered.

This diagram illustrates the backorder flow.

**Figure R-2 Backorder Flow**



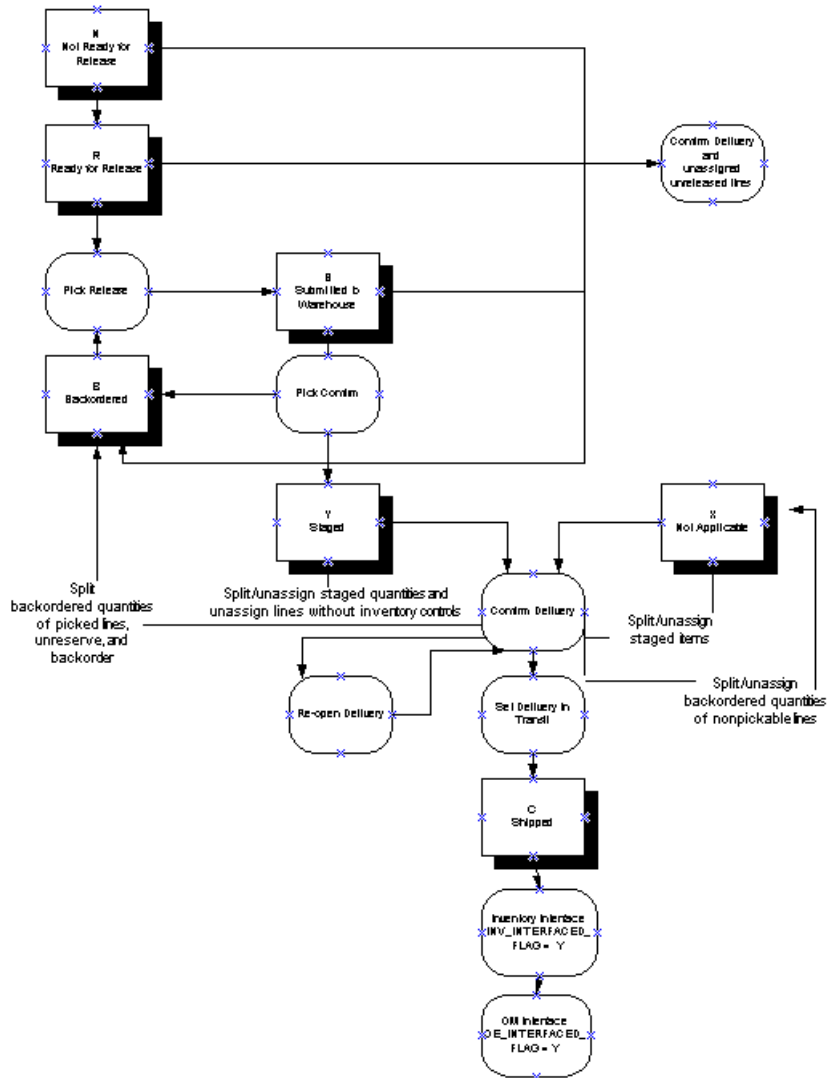
In the physical flow of the backorder process, material may or may not exist. In the case where the material does not exist, the backorder process is used to identify inventory discrepancies. For example, the system allocates the complete requested quantity at Pick Release based on availability. When the picker physically accesses the picking location, the quantity available to pick is less than the quantity the system determined as available. The shipper enters the actual quantity available in the shipped quantity field. The result of the ship confirm action is as follows:



- The line is split into two. One line will indicate the entered quantity as shipped quantity and have a pick status of shipped and the other line will indicate the unshipped quantity with a status of backordered.
- Another case is when the material being shipped is available and material is being backordered for specific business reasons. For example, all available material has been allocated to a specific customer when you find out additional supply for other orders will be delayed. Another customer will have a down production line situation if some of the allocated material doesn't get to them right away. A decision could be made to ship a partial quantity to one customer and backorder enough quantity to accommodate the down line situation. At the ship confirmation step, the user enters a partial ship quantity for the material. At ship confirmation, the line is split into two lines. One with a status of Shipped for the entered quantity's and one with a status of Backordered for the unshipped lines.
- The physical material for the backordered material systematically resides in the staging location. A manual sub-inventory transfer is required if the desired location of the backordered material is another location.
- Pick Release could be run again for the down line customer and the system will allocate the material that was previously allocated to the backordered lines to the down line customer.

This diagram illustrates the transaction flow for backorders.

Figure R-3 Transaction Flow for Backorders



## Scenario 1: Shortage at Detailing

A sales order line for 10 units of item A is booked and released. Only seven units exist in inventory. The order is allocated, pick confirmed and ship confirmed.

### Post Detailing

During allocation, seven units are found. Inventory updated shipping with the results of the detail. Auto backorder split the delivery line and called OM to split the sales order line. WSH then reduced the requested quantity on the move order line. These tables show post detailing data for sales order lines, delivery lines, move order lines, and move order line details (MMTT).

**Table R-2 Sales Order Lines**

| Line | Quantity |
|------|----------|
| 1    | 7        |
| 1.1  | 3        |

**Table R-3 Delivery Lines**

| Line | SO Line | Qty | MO Line | Staged Qty | Status    | Subinventory |
|------|---------|-----|---------|------------|-----------|--------------|
| 100  | 1       | 7   | 1000    | 0          | Released  |              |
| 101  | 1.1     | 3   |         |            | Backorder |              |

**Table R-4 Move Order Lines**

| Line | Req Qty         | Detailed Qty | Delivered Qty |
|------|-----------------|--------------|---------------|
| 1000 | <del>10</del> 7 | 7            | 0             |

**Table R-5 Move Order Line Details (MMTT)**

| Line  | MO Line | Qty | From Loc | To Loc |
|-------|---------|-----|----------|--------|
| 10000 | 1000    | 7   | Stores   | Stage  |

### Pick Confirm

The user pick confirms the seven units. Because the move order line was changed at detailing, the move order line is closed at pick confirm even though all 10 units

were not found. These tables show pick confirm data for sales order lines, delivery lines, move order lines, and move order line details (MMTT).

**Table R-6 Sales Order Lines**

| Line | Quantity |
|------|----------|
| 1    | 7        |
| 1.1  | 3        |

**Table R-7 Delivery Lines**

| Line | SO Line | Qty | MO Line | Staged Qty | Status    | Subinventory |
|------|---------|-----|---------|------------|-----------|--------------|
| 100  | 1       | 7   | 1000    | 7          | Staged    | Stage        |
| 101  | 1.1     | 3   |         | 0          | Backorder |              |

**Table R-8 Move Order Lines**

| Line | Req Qty | Detailed Qty | Delivered Qty |
|------|---------|--------------|---------------|
| 1000 | 7       | 7            | 7             |

**Table R-9 Move Order Line Details (MMTT)**

| Line  | MO Line | Qty | From Loc | To Loc |
|-------|---------|-----|----------|--------|
| 10000 | 1000    | 7   | Stores   | Stage  |

### Ship Confirm

The user now ship confirms the seven units. These tables show ship confirm data for sales order lines, delivery lines, move order lines, and move order line details (MMTT).

**Table R-10 Sales Order Lines**

| Line | Quantity |
|------|----------|
| 1    | 7        |
| 1.1  | 3        |

**Table R-11 Delivery Lines**

| Line | SO Line | Qty | MO Line | Staged Qty | Status    | Subinventory |
|------|---------|-----|---------|------------|-----------|--------------|
| 100  | 1       | 7   | 1000    | 7          | Shipped   |              |
| 101  | 1.1     | 3   |         | 0          | Backorder |              |

**Table R-12 Move Order Lines**

| Line | Req Qty | Detailed Qty | Delivered Qty |
|------|---------|--------------|---------------|
| 1000 | 7       | 7            | 7             |

**Table R-13 Move Order Line Details (MMTT)**

| Line  | MO Line | Qty | From Loc | To Loc |
|-------|---------|-----|----------|--------|
| 10000 | 1000    | 7   | Stores   | Stage  |

## Scenario 2: Shortage Reported at Pick Confirm

A Sales Order line for 10 units of item A is booked and released. Seven units are found during detailing but at pick confirmation the user reports a missing quantity of one and can only pick confirm six units for the order.

### Post Detailing

Allocation completes successfully and all 10 units are found. These tables show post detailing data for sales order lines, delivery lines, move order lines, and move order line details (MMTT).

**Table R-14 Sales Order Lines**

| Line | Quantity |
|------|----------|
| 1    | 10       |

**Table R-15 Delivery Lines**

| Line | SO Line | Qty | MO Line | Staged Qty | Status   | Subinventory |
|------|---------|-----|---------|------------|----------|--------------|
| 100  | 1       | 10  | 1000    | 0          | Released |              |

**Table R-16 Move Order Lines**

| Line | Req Qty | Detailed Qty | Delivered Qty |
|------|---------|--------------|---------------|
| 1000 | 10      | 10           | 0             |

**Table R-17 Move Order Line Details (MMTT)**

| Line  | MO Line | Qty | From Loc | To Loc |
|-------|---------|-----|----------|--------|
| 10000 | 1000    | 10  | Stores   | Stage  |

### Pick Confirm

The user was instructed to find 10 units but could only find seven. A missing quantity is reported, when the user asked the system to redetail the balance, the system could not find more quantity of the item (the results would be the same if the user had not prompted the system to find the balance). These tables show pick confirm data for sales order lines, delivery lines, move order lines, and move order line details (MMTT).

**Table R-18 Sales Order Lines**

| Line | Quantity |
|------|----------|
| 1    | 7        |
| 1.1  | 3        |

**Table R-19 Delivery Lines**

| Line | SO Line | Qty | MO Line | Staged Qty | Status    | Subinventory |
|------|---------|-----|---------|------------|-----------|--------------|
| 100  | 1       | 7   | 1000    | 7          | Staged    | Stage        |
| 101  | 1.1     | 3   |         | 0          | Backorder |              |

**Table R-20 Move Order Lines**

| Line | Req Qty         | Detailed Qty    | Delivered Qty   |
|------|-----------------|-----------------|-----------------|
| 1000 | <del>10</del> 7 | <del>10</del> 7 | <del>10</del> 7 |

**Table R-21 Move Order Line Details (MMTT)**

| Line  | MO Line | Qty | From Loc | To Loc |
|-------|---------|-----|----------|--------|
| 10000 | 1000    | 7   | Stores   | Stage  |

### Ship Confirm

The user now ship confirms the seven units that was available to ship in the staging location. These tables show ship confirm data for sales order lines, delivery lines, move order lines, and move order line details (MMTT).

**Table R-22 Sales Order Lines**

| Line | Quantity |
|------|----------|
| 1    | 7        |
| 1.1  | 3        |

**Table R-23 Delivery Lines**

| Line | SO Line | Qty | MO Line | Staged Qty | Status    | Subinventory |
|------|---------|-----|---------|------------|-----------|--------------|
| 100  | 1       | 7   | 1000    |            | Shipped   |              |
| 101  | 1.1     | 3   |         |            | Backorder |              |

**Table R-24 Move Order Lines**

| Line | Req Qty | Detailed Qty | Delivered Qty |
|------|---------|--------------|---------------|
| 1000 | 7       | 7            | 7             |

**Table R-25 Move Order Line Details (MMTT)**

| Line  | MO Line | Qty | From Loc | To Loc |
|-------|---------|-----|----------|--------|
| 10000 | 1000    | 7   | Stores   | Stage  |

## Backorders and Cycle Counting

The ability to identify and remedy inventory discrepancies as part of the picking and shipping process is available in Oracle Shipping Execution.

Prior to release 11*i*, if the user identified a material shortage while picking and shipping delivery lines, his only option was to backorder the discrepant quantity and alert inventory control personnel to make an inventory adjustment for the material shortage. If this manual alert was not made, the enterprise ran the risk of having unavailable material allocated again at the next pick release process until someone synchronized the physical inventory with the system inventory. The cycle count action in the shipping transaction form provides a mechanism for the user to split the line, one line representing the actual shippable quantity and another line representing the quantity that is backordered. At the same time the reservation is transferred to cycle count so the inventory will not be available at the next pick release process.

The process to send a reservation to cycle count and backorder lines that were released as a result of discrepant inventory is as follows.

Within the Shipping Transactions form:

1. Select a line with a pick status of staged.
2. Select Cycle Count from the action menu and click on go.
3. A window similar to the Split Line window comes up. In this figure the delivery has a delivery detail with an ordered quantity of 20.



Shipping Transactions

Query **Query <2>** Context **Line - 74624**

| Detail | Item Name | Delivery | Pick Status | Order | Requested Quantity | Shipped Quantity | Detail |
|--------|-----------|----------|-------------|-------|--------------------|------------------|--------|
| 74624  | AS54888   | 11274    | Staged      | 52637 | 20                 |                  |        |

**Transfer to Cycle Count**

**Primary**

Original Quantity

Quantity to Cycle Count

UOM

**Secondary**

Original Quantity

Quantity to Cycle Count

UOM

OK Cancel

Actions **Cycle Count** Go Detail...

Lines/LPNs Delivery Path by Stop Path by Trip

4. If you enter a quantity less than 20 (for example, seven), the delivery detail will split as 13 staged, and seven backordered as shown in this figure.

| Detail | Item Name | Delivery | Pick Status | Order | Requested Quantity | Shipped Quantity | Detail |
|--------|-----------|----------|-------------|-------|--------------------|------------------|--------|
| 74624  | AS54888   | 11274    | Staged      | 52637 | 13                 |                  |        |
| 74625  | AS54888   |          | Backordered | 52637 | 7                  |                  |        |
|        |           |          |             |       |                    |                  |        |
|        |           |          |             |       |                    |                  |        |
|        |           |          |             |       |                    |                  |        |
|        |           |          |             |       |                    |                  |        |
|        |           |          |             |       |                    |                  |        |
|        |           |          |             |       |                    |                  |        |
|        |           |          |             |       |                    |                  |        |

Query: Query <2> Context: Line - 74624

Actions: Cycle Count Go Detail...

Lines/LPNs Delivery Path by Stop Path by Trip

- If you enter a quantity of 20, the delivery will get completely backordered.

In both cases the reservation for the quantity that you see backordered, gets transferred to cycle count. This can be verified from the inventory Supply/Demand form.

There are two other ways to transfer backordered quantities to cycle count:

- There is a radio button titled Cycle Count All under the Ship Options in the Confirm Delivery dialog box. By selecting this at ship confirm, the reservations for all lines in the delivery will be transferred to cycle count and the entire delivery will be backordered.
- In the unspecified quantities drop down box there is a Cycle Count selection. By choosing cycle count from here, any line that does not have a shipped quantity specified will be backordered and the reservation transferred to cycle count.

For more information, see the appendix *Transfer of Delivery Line Reservations to Cycle Count*.

## Backorders and Over picking

After pick-confirm step, the Picked Quantity should always be greater or equal to the Requested Quantity.

If not enough quantity was picked, the delivery line will be split at Pick Confirm. The delivery line will be updated to Staged with the Picked Quantity and a new backordered delivery line will be created.

If a delivery line is fulfilled by the Picked Quantity and there is a Pending Quantity, a new delivery line Pending Over pick is created.

When either one of the Picked Quantity or the Pending Quantity is null the following rule is used to handle delivery lines:

- Backorder the delivery line if its Picked Quantity is null and the Requested Quantity is greater than zero.
- Delete the delivery line if its Requested Quantity is null and the Picked Quantity is greater than zero.



Topics covered in this appendix include:

- [Overview](#) on page S-2
- [Introduction](#) on page S-2
- [Watch Out For](#) on page S-3
- [Examples](#) on page S-4
- [Conclusion](#) on page S-4

## Overview

The definition of the word fulfill is to bring into actuality; to carry out; to measure up or satisfy; to bring to an end or complete. To fulfill an order line in Oracle Order Management (OM) means to satisfy the requirements for completion. OM provides the functionality required to recognize fulfillment of an order line, and to cause some order lines to wait until other related order lines have been fulfilled before they continue processing.

## Introduction

Oracle Order Management enables you to group lines into a fulfillment set and to establish a gate activity in your workflow process. Lines in a fulfillment set will wait until all lines in the set have been fulfilled to proceed through the gate. This gate is known as the fulfillment activity. The fulfillment feature is primarily designed to allow the grouping of related lines and to keep any lines in the group from being invoiced until all lines have been fulfilled. You may find additional uses for the fulfillment functionality in your business. This feature did not exist in previous releases of Oracle Order Entry.

## Terminology

The following terms will be used to describe fulfillment:

**Fulfillment activity** - The synchronization point or gate in the workflow process at which lines wait for other lines to be fulfilled.

**Fulfillment method activity** - The activity in the workflow process which indicates that the line has been fulfilled.

**Fulfillment set** - a group of lines which must all be fulfilled before any of the lines proceed beyond the fulfillment activity in the workflow

## How it Works

The fulfillment activity is a seeded workflow activity named FULFILL\_LINE. This activity is the synchronization point between the lines of a fulfillment set.

There are two activities which are considered fulfillment method activities in the seeded OM workflows. For a standard shippable line the fulfillment method activity is the shipping activity. For a return line the fulfillment method activity is the receiving activity. You may define any activity as the fulfillment method activity in a workflow process. The fulfillment activity must be between the

fulfillment method activity and the invoice interface activity in the respective workflows.

When a line workflow reaches the fulfillment activity, the activity checks to see if the fulfillment method activity (for example, shipping or receiving) completed successfully. If so, it updates the fulfilled quantity on the line with the shipped or received quantity, and sets the fulfilled flag to Yes. It then checks to see if the line is part of a fulfillment set. If not, then it completes the fulfillment activity and continues with the next activity in the workflow process. If the line is part of a fulfillment set, it checks to see if the other lines in the fulfillment set are fulfilled. If any lines are not fulfilled, it waits at the fulfillment activity. If all the lines are fulfilled it completes the fulfillment activity for all the lines in the fulfillment set.

## Setup

No setup is required to use the fulfillment functionality with the seeded workflows. If you create your own workflows, include the fulfillment activity before invoicing in each process. This will provide two benefits: it will update the fulfilled quantity for the lines, and it will allow you to use fulfillment sets. For each workflow process that you define, you will need to check the attributes of the FULFILL\_LINE activity. The FULFILLMENT\_ACTIVITY attribute must be your fulfillment method activity, which in the seeded flows is either the shipping activity or the receiving activity. The COMPLETION\_RESULT should be the result with which the fulfillment method activity completes if it is successful. This allows you to designate any activity as a fulfillment method activity.

If you have a workflow process with two separate branches, such as a single workflow process with separate branches for ordered items and returned items, then you should have one fulfillment activity for each branch which relates to the fulfillment method activity for that branch.

## Watch Out For

Here are some limitations that you will need to understand:

You can have multiple fulfillment sets in a single order. If a line is a member of two fulfillment sets then all lines from both fulfillment sets must be fulfilled for any of the lines to complete the fulfillment activity.

If a line workflow process with a notification is in a fulfillment set, and the notification is rejected, then the other lines will not progress in their flows. You will have to delete or cancel the rejected line.

## Examples

### Example1

Assume that you enter an order for an item which is shippable and a service contract for that item. You would not want to bill for the service contract until the item was shipped. Put the two lines into a fulfillment set by clicking the right mouse button and selecting Sets. When the order is booked, the shippable line must complete the scheduling and shipping activities. These activities are not applicable for the service contract, so they will complete immediately. The service contract will wait at the fulfill line activity until the shippable line arrives there, and then both lines will continue to invoicing at the same time.

### Example 2

Assume that you are a telecommunications company and some of your order lines are for local cable service. The line is fulfilled when the technician goes to the subscribers home and makes the connection. You call this activity provisioning, and you have a custom system for managing this service. You could define a new workflow activity called provisioning and define it as the fulfillment method activity for the workflow process associated with cable installation lines. The line for installation might be in a fulfillment set with the line for the first monthly fee and the line for a shippable item, the cable box. When the technician reports that the connection is complete, the custom system could update the status of the provisioning workflow activity. When the line progresses to the fulfillment activity, the quantity fulfilled is updated with the quantity provisioned. The other lines in the fulfillment should already be waiting at the fulfillment activity. The completion of the fulfillment activity for the installation would complete the lines in the fulfillment set, and the installation, first monthly fee and cable box would all proceed to invoice interface.

## Conclusion

Order Management's new fulfillment functionality provides a simple way to synchronize the workflow between order lines. It enables you to prevent invoicing of lines in a fulfillment set until all lines are ready for invoicing. Seeded workflow processes and activities can be used out of the box to provide baseline functionality for sales order, drop ship and return lines. The functionality is also designed to allow you the flexibility to define other activities as fulfillment methods so that you can model your unique business processes.



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# Upgrading to Order Management

Topics covered in this appendix include:

- [Overview](#) on page T-2
- [Strategy](#) on page T-2
- [Intended Users](#) on page T-4
- [Steps to Upgrade to Order Management 11i](#) on page T-4
- [An Insight to Order Management Upgrade](#) on page T-8
- [Fine Tuning the Order Management Upgrade](#) on page T-14
- [Conclusion](#) on page T-16

## Overview

The Oracle Order Management 11i upgrade module upgrades the Oracle Order Entry product to Oracle Order Management. This module migrates the data from the Order Entry system to the Order Management 11i system.

It is important to note that the steps / tips mentioned in this document are only related to the Order Management upgrade and must be performed in addition to any other steps for other products you may be installing/upgrading along with Oracle Order Management.

For the complete instructions on how to upgrade your Oracle Applications system to Release 11i, please refer to the document *Upgrading Oracle Applications Release 11i*, Part No. A69411-01.

The Order Management Family contains three products: Order Management (identified by the product code ONT), Oracle Shipping Execution (identified by the product code WSH) and Oracle Advanced Pricing (identified by the product code QP). The tables in these products are prefixed as follows:

- For ONT the prefix is OE
- For WSH the prefix is WSH
- For QP the prefix is QP.

## Documentation References

The document Upgrade Manual referred to the documentation called *Upgrading Oracle Applications Release 11i*, Part No. A69411-01.

This document can be found in the URL :

**[http://metalink.oracle.com/metalink/plsql/ml2\\_documents.showNOT?P\\_id=67017.1](http://metalink.oracle.com/metalink/plsql/ml2_documents.showNOT?P_id=67017.1)**

## Strategy

If Oracle Order Management is selected for installation, while the Oracle APPS Install/Upgrade is executed, this module is invoked. During this time, all the database server side code and the client side code are applied to your APPS environment, as part of the Order Management Install Process. If your APPS environment had an Oracle Order Entry Release 10.7/11.0 product previously installed, then the Order Management Upgrade Process is invoked.

The Order Management Upgrade migrates the setup tables on a table to table basis, however, the transaction tables are migrated on a business object by business object basis. A sales order (header, lines, price adjustments, and sales credits) is considered a business object.

The upgrade first migrates the header, then all the lines, their price adjustments and the sales credits. If an error is trapped during the migration of any portion of the data, pertaining to the same order, then the whole order is rejected for upgrade and an error logged in the error table OE\_UPGRADE\_ERRORS. All the successfully migrated orders are committed.

The upgrade also uses parallel distribution of the upgraded transactions, where most of the transaction upgrades are written and processed by 32 parallel processes. This helps in maximizing the utilization of the CPUs available.

## Bifurcation of Order Management Upgrade

The Oracle Order Management 11*i* Upgrade Bifurcation is an optional feature, available to the Order Management 11*i* Upgrade customers. This provides the solution to customers with high volume Order Management data, who want to complete the Order Management Upgrade with minimal downtime. To help the customers upgrade the Order Management transactions within the limited time, the bifurcation option picks only the active transactions during the 11*i* Upgrade process. The inactive transactions are upgraded after the process is complete, either as a post-upgrade step or after the system is released for functional use. This bifurcation impacts the transaction upgrade of Order Management, Shipping Execution and Advance Pricing data.

The Bifurcation feature is designed to be executed in two phases; The first phase, that will be applied before the AutoUpgrade is run, identifies the active transactions in the Order Management, Shipping Execution and Advanced Pricing systems and marks them for upgrade during Release 11*i* upgrade process.

The Bifurcation Phase II is applied either as a post-upgrade step or after the release of the 11*i* systems to users for functional use. This second phase essentially upgrades the inactive transactions that are left behind by the bifurcated Release 11*i* Order Management Upgrade.

### Impact to Customers due to Order Management Bifurcation Approach

While the Bifurcation is a great solution to upgrade Order Management within limited down time, please keep in mind, if you elect to defer the upgrade of inactive orders, that reports, forms and other user interface tools will not be able to access the inactive orders until they are upgraded. Therefore it is highly

recommended to apply the Bifurcation Phase II as early as possible, after the release of the 11i system.

This Bifurcation may not benefit customers who have thousands of lines for every order, thus having very few orders in their system.

## Intended Users

This document is intended for Upgrade customers ONLY.

Intended users are customers with Order Entry Release 10.7/11.0 versions, who want to migrate to Order Management 11i (The Order Management 11i Upgrade will not support versions other than Order Entry Release 10.7 / 11.0 for the Order Management upgrade).

## Steps to Upgrade to Order Management 11i

**Important Note:** The following steps may be already included in the Upgrade Manual, or may be purely additional steps to the ones mentioned in the Upgrade Manual. The following steps must be considered as additional steps related to Order Management Upgrade / check points, while performing the Oracle Applications Release 11i upgrade as per the Upgrade Manual. The steps mentioned in this section are available in a more detailed manner in the Oracle Order Management Upgrade White paper which is available via Metalink (note id : 121200.1).

### 1. Order the Oracle Applications 11i product and the supporting documentation

Contact your Oracle sales contacts to order the Oracle Applications Release 11i product. Make sure you have the Upgrade Manual. This can be found in the URL: [http://metalink.oracle.com/metalink/plsql/ml2\\_documents.showNOT?P\\_id=67017.1](http://metalink.oracle.com/metalink/plsql/ml2_documents.showNOT?P_id=67017.1)

### 2. Perform the Order Management Pre-Upgrade steps (category 1)

Once you receive the Upgrade Manual, perform the required pre-upgrade steps before you download the software. These steps are mentioned in Category 1 and 2 of the Order Management Pre-Upgrade Tasks. These steps can be performed even while Order Entry Release 10.7/11.0 is functional and in use. This means, that the users can be logged in to the applications while these steps are performed.

### 3. Download the APPS 11i software

Download your APPS 11i software, that will include all the Order Management upgrade related files. This will create your new APPL\_TOP, where your 11i will be downloaded and you will use for running your Auto-Upgrade/Patches and accessing your applications.

### 4. If necessary apply Order Management Upgrade Mandatory Patch for pre-upgrade steps

Based on the dot release version you have acquired you may or may not need to apply the patch **1471461** after you download the software. Refer to Order Management Upgrade White paper for more details on this step, and this document is available via Metalink (document id : 121200.1)

### 5. Perform the Order Management Pre-Upgrade steps (category 2)

After downloading the APPS 11i software, you must perform the Oracle Order Management Pre-Upgrade steps category 2. You can perform these steps only after you download the software, however the system may remain functional and the users logged in , NOT requiring downtime.

### 6. Perform the Order Management Pre-Upgrade steps (category 3)

This stage ends the functional use of Order Entry Release 10.7/11.0 product. The users should not be logged in while performing these steps. Some of the steps mentioned in this category might be a repetition of the steps mentioned in the category 2. There are also some steps that ask you to check the pre-upgrade data to see if it is supported by the Order Management upgrade. You must run the mentioned scripts and check to see if you have any orders which have unsupported data. If you have any, then you must login to your Order Entry system and correct those data before you proceed to AutoUpgrade of Release 11i. If you fail to do this, then those unsupported data **may not** be upgraded to Order Management 11i, and you may not have another opportunity to correct this data, as Order Entry Release 10.7/11.0 system will not be functional after you start the Order Management AutoUpgrade.

### 7. If you intend to Bifurcate the Order Management Upgrade, apply the Patch 1393123 (Bifurcation Phase I)

(Ignore this step if you are not using Order Management Upgrade Bifurcation Approach).

**Warning:** Applying this patch will upgrade only the active Order Management transactions during the Release 11i upgrade, and you must then apply the Bifurcation Phase II patch after the Release 11i upgrade process, to complete the upgrade of non-active Order Management transactions. Make sure you have opted the Order Management Upgrade Bifurcation Approach, before you apply this patch.

Download the patch **1393123** from Metalink and apply the patch (follow instructions in the readme.txt of the patch) as a Category 3 pre-upgrade step. Running this as a category 2 pre-upgrade step (while the Order Entry system is not yet shutdown for upgrade), is allowed, but repeating this step as a Category 3 pre-upgrade step is highly recommended. Failure to repeat this patch application in the category 3 pre-upgrade step will not cause the upgrade to fail, but will treat the inactive transactions recorded between the time the patch was previously applied until the time the system is brought down, as **active** transactions.

This patch contains a sequence of **manual steps** to follow. When you plan to apply the patch multiple times, it is adequate to do the copying of files once, (the first time you apply the patch), and just repeat the other manual instructions every time you want to re-run the patch.

Running the sql script `ontup293.sql` which is a manual step, requires inclusion of a parameter along with the script name in the command line. This parameter is the age of the orders after they are closed. Essentially you have to pass a number along with this script. If you pass 60 as the number, then the orders closed within the last 60 days will also be considered as active transactions for bifurcation purpose. If you do not intend to use this option, you may have to use the number 0 as the parameter to this script. *Failure to send the parameter will result in the failure of the script*, so follow the readme.txt of the patch carefully.

## **8. Apply Non-Order Management Patches required by Order Management, and to be applied before AutoUpgrade**

The patches listed below are the non-Order Management patches, but which are pre-requisite for Order Management Upgrade and must be applied before starting AutoUpgrade.

**Note:** The list is as of the date this document is written and so is not a complete list. Please check the MetaLink for such patches you may want to apply. The following are the ARUs (patches) and the ARU # may vary from OS platform to platform.

**1253654** (database 8.1.6.1 patch)

**1323676** (FND patch)

## 9. Run AutoUpgrade

Once the pre-upgrade steps category 1 to 3 are complete and the high-priority patches are applied, you are now ready to run the AutoUpgrade. (This is also mentioned in the post-upgrade steps category 4, as the first step). While initiating the Auto-Upgrade, select all the products to install, as per your purchase of licenses. As the Order Management Upgrade talks about Order Management products upgrade, this document assumes that you have purchased license for upgrading the Oracle Order Management product. Select the Oracle Order Management product from the list of the products to be installed. **Select the Oracle Shipping Execution (product code WSH) for Install, along with Order Management (product code ONT), if it is not automatically selected.** During this phase, if you had a previous Order Entry Release 10.7/11.0 installation, then the Order Management upgrade is automatically invoked. If you have licensed Oracle Advanced Pricing (product code QP), then select QP also for Install, before you proceed with the AutoUpgrade.

## 10. If necessary apply Order Management Upgrade Mandatory Patches (ONLY for 11i Order Management Upgrade customers)

You may need to apply the **patches 1471540, 1537129, 1310156, 1311832, 1324853, and 1324884** before you apply the database patch for you dot release. The exact patch which you may require from the above list depends on the dot release you are using. Refer to Order Management Upgrade White paper for more details on this step, and this document is available via Metalink (document id : 121200.1)

## 11. Apply 11i database upgrade patch

This would be the database patch like 11i. The drivers to be run for this purpose comes as a part of the software, and refer to the Release Notes which comes along with the 11i application software for details on the name and location of these driver files.

## 12. Perform the Post Upgrade Steps

Just like you performed the first step of the category 4, which is running the Auto-Upgrade, perform the other post upgrade steps mentioned in the Upgrade manual.

## 13. Apply Order Management Minipacks

Based on the dot release you are in, apply Order Management Minipacks like Pack A, Pack B, etc. where applicable. Refer to Order Management Upgrade Whitepaper

for more details on this step, and this document is available via Metalink (document id : 121200.1)

#### **14. If Bifurcating the Order Management Upgrade, apply the Patch 1393247 (Bifurcation Phase II)**

(Ignore this step if you are not using Order Management Upgrade Bifurcation Approach)

**Warning:** This patch MUST be applied if / ONLY if you have opted the Order Management Upgrade Bifurcation Approach by applying the patch **1393123** as a pre-upgrade step.

Either as a post-upgrade step, or after you release the upgraded Release 11*i* system, apply the patch **1393247** to upgrade the remaining transactions, that were not upgraded by the Release 11*i* Order Management Upgrade process, due to Order Management Upgrade Bifurcation.

The patch application requires you to apply a copy driver and a database driver. Refer to the instructions in the patch readme.txt for instructions.

Since this patch will be upgrading a major percentage of your Order Entry data, it may take several hours to complete, but it can run in parallel to the system functioning and does not require any down time.

## **An Insight to Order Management Upgrade**

The architecture has greatly changed between Oracle Order Entry Release 10.7/11.0 and Oracle Order Management 11*i*. The Order Management Upgrade is all about migrating the data of Oracle Order Entry Release 10.7/11.0 to Oracle Order Management 11*i*. The Order Management upgrade does more than table to table data migration, as the Order Management and Order Entry data models differ substantially.

The following paragraphs are an overview of the migration of some of the functions, taking place in the Order Management Upgrade.

### **Upgrade Temporary Objects**

The below mentioned objects are created and are used only in the Upgrade. These objects will not be used in the Order Management or other functionality after the upgrade. The objects are as follows:



OE\_UPGRADE\_LOG is a table, that has the mapping between the old line id and the new line id created during the upgrade. This table and its associated view OE\_UPGRADE\_LOG\_V can be used to find the historical information of the pre and post upgrade statuses of the order lines. This is expected to be a very high volume table, as would contain one row for every new line or header created.

OE\_UPGRADE\_WSH\_IFACE is an upgrade table that is populated with the shipping information, during the upgrade, and is used by subsequent upgrade functions. This is expected to be a very large table, as it contains one record for every prospective new line.

OE\_UPGRADE\_WF\_ACT\_MAP is a workflow upgrade mapping table, that has mapping information between the cycle actions and its equivalent workflow actions. This table is populated during the upgrade and used within the upgrade only. OE\_UPGRADE\_WF\_HIST\_TEMP, OE\_UPGRADE\_WF\_MULGRP\_V, OE\_UPGRADE\_WF\_OBS\_CODES, OE\_UPGRADE\_WF\_VLD\_CYC, OE\_UPGRADE\_WF\_VLD\_CYC\_V are the other upgrade tables used during the Workflow upgrade.

OE\_UPGRADE\_ERRORS is an error storing table and is populated when an error is trapped during the upgrade. The comments column will hold the explanation of the error occurred. The size of this table is dependent on the errors trapped.

For the purpose of maximizing the utilization of the CPUs, the data to be migrated are grouped into a pre-determined number of equal groups, whose details are stored in the OE\_UPGRADE\_DISTRIBUTION table. The upgrade code is executed multiple times concurrently, and the code pieces refer to the distribution table to pick their group of data for migration. This strategy is used for upgrading Orders, Holds, Workflow History, Invalid Data Marking, Freight Charges and Service Line Details.

The tables OE\_UPGRADE\_PC\_ATTR\_MAP, OE\_UPGRADE\_PC\_CONDNS, OE\_UPGRADE\_PC\_SCOPE, OE\_UPGRADE\_PC\_TEMP are table which are currently not in use, but will be used by future versions of the software.

The table QP\_UPGRADE\_ERRORS is populated when an error is encountered during the upgrade. The ERROR\_MODULE column will specify the module like Price Lists or Discounts for which the error is encountered. The ERROR\_TYPE column will further refine the error details within the ERROR\_MODULE. The ERROR\_DESC column will give the description of the error.

The table QP\_DISCOUNT\_MAPPING is used to map the old discount id's to the new discount id's .

For every record in SO\_PRICE\_LISTS\_B (Price Lists), a record is created in QP\_LIST\_HEADERS\_B and QP\_LIST\_HEADERS\_TL. When creating the new records in

QP\_LIST\_HEADERS\_B and QP\_LIST\_HEADERS\_TL, the old PRICE\_LIST\_ID in SO\_PRICE\_LISTS\_B is retained. Also, the price list that is being upgraded is created as a qualifier for its secondary price list specified in SO\_PRICE\_LISTS\_B. Mapping between the old and new discount list and lines is stored in QP\_DISCOUNT\_MAPPING.

The table QP\_UPG\_LINES\_DISTRIBUTION is used to distribute the Price list ids, Discount ids, Agreement ids, Pricing Rules ids among 32 workers. This is to run the upgrade in parallel for improved performance.

### **Order Headers**

The SO\_HEADERS\_ALL table is migrated to OE\_ORDER\_HEADERS\_ALL table in Order Management, however, the SO\_HEADER\_ATTRIBUTES table is also merged into OE\_ORDER\_HEADERS\_ALL table itself. The Header Id is preserved during the migration. The new sequence OE\_ORDER\_HEADERS\_S is reset with the highest value in its Order Entry equivalent sequence SO\_HEADERS\_S, and is used to generate the header id in the OE\_ORDER\_HEADERS\_ALL table, for any new orders.

### **Order Lines**

The SO\_LINES\_ALL table is migrated to OE\_ORDER\_LINES\_ALL table, however, the tables SO\_LINE\_ATTRIBUTES, SO\_LINE\_DETAILS also are merged into the OE\_ORDER\_LINES\_ALL table. As the Line Detail concept is obsolete in Order Management 115, and the picking details are now stored at the Line level, every old line (line in the SO\_LINES\_ALL table), is now converted into one or more new lines (lines in the OE\_ORDER\_LINES\_ALL). When one old line is migrated into multiple new lines, the old line id will be preserved in the first of the new lines. The rest of the new lines will be assigned newly generated line ids. The new sequence OE\_ORDER\_LINES\_S is reset with the highest value in its Order Entry equivalent sequence SO\_LINES\_S, and is used to generate the line id in the OE\_ORDER\_LINES\_ALL table. The descriptive flex field definitions from SO\_LINES\_ALL table are transferred to OE\_ORDER\_LINES\_ALL table.

### **Order Lines History**

This is a new table and is populated during the upgrade. Mainly cancellation records are stored in this table and so the records from SO\_ORDER\_CANCELLATIONS are migrated to this table namely OE\_ORDER\_LINES\_HISTORY.

### **Price Adjustments**

The SO\_PRICE\_ADJUSTMENTS table is migrated to the OE\_PRICE\_ADJUSTMENTS table. While the header level price adjustments have a direct one to one record migration, the line level price adjustments may end up with more than one record for every old price adjustment record, during the upgrade. Every new order line created will now have a price adjustment record in the OE\_PRICE\_ADJUSTMENTS table, if its old line had a price adjustment record. Even though the old price adjustment id is preserved in the first of the new set of records created, the rest of the records have the id generated during the upgrade. The new sequence OE\_PRICE\_ADJUSTMENTS\_S is reset with the highest value in its Order Entry equivalent sequence SO\_PRICE\_ADJUSTMENTS\_S, and is used to generate the price adjustment id in the OE\_PRICE\_ADJUSTMENTS table.

### **Sales Credits**

The SO\_SALES\_CREDITS table is migrated to OE\_SALES\_CREDITS table. While the header level sales credits have a direct one to one record migration, the line level sales credits may end up with more than one record for every old sales credit record, during the upgrade. Every new order line created will now have a sales credit record in the OE\_SALES\_CREDITS table, if its old line had a sales credit record. Even though the old sales credit id is preserved in the first of the new set of records created, the rest of the records have the id generated during the upgrade. The new sequence OE\_SALES\_CREDITS\_S is reset with the highest value in its Order Entry's equivalent sequence SO\_SALES\_CREDITS\_S, and is used to generate the sales credit id in the OE\_SALES\_CREDITS table.

### **Line Sets**

A Line set in Order Management is created when a line in Order Entry had multiple records in SO\_LINE\_DETAILS table or has multiple picking details or a line was split into multiple shipments. The upgrade creates a line set record in OE\_SETS table for every such situation. This newly created line set id is updated in all the new line records created, that originates from such an old line record in Order Entry. The set id is generated from the new sequence OE\_SETS\_S.

### **Ship Sets**

The ship set id is generated from the new sequence OE\_SETS\_S.

### **Cycles to Workflow**

All the cycles in the Release 10.7/11.0, which are referenced by open headers or open lines are now converted to the workflow processes. A cycle that had header

level and line level actions is converted to separate header level workflow and line level workflow. Cycle actions are converted to workflow activities inside these workflows. The upgrade appropriately assigns the orders and lines to the right workflows created. The upgrade also creates history for all the open orders and lines. Workflow history will not be created for closed order or lines.

### Transaction Types

The SO\_ORDER\_TYPES\_ALL table is migrated to OE\_TRANSACTION\_TYPES\_ALL table as Order Types and Line Types and for each Order Type in SO\_ORDER\_TYPES\_ALL table. You will have one Order Type record and one or more Line Type records in the OE\_TRANSACTION\_TYPES\_ALL table. The workflow to transaction types assignments are created in the OE\_WORKFLOW\_ASSIGNMENTS table. The sequence SO\_ORDER\_TYPES\_S is replaced with OE\_TRANSACTION\_TYPES\_S sequence and the new sequence OE\_WF\_ASSIGNMENTS\_S is introduced to get the key generated for the OE\_WORKFLOW\_ASSIGNMENTS table.

### Freight Charges

The table SO\_FREIGHT\_CHARGES is migrated to OE\_PRICE\_ADJUSTMENTS table and the table SO\_FREIGHT\_CHARGE\_TYPES is migrated to QP\_LIST\_HEADERS\_B, QP\_LIST\_HEADERS\_TL and QP\_LIST\_LINES tables. The sequences SO\_FREIGHT\_CHARGES\_S and SO\_FREIGHT\_CHARGE\_TYPES\_S are now obsolete in Order Management Release 11i.

### Drop Ship Sources

The SO\_DROP\_SHIP\_SOURCES table is migrated to OE\_DROP\_SHIP\_SOURCES table. The new table OE\_DROP\_SHIP\_SOURCES may get more than one record for every record in the old table SO\_DROP\_SHIP\_SOURCES, depending on the number of new order lines created for the old order line referenced in the SO\_DROP\_SHIP\_SOURCES table. The sequence SO\_DROP\_SHIP\_SOURCES\_S is replaced with OE\_DROP\_SHIP\_SOURCES\_S sequence.

### Holds

The SO\_HOLD\_SOURCES\_ALL table is migrated to OE\_HOLD\_SOURCES\_ALL, SO\_HOLD\_RELEASES table to OE\_HOLD\_SOURCES table, SO\_ORDER\_HOLDS\_ALL table to OE\_ORDER\_HOLDS\_ALL table and SO\_HOLD\_DEFINITIONS table migrated to OE\_HOLD\_DEFINITIONS table. When records pertaining to order lines are migrated, more than one record may be inserted into the new holds tables, depending on the number of new order lines created for that old order line. The sequences SO\_HOLD\_DEFINITIONS\_S, SO\_HOLD\_RELEASES\_S, SO\_HOLD\_

SOURCES\_S and SO\_ORDER\_HOLDS\_S are replaced with the sequences OE\_HOLD\_DEFINITIONS\_S, OE\_HOLD\_RELEASES\_S, OE\_HOLD\_SOURCES\_S and OE\_ORDER\_HOLDS\_S respectively.

### **Credit Checks**

The table SO\_CREDIT\_CHECK\_RULES is migrated to OE\_CREDIT\_CHECK\_RULES and the table SO\_CREDIT\_CHECK\_TYPES\_ALL is migrated to OE\_CREDIT\_CHECK\_TYPES\_ALL table. The sequence SO\_CREDIT\_CHECK\_RULES\_S is replaced with the sequence OE\_CREDIT\_CHECK\_RULES\_S.

### **Service Installation Details**

The data is migrated from the SO\_LINE\_SERVICE\_DETAILS to the CS product (CRM), through the CS APIs.

### **Price Lists**

The data in SO\_PRICE\_LISTS\_B is migrated to QP\_LIST\_HEADERS\_B (LIST\_TYPE\_CODE = 'PRL' ) and QP\_LIST\_HEADERS\_TL. The data in SO\_PRICE\_LIST\_LINES\_115 is migrated to QP\_LIST\_LINES (LIST\_LINE\_TYPE\_CODE='PLL').

### **Discounts**

The data in SO\_DISCOUNTS is migrated to QP\_LIST\_HEADERS\_B (LIST\_TYPE\_CODE = 'DLT' ) , QP\_LIST\_HEADERS\_TL and QP\_LIST\_LINES (LIST\_LINE\_TYPE\_CODE='DIS'). The data in SO\_DISCOUNT\_LINES\_115 is migrated to QP\_LIST\_LINES (LIST\_LINE\_TYPE\_CODE='DIS' ). The data in SO\_PRICE\_BREAK\_LINES is migrated to QP\_LIST\_LINES (LIST\_LINE\_TYPE\_CODE='DIS' or 'PBH'). The data in SO\_DISCOUNT\_CUSTOMERS is migrated to QP\_QUALIFIERS.

### **Agreements**

The data in SO\_AGREEMENTS\_B and SO\_AGREEMENTS\_TL is migrated to OE\_AGREEMENTS\_B and OE\_AGREEMENTS\_TL.

### **Pricing Rules**

The data in SO\_PRICING\_RULES is migrated to QP\_PRICE\_FORMULAS\_B and QP\_PRICE\_FORMULAS\_TL. The data in SO\_RULE\_FORMULA\_COMPONENTS is migrated to QP\_LIST\_HEADERS\_B and QP\_LIST\_HEADERS\_TL. The data in SO\_PRICING\_RULE\_LINE\_VALUES is migrated to QP\_LIST\_LINES and QP\_PRICING\_ATTRIBUTES. The data in SO\_PRICING\_RULE\_LINES is migrated to QP\_PRICE\_FORMULA\_LINES.

## Profile Options

The new OM profiles OE\_ID\_FLEX\_CODE, ONT\_SOURCE\_CODE, OE\_INVENTORY\_ITEM\_FOR\_FREIGHT, OE\_INVOICE\_FREIGHT\_AS\_LINE will get migrated from the 107/110 OE system.

## Order Management Upgrade bifurcation

**Bifurcation Phase I** This phase marks the UPGRADE\_FLAG column in SO\_HEADERS\_ALL table to have a value of 'D' for all the inactive transactions, and a value of 'N' for all active transactions. The Shipping and Pricing tables are then marked active or inactive, taking the clue from the UPGRADE\_FLAG of SO\_HEADERS\_ALL table. (It is important to note that the UPGRADE\_FLAG column is updated to 'Y' by the Order Management transaction upgrade, after the Header and its dependent objects are upgraded).

To define Active Order Management transactions the following conditions are checked. The headers that satisfy the conditions are considered as Active transactions.

- All Open Orders
- All Closed Orders that are referred by Open Orders
- All Closed Orders that are part of a Delivery, that has at least one Open Order
- All Closed Orders closed within the specified number of days, specified by the customer, using the Age of Closed Orders option in applying the patch **1393123**.

**Bifurcation Phase II** The phase II sets the UPGRADE\_FLAG to 'N', where the flag has the value 'D', then a set of upgrade codes are executed, to upgrade the inactive transactions to Order Management from Order Entry. This set of upgrade codes are not designed to upgrade active orders (mainly open orders) as they do not deal with the Cycles to Workflow upgrade. They are designed to upgrade only inactive (closed) transactions.

## Fine Tuning the Order Management Upgrade

Some customers may prefer to follow their own sizing parameters for the Order Management / Pricing / Shipping objects, namely tables and indexes. The upgrade executes three files to set the object sizing parameters for the objects of these three products. The files are listed below. If you have done some analysis on your space requirements or would like to follow your own standards for object sizing, you may edit these files with your object sizing parameters, before you start

the AutoUpgrade. This change may be done as a last step of the 11i pre-upgrade steps. If you do not edit these files, then the objects will be sized with our estimations.

## Object Sizing files

Order Management: \$ONT\_TOP/patch/115/sql/ontdbprm.sql

Advanced Pricing: \$QP\_TOP/patch/115/sql/qpdbprm.sql

Shipping Execution: \$WSH\_TOP/patch/115/sql/wshdbprm.sql

## Object Sizing Estimation

### Space Requirement Comparisons (Order Entry versus Order Management).

The following is the approximate space consumption comparison between Order Entry Release 10.7/11.0 and Order Management 11i, for the space set of upgraded transactions.

**Note:** The figures mentioned below are only an approximation, and were derived after gathering statistics from a few high volume Order Management upgrades.

Most of the tables that have a direct one to one migration, may have almost the same space requirement, as in the previous Order Entry release database, with a 10 % (+/-) variation.

As a thumb rule, it is recommended to view the following figures with a 10 % (+/-) variation.

|                             | Data   | Index   |
|-----------------------------|--|---|
| For the whole OM 11i Schema | The data space has been increased by 35 percent as compared to the Order Entry Release 10.7/11.0 | The Index space has been increased by 5 percent as compared to the Order Entry Release 10.7/11.0. |

## Transaction Object Space Comparisons

| For the OM 11i schema Objects |   |  |
|-------------------------------|---|--|
|                               | Data  | Index  |
| Lines Tables                  | Data space for OE_ORDER_LINES_ALL has been increased by 25 Percent as compared to the combined space occupied by the tables SO_LINES_ALL, SO_LINE_DETAILS, and SO_LINE_DETAIL_ATTRIBUTES of Order Entry Release 10.7/11.0 | The Index space for this object has been increased by 50 percent as compared to the combined space occupied by the indexes of the tables SO_LINES_ALL, SO_LINE_DETAILS, and SO_LINE_DETAIL_ATTRIBUTES of Order Entry Release 10.7/11.0 |
| Headers Tables                | Data space for OE_ORDER_HEADERS_ALL has been decreased by 15 percent as compared to the combined space occupied by the tables SO_HEADERS_ALL and SO_HEADER_ATTRIBUTES of Order Entry Release 10.7/11.0.                   | The Index space for these objects has been increased by 5 percent as compared to the combined space occupied by the indexes of the tables SO_HEADERS_ALL and SO_HEADER_ATTRIBUTES of the Order Entry Release 10.7/11.0.                |

## Conclusion

Following the above steps or tips will help in your smooth upgrade of data from Oracle Order Entry Release 10.7/11.0 system to Order Management Release.



# U

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## Lookups

Topics covered in this appendix include:

- [Advanced Pricing Lookups](#) on page U-2
- [Shipping Execution Lookups](#) on page U-14

## Advanced Pricing Lookups

This appendix lists the predefined Oracle Pricing Lookups.

### Agreement Type

*Access Level: Extensible*

Allows the user to optionally categorize agreements by defining unique agreement types. For example, the user could setup an agreement type per contract type, or use the categorization for reporting purposes. An agreement type is optional on a pricing agreement.

The user can choose to use the seeded agreement types or add new types.

**Table U-1 Agreement Type Lookup**

| <b>Code</b> | <b>Meaning</b>                | <b>Function</b>                        |
|-------------|-------------------------------|--|
| GSA         | Government Services Agreement | Used to categorize pricing agreements. |
| STANDARD    | Standard Terms and Conditions | Used to categorize pricing agreements. |
| VPA         | Volume Purchase Agreement     | Used to categorize pricing agreements. |

## Arithmetic Operator

*Access Level: System*

The method by which a price or modifier is calculated. Used in the Price List and Modifier Setup U.I.'s.

**Table U-2 Arithmetic Operator Lookup**

| Code          | Meaning       | Function   |
|---------------|---------------|--|
| %             | Percent       | Modifier value is calculated as a per unit percentage of the List Price. |
| AMT           | Amount        | Modifier value is calculated as per unit amount +/- the List Price.      |
| LUMPSUM       | Lump Sum      | Modifier value is a fixed amount, i.e. is not per unit.                  |
| NEW PRICE     | New Price     | Modifier value overrides the selling price.                              |
| PERCENT PRICE | Percent Price | List Price is derived as a percentage of an associated item.             |
| UNIT PRICE    | Unit Price    | List Price is a per unit price.  |

## Comparison Operator

*Access Level: System*

Used when setting up Qualifiers and Pricing Attributes to define the rule as to how the search engine should evaluate the attribute on the request line.

**Table U-3 Comparison Operator Lookup**

| Code    | Meaning   | Function  |
|---------|-----------|---|
| =       | Equals    | Qualifier/Pricing Attribute value on the incoming request should match the Qualifier/Pricing Attribute value.                   |
| BETWEEN | Between   | Qualifier/Pricing Attribute value on the incoming request should be in the range defined by the Qualifier / Pricing Attributes. |
| Not =   | Not Equal | Qualifier Attribute value on the incoming request should NOT match the Qualifier Attribute value.                               |

## Currency Precision Type

*Access Level: System*

Valid values for the profile option QP: Unit Price Precision Type. Indicates whether the currencies standard or extended precision should be used.

**Table U-4 Currency Precision Types Lookup**

| Precision Type | Rounding Factor   |
|----------------|---|
| Extended       | Rounding Factor is defaulted to the currencies extended precision |
| Standard       | Rounding Factor is defaulted to the currencies standard precision |

## Effective Date Types

*Access Level: System*

Effective date ranges of these types can optionally be defined on some types of Modifier Lists. The Search Engine will use these dates, if passed by the calling application, in addition to the pricing effective date to determine which Modifier Lists are eligible.

**Table U-5 Effective Date Type Lookup**

| Code | Meaning             | Function  |
|------|---------------------|---|
| ORD  | Order Date          | Order Date must be within the date range.                   |
| SHIP | Requested Ship Date | Customer requested Ship Date must be within the date range. |

## Incompatibility Groups

*Access Level: Extensible*

Incompatibility Groups allow the user to define which Modifiers cannot be applied to a request line with which other Modifiers, i.e. are incompatible, and which Modifiers cannot be applied to a request line with any other Modifier, i.e. are exclusive.

All Modifiers in a Phase which are incompatible should be assigned to the same Incompatibility Groups, LVL1 - LVL3, and any Modifier in a Phase which is exclusive should be placed in the EXCL - Exclusive Group.

Users may define additional incompatibility groups, but only the seeded EXCL - Exclusive group is treated as incompatible with ALL.

**Table U-6 Incompatibility Groups Lookup**

| Code | Meaning                 | Function  |
|------|-------------------------|---|
| EXCL | Exclusive group         | Incompatible with all other Modifiers in a Phase.                           |
| LVL1 | Level 1 Incompatibility | Incompatible with other Modifiers in this incompatibility group in a Phase. |
| LVL2 | Level 2 Incompatibility | Incompatible with other Modifiers in this incompatibility group in a Phase. |
| LVL3 | Level 3 Incompatibility | Incompatible with other Modifiers in this incompatibility group in a Phase. |

## Incompatibility Resolution Code

*Access Level: System*

Methods of deciding which Modifier should be selected when multiple Modifiers in the same incompatibility group are eligible to be applied to a request line in the same pricing phase. The method for resolving incompatibility is specified by pricing phase when maintaining pricing phases in the Event to Phase Mapping Setup Up.

**Table U-7 Incompatibility Resolution Code**

| Code       | Meaning    | Function   |
|------------|------------|--|
| BEST PRICE | Best Price | Search Engine selects the Modifier which gives the lowest price to the customer. |

**Table U-7 Incompatibility Resolution Code**

| <b>Code</b> | <b>Meaning</b> | <b>Function</b>  |
|-------------|----------------|--|
| PRECEDENCE  | PRECEDENCE     | Search Engine selects the Modifier with the lowest precedence, i.e. the highest specificity. |

## List Line Type Code

*Access Level: System*

Defines the behavior of a List Line; a List Line maybe a Price List Line or a type of Modifier, i.e. price adjustment, benefit or charge.

**Table U-8 List Line Code Lookup**

| <b>Code</b> | <b>Meaning</b>      | <b>Function</b>  |
|-------------|---------------------|--|
| PLL         | Price List Line     | Sets the base price of an item or level in product hierarchy.  |
| PBH         | Price Break Header  | A series of base price or price adjustments which are eligible for application to the pricing request according to a delimited break unit range and the rules of the break type. |
| PMR         | Price Modifier      | One or more pricing attributes, whose value or range of values is used to derive a factor on a formula line.   |
| DIS         | Discount            | Reduces the list price, or selling of the previous pricing bucket, according to the calculation rules of the arithmetic operator.  |
| SUR         | Surcharge           | Increases the list price, or selling of the previous pricing bucket, according to the calculation rules of the arithmetic operator.  |
| OID         | Other item Discount | A discount for which eligibility can be qualified by one or more request lines, but is applied to the same or different request line/s which are on the request.                 |
| PMG         | Promotional Goods   | A discount for which eligibility can be qualified by one or more request lines, but for which a new request line is created for the discounted item.                             |
| CIE         | Coupon Issue        | Creation of a coupon which qualifies for a discount or promotional goods on a future request.  |
| IUE         | Item Upgrade        | Substitution of one item for another on a request line, according to the pre-defined promotional Upgrade relationship between the two items.                                     |

**Table U-8 List Line Code Lookup**

| <b>Code</b>     | <b>Meaning</b>              | <b>Function</b>  |
|-----------------|-----------------------------|--|
| TSN             | Terms Substitution          | Changing value of qualifier attribute in terms context on request line. Seeded qualifier attributes in terms context are Freight, Shipping, and Payment Terms. |
| Freight Charges | Freight and Special Charges | Monetary charges which are calculated based on attributes of a request line, but which do not effect the selling price on the request line.                    |

## List Type Code

*Access Level: System*

Used to categorize the type of list which groups price list lines or modifiers. Used for validation, including which types of lines can be included on the list, and reporting purposes.

**Table U-9 List Type Code Lookup**

| Modifier Line Types | Price List | Discount | Surcharge | F&S | Promotion | Deal | Price Modifier |
|---------------------|------------|----------|-----------|-----|-----------|------|----------------|
| Price List          | X          |          |           |     |           |      |                |
| Discount            |            | X        |           |     | X         | X    |                |
| Surcharge           |            | X        | X         |     | X         | X    |                |
| Freight Charge      |            |          |           | X   |           |      |                |
| Price Break Header  |            | X        | X         |     | X         | X    |                |
| Item Upgrades       |            |          |           |     | X         | X    |                |
| Other Item Discount |            |          |           |     | X         | X    |                |
| Terms Substitution  |            |          |           |     | X         | X    |                |
| Promotional Goods   |            |          |           |     | X         | X    |                |
| Coupon Issue        |            |          |           |     | X         | X    |                |
| Price Modifier      |            |          |           |     |           |      | X              |



## Modifier Level Code

*Access Level: System*

Determines what qualifiers and pricing attributes are considered by the search engine when deciding if a request line qualifies for a modifier. This code also determines at what level, i.e. individual line or summary, a modifier should be applied to the request.

**Table U-10 Modifier Level Code Lookup**

| Code       | Meaning        | Function   |
|------------|----------------|--|
| Line       | Line           | Line Group   |
| Line Group | Group of lines | The quantity, in the pricing UOM, and amount spent on an item is summed across all request lines. Hence the total item quantity and amount, on the request, or total quantity and amount at a level in the product hierarchy, is considered by the search engine when deciding if a modifier is qualified or not. Modifier application is at the request line level. |
| Order      | Order          | Only qualifiers or pricing attributes of the summary request line, or header, are considered by the search engine when deciding if a modifier is qualified. Note: it is not possible for a header level modifier to be qualified by a request line. Modifier application is at the summary request line, or header level.  |

## Price Break Type Code

*Access Level: System*

Rules which determine which delimited break unit range/s the qualifying break unit quantity falls into.

**Table U-11 Price Break Type Code Lookup**

| Code      | Meaning   | Function  |
|-----------|-----------|---|
| POINT     | Point     | Volume break in which each volume of break unit gets price/discount in the break range into which it falls.                                   |
| RANGE     | Range     | Volume break in which each volume of break unit gets base price/modifier in the break range within which the <i>total</i> volume falls.       |
| RECURRING | Recurring | Volume break in which the modifier is given <i>for each</i> volume of break unit that falls into the break range.<br>Used for modifiers only. |

## Price Formula Line Type Code

*Access Level: System*

Defines the behavior of a formula line. [Table U-12](#) are the defined lookups for basic pricing in OM, and [Table U-13](#) are the lookups defined for Oracle Pricing.

**Table U-12 Price Formula Line Type Code Lookup (Basic Pricing in OM)**

| Code | Function           | Meaning  |
|------|--------------------|--|
| ML   | Factor List        | Formula uses a price modifier list to derive the value for the formula line.<br><br>A price modifier list is a grouping of price modifier lines, each line having one or more pricing attributes, whose value or range of values is used to derive a factor. |
| NUM  | Numeric Constant   | Fixed value  |
| PRA  | Pricing Attributes | Formula takes as input the pricing attribute for the item referenced by the formula line.  |

**Table U-13 Price Formula Line Type Code Lookup (Oracle Pricing Only)**

| Code | Function          | Meaning  |
|------|-------------------|--|
| FUNC | Function          | Formula uses a function to derive the value for the formula line   |
| LP   | Price List Line   | Formula takes as input the list price of the price list line to which it is attached   |
| PLL  | Price List Line   | Formula takes as input the list price from the price list line (any price list line) referenced by the formula line.   |
| PRA  | Pricing Attribute | Formula takes as input the pricing attribute for the item referenced by the formula line.  |
| ML   | Factor List       | Formula uses a price modifier list to derive the value for the formula line.<br><br>A price modifier list is a grouping of price modifier lines, each line having one or more pricing attributes, whose value or range of values is used to derive a factor. |
| NUM  | Numeric Constant  | Fixed value  |

## Pricing Events

*Access Level: System*

A point in the process flow of the transaction system/calling application at which a call is made to the Pricing Engine (analogous to a Workflow Event).

The following seeded lookup codes are for Oracle Order Management integration with pricing; each event represents a stage in the order cycle at which pricing is performed. The information returned by pricing; base prices, price adjustments, promotions, freight charges, etc. depends on the pricing phases which are processed for this event.

**Note:** in this release it is not possible to create new pricing events.

**Table U-14 Pricing Events Lookup**

| <b>Code</b> | <b>Meaning</b>   | <b>Function</b>  |
|-------------|------------------|--|
| PRICE       | Fetch List Price | Calls pricing engine to get base price as user enters item, quantity and unit of measure on the order line.                      |
| LINE        | Enter Order Line | Calls pricing engine to get line level modifiers as user saves the order line.   |
| ORDER       | Save Order Event | Calls pricing engine, as user saves order, to get order level modifiers and other benefits which depend on multiple order lines. |
| BOOK        | Book Order       | Calls pricing engine as order is booked.   |
| SHIP        | Enter Shipments  | Calls pricing engine as order is shipped.  |
| BATCH       | Batch Processing | Calls pricing engine when orders are processed in batch, replaces 'Line' and 'Order' events.                                     |

## Pricing Group Sequence

*Access Level: Extensible*

A Pricing Group Sequence is a mechanism to control the application order of price adjustments and retrospective discounts, i.e. accruals. The sequence of application of these modifiers becomes important when the adjustment or accrual value is derived from the selling price (the price resulting from applying prior price adjustments) rather than the list price. This is known as discounts on discounts or cascading discounts. The sequence number of the group determines which order the calculation engine will apply the modifiers.

The pricing group sequence allows the user to place all price adjustments and retrospective discounts in a pricing bucket; all modifiers in a bucket are additive, i.e. the adjustment amount for all modifiers in a bucket is calculated off the final selling price, or subtotal of the previous bucket.

The user can add additional pricing group sequences / buckets if they require further subtotals or cascading of modifiers. Pricing Group Sequence 0 is reserved for base price calculation.

**Table U–15 Pricing Group Sequence Lookup**

| Code | Meaning                    | Function                 |
|------|----------------------------|--------------------------|
| 0    | Base Price                 | Base Price calculation   |
| 1    | Price Adjustments Bucket 1 | First modifier subtotal  |
| 2    | Price Adjustments Bucket 2 | Second modifier subtotal |
| 3    | Price Adjustments Bucket 3 | Third modifier subtotal  |

## Related Modifier Group Type

*Access Level: System*

Used by Oracle Pricing internally to identify relationships between, and functional groupings, of modifiers.

**Table U–16 Related Modifier Group Type Lookup**

| Code      | Meaning   | Function  |
|-----------|-----------|---|
| QUALIFIER | Qualifier | Identifies those modifiers which the request must qualify for in order to get a benefit.              |
| BENEFIT   | Benefit   | Identifies those modifiers which are given as a benefit once the qualification criteria has been met. |

**Table U-16 Related Modifier Group Type Lookup**

| <b>Code</b>    | <b>Meaning</b> | <b>Function</b>  |
|----------------|----------------|--|
| COUPON         | Coupon         | Identifies the benefit which is given for a Coupon Issue.        |
| PRICE<br>BREAK | Price Break    | Records which modifiers are price break lines for a price break. |

## Request Type

*Access Level: Extensible*

A Request Type indicates to the pricing engine the type of transaction being priced. This is important to pricing, as the engine will use this information to only consider data created specifically to price this particular type of transaction.

The following seeded lookup codes are for Oracle Order Management integration with pricing. Any application which wishes to use Oracle Pricing should create a request type lookup code to identify their transaction.

**Table U–17 Request Type Lookup**

| Code | Meaning                | Function                                 |
|------|------------------------|--|
| ONT  | Order Management Order | Used to price an Order Management Order. |

## Source System

*Access Level: Extensible*

The Source System is used to identify the origin of the pricing data. The pricing engine will use this information to restrict its search to pricing information which originated from a particular application depending on the Request Type to Source System Setup.

Any application which wishes to use create pricing information should create a source system lookup code to identify their pricing data

**Table U–18 Source System Lookup**

| Code | Meaning        | Function                                  |
|------|----------------|---|
| QP   | Oracle Pricing | Use Oracle Pricing tables as data origin. |

## Shipping Execution Lookups

This section lists the key lookups in Oracle Shipping Execution. Consult the Oracle Shipping Execution Lookups form (Setup > Lookups) for complete information on all of the lookups.

### Key Lookups

DELIVERY\_STATUS: Delivery status

DOCUMENT\_TYPE: Shipping document types

EXCEPTION\_SEVERITY: Exception severity  
EXCEPTION\_STATUS: Exception status  
EXCEPTION\_TYPE: Exception type  
FREIGHT\_COST\_TYPE: Freight cost type lookups  
INSPECTION\_STATUS: Inspection status  
LOGGING\_ENTITY: Exception logging entity  
OPN\_SORT\_BY: Sort Order for Open Deliveries Report  
PACK\_PRINT\_ALL: Packing slip print all option values  
PACK\_SORT: Packing slip print sort option values  
PACK\_TYPE: Packing slip types  
PICK\_STATUS: Pick status  
REPORT\_USAGE: Report usage  
SECURITY\_PRIVILEGE: Security privileges in shipping transactions  
SOURCE\_SYSTEM: Source system from which delivery details are imported  
TRIP\_STATUS: Trip status  
TRIP\_STOP\_STATUS: Trip stop status  
UPS: UPS service levels





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# Pricing Attribute Seed Data

Topics covered in this appendix include:

- [Pricing Attribute Seed Data](#) on page V-2

## Pricing Attribute Seed Data

This appendix lists the predefined Oracle Pricing Contexts and default pricing attribute sourcing rules.

[Table V-1](#) displays default pricing attribute contexts information.

[Table V-2](#) displays the default line pricing attribute sourcing mapping information.

**Table V-1 Attribute Contexts**

| Hierarchy                                | Attribute  | Attribute             | Table validated Value Set Name |  |             |
|--|------------|-----------------------|--------------------------------|--|-------------|
| Name                                     | Precedence | Name                  | data source                    |  |             |
| *indicates non table validated value set |            |                       |                                |  |             |
| ITEM                                     | 220        | Item Number           | PRICING_ATTRIBUTE1             | NULL   |             |
|  | 290        | Item Category         | PRICING_ATTRIBUTE2             | NULL   |             |
| LINEAMT                                  | NULL       | NULL                  | NULL                           | NULL   |             |
| PRICING ATTRIBUTE                        | 710        | Parent Price List     | PRICING_ATTRIBUTE10            | QP_NUMBER *  |             |
|  | 720        | Customer Item         | PRICING_ATTRIBUTE11            | MTL_CUSTOMER_ITEMS,<br>RA_CUSTOMERS,<br>RA_ADDRESSES_ALL |             |
|  | 730        | Insurance Cost        | PRICING_ATTRIBUTE12            | QP_NUMBER *  |             |
|  | 740        | Handling Cost         | PRICING_ATTRIBUTE13            | QP_NUMBER *  |             |
|  | 750        | Export Cost           | PRICING_ATTRIBUTE14            | QP_NUMBER *  |             |
|  | 760        | Duty Cost             | PRICING_ATTRIBUTE15            | QP_NUMBER *  |             |
|  | 770        | Freight Cost          | PRICING_ATTRIBUTE16            | QP_NUMBER *  |             |
|  | 780        | Administrative Cost   | PRICING_ATTRIBUTE17            | QP_NUMBER *  |             |
|  | VOLUME     | 800                   | Item Quantity                  | PRICING_ATTRIBUTE10                                      | QP_NUMBER * |
|  |            | 810                   | Item Amount                    | PRICING_ATTRIBUTE12                                      | QP_NUMBER * |
| 820                                      |            | Period1 Item Quantity | PRICING_ATTRIBUTE3             | QP_NUMBER *  |             |
| 830                                      |            | Period2 Item Quantity | PRICING_ATTRIBUTE1             | QP_NUMBER *  |             |
| 840                                      |            | Period3 Item Quantity | PRICING_ATTRIBUTE11            | QP_NUMBER *  |             |

**Table V-1 Attribute Contexts**

| Hierarchy Name | Precedence | Attribute Name      | Attribute data source | Table validated Value Set Name<br>*indicates non table validated value set |
|----------------|------------|---------------------|-----------------------|--|
|                | 850        | Period1 Item Amount | PRICING_ATTRIBUTE13   | QP_NUMBER *  |
|                | 860        | Period2 Item Amount | PRICING_ATTRIBUTE14   | QP_NUMBER *  |
|                | 870        | Period4 Item Amount | PRICING_ATTRIBUTE15   | QP_NUMBER *  |

**Table V-2 Default Line Pricing Attribute Source Mapping**

| Context            | Qualifier Attribute | Source Package      | Source Function   |
|--------------------|---------------------|---------------------|---|
| Item               | PRICING_ATTRIBUTE1  | OE_ORDER_PUB        | G_LINE.inventory_item_id  |
|                    | PRICING_ATTRIBUTE2  | QP_SOURCING_API_PUB | Get_Item_Category(OE_ORDER_PUB.G_LINE.inventory_item_id)  |
| Line Amt           | PRICING_ATTRIBUTE4  | QP_SOURCING_API_PUB | Get_Dollars   |
| Pricing Attributes | PRICING_ATTRIBUTE10 | OE_ORDER_PUB        | G_LINE.unit_percent_base_price  |
|                    | PRICING_ATTRIBUTE11 | QP_SOURCING_API_PUB | Get_Customer_Item_Id(OE_ORDER_PUB.G_LINE.item_identifier_type, OE_ORDER_PUB.G_LINE.ordered_item_id) |
|                    | PRICING_ATTRIBUTE12 | OE_CHARGE_PVT       | GET_COST_AMOUNT('INSURANCE')  |
|                    | PRICING_ATTRIBUTE13 | OE_CHARGE_PVT       | GET_COST_AMOUNT('HANDLING')   |
|                    | PRICING_ATTRIBUTE14 | OE_CHARGE_PVT       | GET_COST_AMOUNT('EXPORT')   |
|                    | PRICING_ATTRIBUTE15 | OE_CHARGE_PVT       | GET_COST_AMOUNT('DUTY')   |
|                    | PRICING_ATTRIBUTE16 | OE_CHARGE_PVT       | GET_COST_AMOUNT('FREIGHT')  |

**Table V-2 Default Line Pricing Attribute Source Mapping**

| <b>Context</b> | <b>Qualifier Attribute</b> | <b>Source Package</b>   | <b>Source Function</b>  |
|----------------|----------------------------|-------------------------|---|
|                | PRICING_<br>ATTRIBUTE17    | OE_CHARGE_PVT           | GET_COST_<br>AMOUNT('ADMINISTRATION')   |
| VOLUME         | PRICING_<br>ATTRIBUTE1     | QP_SOURCING_API_<br>PUB | Get_Period2_Item_Quantity(OE_<br>ORDER_PUB.G_LINE.sold_to_org_id,<br>OE_ORDER_PUB.G_LINE.inventory_<br>item_id) |
|                | PRICING_<br>ATTRIBUTE3     | QP_SOURCING_API_<br>PUB | Get_Period1_Item_Quantity(OE_<br>ORDER_PUB.G_LINE.sold_to_org_id,<br>OE_ORDER_PUB.G_LINE.inventory_<br>item_id) |
|                | PRICING_<br>ATTRIBUTE11    | QP_SOURCING_API_<br>PUB | Get_Period3_Item_Quantity(OE_<br>ORDER_PUB.G_LINE.sold_to_org_id,<br>OE_ORDER_PUB.G_LINE.inventory_<br>item_id) |
|                | PRICING_<br>ATTRIBUTE13    | QP_SOURCING_API_<br>PUB | Get_Period1_Item_Amount(OE_<br>ORDER_PUB.G_LINE.sold_to_org_id,<br>OE_ORDER_PUB.G_LINE.inventory_<br>item_id)   |
|                | PRICING_<br>ATTRIBUTE15    | QP_SOURCING_API_<br>PUB | Get_Period3_Item_Amount(OE_<br>ORDER_PUB.G_LINE.sold_to_org_id,<br>OE_ORDER_PUB.G_LINE.inventory_<br>item_id)   |

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## Qualifier Seed Data

Topics covered in this appendix include:

- [Qualifier Seed Data](#) on page W-2

## Qualifier Seed Data

This appendix lists the predefined Oracle Pricing Qualifier Contexts and default qualifier attribute sourcing rules.

- [Table W-1](#) displays default qualifier contexts information.
- [Table W-2](#) displays the default *header* qualifier attribute sourcing mapping information.
- [Table W-3](#) displays the default *line* qualifier attribute sourcing mapping information.

**Table W-1 Qualifier Contexts**

| Hierarchy      | Qualifier  | Qualifier Attribute | Table validated Value Set Name  |
|----------------|------------|---------------------|---|
| Name           | Precedence | Attribute           | *indicates non table validated value set  |
| Customer       | 260        | Customer Name       | QUALIFIER_ATTRIBUTE2<br>RA_CUSTOMERS  |
|                | 310        | Customer Class      | QUALIFIER_ATTRIBUTE1<br>AR_LOOKUPS  |
|                | 270        | Site Use            | QUALIFIER_ATTRIBUTE5<br>RA_CUSTOMERS,<br>RA_ADDRESSES_ALL,<br>RA_SITE_USES_ALL,<br>AR_LOOKUPS |
|                | 250        | Ship To             | QUALIFIER_ATTRIBUTE11<br>RA_CUSTOMERS,<br>OE_SHIP_TO_ORGS_V                                   |
|                | 280        | Bill To             | QUALIFIER_ATTRIBUTE14<br>OE_INVOICE_TO_ORGS_V,<br>RA_CUSTOMERS                                |
|                | 210        | Agreement Name      | QUALIFIER_ATTRIBUTE7<br>OE_AGREEMENTS   |
| Customer (con) | 240        | Agreement Type      | QUALIFIER_ATTRIBUTE8<br>QP_LOOKUPS  |
|                | 230        | GSA                 | QUALIFIER_ATTRIBUTE15<br>FND_LOOKUPS  |
|                | 320        | Sales Channel       | QUALIFIER_ATTRIBUTE3<br>OE_LOOKUPS  |

**Table W-1 Qualifier Contexts**

| Hierarchy | Precedence | Qualifier Attribute    | Qualifier Attribute data source | Table validated Value Set Name<br>*indicates non table validated value set |
|-----------|------------|------------------------|---------------------------------|--|
|           | 340        | Account Type           | QUALIFIER_ATTRIBUTE12           | AR_CUSTOMER_PROFILE_CLASSES_V  |
| Orders    | 470        | Order Type             | QUALIFIER_ATTRIBUTE9            | OE_ORDER_TYPES_V   |
|           | 480        | Order Category         | QUALIFIER_ATTRIBUTE13           | OE_LOOKUPS   |
|           | 510        | Order Date             | QUALIFIER_ATTRIBUTE1            | QP_DATE *  |
|           | 520        | Request Date           | QUALIFIER_ATTRIBUTE17           | QP_DATE *  |
|           | 530        | Pricing Date           | QUALIFIER_ATTRIBUTE14           | QP_DATE *  |
|           | 440        | Customer PO            | QUALIFIER_ATTRIBUTE12           | OE_ORDER_LINES_ALL,<br>OE_ORDER_HEADERS_ALL                                |
|           | 450        | Line Type              | QUALIFIER_ATTRIBUTE2            | OE_LINE_TYPES_V  |
|           | 460        | Line Category          | QUALIFIER_ATTRIBUTE19           | OE_LOOKUPS   |
|           | 490        | Source Type            | QUALIFIER_ATTRIBUTE15           | OE_LOOKUPS   |
|           | 540        | Ship From              | QUALIFIER_ATTRIBUTE18           | OE_SHIP_FROM_ORGS_V  |
|           | 550        | Shipment Priority Code | QUALIFIER_ATTRIBUTE16           | OE_LOOKUPS   |
|           | 560        | Shippable Flag         | QUALIFIER_ATTRIBUTE10           | FND_LOOKUPS  |
|           | 570        | Shipped Flag           | QUALIFIER_ATTRIBUTE11           | FND_LOOKUPS  |
|           | 580        | Freight Cost Type Code | QUALIFIER_ATTRIBUTE20           | WSH_LOOKUPS  |
| Modlist   | 110        | List Line Number       | QUALIFIER_ATTRIBUTE2            | QP_LIST_LINES  |

**Table W-1 Qualifier Contexts**

| Hierarchy    |            | Qualifier             | Qualifier Attribute   | Table validated Value Set Name           |
|--------------|------------|-----------------------|-----------------------|--|
| Name         | Precedence | Attribute             | data source           | *indicates non table validated value set |
|              | 120        | Coupon Number         | QUALIFIER_ATTRIBUTE3  | QP_COUPONS                               |
|              | 130        | Promotion Number      | QUALIFIER_ATTRIBUTE1  | QP_LIST_HEADERS_VL                       |
|              | 140        | Price List            | QUALIFIER_ATTRIBUTE4  | QP_LIST_HEADERS_VL                       |
| Terms        | 660        | Payment Term          | QUALIFIER_ATTRIBUTE1  | RA_TERMS                                 |
|              | 640        | Freight Terms         | QUALIFIER_ATTRIBUTE10 | OE_FRGHT_TERMS_ACTIVE_V                  |
|              | 650        | Shipping Terms        | QUALIFIER_ATTRIBUTE11 | OE_SHIP_METHODS_V                        |
| Volume       | 500        | Order Amount          | QUALIFIER_ATTRIBUTE10 | QP_NUMBER *                              |
| Volume (con) | 590        | Period 1 Order Amount | QUALIFIER_ATTRIBUTE12 | QP_NUMBER *                              |
|              | 600        | Period 2 Order Amount | QUALIFIER_ATTRIBUTE13 | QP_NUMBER *                              |
|              | 610        | Period 3 Order Amount | QUALIFIER_ATTRIBUTE11 | QP_NUMBER *                              |
|              | 620        | Line Weight           | QUALIFIER_ATTRIBUTE14 | QP_NUMBER *                              |
|              | 630        | Line Volume           | QUALIFIER_ATTRIBUTE15 | QP_NUMBER *                              |



**Table W-2 Default Header Qualifier Source Attribute Mapping**

| <b>Context</b> | <b>Qualifier Attribute</b> | <b>Source Package</b> | <b>Source Function</b>                                 |
|----------------|----------------------------|-----------------------|--|
| Customer       | QUALIFIER_ATTRIBUTE1       | QP_SOURCING_API_PUB   | Get_Customer_Class(OE_ORDER_PUB.G_LINE.sold_to_org_id) |
|                | QUALIFIER_ATTRIBUTE12      | QP_SOURCING_API_PUB   | Get_Account_Type(OE_ORDER_PUB.G_HDR.sold_to_org_id)    |
|                | QUALIFIER_ATTRIBUTE13      | QP_SOURCING_API_PUB   | Get_Sales_Channel(OE_ORDER_PUB.G_HDR.sold_to_org_id)   |
|                | QUALIFIER_ATTRIBUTE1       | OE_ORDER_PUB          | G_HDR.invoice_to_org_id                                |
|                | QUALIFIER_ATTRIBUTE15      | QP_SOURCING_API_PUB   | Get_GSA(OE_ORDER_PUB.G_HDR.sold_to_org_id)             |
|                | QUALIFIER_ATTRIBUTE15      | QP_SOURCING_API_PUB   | Get_GSA(OE_ORDER_PUB.G_LINE.sold_to_org_id)            |
|                | QUALIFIER_ATTRIBUTE2       | OE_ORDER_PUB          | G_HDR.sold_to_org_id                                   |
|                | QUALIFIER_ATTRIBUTE5       | QP_SOURCING_API_PUB   | Get_Site_Use(OE_ORDER_PUB.G_HDR.ship_to_contact_id)    |
|                | QUALIFIER_ATTRIBUTE7       | OE_ORDER_PUB          | G_HDR.agreement_id                                     |
|                | QUALIFIER_ATTRIBUTE8       | QP_SOURCING_API_PUB   | Get_Agreement_Type(OE_ORDER_PUB.G_HDR.agreement_id)    |
| Orders         | QUALIFIER_ATTRIBUTE1       | OE_ORDER_PUB          | G_HDR.ordered_date                                     |
|                | QUALIFIER_ATTRIBUTE9       | OE_ORDER_PUB          | G_HDR.order_type_id                                    |
|                | QUALIFIER_ATTRIBUTE12      | OE_ORDER_PUB          | G_HDR.cust_po_number                                   |
|                | QUALIFIER_ATTRIBUTE13      | OE_ORDER_PUB          | G_HDR.order_category_code                              |
| Order (con)    | QUALIFIER_ATTRIBUTE14      | OE_ORDER_PUB          | G_HDR.pricing_date                                     |
|                | QUALIFIER_ATTRIBUTE17      | OE_ORDER_PUB          | G_HDR.request_date                                     |
|                | QUALIFIER_ATTRIBUTE18      | OE_ORDER_PUB          | G_HDR.ship_from_org_id                                 |

**Table W-2 Default Header Qualifier Source Attribute Mapping**

| <b>Context</b> | <b>Qualifier Attribute</b> | <b>Source Package</b> | <b>Source Function</b>                                      |
|----------------|----------------------------|-----------------------|---|
|                | QUALIFIER_ATTRIBUTE20      | OE_CHARGE_PVT         | GET_COST_TYPES  |
| Terms          | QUALIFIER_ATTRIBUTE1       | OE_ORDER_PUB          | G_HDR.payment_term_id                                       |
|                | QUALIFIER_ATTRIBUTE10      | OE_ORDER_PUB          | G_HDR.freight_terms_code                                    |
|                | QUALIFIER_ATTRIBUTE11      | OE_ORDER_PUB          | G_HDR.shipping_method_code                                  |
| Volume         | QUALIFIER_ATTRIBUTE1       | QP_SOURCING_API_PUB   | Get_Order_Qty(OE_ORDER_PUB.G_HDR.header_id)                 |
|                | QUALIFIER_ATTRIBUTE10      | QP_SOURCING_API_PUB   | Get_Order_Amount(OE_ORDER_PUB.G_HDR.header_id)              |
|                | QUALIFIER_ATTRIBUTE11      | QP_SOURCING_API_PUB   | Get_Period3_Order_Amount(OE_ORDER_PUB.G_HDR.sold_to_org_id) |
|                | QUALIFIER_ATTRIBUTE12      | QP_SOURCING_API_PUB   | Get_Period1_Order_Amount(OE_ORDER_PUB.G_HDR.sold_to_org_id) |
|                | QUALIFIER_ATTRIBUTE13      | QP_SOURCING_API_PUB   | Get_Period2_Order_Amount(OE_ORDER_PUB.G_HDR.sold_to_org_id) |

**Table W-3 Default Line Qualifier Attribute Source Mapping**

| <b>Context</b> | <b>Qualifier Attribute</b> | <b>Source Package</b> | <b>Source Function</b>                                 |
|----------------|----------------------------|-----------------------|--|
| Customer       | QUALIFIER_ATTRIBUTE1       | QP_SOURCING_API_PUB   | Get_Customer_Class(OE_ORDER_PUB.G_LINE.sold_to_org_id) |
|                | QUALIFIER_ATTRIBUTE2       | OE_ORDER_PUB          | G_LINE.sold_to_org_id                                  |
|                | QUALIFIER_ATTRIBUTE5       | QP_SOURCING_API_PUB   | Get_Site_Use(OE_ORDER_PUB.G_LINE.ship_to_contact_id)   |
|                | QUALIFIER_ATTRIBUTE7       | OE_ORDER_PUB          | G_LINE.agreement_id                                    |
|                | QUALIFIER_ATTRIBUTE8       | QP_SOURCING_API_PUB   | Get_Agreement_Type(OE_ORDER_PUB.G_LINE.agreement_id)   |
|                | QUALIFIER_ATTRIBUTE11      | OE_ORDER_PUB          | G_LINE.ship_to_org_id                                  |
|                | QUALIFIER_ATTRIBUTE12      | QP_SOURCING_API_PUB   | Get_Account_Type(OE_ORDER_PUB.G_LINE.sold_to_org_id)   |

**Table W-3 Default Line Qualifier Attribute Source Mapping**

| <b>Context</b> | <b>Qualifier Attribute</b> | <b>Source Package1</b> | <b>Source Function</b>                                       |
|----------------|----------------------------|------------------------|--|
|                | QUALIFIER_ATTRIBUTE13      | QP_SOURCING_API_PUB    | Get_Sales_Channel(OE_ORDER_PUB.G_HDR.sold_to_org_id)         |
|                | QUALIFIER_ATTRIBUTE14      | OE_ORDER_PUB           | G_LINE.invoice_to_org_id                                     |
| Customer (con) | QUALIFIER_ATTRIBUTE15      | QP_SOURCING_API_PUB    | Get_GSA(OE_ORDER_PUB.G_LINE.sold_to_org_id)                  |
| Order          | QUALIFIER_ATTRIBUTE2       | OE_ORDER_PUB           | G_LINE.line_type_id  |
|                | QUALIFIER_ATTRIBUTE10      | OE_ORDER_PUB           | G_LINE.SHIPPABLE_FLAG  |
|                | QUALIFIER_ATTRIBUTE11      | OE_CHARGE_PVT          | GET_SHIPPED_STATUS   |
|                | QUALIFIER_ATTRIBUTE12      | OE_ORDER_PUB           | G_LINE.cust_po_number  |
|                | QUALIFIER_ATTRIBUTE14      | OE_ORDER_PUB           | G_LINE.pricing_date  |
|                | QUALIFIER_ATTRIBUTE15      | OE_ORDER_PUB           | G_LINE.source_type_code                                      |
|                | QUALIFIER_ATTRIBUTE16      | OE_ORDER_PUB           | G_LINE.shipment_priority_code                                |
|                | QUALIFIER_ATTRIBUTE17      | OE_ORDER_PUB           | G_LINE.request_date  |
| Terms          | QUALIFIER_ATTRIBUTE1       | OE_ORDER_PUB           | G_LINE.payment_term_id                                       |
|                | QUALIFIER_ATTRIBUTE10      | OE_ORDER_PUB           | G_LINE.freight_terms_code                                    |
|                | QUALIFIER_ATTRIBUTE11      | OE_ORDER_PUB           | G_LINE.shipping_method_code                                  |
| Volume         | QUALIFIER_ATTRIBUTE11      | QP_SOURCING_API_PUB    | Get_Period3_Order_Amount(OE_ORDER_PUB.G_LINE.sold_to_org_id) |
|                | QUALIFIER_ATTRIBUTE12      | QP_SOURCING_API_PUB    | Get_Period1_Order_Amount(OE_ORDER_PUB.G_LINE.sold_to_org_id) |

**Table W-3 Default Line Qualifier Attribute Source Mapping**

| <b>Context</b> | <b>Qualifier Attribute</b> | <b>Source Packagel</b> | <b>Source Function</b>              |
|----------------|----------------------------|------------------------|-------------------------------------|
|                | QUALIFIER_ATTRIBUTE14      | OE_CHARGE_PVT          | GET_LINE_WEIGHT_OR_VOLUME('Weight') |
|                | QUALIFIER_ATTRIBUTE15      | OE_CHARGE_PVT          | GET_LINE_WEIGHT_OR_VOLUME('Volume') |
| Modlist        | QUALIFIER_ATTRIBUTE4       | OE_ORDER_PUB           | G_LINE.price_list_id                |

---

## Introduction to CBO Troubleshooting in R11i

Topics covered in this appendix include:

- [Introduction](#) on page X-2
- [The Optimizer](#) on page X-3
- [CBO vs. RBO](#) on page X-4

## Introduction

The Cost Based Optimizer (CBO) was first introduced in Oracle7 (release 7.0.12) as an alternative to the Rule Based Optimizer (RBO). However it was never fully adopted by the applications because CBO was unreliable in early releases. It sometimes failed to generate sensible execution plans. These problems were ironed out in subsequent releases and great enhancements were made in releases 7.3, 8.0 and 8i. Now CBO's capabilities and features greatly surpass those of RBO, and as such CBO has quickly become the industry standard. A number of our competitors have been migrating to CBO. The R11i application was written to use CBO.

## Objectives

This brown bag is intended for Oracle Applications Support analysts working with the R11i product. The main objective of this brown bag is to prepare the analyst to troubleshoot performance issues in the R11i applications by giving an understanding of the CBO and its functions. Application development has found that a large number of performance bugs could have been avoided with a little preventative action. This brown bag will introduce some of the basic principles of the CBO and its relevance to the Applications. In the end you will have a basic knowledge of CBO and some of the major differences in the way it operates as opposed to the Rule Based Optimizer (RBO).

Support analysts are not expected to provide performance tuning suggestions or code fixes, but rather to ensure that a consistent approach is taken to diagnose these problems. The intent is to prevent the number of bugs being logged, and also to improve the quality of those that we do need to log.

## Overview

This brown bag will introduce the concept of optimization and the differences between the Rule-based and Cost-based approaches. Then we will take a closer look at the operation of CBO and what makes it run efficiently. Lastly some troubleshooting techniques will be explored. The following topics are covered:

- The Optimizer
- CBO vs. RBO
- CBO Operation
- Gathering Statistics
- Troubleshooting

## The Optimizer

Optimization is the process of choosing the most efficient way to execute a *SQL statement*. There may be many different ways for Oracle to execute a particular statement, based on which tables and indexes are accessed and in which order. The method used to execute a statement can greatly affect how quickly the statement executes. The goal of the optimizer is to choose the most efficient method of execution.

An execution plan is simply the combination of steps that the optimizer takes to execute a SQL statement, including physically retrieving rows from the database, performing some operation on these rows (for example sorting) and returning the output to the user. Each step of the execution plan returns a set of rows that are used by the next step, or in the event of the last step, that are returned to the user. A set of rows returned by a step is called the *row source*. The steps taken to physically retrieve data from the database are known as *access paths*.

We can see the execution plan chosen by the optimizer for a SQL statement by formatting a SQL trace file using the TKPROF utility with the EXPLAIN PLAN option. The optimizer writes a description of the execution plan to the PLAN\_TABLE on the database, which is then displayed in the formatted trace output.

Refer to **Appendix A** for a list of the different types of SQL statements.

Refer to **Appendix B** for a list of access methods in Oracle.

Refer to **Appendix C** for an example of an execution plan.

The technical paper ‘**TKPROF and Explain Plan for Apps Analysts**’ by Carlos Sierra gives an excellent description of SQL Trace, Explain Plan and the TKPROF utility.

## CBO vs. RBO

To choose an execution plan for a SQL statement the optimizer uses one of the following approaches:

**Rule-based** – using this approach, the optimizer uses a fixed ranking system to evaluate which of the possible access paths to choose. If there is more than one way to execute a SQL statement, the rule-based approach always chooses the operation with the lowest rank. The expectation is that the operation with a lower rank would execute faster than one of a higher rank.

Refer to **Appendix B** for the table of rankings for RBO.

**Cost-based** – using this approach, the optimizer considers the available access paths and factors in information based on statistics in the data dictionary for the objects (tables, columns, indexes) accessed by the statement to determine which execution plan is most efficient. Thus we can think of this as a three step approach:

1. The optimizer generates a set of potential execution plans for the statement based on the available access paths and hints.
2. The optimizer estimates the cost of each execution plan based on the data distribution and storage characteristics (or statistics) for the tables, columns and indexes in the data dictionary.
3. The optimizer compares the costs of the execution plans and chooses the one with the smallest cost.

The cost is an estimated value proportional to the elapsed time needed to execute the statement using the execution plan. The optimizer calculates the cost based on the estimated computer resources (I/O, CPU time, memory etc.) required to execute the statement. The greater the cost is the more time taken to execute the plan.

Later, in the section on CBO operation, we will take a closer look at costs.

The goal of Cost-Based Optimization is to maximize the performance of SQL execution based on the customer's data distribution.

The cost-based approach generally chooses an execution plan that is as good as or better than the plan chosen by the rule-based approach, especially for large queries with multiple joins or multiple indexes. Many Oracle performance features are available only through the cost-based approach. Cost-based optimization must be used for efficient star query performance. Similarly, it must be used with hash joins and histograms. Cost-based optimization is always used with parallel query and with partitioned tables.

The following features are available *only* with cost-based optimization:



- partitioned tables
- index-only tables
- reverse indexes
- parallel query
- star transformation
- star join

In addition to the utilization of advanced features and improved SQL execution performance of CBO, developers no longer have to worry about manually tuning SQL statements by disabling non-selective indexes (+0 or ||” construct), or manually ordering the FROM clause to fix the order of the driving table.

## CBO Operation

We now take a closer look at the optimizer and its main functions. The following diagram shows the fundamentals of optimization:

The query itself is only one of the inputs to the optimization process, along with the database object definitions and cost information. The phases of query processing are:

### Parse phase

The SQL statement is parsed and a shared cursor is built, if one does not already exist.

### Syntactic phase

Ensures that the syntax is valid. For example, if the keyword FROM is misspelled.

### Semantic phase

Ensures that the SQL statement is semantically correct. For example, ensuring that the columns which are being selected actually exist. Semantic checking also ensures that the user has the proper security privileges to access the objects being referenced.

### View processing

Un-nest the view definition for SQL statements which reference views. This phase will also attempt to merge the view with the referencing query.

### Subquery processing

Attempts subquery transformations such as converting a correlated subquery into a regular join.

### Predicate pushing

Pushes predicates or filters down into the view query block.

### Constant folding

Folds constant expressions into a single constant to avoid re-evaluation for each row.

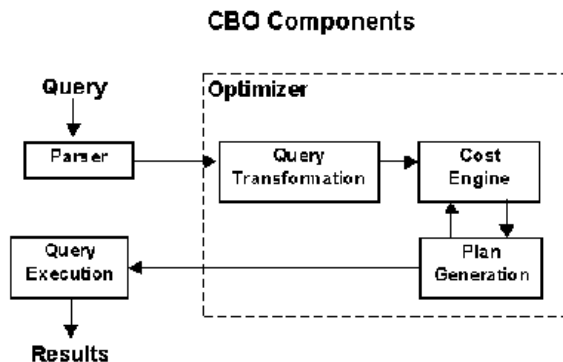
### Optimization and Query Execution Plan (QEP) Generation

Generate the optimal plan based on the optimizer environment. In the case of RBO, fixed rankings will be used to generate the plan. CBO will use the cost information to generate the most efficient plan. Once a plan is generated, it becomes part of the shared cursor.

### Query Execution Plan (QEP) Execution

Once the plan is generated the SQL statement is executed.

The following diagram shows the components of the optimizer:



In this diagram the client program submits a SQL statement to the database server. The database server first parses the SQL statement. If the parse completes successfully, the optimizer attempts to transform the query, such as transforming a

subquery into a regular join. Following the different transformations, the CBO generates several plans and chooses the plan with the lowest cost.

The CBO continues this recursive process until such time it determines that further plan generation would not improve on the current best plan. This is referred to as the 'internal cut-off' point. The CBO attempts to balance parse time with execution time. For example, it does not make sense to spend several minutes optimizing a query which executes in less than one second.

Refer to Oracle8 Concepts, Chapter 20 'Overview of Optimizer Operations' for an in depth study of the optimizer operations mentioned above.

### How to Use the Cost-Based Approach

To use cost-based optimization for a statement, first collect statistics for the tables accessed by the statement. Then enable cost-based optimization in one of these ways:

- Make sure the `OPTIMIZER_MODE` initialization parameter is set to its default
- value of `CHOOSE`. With this setting CBO is invoked once statistics are present for the objects being referenced, else RBO will be used.
- To enable cost-based optimization for your session only, issue an `ALTER SESSION`
- ... `OPTIMIZER_MODE` statement with the `ALL_ROWS` or `FIRST_ROWS` option.
- To enable cost-based optimization for an individual SQL statement, use any
- hint other than `RULE`.

The execution plan produced by the optimizer can vary depending upon the optimizer's goal. Optimizing for best throughput is more likely to result in a full table scan rather than an index scan, or a sort-merge join rather than a nested loops join. Optimizing for best response time is more likely to result in an index scan or a nested loops join.

For example, consider a join statement that can be executed with either a nested loops operation or a sort-merge operation. The sort-merge operation may return the entire query result faster, while the nested loops operation may return the first row faster. If the goal is best throughput, the optimizer is more likely to choose a sort-merge join. If the goal is best response time, the optimizer is more likely to choose a nested loops join.

Choose a goal for the optimizer based on the needs of your application:

- For applications performed in batch, such as Oracle Reports applications, optimize
- for best throughput. Throughput is usually more important in batch applications,
- because the user initiating the application is only concerned with the time necessary for the application to complete. Response time is less important because the user does not examine the results of individual statements while the application is running.
- For interactive applications, such as Oracle Forms applications or SQL\*Plus queries, optimize for best response time. Response time is usually important in interactive applications because the interactive user is waiting to see the first row accessed by the statement.
- For queries that use ROWNUM to limit the number of rows, optimize for best response time. Because of the semantics of ROWNUM queries, optimizing for response time provides the best results.

By default, the cost-based approach optimizes for best throughput.

## COSTS

The CBO uses a sophisticated set of costing algorithms to determine the most efficient execution plan. Cost is the metric that the CBO assigns to each operation such as access methods, joins and sorts. For each index access or table access, the CBO will assign a cost to this operation, which is largely based on the number of I/Os needed for a particular access method. As well as I/O, the CBO uses CPU and network cost components to determine the cost of an individual operation.

The I/O cost determines how many I/Os are needed to access the data. The CBO costs a full table scan as well as an index probe for the indexes available for access paths. If the cost of the index probe is more expensive than the cost of a full table scan, then the CBO will choose the full table scan. Note that with RBO and the fixed ranking system, the index probe would have been chosen because of its lower rank, even if the query was more expensive.

When costing full table scans, the CBO considers multi-block I/Os. The `init.ora` parameter `DB_FILE_MULTIBLOCK_READ_COUNT` specifies the multi-block I/O factor, and hence the cost of a full table scan. For example, if `DB_FILE_MULTIBLOCK_READ_COUNT = 8`, this means that Oracle will read 8 blocks per I/O operation when performing a full table scan. A larger value for this parameter decreases the cost of a full table scan. Hence it is important that the value of `DB_`

FILE\_MULTIBLOCK\_READ\_COUNT should not be altered from the default setting of 8.

The CPU cost is used in conjunction with parallel query. In the case of parallel query, the optimizer will cost a serial plan and compare to the cost of a parallel plan. If the serial plan consists of a full table scan on a very large table, the cost of a parallel plan will likely be less than the serial plan. The default degree of parallelism is a multiplier of the number of CPUs (CPU\_COUNT) and the init.ora parameter PARALLEL\_THREADS\_PER\_CPU.

Sort operations (ORDER BY, joins etc.) are typically CPU intensive. However they can also be I/O intensive if the sort run does not fit into memory. This can be controlled by the parameter SORT\_AREA\_SIZE.

The network cost applies to distributed queries or queries which refer to remote objects via a database link. In such a case, CBO will determine the optimal driving site for the query. The driving site controls whether Oracle should push the rows from the local database to the remote database, or whether Oracle should pull the rows from the remote site over to the local database.

Refer to Appendix D for a complete list of database parameters that affect CBO plans.

## SELECTIVITY

Selectivity is the proportion of a row source retrieved by a particular predicate or combination of predicates, expressed as a value between 0 and 1. So a selectivity of 0.5 will return half the rows. Queries that select a small percentage of a table's rows have good selectivity, while a query that selects a large percentage of the rows has poor selectivity.

If literal values are used in SQL statements, the CBO is able to compare the literal value against the high value and low value for that column using the column statistics from the data dictionary. However for bind variables, the CBO uses default selectivity estimates since the value of the bind is not examined at plan generation time.

Selectivity = Number of rows returned / Total number of rows

Selectivity can be estimated more accurately using histograms (which are discussed later).

## CARDINALITY

Cardinality refers to the number of rows in a table. The estimated or computed cardinality refers to the number of rows which the CBO expects to return for a given operation.

The cardinality is a critical component of the execution plan as it affects the access methods and join methods. If the cardinality is very large (hundreds of thousands of rows) the CBO may choose to perform a full table scan as the access method.

Estimated or computed cardinality = Selectivity \* Number of rows

## TRANSIVITY

Transitivity is a relational property implying an equality expression:

For example, if  $A = B$  and  $B = C$ , then  $A = C$

The CBO uses transitivity on filters to promote indexes on the transitive table. This opens up additional access paths and hence possibly more effective join operations. Transitivity is used only by the CBO, and not the RBO.

## Statistics

We can see the cost-based approach relies heavily on statistics to estimate the cost of each execution plan. These statistics quantify the data distribution and storage characteristics of tables, columns and indexes. Hence it is crucial that statistics be gathered on all the objects and that the statistics be reflective of the data set. For example, the presence of statistics which are several months old may result in sub-optimal plans, due to the fact that the plans being generated do not reflect the current data distribution.

Some of the statistics required by the CBO are:

- Physical description of tables
  - NUM\_ROWS / BLOCKS / AVGRLEN
- Descriptions of attributes
  - DISTINCT VALUES / LOWVAL / HIGHVAL
  - Assumption of uniform data distribution
  - Histograms for attribute skew
- Descriptions of available access methods
  - HEIGHT / LEAF BLOCKS / DISTINCT KEYS

- CLUSTERING FACTOR / LEAF BLOCKS PER KEY / DB BLOCKS PER KEY

For Oracle Applications statistics must be gathered using the FND\_STATS PL/SQL package (which is a wrapper around the DBMS\_STATS package) or via the Gather Schema Statistics concurrent program. DO NOT use the ANALYZE command or the DBMS\_STATS package directly to gather statistics in R11i. Doing so may result in incomplete statistics being generated.

It is important to analyze all product schemas, for example:

```
exec fnd_stats.gather_schema_statistics('ONT') < or use 'ALL' for all schemas >
```

Statistics can also be gathered via the following concurrent programs:

|                                     |           |
|-------------------------------------|-----------|
| Analyze All Index Column Statistics | FNDGAICST |
| Backup Table Statistics             | FNDBKTST  |
| Gather All Column Statistics        | FNDGACST  |
| Gather Column Statistics            | FNDGCLST  |
| Gather Schema Statistics            | FNDGSCST  |
| Gather Table Statistics             | FNDGTST   |
| Restore Table Statistics            | FNDRSTST  |

Refer to Appendix E for a list of the parameters for the programs above.

It should be noted that when you gather statistics for a table or a whole schema, it cascades down and gathers also the statistics for all indexes on each table and all columns for that particular table or schema. Thus, after gathering schema statistics it is not necessary to collect statistics on indexes and columns. However, if you create a new index on a table it is a good idea to then generate statistics on all columns and all index columns for that table.

In the case of transactional tables, whose row counts can vary greatly from one moment to the next, many concurrent programs that access these tables will gather statistics prior to doing any processing. For example, the Order Import concurrent program in Order Management.

If you do not gather statistics the optimizer will use the default statistics for the database objects, which are invariably too low for the applications.

Defaults for table statistics:

- Cardinality: 100 rows

- Average row length: 20 bytes
- Number of blocks: 100

Defaults for index statistics:

- Levels: 1
- Leaf blocks: 25
- Leaf block/key: 1
- Data blocks/key: 1
- Distinct keys: 100
- Clustering factor: 800 (8 \* no. of blocks)

The FND\_STATS package provides a number of procedures, such as ANALYZE\_ALL\_COLUMNS and BACKUP\_SCHEMA\_STATS.

For more information on FND\_STATS refer to the following URL:

[http://www-apps.us.oracle.com/performance/cbo/fnd\\_stats.html](http://www-apps.us.oracle.com/performance/cbo/fnd_stats.html)

## TABLE STATISTICS

The CBO uses table statistics to determine the selectivity and cardinality of filters and joins. Statistics such as the number of rows, number of blocks, average row length allow the optimizer to compute the cardinality and choose the optimal plan. The number of blocks statistic is used to cost a full table scan.

Table statistics generated include:

- Row count (NUM\_ROWS)
- Row length (AVG\_ROW\_LEN)
- Block count (BLOCKS)
- Number of empty blocks (EMPTY\_BLOCKS)

Table statistics are stored in the tab\$ dictionary table, and are available via the dictionary view DBA\_TABLES.

The following query can be used to examine table statistics and to show the last time statistics were gathered:

```
select table_name, num_rows, blocks, avg_row_len,  
       to_char(last_analyzed, 'MM/DD/YYYY HH24:MI:SS') ANALYZED  
from dba_tables
```



```
where table_name = 'OE_ORDER_HEADERS_ALL' and
owner = 'ONT';
```

## INDEX STATISTICS

The CBO uses index statistics to compute the selectivity and cost of an index access path for a particular index. This allows the CBO to eliminate non-selective indexes, and choose the most selective index (where possible). The main statistics for an index are the number of distinct keys, number of nulls, the depth of the index and the clustering factor.

Index statistics generated include:

- B-tree level (BLEVEL)
- Leaf block count (LEAF\_BLOCKS)
- Average number of leaf blocks per key (AVG\_LEAF\_BLOCKS\_PER\_KEY)
- Average number of data blocks per key value  
(AVG\_DATA\_BLOCKS\_PER\_KEY)
- Clustering factor (CLUSTERING\_FACTOR)

Index statistics are stored in the data dictionary table `ind$`, and are available via the dictionary view `DBA_INDEXES`.

The following query can be used to report on index statistics for a given table:

```
select index_name NAME, num_rows, distinct_keys,
leaf_blocks, clustering_factor CF,
avg_leaf_blocks_per_key ALBPKEY,
to_char(last_analyzed, 'MM/DD/YYYY HH24:MI:SS') ANALYZED
from dba_indexes
where table_name = 'OE_ORDER_LINES_ALL' and
owner = 'ONT'
order by index_name;
```

The number of rows statistic reports the number of rows in the index (not the table).

The distinct keys column reports the number of distinct values for that index, which is used to compute the selectivity for the index.

The BLEVEL statistics represents the depth of the index. A larger index depth translates into more I/Os during index transversal. This increases the cost of the index access since cost is proportional to the number of I/Os needed to source the data.

The clustering factor statistic depicts the degree of co-location on index leaf blocks to data blocks. It is included in the cost of an index access when a table access via index rowid is required.

## COLUMN STATISTICS

Column statistics are an essential part of the CBO's cost estimation. Statistics such as the number of distinct keys, number of nulls, density, high values and low values are used to determine the selectivity of filters and expressions involving columns.

Column statistics generated include:

- Count of distinct values of the column (NUM\_DISTINCT)
- Low value (LOW\_VALUE)
- High value (HIGH\_VALUE)
- Number of nulls (NUM\_NULLS)

Column statistics are stored in the data dictionary tables col\$ and hist\_head\$. The dictionary view DBA\_TAB\_COLUMNS can be used to report column statistics for tables.

The following query can be used report column statistics for a particular table:

```
select column_name, num_distinct, num_nulls, density
from dba_tab_columns
where table_name = 'OE_ORDER_HEADERS_ALL' and
column_name = 'HEADER_ID' and
owner = 'ONT';
```

## HISTOGRAMS

Histograms are another level of column statistics which record the low value and high value for a particular column. When statistics are gathered on columns, a default histogram is built with endpoints 0 and 1. This represents a default of uniform distribution. For columns which are skewed, a histogram is needed in order to properly estimate the selectivity of expressions on these columns (for example, flag columns, where a large number of columns may be set to 'N' and a very small number set to 'Y').

There are two types of histograms: frequency-based and height-based. A frequency-based histogram creates a bucket for each distinct value.

A height-based histogram groups repeatable values into buckets whereby the number of buckets is less than that of the number of distinct values. Oracle applications requests frequency-based histograms.

Histograms are useful in the presence of skewed data distribution.

Histograms are not useful for columns with the following characteristics:

- the column does not appear in WHERE clauses of queries
- all predicates on the column use bind variables
- the column data is uniformly distributed
- the column is unique and is used only with equality predicates

Histogram information is stored in the data dictionary view DBA\_HISTOGRAMS. The presence of default endpoint values (0 and 1) in this table would also indicate that the histogram statistics were not generated.

The following query can be used verify histogram statistics:

```
select endpoint_number, endpoint_value
from dba_histograms
where table_name = 'OE_ORDER_LINES_ALL' and
column_name = 'VISIBLE_DEMAND_FLAG';
```

## Troubleshooting

### Initialization parameters

The first step in troubleshooting CBO performance issues is to verify that the necessary initialization parameters are set correctly. Use the following script to examine the setting of these parameters:

AFCHKCBO.sql - This is a sql script ( \$FND\_TOP/admin/sql/AFCHKCBO.sql) which verifies the database initialization parameters . There are several init.ora parameters which need to be set in the database for CBO to work better for Oracle Apps.

Please refer to Appendix F for a list of the mandatory parameters for CBO.

### Verify Statistics

The next step would be to ensure that statistics have been gathered correctly for the schema, tables and indexes. Use the following FND\_STATS utility to verify the statistics exist.

FND\_STATS.VERIFY\_STATS :- This procedure takes a schema name and/or a list of comma separated table\_names and check the status on all these objects and spools out a report .

```
SQL> exec fnd_stats.verify_stats('ONT', 'ONT.OE_ORDER_HOLDS_ALL');
```

```
Table OE_ORDER_HOLDS_ALL
```

| last analyzed         | sample_size      | num_rows | blocks |     |        |   |    |  |  |
|-----------------------|------------------|----------|--------|-----|--------|---|----|--|--|
| 12-21-2000 12:58      | 13               | 130      | 8      |     |        |   |    |  |  |
| Index name            | last analyzed    | num_rows | LB     | DK  | LB/key |   |    |  |  |
| DB/key                | CF               |          |        |     |        |   |    |  |  |
| OE_ORDER_HOLDS_ALL_N1 | 12-21-2000 12:12 | 167      | 1      | 135 | 1      | 1 |    |  |  |
| 90                    |                  |          |        |     |        |   |    |  |  |
| OE_ORDER_HOLDS_ALL_N2 | 12-21-2000 12:12 | 51       | 1      | 36  | 1      | 1 | 41 |  |  |
| OE_ORDER_HOLDS_ALL_N3 | 12-21-2000 12:12 | 167      | 1      | 73  | 1      | 1 |    |  |  |
| 43                    |                  |          |        |     |        |   |    |  |  |
| OE_ORDER_HOLDS_ALL_U1 | 12-21-2000 12:12 | 167      | 1      | 167 | 1      | 1 |    |  |  |
| 62                    |                  |          |        |     |        |   |    |  |  |

Legend:

LB : Leaf Blocks

DK : Distinct Keys

DB : Data Blocks

CF : Clustering Factor

PL/SQL procedure successfully completed.

More details on FND\_STATS can be found at the following site:

[http://www-apps.us.oracle.com/performance/cbo/fnd\\_stats.html](http://www-apps.us.oracle.com/performance/cbo/fnd_stats.html)

### Database trace files

As with any performance issue, database trace files will have to be generated and analyzed to identify the culprit SQL statements.

To make this task easier, have the trace file formatted and sorted using TKPROF as follows:

```
tkprof raw_trace.trc sorted.tkp sys=no explain=apps/apps sort='(exeela,fchela)'
print=10
```

## Reference Material

- Oracle8 Concepts
- Oracle8 Tuning
- Extend Oracle Applications – CBO Tuning
- TKPROF and Explain Plan for Apps Analysts (by Carlos Sierra)
- The CBO web site:

[http://www-apps.us.oracle.com/performance/cbo/troubleshooting\\_cbo.html](http://www-apps.us.oracle.com/performance/cbo/troubleshooting_cbo.html)

## Appendix

### A. Types of SQL Statements

(Taken from the Oracle8 Concepts manual, chapter 20)

Oracle optimizes these different types of SQL statements:

#### Simple statement

An INSERT, UPDATE, DELETE, or SELECT statement that involves only a single table.

#### Simple query

Another name for a SELECT statement.

#### Join

A query that selects data from more than one table. A join is characterized by multiple tables in the FROM clause. Oracle pairs the rows from these tables using the condition specified in the WHERE clause and returns the resulting rows. This condition is called the join condition and usually compares columns of all the joined tables.

#### Equijoin

A join condition containing an equality operator.

#### Nonequijoin

A join condition containing something other than an equality operator.

**Outer join**

A join condition using the outer join operator (+) with one or more columns of one of the tables. Oracle returns all rows that meet the join condition. Oracle also returns all rows from the table without the outer join operator for which there are no matching rows in the table with the outer join operator.

**Cartesian product**

A join with no join condition results in a Cartesian product, or a cross product. A Cartesian product is the set of all possible combinations of rows drawn one from each table. In other words, for a join of two tables, each row in one table is matched in turn with every row in the other. A Cartesian product for more than two tables is the result of pairing each row of one table with every row of the Cartesian product of the remaining tables. All other kinds of joins are subsets of Cartesian products effectively created by deriving the Cartesian product and then excluding rows that fail the join condition.

**Complex statement**

An INSERT, UPDATE, DELETE, or SELECT statement that contains a subquery, which is a form of the SELECT statement within another statement that produces a set of values for further processing within the statement. The outer portion of the complex statement that contains a subquery is called the parent statement.

**Compound query**

A query that uses set operators (UNION, UNION ALL, INTERSECT, or MINUS) to combine two or more simple or complex statements. Each simple or complex statement in a compound query is called a component query.

**Statement accessing views**

Simple, join, complex, or compound statement that accesses one or more views as well as tables.

**Distributed statement**

A statement that accesses data on a remote database.

**B. Types of Access Methods**

(Taken from the Oracle8 Concepts manual, chapter 20)

This section describes basic methods by which Oracle can access data.

## Full Table Scans

A full table scan retrieves rows from a table. To perform a full table scan, Oracle reads all rows in the table, examining each row to determine whether it satisfies the statement's WHERE clause. Oracle reads every data block allocated to the table sequentially, so a full table scan can be performed very efficiently using multiblock reads. Oracle reads each data block only once.

## Table Access by ROWID

A table access by ROWID also retrieves rows from a table. The ROWID of a row specifies the datafile and data block containing the row and the location of the row in that block. Locating a row by its ROWID is the fastest way for Oracle to find a single row.

To access a table by ROWID, Oracle first obtains the ROWIDs of the selected rows, either from the statement's WHERE clause or through an index scan of one or more of the table's indexes. Oracle then locates each selected row in the table based on its ROWID.

## Cluster Scans

From a table stored in an indexed cluster, a cluster scan retrieves rows that have the same cluster key value. In an indexed cluster, all rows with the same cluster key value are stored in the same data blocks. To perform a cluster scan, Oracle first obtains the ROWID of one of the selected rows by scanning the cluster index. Oracle then locates the rows based on this ROWID.

## Hash Scans

Oracle can use a hash scan to locate rows in a hash cluster based on a hash value. In a hash cluster, all rows with the same hash value are stored in the same data blocks. To perform a hash scan, Oracle first obtains the hash value by applying a hash function to a cluster key value specified by the statement. Oracle then scans the data blocks containing rows with that hash value.

## Index Scans

An index scan retrieves data from an index based on the value of one or more columns of the index. To perform an index scan, Oracle searches the index for the indexed column values accessed by the statement. If the statement accesses only columns of the index, Oracle reads the indexed column values directly from the index, rather than from the table.

The index contains not only the indexed value, but also the ROWIDs of rows in the table having that value. Therefore, if the statement accesses other columns in addition to the indexed columns, Oracle can find the rows in the table with a table access by ROWID or a cluster scan.

An index scan can be one of these types:

**unique scan** A unique scan of an index returns only a single ROWID. Oracle performs a unique scan only in cases in which a single ROWID is required, rather than many ROWIDs. For example, Oracle performs a unique scan if there is a UNIQUE or a PRIMARY KEY constraint that guarantees that the statement accesses only a single row.

**range scan** A range scan of an index can return zero or more ROWIDs depending on how many rows the statement accesses.

**full scan** Full index scan is available if a predicate references one of the columns in the index. The predicate does not have to be an index driver. Full scan is also available when there is no predicate if all of the columns in the table referenced in the query are included in the index and at least one of the index columns is not nullable. Full scan can be used to eliminate a sort operation. It reads the blocks singly.

**fast full scan** Fast full index scan is an alternative to a full table scan when the index contains all the columns that are needed for the query and at least one column in the index key has the NOT NULL constraint. Fast full scan accesses the data in the index itself, without accessing the table. It cannot be used to eliminate a sort operation. It reads the entire index using multi-block reads (unlike a full index scan) and can be parallelized.

Fast full scan is available only with cost-based optimization.

You can specify it with the initialization parameter

FAST\_FULL\_SCAN\_ENABLED or the INDEX\_FFS hint.

**bitmap** Bitmap indexes use a bitmap for key values and a mapping function that converts each bit position to a ROWID. Bitmaps efficiently merge indexes that correspond to several conditions in a WHERE clause, using Boolean operations to resolve AND and OR conditions. Bitmap access is available only with cost-based optimization.

*The optimizer can only choose to use a particular access path for a table if the statement contains a WHERE clause condition or other construct that makes that access path available.*



### Rank Access Path

1. Single row by ROWID
2. Single row by cluster join
3. Single row by hash cluster key with unique or primary key
4. Single row by unique or primary key
5. Cluster join
6. Hash cluster key
7. Indexed cluster key
8. Composite key
9. Single-column indexes
10. Bounded range search on indexed columns
11. Unbounded range search on indexed columns
12. Sort-merge join
13. MAX or MIN of indexed column
14. ORDER BY on indexed columns
15. Full table scan

### Unranked Access Paths

Fast full index scan (not available with the rule-based optimizer)

Bitmap index scan (not available with the rule-based optimizer)

## C. Execution Plan

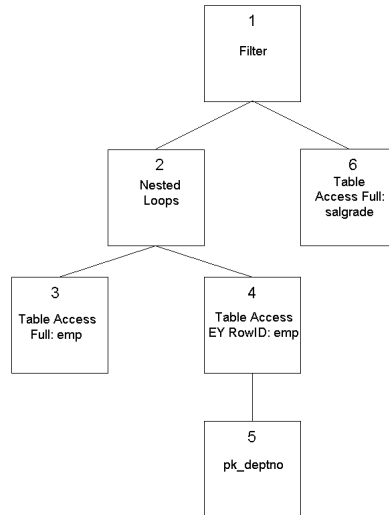
(Taken from the Oracle8 Concepts manual, chapter 20)

**Figure X-1** shows a graphical representation of the execution plan for the following SQL statement, which selects the name, job, salary, and department name for all employees whose salaries do not fall into a recommended salary range:

```
SELECT ename, job, sal, dname
FROM emp, dept
WHERE emp.deptno = dept.deptno
AND NOT EXISTS
(SELECT *
```

```
FROM salgrade
WHERE emp.sal BETWEEN losal AND hisal);
```

**Figure X-1 An Execution Plan**



### Steps of Execution Plan

Each step of the execution plan returns a set of rows that either are used by the next step or, in the last step, are returned to the user or application issuing the SQL statement. A set of rows returned by a step is called a row source.

[Figure X-1](#) is a hierarchical diagram showing the flow of row sources from one step to another. The numbering of the steps reflects the order in which they are displayed in response to the EXPLAIN PLAN command.

Each step of the execution plan either retrieves rows from the database or accepts rows from one or more row sources as input:

- Steps indicated by the shaded boxes physically retrieve data from an object in the database. Such steps are called access paths:
  - Steps 3 and 6 read all the rows of the EMP and SALGRADE tables, respectively.
  - Step 5 looks up in the PK\_DEPTNO index each DEPTNO value returned by Step 3. There it finds the ROWIDs of the associated rows in the DEPT table.

- Step 4 retrieves from the DEPT table the rows whose ROWIDs were returned by Step 5.
- Steps indicated by the clear boxes operate on row sources:
  - Step 2 performs a nested loops operation, accepting row sources from Steps 3 and 4, joining each row from Step 3 source to its corresponding row in Step 4, and returning the resulting rows to Step 1.
  - Step 1 performs a filter operation. It accepts row sources from Steps 2 and 6, eliminates rows from Step 2 that have a corresponding row in Step 6, and returns the remaining rows from Step 2 to the user or application issuing the statement.

## The EXPLAIN PLAN Command

You can examine the execution plan chosen by the optimizer for a SQL statement by using the EXPLAIN PLAN command, which causes the optimizer to choose the execution plan and then inserts data describing the plan into a database table.

For example, the following output table is such a description for the statement examined in the previous section:

| ID | OPERATION                   | OPTIONS | OBJECT_NAME |
|----|-----------------------------|---------|-------------|
| 0  | SELECT STATEMENT            |         |             |
| 1  | FILTER                      |         |             |
| 2  | NESTED LOOPS                |         |             |
| 3  | TABLE ACCESS FULL EMP       |         |             |
| 4  | TABLE ACCESS BY ROWID DEPT  |         |             |
| 5  | INDEX UNIQUE SCAN PK_DEPTNO |         |             |
| 6  | TABLE ACCESS FULL SALGRADE  |         |             |

Each box in [Figure X-1](#) and each row in the output table corresponds to a single step in the execution plan. For each row in the listing, the value in the ID column is the value shown in the corresponding box in [Figure X-1](#).

You can obtain such a listing by using the EXPLAIN PLAN command and then querying the output table.

### Execution Order

The steps of the execution plan are not performed in the order in which they are numbered. Rather, Oracle first performs the steps that appear as leaf nodes in the tree-structured graphical representation of the execution plan (Steps 3, 5, and 6 in [Figure X-1](#)). The rows returned by each step become the row sources of its parent step. Then Oracle performs the parent steps.

To execute the statement for [Figure X-1](#), for example, Oracle performs the steps in this order:

- First, Oracle performs Step 3, and returns the resulting rows, one by one, to Step 2.
- For each row returned by Step 3, Oracle performs these steps:
  - Oracle performs Step 5 and returns the resulting ROWID to Step 4.
  - Oracle performs Step 4 and returns the resulting row to Step 2.
  - Oracle performs Step 2, joining the single row from Step 3 with a single row from Step 4, and returning a single row to Step 1.
  - Oracle performs Step 6 and returns the resulting row, if any, to Step 1.
  - Oracle performs Step 1. If a row is not returned from Step 6, Oracle returns the row from Step 2 to the user issuing the SQL statement.

### D. Parameters that Affect Cost-Based Optimization Plans

(taken from Oracle8 Tuning, chapter20)

The following parameters affect cost-based optimization plans:

#### **OPTIMIZER\_FEATURES\_ENABLED**

Turns on a number of optimizer features, including:

**B\_TREE\_BITMAP\_PLANS,**

**COMPLEX\_VIEW\_MERGING,**

**PUSH\_JOIN\_PREDICATE,**

**FAST\_FULL\_SCAN\_ENABLED**

**OPTIMIZER\_MODE**

As initialization parameter, sets the mode of the optimizer at instance startup: rule-based, cost-based optimized for throughput or response time, or a choice based on presence of statistics. Use OPTIMIZER\_MODE option of ALTER SESSION statement to change the value dynamically during a session.

**OPTIMIZER\_PERCENT\_PARALLEL**

Defines the amount of parallelism that the optimizer uses in its cost functions.

**HASH\_AREA\_SIZE**

Larger value causes hash join costs to be cheaper, giving more hash joins.

**SORT\_AREA\_SIZE**

Large value causes sort costs to be cheaper, giving more sort merge joins.

**DB\_FILE\_MULTIBLOCK\_READ\_COUNT**

Large value gives cheaper table scan cost and favors table scans over indexes.

**COMPLEX\_VIEW\_MERGING**

Controls complex view merging.

**PUSH\_JOIN\_PREDICATE**

Enables the optimizer to evaluate whether or not to push individual join predicates into the view query block.

The following parameters often need to be set in a data warehousing application:

**ALWAYS\_ANTI\_JOIN**

Sets the type of antijoin that Oracle uses: NESTED\_LOOPS/MERGE/HASH.

**HASH\_JOIN\_ENABLED**

Enables or disables the hash join feature; should always be set to TRUE for data warehousing applications.

**SORT\_DIRECT\_WRITES**

Gives lower sort costs and more sort merge joins.

The following parameters rarely need to be changed:

#### **HASH\_MULTIBLOCK\_IO\_COUNT**

Larger value causes hash join costs to be cheaper, giving more hash joins.

#### **SORT\_WRITE\_BUFFER\_SIZE**

Large value causes sort costs to be cheaper, giving more sort merge joins.

#### **OPTIMIZER\_SEARCH\_LIMIT**

The maximum number of tables in the FROM clause for which all possible join permutations will be considered.

#### **BITMAP\_MERGE\_AREA\_SIZE**

The size of the area used to merge the different bit-maps that match a range predicate. Larger size will favor use of bitmap indexes for range predicates.

**Note:** The following sort parameters can be modified using ALTER SESSION ...

SET or ALTER SYSTEM ... SET DEFERRED:

**SORT\_AREA\_SIZE**

**SORT\_AREA\_RETAINED\_SIZE**

**SORT\_DIRECT\_WRITES**

**SORT\_WRITE\_BUFFERS**

**SORT\_WRITE\_BUFFER\_SIZE**

**SORT\_READ\_FAC**

## **E. Gathering Statistics Concurrent Programs**

### **Gather Schema Statistics:**

This concurrent program gathers the schema level statistics . The parameters are:

- Schemaname - the specific schema name . If the schema name is the keyword 'ALL' , then it gathers the statistics on all the APPS related schema.
- Estimate\_percent - The percentage of the data block it should look to gather the statistics . The default is 10 .

- **Parallel\_degree** - The degree of parallelization . The internal default value if nothing is specified is - the minimum of `cpu_num` and `parallel_max_servers` parameter of the database.
- **Internal\_flag** - This is a flag which tells if a backup of the existing statistics is to be taken. The default is `NOBACKUP` and valid values are `BACKUP` and `NOBACKUP`. The backup is stored in `APPLSYS.FND_STATTAB` table. It is always a good idea to have the value as `NOBACKUP` to make the stats gathering process to run faster.
- **Restart\_concurrent\_id** - This parameter was introduced in 11.5.2 to achieve restartability . Initial run should start with a null value. In the event that a user wants to restart a process which dies prematurely, then the previous run's `concurrent_job_id` can be provided here to restart from the failure point .

### Gather Table Statistics:

This concurrent program gathers the table level statistics . The parameters are:

- **Ownname** - the table owner
- **Tabname** - the table name
- **Percent** - The percentage of the data block it should look to gather the statistics . The default is 10 .
- **Degree** - the degree of parallelization . The internal default value if nothing is specified is - the minimum of `cpu_num` and `parallel_max_servers` parameter of the database.
- **Partname** - partition name ( if any)
- **Backup\_flag** - This is a flag which tells if a backup of the existing statistics is to be taken. The default is `NOBACKUP` and valid values are `BACKUP` and `NOBACKUP` . The backup is stored in `APPLSYS.FND_STATTAB` table. It is always a good idea to have the value as `NOBACKUP` to make the stats gathering process to run faster
- **Granularity** - This determines the granularity of the statistics whether it should be a `GLOBAL` or `PARTITION` level statistics. The default value is `DEFAULT` , which means both `PARTITION` as well as `GLOBAL` statistics will be generated . The valid values are `DEFAULT` and `PARTITION`.

**Gather Column Statistics :**

This concurrent program gathers the histogram data for the columns . The parameters are:

- Table owner - the owner of the table
- Table name - name of the table
- Column name - name of the column
- Estimate percent - The percentage of the data block it should look to gather the statistics . The default is 10 .
- Parallel degree - the degree of parallelization . The internal default value if nothing is specified is - the minimum of `cpu_num` and `parallel_max_servers` parameter of the database.
- Bucket size - Nof. of buckets to be created for the Histogram. The default is 254 .
- Backup flag - This is a flag which tells if a backup of the existing statistics is to be taken. The default is NOBACKUP and valid values are BACKUP and NOBACKUP. The backup is stored in APPLSYS.FND\_STATTAB table. It is always a good idea to have the value as NOBACKUP to make the stats gathering process to run faster.

**Gather All Column Statistics:**

This concurrent program gathers the histogram data for all the seeded columns for a given schema. The parameters are:

- Schemaname - The name of the schema. If the keyword 'ALL' is specified then all the Apps specific schemas will be considered .
- Estimate percent - The percentage of the data block it should look to gather the statistics . The default is 10 .
- Parallel degree - the degree of parallelization . The internal default value if nothing is specified is - the minimum of `cpu_num` and `parallel_max_servers` parameter of the database.

**Analyze All Index Column Statistics:**

This concurrent program gathers the histogram data for all the indexed columns for the given schema(s). The parameters are:

- Schemaname - The name of the schema. If the keyword 'ALL' is specified then all the Apps specific schemas will be considered .



- Estimate percent - The percentage of the data block it should look to gather the statistics . The default is 10 .
- Parallel degree - the degree of parallelization . The internal default value if nothing is specified is - the minimum of cpu\_num and parallel\_max\_servers parameter of the database.

### Backup Table statistics :

This is a rarely used concurrent program which back's up the existing statistics into a backup table which can then be imported to a database of choice in order to get back the same set of statistics. The statistics are stored in a table called FND\_STATTAB and the definition of the table is internal to the Application. The parameters are:

- Schemaname - the table owner
- Tabname - table name
- Statid - a user defined string to identify the statistics data
- Partname - partition name if backing up only a partition specific data

### Restore Table statistics :

This is a rarely used concurrent program which restores the statistics from a backup table which was exported from another database in order to get back the same set of statistics. The statistics are stored in a table called FND\_STATTAB and the definition of the table is internal to the Application. The parameters are:

- Schemaname - the table owner
- Tabname - table name
- Statid - a user defined string to identify the statistics data
- Partname - partition name if backing up only a partition specific data

## F. Mandatory CBO init.ora Parameters

```
#####
# Oracle Applications 11i - init.ora
#
# This file contains a listing of MANDATORY CBO init.ora parameters for
```

```
# 8.1.6.
#####
#
# Optimizer
#
# 11i and above use the CBO. Most, if not all of the parameters
# detailed below are dynamic, and can be set at the session level.
#
# For on-line users, there are profile option to change the parameter # values.
# For batch users, the concurrent request form allows the user to specify
# an optimizer_mode. Other parameters are set via profile options.
#
#####

# optimizer_features_enable
#
# This will probably be required to be set to the current release,
# as Oracle Applications will rely on optimizer fixes and new features.

optimizer_features_enable = 8.1.6

# optimizer_mode
#
# Prior to 11i, optimizer_mode was always set to rule. For 11i,
# choose is mandatory. Although Applications modules will set the
# optimizer mode to either first_rows or all_rows, depending on whether
# online or batch, an Applications database MUST BE STARTED with the
# optimizer mode set to CHOOSE. Many of the system dictionary views,in
```

```
# particular export, still require the RBO.
#
# In general, the profile options will ensure that on-line users use
# first_rows, batch jobs use all_rows.
#
# IMPORTANT: The CBO requires accurate table and index statistics, #
and FND_STATS should be run regularly. See the FND
# documentation for further details.
```

```
optimizer_mode = choose
```

```
# optimizer_undo_changes
#
# This parameter is NOT dynamic and for RBO compatibility must remain
# as TRUE. For 11i, it is recommended that it is set to FALSE although
# if custom code continues to use the RBO, and experiences performance
# problems, setting to true should not affect CBO queries.
#
# This will be removed in a future release.
```

```
_optimizer_undo_changes = false
```

```
# _optimizer_mode_force
#
# Must be set to true. Forces recursive SQL ( packaged SQL ) to use the
# optimizer_mode from the current environment.
```

```
_optimizer_mode_force      = true

# db_file_multiblock_read_count
#
# Many APPS customers have multiblock read count set at 16 or 32,
# depending on block size. For 11i, the recommended value is now 8,
# as this provides the best value for the CBO.
#
# This parameter can be set at the session level, so specific batch jobs,
# index rebuilds, and analyze can take full advantage of the maximum
# available multiblock I/O.

db_file_multiblock_read_count = 8

# optimizer_max_permutations
#
# The default ( 80000 ) can cause excessive parse times in some
# circumstances. If necessary, and recommended to do so by Oracle Support
# Services, this value can be reduced to just under 80000 ( 79000 ).
# The parameter must be set to 79,000 or less in order to allow the
# optimizer to consider more than starting table. The default of 80,000
# limits the number of starting tables that the optimizer considers.
optimizer_max_permutations = 79000

# _complex_view_merging
#
# This parameter enables the complex view merging feature which allows
# certain types of complex views to be merged such as the Apps KfV views.
```

---

# This parameter is disabled by default, so it must be explicitly set

`_complex_view_merging = TRUE`

# `_push_join_predicate`

#

# This parameter enables the push join predicate feature which allows

# the optimizer to push join predicates inside non-mergable views.

# This helps eliminate full table scans against the adjoining table of a

# non-mergable view. Pushing the join predicate allows the optimizer to

# promote an index on the table inside the view and utilize a nested loop

# join to the outer referencing table.

#

# Push join predicate is disabled by default, so it must be explicitly

# enabled.

`_push_join_predicate = TRUE`

# `_sort_elimination_cost_ratio`

#

# This parameter fixes the `FIRST_ROWS` bug 780376 which optimizes for the

# order by case as opposed to the selective index filters in the `WHERE`

# clause. Setting it to five forces the optimizer to only eliminate the

# sort when it is 1/5th the cost of the index probe (or conversely the

# index probe is 5 times as costly as the sort).

`_sort_elimination_cost_ratio = 5`

```
#  _use_column_stats_for_function
#
#  This parameter allows the optimizer to utilize dictionary statistics
#  for columns that are involved in no-op expressions such as [col + 0]
#  and [col || "]. If this parameter is disabled (FALSE), the optimizer
#  will employ internal default statistics for such complex expressions
#  which can result in higher parse times and more expensive execution
#  plans. This is the fix for bug 829114.

_use_column_stats_for_function = TRUE

#  _like_with_bind_as_equality
#
#  This parameter forces the optimizer to treat expressions of the form
#  [indexed-column like :b1] similar to [index-column = :b1].
#  Oracle Apps has many queries which use the LIKE operator on indexed
#  columns with binds. Since binds are involved, the CBO assigns
#  internal default selectivity estimates for the LIKE operator (5%),
#  and hence does not consider the index selective.
#  Bug 971158 has an Apps example which resulted in the introduction of
#  this parameter.

_like_with_bind_as_equality = TRUE

#  _or_expand_nvl_predicate
#
#  This parameter allows the optimizer to probe on an index for a column
#  involved in an nvl() function as an r-value.
```

```
#
#   If enabled, the optimizer transforms expressions of the form
#       [p.project_id = nvl(:b1,p.project_id)]
#   into an OR expanded UNION where one-side of the UNION contains the
#   predicate
#       ((:b1 is not null) and (p.project_id =:b1))
#   and the second branch of the UNION contains the predicate
#       (:b1 is null).
#   Therefore, if a value for the project_id bind is supplied, the
#   optimizer executes the first branch of the UNION and probes on the
#   project_id index.
#
#   This improves performance for the Apps legacy code which employs the
#   nvl() construct on indexed columns. This parameter was introduced as
#   the fix for bug 958846.
#
#   THIS PARAMETER MUST ONLY BE SET TO TRUE IF RUNNING 8.1.6.1 OR #
#   ABOVE.

#_or_expand_nvl_predicate    = TRUE

#   _push_join_union_view
#
#   This new feature allows the optimizer to push join predicates inside
#   non-mergable views which contain UNION ALL set operators.
#   This improves query execution performance for queries joining to views
#   which contain UNION ALL operators.
```

```
_push_join_union_view      = TRUE
```

```
#  _table_scan_cost_plus_one
```

```
#
```

```
#  This parameter increases the cost of a full table scan by one in order
```

```
#  to eliminate ties between a full table scan on a small lookup table
```

```
#  and the cost of a unique or range index scan on the lookup table.
```

```
#  This parameter was introduced as the fix for 993906.
```

```
_table_scan_cost_plus_one  = TRUE
```

```
#  _fast_full_scan_enabled
```

```
#
```

```
#  This parameter is used to disable fast full scans.
```

```
_fast_full_scan_enabled    = FALSE
```

```
#  _ordered_nested_loop
```

```
#
```

```
#  Reduce the cost of a nested loop join/index probe when the left side
```

```
#  of the join input is being satisfied via an index or sort row source.
```

```
_ordered_nested_loop       = TRUE
```

```
#  optimizer_percent_parallel
```

```
#
```

```
#  The amount of parallelism to include in the CBO cost function.
```

```
#  The default is zero, and should not normally be changed. It is
```



# necessary to ensure that parallel query is not included in costing.

optimizer\_percent\_parallel=0

# query\_rewrite\_enabled

#

# Required for materialized views and function based indexes, which are

# used in some 11i products. The recommended value is true.

query\_rewrite\_enabled=true



---

---

# Order Management Processing Constraints

## Processing Constraints

The following tables within this appendix display Processing Constraints currently available with the Oracle Order Management application.

### Appendix Tables / Processing Constraints Window field mapping

For all tables within this appendix, the following mapping exists between table columns and fields within the Order Management Processing Constraint window:

- Entity Column - Entity field
- Operation Column - Operation field
- Attribute Column - Attribute field
- Seeded Flag Column- Constraint Seeded check box
- Group Number Column- Group Number field
- Validation Entity Column - Validation Entity field
- Record Set Column - Record Set field
- Validation Template Column - Validation Template field
- Seeded Condition exists for constraint Column - Constraint Condition Seeded check box

### The following is true for all tables within this appendix:

- If a row has the Seeded Flag column with a value of Yes, and the Seeded Condition Exists for Constraint column has a value of Yes, you cannot update the constraint or constraint condition.
- If a row has the Constraint Seeded Flag column with a value of Yes, and the Seeded Condition exists for constraint Column has a value of No, you cannot update the constraint but you can update the constraint condition.

---

---

**Note:** It is possible that a constraint that is 'seeded' has conditions that are 'not seeded'.

---

---

### The following is true for all rows within all tables of this appendix:

- If the value in column Entity has an asterisk, then System Changes (field System Changes within the Processing Constraints window) for the operation are set to

Always, and the User Changes (field User Changes within the Processing Constraints window) for the operation are set to Never After Insert.

- If the value in column Seeded Condition exists for Constraint includes an asterisk, then the condition will evaluate to False for the constraint to be applicable (the Not check box within the Processing Constraints window is selected for the condition).
- The User Action (field User Action within the Processing Constraints window) associated with each constraint operand is Not Allowed, unless specifically noted in the Operation column.
- The Scope (field Scope within the Processing Constraints window) for the Validation Entity condition to be evaluated is Any.

### Constraints for Order Line

| Entity     | Operation                          | Attribute | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template | Seeded Condition exists for constraint |
|------------|------------------------------------|-----------|-------------|--------------|-------------------|------------|---------------------|--|
| Order Line | CANCEL-user action requires reason | NULL      | No          | 1            | Order Line        | Line       | Booked              | No                                     |
| Order Line | CANCEL                             | NULL      | Yes         | 1            | Order Line        | Line       | Cancel Line         | Yes                                    |
| Order Line | CANCEL                             | NULL      | Yes         | 2            | Order Line        | Line       | Closed              | Yes                                    |
| Order Line | CANCEL                             | NULL      | Yes         | 3            | Order Line        | Line       | RMA Received        | Yes                                    |
| Order Line | CANCEL                             | NULL      | Yes         | 4            | Order Line        | Line       | Ship Confirmed      | Yes                                    |
| Order Line | CANCEL                             | NULL      | Yes         | 5            | Order Line        | Line       | ATO                 | Yes                                    |
| Order Line | CANCEL                             | NULL      | Yes         | 5            | Order Line        | Line       | Ship complete       | Yes                                    |
| Order Line | CANCEL                             | NULL      | Yes         | 5            | Order Line        | Line       | Standard item       | Yes                                    |
| Order Line | CANCEL                             | NULL      | Yes         | 6            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |

| Entity     | Operation | Attribute | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template           | Seeded Condition exists for constraint |
|------------|-----------|-----------|-------------|--------------|-------------------|------------|-------------------------------|--|
| Order Line | CANCEL    | NULL      | Yes         | 7            | Order Line        | Line       | Update Config Line            | Yes                                    |
| Order Line | CANCEL    | NULL      | Yes         | 8            | Order Line        | Line       | Operations on Included items  | Yes                                    |
| Order Line | CANCEL    | NULL      | Yes         | 9            | Order Line        | Line       | Pick Released                 | No                                     |
| Order Line | CREATE    | NULL      | Yes         | 1            | Order Header      | Order      | Closed                        | Yes                                    |
| Order Line | CREATE    | NULL      | Yes         | 2            | Order Header      | Order      | Header Invoice Complete       | Yes                                    |
| Order Line | DELETE    | NULL      | No          | 1            | Order line        | Line       | Booked                        | No                                     |
| Order Line | DELETE    | NULL      | Yes         | 1            | Order Line        | Line       | Closed                        | Yes                                    |
| Order Line | DELETE    | NULL      | No          | 1            | Order Line        | Line       | RLM Line                      | No *                                   |
| Order Line | DELETE    | NULL      | Yes         | 2            | Order Line        | Line       | Ship Confirmed                | Yes                                    |
| Order Line | DELETE    | NULL      | Yes         | 3            | Order Line        | Line       | Invoice Interfaced            | Yes                                    |
| Order Line | DELETE    | NULL      | Yes         | 4            | Order Line        | Line       | ATO                           | Yes                                    |
| Order Line | DELETE    | NULL      | Yes         | 4            | Order Line        | Line       | Standard item                 | Yes                                    |
| Order Line | DELETE    | NULL      | Yes         | 4            | Order Line        | Line       | Ship notified                 | Yes                                    |
| Order Line | DELETE    | NULL      | Yes         | 5            | Order Line        | Line       | Top ATO model                 | Yes                                    |
| Order Line | DELETE    | NULL      | Yes         | 5            | Order Line        | Line       | Configuration Created         | Yes                                    |
| Order Line | DELETE    | NULL      | Yes         | 6            | Order Line        | Line       | Configuration created for PTO | Yes                                    |
| Order Line | DELETE    | NULL      | Yes         | 7            | Order Line        | Line       | Is config Line                | Yes                                    |

| Entity     | Operation | Attribute       | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template                  | Seeded Condition exists for constraint |
|------------|-----------|-----------------|-------------|--------------|-------------------|------------|--------------------------------------|--|
| Order Line | DELETE    | NULL            | Yes         | 8            | Order Line        | Line       | Purchase Release Interfaced          | Yes                                    |
| Order Line | DELETE    | NULL            | Yes         | 9            | Order Line        | Line       | Operations on Included Items         | Yes                                    |
| Order Line | DELETE    | NULL            | Yes         | 10           | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | SPLIT     | NULL            | Yes         | 1            | Order Line        | Line       | Configuration Created                | Yes                                    |
| Order Line | SPLIT     | NULL            | Yes         | 1            | Order Line        | Line       | Purchase Release Interfaced          | Yes                                    |
| Order Line | SPLIT     | NULL            | Yes         | 2            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | SPLIT     | NULL            | Yes         | 3            | Order Line        | Line       | RMA Received                         | Yes                                    |
| Order Line | SPLIT     | NULL            | Yes         | 4            | Order Line        | Line       | Closed                               | Yes                                    |
| Order Line | SPLIT     | NULL            | Yes         | 5            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | SPLIT     | NULL            | Yes         | 6            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | SPLIT     | NULL            | Yes         | 7            | Order Line        | Line       | Awaiting Export Compliance Screening | Yes                                    |
| Order Line | SPLIT     | NULL            | Yes         | 8            | Order Line        | Line       | ATO Item Buy                         | Yes                                    |
| Order Line | SPLIT     | NULL            | Yes         | 8            | Order Line        | Line       | Ship notified                        | Yes                                    |
| Order Line | UPDATE    | NULL            | Yes         | 1            | Order Line        | Line       | Closed                               | Yes                                    |
| Order Line | UPDATE    | NULL            | Yes         | 1            | Order Line        | Line       | Closed                               | Yes                                    |
| Order Line | UPDATE    | Accounting Rule | Yes         | 1            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |

| Entity     | Operation | Attribute               | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template                  | Seeded Condition exists for constraint |
|------------|-----------|-------------------------|-------------|--------------|-------------------|------------|--------------------------------------|--|
| Order Line | UPDATE    | Agreement               | Yes         | 1            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | UPDATE    | Arrival Set             | Yes         | 1            | Order Line        | Line       | External Line                        | Yes                                    |
| Order Line | UPDATE    | Authorized To Ship      | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Authorized To Ship      | Yes         | 2            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Customer                | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Customer                | Yes         | 2            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | UPDATE    | Customer                | Yes         | 3            | Order Line        | Line       | Inventory Interfaced                 | Yes                                    |
| Order Line | UPDATE    | Customer                | Yes         | 4            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Customer                | Yes         | 5            | Order Line        | Line       | Awaiting Export Compliance Screening | No                                     |
| Order Line | UPDATE    | Customer PO             | Yes         | 1            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | UPDATE    | Customer PO             | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Customer PO             | Yes         | 2            | Order Line        | Line       | Inventory Interfaced                 | Yes                                    |
| Order Line | UPDATE    | Customer PO             | Yes         | 3            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Customer PO Line Number | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Customer PO Line Number | Yes         | 2            | Order Line        | Line       | Inventory Interfaced                 | Yes                                    |



| Entity     | Operation | Attribute               | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template                  | Seeded Condition exists for constraint |
|------------|-----------|-------------------------|-------------|--------------|-------------------|------------|--------------------------------------|--|
| Order Line | UPDATE    | Customer PO Line Number | Yes         | 3            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | UPDATE    | Customer PO Line Number | Yes         | 4            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Deliver To Contact      | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Deliver To Contact      | Yes         | 2            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Deliver To Org          | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Deliver To Org          | Yes         | 2            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Deliver To Org          | Yes         | 3            | Order Line        | Line       | Awaiting Export Compliance Screening | No                                     |
| Order Line | UPDATE    | Demand Class            | Yes         | 1            | Order Line        | Line       | Configuration Created                | Yes                                    |
| Order Line | UPDATE    | Demand Class            | Yes         | 2            | Order Line        | Line       | External Line                        | Yes                                    |
| Order Line | UPDATE    | End Item Unit Number    | Yes         | 1            | Order Line        | Line       | Booked                               | Yes                                    |
| Order Line | UPDATE    | FOB Point               | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | FOB Point               | Yes         | 2            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | UPDATE    | FOB Point               | Yes         | 3            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Freight Carrier         | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |

| Entity     | Operation | Attribute       | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template                  | Seeded Condition exists for constraint |
|------------|-----------|-----------------|-------------|--------------|-------------------|------------|--------------------------------------|--|
| Order Line | UPDATE    | Freight Carrier | Yes         | 2            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | UPDATE    | Freight Carrier | Yes         | 3            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Freight Terms   | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Freight Terms   | Yes         | 2            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Inventory Item  | Yes         | 1            | Order Line        | Line       | Included Item                        | Yes                                    |
| Order Line | UPDATE    | Inventory Item  | Yes         | 2            | Order Line        | Line       | Line Part of Configuration           | Yes                                    |
| Order Line | UPDATE    | Inventory Item  | Yes         | 3            | Order Line        | Line       | Service Lines Exists                 | Yes                                    |
| Order Line | UPDATE    | Inventory Item  | Yes         | 4            | Order Line        | Line       | Booked                               | Yes                                    |
| Order Line | UPDATE    | Inventory Item  | Yes         | 5            | Order Line        | Line       | Purchase Release Interfaced          | Yes                                    |
| Order Line | UPDATE    | Invoice To      | Yes         | 1            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | UPDATE    | Invoice To      | Yes         | 1            | Order Line        | Order      | Internal Order                       | Yes                                    |
| Order Line | UPDATE    | Invoice To      | Yes         | 2            | Order Header      | Order      | Awaiting Export Compliance Screening | No                                     |
| Order Line | UPDATE    | Invoicing Rule  | Yes         | 1            | Order Line        | Line       | Invoice Interface                    | Yes                                    |
| Order Line | UPDATE    | Item Type       | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Item Type       | Yes         | 2            | Order Line        | Line       | Inventory Interfaced                 | Yes                                    |

| Entity     | Operation | Attribute          | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template  | Seeded Condition exists for constraint |
|------------|-----------|--------------------|-------------|--------------|-------------------|------------|----------------------|--|
| Order Line | UPDATE    | Item Type          | Yes         | 3            | Order Line        | Line       | Pick Released        | No                                     |
| Order Line | UPDATE    | Line Type          | Yes         | 1            | Order Line        | Line       | Booked               | Yes                                    |
| Order Line | UPDATE    | Order Quantity Uom | Yes         | 1            | Order Line        | Line       | Ship Confirmed       | Yes                                    |
| Order Line | UPDATE    | Order Quantity Uom | Yes         | 2            | Order Line        | Line       | Training Line        | Yes                                    |
| Order Line | UPDATE    | Order Quantity Uom | Yes         | 3            | Order Line        | Line       | Inventory Interfaced | Yes                                    |
| Order Line | UPDATE    | Order Quantity Uom | Yes         | 4            | Order Line        | Line       | Pick Released        | No                                     |
| Order Line | UPDATE    | Ordered Quantity   | Yes         | 1            | Order Line        | Line       | Invoice Interfaced   | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity   | Yes         | 1            | Order Line        | Line       | Ship Confirmed       | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity   | Yes         | 2            | Order Line        | Line       | Cancel Line          | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity   | Yes         | 3            | Order Line        | Line       | Closed               | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity   | Yes         | 3            | Order Line        | Line       | RMA Received         | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity   | Yes         | 3            | Order Line        | Line       | ATO                  | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity   | Yes         | 4            | Order Line        | Line       | Ship complete        | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity   | Yes         | 5            | Order Line        | Line       | Standard Item        | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity   | Yes         | 6            | Order Header      | Order      | Internal Order       | Yes                                    |

| Entity     | Operation | Attribute             | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template         | Seeded Condition exists for constraint |
|------------|-----------|-----------------------|-------------|--------------|-------------------|------------|-----------------------------|--|
| Order Line | UPDATE    | Ordered Quantity      | Yes         | 7            | Order Line        | Line       | Update Config Line          | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity      | Yes         | 8            | Order Line        | Line       | Inventory Interfaced        | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity      | Yes         | 9            | Order Line        | Line       | Operations on Included item | Yes                                    |
| Order Line | UPDATE    | Ordered Quantity      | Yes         | 10           | Order Line        | Line       | Pick Released               | No                                     |
| Order Line | UPDATE    | Packing Instructions  | Yes         | 1            | Order Line        | Line       | Ship Confirmed              | Yes                                    |
| Order Line | UPDATE    | Packing Instructions  | Yes         | 2            | Order Line        | Line       | Pick Released               | No                                     |
| Order Line | UPDATE    | Payment Term          | Yes         | 1            | Order Line        | Line       | Invoice Interfaced          | Yes                                    |
| Order Line | UPDATE    | Project               | Yes         | 1            | Order Line        | Line       | Booked                      | Yes                                    |
| Order Line | UPDATE    | Request Date          | Yes         | 1            | Order Line        | Line       | Ship Confirmed              | Yes                                    |
| Order Line | UPDATE    | Request Date          | Yes         | 1            | Order Header      | Order      | Internal Order              | Yes                                    |
| Order Line | UPDATE    | Request Date          | Yes         | 2            | Order Line        | Line       | Update Config Line          | Yes                                    |
| Order Line | UPDATE    | Request Date          | Yes         | 3            | Order Line        | Line       | Pick Released               | No                                     |
| Order Line | UPDATE    | Schedule Arrival Date | Yes         | 1            | Order Line        | Line       | Ship Confirmed              | Yes                                    |
| Order Line | UPDATE    | Schedule Arrival Date | Yes         | 2            | Order Line        | Line       | Update Config Line          | Yes                                    |

| Entity     | Operation | Attribute             | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template                  | Seeded Condition exists for constraint |
|------------|-----------|-----------------------|-------------|--------------|-------------------|------------|--------------------------------------|--|
| Order Line | UPDATE    | Schedule Arrival Date | Yes         | 3            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Schedule Ship Date    | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Schedule Ship Date    | Yes         | 2            | Order Line        | Line       | ATO                                  | Yes                                    |
| Order Line | UPDATE    | Schedule Ship Date    | Yes         | 2            | Order Line        | Line       | Standard item                        | Yes                                    |
| Order Line | UPDATE    | Schedule Ship Date    | Yes         | 2            | Order Line        | Line       | Ship complete                        | Yes                                    |
| Order Line | UPDATE    | Schedule Ship Date    | Yes         | 3            | Order Line        | Line       | Update Config Line                   | Yes                                    |
| Order Line | UPDATE    | Schedule Ship Date    | Yes         | 4            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Ship Set              | Yes         | 1            | Order Line        | Line       | External Line                        | Yes                                    |
| Order Line | UPDATE    | Ship To               | Yes         | 1            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | UPDATE    | Ship To               | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |
| Order Line | UPDATE    | Ship To               | Yes         | 2            | Order Header      | Order      | Internal Order                       | Yes                                    |
| Order Line | UPDATE    | Ship To               | Yes         | 3            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Ship To               | Yes         | 4            | Order Line        | Line       | Awaiting Export Compliance Screening | No                                     |
| Order Line | UPDATE    | Ship To Contact       | Yes         | 1            | Order Line        | Line       | Invoice Interfaced                   | Yes                                    |
| Order Line | UPDATE    | Ship To Contact       | Yes         | 1            | Order Line        | Line       | Ship Confirmed                       | Yes                                    |

| Entity       | Operation | Attribute             | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template  | Seeded Condition exists for constraint |
|--------------|-----------|-----------------------|-------------|--------------|-------------------|------------|----------------------|--|
| Order Line   | UPDATE    | Ship To Contact       | Yes         | 3            | Order Line        | Line       | Pick Released        | No                                     |
| Order Line   | UPDATE    | Shipment Priority     | Yes         | 1            | Order Line        | Line       | External Line        | Yes                                    |
| Order Line   | UPDATE    | Shipment Priority     | Yes         | 2            | Order Line        | Line       | Ship Confirmed       | Yes                                    |
| Order Line   | UPDATE    | Shipment Priority     | Yes         | 3            | Order Line        | Line       | Pick Released        | No                                     |
| Order Line   | UPDATE    | Shipping Instructions | Yes         | 1            | Order Line        | Line       | Ship Confirmed       | Yes                                    |
| Order Line   | UPDATE    | Shipping Instructions | Yes         | 2            | Order Line        | Line       | Pick Released        | No                                     |
| Order Line   | UPDATE    | Shipping Method       | Yes         | 1            | Order Line        | Line       | External Line        | Yes                                    |
| Order Line   | UPDATE    | Source Type           | Yes         | 1            | Order Header      | Order      | Internal Order       | Yes                                    |
| Order Line   | UPDATE    | Source Type           | Yes         | 2            | Order Line        | Line       | Create Supply        | Yes                                    |
| Order Line   | UPDATE    | Subinventory          | Yes         | 1            | Order Line        | Line       | Pick Released        | Yes                                    |
| Order Line   | UPDATE    | Subinventory          | Yes         | 2            | Order Line        | Line       | Inventory Interfaced | Yes                                    |
| Order Line   | UPDATE    | Task                  | Yes         | 1            | Order Line        | Line       | Booked               | Yes                                    |
| Order Line * | UPDATE    | Tax Code              | Yes         | 1            | Order Line        | Line       | Tax Override         | Yes *                                  |
| Order Line * | UPDATE    | Tax Code              | Yes         | 2            | Order Line        | Line       | Invoice Interfaced   | Yes                                    |
| Order Line * | UPDATE    | Tax Exempt            | Yes         | 1            | Order Line        | Line       | Tax Exemptions       | Yes *                                  |
| Order Line * | UPDATE    | Tax Exempt            | Yes         | 2            | Order Line        | Line       | Invoice Interfaced   | Yes                                    |

| Entity       | Operation | Attribute         | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template   | Seeded Condition exists for constraint |
|--------------|-----------|-------------------|-------------|--------------|-------------------|------------|-----------------------|--|
| Order Line * | UPDATE    | Tax Exempt Number | Yes         | 1            | Order Line        | Line       | Tax Exemptions        | Yes *                                  |
| Order Line * | UPDATE    | Tax Exempt Number | Yes         | 2            | Order Line        | Line       | Invoice Interfaced    | Yes                                    |
| Order Line * | UPDATE    | Tax Exempt Reason | Yes         | 1            | Order Line        | Line       | Tax Exemptions        | Yes *                                  |
| Order Line * | UPDATE    | Tax Exempt Reason | Yes         | 2            | Order Line        | Line       | Invoice Interfaced    | Yes                                    |
| Order Line   | UPDATE    | Unit List Price   | Yes         | 1            | Order Line        | Line       | Invoice Interfaced    | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 1            | Order Line        | Line       | Ship Confirmed        | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 2            | Order Header      | Order      | Internal Order        | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 3            | Order Line        | Line       | ATO                   | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 3            | Order Line        | Line       | Ship notified         | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 3            | Order Line        | Line       | Standard item         | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 4            | Order Line        | Line       | ATO                   | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 4            | Order Line        | Line       | Standard item         | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 4            | Order Line        | Line       | Ship complete         | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 5            | Order Line        | Line       | Configuration Created | Yes                                    |
| Order Line   | UPDATE    | Warehouse         | Yes         | 6            | Order Line        | Line       | Inventory Interfaced  | Yes                                    |

| Entity     | Operation | Attribute | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template                  | Seeded Condition exists for constraint |
|------------|-----------|-----------|-------------|--------------|-------------------|------------|--------------------------------------|--|
| Order Line | UPDATE    | Warehouse | Yes         | 7            | Order Line        | Line       | Pick Released                        | No                                     |
| Order Line | UPDATE    | Warehouse | Yes         | 8            | Order Line        | Line       | Awaiting Export Compliance Screening | No                                     |

### Constraints for Line Price Adjustment

| Entity                | Operation | Attribute           | Seeded Flag | Group Number | Validation Entity     | Record Set            | Validation Template | Seeded Condition exists for constraint |
|-----------------------|-----------|---------------------|-------------|--------------|-----------------------|-----------------------|---------------------|--|
| Line Price Adjustment | CREATE    | NULL                | Yes         | 1            | Order Line            | Line                  | Invoice Interfaced  | Yes                                    |
| Line Price Adjustment | DELETE    | NULL                | Yes         | 1            | Order Line            | Line                  | Invoice Interfaced  | Yes                                    |
| Line Price Adjustment | UPDATE    | NULL                | Yes         | 1            | Line Price Adjustment | Line Price Adjustment | any_line_frozen     | Yes                                    |
| Line Price Adjustment | UPDATE    | Arithmetic Operator | Yes         | 1            | Order Line            | Line                  | Invoice Interfaced  | Yes                                    |
| Line Price Adjustment | UPDATE    | Operand             | Yes         | 1            | Order Line            | Lines                 | Invoice Interfaced  | Yes                                    |

### Constraints for Line Sales Credit

| Entity            | Operation | Attribute | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template | Seeded Condition exists for constraint |
|-------------------|-----------|-----------|-------------|--------------|-------------------|------------|---------------------|--|
| Line Sales Credit | CREATE    | NULL      | Yes         | 1            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |



| Entity            | Operation | Attribute         | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template | Seeded Condition exists for constraint |
|-------------------|-----------|-------------------|-------------|--------------|-------------------|------------|---------------------|--|
| Line Sales Credit | CREATE    | NULL              | Yes         | 2            | Order Line        | Line       | Closed              | Yes                                    |
| Line Sales Credit | DELETE    | NULL              | Yes         | 1            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |
| Line Sales Credit | DELETE    | NULL              | Yes         | 2            | Order Line        | Line       | Closed              | Yes                                    |
| Line Sales Credit | UPDATE    | Percent           | Yes         | 1            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |
| Line Sales Credit | UPDATE    | Percent           | Yes         | 2            | Order Line        | Line       | Closed              | Yes                                    |
| Line Sales Credit | UPDATE    | Sales Credit Type | Yes         | 1            | Order Line        | Lines      | Invoice Interfaced  | Yes                                    |
| Line Sales Credit | UPDATE    | Sales Credit Type | Yes         | 2            | Order Line        | Line       | Closed              | Yes                                    |
| Line Sales Credit | UPDATE    | Salesperson       | Yes         | 1            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |
| Line Sales Credit | UPDATE    | Salesperson       | Yes         | 2            | Order Line        | Line       | Closed              | Yes                                    |

### Constraints for Order Header

| Entity       | Operation | Attribute | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template | Seeded Condition exists for constraint |
|--------------|-----------|-----------|-------------|--------------|-------------------|------------|---------------------|--|
| Order Header | CANCEL    | NULL      | Yes         | 1            | Order Line        | Line       | Closed              | Yes                                    |
| Order Header | CANCEL    | NULL      | Yes         | 2            | Order Line        | Line       | RMA Received        | Yes                                    |
| Order Header | CANCEL    | NULL      | Yes         | 3            | Order Line        | Line       | Ship Confirmed      | Yes                                    |
| Order Header | DELETE    | NULL      | Yes         | 1            | Order Header      | Order      | Is Gapless          | Yes                                    |

| Entity       | Operation | Attribute            | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template | Seeded Condition exists for constraint |
|--------------|-----------|----------------------|-------------|--------------|-------------------|------------|---------------------|--|
| Order Header | DELETE    | NULL                 | Yes         | 2            | Order Header      | Order      | Booked              | Yes                                    |
| Order Header | UPDATE    | NULL                 | Yes         | 1            | Order Header      | Order      | Closed              | Yes                                    |
| Order Header | UPDATE    | Conversion Rate      | Yes         | 1            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |
| Order Header | UPDATE    | Conversion Rate Date | Yes         | 1            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |
| Order Header | UPDATE    | Conversion Type      | Yes         | 1            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |
| Order Header | UPDATE    | Currency             | Yes         | 1            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |
| Order Header | UPDATE    | Customer             | Yes         | 1            | Order Header      | Order      | Internal Order      | Yes                                    |
| Order Header | UPDATE    | Customer             | Yes         | 2            | Order Line        | Line       | Ship Confirmed      | Yes                                    |
| Order Header | UPDATE    | Customer             | Yes         | 3            | Order Line        | Line       | Invoice Interfaced  | Yes                                    |
| Order Header | UPDATE    | Customer             | Yes         | 4            | Order Line        | Line       | RMA REceived        | Yes                                    |
| Order Header | UPDATE    | Invoice To           | Yes         | 1            | Order Header      | Order      | Internal Order      | Yes                                    |
| Order Header | UPDATE    | Order Date Type Code | Yes         | 1            | Order Header      | Order      | Lines Exist         | Yes                                    |
| Order Header | UPDATE    | Order Number         | Yes         | 1            | Order Header      | Order      | Booked              | Yes                                    |
| Order Header | UPDATE    | Order Number         | Yes         | 1            | Order Header      | Order      | Is Manual           | Yes                                    |
| Order Header | UPDATE    | Order Number         | Yes         | 2            | Order Header      | Order      | Is Manual           | Yes                                    |
| Order Header | UPDATE    | Order Number         | Yes         | 2            | Order Header      | Order      | Lines Exist         | Yes                                    |

| Entity         | Operation | Attribute         | Seeded Flag | Group Number | Validation Entity | Record Set | Validation Template     | Seeded Condition exists for constraint |
|----------------|-----------|-------------------|-------------|--------------|-------------------|------------|-------------------------|--|
| Order Header   | UPDATE    | Order Type        | Yes         | 1            | Order Header      | Order      | Is gapless              | Yes                                    |
| Order Header   | UPDATE    | Order Type        | Yes         | 2            | Order Header      | Order      | Booked                  | Yes                                    |
| Order Header   | UPDATE    | Order Type        | Yes         | 3            | Order Header      | Order      | Lines Exist             | Yes                                    |
| Order Header   | UPDATE    | Price List        | Yes         | 1            | Order Header      | Order      | Header Invoice Complete | Yes                                    |
| Order Header   | UPDATE    | Request Date      | Yes         | 1            | Order Header      | Order      | Internal Order          | Yes                                    |
| Order Header   | UPDATE    | Ship To           | Yes         | 1            | Order Header      | Order      | Internal Order          | Yes                                    |
| Order Header * | UPDATE    | Tax Exempt        | Yes         | 1            | Order Header      | Order      | Tax Exemptions          | Yes *                                  |
| Order Header * | UPDATE    | Tax Exempt Number | Yes         | 1            | Order Header      | Order      | Tax Exemptions          | Yes *                                  |
| Order Header * | UPDATE    | Tax Exempt Reason | Yes         | 1            | Order Header      | Order      | Tax Exemptions          | Yes *                                  |
| Order Header   | UPDATE    | Warehouse         | Yes         | 1            | Order Header      | Order      | Internal Order          | Yes                                    |

### Constraints for Order Price Adjustment

| Entity                 | Operation | Attribute | Seeded Flag | Group Number | Validation Entity      | Record Set             | Validation Template         | Seeded Condition exists for constraint |
|------------------------|-----------|-----------|-------------|--------------|------------------------|------------------------|-----------------------------|--|
| Order Price Adjustment | CREATE    | NULL      | Yes         | 1            | Order Price Adjustment | Order Price Adjustment | Any Line Invoice Interfaced | Yes                                    |

| Entity                 | Operation | Attribute           | Seeded Flag | Group Number | Validation Entity      | Record Set             | Validation Template         | Seeded Condition exists for constraint |
|------------------------|-----------|---------------------|-------------|--------------|------------------------|------------------------|-----------------------------|--|
| Order Price Adjustment | DELETE    | NULL                | Yes         | 1            | Order Price Adjustment | Order Price Adjustment | Any Line Invoice Interfaced | Yes                                    |
| Order Price Adjustment | UPDATE    | NULL                | Yes         | 1            | Order Price Adjustment | Order Price Adjustment | any_line_frozen             | Yes                                    |
| Order Price Adjustment | UPDATE    | Arithmetic Operator | Yes         | 1            | Order Price Adjustment | Order Price Adjustment | Any Line Invoice Interfaced | Yes                                    |
| Order Price Adjustment | UPDATE    | Operand             | Yes         | 1            | Order Price Adjustment | Order Price Adjustment | Any Line Invoice Interfaced | Yes                                    |

### Constraints for Order Sales Credit

| Entity             | Operation | Attribute | Seeded Flag | Group Number | Validation Entity  | Record Set         | Validation Template         | Seeded Condition exists for constraint |
|--------------------|-----------|-----------|-------------|--------------|--------------------|--------------------|-----------------------------|--|
| Order Sales Credit | CREATE    | NULL      | Yes         | 1            | Order Sales Credit | Order Sales Credit | Any Line Invoice Interfaced | Yes                                    |
| Order Sales Credit | CREATE    | NULL      | Yes         | 2            | Order Header       | Order              | Closed                      | Yes                                    |
| Order Sales Credit | DELETE    | NULL      | Yes         | 1            | Order Sales Credit | Order Sales Credit | Any Line Invoice Interfaced | Yes                                    |
| Order Sales Credit | DELETE    | NULL      | Yes         | 2            | Order Header       | Order              | Closed                      | Yes                                    |
| Order Sales Credit | UPDATE    | Percent   | Yes         | 1            | Order Sales Credit | Order Sales Credit | Any Line Invoice Interfaced | Yes                                    |

| <b>Entity</b>      | <b>Operation</b> | <b>Attribute</b>  | <b>Seeded Flag</b> | <b>Group Number</b> | <b>Validation Entity</b> | <b>Record Set</b>  | <b>Validation Template</b>  | <b>Seeded Condition exists for constraint</b> |
|--------------------|------------------|-------------------|--------------------|---------------------|--------------------------|--------------------|-----------------------------|---|
| Order Sales Credit | UPDATE           | Percent           | Yes                | 2                   | Order Header             | Order              | Closed                      | Yes   |
| Order Sales Credit | UPDATE           | Sales Credit Type | Yes                | 1                   | Order Sales Credit       | Order Sales Credit | Any Line Invoice Interfaced | Yes   |
| Order Sales Credit | UPDATE           | Sales Credit Type | Yes                | 2                   | Order Header             | Order              | Closed                      | Yes   |
| Order Sales Credit | UPDATE           | Salesperson       | Yes                | 1                   | Order Sales Credit       | Order Sales Credit | Any Line Invoice Interfaced | Yes   |
| Order Sales Credit | UPDATE           | Salesperson       | Yes                | 2                   | Order Header             | Order              | Closed                      | Yes   |

The information provided within this appendix is subject to change without notice.



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# Index

## A

---

Account Generator  
    workflow, 4-4

Accounting Rule  
    order types, 4-88, 4-90

Adding attachments, 28-4

Agreements  
    transaction types, 4-86

Approvals  
    upgraded orders, 4-34

Assigning  
    roles to users, 25-12

Attachments  
    copying, 4-176  
    defining categories, 4-179  
    defining in advance, 4-178  
    defining rules, 4-178  
    order import, 4-176  
    overview, 4-175  
    reports, 4-176  
    security, 4-177  
    using, 28-4  
    viewing, 4-176

## B

---

Booking  
    Included Item Freeze Method, 4-32  
    Tax calculation, 4-51, 4-53

## C

---

Cancellations

    charges, 4-63

Carriers  
    ship method relationships, defining, 25-37

Commercial Invoice Report, 28-12

Container-Item Relationships  
    defining, 25-74  
    finding, 25-76

Copying a role, 25-18

Creating  
    attachments, 28-4

Credit Card, 4-168  
    drop shipment, 4-169  
    iPayment, 4-167

Credit Check Rules, 4-157  
    defining, 4-158

Credit Checking  
    assign credit usage rule set, 4-154  
    assigning credit usage rule sets, 4-154  
    credit check rules, 4-157  
    credit profiles, 4-139, 4-144  
    credit usage rule sets, 4-150  
    deactivating, 4-166  
    define credit usage rule sets, 4-150  
    global credit checking, 4-140  
    multi-currency, 4-140  
    overview, 4-132  
    payment terms, 4-138  
    rules, 4-135  
    tolerance percentage, 4-147  
    transaction types, 4-138

Credit limits  
    customer/customer site, 4-144  
    item category, 4-145  
    operating unit, 4-145

- order, 4-148
- Credit Profiles, 4-144
  - customer, 4-145
  - defining, 4-146
  - item category, 4-145
  - operating unit default, 4-145
- Credit Usage Rule Sets, 4-150
  - assigning, 4-154
  - defining, 4-150
- Currency
  - credit checking, 4-147
  - multi currency credit checking, 4-140
- Customer profiles
  - create, 4-144

## D

---

- Deactivating Credit Checking, 4-166
- Defaulting Rules
  - defining, 4-121
  - overview, 4-113
- Defining
  - attachments, 28-4
  - carrier ship method relationships, 25-37
  - container-item relationships, 25-74
  - delivery grouping parameters, 25-35
  - document categories, 25-48
  - document sequences, 25-46
  - document sets, 25-53
  - freight costs, 25-44
  - general parameters, 25-27
  - pick release parameters, 25-29
  - pick slip grouping rules, 25-60
  - profile options, 25-9
  - release rules, 25-62
  - release sequence rules, 25-66
  - roles and users, 25-12
  - ship-method relationships, 25-37
  - shipping exceptions, 25-71
  - shipping parameters, 25-26
  - shipping transaction parameters, 25-32
  - transportation calendars, 25-68
- Delivery Grouping Parameters, defining, 25-35
- Delivery Lines
  - adding text attachments, 28-4

- Document Categories, defining, 25-48
- Document Sequences, 4-72
- Document sequences
  - defining, 25-46
- Document Sets
  - defining, 25-53

## E

---

- Exposure
  - credit limit tolerance, 4-147
  - uninvoiced orders, 4-163

## F

---

- Finding
  - container-item relationships, 25-76
  - grants, 25-21
- Freight and Special Charges
  - calculation methods, 4-60
  - changing and deleting, 4-63
  - copying charges, 4-69
  - cost types, 4-59
  - credit checking, 4-164
  - defining, 4-57
  - freight terms, 4-58
  - grouping, 4-59
  - invoicing, 4-69
  - qualifier/pricing attributes, 4-61
  - returns, 4-68
  - sub types, 4-66
  - types, 4-58
  - viewing and applying, 4-66
- Freight carrier ship method relationships, *see* Ship Method Relationships
- Freight Costs
  - defining, 25-44

## G

---

- General Parameters, defining, 25-27
- GL
  - Journals Display Inverse Rate, 4-44
- Grants
  - assigning roles to users, 25-18



expiration dates, 25-19  
finding, 25-21  
updating, 25-23

## H

---

### Holds

defining, 4-170  
standard types, 4-173

## I

---

INV Capable to Promise, 4-44

iPayment Processing, 4-167

authorizations, 4-168  
changing, 4-168  
risk, 4-167  
security, 4-168

Item Category

credit limits, 4-145

## L

---

LRS

See Log roll-forward server (LRS), E-1, F-1, G-1,  
I-1, K-1, X-1, Y-1

## M

---

Mailing Label Report, 28-9, 28-11

Modifiers

freight and special charges, 4-57

Multi Currency Credit Checking, 4-140

assign credit usage rule sets, 4-154  
credit profiles, 4-146  
credit usage rule sets, 4-150

## O

---

Operating Unit

credit limits, 4-145  
parameter, 4-48

Order Import

defining sources, 4-93

Order Numbering, 4-72

Orders

defining holds, 4-170

Overview

attachments, 28-4

roles and users, 25-12

## P

---

Parameters

Customer Relationships, 4-47

Item Validation Organization, 4-47

operating unit, 4-48

Payment Terms

credit checking, 4-138

Payment Type, 4-134

Pick Release

parameters, defining, 25-29

Pick Slip Grouping Rules, defining, 25-60

Pricing Freight Charge Types, 4-65

Printers, choosing, 25-56

Processing Constraints, 4-95

action, 4-97

Applicable To Tab, 4-104

attribute, 4-97

attribute field, 4-102

Condition Tab, 4-103

conditions, 4-98

defining, 4-101

entity, 4-96

example, 4-105

group number, 4-98

group number field, 4-103

not (modifier) check box, 4-99, 4-104

operation, 4-97

operation field, 4-102

record set field, 4-104

record sets, 4-99, 4-111

scope, 4-99

scope field, 4-103

special considerations, 4-100

system changes, 4-97

system changes field, 4-103

table listing

Line Price Adjustments, Y-14

Lines Sales Credit, Y-14

Order Header, Y-15

- Order Line, Y-3
- Order Price Adjustments, Y-17
- Order Sales Credit, Y-18
- terminology, 4-96
- usage, 4-107
- user action field, 4-102
- user changes, 4-98
- user changes field, 4-103
- user message field, 4-104
- validation entity, 4-99
- validation entity field, 4-104
- validation template, 4-99
- validation template field, 4-104
- validation templates, 4-108
- window, 4-101
- Profile options
  - Add Customers, 4-23
  - Administer Public Queries, 4-24
  - Apply Automatic Attachments, 4-24, 4-175, 4-176
  - Auto Push Group Date, 4-24
  - AutoSchedule, 4-24
  - Charges for backorders, 4-63
  - Charges for Included Item, 4-63
  - Charging Privilege, 4-26, 4-66, 4-68
  - Context Responsibility for Upgraded Orders, 4-27
  - Credit Card Privileges, 4-27, 4-168
  - Credit Memo Transaction Type, 4-28
  - Credit Salesperson for Freight on Sales, 4-28
  - Cust Item Shows Matches, 4-28
  - Customer Relationships, 4-28
  - Deactivate Pricing at Scheduling, 4-29
  - Debug Level, 4-29
  - Debug Log directory, 4-29
  - Discounting Privilege, 4-30, 4-86
  - Estimated Authorization Validity Period, 4-31
  - GL Journals Display Inverse Rate, 4-44
  - GSA Discount Violation Action, 4-31
  - Included Item Freeze Method, 4-32
  - INV Capable to Promise, 4-44
  - Invoice Numbering Method, 4-32
  - Invoice Source, 4-33
  - Invoice Transaction Type, 4-33
  - Item Flexfield, 4-34

- Item View Method, 4-34
- Log Directory for Generated Packages, 4-34
- Negative Pricing, 4-34
- Non-Delivery Invoice Source, 4-35
- Notification Approver, 4-34
- OM
  - Add Customers, 4-23
- Orders Purge Per Commit, 4-35
- Over Return Tolerance, 4-35
- Over Shipment Invoice Basis, 4-35
- Over Shipment Tolerance, 4-36, 4-183
- Party Totals Currency, 4-36
- Payment Method for Credit Card Transactions, 4-36
- Promotion Limit Violation Action, 4-36
- Reservation Time Fence, 4-38
- Return Item Mismatch Action, 4-38
- Return Unfulfilled Referenced Line Action, 4-39
- Risk Factor Threshold for Electronic Payments, 4-39, 4-167, 4-170
- Schedule Line on Hold, 4-41
- Show Discount Details on Invoice, 4-41
- Show Line Details, 4-41
- Source Code, 4-41
- Under Return Tolerance, 4-42
- Under Shipment Tolerance, 4-42
- Unit Price Precision Type, 4-42
- Use Configurator, 4-41
- Profile Options, defining, 25-9

## Q

---

- QuickCodes
  - defining, 4-55
  - Oracle Pricing and Shipping Execution, 4-61, 4-65

## R

---

- Release rules, defining, 25-62
- Release Sequence Rules, defining, 25-66
- Reports and Documents
  - attachments printed in, 28-4
  - Commercial Invoice Report, 28-12
  - Mailing Label Report, 28-9, 28-11

- Roles and Users, 25-12
  - copying a role, 25-18
  - defining a role, 25-13
  - expiration dates, 25-19
  - granting roles to users, 25-18
  - overview, 25-12
  - updating, 25-23
  - upgrade and new installation considerations, 25-13

## S

---

- Sales Credits Types
  - defining, 4-92
- Setting Up
  - checklist, 25-2
  - defining shipping parameters, 25-26
  - flowchart, 25-2
  - printers for documents, 25-56
  - profile options, 4-15
  - recommended setup, 4-3
  - roles and users, 25-12
  - steps, 25-4
- Setting up
  - attachments, 28-4
- Ship Method Relationships
  - defining, 25-37
- Shipping Exceptions
  - defining, 25-71
- Shipping Freight Charge types, 4-65
- Shipping Parameters, setting up
  - delivery grouping parameters, 25-35
  - general parameters, 25-27
  - pick release parameters, 25-29
  - shipping transaction parameters, 25-32
- Shipping Tolerances
  - defining, 4-185
  - over shipments, 4-183
  - overview, 4-183
  - report, 4-184
  - under shipments, 4-184
- Shipping Transaction Parameters, defining, 25-32

## T

---

- Tax
  - taxation in order management, 4-51
- Tax Code, 4-54
  - processing constraints, 4-51
- Trading Community Architecture
  - terminology, 4-187
  - usage within OM, 4-187
- Transaction Types
  - defining, 4-75, 4-84
  - line flow assignments, 4-83
  - order/line level, 4-76
  - workflow assignments, 4-82
- Transportation Calendars, defining, 25-68
- Trip
  - attachments in, 28-4

## U

---

- Units of Measure (UOM), defining, 25-27

## V

---

- Viewing
  - attachments, 28-4
- Viewing Attachments, 4-176
- Viewing Notifications, 4-71

## W

---

- Windows
  - Assign Credit Usage Rules, 4-155
  - Attribute Defaulting Rules, 4-125
  - Charges, 4-66
  - Credit Check Rules, 4-158
  - Credit Profiles, 4-146
  - Defaulting Condition Templates, 4-123
  - Defaulting Setup-Entity Attributes, 4-121
  - Define Credit Check Usage Rules, 4-150
  - Document Categories, 4-179, 4-181
  - Document Sequences, 4-73
  - find credit usage rule sets, 4-154
  - Holds, 4-170
  - OM Freight Cost Types, 4-64
  - Oracle Pricing Quickcodes, 4-65

- Order Import Sources, 4-93
- Order Management Quickcodes, 4-55
- Order Management Transaction Types, 4-85
- Parameters, 4-47
- Processing Constraints, 4-101
- Record Sets, 4-111
- Sales Credit Types, 4-92
- Setup Tolerance, 4-185
- Shipping/Pricing Freight Charge Types, 4-65
- Validation Templates, 4-108

Workflows

- viewing notifications, 4-71