

**Oracle® Configure to Order**

Process Guide

Release 12

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Oracle Configure to Order Process Guide, Release 12

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# Contents

## Send Us Your Comments

## Preface

### 1 Overview of Configure-to-Order Implementation

|  |      |
|--|------|
| Overview of Oracle Configure to Order..... | 1-1  |
| Definitions.....                           | 1-2  |
| Process Flows.....                         | 1-4  |
| Feature Highlight.....                     | 1-14 |
| Examples Used in This Manual.....          | 1-18 |

### 2 Setup

|  |      |
|--|------|
| Parameters.....  | 2-1  |
| Profiles.....  | 2-8  |
| Model Items, Bills, and Routing.....                         | 2-15 |
| Preconfiguring Items.....                                    | 2-32 |
| Sourcing Setup for ATO Models.....                           | 2-37 |
| Forecasting and Master Scheduling for ATO Models.....        | 2-47 |
| Order Management Setup.....                                  | 2-54 |
| Shipping Setup.....  | 2-61 |
| Purchase Pricing for Models and Supplier Communication ..... | 2-62 |
| Custom CTO Packages.....                                     | 2-67 |

### 3 Create and Process Configurations

|                                 |      |
|---------------------------------|------|
| Enter Configured Orders.....    | 3-1  |
| Create Configuration Items..... | 3-16 |

|  |      |
|--|------|
| Supplying Unique Configurations.....                       | 3-53 |
| Pick Release and Ship Confirm .....                        | 3-83 |
| Intercompany Invoicing.....                                | 3-83 |
| Activity and Generic Holds in the Order Process.....       | 3-84 |
| <b>4 Supply To Order Workbench</b>                         |      |
| Supply to Order Workbench.....                             | 4-1  |
| <b>5 Order Changes and Returns</b>                         |      |
| Order Changes.....   | 5-1  |
| Processing Constraints .....                               | 5-4  |
| Re-instituting Prior Processing Constraints .....          | 5-5  |
| <b>6 Updating Existing Configurations</b>                  |      |
| Updating Existing Configurations.....                      | 6-1  |
| <b>7 Deactivating Configuration Items and Purging Data</b> |      |
| Deactivate Configuration Items.....                        | 7-1  |
| Order Purge.....   | 7-5  |
| Purge Matching Tables.....                                 | 7-6  |

**Index**

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## Oracle Configure to Order Process Guide, Release 12

### Part No. B31461-03

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- Did you understand the context of the procedures?
- Did you find any errors in the information?
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# Preface

## Intended Audience

Welcome to Release 12 of the *Oracle Configure to Order Process Guide*.

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

- The principles and customary practices of your business area.
- Configure to Order

If you have never used Configure to Order, we suggest you attend one or more of the Oracle 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 Related Information Sources on page viii for more Oracle Applications product information.

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## **Structure**

### **1 Overview of Configure-to-Order Implementation**

#### **2 Setup**

This section includes key parameters, profiles, and setup considerations for Configure to Order functionality.

#### **3 Create and Process Configurations**

#### **4 Supply To Order Workbench**

#### **5 Order Changes and Returns**

#### **6 Updating Existing Configurations**

#### **7 Deactivating Configuration Items and Purging Data**

## **Related Information Sources**

### **Integration Repository**

The Oracle Integration Repository is a compilation of information about the service endpoints exposed by the Oracle E-Business Suite of applications. It provides a complete catalog of Oracle E-Business Suite's business service interfaces. The tool lets users easily discover and deploy the appropriate business service interface for integration with any system, application, or business partner.

The Oracle Integration Repository is shipped as part of the E-Business Suite. As your instance is patched, the repository is automatically updated with content appropriate

for the precise revisions of interfaces in your environment.

## **Oracle Advanced Supply Chain Planning, Oracle Risk Optimization, Oracle Global Order Promising, and Oracle Demand Planning User's Guide**

This guide contains the information you need to understand and implement Oracle Advanced Supply Chain Planning, Oracle Risk Optimization, Oracle Global Order Promising, and Oracle Demand Planning.

## **Oracle Applications User's Guide**

This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI) available with this release of Configure to Order (and any other Oracle Applications products). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes.

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

## **Oracle Applications Demonstration User's Guide**

This guide documents the functional storyline and product flows for Global Computers, a fictional manufacturer of personal computers products and services. As well as including product overviews, the book contains detailed discussions and examples across each of the major product flows. Tables, illustrations, and charts summarize key flows and data elements.

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

This guide describes how to create various bills of materials to maximize efficiency, support customer requirements, 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 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, multiple subelements, and activity-based costing. It also provides comprehensive valuation and variance reporting.

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

This guide describes a variety of tools offered to manage and manipulate demand information for both design and operational phases. 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, manage spare parts, sales orders, copy existing sales orders, schedule orders, release orders, plan departures and deliveries, confirm shipments, create price lists and discounts for orders, and create reports.

## **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 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 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 HRMS User's Guide**

This manual explains how to enter your employees. It also explains how to set up organizations and site locations. Even if you do not install Oracle HRMS, you can set up your employees, site locations, and organization using Oracle HRMS forms.

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

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

## **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 an Oracle Applications form 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.

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# Overview of Configure-to-Order Implementation

This chapter covers the following topics:

- Overview of Oracle Configure to Order
- Definitions
- Process Flows
- Feature Highlight
- Examples Used in This Manual

## Overview of Oracle Configure to Order

Oracle Configure to Order Process Guide contains current information about how Oracle ERP products support configure to order capability. It provides detailed implementation consideration for every step of the process.

A Configure to Order environment is one in which the product or service is assembled or kitted on receipt of the sales order. Oracle Applications supports the Configure to Order environment with a range of features in order entry, demand forecasting, master scheduling, production, shipping, and financial accounting.

Configure to Order:

- Includes Pick-to-Order (PTO) and Assemble-to-Order (ATO) items, models, and hybrids.
- Supports building configurations using other configurations as subassemblies (multilevel configure to order)
- Supports internal sourcing of ATO models at any level of Bill of Material (BOM)
- Supports purchasing of ATO models and items at any level of the BOM

## Definitions

### Assemble-to-Order Model (ATO Configuration)

Assemble-to-Order model consists of:

- Model bill of material with optional items and option selection rules
- Configuration created from mandatory components and selected options

### Assemble-to-Order Item

Assemble-to-Order item consists of:

- Standard bill of material with standard components
- Item manufactured from standard components

The three types of ATO items are:

- AutoCreated Configuration Items: Configuration items created by CTO for a sales order that was placed for a model and options. These items have the following attributes:
  - The ATO flag is selected on the OM tab of the item master
  - A base model defined on the BOM tab of the item master
  - The Autocreated Configuration flag is selected.
- Preconfigured Items: An item defined by the user with a "base model" and a configured bill of material. These items have the following attributes:
  - The ATO flag is selected on the OM tab of the item master
  - A Base Model defined on the BOM tab of the item master
- Standard ATO Items: These are standard items with the ATO flag selected on the OM tab of the item master.

## Configurations

Hybrid models or multilevel ATO models can also have multiple instantiations of a child model. Multiple instantiation is the ability to create and individually configure multiple occurrences of a model or model component, while configuring the model. A configuration model that contains models or model components that can instantiate

multiple times is called a solution model.

While configuring using Oracle Configurator with the setup complete for multiple instantiation, you can access a configuration model instance, as well as an instance of each component model that is contained within the model. You can configure component model instances separately by selecting from the available options. For example, a computer system is represented by a solution model. A computer might contain a number of different servers, printers, and personal computer (PC) workstations. Each PC workstation in the system represents one instance of a configuration model, and each instance of the PC workstation can be configured differently. One instance of the PC workstation can be configured with a 21-inch flat screen monitor, 10 GB of disk space, and 512 KB RAM, whereas another instance of the PC workstation has a 17-inch screen, ergonomic keyboard, 256 KB RAM, and 4 GB of disk space. These two workstations are part of the computer system solution model.

For more information on how to do the necessary setup and use Configurator for multiple instantiated models, please refer to Oracle Configurator Developer User's Guide.

### **Pick-to-Order Model (PTO Configuration)**

Pick-to-Order model consists of:

- Model bill of material with optional items and option selection rules
- Pick slip used to kit included items and selected options

### **Pick-to-Order Item (Kit)**

Kit consists of:

- Standard bill of material with mandatory included items
- Pick slip used to kit included items

### **Hybrid**

Hybrid consists of:

- Pick-to-Order models with optional Assemble-to-Order items
- Pick-to-Order model containing Assemble-to-Order model

### **Multilevel Assemble-to-Order Model (Multilevel ATO Configuration)**

Multilevel Assemble-to-Order model consists of:

- A model bill of material with a nonphantom model as a component.

- Configuration manufactured from mandatory components, selected options, and configured subassemblies.

## **Multilevel Assemble-to-Order Items**

Multilevel ATO item consists of:

- An autocreated or preconfigured or standard ATO item with another autocreated or preconfigured or standard ATO item as a component
- Item manufactured from standard components and configured components

## **Multiorganization Assemble to Order Model (Multiorganization ATO)**

Multiorganization Assemble-to-Order model consists of:

- An ATO model that will be manufactured in and transferred from another organization

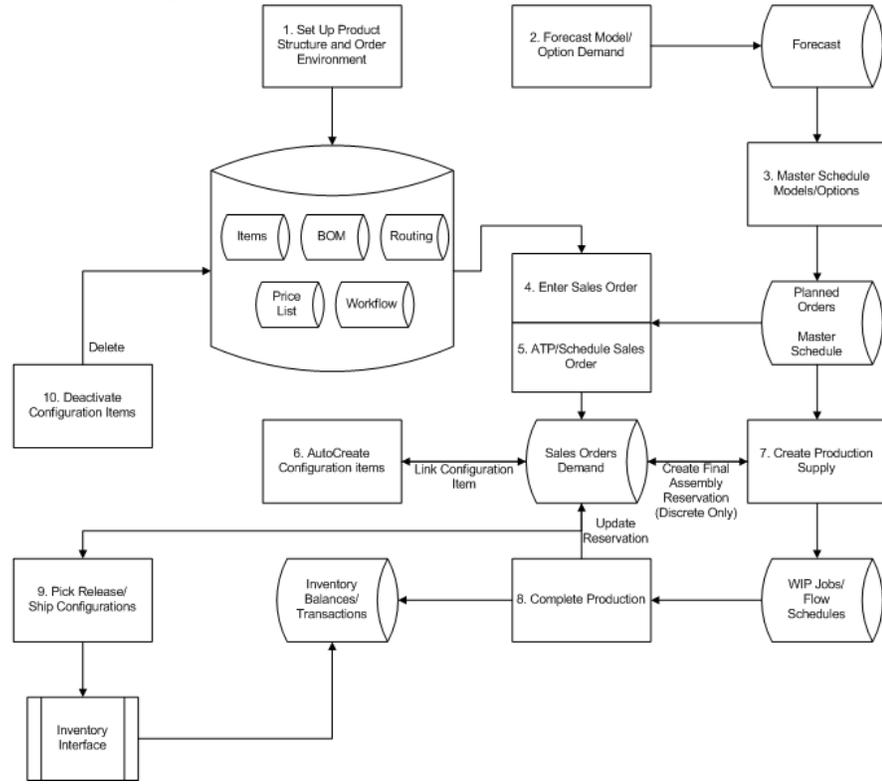
## **Process Flows**

Three process flows are illustrated here:- one for single level, single organization make structures; one for multilevel, multiorganization make structures, and one for a purchased to order configuration.

### **Example 1: Process Flow for Single Level, Single Organization ATO, and PTO**

The following diagram illustrates the flow of a single level, single organization assemble-to-order sales order. Each numbered step is explained in the table following the diagram and will be covered in detail in the following chapters.

**Process Flow for Single Level, Single Organization ATO, and PTO**



**Single Level, Single Organization Process Flow Steps**

| S. No. | ATO | PTO | Name  | Description   |
|--------|-----|-----|---|---|
| 1      | Yes | Yes | Define Model and Option Class Bills of Material and optionally routings | Define model and option class bills and routings (optional) to control order management, master scheduling/MRP, work in process, and costing. |
| 2      | Yes | No  | Forecast Model/Option Demand  | Forecast demand for model, options, or both. Explode forecasts through planning bills to models and/or options.                               |
| 3      | Yes | No  | Master Schedule Models and Options                                      | Master schedule ATO models, options, or both.   |
| 4      | Yes | Yes | Enter Sales Order   | Enter sales orders for models with options.   |

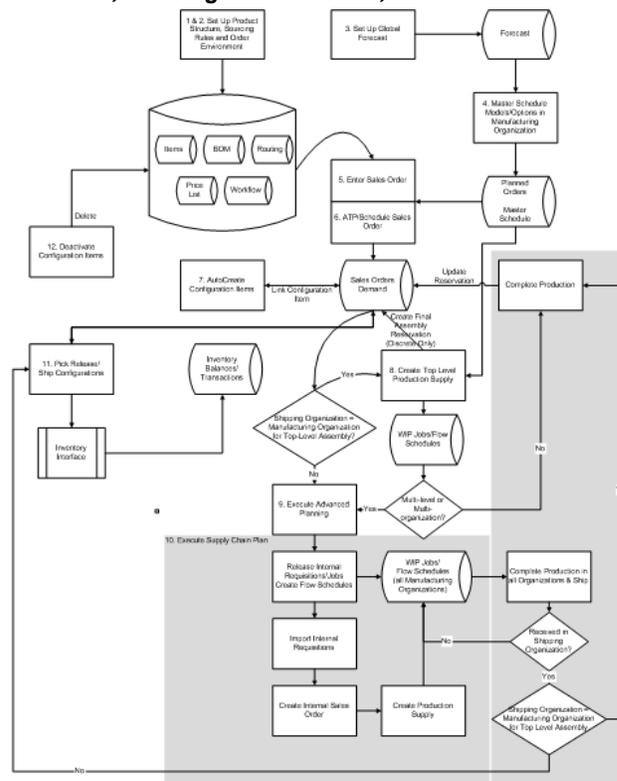
| S. No. | ATO | PTO | Name                                       | Description   |
|--------|-----|-----|--|---|
| 5      | Yes | Yes | Check ATP                                  | Perform group ATP check for all supply-constrained components to find earliest possible ship date for configuration.  |
|        | Yes | Yes | Book and Schedule the Order                | -   |
| 6      | Yes | -   | AutoCreate Configuration Items             | <p>Automatically generate a new item number, bill, and routing for each new sales order and assign new item to sales order.</p> <p>Note: You can also "progress the order" through "create config item" in the workflow, which will create the new item, bill and routing for the configuration required for that sales order.</p>  |
| 7      | Yes | -   | Create Production Supply                   | <p>Discrete: Autocreate Final Assembly Orders automatically opens a discrete job for each new ATO configuration order. These work in process jobs are reserved to the sales orders.</p> <p>Flow: Use the line scheduling workbench to schedule your line based on sales orders. The sales order number is referenced on the flow schedule.</p> <p>Note: You can also "progress the order" through Create Production Supply, which will automatically open a discrete job or create a flow schedule for the active configuration order line.</p> |
| 8      | Yes | -   | Complete Production                        | Complete configuration item to inventory. The work in process reservation or flow schedule reference is automatically converted into an inventory reservation.  |
| 9      | Yes | Yes | Pick Release and Ship Configuration Orders | Pick Release all configuration sales orders.  |
| 10     | Yes |     | Deactivate Configuration Items             | Deactivate autogenerated configuration item numbers whose orders are complete more than x days ago.   |

## Example 2: Process Flow for Multilevel, Multiorganization ATO, and PTO

**Note:** Oracle Advance Planning and Scheduling (APS) must be installed to support multilevel and multiorganization ATO models and ATO items.

The following diagram illustrates the flow of a multilevel, multiorganization ATO sales order. Each numbered step is explained in the table following the diagram, and will be covered in detail in the following chapters.

**Process Flow for Multilevel, Multiorganization ATO, and PTO**



**Multilevel, Multiorganization Process Flow Steps**

| <b>S. No.</b> | <b>ATO</b> | <b>PTO</b> | <b>Name</b>   | <b>Description</b>  |
|---------------|------------|------------|---|---|
| 1             | Yes        | Yes        | Define Model and Option Class Bills of Material and routings (optional) | Define multilevel model and option class bills and routings (optional) to control order management, master scheduling/MRP, work in process, and costing.  |
| 2             | Yes        | Yes        | Set up sourcing rules, shipping networks, assignments sets, APS plans   | Define sourcing rule, shipping networks, assignment sets, ATP rules, and APS plans to control multiorganizational sourcing.   |
| 3             | Yes        | No         | Set up global forecast  | Set up global forecast for the model, options, or both using demand planning.   |
| 4             | Yes        | No         | Master Schedule Models and Options                                      | Master schedule ATO models, options, or both in the manufacturing organizations using the forecast set.   |
| 5             | Yes        | Yes        | Enter Sales Order   | Enter sales orders for models with options.   |
| 6             | Yes        | Yes        | Check ATP   | Optionally perform group ATP, based on planning output, to check for all supply-constrained components to find earliest possible ship date for configuration. If you are using ASCP, you can also perform a global availability check to determine the shipping warehouse on the order. |
|               | Yes        | Yes        | Book and Schedule the Order   | -   |

| S. No. | ATO | PTO | Name                              | Description  |
|--------|-----|-----|-----------------------------------|--|
| 7      | Yes | -   | AutoCreate<br>Configuration Items | Automatically generate a new item number, bill, and routing for all nonphantom models in the configuration structure in all potential sourcing organizations. The final configured assembly item is linked to the sales order. Advanced Planning does not recognize demand for an ATO model order, until this step. You can create a configuration for a scheduled order, before it is booked. See: AutoCreate Configuration Items, page 3-16. |

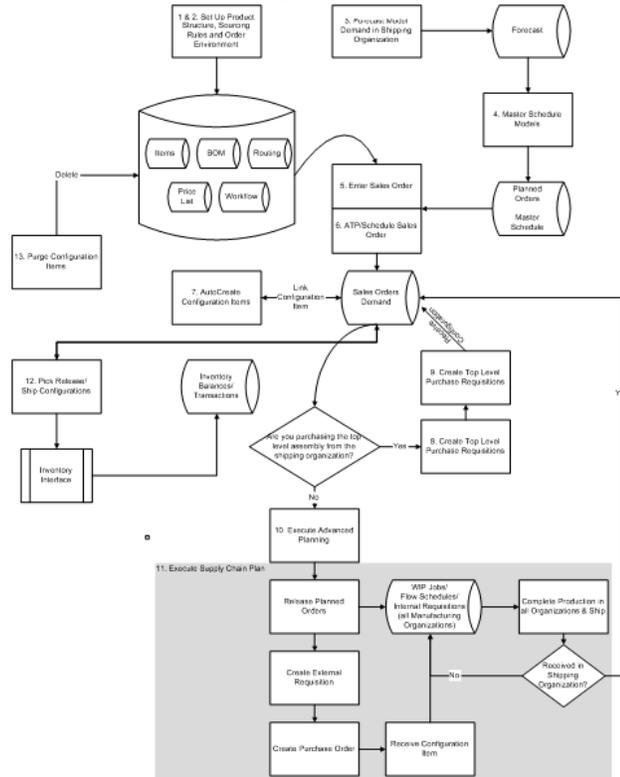
| S. No. | ATO | PTO | Name  | Description   |
|--------|-----|-----|---|---|
| 8      | Yes | -   | <p>Create Top Level Production Supply</p> <p>In a multilevel organization, you can create production supply in the shipping organization only if the final assembly is manufactured entirely in that organization.</p> <p>If the shipping organization does not manufacture the final assembly, and sources it entirely from another internal organization, you can create an internal requisition to transfer it from the source organization.</p> <p>If the shipping organization has more than one source (any combination of Make, Buy or Transfer), use Advanced Planning to recommend supply.</p> | <p>If the final assembly is being shipped from the manufacturing organization itself :</p> <p>Discrete: Autocreate Final Assembly Orders Automatically open a discrete job for the top level item on each new ATO configuration order. These work in process jobs are reserved to the sales order. This process could also create supply for lower level configurations, if they are being built or bought from the same organization.</p> <p>Flow: Use the Line Scheduling workbench to schedule your line based on sales orders. The sales order number is referenced on the flow schedule.</p> <p>Internal Transfer: If the final assembly is entirely transferred from another manufacturing organization, the Autocreate Requisitions process automatically creates an internal requisition for this assembly and reserves it to the sales order.</p> <p>Note: You can also "progress the order" through Create Production Supply, which automatically opens a discrete job, creates a flow schedule, or creates an internal requisition for the final assembly item of the active configuration order line. For items that are manufactured in the shipping organization, this process can optionally create supply for lower level configurations if they are built or transferred in the same organization.</p> |
| 9      | Yes | -   | Plan lower level configuration supply   | <p>In a multiorganization environment:</p> <p>Use advanced planning to generate and implement planned orders across your supply chain.</p>  |

| S. No. | ATO | PTO | Name                                       | Description   |
|--------|-----|-----|--|---|
| 10     | Yes | -   | Execute Supply Chain Plan                  | <p>Complete required manufacturing in the respective source organizations, and ship to the shipping organization.</p> <p>If the shipping organization is the same as the manufacturing organization of the top-level configuration item, the work in process reservation or flow schedule reference is automatically converted into an inventory reservation when you complete the top-level configuration item to inventory.</p> <p>If the final assembly is transferred from another organization, the reservation to an internal requisition is automatically transferred to inventory, upon receipt of the assembly in the shipping organization.</p> |
| 11     | Yes | Yes | Pick Release and Ship Configuration Orders | Pick release all configuration sales orders.  |
| 12     | Yes | -   | Deactivate Configuration Items             | Deactivate autogenerated configuration item numbers in an organization whose orders are complete more than $x$ days ago. A configuration item will be deactivated if there is no sales order demand, or open supply or transactions in that organization,   |

### Example 3: Process Flow for Purchase to Order Configurations

The following diagram illustrates the flow of a purchase to order sales order. Each numbered step is explained in the table following the diagram and will be covered in detail in the following chapters. Note that this assumes the top-level configuration is being purchased. If the top-level is made and a lower level configuration is bought, the flow would be similar to the multilevel multiorganization example, with the lower level production supply being replaced by a purchased supply.

## Process Flow for Purchase to Order Configurations



## Procure to Order Process Flow Steps

| S. No. | ATO | Name  | Description   |
|--------|-----|---|---|
| 1      | Yes | Define Model and Option Class Bills of Material and optionally routings | Define single or multilevel model and option class bills and optionally routings to control order management, master scheduling/MRP, work in process, and costing. The entire BOM for a purchased configuration should be created in the validation organizations and receiving organization. Routings for all models and option classes should be created in the receiving organization. |
| 2      | Yes | Set up sourcing rules   | Define a buy type sourcing rule for the models you will procure and assign it the assignment set specified in "MRP: default sourcing assignment set" profile.   |

| <b>S. No.</b> | <b>ATO</b> | <b>Name</b>                            | <b>Description</b>  |
|---------------|------------|--|---|
| 3             | Yes        | Forecast Model Demand                  | Forecast demand for the ATO model. All components and option classes should have their forecast control set to Null if you intend to buy the model configuration.   |
| 4.            | Yes        | Master Schedule the Top model          | Master Schedule your top ATO model.   |
| 5             | Yes        | Enter Sales Order                      | Enter sales orders for models with options.   |
| 6             | Yes        | Check ATP, Book and Schedule the Order | Perform group ATP based on planning output to back off the lead time of the model for a promise date.   |
| 7             | Yes        | AutoCreate Configuration Items         | Automatically generate a new item number, bill, and routing for all nonphantom models in the configuration structure. The BOM and routing are created in the receiving organization if they do not exist in any other organization. The final configured assembly item is linked to the sales order.  |
| 8             | Yes        | Create Top Level Purchase Requisitions | <p>If the final assembly is being purchased directly from the shipping organization :</p> <p>In multiorganization scenarios, you can create requisition supply only if the final assembly can only be purchased from that organization.</p> <p>If the shipping organization can partially make or transfer the assembly from another organization, use Advanced Planning to recommend planned orders.</p> <p>Note:You could also "progress the order" through Create Supply Order Eligible, which will also place a line in the req import tables for the order line.</p> |
| 9             | Yes        | Create Purchase Orders                 | Create purchase orders or purchase order releases   |

| S. No. | ATO | Name                                       | Description   |
|--------|-----|--|---|
| 10     | Yes | Plan configuration supply                  | Use advanced planning to generate and implement planned orders if you are purchasing lower level configurations, or you are purchasing from an organization other than your shipping organization.  |
| 11     | Yes | Execute Supply Chain Plan                  | Generate requisition and purchase order for the configuration item. Receive it into stock.  |
| 12     | Yes | Pick Release and Ship Configuration Orders | Pick release all configuration sales orders.  |
| 13     | Yes | Deactivate Configuration Items             | Deactivate autogenerated configuration item numbers in an organization whose orders are complete more than $x$ days ago. A configuration item will be deactivated if there is no sales order demand, or open supply or transactions in that organization. |

**Note:** Oracle APS must be installed to support purchasing of ATO items.

## Feature Highlight

The following is a list of key Configure to Order features supported by Oracle Applications:

### Product Definition

- Support for ATO, PTO, and hybrid (PTO/ATO, ATO/ATO) product structures
- Support for multilevel ATO and PTO-multilevel ATO hybrids structures, which enables building configured items that have other configured items as sub assemblies
- Ability to ship configured items from a warehouse
- Ability to purchase configurations at any level in your multilevel BOM structure.
- Planning support for complex configurations where configurations are sourced

across the supply chain.

- Options specific sourcing
- Mandatory and mutually exclusive option selection rules
- Option dependent routings
- Notification to the shipping organization when a change is made to the order request day, ship date, quantity, warehouse, configuration, or a line is split, after the configuration item has been created.

## Planning Configurations

- Forecast any planned item, anywhere on your bill of material, including models, options, and mandatory components, if your configurations are made in-house. Set up a global forecast using demand planning, if you use multilevel or multiorganizational models.
- Use forecast sets as demand schedule for the manufacturing plan and use a manufacturing plan for ATP/Scheduling and planning supply
- Use APS to check availability, determine a shipping organization using global availability, and schedule and plan supply across organizations. Promise based on matching configurations and option specific sources.
- Use constraint based planning to generate feasible plans based on material and capacity constraints
- Master schedule models and options in the manufacturing organizations
- Define multiple sources for models and options at any level in the BOM

## Ordering Configurations

- Interactive option validation or autoselection using Oracle Configurator
- Multiply instantiate ATO models and sub-models using Oracle Configurator
- Support for ordering options in decimal quantities
- ATP inquiry across the supply chain based on option material and resource availability
- Match and reuse an ordered configuration or a configured subassembly

- Reserve to available on-hand configuration (partial or full)
- Automatic configuration pricing calculation taking discounts account
- Order capture from any source (for example, your Web store)
- Workflow based order processing

## **Manufacturing Configurations**

- Automatic creation of unique configuration item, BOM, and routing for the top-level model, as well as lower level models.
- Option to create items, BOMs, and routings, based on sourcing rules, or the base model setup.
- Discrete manufacturing and flow manufacturing environment support for building all levels of the configuration.
- Supply chain cost roll up support for all sourced configurations.
- Automatic configuration lead time and cost calculation for all configured subassemblies and top level assemblies.
- Automatic final assembly work order creation for the top-level configuration.
- Constraint based finite scheduling of final assembly work orders within each manufacturing organization.
- Automatic flow schedule creation for the top-level configuration.
- Automatic sales order reservation of top-level configuration upon production completion (single organization environment only).
- Automatic internal requisition creation for the top-level configuration, with support to reserve the internal requisition to the sales order with automatic conversion to on-hand on receipt.
- Multiple level supply creation support to create supply for all levels of configurations (in the shipping warehouse only).
- Supply chain planning support to create supply for configurations at all levels across the supply chain.

## Procuring Configurations

- Automatic creation of unique configuration item, BOM, and routing for the top-level model as well as lower level models
- Calculation of list price and blanket price for the configuration based on prices for the model and options
- Transmission of configuration details through item attachments or the iSupplier Portal
- Automatic requisition creation for the top-level purchased configuration
- Automatic transfer of the reservation from the requisition to the purchase order
- Automatic sales order reservation of top-level purchased configuration upon receipt into inventory
- Supply chain planning support creation of supply for configurations at all levels across the supply chain
- Support for drop-shipped configurations

## Integration

The following Oracle Application products are integrated to provide Configure to Order features:

- Bills of Material
- MRP/MPS, SCP
- APS (required for multilevel or multiorganization configurations)
- Order Management products
- Configurator products
- Work in Process
- Inventory
- Flow Manufacturing
- Cost Management
- Purchasing

- iSupplier Portal

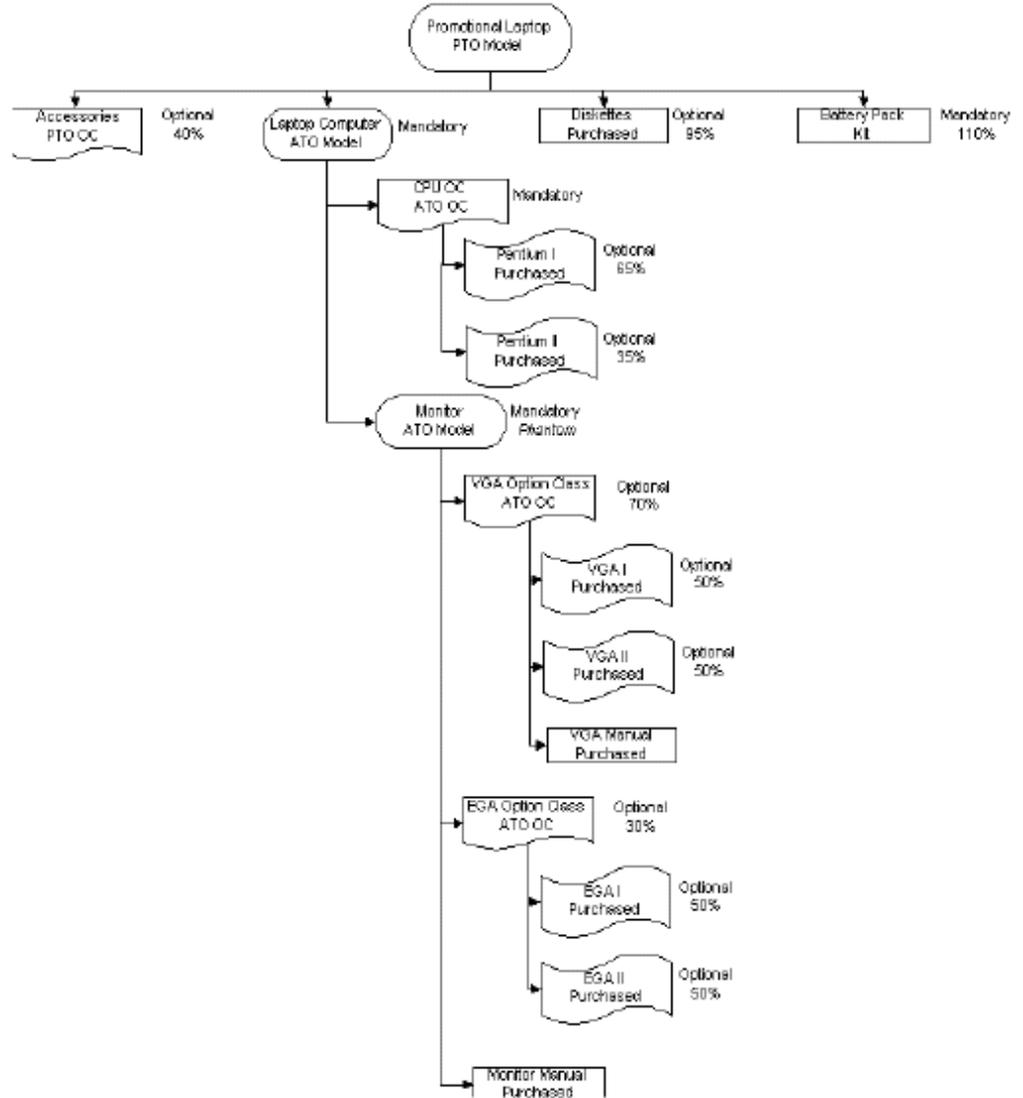
## Examples Used in This Manual

Two examples are used in this manual to illustrate the difference between single level/single organization and multilevel/multiorganization configure to order. Follow the example that best suits your manufacturing environment.

### **Example 1: A hybrid (PTO/ATO) in the single level, single organization environment**

The following is an example of a hybrid (PTO/ATO) in the single level, single organization environment. It is for a PTO model Promotional Laptop that has three pickable items: diskettes, a battery pack, and the laptop computer ATO model. The laptop computer model is comprised of a phantom model for a monitor, option classes for CPUs, VGAs, and EGAs, and the actual options. The example is first shown as a diagram, then in a tabular format. This example is used throughout the entire book for illustration.

**A Hybrid (PTO/ATO) in the Single Level, Single Organization Environment**



**A Hybrid (PTO/ATO) in the Single Level, Single Organization Environment**

| Level | Item               | Item Type | Optional | Supply Type | Planning % | Qty | Mutually Exclusive |
|-------|--------------------|-----------|----------|-------------|------------|-----|--------------------|
| 1     | Promotional Laptop | PTO Model | -        | -           | -          | -   | -                  |

| Level | Item              | Item Type        | Optional | Supply Type   | Planning % | Qty | Mutually Exclusive |
|-------|-------------------|------------------|----------|---------------|------------|-----|--------------------|
| .2    | . Battery Pack    | Kit              | No       | Assembly Pull | 110%       | -   | -                  |
| .2    | . Accessories     | PTO Option Class | Yes      | Assembly Pull | 40%        | -   | No                 |
| .2    | . Diskettes       | Purchased Item   | Yes      | Assembly Pull | 95%        | -   | -                  |
| .2    | . Laptop Computer | ATO Model        | No       | Assembly Pull | 100%       | -   | -                  |
| ..3   | .. CPU            | ATO Option Class | No       | Phantom       | 100%       | -   | Yes                |
| ...4  | ... Pentium I     | Purchased        | Yes      | Assembly Pull | 65%        | -   | -                  |
| ...4  | ... Pentium II    | Purchased        | Yes      | Assembly Pull | 35%        | -   | -                  |
| ..3   | .. Monitor        | ATO Model        | No       | Phantom       | 100%       | -   | No                 |
| ...4  | ... VGA           | ATO Option Class | Yes      | Phantom       | 70%        | -   | No                 |
| ....5 | .... VGA Manual   | Purchased Item   | No       | Assembly Pull | 100%       | -   | -                  |
| ....5 | .... VGA1         | Purchased Item   | Yes      | Assembly Pull | 50%        | -   | -                  |
| ....5 | .... VGA2         | Purchased Item   | Yes      | Assembly Pull | 50%        | -   | -                  |

| Level  | Item               | Item Type        | Optional | Supply Type   | Planning % | Qty | Mutually Exclusive |
|--------|--------------------|------------------|----------|---------------|------------|-----|--------------------|
| ... 4  | ... EGA            | ATO Option Class | Yes      | Phantom       | 30%        | -   | No                 |
| .... 5 | .... EGA1          | Product          | Yes      | Assembly Pull | 55%        | -   | -                  |
| .... 5 | .... EGA2          | Product          | Yes      | Assembly Pull | 45%        | -   | -                  |
| ... 4  | ... Monitor Manual | Purchase Item    | No       | Assembly Pull | 100%       | -   | -                  |

### Example 2: A multilevel ATO in a multiorganization environment

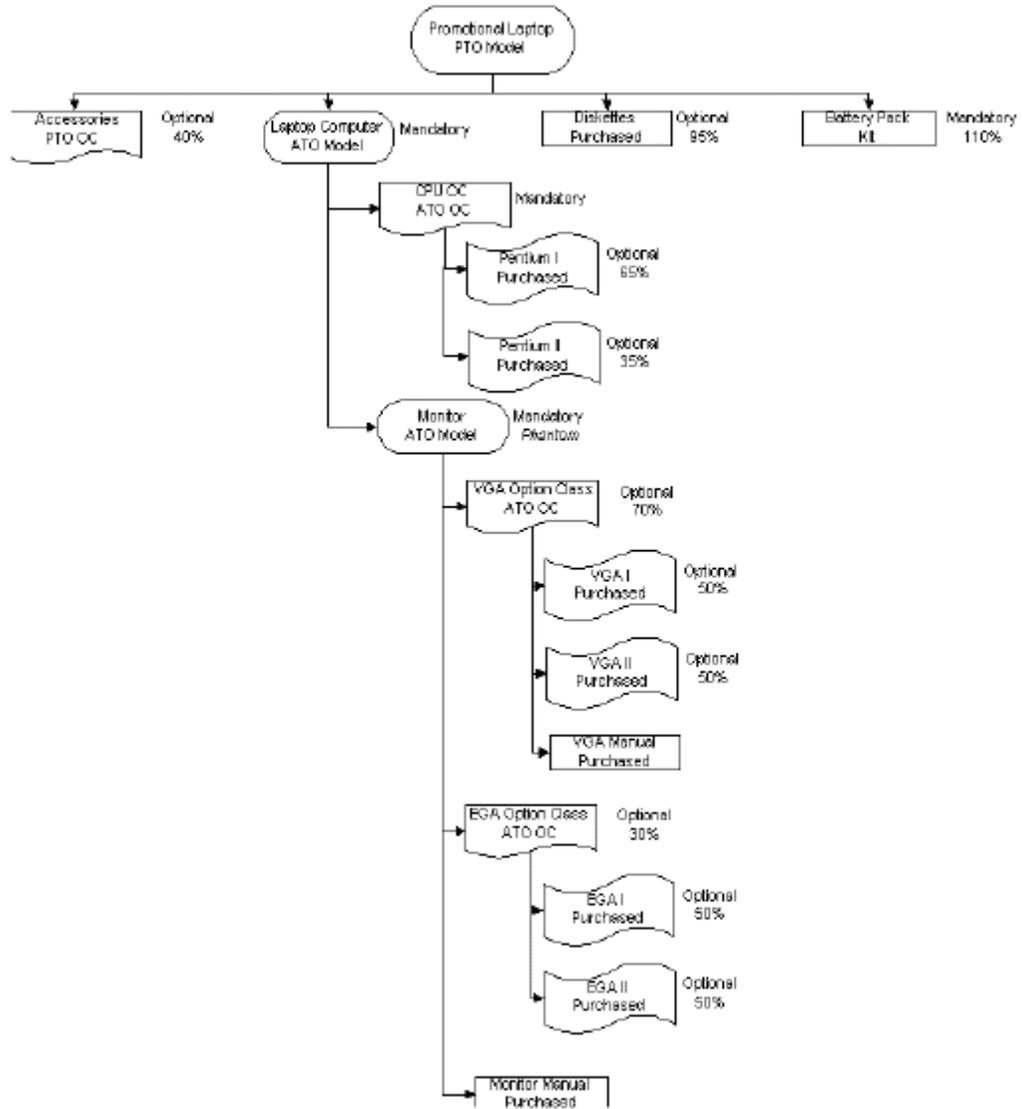
The following is an example of a hybrid (PTO/ATO) in a multilevel, multiorganization environment. It uses the same PTO model Promotional Laptop that has three pickable items: diskettes, a battery pack, and the laptop computer ATO model. However, now the laptop computer model is sourced from another organization, and the monitor model has been made nonphantom and is sourced from a third organization.

The original structure is changed in the following ways:

- The orders are placed in organization W1 (your warehouse).
- The laptop computer is made in organization M1.
- The monitor sub model is changed to Assembly Pull (from phantom) and is made in organization M2.
- There are sourcing rules set up such that W1 gets the laptop from organization M1, and M1 gets its monitors from M2.

The illustration is of the BOM in the three organizations: W1, M1, and M2. The BOM in the OM validation organization would contain all models and options. This example is used throughout the entire book for easy illustration.

## A Multilevel ATO in a Multiorganization Environment



**Note:** If the monitor model was bought instead of made, the entire monitor model BOM should reside in the receiving organization (M1).

This section includes key parameters, profiles, and setup considerations for Configure to Order functionality.

This chapter covers the following topics:

- Parameters
- Profiles
- Model Items, Bills, and Routing
- Preconfiguring Items
- Sourcing Setup for ATO Models
- Forecasting and Master Scheduling for ATO Models
- Order Management Setup
- Shipping Setup
- Purchase Pricing for Models and Supplier Communication
- Custom CTO Packages

### Parameters

The following is a list of key parameters for Configure to Order functionality:

- Bills of Material (BOM) Parameters
- Work-in-Process (WIP) Parameters
- Order Management (OM) Parameters

### BOM Parameters

The following table lists the fields in the BOM Parameters form that are relevant to

configurations.

The screenshot shows a window titled "Parameters (M1)" with a standard Windows-style title bar. The main content area is light yellow and contains several configuration fields:

- Max Bill Levels:** A numeric input field containing the value "10".
- Configuration Options:** A section header followed by a rounded rectangular container with a blue border. Inside this container:
  - Inactive Status:** A text input field containing "Inactive".
  - Numbering Segment:** A text input field containing "Item".
  - Numbering Method:** A dropdown menu with "Append with sequence" selected.
  - Create Lower Level Supply:** A dropdown menu with "Auto Created Configuration It..." selected.
  - Config BOM Creation Allowed:** A checked checkbox.
  - Include Model/Option Class Items in Lead Time Rollup:** An unchecked checkbox.
- Use Phantom Routings:** An unchecked checkbox located below the "Configuration Options" section.
- Inherit Phantom Op Seq:** A checked checkbox located below the "Use Phantom Routings" checkbox.

## **BOM Parameters**

| <b>Field Name</b>         | <b>Value</b>  | <b>Usage Notes</b>   |
|---------------------------|---|--|
| Create Lower Level Supply | <p>You can choose one of the following values:</p> <p>No</p> <p>Auto-created Configuration items only</p> <p>ATO items and Auto-created Configuration Items</p> | <p>This parameter is used to indicate whether or not the system should create supply for lower level configurations and ATO items when progressing an order online in order management, or when using the Autocreate FAS batch program.</p> <p>If set to No, the system will create supply only for the top-level ATO item or configuration. This is the default value for this parameter.</p> <p>If set to Auto-created Configuration items only, the system will create supply for any lower level configuration that was generated because of the specific sales order configuration. Note that it will <i>not</i> create supply for any lower level configuration that was matched to a preconfigured item.</p> <p>If set to ATO items and Auto-created Configuration Items, the system will create lower level supply for all ATO items, preconfigured items and autocreated configured items. Note that supply will be created even for ATO items setup as standard mandatory components on the model bill. This option should be used only if you do not expect to have on hand for your ATO items and preconfigured items.</p> |

| Field Name        | Value   | Usage Notes   |
|-------------------|---|---|
| Inactive Status   | The list of value consists of all the item statuses that are defined in the system. | The Deactivate Configuration Items program sets item status of configuration items to this value.   |
| Numbering Segment | The list of value consists of all the item segments.                                | <p>The item field is a flexfield that may contain multiple segments. Let's say you have a two-segment item field. The two segments are Item-Group. Item, Group will show up in the LOV. The segment you choose here will be the field that the Numbering Method applies.</p> <p>Note: The numbering segment parameter must be set in the OE validation organization. The setting in all other organizations will be ignored</p> |

| Field Name       | Value  | Usage Notes  |
|------------------|--|--|
| Numbering Method | <p>You can choose one of the following values:</p> <p>Append with sequence</p> <p>Replace with sequence</p> <p>Replace with order, line number, shipment #</p> <p>User defined</p> | <p>Using the preceding example, let's say you choose the Item segment in the Numbering Segment. For an ATO model CN97444-Laptop, the configured item number will be the following for each Numbering Method:</p> <p>CN97444*1236-Laptop</p> <p>1236-Laptop</p> <p>45623*1*1-Laptop (45623 is the sales order number, 1 is the line number, 1 is the shipment number.)</p> <p>User defined: You can use the user-defined method to generate customized numbering for configuration items. You can use the customized method to implement in packages, BOMCFG1.pls and CTOCUCNB.pls. For details on how to use these packages, see: See Custom CTO Packages, page 2-67.</p> <p><b>Note:</b> The numbering method parameter must be set in the OE validation organization. The setting in all other organizations is ignored.</p> |

| Field Name  | Value   | Usage Notes  |
|---|---|--|
| Config BOM Creation Allowed                           | You can optionally clear this check box to set this parameter to No. By default, this check box is selected (set to Yes). | Set the check box to Yes in all organizations in which you plan to manufacture or purchase your configurations. It can be set to No in other organizations where a model BOM exists, but a config BOM is not necessary. For example, an OM validation organization that is not a manufacturing organization can be set to No.  |
| Include Model/ Option Class Items in Lead Time Rollup | You can optionally select this check box to set this parameter to Yes. By default, this check box is cleared (set to No). | This parameter determines if a lead time rollup is performed on the model and option class items in the organization. This defaults to no, as rolling up a lead time on the model or option class results in a highly inflated model lead time, which affects the "Estimated manufacturing start date" calculation in AutoCreate Configuration, and affects the offset used by planning with Planning to Forecast and used by ATP against the model. |

## WIP Parameters

The following table lists the field in the WIP Parameters window that is relevant to configurations.

### WIP Parameters

| Field Name                     | Value  | Usage Notes  |
|--------------------------------|--|--|
| Respond to Sales Order Changes | You can choose one of the following values:<br><br>Never<br><br>Always<br><br>When linked 1 to 1 | <p>This parameter determines whether or not a work order that is reserved to a sales order will be put on hold after a configured item is delinked from a sales order line or the order is put on hold.</p> <p>Never: The work order will not be put on hold if you delink the configured item from the sales order or the sales order is put on hold.</p> <p>Always: The work order will be put on hold if you delink the configured item from the sales order or the sales order is put on hold.</p> <p>When linked 1 to 1: The work order will be put on hold if it is the only work order reserved to the sales order.</p> <p>Note: Work orders will be linked to sales orders if the shipping organization is the same as the manufacturing organization. In addition, in a multilevel environment, only the top level configuration work order would be linked to the sales order.</p> |
| Default Discrete Class         | -  | You must have a default discrete class defined in your manufacturing organizations or Autocreate FAS and create flow schedules will fail.  |

### OM Parameters

The following table lists the field in the Order Management Parameters window that is

relevant to configurations.

### **OM Parameters**

| <b>Field Name</b>            | <b>Value</b>  | <b>Usage Notes</b>   |
|------------------------------|---|--|
| Item Validation Organization | The list of value consists of all the organizations that are defined in the system. | <p>In Order Management, the Item Validation Organization parameter indicates the Oracle Manufacturing organization against which items are validated. You must define all transactable items (models, option classes, and options) in this organization.</p> <p>Caution: If you maintain your bills of material in any organization other than the Item Validation Organization, you need to ensure the consistency between the bills. A common practice is to set up the bill in the item primary manufacturing organization, then common it in all other organizations that need to use it.</p> <p>If an operating unit has multiple OE responsibilities, then those OE responsibilities must have the same OE validation organization in order for AutoCreate Configuration to work properly.</p> <p>See the <i>Oracle Order Management User's Guide</i> for more information on setting up the item validation organization.</p> |

## **Profiles**

**Important:** Most profiles used by CTO default to the site level setting.

Changing them to a lower level could produce inconsistent results. You can set the following parameters at both the site and responsibility levels:

- BOM: Create Configuration Exception Behavior
- BOM: CTO Default Blanket PO Release Method

### **BOM: Automatic Reservation**

This profile determines whether CTO attempts to reserve available on-hand when matching during autcreate configuration batch or online modes. If the profile is set to Yes, the program found a match, and the schedule date is within the number of days defined by the profile, OM: Reservation Time Fence, Autcreate Configuration attempts to reserve any quantity available on-hand.

### **BOM: Buy Cost Type**

This profile determines the Buy Cost Type that is used during the Configuration Cost Rollup. See Chapter 9 for Cost Rollup calculation details.

**Important:** This profile should not be set to CTO or clear (null). Create a user-defined cost type and update this profile value with that cost type.

### **BOM: Configuration Item Delimiter**

When you choose any numbering method other than User Defined, Append with sequence, or Replace with Order, line number Numbering Method, the system inserts a delimiter before the sequence number or between the sales order number and line number. Use this profile to define the delimiter to be used by the system.

Anything can be entered as the delimiter character. Do not choose the same delimiter as the item segment delimiter if you have a multisegment item number. It will cause the configuration item process to fail.

### **BOM: Configuration Item Type**

This profile indicates the user item type of the new configuration items created by the Create Configuration Item program. A typical setting is ATO item.

### **BOM: Configurator URL for UI Manager**

In order to preconfigure items using BOM, this profile must be set to the proper URL for the configurator in your instance. See Preconfiguring Items, page 2-32

### **BOM: Create Configuration Exception Behavior**

This profile indicates whether or not to create a configuration item, bill of materials and routing if option items would be dropped from the configuration bill of any organization that the bill is created in. The values for this profile are Create and Link Item and Do Not Create. You can set this profile at the site and responsibility levels. See Create Configuration Items, page 3-16 for information on how this profile affects autcreate configuration behavior.

### **BOM: CTO Default Blanket PO Release Method**

This profile is used to set the release method on the Approved Supplier List (ASL) created for the configuration. PDOI will use this value to set the release method on the ASL created for the configuration. Values are:

- Automatic Release/Review
- Automatic Release
- Release using Autcreate

You can set this profile at the site and responsibility levels. See the *Oracle Purchasing User's Guide* for more on release method on Aisle.

### **BOM: CTO Perform Cost Rollup**

This profile determines if a cost rollup is performed when progressing an order to create a configuration item. The value of this profile also determines the default settings of the corresponding parameter in the AutoCreate configuration concurrent program. This profile is optional. If the profile is null, a cost rollup is performed when a configuration item is created by progressing the sales order. However, the parameter in the AutoCreate Configuration concurrent program defaults to No. See Configuration Item Cost Rollup, page 3-16 for more information.

### **BOM: CTO Perform Flow Calculations**

This profile determines if flow calculations are performed when progressing an order to create a configuration item. The value of this profile also determines the default settings of the corresponding parameter in the autcreate configuration batch program. This profile is optional. If the profile is null, a lead time rollup is performed when a configuration item is created by progressing the sales order. However, the parameter in the AutoCreate Configuration concurrent program defaults to No. See: Configuration BOM, for more information.

### **BOM: CTO Perform List Price and Purchase Price Rollup**

This profile determines if list price and purchase price rollup is performed when progressing an order to create a configuration item. The value of this profile also

determines the default settings of the corresponding parameter in the autcreate configuration batch program. This profile is optional. If the profile is null, a purchase price rollup is performed when a configuration item is created by progressing the sales order. However, the parameter in the AutoCreate Configuration concurrent program defaults to No. See Configuration Purchase Price Calculation Rollup, page 2-8 for more information.

### **BOM: Inherit Option Class Operation Sequence Number**

This profile controls whether components within the model structure inherit the operation sequence from their parent option class or model. The list of values is Yes or No. When the profile is set to Yes, Bills of Material applies inheritance logic for all items in the model structure with an operation sequence defaulted to 1.

In the following example, the profile option is set to Yes, and the CPU and Monitor option class items have operation sequence numbers for the Laptop Computer routing. The processor options are defaulted to an operation sequence of 1, and inherit operation sequence 30 from the CPU option class item. The VGA Option class, options and included item are defaulted to an operation sequence of 1, and then inherit operation sequence 40 from the manual option class item. Routings are not required for the CPU, Monitor, and VGA option classes.

#### ***BOM: Inherit Option Class Operation Sequence Number Example***

| <b>Level</b> | <b>Item</b>       | <b>Item Type</b> | <b>Op Seq</b> | <b>Operation Sequence Inherited</b> |
|--------------|-------------------|------------------|---------------|-------------------------------------|
| . 2          | . Laptop Computer | ATO Model        |               |                                     |
| .. 3         | .. CPU            | Option Class     | 30            | Retains 30                          |
| ... 4        | ... Pentium I     | Option           | 1             | Inherits 30                         |
| ... 4        | ... 486 Processor | Option           | 1             | Inherits 30                         |
| .. 3         | .. Monitor        | Option Class     | 40            | Retains 40                          |
| ... 4        | ... VGA           | Option Class     | 1             | Inherits 40                         |
| .... 5       | .... VGA Manual   | Included Item    | 1             | Inherits 40                         |
| .... 5       | .... VGA1         | Option           | 1             | Inherits 40                         |

| Level | Item     | Item Type | Op Seq | Operation Sequence Inherited |
|-------|----------|-----------|--------|------------------------------|
| ....5 | ....VGA2 | Option    | 1      | Inherits 40                  |

### **BOM: Match to Existing Configurations**

This profile controls whether a match is performed during AutoCreate Configuration, Create Configuration Item workflow activity, Match from Sales Order Pad, and match during PDS based ATP. If the profile value is Yes, the program uses the Enable Configuration Matching attribute on the model to determine if the match is performed. If set to No, then a match is not performed regardless of the setting of Enable Configuration Matching. See Enabling Items, page 2-8 for more information.

### **BOM: Model Item Access**

Indicates if a holder of this responsibility can define and update bills of material for model and option class items.

### **BOM: Perform Lead Time Calculations**

In a discrete manufacturing environment, this profile determines if lead time calculations are performed when progressing an order to create a configuration item. The value of this profile also determines the default settings of the corresponding parameter in the autcreate configuration batch program. Lead time is not calculated if the configuration item has a flow routing, regardless of this profile. This profile is optional. If the profile is null, a lead time rollup is performed when a configuration item is created by progressing the sales order. However, the parameter in the AutoCreate Configuration concurrent program defaults to No. See Perform Lead Time Calculation, page 2-8 for more information.

### **BOM: Send Notifications for Autocreate Config Exceptions**

This profile determines if notifications are sent for expected errors encountered by the auto create configuration process. This profile is optional. If the profile is null, notifications are not sent when progressing the order to create a configuration item. See Configuration Creation Error Handling, page 2-67 for more information.

### **BOM: Use Custom Match Function**

If the profile Match to Existing Configurations is set to Yes, this profile sets the default for the match function: custom or standard. This profile can be overridden with the Enable Configuration Matching attribute on the model item definition. If the profile value for Match to Existing Configurations is No, then the value of this profile does not matter because a match is not performed. If Use Custom Match Function is set to Yes,

then for the models that have the Match Configuration attribute set to Custom, CTO calls the function CTO\_CUSTOM\_MATCH\_PK (file CTOCUSMB.pls), instead of the standard match program.

The profiles BOM: Match to Existing Configurations and BOM: Use Custom Match Function replace BOM: Check for Duplicate Configuration, which is used in the previous releases.

The following table summarizes the relationship between these two profiles and the model item attribute Enable Configuration Matching:

***BOM: Match Profile Relationship***

| <b>Match Profile</b> | <b>Custom Match</b> | <b>Model Match Attribute</b> | <b>Result</b> |
|----------------------|---------------------|------------------------------|---------------|
| Yes                  | Yes                 | Custom                       | Custom        |
| Yes                  | Yes                 | No                           | No            |
| Yes                  | Yes                 | Standard                     | Standard      |
| Yes                  | Yes                 | NULL                         | Custom*       |
| Yes                  | No                  | Custom                       | Custom        |
| Yes                  | No                  | No                           | No            |
| Yes                  | No                  | Standard                     | Standard      |
| Yes                  | No                  | NULL                         | Standard      |
| No                   | Any Value           | Any Value                    | No            |

**BOM: Use OM Validation Organization When Pre-Configuring Single Level Items**

This profile will enable you to decide whether to access the configurator UI published to the OM validation organization or the current organization when preconfiguring single level items. When the profile is set to Yes, the configurator will be called using the OM validation organization as the context organization for single level configurations, irrespective of the current organization from which the BOM form was opened. When the profile is set to No, the configurator will be called using the current organization as the context organization for single level configurations. Note that the OM validation organization is always used as the context organization for multilevel configurations. In general, this profile should be set to Yes. A null value sets the profile

to No.

### **CZ: Populate Decimal Quantity Flags**

This profile, when set to Yes, enables you to enter the decimal quantities for the optional items in the configurator window. If set to No, decimal quantities are not allowed.

### **INV: Capable to Promise**

This site level profile option determines which ATP program will be used for ATP Check. To perform ATP calculations for multilevel and/or multiorganization configuration structures, this profile option must be set to ATP/CTP based on planning output. This option uses data from the Planning Data Store and lets you obtain multilevel supply chain ATP results from a plan.

For more information on the Global ATP Server, see of the Oracle Global ATP Server chapter of the Oracle ASCP and *Oracle Global ATP Server User's Guide*

### **MRP: Default Sourcing Assignment Set**

This profile option determines the sourcing assignment set that CTO will use to assign sources to models. This must be set if models need to be sourced. This assignment set must also be assigned to the supply chain plans in all sourcing organizations.

Any sourcing rules and assignments on models will be ignored if this profile is not set.

### **OM: Employee for Self-Service Orders**

For orders that are originating from self-service applications, the CTO autcreate purchase requisition program will honor this profile.

### **OM: Included Item Freeze Method**

Controls when PTO included items are displayed in Order Management. Values are Entry, Booking, and Shipping.

### **OM: Item View Method**

This profile determines whether you want to display the Item name or Item description for the optional items in the OM Options Window. The Profile has two values: Item Name and Description.

### **OM: Reservation Time Fence**

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 autcreate configuration if the BOM: Automatic

Reservations = Yes

### **OM: Use Configurator**

This profile option determines whether the configurator window or the order management options window is used to select the options for all ATO and PTO Models (SL, ML) entered in order management.

Use the configurator window when you want to set up validation rules, or you want to use the Java interface to choose your options. Use the forms-based options window when you do not need validation rules, but just need to select options.

**Note:** You must use the configurator when in Order Management if the order is originally configured using the configurator through I-Store or another interface.

See the *Oracle Order Management User's Guide* for more information on the options window.

### **WSH: Retain ATO Reservations**

This profile option controls whether or not reservations will be maintained when backordering an ATO item or model.

If the profile is set to Yes, then reservations will not be removed for backordered ATO items/Models, but will be updated to Unstaged.

If the profile is set to No, then the delivery detail status will be changed to N (Not Ready to Release) and reservations will be deleted. Note that you will lose the ability to track that this item was backordered and these items will not show up on the Backorder Detail Report or the Backorder Summary Report.

## **Model Items, Bills, and Routing**

This section describes the setup of item, bills of material, and routing for models and option classes. It also describes the features of cataloging configurations and configuration rules.

### **Items Setup**

Several key item attributes are central to ensure correct processing of a configure-to-order sales order. The following table highlights these attributes and their typical setting.

**Item Attributes**

| <b>Attribute</b> | <b>PTO Model</b> | <b>PTO Option Class</b> | <b>ATO Model</b>            | <b>Option Class</b>  | <b>ATO Item</b>  | <b>Option (Component)</b>   |
|------------------|------------------|-------------------------|-----------------------------|--|--|---|
| BOM Item Type    | Model            | Option Class            | Model                       | Option Class   | Standard   | Standard  |
| BOM Allowed      | Yes              | Yes                     | Yes                         | Yes  | Yes  | Yes   |
| Planning Method  | Not Planned      | Not Planned             | MPS Planning                | MRP Planning   | MRP  | MRP   |
| Forecast Control | Consume          | Consume & Derive        | Consume or Consume & Derive | Consume and derive if manufacturing the model. Null if it belongs to a purchase model. | Consume  | Consume & Derive if manufacturing model, Null if purchasing model |
| Build in WIP     | No               | No                      | No                          | No   | Yes, if using the autcreate program to generate supply— even if it is a buy item. Otherwise, it depends. | (depends)   |
| OE Transactable  | Yes              | Yes                     | Yes                         | Yes  | Yes  | Yes   |
| Check ATP        | No               | No                      | No                          | No   | (depends)  | (depends)   |
| ATP Components   | (depends)        | (depends)               | (depends)                   | (depends)  | (depends)  | (depends)   |

| Attribute               | PTO Model                                 | PTO Option Class | ATO Model   | Option Class   | ATO Item  | Option (Component)                      |
|-------------------------|---|------------------|---|--|---|---|
| Assemble to Order       | No  | No               | Yes   | Yes  | Yes. This value should be the same in all organizations | No                                      |
| Pick Components         | Yes                                       | Yes              | No  | No   | No  | No                                      |
| Ship Model Complete     | Yes or No (only applicable for PTO model) | n/a              | n/a   | n/a  | n/a   | n/a                                     |
| Purchased / purchasable | No  | No               | Yes if you will be purchasing the model   | Yes if you will be purchasing the model  | Yes if you will be purchasing the ATO item              | Yes if you will be purchasing the model |
| Lot/Serial Control      | No  | No               | Yes, if you want the configuration to be lot/serial controlled. Note: Serial Control of "Unique within Item" will mean "Unique within base Model" for configurations. | No, unless you want to set the default serialization starting operation sequence number for the configuration based on the option class routing. | Depends   | Depends                                 |

| Attribute                      | PTO Model | PTO Option Class | ATO Model   | Option Class | ATO Item  | Option (Component) |
|--------------------------------|-----------|------------------|---|--------------|---|--------------------|
| Match Configuration            | N/A       | N/A              | Null if you want to default from profile, Standard if you want a standard match, Custom if you need a custom match. See Match Configurations, page 2-67 | N/A          | N/A   | N/A                |
| AutoCreated Configuration      | N/A       | N/A              | N/A   | N/A          | N/A if no base model exists. Not enabled if base model exists and you want it treated as a preconfigured item. See Preconfiguring Items, page 2-32. | N/A                |
| Create Configuration Item, BOM | N/A       | N/A              | Depends on attribute settings. See: Create Configuration Item, BOM Attribute, page 2-15.  | N/A          | N/A   | N/A                |

| Attribute  | PTO Model | PTO Option Class | ATO Model | Option Class | ATO Item   | Option (Component) |
|------------|-----------|------------------|-----------|--------------|--|--------------------|
| Base Model | N/A       | N/A              | N/A       | N/A          | The model the configured item is generated from. Null if the ATO item is not configured. This must be the same in all organizations. | N/A                |

### Create Configuration Item, BOM Attribute

The Create Configuration Item, BOM attribute on the ATO model defines how items, BOMs, and routings are created according to the following values:

- **Based on Sourcing**

This value creates items, BOMs, and routings based solely on the ship from organization's sourcing.

- **Items Based on Model, BOMs and Routings Based on Sourcing**

This value creates items in all organizations where the model item exists, and create BOMs and routings based on the ship from organization's sourcing only.

- **Based on Model**

This value creates items, BOMs, and routings in all organizations where the model item, BOM and routing exist.

Use of the following features requires you to use the setting Based on Model:

- Multiple sources
- Global ATP
- Match with PDS ATP when sourcing models
- Add warehouse changes after config item creation

The item attribute must be set to Based on Model for all child models of a model set to Based on Model. If this is not followed, AutoCreate Configurations errors out for this model's configurations. You should also set the model's attribute value to Based on Model if the model has customer, region, or item sourcing rules, or if you have PDS with match on and you have assigned sourcing rules to your models. It is possible to use a setting other than Based on Model if you are using match but always manufacture the configuration and its subconfigurations in the shipping organization.

Warehouse changes are allowed if the model's attribute value is set to Based on Model and you have assigned sourcing rules to your models. CTO does not perform any validations for the new warehouse to check if configuration data already exists in the required organizations for this warehouse.

Set the attribute to Items based on Model, BOMs and Routings Based on Sourcing, or Based on Model if shipment or transaction flows are in use that cause your configuration to be invoiced in organizations that are not part of the sourcing chain, or if you are using depot repair and intend to return items for repair to a nonmanufacturing organization. For depot repair, the item should be created everywhere so the configuration can be returned to the appropriate organization. See the *Oracle Inventory User's Guide* for more on Enhanced Intercompany Invoicing and Transaction flows. See the *Oracle Depot Repair Guide* for more on Depot Repair.

For option specific sourced (OSS) items, the organizations in which BOMs are created are further restricted by OSS rules. See: Impact of Option Specific Sources, page 2-37.

## Organization Assignment

In a multilevel, multiorganization ATO environment it is important to ensure that the items are enabled in the proper organizations for ordering, manufacturing and planning your product. The following table summarizes the organizations in which items must be enabled.

**Item/Organization Enablement**

| <b>Item Validation Org</b>        | <b>Receiving Org</b>   | <b>Sourcing (Manufacturing) Org</b>  | <b>Item Master Org</b>            | <b>PO Validation Org</b>   | <b>Transaction Flow Org</b>   |
|-----------------------------------|--|--|-----------------------------------|--|---|
| All items in multilevel structure | Only the items that need to be received in the organization. Typically, this is the top level purchased or transferred model.<br><br>If this organization is also the shipping organization, all optional items in your model BOM should also be enabled in this organization. | Items manufactured and consumed in the organization. Typically, this includes the model being manufactured, all of its option classes and options, and any immediate child models. Child model components do not have to be enabled here unless they are also manufactured here. | All items in multilevel structure | The ATO model, plus all optional items on its bill that you want to include in a purchase price rollup | In organizations that are part of your transaction flow for a configured product, but are never part of the physical flow for that product, only the model needs to be enabled. |

**Note:** ATO models exist in organizations that are not part of any sourcing chain for the model if the organization is:

- The OM validation organization, but never used to manufacture, stock, ship or transact the model
- The PO validation organization, but never used to manufacture, stock, ship or transact the model
- The Purchasing organization for global procurement, but never used to manufacture, stock, ship or physically transact the model
- Part of an enhanced intercompany transaction flow, but never used to manufacture, stock, ship or physically transact the model

If the model attribute "Create config item, BOM" attribute is set to Based on Model, or item based on model, BOM based on sourcing, The configuration item will also be created in these organizations. Set the following attributes on the model item to prevent the configurations from being accidentally transacted or planned in these organizations:  
ATP, ATP Components = none Planning Method = Not Planned

## Model and Option Class Bills of Material

Model bills of material: An ATO model bill lists the option classes, options, and standard items that exist for a model. The bill of material for a PTO model lists the option classes, options, and included items that exist for that mode

Option class bills of material: Option class bills can contain standard components, options, other option classes, or models

### Model Bills of Material

An ATO model can have another ATO model as its component. The decision as to whether or not to create a config item for a lower level model is determined by the BOM supply type on the lower level model in the item validation organization.

- If the supply type is set to phantom, no configuration item will be created during autocreate config, and the model and all it's components will become part of the top level configuration BOM.
- If the supply type is set to anything other than phantom, auto create config will create a configuration item for that model and only the config item will appear on the parent configuration BOM.

A PTO model can have another PTO model or an ATO model as its components.

### Option Class Bills of Material

Oracle Manufacturing enables you to structure any number of levels of option classes within option classes so you can create an indented hierarchy of choices. You can also specify a mandatory component under any option class in the indented structure that would automatically be included anytime you choose an option from that option class (or a lower level option class).

## BOM Attributes

The screenshot shows the 'Bills of Material (M1)' window for item CM66701, 'Bronze Plastic Kit'. The window includes a header with item information and a main table of BOM components. The table has the following columns: Item Seq, Operation Seq, Component, Check ATP, Optional, Mutually Exclusive, and Quantity (Minimum and Maximum). The first three rows are highlighted in yellow.

| Item Seq | Operation Seq | Component | Check ATP                | Optional                 | Mutually Exclusive       | Quantity        |
|----------|---------------|-----------|--------------------------|--------------------------|--------------------------|-----------------|
|          |               |           |                          |                          |                          | Minimum Maximum |
| 10       | 1             | CM66731   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                 |
| 20       | 1             | CM66732   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                 |
| 30       | 1             | CM66733   | <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"/> |                 |

The following BOM attributes are important for model or option class bills of material:

- **Maximum and Minimum Quantity:** For each option, you can specify a quantity range that limits the quantity of the option you can order during Order Management.
- **Optional:** The Optional attribute is applicable only to component items on model and option class bills of material. If this attribute is not selected for an option, the option will not appear in the configurator, or in the OM options window. However, it will be chosen automatically when you choose an optional item from the same model or option class. If this attribute is not selected for an option class, you are required to select at least one of the options from its bill of material.
- **Mutually Exclusive:** The Mutually Exclusive attribute is only applicable to option class items. If this box is selected, you are allowed to select only one option from the option class bill of material.
- **Planning Percent:** (Component Details tab) Planning percent is used in forecast explosion. The planning percent for mandatory components is default to 100 percent. You can enter a planning percent for all the optional items and it can exceed 100 percent.

**Note:** If a sub model can be multiply instantiated in the

configurator, the planning percentage on its parent should represent the average expected number of instantiations, multiplied by 100 percent. See: *Oracle Configurator Developer User's Guide* for more information on multiple instantiation.

**Note:** If your planning percentage changes over time, you can add new rows for the options with different effective dates. For example, for a Model BOM, setup is as follows:

| Component | Effective From | Effective To | Planning % |
|-----------|----------------|--------------|------------|
| OC1       | 1/1/2004       | -            | -          |
| 01        | 1/1/2004       | 3/31/2004    | 60         |
| 02        | 1/1/2004       | 3/31/2004    | 40         |
| 01        | 4/1/2004       | -            | 80         |
| 02        | 4/1/2004       | -            | 20         |

Your forecast for O1 for January through March 2004 is 60 percent of your OC1 forecast. For April and later it will be 80 percent of your OC1 forecast. Setting up components with different effective dates can affect your Configuration model rules and Configuration BOM creation.

- **WIP-supply type:** For a lower level model, a supply type other than phantom implies that it has to be treated as a configurable subassembly for which a configuration item and supply order needs to be created.

**Note:** The supply type on all submodels must be the same (Phantom or Nonphantom) across organizations. For example, if it is Phantom in the OE validation organization, it should be Phantom in the manufacturing organization. It should not be Phantom in the OE validation organization and Pull in the manufacturing organization.

**Note:** If you plan to multiply instantiate a lower level model, its WIP Supply Type on the BOM must be non-phantom. For more

information on the use of this attribute for standard items, please see the *Oracle Bills of Material User's Guide*. For more information on setting up bills of material, please See: *Oracle Bills of Material User's Guide*.

- **Basis:** To determine how the component requirements must be calculated from the parent requirements, you can set the Basis attribute to the values, Item or Lot, for the mandatory components of the ATO Model and ATO option classes.
  - Item: If you set the attribute to Item, the component's dependent requirements are calculated as the multiplication of parent item quantity and per quantity of the component defined in the bill of material.
  - Lot: If you set the attribute to Lot, the dependent requirement for the component is taken as equal to quantity, defined in the bill of material, irrespective of the parent item quantity.

**Note:** You cannot set the Basis value for optional items, under an ATO or PTO model, an option class, or a KIT.

In a multilevel, multiorganization ATO environment it is important to ensure that the bills are created in the proper organizations for ordering, manufacturing, and planning your product. The following table summarizes the organizations in which bills must be enabled.

### ***BOM/Organization Enablement***

| <b>Transaction Flow Org</b> | <b>Item Validation Org</b>  | <b>Receiving Org</b>   | <b>Sourcing (Manufacturing) Org</b>                               | <b>Item Master Org</b> | <b>PO Validation Org</b> |
|-----------------------------|---|--|---|------------------------|--------------------------|
| None                        | Complete Multilevel BOM (often common to the primary manufacturing organization for each level) | None if entire configuration is made in house.<br><br>Complete structure if configuration is purchased.<br><br>In the previous release, the entire bill must exist in one and only one of the possible receiving organizations for a purchased configuration | Model and option class bills made in or sourced from organization | None                   | None                     |

## **Model and Option Class Routing**

Routings for your model and all the option classes should be set-up in the appropriate manufacturing organizations. Oracle Bills of Material supports both discrete and flow manufacturing.

Operation sequences on sub-level phantom routings or option classes must be unique. If they are not, only the operations from the parent are included in the configured routing.

## **Common Model Routing to Option Classes**

The routing for your model can include all steps that any configuration might require. You can then establish option class routings by referencing the model routing as a common routing, so lower level options can still reference the model's routing operations. For example, you can reference the laptop computer's routing as a common routing for the CPU option class, referencing the laptop computer's routing steps in the option class bill.

Alternatively, you can set up a routing for the model that contains only the operations that pertain to building the entire model structure and any of its mandatory components or immediate options. Then you can set up separate routings for each of your option classes that contain the routing steps pertaining to its options and mandatory components. It is important that option class routings and phantom model routings are of the same routing type as the parent model routing. It is also important that you do not duplicate routing operation sequences in any of the routings.

**Note:** APS ignores option class routings that are commoned to a model routing during resource capacity planning for a model forecast. It does not check *which* model it is commoned to, nor does it ignore option class routings commoned to another option class. Therefore, it is recommended that you common an option class routing only to its parent manufactured model.

## Discrete Manufacturing

### Option Dependent Routing Steps

The screenshot displays the Oracle Bills of Material (M1) window for item CN97444, 'Envoy Custom Laptop'. The window includes fields for Item, Alternate, Revision (A), Date (09-MAY-2006 00:08:27), and Display (Future and Current). A table lists routing steps with columns for Item Seq, Operation Seq, Component, Check ATP, Optional, Mutually Exclusive, and Quantity (Minimum and Maximum).

| Item Seq | Operation Seq | Component | Check ATP                | Optional                            | Mutually Exclusive                  | Quantity          |
|----------|---------------|-----------|--------------------------|-------------------------------------|-------------------------------------|-------------------|
|          |               |           |                          |                                     |                                     | Minimum   Maximum |
| 310      | 1             | OC42556   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |
| 80       | 20            | SB10299   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| 90       | 20            | SB34701   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| 100      | 30            | CM67433   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| 110      | 30            | OC68020   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Buttons at the bottom include Substitutes, Designators, Operations, Bill Details, and Revision.

Oracle Bills of Material enables you to define option-dependent operations in model or option class routings. You can specify that a routing step is option dependent, which causes the configuration to include that routing step only if an option referencing that step was chosen. You can assign multiple routing steps to a single optional component in the model bill. You specify one value in the operation sequence column on the main BOM window. The operation you specify on the main window is used as the back flush

location for the item. You can then assign additional operation sequences to the components by using a child window. The child window is available from any optional BOM component line by clicking the Operations button; the Assign Operations window appears.

***Laptop Computer ATO Model BOM***

| <b>Level</b> | <b>Item</b>       | <b>Item Type</b> | <b>Op Seq</b> | <b>Optional</b> | <b>Qty</b> |
|--------------|-------------------|------------------|---------------|-----------------|------------|
| . 2          | . Laptop Computer | ATO Model        |               | No              | 1          |
| .. 3         | .. Carrying Case  | Product          | 10            | No              | 1          |
| .. 3         | .. Keyboard       | Product          | 20            | No              | 1          |
| .. 3         | .. CPU            | Option Class     | 30            | No              | 1          |
| ... 4        | ... Pentium I     | Purchased Item   | 30            | Yes             | 1          |
| ... 4        | ... Pentium II    | Purchased Item   | 25, 35        | Yes             | 1          |

***Routing for Laptop Computer ATO Model (Commoned to the CPU Option Class)***

| <b>Op Seq</b> | <b>Option Dependent</b> | <b>Department</b> | <b>Operation Description</b> |
|---------------|-------------------------|-------------------|------------------------------|
| 10            | No                      | Casing            | Cut and smooth case edges    |
| 20            | No                      | Assembly 1        | Attach keyboard and cable    |
| 25            | Yes                     | Assembly 2        | Clean processor              |
| 30            | No                      | Assembly 2        | Insert processor into board  |
| 35            | Yes                     | Inspection        | Inspect Pentium II           |

In the preceding example, a routing is created for the ATO model. A second routing is created for the ATO option class that uses the model routing as common. This is a typical setup that enables the components on the option class BOM to reference operations on the model BOM.

In this example, Oracle Manufacturing automatically includes Operation Sequence 25 and 35 in any configuration containing a Pentium II because the Pentium II option in the bill references steps 25 and 35. These routing steps can also add to the standard cost for configurations with the Pentium II, because Oracle Manufacturing performs a single level rollup for configurations and accounts for all costed resources used in the configuration routing.

### Operation Sequence Inheritance

You can specify that items within the model structure inherit the operation sequence from their parent option class or model. You invoke this option by setting the site level profile BOM: Inherit Option Class Operation Sequence Number to Yes. Bills of Material applies inheritance logic for all items in the model structure with an operation sequence defaulted to 1. You should maintain a routing for the top-level model, but may not need to maintain a routing for any option class or model where all items below it have an operation sequence of 1.

In the following example, the profile option is set to Yes, and the CPU option class items have operation sequence numbers for the Laptop Computer routing. The processor options are defaulted to an operation sequence of 1, and inherit operation sequence 30 from the CPU option class item. Routing is not required for the CPU option class.

### Operational Sequence Inheritance

| Level | Item              | Item Type    | Op Seq | Operation Sequence Inherited |
|-------|-------------------|--------------|--------|------------------------------|
| . 2   | . Laptop Computer | ATO Model    | -      | -                            |
| .. 3  | .. CPU            | Option Class | 30     | Retains 30                   |
| ... 4 | ... Pentium I     | Option       | 1      | Inherits 30                  |
| ... 4 | ... Pentium II    | Option       | 1      | Inherits 30                  |

### WIP Serial Tracking for Configurations

WIP enables you to start serial tracking and genealogy at any operation on the job for assemblies that have predefined serial generation. If you want this functionality for your configurations, set the model to be under predefined serial control, and specify the default serialization starting operation sequence number on any mandatory operation

in the ATO Model Routing. This information will then be copied to the configuration item routing. When using noncommoned option class routings, the option class must be set to predefined serial control to have the default serialization starting operation sequence number on the configuration to be one of the routing operations on the option class routing rather than one on the model routing. If you define a default serialization starting operation sequence number on both the model and option class routing, the setting on the option class will be ignored.

For more information on WIP serial tracking, see the *Oracle Work in Process User's Guide*.

## Flow Manufacturing

### Option Dependent Event

A flow routing consists of processes, line operations and events. You can designate option dependent events by selecting the Optional check box for an event. On your bills of material, the operation sequence refers to the event sequence on a flow routing. Therefore, you associate an option with event sequences. As in discrete, a single option can reference multiple event sequences.

All operations and processes on the model routing are included on the configured routing. All nonoptional events are included on the configured routing. The option dependent events are included only in the configuration routing if an option referencing that event was chosen.

### Operation Sequence Inheritance

You can specify that items within the model structure inherit the event sequence from their parent option class or model. This functionality is similar to that described under Discrete Manufacturing.

## Cataloging Configurations

Oracle Manufacturing provides features that help you catalog your assemble to order configurations so you can easily find on hand configurations that meet customer requirements, or find configuration item numbers that were used to fulfill previous orders for the same configuration. Oracle Manufacturing lets you set up rules to automatically assign item catalog descriptive element values to assemble to order configurations based on the options selected.

For example, you might want to catalog computer configurations using descriptive elements that indicate the processor type and operating system (OS) chosen for each configuration. You could then assign the laptop computer model item to a catalog group that specifies those descriptive elements, but not assign any values to those attributes because the laptop computer is a model, not a specific configuration. You would also assign each option item to a catalog group with descriptive elements that describe that option. So you would assign the processor option items (Pentium I, Pentium II) to a Processors catalog group containing a processor type descriptive element as well as others that might describe more specific processor attributes.

### **Catalog Configurations Example**

| <b>Item</b>     | <b>Catalog Group</b> | <b>Descriptive Element Name</b> | <b>Descriptive Element Value</b> |
|-----------------|----------------------|---------------------------------|----------------------------------|
| Laptop Computer | Personal Computers   | Processor Type OS               | -                                |
| Pentium I       | Processors           | Processor Type                  | Slow                             |
| Pentium II      | Processors           | Processor Type                  | Fast                             |
| Windows         | Operating Systems    | OS                              | Windows                          |
| UNIX            | Operating Systems    | OS                              | Unix                             |

You would also specify which descriptive elements to assign automatically to an ordered configuration, based on options chosen under each option class in the laptop computer's bill. For example, when you defined the bill for the CPU option class, you would specify that the processor type descriptive element should be assigned automatically based on options chosen under this class. The Bills of Material window lets you specify descriptive elements for each model or option class bill of material to be used to populate configuration item description. If you want the Autocreate Configuration Items program to concatenate descriptions, you must specify descriptive elements for each model and option class bill. An example of a concatenated description might be Pentium II-Windows.

### **Concatenated Description Example**

| <b>Item</b>      | <b>Item Type</b> | <b>Element Name</b> |
|------------------|------------------|---------------------|
| CPU              | Option Class     | Processor Type      |
| Operating System | Option Class     | OS                  |

You can inherit multiple elements from the parent option class or model. In the case of a multilevel ATO, the description of the parent configuration does not roll up the description from the child. If the same element exists on more than one option class that has a common option, the one with maximum value is used. If models and option classes belong to different catalog groups, the Configured Item inherits only the elements of the model's catalog group. For ATO models that are not assigned to a catalog, Configure to Order ignores the return values of the CUSTOM function.

More on cataloging configurations can be found in the CTO chapter of the *Oracle Bills of*

*Material User's Guide.*

See Custom CTO Packages, page 2-67 for more information.

## Configuration Rules

Configuration rules are defined in Oracle Configurator Developer.

For more information on setting up configuration rules, please See: *Oracle Configurator Developer User's Guide.*

## Preconfiguring Items

Invoke Oracle Configurator from within Oracle Bills of Material to create a configured bill of material and routings for a predefined ATO item. This is useful in a business to business environment where the same configuration is ordered repeatedly.

Preconfigured items can be built to forecast and kept on hand. Customers can order the preconfigured items directly, as they would a standard ATO item.

Preconfigure BOM respects the new organization level BOM parameter Create Configuration BOM. An error message displays if you try to preconfigure in an organization where this parameter is set to No.

You can preconfigure multilevel structures within BOM in a manner similar to that done in Order Management. The configurator uses the item validation organization defined in the OM parameters form for the current organization to determine the BOM to present during the configuration session. Once the options are chosen, the sourcing rules on the models, the setting of the Create Configuration Item, BOM, and Routing attribute, and any Option Specific Source definition are used to determine the organizations in which to create the BOM and routings.

The profile option BOM: Use OM Validation Organization When Pre-Configuring Single Level Items determines whether the current organization or the OM validation organization is used when preconfiguring a single level BOM. Usually, this value should be set to Yes.

The Preconfiguration process matches to existing configurations, if the profile BOM: Match to Existing Configuration is set to Yes, and the model is set to perform matching. If the program finds a match for the top-level model you will be asked if you want to use the matched item id or create a new configuration for the new item. If you choose to use the match, no BOM is created for the current item. If you choose to create a new configuration for the new item, the new configuration replaces the old configuration in the match tables, and future matches in OM or BOM will match to the new predefined configuration.

If a match is found for any of the lower level models, the matched configuration item is used by default.

**Note:** Preconfiguration does not perform weight and volume

calculations, lead time calculations, cost rollup, list price and purchase price rollup for the configuration items. To perform these calculations for your preconfigured items, use the appropriate batch processes described in *Optional Processing Programs*, page 3-16.

If you try to preconfigure an item based on a model that is sourced entirely from another organization, you will receive an error asking you to go to the source organization to configure the item.

You cannot preconfigure an alternate BOM. If a routing already exists for an ATO Item having a base model, and then the user preconfigures the bill for the ATO Item, no new routing gets created after preconfiguring.

The BOM: Configurator URL profile option must be set properly to enable you to call the configurator from within BOM. See *Profiles*, page 2-8 for more information on setting profile options.

## Enabling Items

It is recommended that you enable the preconfigured item in all organizations that require it for the configuration process. If you do not enable the preconfigured item, the preconfiguration process automatically enables it in all organizations identified by the base model's item attribute Create Configured Item, BOM, and the base model's sourcing chain from this organization. See *Create Configuration Items*, page 3-16 for details. These items are created as autocreated items by setting AutoCreated Configuration to Yes in these organizations. If you want these items to be treated as preconfigured items, enable them in all organizations before preconfiguring the BOM or deselect the configuration item attribute AutoCreated Configuration on the preconfigured item in all organizations.

When the item is automatically enabled in an organization, for attributes that have the attribute control set at the organization level, attribute values for these items are inherited from the base model in that organization. Item attributes are copied from the preconfigured item if the attribute control is set at the master level.

**Note:** Child configuration items are created as autocreated items with all attributes set as described in *Create Configuration Items*, page 3-16. If you want the child configurations to be treated as preconfigured items, you must either:

- Preconfigure them before the parent configuration. You must use the match functionality and then configure all levels of configurations from the bottom up.
- Clear the AutoCreated Configuration attribute on the

configurations you want to treat as preconfigured items.

**Note:** For preconfigured items, because the item is created by the user, item attributes are not copied from or validated against the base model item attributes. It is up to the user to set them appropriately. The Assemble to Order and Build in WIP flag must be selected. It is recommended that you use the ATO item template for these items.

The following table shows the differences between preconfigured items and Auto Created Configuration Items.

***Preconfigured and Auto Created Item Differences***

| <b>Preconfigured Item</b>  | <b>Auto Created Configured Item</b>   |
|--|---|
| Created by user  | Created by system   |
| Autocreated configuration = N on Items form                        | Autocreated configuration = Y on Items form   |
| Item attributes are as defined by the user                         | Item attributes are: <ul style="list-style-type: none"><li>• Inherited from the model if item is auto created in all organizations</li><li>• Copied from configured item in another organization if it was preconfigured there and attribute control was at master level</li><li>• Inherited from model if it was preconfigured in another organization and attribute control was at organization level</li></ul> |
| Is displayed in iStore and similar applications for users to order | Is not displayed in iStore and similar applications for users to order  |

## **BOM and Routing Creation**

BOMs and routings are created for the preconfigured item and any child configuration items in the sources identified based on the base model's sourcing rules, option specific source definition, and the item attribute Create Configured Item, BOM.

See: Create and Process Configuration for more information on how the system

determines where to create the item, bill, and routing. See *Create Configuration Items*, page 3-16 for more information on BOM creation logic. See *Match Configuration Item*, page 3- for more information about matching.

**Note:** To prevent creating an incorrect BOM, the preconfigure item process does not respect the profile *Create Configuration BOM With Dropped Components*. It will always error out if a component is dropped during config item creation at any level.

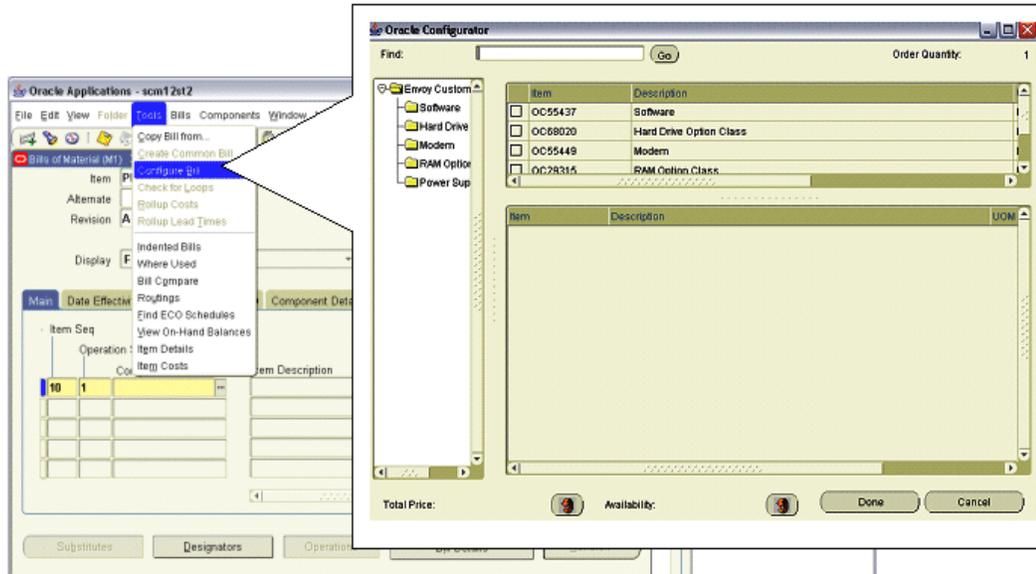
## Option Specific Sourcing

Preconfiguration behavior with regards to option specific sourcing is as follows:

- If, due to option specific sourcing, the preconfiguring organization is not a valid organization for configuration BOM creation, the item and its data are not created and an error message is displayed.
- BOMs and routings are created for the pre-configured item and its child configuration items, in all valid source organizations, based on the model options' specific sourcing setup. BOMs and routings are not created in organizations that have the BOM parameter *Config BOM creation allowed* set to No.

Preconfiguration does not perform weight and volume calculations, lead time calculations, cost rollup, list price, and purchase price rollup for the configuration items. To perform these calculations for your preconfigured items, use the appropriate batch processes described in *Batch vs. Online Mode*, page 3-16.

## Preconfiguring



## Preconfiguring Items

### To preconfigure an item:

1. Create a new item in the master organization and assign it to the appropriate manufacturing organization. On the BOM tab of the item master, set the base item to the model from which you want to derive the configuration and select the Assemble to Order flag.
2. In the manufacturing organization, create a new bill of material for the item with no components. Put the cursor in the components region. Go to the Tools menu and select Configure Bill. This will bring up the configurator where you can pick your options. Once done, this item can be planned, ordered and stocked just like any standard item.

## Preconfiguring Items Example

Preconfiguring items respect the multilevel structure and the sourcing rules that you have defined for models at all levels of the BOM. As an example, use Example 2: Process Flow for Multi-Level, Multi-Organization ATO, and PTO, page 1-4:

If you went in to the warehouse, W1, added a new item based on your laptop computer model, and then tried to preconfigure a BOM, the program would give you a message asking you to go to Org M1 to configure the item, because the entire item is sourced from M1. If you go to M1 and try to preconfigure the BOM, the program will invoke the configurator based on the item validation organization defined in the OM parameters for the given organization. You would be able to choose options for all levels of your

bill, regardless of where they will be manufactured. Then, when done, the program will create the BOMs and routings in the appropriate organizations based on the sourcing rules. In the case of this example, a configured laptop computer BOM and routing will be created in M1, and a configured monitor item and routing would be created in M2. You will get a message when the program completes indicating that the BOMs were created in the appropriate organizations.

## Sourcing Setup for ATO Models

Sourcing rules assigned to models are used during the planning of the model forecast, and during ATP of a model sales order. These same rules are used during autcreate configuration to determine the correct sourcing for the configured item. Once the configuration item is created, its sourcing rules are used for all planning and execution.

**Note:** If you are using transfer from sourcing rules on your models, you must use ASCP, Global forecast, and ATP based on planning output to ensure proper forecast explosion, planning, ATP, and forecast consumption of your models, configurations.

If you are using a customer, region or item specific sourcing rule for ATP purposes to choose a shipping warehouse, but then all manufacturing for the configuration and any sub level configurations are done in the shipping organization. In this case, you can specify a forecast directly in the shipping organization instead of using global forecasting.

See the *Oracle Demand Planning Implementation Manual* for more information on global forecasting, and the *Oracle Advanced Planning Implementation and User's Guide* for more information on ATP and planning for configurations.

## Sourcing Assignments

You can assign sourcing rules or bills of distribution to your models. Model sourcing assignments must be done on the source in the assignment set specified in the MRP: Default Assignment Set, in order for the configuration item to be created with the correct sourcing.

If you have an item-level assignment for the purposes of ATP and of planning feedback loop, you must *also* have an organization-level Make At or Buy rule in the end node in your sourcing chain to avoid a circular sourcing error in the AutoCreate Configurations process. For example, assume that an item-level assignment says to transfer from M1 and M2. If M1 makes the configuration, it must have an organization-level Make At rule assigned. If M2 buys the configuration, it must have an organization-level Buy From rule assigned.

Region or other assignments that cannot be defined on the source should never be assigned to the model itself, as they will not be applied to the configuration. To use

these types of rules, create category level or higher assignments. A new category can be created for this model or group of models if it is necessary to assign a rule to a specific model.

Cross instance sourcing does not work for configured items because it is not defined on source.

**Note:** You must specify the same assignment set in all of the following places to assure accurate results throughout your CTO process:

- MRP: Default Sourcing Assignment set on the source
- MSC: ATP assignment set on the source if it is defined
- MSC: ATP Assignment set on the destination if MSC:ATP assignment set on the source is not defined
- Sourcing Assignment set on your ASCP plan

If you are using Global Forecasting, the Forecast Distribution Assignment set specified in the ASCP Plan options is expected to be different assignment set because it is not used for sourcing.

The MRP and MSC profiles must be set at the site level. If you override them at a lower level, you will see inconsistent results.

**Important:** CTO creates the assignment set CTO Configuration Updates for its internal processing use during the Update Existing Configurations concurrent program. Do not use this assignment set for any purpose.

## Option Specific Sourcing (OSS)

Option specific sourcing allows you to restrict the sourcing of a configuration based on a specific option or options that are ordered. For example, you may have a model that can be manufactured in three organizations. But if a specific option is chosen, it can be made only in one of the three, as they have the specialized machinery to build it.

If you have restricted options, specify the list of valid organizations and vendors where the model can be manufactured, stocked, transferred or procured, if that option is chosen. This list of organizations is overlaid with the model sourcing chain, during the ATP and Autocreate configurations processes, to restrict the sourcing of a specific configuration based on the options that were chosen. See: Impact of Option Specific Sources, page 2-37 for more information.

## Using Option Specific Sourcing

This section is intended to give you a feel for situations in which you may need to setup option specific sourcing for your models:

### **OSS setup is *not* required**

There are three organizations, set according to regions of the world:

- Japan Org
- US Org
- Europe Org

The model is a Make item in all three, but the BOM in each is different, and contains only options pertinent to its respective region.

For previous releases, you manually chose the warehouse on the sales order based on where the order originated (or used OM defaulting rules to do so). In this case, CTO creates the BOM only in the org against which the order is placed. This is still true if the model's Create Configuration Item, BOM attribute is set to Based on Sourcing (the default). No further set up is required.

You can use this attribute even if you are doing PDS based ATP with matching, because the ship from organization is always defaulted, and there is no variation in sourcing once that organization is picked. No OSS setup is required.

### **OSS setup *is* required**

The ATO model can be made in any of six manufacturing organizations, and you want the choice of the manufacturing organization to be based on GOP, rather than simple defaulting rules. However, if the customer chooses a specific option (for example a specific specialty coating for the product) it can only be made in Org1. Match is used on this model.

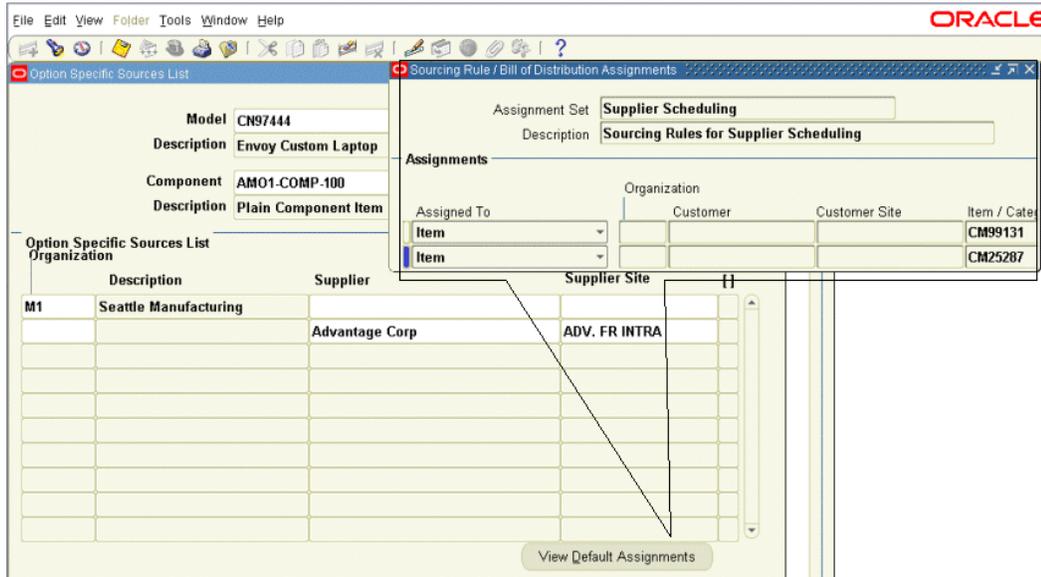
For 12.0, if you want to use GOP to pick the warehouse or want to match during ATP, the model's Create Configuration Item, BOM attribute must be set to Based on Model so that the item, BOM, and routing are created in all six manufacturing organizations, and future matches to the configuration item are valid and ATPable in all six manufacturing organizations.

If you do not set up OSS for the model with the specialty coating, CTO attempts to create the bill for these configurations in all six organizations no matter which one is shipping the material. Because the speciality coating option does not exist on the model BOMs in organizations 2-5, autcreate configuration completes with a warning and puts the order on hold for all sales orders with this option.

To avoid this, set up OSS for the Model with the specialty coating as a component to restrict ATP to choose only Org 1, and to restrict the BOM creation for that item to Org1.

This is required even if you are not using ATP or APS.

## Setting Up Option Specific Sourcing



### To set up option specific sourcing

1. Navigate to Advanced Planning, Source Instance Setup, Sourcing, CTO Option specific sourcing.
2. In the header, enter the following:
  - **Model Name:** List of values contains all ATO models in your item master
  - **Component Name:** List of values that contains all active items in the system. You should pick only options, options classes or sub-models that are components of the parent model specified

If an option is specified, the sourcing chain for a configuration with that option will be limited to the organizations and suppliers listed in the setup

If an option class is specified, the sourcing chain for a configuration with that option class chosen is limited to the organizations and suppliers listed in the setup. If there is setup for both an option class and an option underneath it, an intersection of the specified sources is taken to determine the valid sources for the configuration.

If a sub model is specified as a component, any configuration that has that sub model is restricted to the organizations specified in the setup.

**Note:** If the sub model is phantom on the parent models bill in the OM validation organization, it is treated as an option class for the purposes of OSS processing.

1. In the child form, enter list of organizations and supplier/supplier sites that are valid parts of the sourcing chain for this model and component combination. Valid parts of the chain are anywhere this model with this option can be manufactured, stocked, transferred or procured:
  - **Organization:** List of values contains all organizations in your system in which the model is enabled
  - **Supplier:**List of values contains all vendors in all operating units
  - **Supplier Site:**List of values contains all vendor site code. Note that the LOV displays the vendor code (name) and not the vendor ID, as vendor ID is operating unit specific. This enables you to set up a vendor site once and have it apply to all operating units that use that vendor.

Selecting View Model Assignments opens the assignments form with MRP: Default assignment set data. If the profile is set to Null then the Assignment form opens with no specific assignment in it.

**Note:** Option specific source lists setup for a model are ignored in cases where that model appears as a phantom on a parent model bill in the OM Validation Organization.

**Note:** An option specific list defined for a submodel will affect the parent model's available sources if the model appears as a nonphantom in the parent model's bill in the OM validation organization.

For ATP to consider option specific sourcing, any model with option specific sources defined, or any model with child models with option specific sourcing defined must have ATP Components set to something other than None. If this is not done, you could schedule against an invalid organization. If this happens, autocreate config will error out. Components with Option Specific Source lists do not have to be ATPable.

### Option Specific Sourcing Example

Model BOM in the item validation org is:

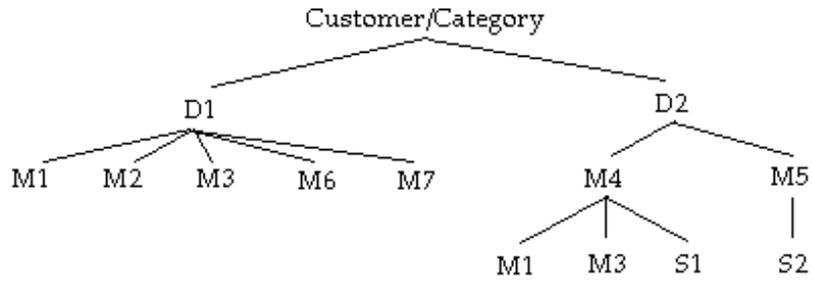
Model1

- OC1
  - O1
  - O2
  - O3
  - O4

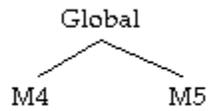
Model2

- OC2
  - O5
  - O6

Model1 sourcing:



Model2 sourcing:



**Sourcing Rules**

| Sourcing rule | Org / Global | Type     | Org | Supplier | Alloc% | Rank |
|---------------|--------------|----------|-----|----------|--------|------|
| SR11          | Item         | Transfer | D1  | -        | 40%    | 1    |
| -             | -            | Transfer | D2  | -        | 60%    | 1    |
| SR12          | Org D1       | Transfer | M1  | -        | 30%    | 1    |
| -             | -            | Transfer | M2  | -        | 30%    | 1    |
| -             | -            | Transfer | M3  | -        | 30%    | 1    |

| <b>Sourcing rule</b> | <b>Org / Global</b> | <b>Type</b> | <b>Org</b> | <b>Supplier</b> | <b>Alloc%</b> | <b>Rank</b> |
|----------------------|---------------------|-------------|------------|-----------------|---------------|-------------|
| -                    | -                   | Transfer    | M6         | -               | 40%           | 1           |
| -                    | -                   | Transfer    | M7         | -               | 100%          | 2           |
| SR13                 | Org D2              | Transfer    | M4         | -               | 50%           | 1           |
| -                    | -                   | Transfer    | M5         | -               | 50%           | 1           |
| SR14                 | Org M4              | Transfer    | M1         | -               | 50%           | 1           |
| -                    | -                   | Transfer    | M3         | -               | 25%           | 1           |
| -                    | -                   | Buy         | -          | S1              | 25%           | 1           |
| SR15                 | Org M5              | Buy         | -          | S2              | 100%          | 1           |
| SR16                 | Item                | Transfer    | M4         | -               | 40%           | 1           |
| -                    | -                   | Transfer    | M5         | -               | 60%           | 1           |

#### ***MRP Sourcing Assignments***

| <b>Assigned to</b> | <b>Org</b> | <b>Item/</b> | <b>BOD/SR</b> |
|--------------------|------------|--------------|---------------|
| Customer           | -          | Model1       | SR11          |
| Model-Org          | D1         | Model1       | SR12          |
| Model-Org          | D2         | Model1       | SR13          |
| Model-Org          | M4         | Model1       | SR14          |
| Model-Org          | M5         | Model1       | SR15          |
| Item               | -          | Model2       | SR16          |

Additional requirements

- Model1 with option O1 can be made in M1, M3 and M6 only.
- Model1 with option O2 can be made in M2, M3 and M6 only.
- Model1 with option O3 can be bought from S1 only.
- Model1 with option O4 can be made in M2, M6 and M7 only.
- Model2 with option O5 can be made in M4 only.

Set up the option specific source lists listed in Table 2–17, page 2-37.

***Option Specific Source Lists***

| <b>Model</b> | <b>Component</b> | <b>Org</b> | <b>Vendor</b> | <b>Vendor Site</b> |
|--------------|------------------|------------|---------------|--------------------|
| Model1       | O1               | D1         | -             | -                  |
| -            | -                | D2         | -             | -                  |
| -            | -                | M4         | -             | -                  |
| -            | -                | M1         | -             | -                  |
| -            | -                | M3         | -             | -                  |
| -            | -                | M6         | -             | -                  |
| Model1       | O2               | D1         | -             | -                  |
| -            | -                | D2         | -             | -                  |
| -            | -                | M4         | -             | -                  |
| -            | -                | M2         | -             | -                  |
| -            | -                | M3         | -             | -                  |
| -            | -                | M6         | -             | -                  |
| Model1       | O3               | D2         | -             | -                  |
| -            | -                | M4         | -             | -                  |

| Model  | Component | Org | Vendor | Vendor Site |
|--------|-----------|-----|--------|-------------|
| -      | -         | -   | S1     | Ste1        |
| Model1 | O4        | D1  | -      | -           |
| -      | -         | M2  | -      | -           |
| -      | -         | M6  | -      | -           |
| -      | -         | M7  | -      | -           |
| Model2 | O5        | M4  | -      | -           |

### Impact on Sourcing Assignments for the Model

Category or organization level assignments cannot be used for option specific source models, or models that are parents of option specific sourced models. If specified, those rules will be ignored during CTO process. In addition, Region or other assignments that cannot be defined on the source should not be used for option specific sourced models. This means that users of option specific sourcing will be restricted to item-level and customer-item assignments for Global ATP and loop back.

In organizations where you will be purchasing a configuration, you must define explicit buy rules in order for those organizations to be considered as valid organizations during OSS processing.

Defining an item rule for an option specific model, or a parent of an option specific model, will make all the organizations where the model is enabled as valid organizations. To avoid this, you must assign specific Make At or Buy From assignments in the end node of your sourcing chains.

### Interactions with Other Features

If users set the new model level Create Configuration Item, BOM item attribute to create configuration data based on the model, and they have certain organizations where they build configurations with certain options (and the options are not on the model BOM in those organizations), they *must* set up option specific sourcing for these options. If they don't, CTO will attempt to create the bill and routing in all valid sources for the model, which could result in all of their sales orders getting put on hold, because some of the selected options didn't exist in some of the model sources.

The model order line is promised by looking at model sourcing rule and the list of organizations specified for the selected option items. In certain setups, a specific configuration for this model may not have a valid source. If this happens, during

availability check the user will get an error stating no valid sources exist based on option specific sourcing. To avoid this, the user should create configurator rules to ensure nonvalid configurations are not configured and sent to ATP.

When a configuration is created from a model with option specific sourcing defined, either from a sales order or through Bills of Material, the configuration will be marked as an option specific sourced item. If these configurations are ordered directly on a sales order line, ATP will validate that the ship from organization appears as an explicit organization in the items sourcing tree.

## Additional Tips

- If there is a single, mandatory, mutually exclusive option class that determines the valid organizations, this setup needs to be done only for options in this option class. For example, you sell computers to all parts of the world, but have a single model setup regardless of where you are shipping. Your user is restricted to a specific base computer by the region in which they use the computer. In addition, they will be restricted to certain accessories (keyboards, power supplies, and so on). You always build the computers in the plant closest to your customer (so all Asian computers are built in Singapore, all U.S./Canada computers are built in the U.S., and so on.).
- You could setup your option specific rules based on the base unit to restrict the models sourcing to a specific plant. Because this is a mandatory choice, there is no need to also set up OSS for all the accessories.
- If there is no single, mandatory option that determines the source, users may want to consider creating a dummy mutually exclusive option class to which they can assign this option specific rule. Otherwise, they will need to set up option specific rules for all the options in the model structure that are not made in all organizations.
- If the choice of organization is based on an attribute or a value of an option, you may want to consider creating a dummy option to represent the attribute for OSS. For example, you are selling pipe, and your customers can order a pipe with a length between 2 inches and 20 feet. Anything under 15 feet can be made in all six organizations of your manufacturing organizations, but anything over fifteen feet can only be made in Org6. You can create a dummy option class with two components: Less than 15 feet and 15 feet or greater. This could be selected in the background by the configurator, and used to restrict the sourcing of these items to Org6, and restrict the BOM creation for these items to Org6. If you change the option specific sourcing on a model, you need to run the Update Existing Configurations program before the change will appear on your existing configurations. See Updating Existing Configurations, page 6-1 for more information.

## Forecasting and Master Scheduling for ATO Models

The following information provides an overview of planning and ATP for configurations. For more information refer to the relevant planning guides.

### ASCP vs. MRP?

In general, ASCP is the recommended planning solution for configurations, and ATP based on planning output is the recommended ATP solution. Both have been designed specifically to support configurations throughout the planning life cycle—from forecasting to shipment of your configurations—and provide the most robust and accurate results for your business.

Features available in ASCP and ATP based on planning output that are *not* available in MRP and ATP based on collected data are:

- **Support for Multiple Sources:** You can source configurations from more than one location. This can be done through sourcing assignments that are a combination of make/buy, make/transfer, transfer/transfer, and so on.
- **Global ATP for ATO Models and ATO Items:** Specifying a warehouse prior to scheduling or performing an ATP is not necessary. ATP can choose a source based on sourcing assignments and availability and produce the specific configuration, enabling the system to recommend the best possible source for the product.
- **Option Specific Sourcing of ATO Models:** You can restrict the sourcing of a model based on the options chosen. For example, a model could be made in organizations 1 and 2, but if option 1 is chosen, it can only be made in organization 1.
- **Match and ReUse during ATP:** ATP based on planning output does a match prior to performing its availability check. If a match is found, ATP is done on the matched item instead of the model and options. This provides an accurate ATP and scheduling throughout the order life cycle, as well as enables customers to manage a combination of make to stock and make to order business processes. If match is not on, and a customer is rescheduling an existing order for which the configuration has not changed, the linked configuration will be used to reschedule the order, resulting in a more accurate and reliable reschedule process.

In order for ATP to recognize a match, the configuration must have been collected and planned in the ATP referenced ASCP plan.

- **Preconfiguration forecast consumption:** If a forecast exists for the matched item at any level in your configuration, its forecast is consumed first, then the model and option forecast will be consumed, if needed.
- **Planning for option dependant resources:** When planning to a forecast, APS applies the planning percentages to the option dependant resources in addition to

the optional material. This means that a planned order for the ATO model will have its resource usage reduced proportionally based on how often that resource is expected to be optionally used.

- **Supplier Capacities for ATO Models:** You can specify a supplier capacity for an ATO model. ASCP plans constrain all purchase requirements for the ATO model and all configurations based on the capacity definition of the ATO model. You cannot define a capacity for a specific configuration.
- **Support for Multiorganization ATO models:** If you have a multiorganization ATO BOM structure or do not manufacture in the shipping organization, you must use ASCP and DP for global forecasting. MRP forecasting processes does not support multiorganization forecast consumption.

See the CTO chapter of the *Oracle Advanced Planning Implementation and User's Guide* for more information.

MRP can be used to plan for configurations that:

- Are not sourced, and do not require any of the ATP features mentioned earlier
- Are sourced, but do not require forecasting or ATP
- Are multi-level, but do not require forecasting or ATP

See *Oracle Master Scheduling/MRP* and *Oracle Supply Chain Planning User's Guide* for more information.

## Forecasting

Oracle Master Scheduling/MRP enables you to define and maintain forecasts for any item, at any level on your bills of material. You can directly forecast demand for option classes, options, and mandatory components. You can also explode forecasts for models and option classes, through model and option class bills, to selected option classes, options, and mandatory components.

### Forecast Control

Use the Forecast Control item attribute to tell the system the types of demand that you place for models, option classes, options, and mandatory components. MRP and ASCP use the Forecast Control value you assign to each assemble-to-order and pick-to-order item when forecasting and master scheduling models and options.

**Consume** Independent forecast demand is demand that you place for an option by directly entering forecasts for the option, rather than exploding forecast to the option. If you forecast demand directly for an option and do not want to derive it during forecast explosion, then set Forecast Control to Consume.

**Consume and Derive** The forecast explosion process can derive a forecast for option

classes, options and lower level models by calculating forecasts for the children by extending parent forecast quantities using the component usages and planning percents defined on your planning, model, and option class bills. If you want to forecast demand for an item by exploding demand from a higher level item in a bill of material, then set Forecast Control to Consume and Derive.

If you forecast demand for an item directly, and you explode forecast demand to the item, also set Forecast Control to Consume and Derive.

**None** Set the value to forecast control item attribute to None. This means that at every level of the bill the production forecast for the lower level item is based on the forecasted planned orders for the item above it in the bill structure. The main effect of this is that as the top model's forecast is consumed the amount of planned order supply is reduced. This will directly affect the production forecast demand exploded to the next level. Use this feature if you want the lower level forecasts to be reduced based on the top level models forecast consumption, not how often the specific option is used.

**Null** Sales order demand is demand that you place when your customers order configurations. As your customers order configurations, the system automatically places sales order demand for each model, option class, and option selected by your customer when they place the order. If you place sales order demand for an item, but do not forecast the item, then set Forecast Control to Null.

**Derived Sales Order Demand** Under normal circumstances, the system does not place sales order demand for mandatory components when your customers order configurations. You can set the Forecast Control attribute to Consume or Consume and Derive to automatically place demand and consume forecasts for mandatory components when you place sales orders demand for configurations that include the mandatory components.

If you forecast demand for a mandatory component, either directly or through forecast explosion, then set Forecast Control to Consume or Consume and Derive. If you set the f/c control to None for a mandatory component, planning generates planned order demand directly from the model; the demand is proportionate for the ATO model demand.

**Note:** If your configurations are purchased from a supplier ever, set the forecast control to Null on all of the model's components. Planning does not derive the forecast for lower level options. Planning still consumes the forecast for the model.

## Global vs. Local Forecast

If you are transferring your configurations across your organizations (for example, if you are using transfer from sourcing rules on your models), you must use Demand Planning to create a global forecast for your model and options, and then distribute that forecast to your shipping organizations during an ASCP plan run. Forecast consumption is done off the global forecast, and the remaining forecast is redistributed

during the planning run.

**Consume and Derive** If you choose to consume and derive your forecast for your options from the forecast for the model:

- The forecast explosion of a global forecast will be done off the planning percentages on the model in the org specified in the demand plan. Generally, you should set this to your OM validation organization. This can be done in DP, or as part of the ASCP plan run.
- You must assign sourcing rules in your distribution assignment set to your model AND all your option classes and options for whom you are deriving a forecast, in the forecast distribution assignment set.

**None** If you do not derive the forecast for your options, that is the item forecast control attribute is set to None:

- Assign a sourcing rule in your distribution assignment set for only the model, and any options you forecast directly.
- After the model forecast is distributed to the shipping organizations, ASCP will create a production forecast for all the option classes and options based on the planning percent in the organizations in the sourcing chain to drive planned orders in those organizations.

**Note:** If you are using option specific sourcing, it is recommended that you *do not* derive the forecast for your options. Allow the program to create production forecasts for your options, based on the actual planning percent in the source organizations.

For more information on global forecasting and demand planning see the *Oracle Demand Planning User's Guide*.

If you are not transferring configurations across organizations, you can forecast directly in the manufacturing organizations. If you want to derive the forecast for your options based on planning percentages on the model, you can perform a forecast explosion on the source in the manufacturing organization, or you can perform an in-line forecast explosion in your ASCP plan. However, if you are using MRP, you *must* do the forecast explosion in the manufacturing organization.

## Forecasting Preconfigured Items

You can forecast and consume forecasts for preconfigured items, if you are using APS and ATP based on planning output. When doing this, make sure the forecast for your model and options does *not* include the forecast for your preconfigured item.

### Example

You plan to make a total of 100 of ModelA each week, of which you expect 40 to be of a

specific popular configuration. Create a forecast for 40 of the popular configuration, and a forecast of 60 for ModelA. If entering a forecast directly for a component of ModelA, adjust its forecast to *not* include the dependant demand from the popular configuration.

Sales orders that match the popular configuration will consume its forecast first, then revert to the model and option forecast.

This feature can also be used for forecasting popular configurations at lower levels of the BOM structure in order to build these subsassemblies in advance of anticipated demand.

See the CTO chapter of the *Oracle Advanced Planning Implementation and User's Guide* for more information.

## Demand Planning for Configurations

You can use Oracle Demand Planning to calculate planning percentages based on the sales history of models and options. This is useful for predicting the mix of options in configure-to-order environments. The sales history of the models (independent demand) and options (dependent demand) is derived from the sales of the configuration items. This feature enables you to quantify the relationship of dependent to independent demand (options to model) in two ways:

1. Historical planning percentages: Ratio of average sales history of options to average sales history of option classes or models. You can specify the historical period over which the sales history is averaged. This is applicable when the make up of the products is relatively consistent over time.
2. Forecasted planning percentages: Ratio of forecast of options to forecast of option classes or models. This is applicable when the product mix is variable and product trends and seasonal projections are important.

In addition, you can use the planning percentages specified in Oracle Bills of Material to explode forecasts of models to option classes and options. The planning percentages are calculated at the time of generating a statistical forecast and are stored as an object associated to that forecast. This feature also enables you to compare and modify various planning percentage objects as well as the exploded dependent demands. This can be done as a global forecast or local forecast.

See the *Oracle Demand Planning User's Guide* for more information.

## Planning and Master Scheduling Model and Options

Oracle Master Scheduling/MRP also lets you master schedule any planned item, anywhere on your bills of material, including models, option classes, options, and mandatory components.

## Advanced Planning

Oracle's advanced planning and scheduling solution enables you to accurately plan

your models and options across your supply chain. As sales orders consume forecasts, the actual configuration demand replaces the model and option class demand.

When setting up your ASCP, keep the following points in mind:

- The assignment set assigned on your plan must equal the one assigned to the MRP: Default Assignment set on the source.
- Use your global forecast or your local forecast set as the demand schedule for the plan. MDS is not supported as a demand schedule for configurations if you transfer configurations across organizations.
- Be sure to include sales orders in all your organizations against which you plan to place demand.
- If you choose to plan only those items in the demand schedule, the plan will also pick up and plan configurations that were created for sales orders for models in that plan. Plan All Items to pick up configurations in stock that have no forecast, and no current sales order
- If you have option dependant routings, and are planning resources, the options must be planned.
- Enable the plan for ATP to support ATP based on planning output, and ensure all ATPable items are planned
- A configuration item *must* be created for all scheduled sales orders in order for planning to plan for them. Any scheduled sales order without a configuration linked to it will *not* be planned.
- If you do a net change collections to pick up configured sales orders, you must collect all of the following items:
  - Sales Orders
  - Items
  - BOMs/Routings
  - Sourcing rules, if your model had sourcing rules assigned to them
- For ATP to use a matched configuration, it must have been collected and included in the plan

See the CTO chapter of the *Oracle Advanced Planning Implementation and User's Guide* for more information.

## Phantom Submodels

A phantom submodel is treated like a nonphantom model for the purposes of ATP and planning. This means:

- Its resources would be counted twice if the phantom model routing is commoned to its parent routing.
- Its lead-time for lower level components would be offset inaccurately. This affects only ATP
- The forecast explosion for lower level components (date and quantity) would be LT offset incorrectly. This means you would forecast requirements too early in time and cause excess inventory.

It is recommended not to use phantom sub-models if you are using ASCP and ATP based on planning output.

## MRP

You can load forecasts and sales orders into a master demand schedule (MDS) if you use single level single organization models. This MDS can be used to create a Master Production Schedule (MPS) that can drive the planning process for all MRP planned items. This enables you to manually smooth the MPS. Identify your master production schedules as visible to the Oracle Inventory available-to-promise (ATP) process, so that Order Management can check ATP information for your key subassemblies when scheduling sales orders for configurations.

## Production Relief

Production relief, also known as MPS relief, is the process that replaces planned supply with actual supply when you create a work order to build a manufactured item, or when you create a purchase requisition to buy a purchased item. Each time you create a work order or purchase requisition, you create actual supply. If the actual supply is planned, then you typically want to reduce the planned supply by the work order or purchase requisition quantity to avoid overstating supply. When a purchase order, purchase requisition or discrete job is created for a member of a product family, the MPS is not relieved for the member items as well, as the product family. You can track reliefs against a Master Demand Schedule for both the product family and the member items. You cannot track reliefs against a Master Production Schedule at the product family item level because the MPS for a product family item is not relieved when the MPS for the member item is relieved. The procedure for tracking reliefs (MDS) for a product family item is the same as that for any individual item.

Production relief relieves your master production schedules for any phantom item when you create a work order for the phantom's parent. Because option classes, and optionally models, are created as phantoms on the configuration item bill, Master Scheduling/MRP automatically relieves your master production schedules for models

and option classes when you create a final assembly order for a configuration. Production relief relieves your master production schedules for options and mandatory components when you create work orders for them.

## Shipment Relief

Shipment relief, also known as MDS relief, is the process that reduces anticipated demand when you ship product that satisfies a sales order. Each time you ship a product to a customer, you satisfy demand. If the demand is included on your master demand schedules, then you typically want to reduce the anticipated demand by the sales order quantity to avoid overstating demand. Master Scheduling/MRP automatically relieves master demand schedules when you ship a sales order for a configuration. If you have not reloaded your master demand schedule after the AutoCreate Configuration process, there will be no master demand schedule for the configuration item.

When there is no master demand schedule for the configuration item, shipment relief explodes the configuration bill and relieves master demand schedules for each model and option class on the bill. Shipment relief also relieves master demand schedules for each standard item where you have set Forecast Control to Consume or Consume & Derive. If you ship a sales order for a member of a product family, sales order shipment relieves the master demand schedule for member items and the product family. If you have reloaded your master demand schedule since the AutoCreate Configuration process, shipment relief finds and relieves master demand schedules for the configuration item only.

See *Oracle MRP/Master Scheduling User's Guide* for more information about master scheduling.

## Order Management Setup

The following information provides an overview of Order Management setup in Oracle Configure to Order.

## Pricing

The model, option class and all optional items, and PTO included items need to be on the appropriate price list before you can enter an order. The price assigned to the model and option classes should include the price of any standard mandatory components that are underneath that model. If you need many option classes or options with a zero price, you can easily put all items on a price list with a zero price (or any price, for that matter). On the price list, enter the following values:

- Product Context: Item
- Product Attribute: ALL\_ITEMS

- Product Value: ALL
- UOM: whatever
- Application Method: Unit Price
- Value: 0 (or whatever default price you want to set)

You then can enter lines for only the items that have a nonzero price.

## Workflow

### Setup for Configuration Line Workflow

The AutoCreate Configuration process creates a configuration item for the models, option classes and options that you have selected. At the end of the AutoCreate Configuration process, the configuration item is linked to the sales order by adding a new order line to the sales order. You must assign the Configuration Line Workflow to the order line type you are using to process the rest of the CTO workflow properly.

#### To assign the Configuration Line Workflow

1. (N) Order Entry, Setup, Transaction Type, Define
2. Query the Transaction Type corresponding to your ATO Model order type.
3. Click Assign Line Flows. This opens the Line Workflow Assignments form.
4. Create a line workflow assignment with the following values:
  - Line Type = Your order line type
  - Item Type = Configured Item
  - Process Name = Line Flow - Configuration.

See *Using Oracle Workflow* in the *Oracle Order Management User's Guide* for more information on the setting up workflows.

**Note:** Configurations are created as invoiceable by default. Therefore, if you put an invoicing activity in the config line workflow (or assign the ATO item workflow to the config line), your configuration item will appear on the customer invoice. Config item will always have a zero price on the invoice if the order was placed for the model and options.

### Customize the Order Processing Workflow

This section provides details on customizing the workflows if it is needed by your

business. See *Using Oracle Workflow in Oracle Order Management Guide* for more information on the OM workflows used by CTO.

The ATO model line, the configuration line, and the ATO Item workflow can be customized by adding blocks or approval activities or by removing some optional blocks and activities.

### ATO Model Workflow

The following table shows all the activities in the ATO Model line workflow are mandatory.

#### **ATO Model Mandatory Workflow Activities**

| <b>ATO Model Line Workflow Activity</b> | <b>Mandatory</b> | <b>Comments</b>  |
|---|------------------|--|
| Enter Line                              | Yes              | -  |
| Schedule Line                           | Yes              | -  |
| Configuration Item Created              | No               | This activity aids in correctly processing order lines if the configuration item is created before the line is booked. If you do not create configurations for unbooked orders, remove this activity. Note that the creation of the configuration item before booking is desirable if you want ASCP to see unbooked order as demand and plan for it. |
| Create Configuration Eligible           | Yes              | -  |
| Create Configuration                    | Yes              | Creates item, BOM, and routing   |
| Wait for CTO                            | Yes              | -  |
| Line Level Invoice Interface            | Yes              | -  |
| Close Line Process                      | Yes              | -  |

### Configuration Line Workflow

This table summarizes which activities in the Configuration Line workflow activity are mandatory and which are optional.

**Configuration Line Workflow Activities**

| <b>Configuration Line Workflow Activity</b> | <b>Mandatory</b> | <b>Comments</b>  |
|---|------------------|--|
| Enter-Line                                  | Yes              | Enter Line activity is added to the configuration flow to account for configuration creation before an order is booked, provided the respective model line is scheduled. This requires the configuration line workflow to wait for booking if the configuration is created before the order is booked. Once the order is booked, the configuration line progresses to Create Supply Order Manual activity. Enter line activity does not affect the configuration flow if the order is booked before the configuration item is created. |
| Check Reservation                           | No               | This activity moves an ATO item WF directly to shipping if a reservation to the order is made before the order is booked. Remove this item if you do not reserve ATO items manually or automatically before booking.   |
| Check Supply Creation                       | No               | Checks if the supply needs to be created by CTO or planning. Remove this activity if you have only SLSO ATO models and always use CTO to create supply.  |
| Create Supply Order Eligible                | Yes              | -  |

| <b>Configuration Line<br/>Workflow Activity</b> | <b>Mandatory</b> | <b>Comments</b>   |
|---|------------------|---|
| Check Supply Type                               | No               | Not required if routings for all models and ATO items are only discrete routings or flow routings and ATO models and ATO items are not purchased. |
| Create Work Order Process                       | No               | Not required if routing of all models used is flow routing  |
| Create Flow Schedule                            | No               | Not Required if Routing of all models used is discrete routing.   |
| Autocreate Req                                  | No               | Not required if ATO models and ATO items are never purchased.   |
| Purchase Release, Line -<br>Deferred            | No               | Not required if you will never dropship an ATO model or item.   |
| Wait for PO Receipt                             | No               | Not required if ATO models and ATO items are never purchased.   |
| Ship Line                                       | Yes              | -   |
| Fulfill Line                                    | Yes              | -   |
| Close Line                                      | Yes              | -   |

Block activities cannot be added inside the Create Manufacturing Configuration Data process and the Create Supply Order process.

#### **ATO Item Workflow**

This table summarizes which activities in the ATO Item workflow activity are mandatory.

**ATO Item Workflow Activities**

| <b>ATO Item Line Workflow Activity</b> | <b>Mandatory</b> | <b>Comments</b>   |
|--|------------------|---|
| Enter Line                             | Yes              | -   |
| Schedule Line                          | Yes              | -   |
| Create Supply Order Eligible           | Yes              | -   |
| Check Supply Type                      | No               | Not required if routings for all models and ATO items are only discrete routings or flow routings and ATO models and ATO items are not purchased. |
| Create Work Order Process              | No               | Not required if routing of all models used is flow routing  |
| Create Flow Schedule                   | No               | Not required if routing of all models used is discrete routing.   |
| Autocreate Req                         | No               | Not required if ATO models and ATO items are never purchased.   |
| Purchase Release, Line - Deferred      | No               | Not required if you will never dropship an ATO model or item.   |
| Wait for PO Receipt                    | No               | Not required if ATO models and ATO items are never purchased.   |
| Ship Line                              | Yes              | -   |
| Fulfill Line                           | Yes              | -   |

Block activities cannot be added inside the Create Supply Order process.

Activities marked as No in the mandatory column in both the preceding tables can be removed from Create Supply Order process. The Create Supply Order process is used

in both Configuration line workflow and ATO item workflow and hence changes to this process will affect both the line flows.

## Customization to Workflow

You can customize the seeded workflow, using Oracle Workflow Builder, if you have special requirements. The notification message can also be customized.

Please see the *Oracle Order Management Workflow Guide* for more information.

## Constraints

Order Management has a delete constraint that prevents the deletion of a line after booking. This prevents you from changing the configuration of a model after it has been booked. This is a non-system constraint that should be disabled if you need to make changes to your configurations after booking.

## Removing Delete Constraints

### To remove the delete constraint

1. (N) Order Management, Setup, Rules, Security, Processing Constraints
2. Perform a query on the entity Order Line, and for the application, Oracle Order Management.
3. Look for a nonseeded delete constraint, with conditions, any booked order line and any non-RLM line.
4. Disable the entire constraint (from the constraints portion of the form).

## OM Validation Organizations

In general, if you are using CTO functionality, the OM validation and PO validation organizations should be used exclusively for those activities. They should not be one of your manufacturing or purchasing organizations.

This is because the Configuration item will be created in these organizations, but if the attribute Create Configuration BOM, Routing is set to Based on Sourcing or Item Based on Model, BOM Based on Sourcing, the BOM is not created in these organizations unless it happens to be on the sourcing chain of the order that the configuration item is being created for. This can cause issues for ATP, and future orders taken against these organizations.

If you do set it up exclusively for use as a validation organization, the create configuration BOM parameter should be off in these organizations. If not, and any of your models have the Create Configuration Item, BOM item attribute set to Based on Model, a BOM is needlessly created in the OM validation organization because a model BOM exists there.

**Note:** If the profile INV: capable to promise, is set to perform ATP based on collected data, OM allows an ATO item order to be scheduled only if a BOM for the item exists either in the shipping organization or in OM validation organization. If you accept orders directly for the autocreated configuration items, the Create Configuration BOM parameter should be set to Yes, at least in the shipping organization or the OM validation organization.

## Related Topics

For more information on Order Management constraints for configurations, see Order Changes and Returns, page 5-1.

## Shipping Setup

This section describes the various shipping attributes required for the shipping setup in configure to order environment.

### Item Attribute

The following item attribute is applicable to PTO models.

### Ship Model Complete

If this attribute is set to Yes, the entire configuration must be delivered in the same shipment. If the attribute is set to No, components can ship separately. ATO models are inherently ship together models. If you have a PTO model that has an ATO model and some other PTO options underneath, and you want to ship the PTO options along with the ATO model, then Ship Model Complete must be set to Yes on the PTO model.

### BOM Attributes

The following shipping attributes are on the Bills of Material window.

### Include On Shipping Docs

Indicates whether the component will be printed on external shipping documents such as pack slips and commercial invoices. For example, for an ATO model, it may be more reasonable to print the order lines, ATO model, and options on the shipping documents, in addition to the configured item.

### Required to Ship

Indicates whether the component is required to ship the order. You can only update this check box if the Assemble to Order item attribute for the assembly item in the Define

Item window is disabled.

This attribute only affects PTO included items (not ATO items or configurations).

## PTO Models and Packing Lists

PTO items generally do not show up on a packing list. If you have a requirement to do so, you must make the PTO model shippable, but not transactable. Shipping will now print all shippable items on the packing list regardless of whether it is a model or not. This will enable you to see what was ordered (the model), as well as the shippable components within the model on the packing slip. They must ensure that the shippable flag for the model is checked in the item master for it to print. The ability to print the components on the shipping docs will continue to be managed by using the check boxes on the BOM Include on Shipping Docs.

Be careful if your business process requires them to ship the PTO models in partial. Because the model is shippable but not transactable, pick release will always stage the full requested quantity of the model because inventory basically ignores nontransactable items. If shippable, transactable components are released in different quantities than the model, you will have to manually adjust the shipped quantity of the model.

### **Example:**

Before Pick Release:

- Model Qty = 10 Ready to Release  
component 1 Qty = 10 Ready to Release  
component 2 Qty = 10 Ready To Release

After Pick Release

- Model Qty = 10 Staged  
component 1 Qty = 5 Staged  
component 2 Qty = 5 Staged

Ship Confirm will receive a warning that they are breaking the model, but if the model quantity is not adjusted to 5, the components will be backordered but not reflect that they are associated with a model because the shippable model has shipped complete. This gets even more complicated if the components are staged nonproportionally.

## Staging Subinventory

Your staging sub-inventory *must* be reservable in a configure to order environment.

## Purchase Pricing for Models and Supplier Communication

This section describes how to set up purchasing data to enable purchase price

calculation and channels for communicating configuration details to your supplier.

## Purchase Price Calculation

CTO performs a purchase price calculation during autcreate configuration. The price calculation is done in the following ways: Using List Prices, Using Blanket Purchase Orders for Models, or Using Custom Hooks.

This section will describe the setup requirements for each of these calculations. Details on the calculation themselves can be found in Chapter 9: Create Configuration Items.

### List Price Calculation Setup Requirements

The list price for the model and all its options should be defined on the item master in the PO validation organization for the operating unit where the purchased configuration will be received. The price assigned to the model and option classes should include the price of any standard mandatory components that are underneath that model.

### Blanket Price Calculation Setup Requirements

You must first define and approve a blanket purchase order for your purchased ATO model, its option classes and options. The price assigned to the model and option classes should include the price of any standard mandatory components that are underneath that model. For ease of maintenance and performance reasons, it is recommended that you have a separate blanket for each model.

For details on setting up blanket purchase agreements, please see the *Oracle Purchasing User's Guide, Overview of Purchase Orders*. The following is a discussion of items critical to the CTO purchase price rollup process.

- Price breaks assigned to the model are copied to the configuration item. Any price breaks assigned to option classes or options are ignored. For ATO models, the price breaks must not be organization specific. In other words, the Org and Ship to fields must be blank.
- If you have assigned your model sourcing rules at the item level, the sourcing rules must have both a supplier, and supplier site and must have both a start and end date. Your blankets do not need effective and disable dates. But if they have them, they must be inside the effective dates on the sourcing rule. The latest blanket is used for the calculation instead of the one defined in the model ASL. This blanket is linked to the new configuration ASL.
- If you have assigned sourcing rules to your model at any other level (for example, item-org), the blanket PO must have both effective and disable dates on the terms tab. Additionally, if you have multiple blankets defined for a single model, the effective dates on all blankets must be the same.

Next, in each requisitioning organization, define global approved supplier, supplier

sites for the ATO model that point to the appropriate blanket. These ASLs can point to either a local or a global agreement. See the Define Approved Suppliers Lists section in the *Oracle Purchasing User's Guide* for more information.

Finally, set the new profile option BOM: CTO Default Blanket PO Release Method to determine the release method on the ASL created for the configuration.

### Limitations of Blanket Purchase Orders for Models

- If the profile PO: Automatic Document Sourcing is set to Yes:
  - CTO still requires ASLs to be defined for the model to determine the valid vendor and vendor sites, and PDOI will create ASLs for the configuration.
  - However, the latest blanket will be used for the calculation instead of the one defined in the model ASL.
- The MRP: Default Assignment Set must be the same for all responsibilities, or you may run into inconsistencies in OM, PO and APS.
- CTO will not overwrite an existing price in an existing blanket. CTO will also not overwrite the list price when progressing the order manually by using the actions button. The Purchase Price Calculation batch program has a *parameter to specify whether or not to overwrite the list price*. So, if you negotiate a special price for a pre-configured item and enter it on the blanket for the model or the list price on the item master, CTO will not over-write this price. However, this also means that CTO will not recalculate and overwrite an existing entry in a blanket when you match to an existing configuration, or when you run the batch program manually, even if prices for the options on the current valid blanket have changed. CTO will calculate a price for any valid blanket that does *not* have an entry for the matched configuration. Therefore, it is suggested that you set up a new blanket each time you renegotiate prices with your supplier, rather than just updating the prices on the existing blanket. This way, as soon as the new blanket becomes effective, CTO will automatically recalculate a new price based on the new blanket prices for any matched configuration or any time the batch process is run.
- Retroactive pricing is not supported for configurations. If you change the price of a model or option price, the price on existing configurations in the blanket is not recalculated. You will have to manually update the configuration prices directly to affect existing POs or Reqs.
- If you "expire" a blanket line for a configuration, you must also remove the ASL document reference if you want to recalculate a new price for the configuration
- If you "cancel" a blanket line for a configuration, a new price will *not* be calculated for the configuration
- CTO uses the sys date to look for valid blankets and sourcing rules. Prices for a

configuration will be based on the blanket that was valid on the day the configuration is created. Therefore, it is recommended that you run the Purchase Price batch program for all open sales orders on the day you cut over to a new blanket to recalculate valid prices on the current valid blanket.

- If you have not defined sourcing rules for your model, and you have multiple blankets defined for different suppliers that are all effective for the same period, a sourcing rule will be created for the configuration with 100 percent allocation to one of the suppliers, and 0 percent allocation to the others.
- If you are using global agreements, blanket price rollup creates a new entry in the global agreement, and enables it in all the operating units in which the model line was enabled. An ASL will also be created in all the enabled operating units, even if one didn't exist for the model.

### **Custom Price Calculation Setup Requirements**

If you prefer to do your own price calculation, CTO now provides two custom hooks in autocreate config. The first (CTOCULPB.pls) inserts the result into the list price of the configuration item in the PO validation organization instead of our calculated price. The second (CTOCUPPB.pls) enables you to do your own calculation based on any vendor and vendor site combination defined in a global ASL (no associated blanket is required). You are expected to update the appropriate tables as part of the custom program. For more information on these procedures, please see the "Description of CTO Custom Packages" section of Chapter 2.

### **Note to Buyer/Note to Receiver**

Autocreate Req will populate the note to buyer and note to receiver columns of the requisition import table with text from the message dictionary. The message `note_to_buyer` is seeded with text that reads: Supply for sales order: <order\_num>.

You can change the text of the note by editing the message dictionary for CTO Note to Buyer. There are also message dictionary entries for CTO Note to Receiver that can be populated with custom text.

### **iSupplier Portal**

Activate the CTO link in the iSupplier Portal in order for your suppliers to be able to see the configuration details for your purchased configurations. Following is a summary of steps required to personalize the iSupplier Portal to see the configuration details. For additional information, please see the *OA Framework User's Guide*.

## Activating CTO links in the iSupplier Portal

### To activate the CTO link in the iSupplier Portal

1. Log on as the system administrator.
2. Ensure that the Personalize Self-Service Defn. profile is set to Yes in your user/responsibility level.
3. Ensure that the Disable Self-Service Personal profile is not set to Yes in your default/user/responsibility level.
4. Open the iSupplier Portal full access.
5. Open an active PO. It will now have a Personalize Region link on top of every region.
6. Click the link to personalize that region. This takes you to a new page.
7. Select Personalization Level Site/Organization/Responsibility level.
8. Click Next to display the next screen.
9. Enter the responsibility/ite name.
10. Click Next to display the last page to create/update the personalization.
11. Add the column for configuration details to enable the configuration column on the iSupplier Portal PO details page. Any item on the PO that has a base model will have a link activated in this column that will take the supplier to a page that displays all the option classes and options that were chosen in order management. If the configuration item has been delinked from the sales order, the BOM will be displayed based on the actual configuration BOM in an organization, based on the following logic:
  - Display BOM from the first receiving organization on the PO in which it exists.
  - If BOM does not exist in any of the receiving organizations on the PO, display BOM from the first organization within this set of books in which it exists.
  - If BOM does not exist in any of these organizations, display a "BOM not found" message.

For more information on the iSupplier Portal see: *Oracle iSupplier Portal Implementation Manual*.

## Supplier Item Descriptions

CTO displays the supplier item descriptions for the model, option class and options on

the iSupplier Portal configuration details page and in the item level text attachment that is generated during auto create config for buy configurations.

Supplier item descriptions are shown only if defined on the blanket if the document is a blanket release, or the global ASL for the item for the supplier, supplier site if the document is a standard purchase order.

## Custom CTO Packages

CTO provides a variety of custom packages to enable customers to:

- Create custom catalog descriptions
- Add the configuration item to sales and marketing category sets
- Use custom numbering for both sales order created and preconfigured items
- Modify the way price rollup is done
- Customize the logic used for finding matches to existing configurations
- Check if CTO can create supply

## Catalog Descriptions of Multiple Level Models

By default, CTO creates catalog descriptions for a configuration item, using its components' descriptive element values. For multiple level configurations, the description of the parent configuration does not roll up the description from child configurations.

CTO provides a custom package, `CTO_CUSTOM_CATALOG_DESC`, to enable customers to create custom catalog descriptions. Details of the package are as follows:

File Name: `CTOCUCLS.pls` (Package Specification), `CTOCUCLB.pls` (Package Body)

Package Name: `CTO_CUSTOM_CATALOG_DESC`

Procedure Name: `catalog_desc_method`

You can alter the default behavior in two ways:

1. Change the return value of this function to `Y,,` to roll up the child model descriptions to the parent models.
2. Change the return value of this function (`catalog_desc_method`) to `C`. In this case, add custom code to the procedure, `user_catalog_desc`, to obtain a customized description.

The procedure, `user_catalog_desc`, has three parameters:

- p\_params IN
- p\_catalog\_dtls IN OUT
- x\_return\_status OUT

p\_params is a record type and contains the following two elements:

- p\_item\_id number (inventory item ID of the configuration item)
- p\_org\_id number (organization ID)

p\_catalog\_dtls is a table of records that contains the following two elements:

- cat\_element\_name varchar2(30)
- cat\_element\_value varchar2(30)

Update p\_catalog\_dtls(i).cat\_element\_value with an appropriate value of the corresponding cat\_element\_name.

- x\_return\_status is the OUT parameter, which should be set to one of the following values:
  - FND\_API.G\_RET\_STS\_SUCCESS to indicate success
  - FND\_API.FND\_API.G\_RET\_STS\_ERROR to indicate failure with expected status
  - FND\_API.FND\_API.G\_RET\_STS\_UNEXP\_ERROR to indicate failure with unexpected status

**Note:** While creating configured items, CTO does not call the procedure, CTO\_CUSTOM\_CATALOG\_DESC.user\_catalog\_desc, for the ATO models that are not associated with catalog groups.

## Copy Category Sets

As standard functionality, CTO adds the configuration item to all category sets to which its base model belongs, except the Sales and Marketing category. CTO provides a customizable package to enable users to add the configuration item to Sales and Marketing category sets, if needed. Details of the package are as follows:

File Name: CTOCUCTS.pls (Package specification), CTOCUCTB.pls (Package body)

Package Name: CTO\_CUSTOM\_CATEGORY\_PK

Function Name: COPY\_CATEGORY

Function copy\_category has following parameters:

- Pcategory\_set\_id in Number,
- Porganization\_id in Number

It returns value 1 (add to category set) or 0 (Do not add to category set)

You can add the configuration item to the Sales and marketing category by changing the return value of the package to 1. By default, the package returns 1 for all category sets except sales and mktg category set. Alternatively, you can choose *not* to add configuration to another category set by changing the return value to 0.

**Note:** Copying the Sales and Marketing category to the configuration item makes the configuration item available to you in all CRM applications, including Sales Opportunities. Generally, this should *not* be copied.

## Custom Numbering Method

CTO provides three standard configuration numbering methods and a custom user defined numbering method. CTO provides two packages for the custom numbering method to enable you to use custom numbering for both sales order created and preconfigured items.

To generate custom numbers for configurations created from sales orders, add your custom code to the BOMPCFGI package. Details of the package are as follows:

File Name: BOMCFGIB.pls

Package Name: BOMPCFGI

Function Name: user\_item\_number

Function user\_item\_number accepts model\_line\_id as input parameter and returns name of the item in varchar2.

To generate custom numbers for lower level configurations of preconfigured items, add your custom code to CTO\_CUSTOM\_CONFIG\_NUMBER package. Details of the package are as follows:

File Name: CTOCUCNB.pls

Package Name: CTO\_CUTOM\_CONFIG\_NUMBER

Function Name: USER\_ITEM\_NUMBER

Function USER\_ITEM\_NUMBER has following parameters :

Model\_item\_id in Number,

Model\_line\_id in Number,

Param1 inVarchar2

Param2 inVarchar2

Param3 inVarchar2

Param4 inVarchar2

Param5 inVarchar2

Input parameters param1 to param5 are for future use.

If you want to use the same numbering logic for both sales order and preconfigured cases, you should put all custom code in CTOCUCNB.pls. Then create code in BOMCFGIB.pls calling CTO\_CUSTOM\_CONFIG\_NUMBER.user\_item\_number

```
(model_line_id => model_line_id,model_item_id => null);
```

**Note:** If you want to have different logic for autocreate and pre-config cases, you can still achieve it by putting all custom logic in CTOCUCNB.pls, because the input to the API will be different. For autocreate cases, model\_line\_id parameter will be NOT NULL and model\_item\_id will be NULL. For preconfig cases, model\_line\_id parameter will be NULL and model\_item\_id will be NOT NULL.

## Custom Purchase Price Rollups

By default, CTO calculates both list price and blanket prices for purchased configurations. CTO provides two custom packages to enable you to modify the way that the price rollup is done.

CTO\_CUSTOM\_LIST\_PRICE\_PK.get\_list\_price can be used to implement customized buy price calculation that will be inserted in the list price of the configuration instead of the rolled-up price otherwise calculated by the system. Details of the package are as follows:

File Name: CTOCULPB.pls

Package Name: CTO\_CUSTOM\_LIST\_PRICE\_PK.

Function Name: get\_list\_price

Function get\_list\_price has following parameters

- PmodelLineId in Number,
- PinventoryItemId in Number, -- model's inventory\_item\_id
- PorganizationId in Number

And returns the price as a number.

CTO\_CUSTOM\_PURCHASE\_PRICE\_PK.Get\_Purchase\_price can be used to implement customized buy price calculations based on vendor, vendor site (there must be a valid ASL defined for the vendor, vendor site). This price calculation will be done instead of the standard blanket price rollup.

File Name: CTOCUPPB

Package Name: CTO\_CUSTOM\_PURCHASE\_PRICE\_PK

Function Name: Get\_Purchase\_price

Function Get\_Purchase\_price has following parameters:

```
P_item_id in Number,  
P_vendor_id in Number,  
P_Vendor_site_id in Number
```

This is a Boolean function.

If this function is taking care of creating vendor based price it should return TRUE; otherwise it should return FALSE. By default it will always return FALSE.

**Note:** If this function returns TRUE it is assumed that the vendor based price calculation and creating blanket or other document is done by this procedure.

## Match Configurations

Cto\_custom\_match\_pk can be used to customize the logic to be used for finding matches to existing configurations. Details of the package are as follows:

```
File Name: CTOCUSMB.pls  
Package Name : CTO_CUSTOM_MATCH_PK  
Procedure Name: .find_matching_config
```

Function find\_matching configurations has the following parameters:

- pModelLineId in Number,
- xMatchedItemId out Number,
- xErrorMessage out Varchar2
- xMessageName out Varchar2
- xTableName out Varcahr2

If the function succeeds, it should return the inventory\_item\_id of the matched item that should be returned in xMatchedItemId. If the function fails other out parameters can be used to return the details of the error.

## Custom Check Supply Creation API

CTO has a new custom API to check if CTO can create supply.

This logic is executed when the workflow passes through the Check Supply Creation node, and during un-reservation if the workflow is already at the Ship node.

Custom API is called as part of a private API

CTO\_UTILITY\_PK.cto\_can\_create\_supply( ) before executing the default logic.

The signature for the API is as follows:

Package name: CTO\_CUSTOM\_SUPPLY\_CHECK\_PK

## API:

```
Check_supply(  
  P_in_params_rec          IN  
  CTO_CUSTOM_SUPPLY_CHECK_PK.in_params_rec_type,  
  X_out_params_rec        OUT NOCOPY  
  CTO_CUSTOM_SUPPLY_CHECK_PK.out_params_rec_type,
```

- X\_return\_status OUT varchar2,
- X\_msg\_count OUT number,
- X\_msg\_data OUT varchar2

```
);
```

The in\_params\_rec\_type is a pl/sql record structure having following attributes:

- **Config\_item\_id number:** Inventory item ID of the item for which supply is desired
- **Org\_id number:** Ship from organization ID on the order line

The out\_params\_rec\_type is a pl/sql record structure has the following attribute:

- can\_cto\_create\_supply Varchar2(1)

Excepted return values:

- can\_cto\_create\_supply:= 'Y' (also default value)
- allows CTO to uses it intelligence to find out the source of supply
- can\_cto\_create\_supply := 'N' CTO should not use it intelligence for supply creation and instead move the workflow directly to shipping

## Custom Recipients for Create Configuration Error Notifications

When an error is encountered during the create configuration process, a notification is sent to specific users. A custom hook is provided for you to override the default recipients and provide notifications to different users.

The signature for the custom hook is as follows:

- FUNCTION CTO\_CUSTOM\_NOTIFY.get\_recipients( p\_error\_type,  
 p\_inventory\_item\_id, p\_org\_id, p\_order\_number) returns varchar2

The following lookup values are supported for the Configuration\_Exception lookup type.

- OPT\_DROPPED\_AND\_ITEM\_CREATED(1): A user selected option was dropped from a BOM in one of the organizations in which the BOM was created.
- OPT\_DROPPED\_AND\_ITEM\_NOT\_CREATED(2): BOM was *not* created because a user selected option would have been dropped from a BOM in one of the organizations in which it should have been created
- EXP\_ERROR\_AND\_ITEM\_CREATED(3): There was an expected error, but the item was created anyway.
- EXP\_ERROR\_AND\_ITEM\_NOT\_CREATED(4): There was an expected error, and the item was not created.

If the API returns null, CTO sends notifications to the default recipients intended for the error type.

## Related Topics

Configuration Creation Error Handling, page 2-67



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## Create and Process Configurations

This chapter covers the following topics:

- Enter Configured Orders
- Create Configuration Items
- Supplying Unique Configurations
- Pick Release and Ship Confirm
- Intercompany Invoicing
- Activity and Generic Holds in the Order Process

### Enter Configured Orders

This section describes entering and configuring sales orders and provides a detailed description of the workflow for processing configured orders. It also describes the Match and Reserve functionality.

### Order Management Overview

One of the major features in Order Management is the integration of Oracle Configurator. Oracle Configurator provides graphical configuration interface, dynamic validation and other features that make the order configuration a totally different experience.

Another major feature in Order Management is the use of Oracle Workflow to provide you control over the sequence of events that occur in processing of orders, returns, order lines, and return lines. Oracle Workflow maintains the state of all activities for an order, automatically executes functions and sends notification, and maintains a history of completed activities. Oracle Workflow lets you automate and continuously improve business processes, routing information of any type according to business rules you can easily change to people both inside and outside your enterprise. Workflow replace Order Cycles to process orders.

## Enter Configured Orders

Orders entered through iStore or Order Management can be configured using Oracle Configurator. You have to enter a model on the order, and then click Configurator to open the Configurator window to select options.

*Oracle Configurator Developer User's Guide* provides detailed information on how to define configuration rules to be used during option selection.

Orders entered in Order Management can be configured using either Oracle Configurator or the Order Management Options Window. See: Profiles, page 2-8, for more information on the profile option that controls this behavior.

**Note:** The options displayed in the OM options window or in the configurator are based on the model structure in the OM validation organization. It is important that the entire model and option structure in the validation organization matches the structure in your manufacturing organizations. This can be achieved by either commoning all levels of your model and option class bills to the OM validation organization, or by ensuring changes to the model, option class, or options are made in all organization BOMs simultaneously. Standard, mandatory components can vary between organizations.

## View Selected Options

Whether you use Oracle Configurator or the Order Management Options Window to select options or import a configured order, you can view and delete selected options along with their option classes from the Sales Order Pad line region.

**Note:** If the order was originally configured using Oracle Configurator, whether in iStore or in Order Management, the configurator window must be used to make modifications to the selections. Similar constraints exist for the options window.

The View Line Detail option from the Tools menu in Sales Order Pad lets you toggle between displaying the model line only or model line plus all the configuration detail.

## Dropshipping Configurations

ATO items, Configurations and components of non-ship model complete (SMC) PTOs can be dropshipped.

If you always dropship an item, you can designate it as a dropship item by setting up its supply source type to External on the OM tab in the item master. All orders for this item by default will be dropship orders. You can also explicitly choose the External supply type on the order line in the sales order pad. Each line of a non-ship model complete

PTOs may be dropshipped from a different supplier based on your sourcing rules.

As with standard items, planning cannot be used for external ATO orders. You cannot perform an ATP inquiry or reserve on-hand to a dropship ATO order. The schedule date is defaulted from the request date. Shipsets or arrival sets can not be dropshipped. See: the *Oracle Order Management Implementation Manual* and user's guide for more information on drop shipping.

## Check ATP for ATO Models

This provides an overview of ATP and scheduling of configurations. See the Configuration ATP chapter of the *Oracle Global Order Promising Implementation and User's Guide* for more information on ATP. ATP is performed on any model with either ATP or ATP Components set to anything other than None.

## ATP Based on Planning Output

If you are using ATP on an ATO model using ATP based on planning output, ATP first performs match. If a matching configuration is found and is planned, ATP uses the matched item and its sourcing to promise the sales order. GOP performs capable-to-promise based on the bill of material and routing of the matched item if the item has Component ATP flag set to anything other than None. If there are not enough supplies for the matched item to meet the request date, ATP switches to the model and options to see if it can make enough to still make the date.

**Note:** If you are doing an ATP check on a sales order for which a configuration is already created and the configuration has been planned, then ATP will always be done off the linked configuration—regardless of whether or not match is on.

**Note:** A configuration must be collected and planned to be considered for a match during ATP. If the configuration is not planned then ATP creates a run-time BOM based on options selected and uses it to perform the ATP check.

If a match is not found or if configuration is not planned, ATP creates a run-time bill of material and routing for the configuration to promise the sales order.

In either case, the availability window returns a single date for the entire configuration, along with a message indicating whether or not it was able to meet the requested date.

Select ATP Details to see the model and all its options listed in the header section of the window. If a match is found for a configuration, the matched item is listed next to the highest matched model. If a match is found for the parent model, the lower level models do *not* show the matched item name because the ATP is done using the parent item itself. You can see the lower level configurations in the pegging tree. However, if a

match is not found for the parent, but is found for a child configuration, the child displays the matched item.

Options, option classes, and submodels do not have information about the warehouse or their availability dates. Instead, each component has an associated Days Late that can be used to estimate which option is causing your entire configuration to be delayed.

### ATP and Option Specific Sourcing

If option specific sourcing is specified for a model, the order is promised by looking at model sourcing rules and the list of organizations and suppliers specified for option items. If a ship from organization is specified, ATP verifies that the ship from organization is a valid organization based on the option specific sourcing. If it is not valid, an error displays. Note that the option specific setup of the child models may affect the validity of the parent model even if the parent model does not have any OSS setup.

If the ship from organization is valid or not specified, ATP uses the option specific source list for the specific configuration to trim the tree of sources assigned to the model, and traverses the trimmed tree to look for availability for the current configuration. The Make/Buy code is honored in the last source on each branch of the trimmed tree provided no source setup is found for that organization. If there is a valid option specific source list for multiple selected options, or at multiple levels in the hierarchy, this is done based on an intersection of all valid sources for all options.

If there are conflicting option specific source lists for a nonphantom model at any level of the BOM, or if the option specific source list does not overlap with the model sourcing, an error indicates an invalid sourcing definition for the configuration.

**Note:** To improve performance, the program stops processing the configuration as soon as it encounters an error in a model. This means other errors in the sourcing tree will not be found until the first error is fixed.

**Important:** If you use ship sets and no source is found, ATP cannot distinguish if it is because of invalid option specific sourcing, or a lack of commonality in valid sources for all the items in the ship set.

**Important:** Because ATP is not called for drop shipments, it cannot validate that the receiving organization specified on the sales order is a valid source for the configuration. However, when attempting to do config item creation, CTO errors out if the receiving organization is not a valid source in the option specific list. Therefore, it will be possible for a sales order to be taken for a drop shipped order against a warehouse in which it cannot be fulfilled. To correct this, cancel the warehouse and

change it to a valid source.

**Important:** If the model has OSS set up, then it must be ATPable.

When doing an ATP on an config item created from an OSS model, an organization or supplier is considered a valid source only if it is in the configuration items sourcing assignments. ATP validates the ship from organization and gives an error if it is not on the sourcing assignments for the configuration. If you do an ATP from an organization not on the sourcing chain, but where the item exists, there is an error if an ATP query is performed from an ERP instance. ATP does not flag this error if an ATP inquiry for a configuration is performed from a planning instance.

## Rescheduling

If a matched item exists and is planned, rescheduling before a configuration is created is based on matching configurations. If a match is not found or the matched item is not planned, rescheduling is based on the model and options.

Rescheduling after a configuration item is created and linked is always done based on the linked configuration and its supplies. If the rescheduling is happening as part of a configuration change, the system verifies that the new configuration matches an existing configuration. If it does, and the matched configuration is planned, the rescheduling is done according to the new matching configuration's supply. If it does not match or the matched configuration is not planned, the rescheduling is done from a run-time BOM generated from the model and options.

If the configuration item is delinked from the sales order, but the configuration has not changed and the warehouse on the order line has not changed for a model with the Create Config item, BOM attribute set to 'Based on Sourcing' or 'Item Based on Model, BOM Based on Sourcing,' the original configuration item is used to promise the sales order. This is the case even if match is not on.

## ATP Based on Collected Data

If you are doing an ATP based on collected data, the order promising is always done from a run-time BOM created from the models and options on the sales order. You cannot match during ATP, nor can you take advantage of a linked configuration's supply during rescheduling.

If you perform an availability check from order management, the availability window returns a single date for the entire configuration, along with a message indicating whether or not it was able to meet the requested date.

Select ATP Details to see the model and all of its options listed in the header section. Options, option classes, and submodels do not have information about the warehouse or their availability dates. Instead, each component has an associated Days Late that can be used to estimate which option is causing your entire configuration to be delayed.

Option Specific Sourcing is honored during ATP based on collected data. You can perform a Global ATP when ATP is being done based on collected data.

## Intercompany Setups

If you are using transfer pricing for your intercompany invoicing, you must create an entry in the intercompany price lists for the model and all its options, and all of these items must be invoicable. The intercompany price set for the models and option classes should include the price of any mandatory components underneath those structures.

If you are using enhanced intercompany invoicing based on transfer prices, the model item must exist in all organizations in your transaction flow. Unless these organizations are also manufacturing organizations, the component items (option classes and options) do *not* need to be enabled in these organizations, and the model does not need a BOM in these organizations. However, the option items must still appear on the price lists that are associated with each organization pair in the sourcing chain. You can also assign an intercompany price directly for a configured item if you want to exempt it from the normal transfer price calculation during invoicing.

See the Intercompany Chapters of the *Oracle Inventory User's Guide* for more information on Intercompany Invoicing, including how to setup transaction flows, intercompany relations and transfer pricing.

## Match Configuration Item

Match enables you to check for an existing configuration that matches the current ordered configuration exactly. If a match is found, the system will link the matched item to the sales order line.

In a multilevel configured environment, if a match is not found for the complete multilevel configuration, an attempt is made to find a match for any lower level configurations. If a match is found only for a lower level configurations, a new configuration item is created for the top level model and linked to the sales order. The matched items for lower level configurations are used as components in the top level BOM.

Match is performed independent of organization. If a matching configuration is found in any organization, it is enabled and used in the organizations required for this order.

Match does not consider mandatory components or item revisions when looking for matching configurations. However, the search for existing configuration does take into account the routing type (discrete or flow) associated with model being ordered.

The match feature enables you to identify configurations that might have been ordered before. However, changes to the base model item BOMs or routings are not automatically propagated to the items maintained in the matched items repository. Ensure that your matchable configuration items, BOMs, and routings are maintained like other standard items. Use the Purge configurations process to purge obsolete configurations from the match repository, to avoid matches to obsolete configurations.

Whether or not a match is performed is governed by three settings:

- BOM: Match to Existing Configuration
- BOM: Use Custom Match Function
- Enable Match configuration attribute on the model.

If BOM: Match to Existing Configuration is set to No, then no match will be performed on any item, regardless of the model level attribute.

If BOM: Match to Existing Configuration is set to Yes, then the model level attribute can be used to over-ride the profile settings.

If the model attribute is null, the both profile values will be used to determine the type of match to perform

If the model attribute is None, configurations for this model will not be matched, even though the profile is on.

If the model attribute is Standard, or Custom, it will over-ride the BOM: Use Custom Match Function setting.

The match is performed by comparing the current configuration with the configurations stored in the bom\_ato\_configuration table. This table is loaded only if the match profile is on at the time of configuration item creation and the model match attribute is either NULL, standard, or custom. You cannot match to any configurations created before the match profile is turned on and the model attribute Match Configuration is set to NULL, Standard Match, or Custom Match. When the model attribute is set to NULL, the setting at the profile level is applicable to the model item.

Order Management and Configurator allow you to enter decimal quantities for option items. The ordered quantity of ATO options is rounded to nine decimals; Bills of Material rounds to seven decimals. CTO rounds the ordered quantity of ATO options to seven decimals before creating the BOM for configuration items. Matching is performed after rounding the option quantities to seven decimals.

## Prerequisites

Match requires that the order is scheduled and that a configuration item has not been created for the order line. As explained in the Setup chapter, you need to set the profiles and model attributes accordingly before you use the Match function.

- BOM: Match to Existing Configurations
- BOM: Use Custom Match Function

## Perform Match

You can perform Match for an ATO model order line after the line is scheduled. The model item Match Configuration attribute should be set to Null, Standard, or Custom.

Match is available from the following form or program:

### **Sales Order Pad Actions**

#### **Sales Order Pad Actions Button - Match**

This action performs a match. If a match is found for the top level assembly, the system links the matched item to the order line. If there is on-hand inventory for this linked item, you have a choice to make a reservation or not.

#### **AutoCreate Configuration Concurrent Program**

This program performs a match. If a match is found, the system links the matched item to the order line. For multilevel configurations, autcreate configuration will try to match and reuse lower level configurations if a match for top level assembly is not found. If BOM: Automatic Reservations is set to Yes, and the order schedule date is within the OM: Reservation Time Fence, the program will automatically reserve any available on hand. At the time of configuration item creation, if the profile BOM: CTO Create Configuration Exception Behavior is set to Create BOM, CTO displays a warning message and puts the order on hold if selected options are dropped from the configuration BOM in any organization where the BOM is created. A notification about the dropped components is sent to the item's planner in the organizations where the BOM was created without the selected components. If match is enabled on the base model, any orders that use the matched configuration item are also placed on hold.

#### **Sales Order Pad Actions Button - Progress Order**

When you perform Progress Order - Create Configuration Item, the system performs a match. If a match is found, the system links the matched item to the order line. For multilevel configurations, the system will try to match and reuse lower level configurations if a match for top level assembly is not found. Reservations is set to Yes, and the order schedule date is within the OM: Reservation Time Fence, the program will automatically reserve any available on hand.

#### **Preconfiguration**

The preconfiguration process also attempts to perform a match. If a match is found for the top level item, you will be asked if you want to use it instead of creating a new bill for the new item. If a matched configuration is found and you choose to use the matched configuration, the bill of materials of the matched configuration displays. For multilevel configurations, the system tries to match and reuse lower level configurations if a match for top level assembly is not found. See *Preconfiguring Items*, page 2-32

for more information.

**Note:** If the model item attribute Create Configuration Item, BOM is set to Based on Sourcing, or Item Based on Model, BOM Based on Sourcing, match creates data in organizations based on the new sourcing chain for this order, if it does not already exist.

If the attribute is set to Based on Model, match does not attempt to create data in any new organizations. If your sourcing changes, or the model is enabled in a new organization, the Update Configurations program should be run to create the data in the necessary places.

See: Create Configuration Item, BOM Attribute, page 2-15 for more information.

If a parent model has its attribute set to Standard Match or Custom Match and has a selected child model with its attribute set to No, the parent model's attribute is read as No.

**Note:** If you set Match Configuration to Standard Match or Custom Match for any model, you must also set the profile BOM: Match to existing configurations to Yes, or the Match Configuration attribute will be ignored.

**Note:** If you set the model item attribute, Match Configuration, to No for all of your models (you are not using match), set the profile BOM: Match of existing configurations to No to avoid extra processing.

## Workflow for Configured Orders

Oracle Configure to Order uses Oracle Workflow to control the sequence of events that occur in the processing of orders, quotes, sales agreements, returns, order lines, and return lines.

## Seeded Workflow

*Using Oracle Workflow in Oracle Order Management User's Guide* provides a description of all the seeded workflows. This section provides further information on the seeded workflow for ATO models and ATO items.

- **Line Flow - Generic** is a generic line workflow that works for all item types including ATO/PTO models and ATO items.
- **Line Flow - ATO Model** is a line workflow that works only with ATO models and can be optionally assigned to model order lines instead of Line Flow - Generic. It is a subset of Line Flow - Generic workflow.
- **Line Flow - ATO Configuration item** is a line workflow that works only with ATO configuration items. This must be set up during the implementation as described in Chapter 2.
- **Line Flow - ATO Item** is a line workflow that works only with ATO Items and can be optionally assigned to ATO item lines instead of Line Flow - Generic. It is a subset of Line Flow - Generic workflow.

This special type workflow offers you the flexibility to assign unique processing activities for ATO models or items to the workflow. You may decide not to use the generic workflow for ATO models or items and use the special type workflow instead.

In the configuration line workflow, Enter Line activity is added to the configuration flow to account for configuration creation before order is booked, provided the respective model line is scheduled. This requires the configuration line workflow to wait for booking if the configuration is created before the order is booked. Once the order is booked, the configuration line progresses to Create Supply Order Manual activity. Enter line activity does not affect the configuration flow if the order is booked before the configuration item is created. Because configuration items are invoiceable items and ATO item flow has invoicing activity, using that flow for configuration items will result in configuration items to appear on invoices.

## Workflow Activities for ATO Model

The following are the main workflow activities for an ATO Model order line:

- Enter
- Schedule
- Create Configuration Item (includes creation of, BOM, Routing)
- Invoice

### **Workflow Activities for ATO Configuration Items**

The following are the main workflow activities for an ATO configuration item order line:

- Enter
- Create Supply (Work Order, Flow Schedule, Purchase Requisition, or DropShip Requisition)
- Shipping
- Fulfillment
- Close

See: Setup for Configuration Line Workflow, page 2-54 for more information.

### **Workflow Activities for ATO Item**

Following are the main workflow activities for an ATO item order line:

- Enter
- Schedule
- Create Supply (Work Order, Flow Schedule, Purchase Requisition, or DropShip Requisition)
- Ship
- Invoice

### **ATO Model Line vs. Configuration Item Line**

Once a configuration item is created for an ATO model order line, Order Management creates a new order line for the configuration item. The configuration item line goes through manufacturing and shipping processes while the ATO model line waits for the completion of those processes.

**Note:** For multilevel configurations, order management creates a configuration line for the top level configuration item. Lower level configuration item details are not maintained by order management.

The following describes the differences between the two lines.

### ***ATO Model vs. ATO Configuration Order Line Workflows***

| <b>Line Type</b>        | <b>(Main) Activities for the Line</b>   |
|-------------------------|---|
| ATO Model Line          | Enter, book, schedule, create configuration item (including BOM, and routing, invoice), fulfill |
| Configuration Item Line | Enter, create supply, shipping, fulfill   |

## **Order Line Statuses**

The status on an order line provides good information on the current state of a line. The following table lists the line status for both the ATO model and the configuration line.

### ***Line Status for Both the ATO Model and the Configuration Line***

| <b>Order Line Type</b> | <b>Line Status</b> | <b>Status Description</b>  | <b>Comments/Tips</b>   |
|------------------------|--------------------|--|--|
| ATO Model              | Entered            | The line is entered and not booked.  | -  |
| -                      | Booked             | The line is booked.  | The status remains Booked until the configuration item is shipped. |
| -                      | Fulfilled          | After the configuration line is shipped, the model line shows this status. It is eligible for invoicing. | -  |
| -                      | Closed             | The line is closed.  | -  |
| -                      | Fulfilled          | The line is shipped.   | -  |
| -                      | Closed             | Closed Line  | Line will close once invoiced                                      |
| Configuration          | Awaiting Shipping  | Supply is available and reserved to the order line   | -  |

| <b>Order Line Type</b> | <b>Line Status</b> | <b>Status Description</b>   | <b>Comments/Tips</b>  |
|------------------------|--------------------|---|---|
| -                      | Awaiting Supply    | You have bypassed the autocreate processes and are waiting for supply from elsewhere (usually planning)           | This status is used any time you bypass the autocreate supply processes. Product can be shipped while a line is in this status.   |
| -                      | Entered            | Configuration has been created but the order is not yet booked.   | -   |
| -                      | Booked             | Configuration is created, order line is booked, and the order line will be drop shipped.                          | -   |
| -                      | PO Open            | A purchase order has been created and reserved to the sales order line for the entire line quantity.              | This status is used only if you create purchase requisitions using autocreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for external (dropshipped) order lines.   |
| -                      | PO Partial         | You have a partial reservation for a purchase order, and the rest of the order quantity is reserved to inventory. | This status can occur if you create a PO with the autocreate supply process and it is partially received. If you manually reserve on-hand to an order line and create a PO for the difference, the status is also PO-Partial. This status is used only if you create purchase requisitions using autocreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for external (dropshipped) order lines. |

| <b>Order Line Type</b> | <b>Line Status</b>   | <b>Status Description</b>   | <b>Comments/Tips</b>   |
|------------------------|----------------------|---|--|
| -                      | External Req Open    | A purchase (external) requisition has been created and reserved to the sales order line for the entire line quantity.   | This status is used only if you create purchase requisitions using autcreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for external (dropshipped) order lines.   |
| -                      | External Requisition | A row for a purchase requisition (external requisition) has been inserted in the requisition interface tables for this order line for the entire line quantity.                       | The line will remain at this status until you run Requisition import. This status is used only if you create purchase requisitions using autcreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for external (dropshipped) order lines. |
| -                      | External Req partial | A row has been inserted for some quantity in the requisition interface table and some (or all) of the remaining order quantity is reserved to inventory, for a buy item's order line. | The line will remain in this status until the you execute Requisition import. This status is not used for External (dropshipped) orders.   |
| -                      | Production Open      | When a work order is linked or a flow schedule is referenced to the order line, the configuration line shows this status.   | The cursor must be on the configuration order line in order to run Progress Order, Create Supply   |
| -                      | Production Partial   | You have a partial reservation for a WIP job or a reference to flow schedules and the rest of the order quantity is reserved to inventory.  | You can be in this status if there is a partially completed WIP job or flow schedule that you created through the autcreate supply process. If you manually reserve on-hand to an order line associated with a make item and create supply for the difference, the status will also be Production Partial                          |

| <b>Order Line Type</b> | <b>Line Status</b>     | <b>Status Description</b>  | <b>Comments/Tips</b>   |
|------------------------|------------------------|--|--|
| -                      | Supply Eligible        | A configuration item has been created for the line, the line is booked and is waiting for the autcreate supply processes.            | -  |
| -                      | Supply Open            | There is more than one type of supply reserved to this sales order line.   | -  |
| -                      | Supply Partial         | There is more than one type of supply and on hand reserved to this sales order line.   | -  |
| -                      | Internal Req Requested | A row for an internal requisition was inserted in the requisition interface tables for this order line for the entire line quantity. | -  |
| -                      | Internal Req Open      | An internal requisition was created and reserved to the sales order line for the entire line quantity.                               | -  |
| -                      | Internal Req Partial   | You have a partial reservation for an internal requisition and the rest of the order quantity is reserved to inventory.              | -  |
| -                      | ASN Open               | An ASN is created for the purchase order.  | The status is applicable only when the receiving organization is WMS enabled.  |
| -                      | ASN Partial            | Your sales order line is reserved to ASN for partial amount and the rest of the line quantity is reserved to Inventory.              | The status is applicable only when the receiving organization is WMS enabled. This status appears when you partially received ASN into inventory, while some quantity on ASN is pending resulting with a reservation to ASN and Inventory. |

| Order Line Type | Line Status          | Status Description   | Comments/Tips   |
|-----------------|----------------------|--|---|
| -               | In receiving         | After performing a receiving transaction for the full quantity, the reservation transitions the line status to this value in a WMS enabled receiving organization. | The status is applicable only when the receiving organization is WMS enabled. |
| -               | In Receiving Partial | You have a reservation partially against In Receiving, and the rest of the quantity to Inventory.  | The status is applicable only when the receiving organization is WMS enabled. |

## Create Configuration Items

After a sales order for an ATO model is scheduled, you can create unique configuration items, bill of materials, and routings for every configurable level in your model bill of material. You can also establish the cost and lead time for these configuration items. If a model is sourced, the item, bill of materials, and routing are created according to the model's Create Configuration Item, BOM attribute setting.

This program first performs a match. If a match is found, the system links the matched item to the order line. If no match is found, a new item, BOM, and routing is created for the sales order. For multilevel configurations, autcreate configuration attempts to match and reuse lower level configurations if a match for top-level assembly is not found. If BOM: Automatic Reservations is set to Yes, and the order schedule date is within the OM: Reservation Time Fence, the program automatically reserves any available on hand to a matched order.

When a configuration item is created for a multiple instantiated model, CTO treats each instance of the model as an individual configuration. If the model is not enabled for matching, one configured item is created for each instance of the model. If the model is match-enabled, a match against existing configurations is performed for each instance. The match process also identifies matches among the multiple instances.

**Note:** CTO will create a configuration item for all scheduled order lines before or after booking. Because configuration validation is enforced only at booking, this means a configuration could be created for a configuration that is not valid. At the time of booking, if the configuration is invalid, you will be required to change it to a valid configuration, which will delink the original configuration. That enables you to create a new one. However, the old configuration will

still exist in the system and may have been planned. Because planning has no visibility to whether an order is booked or not, these planned orders can even be released. It is suggested that you schedule *after* booking whenever possible to ensure planning sees only valid configurations.

## Batch vs. Online Mode

You can launch the AutoCreate Configuration Items concurrent program to create configuration items for one or more sales orders. It is recommended that this program be run at fixed intervals, at least once a day, with the appropriate parameters. If you are using ASCP to plan your configurations, the program should also be launched before collections. You can also create a configuration item for a single sales order line online from the Sales Order Pad Action button (Progress Order).

## AutoCreate Configuration Items

You can launch this concurrent program from the Bills of Material menu at any point after an order has been scheduled. The program supports the following parameters:

### Sales Order

You can specify a specific sales order number. If the parameter is blank, it will create the configurations for any eligible sales orders.

### Release Offset Days

Only those sales orders for which the expected release dates for the final assembly work orders are within the release offset days specified.

The program calculates an expected work order release date using the following formula:

Schedule Ship Date - Order Lead Time

### Example

Example: Schedule Ship Date = 6/20/2000

Order Quantity = 10

Fixed Lead Time = 1 day; Variable Lead Time = .5 day

Result:  $6/20/2000 - ((10 * .5) + 1) = 6/12/2000$  (excluding 2 weekend days)

If today is 6/9/2000 and Release Offset Days is set to 5, this order processes.

### Organization

You can optionally specify an organization. Only those sales order with this organization as the shipping warehouse will be processed.

### Perform Lead Time Calculation

If you specify Yes, manufacturing and cumulative lead times are calculated for the

configuration item based on the configuration item routing in all organizations where the configuration routing is created. If you specify No, the configuration item lead-time attributes default from the base model.

This parameter gets defaulted from the profile BOM: Perform Lead Time Calculations and is valid only for items with a discrete routing. To calculate lead times at a later date, run the CTO Lead Time Calculation concurrent program.

### **Perform Flow Calculation**

If you specify Yes, Total Product Cycle Time, Yield, Net Planning percent, Operation times will be calculated for your processes, operations and events in the configuration flow routing. If you specify No, those data will be copied from the model. This parameter gets defaulted from the profile BOM: CTO Perform Flow Calculations and is valid only for items with a flow routing.

To calculate these values at a later time, open the configuration flow routing from the Graphical Line Designer, or run the batch calculation of yield and times for flow routings concurrent program.

### **Perform Purchase Price Rollup**

If this parameter is set to Yes the process enables you to perform a list price and purchase price rollup for all configurations created. This parameter defaulted from the profile, BOM: CTO Perform Purchase Price Rollup. To calculate the purchase price at a later date, execute the CTO Purchase Price concurrent process. See CTO Purchase Price Calculation Concurrent Program, page 2-8 for more information on how this calculation is performed.

### **Perform Cost Rollup**

If this parameter is set to Yes, the process performs a cost rollup in all organizations where the new configuration item can be made or received. For configuration with the Create Configured Item, BOM attribute set to Based on Sourcing or BOM Based on Sourcing, these organizations are limited to the ship from organizations sourcing chain. This parameter defaults from the profile, BOM: CTO Perform Cost Rollup. To calculate the cost of the configuration item at a later date, execute the CTO Cost Rollup Calculation concurrent process.

### **Notify User for Exceptions**

This parameter enables you to receive notifications if the batch process is executed manually. This parameter defaults from the profile, BOM: Send notifications for Autocreate Config Exceptions.

### **Sales Order Line**

You can specify a specific sales order line. If the parameter is blank, it will create the configurations for any eligible sales order line. If you specified a sales order, you can also specify a specific sales order line.

**Note:** If you are using APS to plan your configurations, you must create

configured items for all scheduled sales orders prior to running your collections and plan. Any sales order without a configuration item linked to it will *not* be planned. Therefore, if you are using APS, it is recommended that you schedule this program in a request set with collections. In this scheduled program, without a sales order or release offset days specified, and with lead time, flow, purchase price and cost parameters set to Yes.

### **Sales Order Pad Action Button - Progress Order**

After an order is booked, you can create a configuration item for one sales order line from the Sales Order Pad. This process uses profiles to determine if lead time, flow, cost, purchase price calculations are performed for these configurations at this time. See Profiles, page 2-8 for more details.

**Note:** If you are using APS, you will want to have these calculations done before running collections and your plan. Therefore, if you defer it from the online mode, you will want to schedule the optional processing to run prior to running collections and your plan.

## **Configuration Items**

An item that corresponds to a base model and a specific list of options. Bills of Materials create configuration items for assemble-to-order models.

### **Process Description**

Creating configuration items for an ATO model order line completes the following tasks:

- Creation of a configuration item
- Creation of configuration bill of material based on the model bill of material
- Creation of configuration routing based on the model routing
- Creation of sourcing rules for the configuration based on the model sourcing
- Calculation of leadtime, costs, and purchase price for the configuration
- Calculation of weight and volume for the configuration
- Link the configuration item to the sale order

## Configuration Item

A configuration item is created for every non-phantom model in your bill or material in the OM Item validation organization. The item is created according to the settings of the model attribute Create Configured Item, BOM according to the following values:

### **Based on Sourcing**

Creates items in all organizations in the ship from organization's sourcing chain, as well as the OM validation organization associated with the sales order, and the OM and PO validation organizations associated with all organizations in the sourcing chain. If you are using purchasing's Global agreements, the item is also enabled in the PO validation organizations for all owning OUs and Purchasing OUs of the global agreements associated with a global ASL in the receiving organization.

If this setting is on a lower level configuration, its configuration item is created in the same manner, based on the sourcing chain in the organization in which it is consumed in the parent configuration.

If you have option specific sourcing set up, it further restricts where the item is created.

See: Impact of Option Specific Sources, page 2-37 for more information on option specific sourcing.

### **Items Based on Model, BOMs Based on Sourcing**

Creates items in all organizations where the model item exists. With this setting, option specific sourcing set ups do not affect where the item is created.

### **Based on Model**

Creates items in all organizations where the model item exists. With this setting, option specific sourcing set ups do not affect where the item is created.

The configuration item numbers are determined by the Numbering Method parameter specified in the BOM parameters of the item validation organization.

If profile BOM: Match to Existing Configuration is set to Yes and the model Match Configuration attribute is not set to No, the system will attempt to find an existing matching configuration item. If it is found, the system will use the matched configuration item instead of creating a new item. If the profile BOM: Automatic Reservations is set to Yes, and you are within the OM: Reservation Time fence, a reservation to available on hand will be automatically performed. Match is organization independent. See Match Configuration Item, page 3- for more information.

If you have previously created a configuration for a model sales order line and it was delinked for any reason, the original configuration will be relinked to the sales order if the configuration has not changed—even if match is off. Similarly, if the top level configuration changes, but a lower level configuration has not, the lower level configuration will be reused in the new parent level configuration—even if match is off. This enables you, planning and ATP to reusing existing configurations and their supplies for a sales order if the configuration has not changed. If match is not enabled for the model, configurations will not be reused across sales order lines.

For items with the Create Configured Item, BOM attribute set to either Item Based on Model, BOM Based on Sourcing, or Based on Model, a supplier type, long-text attachment will be generated and attached to your configuration item in all the PO validation organizations of the organizations (OUs) where the configuration is enabled. This attachment will contain the configuration details—the model, option classes, and options chosen.

For items with the Create Configured Item, BOM attribute set to Based on Sourcing or if your model has a buy type sourcing rule, or buy-type planning flag on the item master, AutoCreate configuration will generate a supplier-type, long-text attachment for the new configuration item in all PO validation organizations required by your sourcing chain. This file will contain the configuration details—the Model, Option Classes, and Options chosen.

The weight and volume of the configuration are calculated. For more information, see the Configure to Order Chapter in the *Oracle Bills of Material User's Guide*.

The configuration item is assigned to all the item categories to which the model was assigned, with the exception of the Sales and Marketing category. you can use a custom program to assign the item to other categories. See: Custom CTO Packages, page 2-67, for more information about this program.

The default subinventory and default locator are also copied from the model to the configuration item.

The configuration item inherits most of its attributes from the model. However, there are a series of attributes that are specifically set by the autcreate configuration process. The tables below contain the details of which item attributes on the configuration item are hard coded by CTO, and which are specifically not populated during the autcreate process. All other attributes are inherited from the model.

### Hard-coded Item Attributes

These attributes are hard-coded to the value listed in the table by the autcreate configuration process.

#### **Hard Coded Item Attributes**

| <b>Item Master Tab</b> | <b>Attribute Name</b> | <b>Column Name<br/>(Table:<br/>MTL_SYTEM_ITEMS<br/>)</b> | <b>Value</b>                           |
|------------------------|-----------------------|--|--|
| N/A                    | Organization          | ORGANIZATION_ID  | Organizations in which item is created |

| <b>Item Master Tab</b>   | <b>Attribute Name</b>      | <b>Column Name<br/>(Table:<br/>MTL_SYTEM_ITEMS<br/>)</b> | <b>Value</b>  |
|--------------------------|----------------------------|--|---|
| Main                     | User Item Type             | item_type  | Based on Profile<br>BOM: Configuration<br>Item Type |
| Inventory                | Lot Divisible              | lot_divisible_flag                                       | N   |
| Inventory                | Grade Controlled           | grade_control_flag                                       | N   |
| Inventory                | Child Lot Enabled          | child_lot_flag   | N   |
| Inventory                | Format Validation          | child_lot_validation_f<br>lag                            | N   |
| Inventory                | Copy Lot Attributes        | copy_lot_attribute fla<br>g                              | N   |
| Inventory                | Inventory Item             | inventory_item_flag                                      | Y   |
| Inventory                | Stockable                  | stock_enabled_flag                                       | Y   |
| Inventory                | Transactable               | mtl_transactions_ena<br>bled_flag                        | Y   |
| Inventory                | Reservable                 | reservable_type  | 1 (Yes)   |
| Bills of Material        | Base Model                 | base_item_id   | Base Model's Item Id                                |
| Bills of Material        | BOM Allowed                | bom_enabled_flag   | Y   |
| Bills of Material        | BOM Item Type              | bom_item_type  | 4 (Standard item)                                   |
| Costing                  | Include in Rollup          | default_include_in_ro<br>llup_flag                       | Y   |
| Process<br>Manufacturing | Recipe Enabled             | recipe_enabled_flag                                      | N   |
| Process<br>Manufacturing | Process Quality<br>Enabled | process_quality_enab<br>led_flag                         | N   |

| Item Master Tab       | Attribute Name             | Column Name<br>(Table:<br>MTL_SYTEM_ITEMS<br>) | Value   |
|-----------------------|----------------------------|--|---|
| Process Manufacturing | Process Execution Enabled  | process_execution_enabled_flag                 | N   |
| Process Manufacturing | Process Costing Enabled    | process_costing_enabled_flag                   | N   |
| Process Manufacturing | Hazardous Material         | hazardous_material_flag                        | N   |
| MPS/MRP Planning      | [Repair] Preposition Point | preposition_point                              | N   |
| MPS/MRP Planning      | [Repair] Repair Program    | repair_program                                 | 3 (Repair Return)   |
| Purchasing            | Outsourced Assembly        | outsourced_assembly                            | 2 (un-checked)  |
| Purchasing            | List Price                 | LIST_PRICE_PER_UNIT                            | Calculated in PO validation organizations, based on pricing setup |
| Purchasing            | Purchased                  | purchasing_item_flag                           | Y   |
| Purchasing            | Purchasable                | purchasing_enabled_flag                        | Y   |
| Physical Attributes   | Unit Volume                | unit_volume                                    | Calculated based on options selected                              |
| Physical Attributes   | Unit Weight                | unit_weight                                    | Calculated based on options selected                              |
| Work in Process       | Build in WIP               | build_in_wip_flag                              | Y   |
| Order Management      | ATP Components             | atp_component_flag                             | See: Check ATP, page 3-16   |

| Item Master Tab  | Attribute Name          | Column Name<br>(Table:<br>MTL_SYTEM_ITEMS<br>) | Value  |
|------------------|-------------------------|--|--|
| Order Management | Assemble to Order       | replenish_to_order_flag                        | Y  |
| Order Management | Check ATP               | atp_flag                                       | Set to ensure consistent ATP before and after configuration item creation. See: Check ATP, page 3-16 |
| Order Management | Customer Ordered        | customer_order_flag                            | Y  |
| Order Management | Customer Orders Enabled | customer_order_enabled_flag                    | Y  |
| Order Management | Internal Ordered        | internal_order_flag                            | Y  |
| Order Management | Internal Orders Enabled | internal_order_enabled_flag                    | Y  |
| Order Management | OE Transactable         | so_transactions_flag                           | Y  |
| Order Management | Pick Components         | pick_components_flag                           | N  |
| Order Management | Shippable               | shippable_item_flag                            | Y  |
| N/A              | {Hidden Field}          | INVENTORY_ITEM_ID                              | Generated from sequence  |

| Item Master Tab | Attribute Name            | Column Name<br>(Table:<br>MTL_SYTEM_ITEMS<br>) | Value  |
|-----------------|---------------------------|--|--|
| N/A             | {Hidden Field}            | segment<n>                                     | <n> is the number specified in BOM parameter 'Config segment number' and this segment will be populated by CTO based the 'config numbering method' BOM parameter. All other segments will inherit the model value. |
| BOM             | Autocreated Configuration | auto_created_config_flag                       | Y  |
| N/A             | {Hidden Field}            | option_specific_sourced                        | 1 if the configuration was created based on option specific sourcing   |

### Check ATP

Use the following logic to determine ATP settings for your models:

- When the model's Check ATP flag is set to None or Resource Only:
  - If model's ATP\_Components flag is set to None, CTO sets both the Check\_ATP and ATP\_components flags on the configuration item to None
  - Otherwise, CTO sets the ATP\_check flag on the configuration item to Material Only and inherits its ATP\_components flag value from the model.
- When the model's ATP flag is set to Material Only or Resource and Material, CTO sets the Check\_ATP flag on the configuration item to Material Only and inherits its ATP\_components value from the model.

### Item Attributes that are hard-coded if the model value is null

These attributes are hard-coded if the model value is null, otherwise they are inherited from the model.

**Hard-Coded Item Attributes for a Null Model Value**

| Item Master Tab     | Attribute Name           | Item Attribute         | Hard Coded value if Model value is null |
|---------------------|--------------------------|------------------------|---|
| Bills of Material   | Effectivity Control      | effectivity_control    | 1 (Date)                                |
| Physical Attributes | [Weight] Unit of Measure | weight_uom_code        | Base UOM of the UOM Class               |
| Physical Attributes | [Volume] Unit of Measure | volume_uom_code        | Base UOM of the UOM Class               |
| MPS/MRP Planning    | Create Supply            | create_supply_flag     | Y                                       |
| Order Management    | Default SO Source Type   | default_so_source_type | Internal                                |

**Item attributes that are populated**

These attributes are not populated by the autcreate configuration process.

**Item Attributes Not Populated**

| Item Master Tab     | Attribute Name                        | Item Attribute         |
|---------------------|---------------------------------------|------------------------|
| Receiving           | [Overreceipt Quantity Control] Action | QTY_RCV_EXCEPTION_CODE |
| Physical Attributes | [Type] Event                          | EVENT_FLAG             |
| Physical Attributes | [Type] Electronic Format              | ELECTRONIC_FLAG        |
| Physical Attributes | [Type] Downloadable                   | DOWNLOADABLE_FLAG      |
| MRP Planning        | Calculate ATP                         | mrp_calculate_atp_flag |
| MPS/MRP Planning    | [MPS Planning] Calculate ATP          | MRP_CALCULATE_ATP_FLAG |
| MPS/MRP Planning    | Forecast Control                      | ATO_FORECAST_CONTROL   |

| Item Master Tab | Attribute Name                                      | Item Attribute             |
|-----------------|---|----------------------------|
| Service         | [Debrief and Charges]<br>Recovered Part Disposition | RECOVERED_PART_DISP_CODE   |
| Service         | [Service Enable] Defect<br>Tracking                 | DEFECT_TRACKING_ON_FLAG    |
| Service         | [Installed Base] Create Fixed<br>Asset              | ASSET_CREATION_CODE        |
| Service         | Enable Provisioning                                 | COMMS_ACTIVATION_REQD_FLAG |
| Web Option      | Orderable on the Web                                | ORDERABLE_ON_WEB_FLAG      |
| Web Option      | Back Orderable                                      | Web Option                 |
| Web Status      | WEB_STATUS  | N/A                        |
| N/A             | {Hidden Field}                                      | VOL_DISCOUNT_EXEMPT_FLAG   |
| N/A             | {Hidden Field}                                      | COUPON_EXEMPT_FLAG         |

### Configured Item Level Inventory Setups

If any of the following inventory setups exist for the model, they are copied to configuration items:

- User defined costs
- Descriptive element values
- Categories
- Related items
- Subinventories (Except Lead times)
- Secondary locators
- Cross references

- Item subinventory defaults
- Item locator defaults
- Pending status
- ABC assignments

The following are not copied:

- Manufacturer part numbers
- Item safety stock

## Configuration BOM

The settings of the Create Config Item, BOM attribute on the model determine where the BOM will be created according to the following values:

- **Based on sourcing:** Creates Bills and routings in all manufacturing organizations in the ship from organization's sourcing chain that had a model bill and routing defined, and the BOM parameter Config BOM Creation Allowed is selected. For purchased configurations, it will also create a bill and routing in one of the receiving organizations specified in the chain, if a bill had not already been created elsewhere and the BOM parameter Config BOM Creation Allowed is selected.

If this setting is on a lower level configuration, its bill and routing will be created in the same manner, based on the sourcing chain in the organization in which it is consumed in the parent configuration.

If option specific sourcing is set up, it will further restrict where the BOM and routing is created.

- **Items Based on Model, BOMs Based on Sourcing:** Creates the bills and routings in the same manner as the setting Based on Sourcing
- **Based on model:** Creates the bill and routing in all organizations where the Model has a bill and routing defined, and the BOM parameter Config BOM Creation Allowed is selected. If option specific sourcing is set up, it will further restrict where the BOM and routing is created.

See Impact of Option Specific Sources, page 2-37 for more information on option specific sourcing.

**Note:** Purchased configuration BOMs are created in only one of its sourcing organizations.

The configuration item bill of material in any organization contains the chosen options

and all mandatory components whose effective date in that organization is less than the scheduled ship date *and* disabled date is greater than or equal to the estimated release date. The estimated release date is the schedule ship date minus the total of fixed lead time of model in the manufacturing organization plus the order quantity times the variable lead time of model in the manufacturing organization.

**Important:** It is possible that an option you chose on the sales order line may not be included in the configuration BOM. If this happens, you will be given a warning online if you are progressing the order manually or the autcreate config batch program will complete with a warning. The sales order line will also be put on hold. Reasons for this failure may be that an item selected in order management is not:

- Effective at the time manufacturing needs to begin (see preceding paragraph)
- On the model BOM in the org where the BOM is being created.

See Custom Recipients for Create Configuration Error Notifications, page 2-67.

A configuration BOM contains selected and mandatory components from the model and option classes. Because the configuration BOM is a single level BOM that is created by combining components from multiple model and option class BOMs, if a component appears in more than one option class BOM or in model BOM and option class BOMs, the component quantity may be added and represented as a single row in the configuration BOM. CTO consolidates the components if the components have the same operation sequence and same effectivity dates. If the effectivity dates on the multiple components in the model and option class BOMs overlap partially, CTO may create multiple rows in the configuration BOM to calculate correct consolidated quantity throughout the effective period. For example:

| Model          | Operation Sequence | Quantity | Effective From | Effective To |
|----------------|--------------------|----------|----------------|--------------|
| ....01         | 100                | 2        | 18-Sep-03      | NULL         |
| ..Option Class | -                  | -        | -              | -            |
| ....01         | 100                | 4        | 14-Dec-03      | NULL         |

The preceding will be consolidated as follows on the configuration BOM, created on 02-Dec-03:

| CFG*1          | Operation Sequence | Quantity | Effective From | Effective To |
|----------------|--------------------|----------|----------------|--------------|
| ..Model        | -                  | -        | -              | -            |
| ..Option Class | -                  | -        | -              | -            |
| ..01           | 100                | 2        | 2-Dec-03       | 14-Dec-03    |
| ..01           | 100                | 9        | 14-Dec-03      | NULL         |

Items on new configuration BOMs are sequenced such that the Item Sequence reflects the logical sequence on the original Model and Option Class BOMs. The Item Sequence increment is based on the profile BOM: Component Item Sequence Increment. Note that if the same option appears more than once on the indented model structure, and is assigned to the same operation sequence, it will be combined into one entry under the first parent.

**Note:** BOM rounds quantities to seven decimals, so rounds the ordered quantity of ATO options to seven decimals before creating the BOM for configuration items.

### Example 1: Single Level, Single Organization Example

In a single organization environment, configuration is assembled and shipped from the same organization (shipping organization). The model bill of material from the shipping organization is used for the creation of a configuration bill of material. The configuration bill of material is created only in the shipping organization.

The following table shows the bills of material for the laptop computer from Example 1 in Chapter 1. The Selected column indicates the option selection during order entry.

#### *BOM for Laptop Computer Example*

| Level | Item              | Item Type        | Optional | Selected |
|-------|-------------------|------------------|----------|----------|
| .1    | . Laptop Computer | ATO Model        | No       | Yes      |
| ..2   | .. CPU            | ATO Option Class | No       | Yes      |
| ...3  | ... Pentium I     | Purchased        | Yes      | -        |

| Level | Item                  | Item Type              | Optional | Selected |
|-------|-----------------------|------------------------|----------|----------|
| ...3  | ... Pentium II        | Purchased              | Yes      | Yes      |
| ..2   | .. Monitor            | ATO Model<br>(phantom) | No       | Yes      |
| ...3  | ... VGA               | ATO Option<br>Class    | Yes      | Yes      |
| ....4 | .... VGA<br>Manual    | Purchased Item         | No       | -        |
| ....4 | .... VGA1             | Purchased Item         | Yes      | Yes      |
| ....4 | .... VGA2             | Purchased Item         | Yes      | -        |
| ...3  | ... EGA               | ATO Option<br>Class    | Yes      | -        |
| ....4 | .... EGA1             | Product                | Yes      | -        |
| ....4 | .... EGA2             | Product                | Yes      | -        |
| ...3  | ... Monitor<br>Manual | Purchased Item         | No       | -        |

The following table shows the configuration bill of material. Notice that the configuration BOM looks like a single level bill with models and option classes as components.

**Single Level Configuration BOM**

| Level | Item                     | Item Type                   | Optional | Selected |
|-------|--------------------------|-----------------------------|----------|----------|
| .1    | . Laptop<br>Computer*001 | ATO Item<br>(Configuration) | No       | Yes      |
| ..2   | . Laptop<br>Computer     | ATO Model                   | -        | -        |

| Level | Item              | Item Type           | Optional | Selected |
|-------|-------------------|---------------------|----------|----------|
| .. 2  | .. CPU            | ATO Option Class    | No       | Yes      |
| .. 2  | .. Pentium II     | Purchased           | Yes      | Yes      |
| .. 2  | .. Monitor        | ATO Model (phantom) | No       | -        |
| .. 2  | .. VGA            | ATO Option Class    | Yes      | Yes      |
| .. 2  | .. VGA Manual     | Purchased Item      | No       | -        |
| .. 2  | .. VGA1           | Purchased Item      | Yes      | Yes      |
| .. 2  | .. Monitor Manual | Purchased Item      | No       | -        |

### Example 2: Multilevel, Multiorganization example

In a multiorganization setup, the model bill of material in the sourcing organization is used for the creation of a configuration bill of material. The configuration bill of material is created only in the respective sourcing organization.

Assuming the same options were selected as in Example 1, but the setup has changed to the multilevel, multiorganization of example 2 in chapter 1, the following tables show the configuration bills of material in the respective manufacturing (sourcing) organizations. Notice that the laptop configuration BOM has the monitor configuration as a subassembly.

#### *Multilevel Configuration BOM in M1*

| Level | Item                  | Item Type                | Optional | Selected |
|-------|-----------------------|--------------------------|----------|----------|
| .1    | . Laptop Computer*001 | ATO Item (Configuration) | No       | Yes      |
| .. 2  | . Laptop Computer     | ATO Model                | -        | -        |
| .. 2  | .. CPU                | ATO Option Class         | No       | Yes      |

| Level | Item           | Item Type                   | Optional | Selected |
|-------|----------------|-----------------------------|----------|----------|
| .. 2  | .. Pentium II  | Purchased                   | Yes      | Yes      |
| .. 2  | .. Monitor*001 | ATO Item<br>(Configuration) | Yes      | Yes      |

**Multilevel Configuration BOM in M2**

| Level | Item                 | Item Type                   | Optional | Selected |
|-------|----------------------|-----------------------------|----------|----------|
| .. 2  | .. Monitor*001       | ATO Item<br>(Configuration) | No       | Yes      |
| .. 2  | .. Monitor           | ATO Model                   | No       | Yes      |
| .. 2  | .. VGA               | ATO Option<br>Class         | Yes      | Yes      |
| .. 2  | .. VGA Manual        | Purchased Item              | No       | -        |
| .. 2  | .. VGA1              | Purchased Item              | Yes      | Yes      |
| .. 2  | .. Monitor<br>Manual | Purchased Item              | No       | -        |

**Example 3: Purchased Configuration**

In the case of a purchased configuration, the entire model BOM should be defined in at least one receiving organization. The entire configured BOM would also be created in the receiving organization.

**Configuration Routing**

The model and option class routings from the sourcing organization is used for the creation of configuration routing. In a single organization environment, the routing in the shipping organization is used. If the configuration is purchased, the routing assigned to the model in the receiving organization will be used. Routing is creating anywhere a BOM is created.

If you have a phantom submodel, the operations from the submodel routing are added to the configured routing for the configured item generated for the parent model, as long as the operation sequences are unique. If an operation sequence on the submodel

routing is the same as one on the parent, the operation from the submodel is not added to the configured routing.

## Sourcing Assignment Creation

Sourcing assignments for the configuration are created based on the setting of the Create Item, BOM attribute on the model, and the sourcing assignments on the model in the assignment set defined in the profile MRP: Default Assignment Set in the following manner:

Create Item, BOM attribute on the model is set to:

- **Based on Sourcing:** Copies the sourcing assignments from the model to the configuration item for all organizations in the ship from organization's sourcing chain. If this setting is on a lower level configuration, its sourcing will be created in the same manner, based on the sourcing chain from the organization in which it is consumed in the parent configuration.
- **If option specific sourcing is set up,** new sourcing rules and assignments will be created for the configuration based on the option specific rules and the sourcing chain.

See *Impact of Option Specific Sources*, page 2-37 for more information on option specific sourcing.

- **Items Based on Model, BOMs Based on Sourcing:** Creates sourcing assignments in the same manner as Based on Sourcing
- **Based on Model:** Copies all assignments from the model to the configuration item. If option specific sourcing is set up, new sourcing rules and assignments will be created for the configuration based on the option specific rules and the sourcing chain.

## Delink Configuration Item

When a match is made or a configuration is created for an order, the top level configured item is linked to the sales order.

You can delink the configuration item from an ATO model line through the Sales Order Pad Action Button Delink Config Item. If there is a reservation against sales order for the configuration item in the shipping organization, Delink Configuration Item will automatically unreserve the supply from the sales order. Similarly, if a flow schedule is referenced to the sales order line that is delinked, the reference will be removed.

Delinking the configuration sets the Order Management workflow on the model back to Create Configuration Eligible.

**Note:** With the addition of the change order process it is recommended

that you do not manually delink a configuration item.

If you want to create a configuration again, run the AutoCreate Configuration batch program for the relevant sales order line. You can also progress the order line to create the configuration item, if the order has been booked. Either process links the same configuration item back to the sales order if there was no configuration change, even if match is off.

If you delink a configuration item and do not change the configuration, AutoCreate Configuration checks if the configuration item created earlier for the model line is still applicable and will attempt to reuse the configuration.

## Link Configuration Item

You can manually link a configuration item to an ATO model line through the Sales Order Pad Action Button - Link Config Item. This is useful when you want to ship a near match item.

**Warning:** The system does not perform a match validation when you manually link a configuration item. If the linked configuration varies significantly from the configuration chosen in Order Management you can have significant issues in planning issues and the install base, particularly in a multilevel, multiorganization environment.

In a Multilevel, Multiorganization structure, autocreate configuration and match processes ensure that configuration items are created for lower level models and also ensure that the demand is created in the correct organizations using the sourcing rules. Link Process simply links the item. It does not validate existence of BOM/RTG, does not honor sourcing rules, and does not update the demand picture.

It is suggested that you do not manually link a configuration item except under the following conditions:

1. You have a near match in stock in a single level, single organization environment and want to ship it to the customer without changing the details on the order.
2. You are certain that the item you are linking is a match and have ensured that it has correct setup of bills, routings, and sourcing rules in the correct organizations.

In all other cases, it is preferable to reprogress the model through create configuration process to have the system find a match or generate a new configuration item ID.

## Configuration Lead Time Calculation

If the configuration item has a discrete routing, the configuration manufacturing and cumulative lead times are calculated for the configuration item based on the configuration item routing. This calculation is done anywhere a discrete routing is

created.

Configuration items with flow manufacturing routings inherit the lead times from the model item master in the appropriate organization.

This calculation is an optional process that occurs during the AutoCreate Configuration Batch process. You can determine if it occurs by setting appropriate profile options and the parameters of the AutoCreate Configuration Batch program. Configuration Lead Time calculation can also be run independently as required for all sales orders and preconfigured items.

## Configuration Item Cost Rollup

This is an optional process that occurs during the AutoCreate Configuration process. You can choose to automatically perform cost rollup during autcreate configuration of the item by setting appropriate profile options and the parameters of the AutoCreate Configuration Batch program. It can also be run for all sales orders and preconfigured items using the CTO Calculate Cost Rollup concurrent program. See: Profiles, page 2-8, and BOM: CTO Perform Cost Rollup.

Configuration item cost rolup is a single level cost rollup. It is recommended that you set up user-defined costs for the model. Costs for all other optional and mandatory components should also be set up/rolled up as applicable.

If costs are not shared across organizations, during the autcreate configurations process, CTO copies the cost of the base model to the configuration item in each organization in which the configuration item is assigned. Costs are copied in the valuation cost type of the costing organization. The user-defined cost is copied in all types of costing organizations. In Average, LIFO, and FIFO costing organizations, the cost in the respective rate types is also copied.

After the BOM and routing has been created and the list price of the item has been calculated, CTO calculates the cost of the configuration item using a single level cost rollup. For Make configurations, the cost is rolled up by adding up the valuation costs of all the components in the configuration BOM for which Include in cost rollup flag is set to Yes. This is the total Rolled up Cost for the configuration. The cost is calculated in the manufacturing organization.

If a configuration item is purchased, an entry will be created in the cost type specified in the profile BOM: CTO Buy Cost type, based on the list price of the configuration in the PO Validation Organization. This cost is the total Rolled up Cost for the configuration.

A nonupdateable cost type CTO has been seeded to facilitate costing of configurations. A single level cost rollup is performed in the CTO cost type, using the cost type specified in the profile BOM: CTO Buy Cost type as the buy cost type. For make configurations, because this cost-type holds no costs for the model and options, the rollup will be done based on the valuation cost of the model and options, and an entry for the configuration will be placed in the CTO cost type.

If the organization is using standard costing, CTO will then update the frozen cost of the configuration with the cost rolled up in the CTO cost type. If the costing

organization is an average, LIFO, or FIFO organization, the valuation cost of the item is not updated and the cost in CTO cost type serves as an estimated cost.

In the case of Multilevel configuration items, CTO performs the preceding steps for all configuration items in the BOM, starting with the lowest level configuration item. Cost of the parent configuration uses the cost of the child configuration from the CTO cost type. For procured configurations, the cost specified in the profile BOM: CTO Buy cost type is used as the Buy Cost, and is included in the rollup of the parent configuration.

**Note:** The cost in the buy cost type will be used in the rollup only if the configuration has a buy type sourcing rule in the assignment set defined by MRP: Default Assignment Set. If a configuration is procured, but does not have buy type sourcing rules, it will be treated as a manufactured item for the purposes of cost rollup.

If a configuration is transferred from one organization to another, a single level cost rollup is performed first in the manufacturing or procuring organization, then in the receiving organization as described earlier. For more information on cost rollup, see the *Oracle Costing User's Guide*.

CTO does not perform an automatic cost rollup for preconfigured items. However, the user defined and item costs are copied to the preconfigured item.

**Note:** Do not perform a cost rollup on the model itself. The model is not expected to have a rolled up cost because it is not a standard item, and will cause your preconfigured item cost to be incorrect.

## Costing of Matched Configurations

If the profile Match to Existing Configurations has been set to Yes, the autcreate configuration process may find a match to an existing item. The matched item may be an autcreated or preconfigured item for which cost in the current organization may or may not have been previously rolled up. CTO will decide whether or not to perform a cost rollup of a matched configuration based on the following rules:

1. In a standard cost organization:
  1. If the item has already been transacted in the current organization, CTO will not perform a cost rollup. It will simply update the CTO cost type of the item with the existing frozen cost.
  2. If the item has not been transacted, and the item sourcing has changed from make to buy or vice versa, CTO will recalculate the cost. Otherwise, CTO will not recalculate the cost.

**Note:** If you have manually changed the frozen cost of the

configuration before it has been transacted, it will be over-ridden by the rollup cost calculated by CTO.

2. In an average, FIFO, or LIFO organization:
  1. If a cost already exists in the valuation cost type, CTO will not perform a rollup. It will simply update the CTO cost type of the item with the existing frozen cost.
  2. If the item does not have a valuation cost, and the item sourcing has changed from make to buy or vice versa, CTO will recalculate the cost. Otherwise, CTO will not recalculate the cost.

If standard costs are shared across organizations, the cost of configuration is calculated in the cost master organization only. To calculate the correct cost, CTO creates the configuration BOM in the cost master organization, implying that the model BOM should be set up in the cost master organization and the BOM parameter, Config BOM creation allowed, in this organization should be set to Yes.

## **Configuration Purchase Price Calculation Rollup**

During AutoCreate Config or when matching to an existing configuration, CTO will perform a price calculation for any configuration that has a list or blanket price defined.

This is an optional process that occurs during the AutoCreate Configuration process. You can determine if it occurs by setting appropriate profile options and the parameters of the AutoCreate Configuration Batch program. Configuration Purchase Price calculation can also be run independently as required for all sales orders and preconfigured items.

The price calculation is done in the following ways:

### **Using List Prices**

During autcreate configuration, CTO will rollup the list prices of the model, options, option classes, and submodels in any PO validation organization with the configuration item enabled. The rolled up value is inserted as the list price for the configuration in the appropriate PO validation organization. Unless you choose to overwrite the existing prices by using the batch program, CTO will not perform the calculation if there is already a list price on the configuration. The program does not automatically overwrite because you may be matching to an existing preconfigured item with a negotiated list price, or using of the custom purchase price program.

### **Using Blanket Purchase Orders for Models**

CTO calculates a rolled up price for each blanket associated with a valid supplier,

supplier site combination listed in the global ASL for the Base Model. The price is the sum of the prices of the model, option classes, and options on the blanket order defined in the global ASL for the model. If there is no price on the blanket for a given component, its list price from the PO validation organization where the ASL is defined is used in the rollup. If there is a blanket price specified for a lower level configuration, its price is used in the rolled up price of the parent. If the lower level configuration is not available in the blanket then the lower level model, option class, and option item price is taken from the blanket and included in the rollup.

For configurations derived from models with the Create Config Item, BOM attribute set to Based on Model, the blanket price is rolled up for all blankets that are associated with a model global ASL in any organization.

For a model attribute of Based on Sourcing or Item Based on Model, BOM Based on Sourcing, the blanket price is rolled up for all blankets that are associated with a model global ASL in the receiving organizations. This is done for configurations that can be procured. Prices are not rolled up for configurations that are not procured in any organizations in the sourcing chain.

If the batch program is used to perform blanket price rollup, the rollup is done as described earlier if the concurrent program is launched for a specific order/order line.

When the batch program is launched without any order-specific parameters, blanket prices are rolled up for all configurations that meet the parameter criteria irrespective of their make/buy sourcing rules and attributes. The prices are rolled up for all global blankets associated with model ASL.

For OSS Items, the blanket price rollup will be further restricted such that they are rolled up for all blankets that are associated with the model ASL and the vendor is part of the sourcing rule associated with the OSS item

CTO creates a blanket line for the configuration in the blanket of the model. To achieve this, CTO inserts a row in the PDOI tables with the information to create the blanket line and then launches PDOI with Create Sourcing Rules equal to yes and Release Method equal to the one specified in the profile option BOM: CTO Default Blanket PO Release Method. This will create:

- A new row for the configuration item in the model's blanket purchase order with the rolled up price. If you are using a global agreement, this line is enabled in all organizations that have the model enabled.
- A new global ASL for the configuration with the appropriate supplier, supplier site, and source documents. If you are using global agreements, this ASL is enabled in all operating units that have the agreement enabled, even if one does not exist for the model.
- A sourcing rule if one does not exist for the Item-Supplier/site combination
- An item level sourcing assignment for the configuration (if one did not already exist)

CTO will not perform the calculation if there is already an entry for the configuration in a given blanket. This may happen if you are matching to an existing configuration, or are using one of the custom purchase price programs.

See Configuration Item Cost Rollup, page 3-16, for more information. The *Oracle Purchasing User's Guide* has more details on PDOI, blankets and ASLs. Look at Purchase Price Calculation, page 2-62 and Custom CTO Packages, page 2-67, for information on using custom hooks in the AutoCreate Configuration batch program to do your own price calculation.

## Configuration Creation Error Handling

If the batch program is being used all expected and some unexpected errors are written to the log file. Notification can additionally be sent to the planner.

If you are progressing online, or preconfiguring a BOM, an error is also given online. When progressing the item for a sales order, the system will also send a notification to the planner if the BOM: Send Notifications for Autocreate Config Exceptions profile is set to Yes.

An order is put on hold for all expected errors but not for unexpected errors. For expected errors you must fix the problem that caused the hold and release the hold to continue the OM workflow. If this requires a configuration change, the order is automatically rescheduled. If a configuration, or any scheduling attribute change is not required, unreschedule the order and reschedule it again to ensure that the schedule date is correct. This delinks the existing configuration; however, the configuration item will be added again when the AutoCreate Configurations batch program is run.

The notification contains details on the error and also if the order was put on hold. The notification is sent to the user or role specified by the API based on the type of error and at what point in the processing the error occurs. The message format is based on the type of error.

## Expected Error Types

The kinds of expected errors encountered during Create Configuration are as follows:

1. Option Items dropped from BOM. If the profile BOM: Create Configuration Exception Behavior is set to Create and Link Item, one notification is sent to a specified user for the item-organization combination where the components are dropped.

The notification message will contain all the option items dropped from the sales order line. Notification is sent to the planner\_code specified on the model item in the organization where the components were dropped. If the planner code value is null or not a valid work flow user then, the notification is sent to the system administrator.

**Note:** This failure may occur if an item selected in order management is not:

- Effective at the time manufacturing needs to begin
- On the model BOM in the organization where the BOM is being created

2. Item not created because Option Items would be dropped from BOM. If the profile BOM: Create Configuration Exception Behavior is set to Do Not Create Item if components will be dropped, a notification is sent to a specified planner for the item-organization combination where the component will be dropped.

Notification is sent to the planner\_code specified on the model item in the organization where the components were dropped, and in the ship from organization. If the planner code value is null or not a valid work flow user then, the notification is sent to the system administrator.

3. Other expected error for which item is not created. For other expected errors encountered during the create configuration process, one notification will be sent to a specified user for the top model in the shipping organization.

The notification message contains specific error message for the problem encountered. Notification is sent to the planner\_code specified on the model-organization combination in the shipping organization. If the planner code value is null or not a valid work flow user then, the notification is sent to the system administrator. These types of errors include:

- Model BOM/Routing Not available in manufacturing organization determined by OSS sourcing
  - Create item error
  - Create BOM error
  - Inherit operation sequence error, and so on.
  - Create routing error
4. Autocreate configured Items does not provide any error or warning if it cannot create a configured BOM in some of the sourcing organizations for configurations of models with the 'create configured item,BOM' attribute set to Based on Model. This might happen because of setup issues. For example, Organization 1 is a make source for a model but the model BOM does not exist in organization 1. It does copy organization 1 source assignments from the model to the Config.
  5. Other expected errors for which item was created. Some expected errors occur after

the item has been created, which will result in one notification being sent to a specified user for that item in the item-organization combination where the error occurred.

The notification message will contain specific error message for the problem encountered. Notification is sent to the planner\_code specified on the model-organization combination for which the error occurred. If the planner code value is null or not a valid workflow user then, the notification is sent to the system administrator. These types of errors include:

- Lead Time calculation failed
- Cost Rollup failed (buy cost not defined, and so on.)
- List Price & Purchase Price Rollup failed

## Optional Processing Programs

This section discusses the various concurrent programs provided by Oracle Configure to Order.

### CTO Calculate Cost Rollup

This program enables you to perform a cost rollup for previously created configuration items in a given organization. If the organization is not specified, cost rollup is performed in all organizations where the configuration item is enabled. The sourcing, parent child relationship is determined and the cost for the configuration item in all the organizations specified is calculated.

Cost is automatically calculated for the selected configuration items and their child configuration items in all organizations where the BOM exists. If a cost already exists in the Valuation cost type (matched items), that cost is used and cost is not recalculated.

#### **Organization:**

You can optionally specify an organization. A supply chain cost rollup will be performed on all configuration items in this organization, as well as organizations in its sourcing chain where a BOM exists.

#### **Configuration:**

If you specify a specific configuration without an organization, then a supply chain rollup will be performed for this configuration and its children in all organizations where a BOM exists. If you specify it with an organization, the program will do a supply chain rollup for this configuration and its children in this organization and its sourcing chain.

#### **Base Model:**

If you specify a base model without an organization, then a supply chain rollup will be performed for all configurations based on this model, and their children, in all

organizations where a BOM exists. If you specify it with an organization, the program will do a supply chain rollup for or all configurations enabled in the organization and based on this model. It will include the selected items children and their sourcing chain.

**Created Days Ago:**

Program rolls up costs for the CTO Calculate Cost Rollup, and lead times for the Calculate Lead Time, which was created within the specified number of calendar days and meets the other program parameters.

## **Calculate Lead Time**

CTO provides a Calculate Lead Time concurrent program to calculate the lead time for any sales order or preconfigured item.

You can launch this concurrent program from the Bills of Material, ATO menu. The program supports the following parameters:

**Organization:**

You can optionally specify an organization in which to perform the rollup.

**Configuration Item:**

Specify a specific existing configuration for which you want to perform the rollup.

**Base Model ID:**

If you specify a base model, all configurations with that base model that meet the rest of the program parameter criteria will be rolled up.

**Created Days Ago:**

Program rolls up purchase prices for any configuration item created within the specified number of calendar days and meets the other program parameters.

**Load Type:**

**Select between:**

- Autocreated Configuration Items only
- Preconfigured items only
- Autocreated and Preconfigured Items

This determination between the type of items is done based on the Autocreated Configuration item attribute.

## **CTO Purchase Price Calculation Concurrent Program**

CTO also provides a CTO Purchase Price Calculation concurrent program to calculate the purchase price for any sales order or preconfigured item. This can also be used to recalculate a price if the autocreate configuration program is unable to calculate the price for any reason. It should also be used to recalculate blanket prices for all open

sales orders on the day you cut over to a new blanket for a model.

You can launch this concurrent program from the Bills of Material, ATO menu. The program supports the following parameters:

**Sales Order Number:**

You can specify a specific sales order number.

**Sales Order Line:**

If you have entered a specific sales order, you can also specify a specific sales order line.

**Organization Code:**

You can optionally specify an organization. Only those sales orders with this organization as the shipping warehouse will be processed.

**Offset Days:**

The program will calculate the price for only those sales orders that are scheduled to ship on or before the system date plus the offset days (using BOM calendar days).

**Overwrite List Price:**

If you specify Yes, the program will overwrite existing list prices on the configuration items for which it is performing the calculation. If you specify No, the program will not overwrite existing list prices. The default is No.

**Configuration Item:**

Specify a specific existing configuration for which you want to perform the rollup.

**Base Model ID:**

If you specify a base model, all configurations with that base model that meet the rest of the program parameter criteria will be rolled up.

**Created Days Ago:**

Program will rollup purchase prices for any configuration item that was created within the specified number of calendar days and meets the other program parameters.

**Load Type:**

Select between:

- Autocreated Configuration Items only
- Preconfigured items only
- Autocreated and Preconfigured Items

This determination between the type of items is done based on the Autocreated Configuration item attribute.

## Impact of Option Specific Sources

If you use option specific sourcing, option specific sourcing setups will add additional restrictions to how configuration item, BOM, routing, and sourcing assignments are created.

## Pruning the Sourcing Tree for OSS Models

For all option specific sourced configurations, CTO prunes the model sourcing with an option specific source list you provide it. CTO allows you to specify the list of organization where a model's configuration can be distributed, manufactured, or procured with a specific option item. This list of organization information is stored in a CTO table at setup.

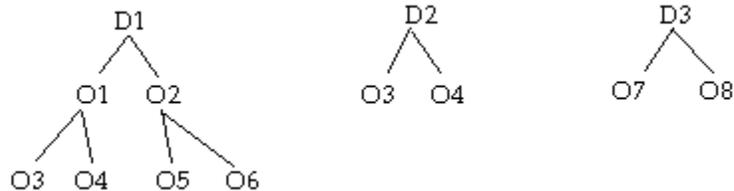
If there is an OSS configuration, CTO looks at the list of valid organizations defined for each option item for this configuration. If more than one option item decides model sourcing, the intersection of all of the components' list of organizations are taken as valid organizations for this configuration.

The list you specify determines where this configuration can be distributed, manufactured, or transferred. The pruned sourcing tree is then used to create the item, BOM, and routing according to the Create Configuration Item, BOM item attribute.

### Model Sourcing Tree Example

If the model sourcing tree looks as follows:

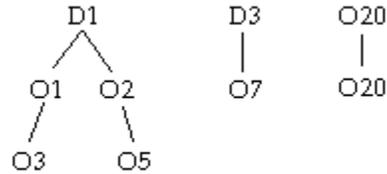
#### Source Trees



The intersection list is D1, O1, O3, O2, O5, D3, O7, and O20.

After pruning with top model sourcing, the sourcing tree looks as follows:

### Pruned Source Trees



The assignment for the receiving organization D2 is not considered for pruning, because D2 is not part of the valid organization specified, so the whole assignment is not considered as valid. Therefore distribution from organization D2 and the whole assignment in that organization is invalid. Also, note that organization O20 is not part of the model sourcing tree, but because organization O20 is part of the intersection list, CTO creates an explicit sourcing rule for organization 20.

The model's sourcing tree is pruned with the intersection organization list. If needed new sourcing rules assignments are identified for this configuration.

The logic to prune model sourcing based on intersection list is as follows.

1. The intersection list is stored in a temporary table.
2. The sourcing assignments are retrieved. This includes all of the sourcing assignments for model in default assignment set, which has receiving organization as one of the organizations in the intersection list. Store these assignments in temporary table.
3. Item level assignment and customer-item assignments for this model are retrieved and added to the temporary table.
4. Valid sourcing rows are identified for each assignment in the temporary table, by comparing the source organization with the intersection list and marking them as valid.
5. Assignments with valid source organizations are assigned to the new configuration item.
6. For organizations in the intersection list that are not part of model sourcing tree the following must be done:
  - If the planning make/buy code for the configuration in that organization is Make, insert a new assignment with 100 percent make in that organization.
  - If the planning make/buy code is Buy, ignore that organization.

You cannot create a sourcing rule with 100 percent buy without specific vendor

information. An organization is valid if the planning make/buy code is Buy. Only organizations with explicit buy rules are considered valid organizations for Buy models.

7. The option specific sourced attribute for this configuration is updated.
8. A list for BOM creation is created from the leaf node organizations from valid assignments. In the Model Sourcing Tree Example, page 3-16, that would be O3, O5, O7, and O20.

**Item Sourcing Rules:**

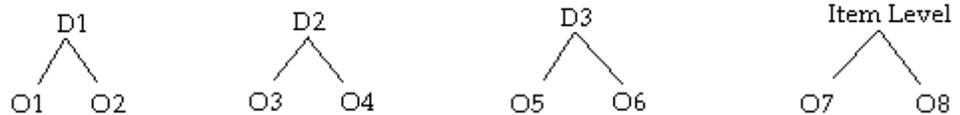
In general, the item level sourcing rule is used for any item in the organization that does not have an explicit sourcing rule.

For an option specific source model, the item level sourcing rule is used only for the organizations in the sourcing tree that do not have an explicit sourcing rule. This is because the provided list is the list of manufacturing/distribution organizations. ATP also uses that list to determine ship from organizations

**ATO Model Tree Example**

Assume Model1 is an option specific sourced ATO model with the following sourcing tree defined:

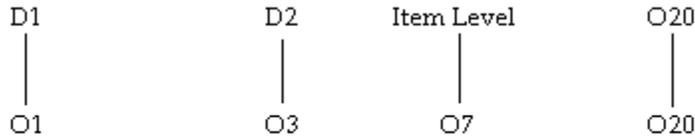
**Item Sourcing Tree**



The valid list of organizations for model1-Opt1 is D1, O1, D2, O3, O7 and O20. The ship from organization is specified as O20. ATP then satisfies the order in organization 20 by looking at the item level rule. The order is satisfied by looking at supply/capacity in organization O7.

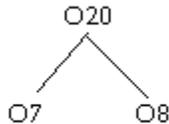
CTO creates configuration item C1\* for this order with the following sourcing rule:

### Pruned Trees



ATP uses the sourcing item level sourcing rule for org O20, but CTO creates 100 percent make according to the rule for organization O20. To avoid this inconsistency, make sure all organizations listed are part of the model sourcing tree. In this case, an explicit rule in organization O20 should be created:

### Explicit Rule



All organizations that are in the OSS list should be part of the model sourcing tree. This recommendation applies only if the model has item level sourcing.

### Pruning Source Trees With Multiple Levels:

In a multilevel model, the lower level model's option specific sourcing restricts the top configuration's manufacturing organization. For example, due to a specific option item, a lower level model can be restricted so that it is manufactured in org1, org2, and org3 only. Any configuration that has this configuration for a child can only be built in org1, org2, and org3. The top-level configuration's sourcing cannot be simply copied from model sourcing. The model sourcing must be pruned with the lower level configuration's valid organizations.

CTO creates the BOM for this top configuration in only those organizations where the top configurations can be manufactured/procured. CTO prunes the top model sourcing chain with the lower model's list of valid organizations.

All organizations where there is an explicit buy rule exists are considered valid organizations for the top model. This is because when the top model is procured, the lower level model sourcing does not impact the top model. Organizations that have no explicit sourcing rule and the planning make/buy code set to Buy are not valid. CTO cannot create an explicit sourcing rule for this organization without any vendor information. You must specify an explicit buy rule to consider the organization as valid.

## Option Specific Sourcing and AutoCreate configuration

For option specific sourced models, if the model Create Config Item, BOM attribute is set to Based on Sourcing or Item Based on Model, BOM Based on Sourcing, CTO creates the BOM and routing only in those organizations where this configuration can be either manufactured or externally requisitioned. CTO derives valid sourcing rules and creates valid assignments for new configurations based on the model-sourcing rule and any option specific sourcing organizations. If the model attribute is set to Based on Model, the configuration item is created in all organizations where the base model is enabled. The BOM and routing is created only in those organizations where the configuration can be manufactured or externally requisitioned.

In a multilevel model case, lower level model sourcing affects the top model's sourcing. Even if the top model does not have any option specific sourcing defined, the lower level model's option specific sources restrict the organizations where the top configurations can be manufactured. If the parent model manufacturing organizations are restricted by a lower level model's option specific sourcing, CTO considers the top model as an option specific model, too.

## Sourcing Rules and Assignments

After all option specific sourcing models are pruned, sourcing assignments for each pruned configuration are created.

CTO creates a new sourcing rule that contains the pruned sourcing rules of the model. For sourcing rules that are not pruned, CTO reuses the sourcing rules assigned to the model. An identical one is reused.

New sourcing rules are created for pruned assignments. For assignments with all valid nodes, the model assignment is copied. Only active planning sourcing rules are considered. The new assignments are then stored in a temporary table. This table has the rank and allocation percentage for each organization from the model.

### Option Specific Sourcing Examples

See the Option Specific Sourcing Example in Option Specific Sourcing (OSS), page 2-32 for more information.

### Option Specific Sourcing During Configuration Item Creation Example

The configuration item is created and assigned to organizations based on the Config Item, BOM, Routing Creation attribute, and the Option Specific Sources List.

Within the list of organizations determined for an order based on the new model attribute, the BOM and routing is created only in the valid manufacturing or external requisitioning organizations. An organization is considered a valid manufacturing requisitioning organization if:

- There is a full or partial Make At or Buy From Rule assigned to the organization in the MRP:Default Assignment Set, and the organization is in the option specific source list for the configuration.

- There is no sourcing for the organization in the MRP:Default Assignment Set, but the organization is in the option specific source list for the configuration.

In the Option Specific Sourcing example, if the new model attribute is set to Based on Model, and the customer orders Model1-O1-O2-Model2-O5, the configured Model1 BOM and routing is created in both M3 and M6, regardless of whether D1 or D2 is chosen as the ship from organization on the sales order. The item is created everywhere the model is enabled.

If, on the other had, the new model attribute is set to Based on Sourcing, and the customer orders Model1-O1-O2-Model2-O5, the configured Model1 BOM and routing is created in both M3 and M6 if the order comes in against D1, but is created only in M3 if the order comes in against D2. The configured item is created only in the D1, M3, M6, D2, M4, M3, the OM validation organization, and the PO validation organizations. This is not a recommended setup if you want to use global ATP on the configured item, or are using matching with PDS ATP.

If the Config Item, BOM, Routing Creation attribute is set to Item Based on Model, BOM and Routing Based on Sourcing, then the BOM and routing is created as described in the Based on Sourcing example, and the item is created everywhere. This is not a recommended setup if you want to use global ATP on the configured item, or are using matching with PDS ATP.

**Important:** Single source users must create option specific valid source lists if the model attribute is set to Based on Model.

**Important:** If you are using Option Specific Sourcing, the same assignment set must be specified in MRP: Default Assignment Set, MRP: ATP Assignment Set, MSC: ATP Assignment Set, and on the plan being used by ATP and planning.

CTO creates item and Model-Organization level assignments in the MRP:Default Assignment Set for the configuration item, based on the Option Specific Sourcing, and the assignments associated with the Config Item, BOM, Routing Creation attribute.

#### **Child Models Impacting Parent Model Sourcing Example**

There are cases when a parent model has no option specific sourcing defined, but the child model does. In this case, CTO derives the appropriate sourcing for the top model based on the sourcing of the child, and create the parent's BOM and routing only in the valid organizations based on the child's restrictions:

M1

- M2 (nonphantom)
  - Opt2
  - M3 (nonphantom)

### Opt3

M1 and M3 have no sourcing, but are enabled and make in Org1, Org2, Org3, and Org4. All models have a BOM and routing in each of those organizations.

M2 is enabled and make in Org1, Org2, Org3, and Org4. It has a BOM and routing in each of those organizations. It has a sourcing assignment in Org3 that is 50 percent make at Org3, 50 percent transfer from Org4.

The valid organization list for M2-Opt2 includes Org2, Org3, and Org4.

The valid organization list for M3-Opt2 includes only Org4.

The order comes in for M1-M2-Opt2-M3-Opt3, and is booked and scheduled against Org3. If the Config item, BOM, and Routing Creation attribute is set to Based on Model, CTO creates M1\*1, M2\*2 and M3\*3 in all organizations that have the model enabled. It is Make At in all organizations. In addition it:

- Creates the BOM and routing for M3\*1, only in Org4. A sourcing assignment is created for M\*3 in Org4 that says make at Org4. M3\*1 is marked as created with option specific sources.
- Even though M2 option specific list said Org 2, Org 3, and Org 4 are valid, because M3\*1 cannot be made in Org2, and there is no sourcing for it from Org2, M2\*1 also cannot be made in Org2. Similar logic exists for Org 3. Therefore, CTO further restricts the valid list and creates the BOM and routing only in Org 4, and creates only the sourcing assignment in Org3 to transfer from Org4. M2\*1 is marked as created with option specific sources.
- M1\*1 has no option specific valid organizations, implying it can be made anywhere it has a BOM. However, because of the option specific sourcing for the child models, the only valid sources for the M1\*1 are Org 3 or Org4. CTO therefore creates the BOM and routing for M1\*1 only in Org 3 and Org 4. CTO also creates 100 percent Make At sourcing assignments in Org3 and Org4, even though the model has no sourcing, for use in validating the ship from organization when matching to this configuration in the future or when an order is entered directly. M1\*1 is marked as created with option specific sources:

Assume another order comes in for the same configuration against Org1, and match is on. The item has been created but not collected or planned. ATP calls CTO for a match and Option Specific Sourcing. CTO returns a match and a list of valid organizations based on their sourcing rules.

- **M1\*1: Org 3 and Org4:** M1\*1 is marked as having option specific sources, even though the model was not, so CTO now returns organizations based on the configuration items sourcing assignment)
- **M2\*1: Org3 and Org4**

- **M3\*1: Org4**

CTO returns a failure because Org 1 is not a valid source for the configuration. ATP fails with an error indicating Org1 is not a valid source for this configuration.

If you collect and plan the configuration items the logic is the same as for a noncollected matched item.

Finally, assume an order is entered for M1\*1 directly, without any configuration. In this case, because CTO marked it as having option specific sources, it will behave as any ATO item with option specific sources.

If Config item, BOM and Routing Creation is set to Based on Sourcing, CTO creates M1\*1 in Org3 and 4 plus the OM validation organization, and M2\*1 in Org3 and 4 plus the OM validation organization and PO validation organizations, and M3\*1 in Org4 plus the OM validation organization.

**Important:** If a model is procured, any option specific sourcing on its children are ignored. This is because the *entire* configuration is bought from the source indicated on the parent.

## Blanket Price Rollup

With option specific sourcing, some specific configuration for a model can be procured only from some specific vendors. The vendors who can supply these configurations are defined in the Option Specific Sourcing rule.

If a configuration has an option specific sourcing rule the blanket price rolls up only valid vendor blankets for that configurations. CTO looks at the configuration item sourcing rules to identify the list of all possible vendors for these configurations. Blanket prices are rolled up only for valid vendors who are also part of the ASL model.

If the configuration is flagged as Parent OSS in the item master, or if the configuration has no option specific sourcing defined, CTO rolls up all of the blankets that are defined in Model ASL.

CTO performs list price rollup in all possible PO validation organization where that configuration item is enabled.

## Error Handling

Autocreate configuration validates the ship from organization, and errors out if the ship from organization is not part of the valid option specific source list. You may run into this scenario if a model with an option specific setup is not ATP, or you are drop shipping a configuration that has option specific sourcing.

## Related Topics

Configuration BOM, page 3-16

Profiles, page 2-8

BOM: Perform Lead Time Calculations

BOM: CTO Perform List Price and Purchase Price Rollup

Purchase Price Calculation, page 2-62

Model Items, Bills, and Routing

## Supplying Unique Configurations

You can create final assembly work orders, flow schedules, or purchase requisitions to supply configurations and ATO items. The following describes the details of each.

### Supply Creation Workflow

The workflow subprocess for create supply checks to see if the configuration supply should be created by CTO. If it is, the workflow will stop at Create Supply Order Eligible; otherwise it will move to Ship Line activity.

The program skips the supply process in the following situations:

- Multiple types of source rules are assigned to the item in the shipping organization. For example: 50 percent make, 50 percent buy.
- User defined logic exists. See Custom Check Supply Creation API, page 2-67.

The line status will be Awaiting Supply until an inventory reservation is made. However, the line can be picked and shipped without reserving material.

If supply is to be created by CTO, the workflow determines what type of supply to create, based on setups in the shipping organization, when you progress through the Create Supply Order Eligible Activity:

- If the item is a make item with no sourcing rules assigned to it, or has a 100 percent make at sourcing rule, and has either a discrete routing or no routing associated with it, a discrete job will be created.
- If the item is a make item with no sourcing rules assigned to it, or has a 100 percent make at sourcing rule, and has a flow routing associated with it, a flow schedule will be created.
- If the item is a buy item with no sourcing rules assigned to it, or has only buy from sourcing rules associated with it, a purchase requisition will be created.
- If the item has a transfer sourcing rule for 100 percent transfer from other organizations, an internal requisition, with the ship from organization as its destination, is created.

- If the sales order line is marked as external, a drop ship purchase requisition will be created, regardless of the sourcing on the item.

## **Discrete Manufacturing**

*Oracle Work In Process User's Guide* provides complete information on how you manage work orders and shop floor activities. The following information is intended only to provide some additional tips and hints on managing work orders in a configuration environment.

### **Create Final Assembly Work Orders**

Oracle Applications provides you with various methods of creating work order to fulfill a configuration sales order. The following table explains the benefits and the implementation consideration of each method.

**Comparison of Methods to Create Final Assembly Work Orders**

| <b>Method</b>                       | <b>Description</b>   | <b>Implementation Consideration</b>  | <b>Reference Document</b>                  |
|-------------------------------------|--|--|--|
| 1.AutoCreate FAS concurrent program | <ul style="list-style-type: none"> <li>- This is a concurrent program that you can launch from the Work in Process menu.</li> <li>-It can be run at any frequency you specify to create work orders for the configured assembly.</li> <li>- The top level work order is reserved to the sales order.</li> <li>- Lower level supplies are not reserved to the sales order.</li> <li>- While computing the mandatory component requirements, the program honors the basis settings (either lot or item)</li> </ul> | <ul style="list-style-type: none"> <li>- This program can only be used if your final assembly is manufactured in the shipping organization. In all other cases, advanced planning is used to create planned orders based on the demand in the shipping organization.</li> <li>- Typically used to create supply for short term demand in a single organization environment.</li> <li>-Useful in a single organization, high volume, short product lead time environment where you may need to run this program more than once a day</li> <li>-Creates one work order for the top level assembly for the full order quantity If you have multiple levels of configurations or ATO items in your shipping organization, this program can create supply for the lower level items as well, if the BOM parameter "Create lower level supply" is set properly. Lower level</li> </ul> | <i>Oracle Work in Process User's Guide</i> |

| Method | Description | Implementation Consideration   | Reference Document |
|--------|-------------|--|--------------------|
|        |             | <p>supply can be of any type (work order, flow schedule or PO). Lower level supplies will not be reserved to the sales order.</p> <p>For lower level ATO items or configurations in other organizations, planning must be run to create supply for the lower level assemblies.</p> <p>-This program does not take capacity into consideration</p> <p>- This program will create a work order for the unreserved portion of a sales order line and its sub-assemblies in the shipping organization.</p> <p>- -If you have created supply for a lower level purchased configuration through this process, you will need to run requisition import with import source code 'CTO-LOWER LEVEL' to create the requisition.</p> |                    |

| <b>Method</b>                                   | <b>Description</b>   | <b>Implementation Consideration</b>  | <b>Reference Document</b>   |
|---|--|--|---|
| 2. Progress Order (action) from Sales Order Pad | <p>-From the Sales Order Pad in Order Management, you can invoke Progress Order action to create a work order for an order line.</p> <p>- This creates a work order for the configuration item.</p> <p>- Top level work order is reserved to the sales order.</p> <p>Lower level supplies are not reserved to the sales order.</p> | <p>- This option can only be used if your final assembly is manufactured in the shipping organization. In all other cases, advanced planning is used to create planned orders based on the demand in the shipping organization.</p> <p>-Need to manually progress the order (in Order Management) one at time.</p> <p>-In single organization environment, progress order is a way to create supply for a single order with minimum delay. If you have an urgent order that needs to be pushed to manufacturing, this may be a way to quickly progress an order to production. If you have multiple levels of configurations or ATO items in your shipping organization, this program can create supply for the lower level items as well, if the BOM parameter "Enable lower level supply creation" is set properly. Lower level supply can be of any</p> | <p><i>Oracle Order Management User's Guide</i></p> <p><i>Oracle Advanced Planning and Shipping User's Guide</i></p> |

| Method | Description | Implementation Consideration   | Reference Document |
|--------|-------------|--|--------------------|
|        |             | <p>type (work order, flow schedule or PO). Lower level supplies will not be reserved to the sales order.</p> <p>For lower level ATO items or configurations in other organizations, planning must be run to create supply for the lower level assemblies.</p> <p>-Creates one work order for the top level assembly for the full order quantity.</p> <p>-If you have created supply for a lower level purchased configuration through this process, you will need to run requisition import with import source code 'CTO-LOWER LEVEL' to create the requisition.</p> <p>- This activity will not be accessible from the sales order pad if supply (Discrete job/ Flow Schedule/ Purchase requisition/Purchase order/Inventory reservations) has been created for this any part of this order line.</p> |                    |

| Method                 | Description  | Implementation Consideration  | Reference Document                                       |
|------------------------|--|---|--|
| 3. Planner's Workbench | <p>- Planning can be run periodically to create planned orders based on sales orders for configured product.</p> <p>-From the Planner's Workbench, you can release planned orders to work orders or internal requisitions for configurations.</p> <p>-The work order is not reserved to sales order;</p> | <p>- In a multiorganization, advanced planning must be used to generate planned orders for your configurations.</p> <p>-With Advanced Planning and Scheduling products, a single plan can be used for your entire supply chain. In addition, material and resources constraints can be considered during the planning process.</p> <p>-Enables the planner to manage configured and nonconfigured demand the same way.</p> <p>-Limited by planning run frequency.</p> <p>-Work orders are not reserved to the sales order.</p> <p>Prior to shipping, users must manually reserve finished assembly to the sales order, or run the Reserve Orders concurrent program to do so automatically.</p> | <p><i>Oracle Master Scheduling /MRP User's Guide</i></p> |

| Method                 | Description  | Implementation Consideration               | Reference Document                         |
|------------------------|--|--|--|
| 4. Create Discrete Job | <p>-You can manually create a job for a configured item.</p> <p>- If the top level configured assembly is being manufactured in the shipping organization, its work order can be reserved to the sales order.</p> <p>-You can reserve the work order to multiple sales orders.</p> | -Manual process, only used for exceptions. | <i>Oracle Work in Process User's Guide</i> |

### AutoCreate FAS Batch Program

Please see the *Oracle Work in Process User's Guide* for details about the AutoCreate FAS batch program.

#### Work Order Reservation:

If you use method 1 above 2 (see preceding section) to create the work order for top level configurations, the top level work order is automatically reserved to the sales order. If you use method 3 and 4 for a top level configuration that is manufactured in the shipping organization, you can manually reserve the work order to the sales order (if necessary).

If your product is manufactured in an organization other than your shipping organization, you can reserve the material for the sales order after it has been received in the shipping organization. The reservation can be done manually from the sales order, or by using the Reserve Orders batch process provided by Order Management. Work orders in other organizations will not be reserved against the sales order.

Lower level supplies are not reserved to the sales order.

#### Complete an Assembly:

When a work order for the top level configuration has been reserved to the sales order, the finished assembly will be automatically reserved against the sales order when you complete the assembly from WIP.

Note that you will not be able to see the job number on the sales order once the job has been completed.

#### Perform an Assembly Return:

When you perform assembly return from WIP on a work order that had been reserved to a sales order, the system will automatically unreserve the on-hand inventory from the sales order. However the system will not automatically reserve the work order to the original sales order. If you need to reserve the work order to the original sales order or to a different sales order, you can do this by entering the sales order number on the WIP Completions form when you perform return transaction.

**Transfer Reservation from One Sales Order to Another:**

If you need to transfer WIP reservation from one sales order to another sales order, you need to delete the existing WIP reservation for sales order 1 and add a new reservation for sales order 2. Sales order 1 and sales order 2 must have the same configuration item.

You can do this on Discrete Job form in Oracle Work In Process.

For more information about discrete work orders, please See: *Oracle Work In Process User's Guide*.

**Supply Chain Execution in a Multiorganization Environment:**

In a multiorganization environment, advanced planning is used to generate and manage planned orders across the supply chain for all levels of the configuration. In the multiorganization example in chapter one, an order is taken for a configured laptop. Advanced planning is run and creates the following planned orders:

1. Planned internal requisition in the shipping organization (W1) to source the configured laptop from organization M1.
2. Planned order for the configured Laptop in organization M1.
3. Planned internal requisition in organization M1 to source the configured monitor from organization M2.
4. Planned order for the configured monitor in organization M2.
5. Planned purchase requisitions for any material that is needed in either M1 or M2 to fulfill the order.

The planner would release all planned orders to create the appropriate work orders and requisitions. Internal requisitions are converted to internal sales orders through a background process, and purchase requisitions are converted to purchase orders through the normal purchasing process.

M2 manufactures and completes the monitor, then ships it to organization M1. M1 manufactures and completes the laptop, then ships it to organization W1. The laptop is reserved to the sales order, picked and shipped.

**Note:** The Auto-Create Final Assembly and Flow Schedule Creation supply creation processes for ATO items are not enabled in process manufacturing organizations. When attempting to create the supply

from a sales order workflow by progressing the sales order line, the workflow transitions to ship line. The concurrent process, Autocreate FAS, skips the sales order lines with ATO items with ship from organizations set as process organizations.

A generic process flow describing this is presented in Chapter 1.

For more information about Advanced Planning and Scheduling, please See: *Oracle Advanced Planning Users Guide*.

For more information about Purchasing, please see: *Oracle Purchasing Users Guide*.

For more information about internal orders, please see: *Oracle Inventory User Guide*

## **Flow Manufacturing**

*Oracle Flow Manufacturing Implementation Manual* and user's guide provides complete information on implementing flow manufacturing at your facility. The manual covers flow line design, line balancing, production execution and kanban planning and execution.

The *Oracle Flow Manufacturing Implementation Manual* explains how flow manufacturing supports building customized products. See: *Oracle Flow Manufacturing Implementation Manual*.

The following information provides some additional tips and hints when you deploy flow manufacturing in a configure to order environment.

### **Create Final Assembly Flow Schedules**

Oracle Applications lets you create flow schedules by using the Line Scheduling Workbench in Flow Manufacturing or the Sales Order Pad in Order Management. The following table provides some explanation of each method.

### **Comparison of Methods to Create Flow Schedules**

| <b>Method</b>  | <b>Description</b>  | <b>Implementation Consideration</b>  |
|--|---|--|
| 1. Line Scheduling Workbench or the Flow Schedule tab on Flow Manufacturing Self Service | <p>-You can use the Line Scheduling Workbench or the Flow Schedule tab on Flow Manufacturing Self Service</p> <p>-You can create flow schedules for planned orders and sales orders</p> <p>-Flow schedules created from the sales orders will reference the sales order and order line.</p> | <p>-Scheduler can manage configured and nonconfigured orders in the same workbench, and can sequence orders according to their scheduling rules.</p> <p>-Scheduling is constrained to the line rate. The scheduler can view orders that could not be scheduled because of the constraint from the same workbench.</p> <p>-Feeder Line Synchronization can be used to create lower level flow schedules.</p> <p>-Advanced Planning and Scheduling must be used for lower level or multiorganization configurations.</p> |

| Method  | Description  | Implementation Consideration  |
|---|--|---|
| 2. Progress Order (action) from Sales Order Pad | <p data-bbox="699 338 1019 491">-A way to create supply for a single order line when the top level configuration is manufactured in the shipping organization</p> <p data-bbox="699 520 1019 611">-Flow schedules created from the sales orders will reference the sales order and order line.</p> | <p data-bbox="1045 338 1365 457">-Valid only if the top level configuration is manufactured in the shipping organization.</p> <p data-bbox="1045 487 1365 674">-This method provides a way to create production schedules for the top level assembly for urgent orders in a single organization environment.</p> <p data-bbox="1045 703 1365 793">-Need to manually progress the order (in Order Management) one at a time.</p> <p data-bbox="1045 823 1365 1066">-Schedules are created first in, first out. No sequencing is performed. The order is scheduled at the first available spot between today plus the manufacturing lead time and the order schedule date.</p> <p data-bbox="1045 1096 1365 1415">-Scheduling is still constrained to the line rate. This may cause a flow schedule to be created for only a partial quantity. In this case, the scheduler must use the line scheduling workbench to manage the unscheduled portion of the order quantity.</p> <p data-bbox="1045 1444 1365 1787">-If you have multiple levels of configurations or ATO items in your shipping organization, this program can create supply for the lower level items as well, if the BOM parameter "Enable lower level supply creation" is set properly. Lower level supply can be of any type (work order, flow schedule or</p> |

| Method                         | Description  | Implementation Consideration  |
|--------------------------------|--|---|
| 3. Feeder Line Synchronization | -Creates flow schedules for configured (and nonconfigured) subassemblies based on the flow schedule for the parent item. | <p>PO). Lower level supplies will not reference the sales order. If the lower level configurations are also flow items, flow schedules for the lower level configurations are created automatically, using Feeder Line Synchronization.</p> <p>-For lower level ATO items or configurations in other organizations, planning must be run to create supply for the lower level assemblies.</p> <p>-This activity will not be accessible from the sales order pad if supply (Discrete job/ Flow Schedule/Purchase Requisition/Purchase order/ Inventory reservations ) has been created for this any part of this order line.</p> <p>-Valid in a multilevel, single organization environment only</p> <p>-Subassemblies are scheduled to complete just when they are required for the parent assembly.</p> <p>-Enables a single organization flow manufacturing company to produce multilevel configurations to order without running planning.</p> |

### Flow Schedule and Order References

Top level flow schedules that are created from sales orders are referenced not reserved to the sales order. This means you can see the order number and order line on the flow schedule and the supply to order workbench, but you will *not* see the flow schedule number in the reservations form accessible from Order Management or Inventory. Supply for lower level configurations or ATO items will not reference the sales order. If

the configuration is delinked from the sales order for any reason, the reference will be automatically removed.

The Flow Line Scheduling Workbench enables you to reference existing flow schedules to unreferenced orders. This allows prebuilding ATO items or common configurations to forecast, and later, linking flow schedules to the sales orders to move the workflow. See the *Oracle Flow Manufacturing User's Guide*.

### **Complete and Assembly**

When a flow schedule is referenced to a sales order, the finished assembly will be automatically reserved against the sales order when you complete the assembly using Work Order-less Completions.

### **Perform and Assembly Return**

When you perform assembly return from WIP on a flow schedule that has a sales order reference, the system will automatically un-reserve the on hand inventory from the sales order. The uncompleted flow schedule will still be referenced to the sales order.

### **Supply Chain Execution in a Multiorganization Environment**

In a multi-organization environment, advanced planning is used to generate and manage planned orders across the supply chain for all levels of the configuration. However, in flow, planned orders cannot be released to flow schedules from the planners workbench. Instead, schedulers would implement planned orders from the line scheduling workbench.

In the multi-organization example in chapter one, an order is taken for a configured laptop. Advanced planning is run and creates the following planned orders:

1. Planned internal requisition in the shipping organization (W1) to source the configured laptop from organization M1.
2. Planned order for the configured Laptop in organization M1.
3. Planned internal requisition in organization M1 to source the configured monitor from organization M2.
4. Planned order for the configured monitor in organization M2.
5. Planned purchase requisitions for any material that is needed in either M1 or M2 to fulfill the order.

The planner would release planned orders to create the internal requisitions and purchase requisitions. Internal requisitions are converted to internal sales orders through a background process, and purchase requisitions are converted to purchase orders through the normal purchasing process.

The schedulers in organizations M1 and M2 would go to the line scheduling workbench

for their respective lines and schedule the planned orders for flow schedules.

M2 manufactures and completes the monitor, then ships it to organization M1. M1 manufactures and completes the laptop, then ships it to organization W1. The laptop is reserved to the sales order, picked and shipped.

For more information about Advanced Planning and Scheduling, please See: *Oracle Advanced Planning User's Guide*.

For more information about Purchasing, please see: *Oracle Purchasing User's Guide*.

For more information about internal orders, please see: *Oracle Inventory User's Guide*

## Purchasing and Internal Transfers

The *Oracle Purchasing User's Guide* and *Oracle Inventory User's Guide* provide complete information on how you manage requisitions, purchase orders, and internal sales orders, respectively. The following information is only intended to provide some additional tips and hints on managing requisitions in a configuration or ATO environment.

## Process Manufacturing

When creating supply, if the qualifying sourcing rule in the shipping warehouse is 100 percent buy (single or multiple vendors), an external requisition is created for ATO items, even when the shipping organization is a process manufacturing organization. Internal and external requisition creation and Drop Shipment functionality is enabled in process manufacturing organizations.

To enable AutoCreate Requisition functionality for the item, select the Replenish to Order check box, within the Master Item window.

While creating the Purchase (External), Dropship, or Internal Requisitions for a process-enabled ATO item, CTO passes the following data to the requisition documents:

1. Grade of the ATO item
2. Secondary UOM of ATO Item
3. Secondary Quantity of ATO Item
4. Charge Account id

Besides supporting the reservation and change management behavior (similar to ATO items in discrete organizations), the secondary quantity changes are also managed for change management between demand and supply.

## Create Purchase Requisitions

If you have short cycle times or long periods between planning executions, Oracle

Configure to Order can quickly communicate sales order demand to internal and/or external organizations and suppliers, independent of Oracle Planning. You can receive an order and then immediately create supply to fulfill that order, reducing customer lead time.

Oracle Applications provides you with various methods of creating requisitions to fulfill a configuration or ATO sales order. The following table explains the benefits and the implementation consideration of each method.

**Comparison of Methods to Create Purchase Requisitions**

| Method   | Description   | Implementation Consideration  | Document          |
|--|---|---|-------------------|
| 1. AutoCreate Purchase Requisitions concurrent program | <p>- This is a concurrent program that you can launch from the Bills of Material menu. You can use the program to create internal and/or external requisitions.</p> <p>The program creates a record in the req import table for each order line that meets the program parameters.</p> <p>Note that req import needs to be run to generate the requisition.</p> <p>-It can be run at any frequency you specify to put a record in the req import tables</p> <p>- The requisition, when created, is reserved to your sales order. For external requisitions, the reservation is transferred to the purchase order created for the item, and then to inventory upon receipt. Order line status is updated to reflect the latest reservation. The reservations transfer through intermediate states if the organization is</p> | <p>Valid only if the ATO item or configuration item is a buy item without any sourcing rule, or has buy-type or transfer from (100 percent from another organization) sourcing rules in the shipping organization, or has a 100 percent transfer sourcing rule from a single source organization.</p> <p>- ATO items must be Build In Wip, even if they are being procured.</p> <p>- If you would like requisitions to be created immediately, you can create a request set to launch AutoCreate Req, followed immediately by Req Import. Set the supply type parameter on the req import program to CTO to create a requisition only for the items created through the autcreate req process. You can launch it a second time with supply type CTO-LOWER-LEVEL to create a requisition for any lower level procured assemblies</p> | Oracle Purchasing |

| Method | Description                                     | Implementation Consideration  | Document |
|--------|---|---|----------|
|        | WMS-enabled. See: Order Line Statuses, page 3-1 | <p>(if the parameter "Enable lower level supply creation" is not No).</p> <p>- Typically used to create supply for short term demand in a procure to order environment.</p> |          |

| Method  | Description  | Implementation Consideration   | Document   |
|---|--|--|--|
| 2. Progress Order (action) from Sales Order Pad | <p>- From the Sales Order Pad in Order Management, you can invoke Progress Order from 'Create Supply Eligible.' If the ATO item is a buy item or has buy sourcing rules, or has a 100 percent transfer rule to transfer the item from a single source organization, a record is created in the requisition import tables</p> <p>- The requisition, when created, is reserved to the sales order.</p> | <p>- Valid only if the ATO item or configuration is a buy item, or has a buy-type sourcing rule in the shipping organization, or has a 100 percent transfer from sourcing rule from a single source organization.</p> <p>Manually progress the order (in Order Management) one at a time.</p> <p>- ATO items must be "Build In Wip", even if they are being procured.</p> <p>-In a Procure to Order Environment, progress order is a way to create supply for a single order with minimum delay. If you have an urgent order that needs to be pushed to purchasing, this may be a way to quickly progress an order to production. Note that Req Import needs to be run to actually create the requisition.</p> <p>- This activity will not be accessible from the sales order pad if an inventory reservation has been created for any quantity for this order line.</p> | <p><i>Oracle Order Management User's Guide</i></p> |

| Method                         | Description  | Implementation Consideration  | Document  |
|--------------------------------|--|---|---|
| 3. Advanced Planners Workbench | <p>- Advanced planning can be executed periodically to create planned purchase or internal requisitions, based on sales orders for the configured product.</p> <p>- From the Planner's Workbench, you can release planned orders to requisitions for configurations.</p> <p>- The requisition is not reserved to sales order</p> | <p>- For external requisitions, configuration details are communicated through text attachments to the PO or are viewed in the iSupplier Portal.</p> <p>- With Advanced Planning and Scheduling products, a single plan can be used for your entire supply chain. In addition, material and resources constraints can be considered during the planning process.</p> <p>- Enables the planner to manage configured and nonconfigured demand the same way.</p> <p>- Requisitions are not reserved to the sales order.</p> <p>Prior to shipping, users can manually reserve the inventory to the sales order, or execute the Reserve Orders concurrent process.</p> | <p>Oracle Advanced Planning and Scheduling</p> <p>Oracle Purchasing</p> |

**Autocreate Purchase Requisition Batch Program:**

You can launch this concurrent program from the Bills of Material, ATO menu. The program supports the following parameters:

Sales Order: You can specify a specific sales order number. If the parameter is blank, it will create the configurations for any eligible sales orders.

Sales Order Line: If you specified a sale order, you can also specify a specific sales order

line. If the parameter is blank, it will create the configurations for any eligible lines on the sales order.

**Organization Code:** You can optionally specify an organization. Only those sales order with this organization as the shipping warehouse will be processed.

**Offset Days:** The program will process only those sales orders which are scheduled to ship on or before the system date plus the offset days (using BOM calendar days)

**Create Requisition of Type:** The parameter determines whether to create either or both internal and external requisitions for the sales order lines, submitted for creating supply.

**External:** When the parameter is set to *External*, the program processes only those lines that require external (purchase) requisitions; it does not process lines that require internal requisitions.

**Both:** When the parameter is set to *Both*, the program processes order lines that require internal or external (purchase) requisitions and creates internal or external requisitions as needed.

#### **Requisition and Purchase Order Reservation:**

If you use method 1 and 2 (see the preceding section) to create the requisition for an ATO item or configuration, the requisition is automatically reserved to the sales order. When the PO is created, the reservation will be transferred to the purchase order. If you use method 3, you cannot reserve the material to the sales order until receipt into inventory.

Note that you will not be able to see the PO number on the sales order once the entire PO has been received.

#### **Managing Changes in Purchasing:**

Changes to a requisition (other than requisition cancellation) will *not* be reflected in the reservation to the sales order. Therefore, it is recommended that users never change a req with source type CTO.

If the PO is cancelled without canceling the requisition, the reservation is transferred back to the req. If both are cancelled, the reservation is removed. In the latter case, you can run the autcreate purchase requisition batch program to create a new requisition for sales order.

If a partial PO quantity cancelled, or the PO quantity is reduced, then the reservation quantity is reduced accordingly. Again, run the autcreate purchase requisition batch program to create a new requisition for the outstanding quantity.

**Note:** Once a sales order reservation to the PO has been removed (either automatically or manually), it cannot be manually rereserved. You can manually reserve on-hand stock to the sales order or the autcreate purchase requisition batch program can pick it up again and create a new supply order along with a new reservation.

**Receive an Assembly:**

When a purchase order has been reserved to the sales order, the inventory will be automatically reserved against the sales order when you receive the purchase order.

**Note:** This process does not support the receipt of substitute items. The user will be able to receive a substitute item, but the sales order will remain for the original item. The user will have to manually cancel the original order line and add a new line for the substituted item prior to shipment.

**Perform an Assembly Return:**

When you perform a return to vendor on material that had been reserved to a sales order, the system will automatically unreserve the on-hand inventory from the sales order. However the system will not automatically reserve the purchase order to the original sales order. It is suggested that you close the existing purchase order and let the system generate a new requisition and purchase order for the returned material.

**Create Dropship Requisitions**

Dropship functionality enables you to take an order from your customer for ATO and non ship model complete (non SMC) PTO and PTO-ATO hybrid configurations and fulfill it directly from your supplier's site. The functionality does not support dropshipments of ship model complete (SMC) PTO or SMC PTO-ATO hybrid configurations.

Dropship is implemented for ATO items in the same manner as it is for standard items, which means planning cannot be used. For more details on dropshipping configurations, please see the *Oracle Order Management User's Guide* and the *Oracle Order Management Implementation Manual*.

Oracle Applications provides you with various methods of creating dropship requisitions to fulfill a configuration or ATO item sales order.

The following table explains the benefits and the implementation consideration of each method.

**Comparison of Methods to Create Drop Ship Requisitions**

| <b>Method</b>                                 | <b>Description</b>  | <b>Implementation Consideration</b>  | <b>Document</b>                |
|---|---|--|--------------------------------|
| 1. AutoCreate DropShip Req concurrent program | - This is a concurrent program that can be run at any frequency you specify to put a record in the req import tables for external sales order lines | <ul style="list-style-type: none"><li>- Valid only if the ATO item or configuration order line has supply source type as External.</li><li>- Creates a record in the req import table for each order line that meets the program parameters.</li><li>- Note that req import needs to be run to generate the requisition.</li><li>- If you would like requisitions to be created immediately, you can create a request set to launch AutoCreate DropShip Req, followed immediately by Req Import.</li><li>- There is no reservation between the req/PO and the order line status on the configuration line will remain at "awaiting Receipt" until the line is shipped.</li></ul> | <i>Oracle Order Management</i> |

| Method  | Description  | Implementation Consideration  | Document                                    |
|---|--|---|---|
| 2. Progress Order (action) from Sales Order Pad | -From the Sales Order Pad in Order Management, you can invoke Progress Order from 'Create Supply Eligible'. If the ATO Item, Configuration. on an external order line, a record will be created in the req import tables -The requisition is <i>not</i> reserved to the sales order. | <p>- This option is valid only for ATO Items and configurations that are on an external order line.</p> <p>-Need to manually progress the order (in Order Management) one at time.</p> <p>-In a Procure to Order Environment, progress order is a way to create supply for a single order with minimum delay. If you have an urgent order that needs to be pushed to purchasing, this may be a way to quickly progress an order to production.</p> <p>Note that Req Import needs to be run to actually create the requisition.</p> <p>- There is no reservation between the req/PO and the order line status on the configuration line will remain at awaiting receipt until the line is shipped.</p> | <i>Oracle Order Management User's Guide</i> |

#### **Autocreate Dropship Requisition Batch Program:**

You can launch this concurrent program from the Bills of Material,ATO menu. The program supports the following parameters:

- **Sales Order:** You can specify a specific sales order number. If the parameter is blank, it will create the configurations for any eligible sales orders.

- **Sales Order Line:** If you specified a sale order, you can also specify a specific sales order line. If the parameter is blank, it will create the configurations for any eligible lines on the sales order.
- **Organization Code:** You can optionally specify an organization. Only those sales order with this organization as the shipping warehouse will be processed.
- **Offset Days:** The program will process only those sales orders which are scheduled to ship on or before the system date plus the offset days (using BOM calendar days).

#### **Requisition and Purchase Order Link:**

There are no reservations for drop shipped order lines. To see the requisition or purchase order number that was created for the order, select the external order line, and go to Actions, Additional Line Information, Dropship tab. To manage changes to the order or purchase order, use the OM Sales Order to Purchase order discrepancy report.

#### **Receive an Assembly:**

You must perform a logical receipt of the purchase order, which will trigger a logical shipment on your sales order. See the *Order Management User's Guide* for more information.

### **Communicating Configuration Details to Your Supplier**

When purchasing a configuration, a purchase order or blanket release is created for the configuration item itself. CTO provides two methods to communicate the configuration details to your supplier: item attachments and the iSupplier Portal.

EDI or During AutoCreate Config, CTO creates a supplier-type, item level attachment in the PO validation organization. The attachment contains the models, option classes and options that were chosen during the configuration session. This attachment can be automatically printed, faxed, e-mailed, or transmitted by XML.

Suppliers can also see details of the purchased configuration from the iSupplier Portal by using a link off the PO details page. When clicking this link, the supplier can see the model and options that were chosen in order management. They can view any supplier or miscellaneous item attachments on the options, and they can export the data to excel, or download a text version of the file. See iSupplier Portal, page 2-62

### **User Item Description**

If the user in Order Management enters a User Item Description for an ATO item, it will be used as the description of the item in purchasing. This can enable users to create orders for one time items. In case of a configured item, the base model's user item description will be copied to configuration item, which will be used as the description in PO. For more information on User Item Description, see the *Oracle Order Management User's Guide*.

## Reserve Supply

Reservation for an ATO model sales order is placed against the configuration item. The following table describes the various method of reserving a supply.

### *Various Methods of Reserving Supply*

| <b>Supply Type\ Method</b> | <b>On-hand</b>                    | <b>Work Order</b> | <b>Req/PO</b> | <b>Description</b>  |
|----------------------------|-----------------------------------|-------------------|---------------|---|
| Automatic                  | Match action from Sales Order Pad | -                 | -             | <p>-If a match is found, and there is available inventory in the shipping organization, the system gives you an option to make reservation.</p> <p>-The cursor must be on the ATO model order line when you perform the Match action.</p> |

| Supply Type\ Method | On-hand  | Work Order   | Req/PO                           | Description   |
|---------------------|--|--|----------------------------------|---|
| -                   | -AutoCreate Orders from WIP, when the shipping organization is the same as the top level manufacturing organization. | -AutoCreate Orders from WIP, when the shipping organization is the same as the top level manufacturing organization. | -                                | -If a match is found, if "BOM: Automatic Reservations is Yes", and, if you are within the "OM: Reservation Time Fence" and if there is available inventory in the shipping organization, the system will make an inventory reservation.<br><br>It will then create a work order for the remaining quantity, and reserve the work order to the sales order line. |
| -                   | -  | -  | Autocreate purchase requisitions | Autocreate requisitions places a record in the req import tables for each eligible order line. When the requisition is created, it is reserved to the sales order.  |

| Supply Type\ Method | On-hand  | Work Order | Req/PO | Description   |
|---------------------|--|------------|--------|---|
| -                   | Work Order Completion Form in WIP                    | -          | -      | -If the work order is reserved to a sales order, the reservation is transferred to inventory when you complete finished assembly.   |
| -                   | Work Orderless Completion Form in Flow Manufacturing | -          | -      | -When you perform an assembly completion for a flow schedule that is tied to a sales order, the system automatically places a reservation on the finished assembly against the sales order demand for the configuration item. |
| -                   | PO Delivery  | -          | -      | When a PO distribution is delivered to inventory, the reservation from the purchase order is transferred to inventory.  |

| Supply Type\ Method | On-hand  | Work Order | Req/PO | Description  |
|---------------------|--|------------|--------|--|
| Manual              | Reservation from Sales Order Pad in OM.<br><br>(Sales Order Pad, Tools, Scheduling, Reserve) | -          | -      | -You can reserve available inventory in the shipping organization to an internal ATO item order line or a configuration order line.<br><br>-The cursor must be on the desired order line when you perform reservation. |
| -                   | INV Reservations form  | -          | -      | -You can reserve available inventory in the shipping organization to a configuration or an ATO item internal order line by using the Reservation window in Inventory   |

| Supply Type\ Method | On-hand                           | Work Order                | Req/PO | Description  |
|---------------------|-----------------------------------|---------------------------|--------|--|
| -                   | -                                 | Discrete Jobs Form in WIP | -      | -You can manually reserve a work order for your top level configuration item to one or more sales orders through the Discrete Job window, if the manufacturing organization is the same as the shipping organization.  |
| -                   | Reserve Orders Concurrent Program | -                         | -      | You can schedule the reserve orders concurrent program to run on a regular basis to reserve your on hand to a sales order automatically. This is especially useful in a multiorganization environment, or any environment where you are using planning to create your supply and the reservation is not done automatically upon completion or receipt. |

## Pick Release and Ship Confirm

After the assembly is received into inventory in your shipping organization, the sales order is ready to be picked and shipped to customers. If your top level assembly was made in or bought for your shipping organization, and the supply was reserved or referenced to the sales order, the resulting on-hand inventory will be reserved to the sales order and your sales order will automatically be eligible for shipping. If your supply was created using planning, you will need to manually reserve the material to your sales order before you can proceed to shipping. This chapter provides explanation of some settings for configured order that will affect shipping for configured products.

See: Shipping Setup, page 2-61, for more information on shipping setup for CTO. For a complete guide on shipping, please refer to *Oracle Shipping Execution User's Guide*.

## Intercompany Invoicing

This section provides an overview of Intercompany Invoicing for configured items. See the Intercompany chapters of the *Oracle Inventory User's Guide* for more information.

### Traditional Intercompany

For transaction flows with Advanced Accounting turned off, the models and options of a configuration are all invoiced individually. The system determines what models and options to invoice based on the option lines on the sales order to which the configuration item is linked.

### Enhanced Intercompany

For transaction flows with Advanced Accounting turned on, the configuration itself is invoiced. If the pricing option on the transaction flow is transfer price, a transfer price is calculated for the configuration item at the time of invoicing by summing up the transfer price of all options and option classes selected. This transfer price is *not* stored on the intercompany price list, but is dynamically recalculated each time an invoicing account occurs. If a transfer price already exists for the configuration item for any reason, it is not recalculated. The system determines what models and options to include in the rollup based on the option lines on the sales order to which the configuration item is linked. If the configuration is not linked to any sales order, it is determined by traversing the configuration BOM. Discounts and modifiers defined on the model and options are not considered for procurement flows, because these items do not appear on the Purchase Order lines.

If the pricing option on transaction flow is set up to be PO Price, the PO price for the configured item is used during intercompany invoicing.

**Note:** For configured items created in the preceding releases that are

not currently linked to any sales order, transfer prices on mandatory components will also be included in the rolled up transfer price. If no transfer price is defined for these components, it will be taken as 0.

**Note:** Enhanced intercompany is not supported for shipments between two internal organizations.

## Activity and Generic Holds in the Order Process

You can apply the following seeded activity-based holds on a configuration line:

1. CREATE\_CONFIG - Create Configuration
2. CREATE\_SUPPLY - Create Supply

The concurrent processes, Autocreate Configuration items, Autocreate FAS and Autocreate Purchase Requisitions, check for the activity-based holds and, depending on the workflow status, ignore the held sales order lines for processing.

The following table explains the behavior of the concurrent processes for various hold conditions:

### *Hold Conditions*

| Model/Configuration | AutoCreate Configuration     | AutoCreate FAS    | AutoCreate Purchase Requisitions |                          |
|---------------------|------------------------------|-------------------|----------------------------------|--------------------------|
| Model               | Generic                      | Hold with message | Hold with message                | Hold with message        |
| -                   | Activity based-CREATE_CONFIG | Hold with message | Creates WIP Job                  | Creates Requisition data |
| Configuration line  | Generic                      | -                 | Hold with message                | Hold with message        |
| -                   | Activity based-CREATE_CONFIG | -                 | Creates WIP Job                  | Creates Requisition data |

| Model/Configuration | AutoCreate Configuration     | AutoCreate FAS | AutoCreate Purchase Requisitions |                   |
|---------------------|------------------------------|----------------|----------------------------------|-------------------|
| -                   | Activity based-CREATE_SUPPLY | -              | Hold with message                | Hold with message |



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# Supply To Order Workbench

This chapter covers the following topics:

- Supply to Order Workbench

## Supply to Order Workbench

This section describes the CTO Supply to Order Workbench. The Supply to Order Workbench is used to view the status information for Configured and ATO orders, as well as for all dropship orders.

### Overview of the Supply to Order Workbench

The concept of the Supply to Order Workbench is to give the customer service representative additional details of a multilevel ATO configuration and top-level supply that is linked to the current sales order for a configuration, ATO item, or Drop Shipped Order line. The goal is to provide them with a single source of information to give their customers accurate order statuses. It is a self-service application that can be accessed through the sales order header or lines, by clicking Actions and selecting Supply to Order Workbench.

You can access the Supply to Order Workbench within Order Management from the Supply to Order Workbench action menu. You can also bring up the Supply to Order Workbench independently by using the menu option in the self-service application menu. The Supply to Order Workbench Search page accessed from this menu option enables you to search by an Order context or Line context.

From the Order tab, you can search using the following criteria: Order Number, Customer Name, From Order Date, or To Order Date. If you select Advanced Search you can also search by Order Type and Created By.

From the Line tab, you can search using the following criteria: Order Number, Item, From Schedule Ship Date, or To Schedule Ship Date. If you select Advanced Search you can also search by Base Model, Option Item, Source Type, and Line Status.

The Supply to Order workbench is available from the actions menu in Order

Management and is active for any ATO item order line, any dropship orders line and any configuration item line, or any ATO Model lines which have configuration items created. Note that the workbench cannot be invoked until the configuration item is created for ATO model orders (including drop shipped orders).

**Note:** You must have access to the Supply to Order Workbench Manager responsibility to be able to access the workbench. You can define the security profile from the menu function Define Security profiles and assign the security profile to the responsibility, by setting the appropriate security profile to MO: Security Profile. Depending on the Security profile assigned to the responsibility, you can view only the orders belonging to the operating units that are accessible to your responsibility.

**Note:** When the workbench is invoked from the sales order, you can view the information for that specific order only. Orders and order lines searches are not accessible.

However, if you try to invoke the workbench and there is no valid line for which to display the information, a message is displayed in the status bar informing you that there are no lines to be displayed. It can be invoked from the order header when the order contains an ATO item, configuration item, or an external (drop shipped) order line. It can be invoked at the line level when the user is on an ATO item, configuration item, or an external (drop shipped) order line. In both cases, it will be available only after the order has been booked. The workbench will not be invoked until the configuration item is created for ATO model lines.

The workbench Orders tab displays the Supply to Order Details which consists of two pages, Supply to Order Lines and the Active Supply Page. Both are explained in detail later.

## Supply to Order Lines

The Supply to Order Lines page displays context information from the sales order header at the top of the page. When invoked from order header, it lists all the top-level configuration items, ATO items, or drop shipped standard items for that sales order. When invoked from a line it lists the specific line only. Each line displays the item description, quantity, and line status from Order Management, and an active link that describes the type of active supply associated with the order line. You will be able to see links to WIP Jobs, Flow Schedules, Requisitions, or Purchase orders that are reserved or referenced to the sales order line. You can click the active link to go view details of the supply on the Active Supply Details page, described later.

**Note:** Inventory reservations are *not* shown on this page.

**Note:** Dropship PO details will be displayed even after the drop ship PO has been received. However, all other types of supply will no longer be displayed after the supply order is completed and the reservation has transferred to inventory.

If you have any multilevel configurations, the top-level configuration will have an arrow indicating there is more information. Click the arrow to see the indented structure of the configuration items will also be displayed. There is also a expand all and collapse all option. Note that for the lower level configurations, the line number and line status displayed is for the corresponding lower level model, so you can cross-reference the configuration ID shown in the workbench with the sales order line of its base model. Lower level configurations cannot have supply reserved to the sales order, so you will not be able to see any supply details for these configurations.

The Export button is provided for you to export the information in the table to Excel.

## Active Supply Details

The Active Supply Details Page can only be accessed from the link on the Supply to Order Lines tab for a given sales order line. The page displays context information from the line at the top of the page, then lists all the open supplies (WIP Jobs, Flow Schedules, Requisitions or Purchase Orders) for the sales order line.

**Note:** Inventory reservations are shown in the header of this page.

This page has three tabs: General Supply Information, Orders, and Purchasing Documents. The General Supply tab contains information relevant to all types of supply, such as the Supply Type, Linked quantity, Document Number, Status, Expected Completion Date, and Need by Date.

The Work Orders tab contains details specific to work order jobs: Job start date, Start Quantity, Scrap Quantity, and WIP Job Lot Number. The Purchasing Documents tab contains details specific to purchasing documents (Requisitions, POs, and ASNs). This tab has two tables:

1. Requisitions and Orders table
2. Advanced Shipment Notices table

The Requisitions and Orders table contains information specific to Internal, Purchase, and Dropship Requisitions, such as Operating Unit, Document Revision, Line, Supplier, Buyer, Promised Date, Internal Sales Order, and Operating Unit. Sales Order and Operating Unit are applicable only when the purchasing document is an Internal Requisition. You can add Job or PO descriptive flexfields to the tabs by personalizing the page. The Advance Shipment Notices table includes the information specific to ASNs, such as Supply Type, Linked Quantity, Document Number, Ship Date, Supplier, Site, Freight Carrier, and Ship To.

**Note:** The supply details for a flow schedule are displayed on the General Supply information tab.

## Personalizing the Supply to Order Workbench

Only the Administrator user can personalize a page. For example, for purchase requisitions in Process organizations, you can display additional information, such as secondary order quantity, secondary UOM, and grade. You can personalize for a responsibility, function, or localization. See the *OA Framework User's Guide* for more information.

### To personalize the Supply to Order Workbench:

1. Log in to application as the system administrator.
2. Ensure that the Personalize Self-Service Defn profile is set to Yes at your user/responsibility level.
3. Ensure that the Disable Self-Service Personal profile is not set to Yes at your default/user/responsibility level.
4. Query the sales order and invoke the Workbench.  
The workbench now has links Personalize Region links on top of every region.
5. Click the link to personalize that region, which will take you to a new page
6. Select Personalization Level at either the Site, Organization, or Responsibility level.
7. Click Next. This will take you to the next screen.
8. Enter the responsibility or site name.
9. Click Next to display the last page to create or update the personalization. If there is an existing personalization, you can modify it. Otherwise you can create new personalization.
  - The label of the region can be modified by entering a value in the new label field.
  - The order of the column displayed can be changed.
  - New columns can be added by moving column from available column list to column displayed list.
  - Columns can be removed from the display by moving the columns from the "column displayed" list to the "column available" list.

- To change the column labels, click the advanced setting button. This will bring a new page and you can edit the column label in the New Column Label column.
  - For table regions, you can modify the sorting fields or enter a new sorting field in sorting settings. You can also give filtering condition for the table data by entering condition for any of the columns displayed.
10. Click Apply in all pages to save the changes.
- This will save the personalization and make it effective for the site, organization or responsibility.



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## Order Changes and Returns

This chapter covers the following topics:

- Order Changes
- Processing Constraints
- Re-instituting Prior Processing Constraints

### Order Changes

Order Management provides you with the ability to automate the process of changing various types of orders. However, system and processing constraints can prevent specific changes to an order depending on the flow status.

The *Order Management User's Guide* provides a detailed description of the processing constraints.

You can make changes to an ATO model line without delinking the configuration item.

#### **Summary of Allowed Changes to an ATO Model Line**

| <b>Change</b>                       | <b>Allowed</b>        | <b>Reservation /Flow Schedule Impact</b>                              |
|-------------------------------------|-----------------------|---|
| Schedule Ship Date                  | Until line is shipped | No change to reservation/reference                                    |
| Request Date/Scheduled Arrival Date | Until line is shipped | No change to reservation/reference                                    |
| Order Line Quantity                 | Until line is shipped | Reservation is decreased if quantity decreases and reservation exists |

| <b>Change</b>                | <b>Allowed</b>  | <b>Reservation /Flow Schedule Impact</b>                                   |
|------------------------------|---|--|
| Cancellation                 | Until line is shipped   | Reservation/reference is removed   |
| Configuration Change         | Until line is shipped   | Reservation/reference is removed, and configuration item is delinked       |
| Manual Delink of Config Item | Until line is shipped   | Reservation/reference is removed, and configuration item is delinked       |
| Unschedule                   | Until line is shipped   | Reservation/reference is removed, and configuration item is delinked       |
| Warehouse change             | Until supply is created and reserved/referenced, if model attribute Create Configured Item, BOM is set to Based on Model. Not allowed if attribute is set to Based on Sourcing, or Item Based on Model, BOM Based on Sourcing or NULL | N/A: Must remove reservation or reference in order to change the warehouse |
| Manual splits                | Until supply is reserved/referenced   | N/A: Must remove reservation or reference in order to split the line.      |

**Note:** The Order Line quantity increase will not result in a reservation increase. You should run the appropriate create supply batch program to create more supply. Or, in the case of a work order, you can manually increase the quantity on the work order and then increase the reservation.

**Important:** Order Management has a delete constraint that prevents the deletion of a line after booking. This prevents you from changing the configuration of a model after it has been booked. This is a nonseeded constraint that should be removed if you need to make changes to your configurations after booking. See Order Management Setup, page 2-54

for more information.

**Note:** Because a configured BOM is created with only seven decimal places on component items, change management compares the old and new quantities on options after rounding to seven decimal places. If there is no change after rounding a quantity to seven decimals, CTO does not consider this as a configuration change and does not delink the configuration item.

After a change is made, Order Management will try to reschedule the order with the changes. If rescheduling succeeds then system will store the changes, otherwise the system will not save the changes.

## Notification of the Change

A notification of the changes made are sent to either the planner or the buyer for any ATO configuration whose workflow is at ship line.

A configuration line workflow will be at ship line if material or supply is reserved to the sales order line, or the workflow is set to skip the autcreate supply process entirely. For configured items and make ATO items, notification will be sent to the planner of the top model/item in the shipping organization. For purchase to order ATO items or configurations, a notification will be sent to the buyer on the requisition, if one exists, or the buyer specified on the top model/item in the shipping organization. The planner or buyer should be a valid workflow user. If the planner or buyer is not valid workflow user then notification will be sent to the SYSADMIN user by default. The default user can be customized by changing the Change Order Administrator attribute default value in the workflow. Please see the Inventory user manual to know how to set up the planner code to an item.

**Note:** These changes could cause data inconsistency between Order Management, WIP, and PO if action is not taken by the planner to update associated WIP jobs, flow schedules, or purchase orders.

## Drop Shipped Configurations

The CTO change order process does not send notifications for drop shipped orders. If you change the request date on a drop ship order before it is interfaced to purchasing, the scheduled ship date will not change. You must change the scheduled ship date manually.

Most order changes on a drop ship sales order can be automatically communicated to the purchase document, as long as an ASN or receipt has not been performed.

For configurations:

- A nonsystem constraint exists that does not allow reconfiguration (add option, delete option, quantity change) of ATO model and its children after a PO has been approved. The condition of the constraint is PO Approved.
- You will not be able to manually delink the configuration item for an ATO model if the related dropship PO is approved
- When OM deletes the configuration item line due to reconfiguration, Purchasing cancels or deletes the related line/shipment depending on PO status. If PO is not approved, then the PO line/shipment can be deleted. If PO is approved, then the PO Line/shipment is canceled.

See De-link Configuration Item, page 3-16 for more information. *Fulfillment* in the *Oracle Order Management User's Guide* has more information on drop ship change management.

**Important:** If the ATO model is reconfigured, the Purchase Order line/shipment tied to the configuration item loses its relationship to the sales order line. Purchasing will not be able to derive any sales order information for any exception handling. Due to this reason, it is recommended not to disable the new reconfiguration constraints. You will have to manually handle any resulting exceptions due to the disabling of the constraints.

## Processing Constraints

Order Management still has some seeded processing constraints for configurations that deny certain actions when the workflow reached certain status.

### ATO Model

For an ATO model order line, there are still processing constraints that prevent certain order changes.

After a configuration item is created, you cannot delete the top model order line. You can cancel the top model by setting the quantity to zero or clicking Actions.

There is also an Order Management constraint that prevents cancellation or reduction in quantity of an ATO model line if the configuration line is interfaced to shipping and some deliveries are staged. This is a 'non seeded' constraint. If this constraint is removed then the staged lines can be canceled. It is recommended that you do not remove this constraint.

You also cannot cancel any quantity on the model line that is associated with a closed delivery on the configuration line. However, if the configuration line is interface to shipping and there are no staged deliveries, but there are some closed deliveries, then the model quantity that is not yet closed can be canceled.

## Option Items

There is a delete constraint that prevents the deletion of a line after booking. This will prevent you from being able to change the configuration of a model after it has been booked. This is a nonseeded constraint that should be removed if you need to make changes to your configuration after booking.

## Configuration Item

For the configuration order line, there is a processing constraint that prevents updating anything on the configuration line. To make changes to the configuration line's dates or quantities, change the ATO model line and the changes will cascade to the configuration item.

## ATO Item

For an ATO item order line, there is a processing constraint that prevents you from changing the warehouse after a work order, flow schedule, purchase requisition, or purchase order has been created and reserved to the ATO item.

There is also an OM constraint that prevents cancellation or reduction in quantity of an ATO item line if the line is interfaced to shipping and some deliveries are staged. This is a nonseeded constraint. If this constraint is removed then the staged lines can be canceled. It is recommended that you do not remove this constraint.

You also cannot cancel any quantity that is associated with a closed delivery. However, if the line is interface to shipping and there are no staged deliveries, but there are some closed deliveries, then the unclosed quantity in the order line can be canceled.

## Remnant ATO Model Lines

All lines in a PTO model can become remnant if the PTO model is partially shipped. Additionally, all lines will become remnant if any item under a nonship model complete PTO model is dropshipped and has been partially or fully received.

If you are using PTO-ATO Hybrids, you will not be able to change any of the following on the remnant ATO model lines:

Request date, schedule ship date, schedule arrival date, quantity, or configuration. You also cannot delete and cannot invoke the configurator.

See the *Oracle Order Management User's Guide* for more information on remnants.

## Re-instituting Prior Processing Constraints

In the previous releases, Order Management had additional seeded processing constraints for configurations that denied certain actions when the workflow reached a certain status. The original processing constraints are described here, along with details

on how to reinstate them if your business requires them.

## Prior ATO Model Constraints

For an ATO model order line, there were processing constraints that prevented certain order changes.

After a configuration item is created, these actions were not allowed:

- Increasing / Decreasing quantity
- Updating schedule ship date
- Modifying selected options (add or delete options)
- Canceling line

## Prior ATO Item Constraints

For an ATO item order line, there were processing constraints that prevented certain order changes.

After a work order or flow schedule was created and reserved to the ATO item, these actions were not allowed:

- Increasing / Decreasing quantity
- Updating schedule ship date
- Canceling line

After ship notified of the ATO item, these actions were not allowed:

- Updating scheduled ship date
- Updating ordered quantity
- Canceling order line

## To reinstitute these constraints

If needed, the preceding removed conditions can be added as a nonseeded condition. The following tables are the exact conditions that were removed in OM Family Pack E. They can be added exactly as shown to keep the old functionality. Please refer to *Oracle Order Management User's Guide* to know how to add conditions to the existing constraints.

Note that only the conditions were removed in OM Family Pack E. The validation templates for those conditions are still available to use.

**Cancel Constraint**

| <b>Operation</b> | <b>Attribute</b> | <b>User Action</b> |
|------------------|------------------|--------------------|
| CANCEL           | -                | Not Allowed        |

**Cancel Constraint Conditions**

| <b>Group</b> | <b>Scope</b> | <b>Validation Entity</b> | <b>Record Set</b> | <b>Validation Template</b> |
|--------------|--------------|--------------------------|-------------------|----------------------------|
| 6            | Any          | Order Line               | Line              | ATO                        |
| 6            | Any          | Order Line               | Line              | Ship notified              |
| 6            | Any          | Order Line               | Line              | Standard item              |
| 7            | Any          | Order Line               | Line              | Configuration Created      |

**Update Ordered Quantity Constraint**

| <b>Operation</b> | <b>Attribute</b> | <b>User Action</b> |
|------------------|------------------|--------------------|
| UPDATE           | Ordered Quantity | Not Allowed        |

**Update Ordered Quantity Constraint Conditions**

| <b>Group</b> | <b>Scope</b> | <b>Validation Entity</b> | <b>Record Set</b> | <b>Validation Template</b> |
|--------------|--------------|--------------------------|-------------------|----------------------------|
| 6            | Any          | Order Line               | Line              | ATO                        |
| 6            | Any          | Order Line               | Line              | Ship notified              |
| 6            | Any          | Order Line               | Line              | Standard item              |

| Group | Scope | Validation Entity | Record Set | Validation Template   |
|-------|-------|-------------------|------------|-----------------------|
| 8     | Any   | Order Line        | Line       | Configuration Created |

**Delete Constraint**

| Operation | Attribute | User Action |
|-----------|-----------|-------------|
| DELETE    | -         | Not Allowed |

**Delete Constraint Conditions**

| Group | Scope | Validation Entity | Record Set | Validation Template   |
|-------|-------|-------------------|------------|-----------------------|
| 3     | Any   | Order Line        | Line       | Configuration Created |

**CREATE Line Constraint**

| Operation | Attribute | User Action |
|-----------|-----------|-------------|
| CREATE    | -         | Not Allowed |

**Create Constraint Conditions**

| Group | Scope | Validation Entity | Record Set | Validation Template   |
|-------|-------|-------------------|------------|-----------------------|
| 3     | Any   | Order Line        | Line       | Configuration Created |

***Update Scheduled Ship Date Constraint***

| <b>Operation</b> | <b>Attribute</b>   | <b>User Action</b> |
|------------------|--------------------|--------------------|
| UPDATE           | Schedule Ship Date | Not Allowed        |

***Update Scheduled Ship Date Constraint Conditions***

| <b>Group</b> | <b>Scope</b> | <b>Validation Entity</b> | <b>Record Set</b> | <b>Validation Template</b> |
|--------------|--------------|--------------------------|-------------------|----------------------------|
| 2            | Any          | Order Line               | Line              | ATO                        |
| 2            | Any          | Order Line               | Line              | Ship notified              |
| 2            | Any          | Order Line               | Line              | Standard item              |
| 4            | Any          | Order Line               | Line              | Configuration Created      |



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## Updating Existing Configurations

This chapter covers the following topics:

- Updating Existing Configurations

### Updating Existing Configurations

If you are using match, and you change any of the following setups on your model, you will need to run the CTO Update Config and Optional Processing Request Set to ensure that your existing configurations are updated to reflect the changes.

- Addition or change of sourcing rules, assignments, or option specific sourcing
- Change of the Create Configured Item, BOM attribute setting
- Change of ATP attributes
- Enable the model item in a new organization

If you are not using match, you can choose to run this program if you want the setups applied to configurations on existing sales order lines.

The Update Existing Configured Items and optional processing programs' request set automatically creates configuration data in all necessary organizations for existing configurations. If specified, it also calculates the lead time, cost, and purchase price for the newly upgraded items.

The following table describes when to use this program and how the program creates data. The item attribute column refers to the item attribute Create Configured Item, BOM. See Model Items, Bills, and Routing, page 2-15 for more information.

**Updating Existing Configurations**

| <b>Item Attribute</b> | <b>Sourcing Change</b> | <b>Match</b> | <b>Run Program</b> | <b>Reason</b>   | <b>Program Behavior</b>  |
|-----------------------|------------------------|--------------|--------------------|---|--|
| 1                     | Y                      | Y            | Yes                | Create data based on newly setup multiple sources or OSS and for future matches.  | The program will create data based on the item attribute for all canned configurations having open orders, whose base models have multiple sources or OSS setup.   |
| 1                     | Y                      | N            | Depends            | Customers do not need to run program if match is off and they do not want to use the newly setup multiple sources or OSS on existing open order lines. They should run it if they want to apply the multiple sources or OSS on existing orders. | If Run, the program will create data based on the item attribute, for all configurations on open order lines whose base models have multiple sources or OSS setup. |
| 1                     | N                      | Y            | No                 | Customer chose to set profile to 1 even though match is on.   |  |

| <b>Item Attribute</b> | <b>Sourcing Change</b> | <b>Match</b> | <b>Run Program</b> | <b>Reason</b>  | <b>Program Behavior</b>  |
|-----------------------|------------------------|--------------|--------------------|--|--|
| 1                     | N                      | N            | No                 | Not needed.  |  |
| 2                     | Y                      | Y            | Yes                | Create data based on newly setup multiple sources or OSS and for future matches. | The program will create data based on the item attribute for all canned configurations having open orders, whose base models have multiple sources or OSS setup. |

| Item Attribute | Sourcing Change | Match | Run Program | Reason  | Program Behavior   |
|----------------|-----------------|-------|-------------|---|--|
| 2              | Y               | N     | Depends     | Customers need to run this program only if they want to use the newly setup multiple sources, OSS, shipment transaction flows or global procurement on existing open order lines. | If Run, the program will create items for all existing configurations on open order lines in all organizations where the model exists. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **The program will create BOMs and routings for all configurations on open order lines whose base models have multiple sources or OSS setup. |

| Item Attribute | Sourcing Change | Match | Run Program | Reason   | Program Behavior  |
|----------------|-----------------|-------|-------------|--|---|
| 2              | N               | Y     | Yes         | To create items everywhere. Customer may have set profile to 2 because they want to use global procurement or transaction flows. | The program will create items everywhere for all configurations on open order lines. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **BOM and routings will not be created because multiple sources or OSS are not setup. |

| Item Attribute | Sourcing Change | Match | Run Program | Reason   | Program Behavior  |
|----------------|-----------------|-------|-------------|--|---|
| 2              | N               | N     | Depends     | Customers need to run this program only if they want to use the newly setup shipment transaction flows or global procurement on existing open order lines. | If Run, the program will create items for all existing configurations on open order lines in all organizations where the model exists. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **BOM & routings will not be created since multiple sources or OSS are not setup. |
| 3              | Y               | Y     | Yes         | Customer chose to create data everywhere   | The program will create data everywhere for all canned configurations. **   |

| Item Attribute | Sourcing Change | Match | Run Program | Reason   | Program Behavior   |
|----------------|-----------------|-------|-------------|--|--|
| 3              | N               | Y     | Yes         | Customer chose to create data everywhere   | The program will create data everywhere for all canned configurations. **  |
| 3              | Y               | N     | Depends     | Customers need to run the program only if they want to use the newly setup multiple sources, OSS, shipment transaction flows or global procurement on existing open order lines. | If Run, the program will create items for all existing configurations on open order lines in all organizations where the model exists. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **The program will create BOMs and routings in all organizations where the model BOMs and routings exist for all configurations on open order lines. |

| Item Attribute | Sourcing Change | Match | Run Program | Reason  | Program Behavior   |
|----------------|-----------------|-------|-------------|---|--|
| 3              | N               | N     | Depends     | Customers need to run the program only if they want to use the newly setup shipment transaction flows or global procurement on existing open order lines. | If Run, the program will create items for all existing configurations on open order lines in all organizations where the model exists. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **The program will create BOMs and routings in all organizations where the model BOMs and routings exist for all configurations on open order lines. |

**Note:** It is recommended that you use the Update Configurations and Optional Processing concurrent request (Available under BOM, ATO) if you intend to calculate lead times cost or purchase prices of newly upgraded items. The update existing configurations program by itself (Available under BOM, others) should only be used if you do not want to calculate lead time/cost or purchase price of the newly upgraded

items.

## Update Existing Configurations

The Update Existing Configurations concurrent program has the following parameters:

- Items
  - All models
  - Item Category (all models in this item category)
  - Specific Configuration item (this configuration item)
- Category Set (enabled if item category is selected)
- Item Category (enabled only if Category Set is selected)
- Configuration item (enabled only if Configuration Item option is selected in 1)
- Has sourcing changed?
  - Yes
  - No
- Process nonmatchable models?
  - Yes
  - No
- Upgrade Mode
  - Update Items
  - Update Items and Update ATP attributes
  - Update ATP attributes

## Using Update Existing Configurations

You can use the Update Existing Configurations concurrent program to update all existing models, all models in an item category, or a single configuration item. This program will create all items and items data. This program also creates new sourcing for the items, but in a new assignment set, CTO Update Configurations, seeded for the

purpose of this program. Once all items have been created, subrequests are launched for the AutoCreate BOMs Across Organizations program. One subrequest is launched per 100 items. These sub programs create BOMs and routings, and perform flow calculations for the items created by the parent program. The program also replaces the sourcing in MRP: Default Assignment Set with new sourcing created by the earlier program in the new seeded assignment set, if BOM creation succeeds.

**Note:** It is possible that items may be created in new organizations, and the subprograms could fail the BOM creation process. This is why sourcing is not updated until BOM creation succeeds.

## Item

- **All models:** If you select all models, all existing models on open order lines and in the match tables are upgraded. You can do additional filtering by other input parameters).
- **Item Category:** Enables you to specify a specific item category set and category to upgrade.
- **Specific Configuration Item:** Enables you to specify a configuration item to upgrade.

## Category Set

The Category set which includes the upgrade category described later. Enabled only if Item Category is specified in Item, page 6-1.

## Item Category

Define a new Item Category for the purposes of this program and put all models to be upgraded in this category before running the program. The program processes all configurations of these models and their child models. If you choose to put only top level models in the category, configurations of child models are automatically processed, even if they are not assigned to the category, if they are part of the same order line as the top parent or if they are canned for matching. However, order lines for the child configuration item itself will not be processed. Parent models of the model in the category (if any) will not be processed if they are not assigned to the category. Hence, you are recommended to put all models related to each other in this category to avoid having inconsistent data being processed. After the program processes the models successfully, they will be automatically removed from the category. If the same model needs to be processed again due to a new feature being enabled, it should be put in the category again. You should not use an existing category for this program, because at the end of the program all item assigned to this category will be removed from the category. Enabled only if Item Category is specified in Item, page 6-1.

## Configuration Item

This option processes a specified configuration item only. Select the configuration item with the Configuration item parameter.

## Sourcing Charges

If sourcing has changed on any of the models specified in the Items parameter, select Yes. Defining Option Specific Sourcing is considered a sourcing change. If sourcing has not changed on any models, select No. If this parameter is selected as No, the concurrent program processes only configuration items with the Configured Item, BOM creation attribute set to Based on Model or Item Based on Model, BOM Based on Sourcing. If this parameter is set to Yes, all configuration items are processed. If sourcing (or OSS) has changed, this parameter must be set to Yes, otherwise you could end up with configuration data created in organizations that do not match the configuration item sourcing.

**Note:** If you change the sourcing, and supply is already created for a sales order based on old sourcing, the existing sales orders may have supply created in the wrong organization. The next plan run should indicate excess supply in that organization.

## Process Non-Matchable Models

Select No if you do not want to use newly setup features on existing order lines. This option is available only for models that have the Enable Configuration Matching attribute set to No. Open order lines for models that have this attribute set to Standard match or Custom match are always upgraded.

## Upgrade Mode

Select Update Items to create items, BOMs, and routings in additional organizations based on the sourcing changes and the setting of the Configured Item, BOM creation attribute. This will not update ATP attributes.

Select Update ATP attributes to update only the ATP attributes on the selected configuration items. If the profile INV:Capable to Promise is set to Based on Planning Output, and match is enabled, run this program in ATP attributes mode for all of your existing configurations.

Select Update Items and Update ATP Attributes to create the item, BOMs and routings, and update the ATP attributes on all existing instances of the selected configuration item.

**Note:** It is recommended that you update all models in batches by putting them in the category one batch at a time. This improves

performance and avoids redundant processing.

**Note:** This process will update both autocreated and preconfigured items.

## Details of Data Created and Updated By This Program

The program creates the following data:

### Update Existing Configurations and Optional Processing Request Set

A seeded request set, CTO Update Configuration and Optional Processing Request Set, is available to execute the Update Existing Configurations batch program, and some or all of the optional processing batch programs together. The request set includes the following programs:

- Update Existing Configurations
- Update Configurations-CTO Calculate Lead Time  
This program calculates lead time for all configuration items that are processed by the main program in all organizations where the item routing is newly created. You can skip this processing by setting an input parameter, Calculate Lead Time to No.
- Update Configurations-CTO Purchase Price Calculation  
This program rolls up list price and purchase price for all configuration items processed by the main program, in all organizations where the item is newly created. You can skip this processing by setting an input parameter, Perform Purchase Price Rollup to No.
- Update Configurations-CTO Calculate Cost Rollup  
This program rolls up cost for all configuration items processed by the main program in all organizations where the item exists. You can skip this processing by setting an input parameter, Perform cost rollup to No.

**Note:** Execute this request set with the parameter Perform Cost Rollup set to Yes, to have the costs roll up, while upgrading the configured items. Running the request Update Existing Configurations alone does not perform a cost rollup to the configured items while upgrading.

### Sourcing rules

Sourcing rules are deleted and re-created for each item that is processed. New sourcing is created based on the new sourcing defined for the model and the value of item

attribute Create Configured item, BOM. The program does not recreate sourcing for the following items:

Configuration items in match tables that are not linked on open sales order lines and have item attribute set to Based on Sourcing or Items Based on Model, BOMs and Routings Based on Sourcing (if match is being used).

**Note:** When a match is found for such an item, the AutoCreate Configurations program creates the data and sourcing based on the model sourcing. Match during ATP is not possible for such items; however, the recommended attribute setting if Match is being used with PDS ATP is Based on Model.

## Item creation

Items are created in the organizations required based on the new sourcing defined for the model and the value of item attribute Create Configured item, BOM, if it does not already exist. If the item is an autocreated item in all organizations, it inherits item attributes from the model item in that organization. If the item is a preconfigured item in at least one organization, it inherits item attributes either from the model item in that organization, or from the preconfigured item, based on the item attribute control level. If the item is a pre-configured item in more than one organization, any one organization is randomly selected to inherit the item attributes.

## BOM and Routing Creation

BOMs and routings are created in the organizations required based on the new sourcing defined for the model and the value of item attribute Create Configured item, BOM, if it does not already exist. The program does not check for dropped components on the BOM in existing organizations. If there are dropped components in the new organizations where the BOM is created, all open order lines to which this configuration item is linked are put on hold. Dropped components effectivity is checked based on:

- Sysdate if match is being used and the item is not linked to any open sales order
- Schedule ship date of one of the order lines to which this item is linked (randomly picked)

The program creates data for the following items (depending on the parameters selected):

- Configuration items linked on open sales order lines
- Additional configuration items in match tables that are not linked on open sales order lines and have item attribute set to Based on Model (if match is being used)

This includes preconfigured items in the matched tables and matched on open order lines.

The program does not create data for the following type of items:

- ATO items created manually.
- Preconfigured items that have base models with the match attribute set to No.
- Preconfigured items ordered directly on open order lines.
- Autocreated configuration items that are delinked from all open sales order lines, and are not canned for future matching, but are being ordered as ATO items on the order line.

Data is not created for a particular item for the following type of errors:

- Dropped components on a BOM. If dropped components are found while creating the BOM for a configuration item in a certain organization, the BOM will be created or not created based on the profile BOM: Create Configuration Exception Behavior. If the profile is set to not create the BOM, BOMs, routings, and sourcing are not created for this configuration item in all organizations. Optional processing is also not performed for this item. However, configuration items are created for this item. Parent configuration BOMs are also created.
- Lower level configuration item does not exist in BOM creation organization. Configuration BOM are not created if any of the lower level configuration items do not exist in this organization. In this case, BOMs, routings, and sourcing are not created for this configuration item in all organizations. Optional processing is not performed for this item. However, configuration items are created for this item. This may happen if you choose not to create data for preconfigured items, and the preconfigured item is a child on an autocreated item BOM.

**Note:** If any items fail correct the issue and resubmit the item for processing by adding it to the assignment set again. Or you can process them directly.

## Before Running Update Existing Configuration

It is recommended that you make setup changes to a subset of models rather than trying to change them all at once. Perform the following steps for the items you are changing before running the Update Existing Configuration concurrent program:

- Setup Option Specific Sourcing if applicable.
- Setup Multiple Sourcing if applicable.
- Setup Shipment and Procurement Transaction flows if applicable.
- Setup Global Procurement and Blanket Agreements if applicable.

- Set the following profiles, if they are not already set:
  - BOM: CTO Perform Cost Rollup
  - BOM: CTO Perform List Price and Purchase Price Rollup
  - BOM: CTO Perform Flow Calculations
  - BOM: Perform Lead Time Calculations
- Set the BOM parameter Create Configuration BOM to No in organizations where you do not want configuration BOMs to be created (for example, OM validation organization).
- Set the following attributes for all models you are going to update, or, if you want to default from the profile, leave them null:
  - Configured Item, BOM creation
  - Enable Configuration Matching
- Deactivate configurations and run update pending status to deactivate as many old configurations as possible. This will improve the performance of the update program.
- Purge data from matched tables for configurations you no longer want to match and are not ready to be deactivated. This will improve the performance of the update program.



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# Deactivating Configuration Items and Purging Data

## Deactivate Configuration Items

Bills of Material enables you to automatically deactivate item numbers associated with deactivated configuration orders. You can also deactivate configuration items to remove them from item master reports and screens before you actually purge them from the database. Deactivating a configuration from all organizations also removes it from the match tables, so that new orders will not match to a deactivated configuration. You can deactivate both autocreated and preconfigured ATO items.

When you set up Inventory and Bills of Material, you can define an item status to identify deactivated configuration items. You can use this status to disable the configuration item from all Oracle Manufacturing functions. You would normally specify No for each of the following item attributes for inactive configuration items:

- BOM allowed
- Build in WIP
- Transactable
- Stockable

When defining bills of material parameters, specify the item status to use for deactivated configuration items.

You can also set up an item template that can be used to set the status of attributes that are not available in the BOM status form. Typically, deactivated items are not:

- Purchased or purchasable
- Planned

- Forecasted
- Customer ordered, or customer orderable
- Internal ordered, or internal orderable
- Orderable on the Web

See BOM Parameters, page 2-1 for more information.

## Match and Deactivation

If match is enabled on a model you cannot deactivate its configurations in the context of a single organization. You must go to the master organization and deactivate all configurations. When run in the master organization, the deactivate program confirms that there is no open supply or demand for the configuration in any of the child organizations and then deactivates it in all organizations, including the master, and removes it from the match tables.

The Deactivate concurrent batch program has a parameter that deactivates the base model and all its configurations in that organization. This enables you to stop producing an entire model in a specific organization. If match is enabled for a base model, then the program should be run from the master organization.

## Deactivate Concurrent Program

The deactivate program can be run for configurations in any organization if the item status attribute is controlled at organization level, and the base model is not using match. If the attributes are controlled at the master level or match is being used, deactivate must be run in the master organization.

You can run the Deactivate Configuration Items concurrent program to automatically deactivate all configuration items that have no open sales orders or on-hand inventory, and whose most recent transaction date is more than the number of days ago you specify. Each deactivated configuration item has its status updated and the item template applied, if specified in the program. Deactivated configurations are removed from the matching tables, so that future configurations cannot match to deactivated items.

## Deactivating Configuration Items

### To deactivate configuration items

1. From Bills of Material menu, navigate to the Submit Requests window.
2. Select Request and select Deactivate Configuration Items.

The Deactivate Concurrent Batch program has following parameters:

- **Organization ID**  
The organization you want to deactivate configuration items in. If you specify an item master organization, the configurations is deactivated in this organization and all child organizations. The default is Current organization.
- **Configuration Item**  
Deactivates a specific configuration. If this is enabled, all other parameters, except Transacted Days Ago and Apply Item Template are ignored if a value is entered for this parameter.
- **Base Model Item**  
If specified, deactivates the model and all its configurations in that organization. This enables you to stop producing an entire model in a specific organization. LOV includes all items assigned to this organization with a BOM item type of model and with the ATO attribute selected.
- **Option Item**  
Enabled only if base model is specified. Allows deactivation of only those configurations of a model for which this option is specified as an optional component. When the match is enabled for a base model and the deactivation program is executed in a child organization, the program deactivates an OSS configuration in that organization but does not remove the configuration from the match tables. This program does not update the sourcing rules, so they must be manually updated.
- **Transacted Days Ago**  
Configuration items with material transactions outside of the time frame are evaluated for deactivation. The default is 90.
- **Apply Item Template**  
Enables you to choose an item template to apply to all deactivated configurations. This enables you to control the settings of item attributes *not* controlled by the BOM item status. Note that the attribute settings in BOM item status will over-ride the settings of the template when the update pending status' program is run.

**Note:** Always use the deactivation batch program to disable configuration items. Configuration items should not be manually disabled from the Items form.

**Note:** Deactivate does *not* update sourcing rules for a configuration. If

you deactivate in an organization other than the master organization, you will need to update your sourcing rules manually.

**Note:** You need to run the Update Pending Status program to actually change the status of the item.

## Conditions For Deactivating

All configuration items that meet the following conditions are selected for deactivation:

- **No Open Demand:** There should not be any open demand for the configuration item (in context organization). Open demand is identified by open sales orders, quotes, and planned orders. Future demand (demand in interface tables) will also count as demand.
- **No Open Supply:** There should not be any supply created for the configuration item in the current organization, that is, in the organization where deactivation process is run. Open supply is identified by discrete jobs, flow schedule, purchase orders, purchase requisitions, and inventory reservations.

In the case of a cancellation or delink, there might be supply created for the configuration item in another organization with no demand associated with it in this organization. In this case, we will deactivate the configuration item in this organization.

### Example:

Item C\*1 is sourced in organization O1 from organization O2.

There is sales order demand in O1 and planned order demand in O2. A work order for C\*1 is created in O2.

Now, the order is canceled and demand for C\*1 is removed from organizations O1 and O2.

If the Deactivation process is run in O1, we will find no demand for C\*1 in any organization, and no supply in organization O1. Even though there is open supply in organization O2, the item will be deactivated in organization O1. The item will not be deactivated in organization O2.

We will only deactivate the item in the organization where the program is being run. This is because the same item could be enabled in other organizations due to different reasons:

As a result of the Create Configuration process, in the case of a multiorganization configuration.

Enabled manually to be used as a predefined ATO Item in other organizations

If the item needs to be deactivated in all organizations, the Deactivate Configuration

Items process needs to be run in all organizations when the item attribute specified as Inactive Status is controlled at the organization level. It should be run in the master organization when the attribute Inactive Status is controlled at the master level.

### **No Material Transactions**

There should not be any material transactions in current organization for the item 'n' days before the Deactivation process is run. 'n' is defined by the input parameter 'Number of Days.' Hence, if we find any material transactions for the item in the last 'n' days, the item will not be deactivated. Material transactions are checked only in the organization in which the program is run.

### **No On Hand**

Items are not deactivated in an organization if there is any on hand in that organization.

### **Does Not Exist in Child Organization**

For any organization, child organizations may have been set up. If the item is available in the child organization then, that item will not be deactivated in the master organization when the attribute specified as Inactive Status is controlled at the organization level. First, run the program once in each child organization. If the attribute is set at master level, then the item is automatically deactivated in the child organizations before it is deactivated in the master organization.

### **Does Not Have a Common BOM and Routing**

The items (to be deactivated) BOM and Routing should not be commoned by any other item that is currently active. If it is then item will not be deactivated.

**Note:** You can delete item information for deactivated configurations from the database, including the bills of material and routings. The ability to delete configuration items is subject to the same deletion constraints that operate for other item types as well.

### **Related Topics**

Deleting Items, Bills, Routings, Components, and Operations.

### **Order Purge**

CTO tables are populated during scheduling of an order and creation of configuration item. When you run a Order Purge program of Order Management, related data of an order inserted in CTO Tables are also purged.

## Purge Matching Tables

If the profile BOM: Match to Existing Configurations is on, the table bom\_ato\_configurations is populated every time a new configuration is created so that if similar configuration is created in future, the configuration item can be matched from this table. If it is not purged of old data, this table can grow very large and might affect the Match and Reserve performance.

This table is purged automatically anytime you deactivate a configuration item through the process described earlier in this chapter. However, it is also possible to remove specific items from the table before it is deactivated by running the Purge Configuration Items concurrent program. You may want to do this on items in which you want to process existing sales orders for the item, but you do not want to take any new sales orders for the item.

## Purging Specific Configurations

### To purge specific configurations:

1. From Bills of Material menu, navigate to the Submit Requests window.
2. Select single request and select Purge Configuration Items.
3. Enter the criteria for the items that you want purged from the table:
  - Item Created Days Ago: Configuration items created earlier then sysdate minus this number are purged
  - Last Referenced Days ago: Configuration items that were last matched before sysdate minus this number are purged
  - Base Model: All configurations generated from a specific base model are purged
  - Option Item: You can optionally use this along with the Base Model parameter. This parameter enables purging of only those configurations of a model for which this option is specified as an optional component
  - Configuration item: A specific configuration is purged
  - Mode: It has two values:
    1. Purge Match and Reuse tables: In this mode, the config id value is unstamped from bom\_cto\_order\_lines provided the config is not linked to any SO, in addition to purging the bom\_ato\_configurations
    2. Purge Reuse table only: In this case, we will only unstamp the config id

from bom\_cto\_order\_lines provided the config is not linked to any SO. No deletions from bom\_ato\_configurations will be done

- Sales Order number: If a Sales Order number is provided as a parameter, a check is done to verify if any configuration items are linked to that SO. If they are, we will not remove their reference from bom\_cto\_order\_lines. (Null out the config\_item\_id column in bcol).
- Sales Order line number

**Note:** Parameters Sales Order number and Sales Order line number operate in mode 2 only while the existing parameters operate in mode 1 only.

Mode 1 is the existing functionality. Mode 1 parameters get disabled in Mode 2 and vice versa.

Mode 2 parameters (SO number and SO line number) do not select from bom\_ato\_configurations. They select orders where there is atleast one model line from oe\_order\_lines\_all and null out the config item id for that line from bom\_cto\_order\_lines if that config has been delinked from that SO. This also explains why the existing parameters have been disabled for Mode 2.



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# Index

## A

---

Active Supply Details, 4-3  
Activity and Generic Holds in the Order Process, 3-84  
ASCP, 2-47  
ASL Document Reference, 2-64  
Assemble-to-Order Item, 1-2  
Assemble-to-Order Model, 1-2  
Assembly Return, 3-8  
Assembly Return, Perform, 3-60  
ATO  
    ASCP v. MRP, 2-47  
    forecasting, 2-47  
    master scheduling, 2-47  
    sourcing setup, 2-37  
ATO Item, 1-2  
ATO items, three types, 1-2  
ATO Item Workflow, 2-58  
ATO Model, 5-6  
ATO Model Bill, 2-22  
ATO Model Line vs. Configuration Item Line, 3-11  
ATO Model Workflow, 2-56  
ATP  
    intercompany setups, 3-6  
ATP Based on Planning Output, 3-3  
AutoCreate Configuration, 3-49  
AutoCreate Configuration Concurrent Program, 3-8  
AutoCreate Configuration Items, 3-17  
Autocreate Configurations Process, 3-36

AutoCreated Configuration Items, 1-2, 2-3  
Autocreate DropShip Requisition, 3-72  
Autocreate DropShip Requisition Batch Program, 3-76  
Autocreate Final Assembly Orders, 1-6, 1-10  
AutoCreate Req, 2-65, 3-69

## B

---

Base Model, 1-2  
Batch vs. Online Mode, 3-17  
Blanket Price Calculation Setup, 2-63  
Blanket Price Rollup, 3-52  
Blanket Purchase Order, 2-63  
Blanket Purchase Orders for Models, Limitations, 2-64  
Blanket Release, 3-77  
Block Activities, 2-56, 2-58  
BOM/Organization Enablement, 2-26  
BOM and Routing Creation, 2-34  
BOM Attributes, 2-22  
BOM Parameters form, 2-1  
Buy Cost Type, 3-37

## C

---

Cancel a Blanket Line, 2-64  
Catalog Descriptions, 2-67  
Catalog Descriptions of Multi-Level Models, 2-67  
Cataloging Configurations, 2-30  
Check ATP for ATO Models, 3-3  
Common Model Routing to Option Classes, 2-26  
Complete an Assembly, 3-60, 3-66  
Configuration BOM, 3-28

Configuration Creation Error Handling, 3-40

Configuration Items, 3-16, 3-19

batch vs. online mode, 3-17

cnfiguration items, 3-19

de-linking, 3-34

item cost rollup, 3-36

lead time calculation, 3-35

linking, 3-35

purchase price calculation rollup, 3-38

Configuration Line Workflow, 2-56

Configuration Routing, 3-33

Configuration Rules, 2-32

Configured Orders, 3-1

dropshipping, 3-2

workflow, 3-9

Copy Category Sets, 2-68

Cost Roll-up, 3-36

Create Configuration Eligible, 3-34

Create Configuration Error Notifications, 2-72

Create Configuration Items, 3-19

Create Lower Level Supply, 2-3

Create Production Supply, 1-6

Create Supply Order process, 2-59

Creating Requisitions, 3-67

CTO Calculate Cost Rollup, 3-42

CTO Link, Activate, 2-65

Custom CTO Packages, 2-67

Customize the Order Processing Workflow, 2-55

custom numbering method, 2-5

Custom Numbering Method, 2-69

Custom Purchase Price

calculation setup, 2-65

roll-ups, 2-70

Custom Purchase Price Roll-ups, 2-70

## D

---

Deactivate Configuration Items, 1-6, 7-1

Default Discrete Class, 2-7

Definitions, 1-2

Delete Constraint, 5-2

De-link

configuration item, 3-34

Discrete Manufacturing, 2-27

Dropship, 3-74

Dropshipping and Order Changes, 5-3

Dropshipping Configurations, 3-2

Dropship Requisitions, 3-74, 3-74

## E

---

EDI, 3-77

Enabling Items, 2-33

Enter Configured Orders, 3-2

Environment

configure to order, 1-1

Expire a Blanket Line, 2-64

## F

---

Feature Highlight, 1-14

FIFO, 3-36

Final Assembly Flow Schedules, 3-62

Final Assembly Work Orders, 3-54

Flow Manufacturing, 2-30

Flow Schedules, 3-65

Forecasting, 2-47

## G

---

Global Agreements, 2-65

## H

---

Hard Coded Item Attributes, 3-21

Holds

activity and generic, 3-84

Hybrid, 1-3

PTO/ATO in the single level, single

organization environment, 1-18

## I

---

Inactive Status, 2-4

Integration, 1-17

Intercompany Invoicing, 3-83

Intercompany Setups, 3-6

iStore, 3-2

iSupplier Portal, 2-65, 3-77

item attribute

Assemble to Order, 2-17

ATP Components, 2-16

BOM Allowed, 2-16

BOM Item Type, 2-16

Build in WIP, 2-16

Check ATP, 2-16

Forecast Control, 2-16

- Lot/Serial Control, 2-17
- OE Transactable, 2-16
- Pick Components, 2-17
- Planning Method, 2-16
- Purchased/purchasable, 2-17
- Ship Model Complete, 2-17
- Item Attribute, 2-61
- Item Catalog descriptive element, 2-30
- Items Setup, 2-15
- Item Validation Organization, 2-8

## **L**

---

- Lead Time Calculation, 3-35
- LIFO, 3-36
- Link Configuration Item, 3-35
- List Price Calculation Setup, 2-63

## **M**

---

- Manually Link, 3-35
- Manufacturing Configurations, 1-16
- Match, 3-6, 3-6
- Match Configuration Item, 3-6
- Match Configurations, 2-71
- Maximum and Minimum Quantity, 2-23
- Model and Option Class Bills of Material, 2-22
- Model and Option Class Routing, 2-26
- Model Items, Bills, and Routing, 2-15
- MRP, 2-47
- Multi-level, Multi-organization, 3-32
- multilevel, multiorganization assemble-to-order sales order, 1-7
- multilevel ATO in a multiorganization environment, 1-21
- multi-organization, 3-59
- Multi-Organization Setup, 3-32
- Mutually Exclusive, 2-23

## **N**

---

- Non-Updateable Cost Type, 3-36
- Notification of Order Changes, 5-1, 5-3
- Numbering Method, 2-5
- Numbering Segment, 2-4

## **O**

---

- Offset Days, 3-73

- OM Validation Organizations, 2-60
- Operation Sequence Inheritance, Discrete Manufacturing, 2-29
- Operation Sequence Inheritance, Flow Manufacturing, 2-30
- Optional, 2-23
- Optional Processing Programs, 3-42
  - calculate lead time, 3-43
  - CTO calculate cost rollup, 3-42
  - CTO purchase price calculation Concurrent Program, 3-43
- Option Class Bills of Material, 2-22
- Option Dependent Event, 2-30
- Option Dependent Routing Steps, 2-27
- Option Specific sources
  - autocreate configuration, 3-49
- Option Specific Sources
  - blanket price rollup, 3-52
  - impact, 3-44
  - pruning the sourcing tree, 3-45
- Option Specific Sourcing, 2-35
  - setup, 2-40
- Oracle Configurator, 3-1
- Oracle Workflow, 3-1
- Order Changes, 5-1
  - dropshipped configurations, 5-3
  - notification, 5-1, 5-3
- Ordering Configurations, 1-15
- Order Line Statuses, 3-12
- Order Management
  - setup, 2-54
  - validation organizations, 2-60
  - workflow, 2-55
- Order Management Parameters, 2-7
- Order Purge, 7-5
- Organization Code, 3-73
- OSS, 2-38
- Overview of Oracle Configure to Order, 1-1

## **P**

---

- Package
  - CTO\_CUSTOM\_CATALOG\_DESC, 2-67
  - CTO\_CUSTOM\_CATEGORY\_PK, 2-68
  - CTO\_CUSTOM\_MATCH\_PK, 2-71
  - CTO\_CUSTOM\_PURCHASE\_PRICE\_PK, 2-70
  - CTO\_CUSTOME\_LIST\_PRICE\_PK, 2-70

- CTO\_CUTOM\_CONFIG\_NUMBER, 2-69
- Perform an Assembly Return, 3-66
- Pick Release, 3-83
- Pick Release and Ship Confirm, 3-83
- Pick-to-Order Item, 1-3
- Pick-to-Order Model, 1-3
- Planning Configurations, 1-15
- Planning Percent, 2-23
- preconfigured items, 1-2, 2-3
- Preconfigured Items, 2-32, 2-69
- Preconfiguring, 2-35
  - example, 2-36
- Preconfiguring Items, 2-32
- Price Breaks, 2-63
- Process Flow, 1-4
- Processing Constraints, 5-4
  - reinstating prior constraints, 5-5
- Procuring Configurations, 1-16
- Product Definition, 1-14
- Profile Options
  - automatic reservations, 2-9
  - blanket PO release method, 2-10
  - buy cost type for configurations, 2-9
  - capable to promise, 2-14
  - configuration exception behavior, 2-9
  - configuration item delimiter, 2-9
  - configuration item type, 2-9
  - configurator URL, 2-9
  - CTO perform cost rollup, 2-10
  - custom match function, 2-12
  - default sourcing assignment, 2-14
  - employee for self-service orders, 2-14
  - flow calculations, 2-10
  - included item freeze method, 2-14
  - inherit option class, 2-11
  - item validation organization, 2-13
  - lead time calculations, 2-12
  - list price and purchase price rollup, 2-10
  - match to existing configurations, 2-12
  - model item access, 2-12
  - reservation time fence, 2-14
  - retain ATO reservations, 2-15
  - send notifications, 2-12
  - use configurator, 2-15
- Profiles, 2-8
- progress the order, 1-10
- PTO Model, 2-22

- PTO Models, 2-62
- Purchased Configuration, 3-33
- Purchase Price Calculation, 3-43
- Purchase Price Calculation batch program, 2-64
- Purchase Price Calculation Batch program, 2-65
- Purchase Pricing, 2-62
  - calculation, 2-63
- purchase to order sales order, 1-11
- Purchasing of Configurations, 3-67
- Purge Matching Tables, 7-6

## R

---

- Remnant, 5-5
- Requisitions
  - changes, 3-73
- Reservations
  - purchase order, 3-73
  - requisition, 3-73
- Reserve Supply, 3-78
- Respond to Sales Order Changes, 2-7
- Returns
  - assembly, 3-74

## S

---

- Sales Order Pad, 3-2, 3-2
- Sales Order Pad Action Button - Progress Order, 3-19
- sales order reservation, 3-73
- Seeded Workflow, 3-10
- Setup
  - Parameters, 2-1
- Ship Confirm, 3-83
- Shipping
  - setup, 2-61
- single level, single org assemble-to-order sales order, 1-4
- Single Org Environment, 3-30
- Sourcing
  - assignments, 2-37
  - option specific sourcing, 2-38
  - OSS, 2-38
  - setup, 2-37
- Sourcing Rules, 2-63
- Standard ATO Items, 1-2
- Supplier Item Descriptions, 2-66
- Supplying Unique Configurations, 3-53

Supply to Order Workbench, 4-1  
    active supply details, 4-3  
    lines, 4-2  
    personalizing, 4-4

## **T**

---

Transfer Reservation from One Sales Order to Another, 3-61, 3-61, 3-66

## **U**

---

Updating Existing Configurations, 6-1  
User-Defined Cost, 3-36  
Using Blanket Purchase Orders for Models, 3-38

## **V**

---

Viewing Selected Options, 3-2

## **W**

---

WIP Parameter, 2-5  
WIP Serial Tracking, 2-29  
WIP-supply type, 2-24  
Workflow, 2-55  
Workflow Activities for ATO Configuration Items, 3-10  
Workflow Activities for ATO Item, 3-11  
Workflow Activities for ATO Model, 3-10  
Workflow for Configured Orders, 3-9  
Work Order-less Completions, 3-66  
Work Order Reservation, 3-60

## **X**

---

XML, 3-77

