Oracle® Manufacturing: Subcontracting

User's Guide

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Oracle Manufacturing: Subcontracting User's Guide, Release 12.1

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Preface

Intended Audience

Welcome to Release 12.1 of the *Oracle Manufacturing: Subcontracting User's Guide.*

This guide contains the information needed to implement and use Oracle Receivables: Subcontracting.

See Related Information Sources on page x for more Oracle E-Business Suite product information.

Deaf/Hard of Hearing Access to Oracle Support Services

To reach Oracle Support Services, use a telecommunications relay service (TRS) to call Oracle Support at 1.800.223.1711. An Oracle Support Services engineer will handle technical issues and provide customer support according to the Oracle service request process. Information about TRS is available at http://www.fcc.gov/cgb/consumerfacts/trs.html, and a list of phone numbers is available at http://www.fcc.gov/cgb/dro/trsphonebk.html.

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Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

Structure

Related Information Sources

You can choose from many sources of information, including online documentation, training, and support services, to increase your knowledge and understanding of Oracle Receivables: Subcontracting.

If this guide refers you to other Oracle Applications documentation, use only the Release 12 versions of those guides.

Online Documentation

All Oracle Applications documentation is available online (HTML or PDF).

- Online Help - Online help patches (HTML) are available on Oracle*MetaLink*

- About Documents - Refer to the About Document for the mini-pack or family pack that you have installed to learn about new documentation or documentation patches that you can download. About Documents are available on Oracle*MetaLink*

Guides Related to All Products

Financials Glossary: The glossary includes definitions of common terms that are shared by all Oracle Financials products. In some cases, there may be different definitions of the same term for different Financials products. If you are unsure of the meaning of a term you see in an Oracle Financials guide, please refer to the glossary for clarification. You can find the glossary in the online help or in the *Oracle General Ledger User's Guide*.

Oracle E-Business Suite 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 Receivables (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.

User Guides Related to This Product

Receivables shares data and setup information with other Oracle Applications products. Even if you have not installed them as separate products, your Receivables application includes some forms and functionality from other Oracle Applications. Therefore, you may want to refer to other user guides when you set up and use Receivables.

Oracle Public Sector Financials Documentation

Information regarding public sector functionality in Receivables is documented in this guide. For information regarding public sector functionality in other Public Sector Financial's products, refer to the following documentation:

- Oracle General Ledger User Guide
- Oracle Purchasing User's Guide
- Oracle Payables User Guide

Oracle Projects Documentation Set

- **Oracle Projects Implementation Guide:** Use this manual as a guide for implementing Oracle Projects. This manual also includes appendixes covering function security, menus and responsibilities, and profile options.
- **Oracle Projects Fundamentals User Guide:** This guide provides the common foundation shared across the Oracle Projects products. Use this guide to learn fundamental information about the Oracle Projects solution. This guide includes a Navigation Paths appendix. Use this appendix to find out how to access each window in the Oracle Projects solution.
- **Oracle Project Costing User Guide:** Use this guide to learn detailed information about Oracle Project Costing. Oracle Project Costing provides the tools for processing project expenditures, including calculating their cost to each project and determining the General Ledger accounts to which the costs are posted.

- **Oracle Project Billing User Guide:** Use this guide to learn how to use Oracle Project Billing to process client invoicing and measure the profitability of your contract projects.

- **Oracle Project Management User Guide:** This guide shows you how to use Oracle Project Management to manage projects through their lifecycles - from planning, through execution, to completion.

- **Oracle Project Resource Management User Guide:** This guide provides you with information on how to use Oracle Project Resource Management. It includes information about staffing, scheduling, and reporting on project resources.

- **Oracle Projects API's, Client Extensions, and Open Interfaces Reference:** This manual gives detailed information about all public application programming interfaces (API's) that you can use to extend Oracle Projects functionality.

Oracle General Ledger User's Guide

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

Oracle Receivables Tax Manual

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

Oracle Cash Management User Guide

This guide provides information about using Oracle Cash Management to clear your receipts, as well as reconciling bank statements with your outstanding balances, transactions, and receipts.

Oracle HRMS Documentation Set

This set of guides explains how to define your employees, so you can give them operating unit and job assignments. It also explains how to set up an organization (operating unit). Even if you do not install Oracle HRMS, you can set up employees and organizations using Oracle HRMS windows. Specifically, the following manuals will help you set up employees and operating units:

- **Using Oracle HRMS - The Fundamentals:** This user guide explains how to set up and use enterprise modeling, organization management, and cost analysis.

- **Managing People Using Oracle HRMS:** Use this guide to find out about entering employees.

Oracle Payables User's Guide

Refer to this manual to learn how to use Invoice Import to create invoices in Oracle Payables. This manual also explains how to define suppliers, and how to specify supplier and employee numbering schemes for invoices. The guide also describes how accounts payable transactions are posted to General Ledger from the payables subledger.

Oracle Inventory User's Guide

If you install Oracle Inventory, refer to this manual to learn how to define your items, units of measure classes, units of measure, and unit of measure conversions for use in measuring amounts for your units of production items, as well as other information about setting up and using Oracle Inventory.

Oracle Business Intelligence System Implementation Guide

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

BIS Release 12 User's Guide Online Help

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

Country-Specific Manuals

Use these manuals to meet statutory requirements and common business practices in your country or region. They also describe additional features added to Receivables to meet those requirements. Look for a user guide appropriate to your country; for example, see the Oracle Financial's for the Czech Republic User's Guide for more information about using this software in the Czech Republic.

Oracle Applications Character Mode to GUI Menu Path Changes

This is a quick reference guide for experienced Oracle Applications end users migrating from character mode to a graphical user interface (GUI). This guide lists each character mode form and describes which GUI windows or functions replace it.

Oracle Financial's Open Interfaces Guide

This guide contains a brief summary of each Oracle Financial Applications open interface. You can also read about the Receivables open interface tables in the appropriate sections of the *Oracle Receivables User's Guide*.

Installation and System Administration

Oracle E-Business Suite Concepts

This book is intended for all those planning to deploy Oracle E-Business Suite Release 12, or contemplating significant changes to a configuration. After describing the Oracle E-Business Suite architecture and technology stack, it focuses on strategic topics, giving a broad outline of the actions needed to achieve a particular goal, plus the installation and configuration choices that may be available.

Oracle E-Business Suite Installation Guide: Using Rapid Install

This book is intended for use by anyone who is responsible for installing or upgrading Oracle E-Business Suite. It provides instructions for running Rapid Install either to carry out a fresh installation of Oracle E-Business Suite Release 12, or as part of an upgrade from Release 11*i* to Release 12. The book also describes the steps needed to install the technology stack components only, for the special situations where this is applicable

Oracle E-Business Suite Upgrade Guide: Release 11i to Release 12.1.1

Refer to this guide if you are upgrading your Oracle Applications. This guide describes the upgrade process and lists database and product-specific upgrade tasks.

Maintaining Oracle E-Business Suite Documentation Set

This documentation set provides maintenance and patching information for the Oracle E-Business Suite DBA. *Oracle E-Business Suite Maintenance Procedures* provides a description of the strategies, related tasks, and troubleshooting activities that will help ensure the continued smooth running of an Oracle E-Business Suite system. *Oracle E-Business Suite Maintenance Utilities* describes the Oracle E-Business Suite utilities that are supplied with Oracle E-Business Suite and used to maintain the application file system and database. It also provides a detailed description of the numerous options available to meet specific operational requirements. *Oracle E-Business Suite Patching Procedures* explains how to patch an Oracle E-Business Suite system, covering the key concepts and strategies. Also included are recommendations for optimizing typical patching operations and reducing downtime.

Oracle E-Business Suite System Administrator's Guide Documentation Set

This documentation set provides planning and reference information for the Oracle E-Business Suite System Administrator. *Oracle E-Business Suite System Administrator's Guide - Configuration* contains information on system configuration steps, including defining concurrent programs and managers, enabling Oracle Applications Manager features, and setting up printers and online help. *Oracle E-Business Suite System Administrator's Guide - Maintenance* provides information for frequent tasks such as monitoring your system with Oracle Applications Manager, administering Oracle E-Business Suite Secure Enterprise Search, managing concurrent managers and reports, using diagnostic utilities including logging, managing profile options, and using alerts. *Oracle E-Business Suite System Administrator's Guide - Security* describes User Management, data security, function security, auditing, and security configurations.

Oracle Alert User's Guide

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

Oracle E-Business Suite Developer's Guide

This guide contains the coding standards followed by the Oracle E-Business Suite development staff. It describes the Oracle Application Object Library components needed to implement the Oracle E-Business Suite user interface described in the *Oracle E-Business Suite User Interface Standards for Forms-Based Products*. It provides information

to help you build your custom Oracle Forms Developer forms so that they integrate with Oracle E-Business Suite. In addition, this guide has information for customizations in features such as concurrent programs, flexfields, messages, and logging.

Other Implementation Documentation

Oracle Applications Product Update Notes

Use this guide as a reference for upgrading an installation of Oracle Applications. It provides a history of the changes to individual Oracle Applications products between Release 11.0 and Release 12. It includes new features, enhancements, and changes made to database objects, profile options, and seed data for this interval.

Multiple Reporting Currencies in Oracle Applications

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

Multiple Organizations in Oracle Applications

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

Oracle Workflow Administrator's Guide

This guide explains how to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes, as well as how to monitor the progress of runtime workflow processes.

Oracle Workflow Developer's Guide

This guide explains how to define new workflow business processes and customize existing Oracle Applications-embedded workflow processes. It also describes how to define and customize business events and event subscriptions.

Oracle Workflow User's Guide

This guide describes how Oracle Applications users can view and respond to workflow notifications and monitor the progress of their workflow processes.

Oracle Workflow API Reference

This guide describes the API's provided for developers and administrators to access Oracle Workflow.

Oracle E-Business Suite Flexfields Guide

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

Oracle eTechnical Reference Manuals

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

Oracle E-Business Suite User Interface Standards for Forms-Based Products

This guide contains the user interface (UI) standards followed by the Oracle E-Business Suite development staff. It describes the UI for the Oracle E-Business Suite products and how to apply this UI to the design of an application built by using Oracle Forms.

Oracle Manufacturing API's and Open Interfaces Manual

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

Oracle Order Management Suite API's and Open Interfaces Manual

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

Oracle Applications Message Reference Manual

This manual describes all Oracle Applications messages. This manual is available in HTML format on the documentation CD-ROM for Release 12.

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.

Do Not Use Database Tools to Modify Oracle E-Business Suite Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle E-Business Suite 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 E-Business Suite data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle E-Business Suite tables are interrelated, any change you make using an Oracle E-Business Suite form can update many tables at once. But when you modify Oracle E-Business Suite data using anything other than Oracle E-Business Suite, 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 E-Business Suite.

When you use Oracle E-Business Suite to modify your data, Oracle E-Business Suite automatically checks that your changes are valid. Oracle E-Business Suite 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.

1

Overview

This chapter covers the following topics:

- Overview of Oracle Subcontracting

Overview of Oracle Subcontracting

Subcontracting is a common business practice where a brand-owner or an Original Equipment Manufacturer (OEM) outsources its entire manufacturing operations or a portion of it by entering into a contractual agreement with an external manufacturing service provider commonly known as a Manufacturing Partner (MP).

There are different ways in which enterprises outsource their manufacturing activities. These variations are driven by the strategic decisions that are made on some of the following factors:s:

- **Extent of Outsourcing:**

  Enterprises can opt to outsource the entire manufacturing process or a portion of it by collaborating with a MP.

- **Nature of Component Supply:**

  Enterprises can either own and manage the components for consumption at the MP's facility, or engage a supplier to either own and consign inventory, or drop ship the components at the MP's facility. In other situations, the OEM may charge the MP by registering a sale of the components resulting in a complete transfer of ownership

- **Shipment of Finished Goods:**

  Enterprises can decide to either supply finished goods directly to the customer or enter into a contractual agreement with the MP to drop ship the finished goods to the customer's facility.

Oracle supports the following types of subcontracting business practices that involve complete outsourcing of assemblies and most importantly, component sale by an OEM

to a MP:

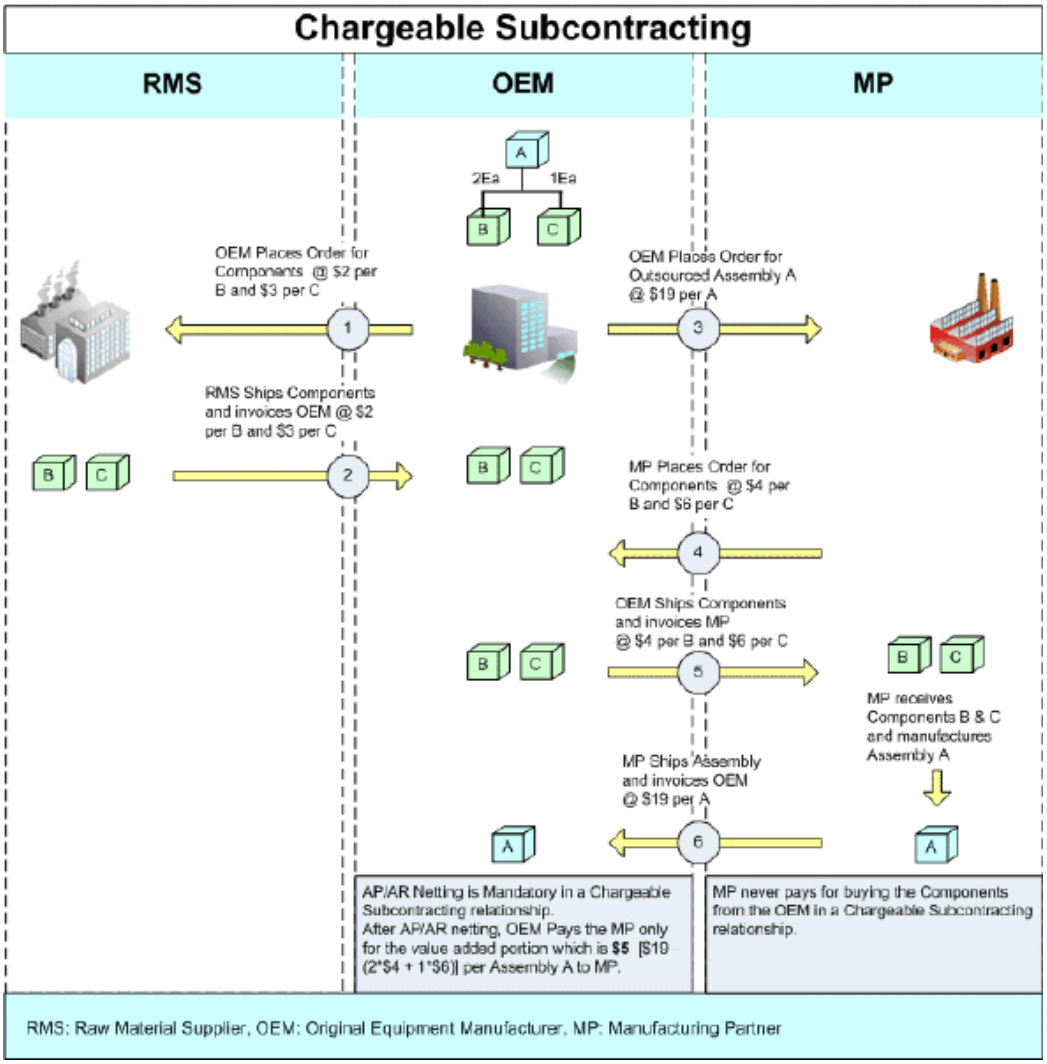
- Chargeable Subcontracting
- Buy/Sell Subcontracting

Chargeable Subcontracting

Chargeable Subcontracting is a practice where the OEM completely outsources the manufacturing of an assembly to an MP and makes a provisional sale of components by invoicing the MP. These components are used to build the assembly at the MP's facility. In this practice, although the OEM registers a sale of components to the MP, the OEM still retains the ownership of the components and the inventory is reported under OEM's inventory valuation. When the OEM receives the assemblies, the MP invoices the OEM for the gross price of the assembly.

In a chargeable subcontracting relationship, the MP does not pay the OEM for purchasing the subcontracting components. The OEM pays the MP only for the value added portion in the outsourcing process, making it mandatory to net receivables invoices for components, and payables invoices for assemblies.

Chargeable Subcontracting Process



The Chargeable Subcontracting Process diagram describes the chargeable subcontracting business flow where an OEM outsources an assembly A to a MP and makes a provisional sale of components B and C to MP that are consumed at the later's premises to manufacture assembly A. Assembly A's bill of material constitutes of 2 Ea of B and 1 Ea of C. Although there can be different modes of component supply, in this specific example, the OEM buys components B and C from a RMS (Raw Material Supplier) and sells them to the MP. In this example:

1. OEM periodically buys Components B and C from the RMS at the rate of $2 per each unit of B and $3 per each unit of C..

2. RMS ships components and invoices OEM for supplying B and C at the rate of $2 per B and $3 per C.

3. OEM outsources the manufacturing of assembly A by raising a purchase order or a blanket release on the MP at the rate of $19 per each unit of A.

   Note: The purchase price of the assembly is determined considering the components' sales price and the value added in the manufacturing process.

4. MP orders components B and C from OEM at the rate of $4 per each unit of B and $6 per each unit of C.

   Note: Although the OEM buys components at a certain price, the OEM may sell the components to the MP at a different price to prevent visibility of the actual purchase costs. In this example, OEM procures B and C at $2 per each unit of B and $3 per each unit of C from RMS and sales B and C at $4 per each unit of B and $6 per each unit of C from MP.

5. Appropriate units of components B and C are allocated to the respective purchase order for A for the purpose of planning and tracking. The OEM then ships Components B and C, and invoices MP at the rate of $4 per each unit of B and $6 per each unit of C. The MP receives components B and C and manufactures A.

   Note: The OEM registers a sale, but retains the ownership of the components. MP ships assembly A and invoices OEM at the rate of $19 per each unit of A.

6. OEM receives Assembly A and nets accounts receivable invoices for selling B and C and account payble invoices for purchasing assembly. The OEM pays only for the net value added in the manufacturing of A. In this example, the added value for each unit of A is calculated as:

   Purchase Price per unit of A = $19

   Selling Price per unit of B = $4

   Selling Price per unit of C = $6

   Component usage per unit of A = 2 units of B, 1 unit of C

   Net Value Add per unit of A = [$19 – (2 * $4 + 1* $6)] = $5

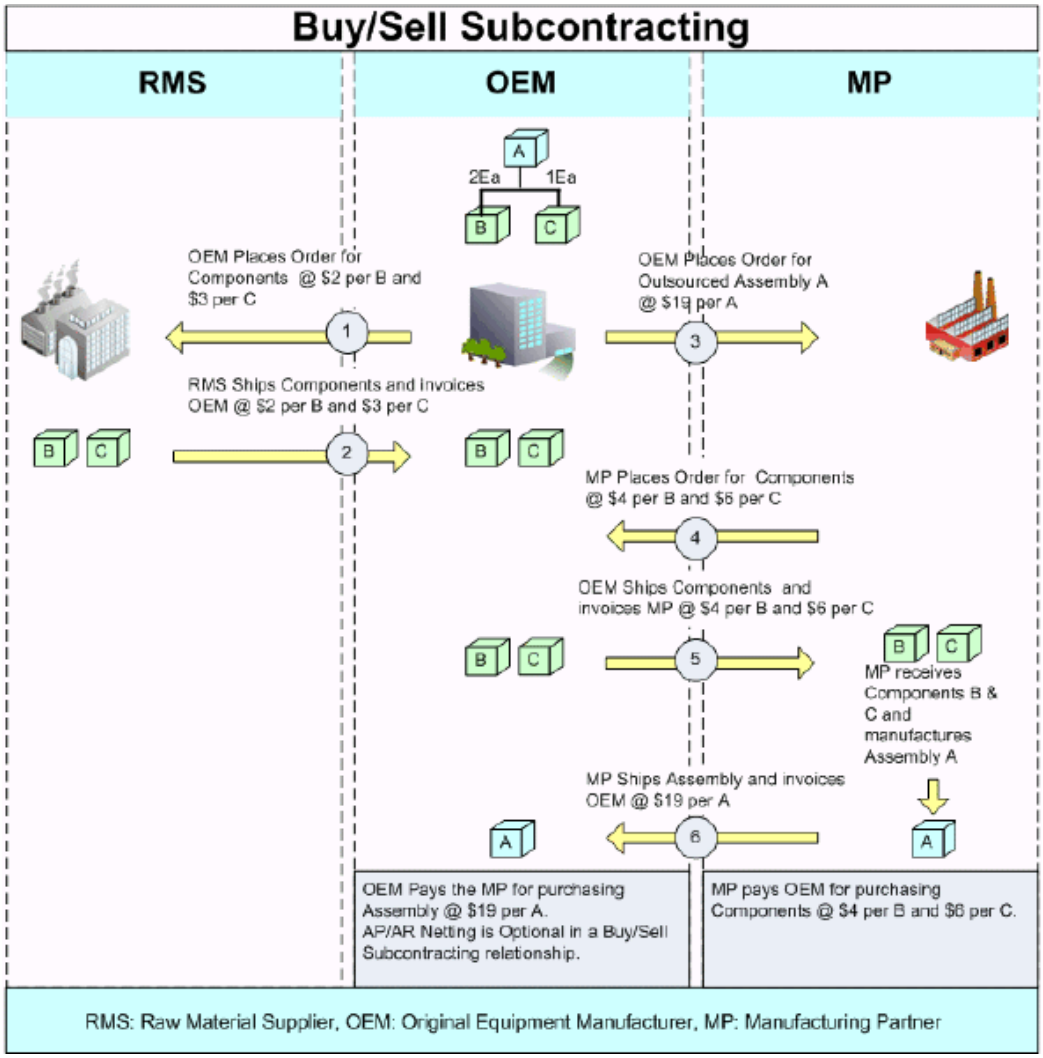
   Note: In a chargeable subcontracting relation, the MP does not pay the OEM for buying the components, making it mandatory to net subcontracting account receivables and payables.

Buy/Sell Subcontracting

Buy/Sell Subcontracting is a business practice where an Original Equipment Manufacturer (OEM) completely outsources the manufacturing of an assembly to a Manufacturing Partner (MP) by buying the assembly from the MP and most importantly, selling the components to the MP that are consumed in the manufacturing of the assembly at the MP's premises. The ownership of the components is transferred to the MP immediately after the OEM ships the components to the MP unlike Chargeable Subcontracting where the OEM retains the ownership of the components throughout the subcontracting process.

In a Buy/Sell scenario, the sale of subcontracting components and purchase of outsourced assemblies are treated as independent business transactions. Receivables and Payables are generally not netted – OEM pays the MP for purchasing the outsourced assemblies and the MP pays for buying the subcontracting components from the OEM.

Buy/Sell Subcontracting Process



The Buy/Sell Subcontracting process diagram describes a buy/sell subcontracting business flow, where the OEM outsources assembly A to an MP, buys components B and C from the RMS and sells them to the MP for manufacturing A at the later's premises. Assembly A's bill of material constitutes of 2 Ea of B and 1 Ea of C. In this example:

1. OEM periodically buys Components B and C from the RMS at the rate of $2 per each unit of B and $3 per each unit of C.

2. The RMS ships components and invoices the OEM for supplying B and C at the rate of $2 per B and $3 per C.

3. The OEM outsources the manufacturing of assembly A by raising a purchase order or a blanket release on the MP at the rate of $19 per each unit of A.

Note: The purchase price of the assembly includes the components' sales price and the value added in the manufacturing process.

4. The MP orders components B and C from the OEM at the rate of $4 per each unit of B and $6 per each unit of C.

   Note: Like chargeable subcontracting, the OEM may sell the components to the MP at a different price to prevent visibility of the actual purchase costs. In this example, OEM procures B and C at $2 per each unit of B and $3 per each unit of C from RMS and sales B and C at $4 per each unit of B and $6 per each unit of C from MP.

5. Appropriate units of components B and C are allocated to the respective purchase order for A for the purpose of planning and tracking. The OEM ships Components B and C, and invoices MP at the rate of $4 per each unit of B and $6 per each unit of C. MP receives components B and C and manufactures A.

   Note: In a buy/sell subcontracting relationship, the shipment of the components to the MP results in a complete transfer of ownership of the components from the OEM to the MP.

6. The MP ships assembly A and invoices OEM at the rate of $19 per each unit of A.

7. As the sale of subcontracting components and purchase of outsourced assemblies are treated as independent business transactions, the OEM pays the MP for buying assembly A at the rate of $19 per unit of A, and the MP pays the OEM at the rate of of $4 per each unit of B and $6 per each unit of C.

   Note: Unlike chargeable subcontracting, netting of subcontracting account receivables and payables is optional for Buy/Sell subcontracting.

Major Features of Subcontracting

Subcontracting features include:

- Modeling of OEM and MP as inventory organizations to facilitate tracking and simulation of subcontracting processes.
  - Accounting transactions in the MP org are not posted to the General Ledger (GL) to avoid any unwanted financial impact.

- Chargeable Subcontracting support is only for Standard Costing Orgs and can be deployed in Japan, Taiwan, and Korea.

- Buy/Sell Subcontracting support is for Standard, Average, FIFO and LIFO costing methods and can be deployed in any country.

- Separate tracking of accounting transactions and variances associated with subcontracting component sales in the OEM Org by setting up different accounts for Subcontracting COGS, Subcontracting Revenue, and Subcontracting Receivables.

  Note: This is relevant only for chargeable subcontracting as the component sale is virtual in nature and the OEM retains the ownership of the components even after the sale.

- Integrated planning (using ASCP) and subcontracting execution in discrete and project manufacturing environments to manage and control processes throughout the extended supply chain.

- Support for different types of component supplies both Pre-positioned and Synchronized, including the ability to drop ship components to partner's site that help in flexibly modelling the subcontracting process in varying business conditions.

- Automatic creation of Discrete Jobs in the MP Org to simulate assembly production at the MP's facility in response to a purchase order or a blanket release (referred to as Subcontracting Orders in the subcontracting solution) through a concurrent program referred to as Interlock Manager.

- Automatic creation of component purchase orders (referred to as Replenishment Purchase Orders in the subcontracting solution) for purchasing components from OEM and creation of corresponding component sales orders (referred to as Replenishment Sales Orders in the subcontracting solution) for shipping components to the MP through the Interlock Manager.

- Automatic allocation of the Replenishment Sales Order component supplies to corresponding Subcontracting Orders for outsourced assemblies through the Interlock Manager.

- Automatic receipt of components in the MP Org based on in transit lead times through a concurrent program referred to as Auto Receive Components eliminate any manual effort involved in performing such transactions.

- Automatic completion of the discrete job, backflushing of components and appropriate inventory balancing in the MP Org upon receipt of the outsourced

assembly in the OEM Org for ensuring accuracy of inventory records that better planning and control through a concurrent program reffered to as Process Receiving Transactions.

- Dedicated Subcontracting Workbench and Reports providing better tracking and increased visibility throughout the subcontracting life cycle.

- Ability to manage subcontracting process exceptions (over or under consumption, component and assembly returns, etc) helps in taking care of process variations and discrepancies.

- Option to net subcontracting payables and receivables through the AP/AR Netting feature streamlines the payment process and provides greater flexibility in conducting business with partners.

2

Setting Up Subcontracting

This chapter covers the following topics:

- Overview of Setting Up Subcontracting
- Setting Profile Options
- Setting up OEM Organizations
- Setting Up Manufacturing Partner Organizations
- Defining Customers and Suppliers
- Associating Customers and Suppliers
- Setting Up Item Definitions
- Setting Up Bills of Material for Outsourced Assemblies
- Setting Up Specific Subcontracting Accounting for Chargeable Subcontracting
- Defining Specific Receivables Transaction Types for Chargeable Subcontracting
- Defining Specific Transaction Sources for Chargeable Subcontracting
- Setting Up Specific Order Management Transaction Types for Chargeable Subcontracting
- Setting Up Standard Costs of Components and Assemblies for Chargeable Subcontracting
- Defining Price Lists for Subcontracting Components
- Setting Up Purchase Price of an Outsourced Assembly
- Setting Up a Shipping Network
- Defining Sourcing Rules
- Defining Netting Agreements

Overview of Setting Up Subcontracting

The following sections describe the setup steps that are required for implementing Chargeable and Buy/Sell Subcontracting.

Setup Steps

The key setup steps are:

1. Enable subcontracting profile options.
2. Define Customers and Suppliers.
3. Define OEM and MP Organizations, and associate customers and suppliers defined in the previous step.
4. Define components and assemblies in both the MP and OEM organizations.
5. Define specific accounts, AR, and OM transaction types for execution and accounting.

   Note: This step is required only for Chargeable Subcontracting.

6. Define shipping networks between the OEM and MP, and enable subcontracting relationships.
7. Setup AP/AR Netting Agreements (mandatory for Chargeable Subcontracting and Optional for Buy/Sell).

Process Steps

The Subcontracting process includes these steps:

1. Creating a purchase order (referred to as Subcontracting Order) for buying the outsourced assembly from the MP.
2. Creating a Discrete Job in the MP Organization against the Subcontracting Order automatically, using the Interlock Manager.
3. Creating Replenishment Purchase Orders in the MP Organization for procuring components from the OEM automatically using the Interlock Manager.
4. Creating Replenishment Sales Orders in the OEM Organization for shipping components from OEM to MP automatically using the Interlock Manager.

5. Ship-Confirming Replenishment Sales Orders in the OEM Organization to ship components to MP.

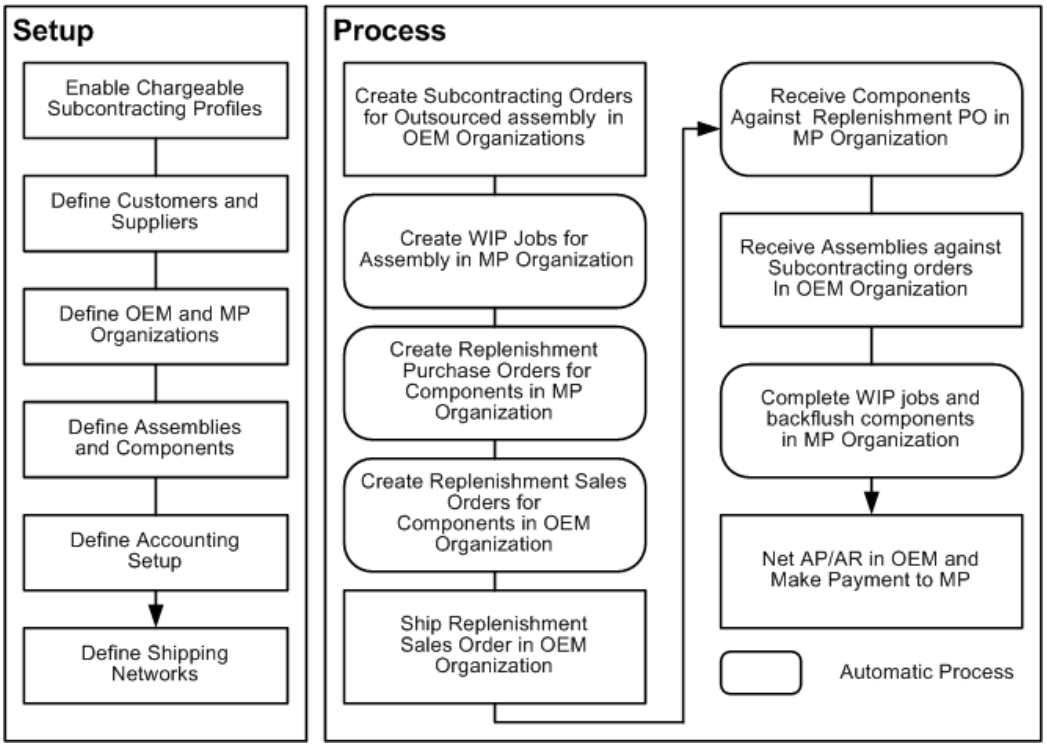
6. Running the Auto Receive Components concurrent program to automatically receive the components in the MP.

7. Receiving the outsourced assemblies in the OEM Organization against subcontracting orders created in Step 1.

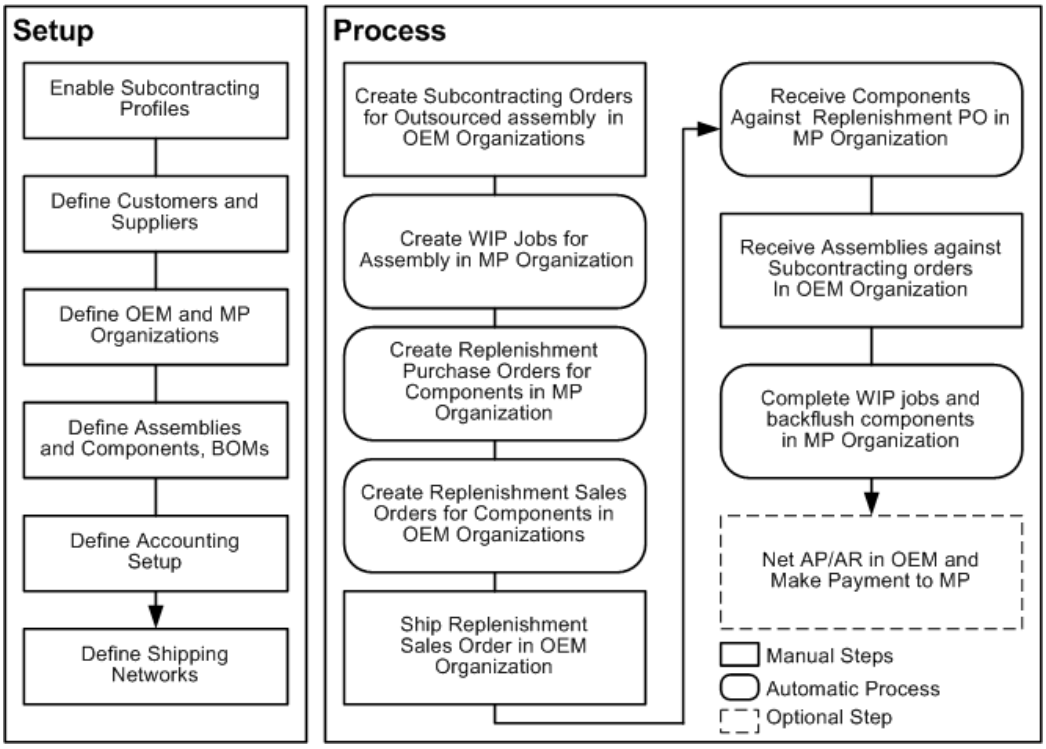
8. Running the Process Receiving Transactions concurrent program. This step completes the WIP job and backflushes the components and reduces the inventory of the outsourced assembly by an appropriate amount in the MP Organization.

9. Performing batch netting for AP and AR invoices, for paying the MP. This is an optional step for Buy and Sell Subcontracting.

This diagram illustrates the setup and process flow for Chargeable Subcontracting:



This diagram illustrates the setup and process flow for Buy and Sell Subcontracting:



Setting Profile Options

You must enable these profile options:

- JMF: Enable Subcontracting
- Subcontracting Enabled

You must enable both profile options simultaneously at the site level.

Profile Option	User	Sys Admin User	Sys Admin Resp	Sys Admin App	Sys Admin Site	Required	Default Value
JMF: Enable Subcontracting	-	-	-	-	Yes	No	No
Subcontracting Enabled	-	-	-	-	Yes	No	No

Yes	You can update the profile option
-	You can view the profile option value but you cannot change it.
No	You cannot view or change the profile option value.

JMF: Enable Subcontracting

This profile should be set to Yes to use the subcontracting features. You can update this profile option at the site level only.

Yes: Enables Subcontracting.

No: Disables Subcontracting.

Subcontracting Enabled

This profile should be set to Yes to consider outsourced assembly item invoices in AP and AR Netting. You can update this profile option at the site level only.

Yes: Enables Subcontracting AP/AR Netting

No: Disables Subcontracting AP/AR Netting

Related Topics

See: Profile Options, *Oracle E-Business Suite System Administrator's Guide - Maintenance*.

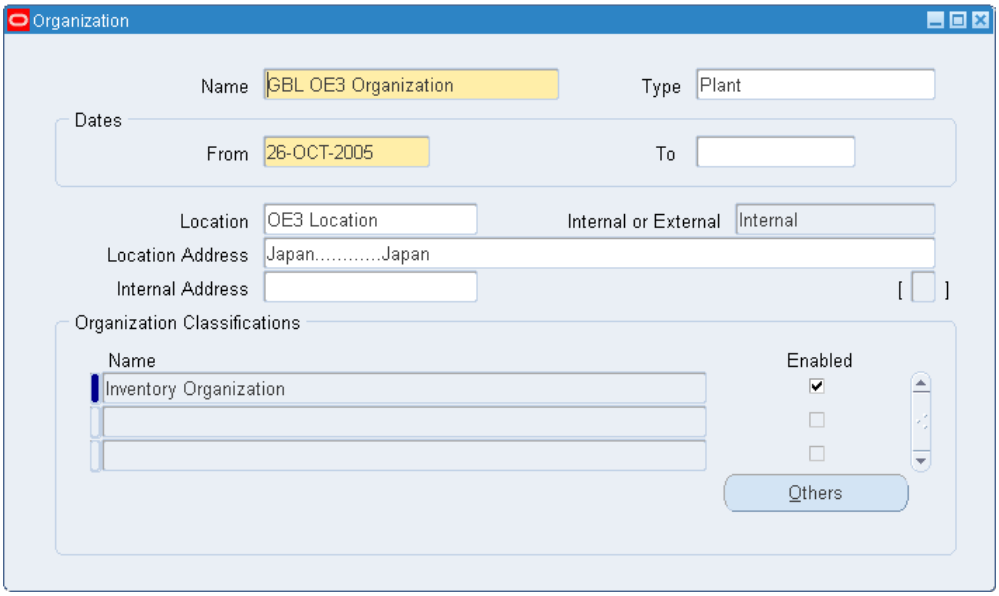
Setting up OEM Organizations

Define and set up the Original Equipment Manufacturer (OEM).

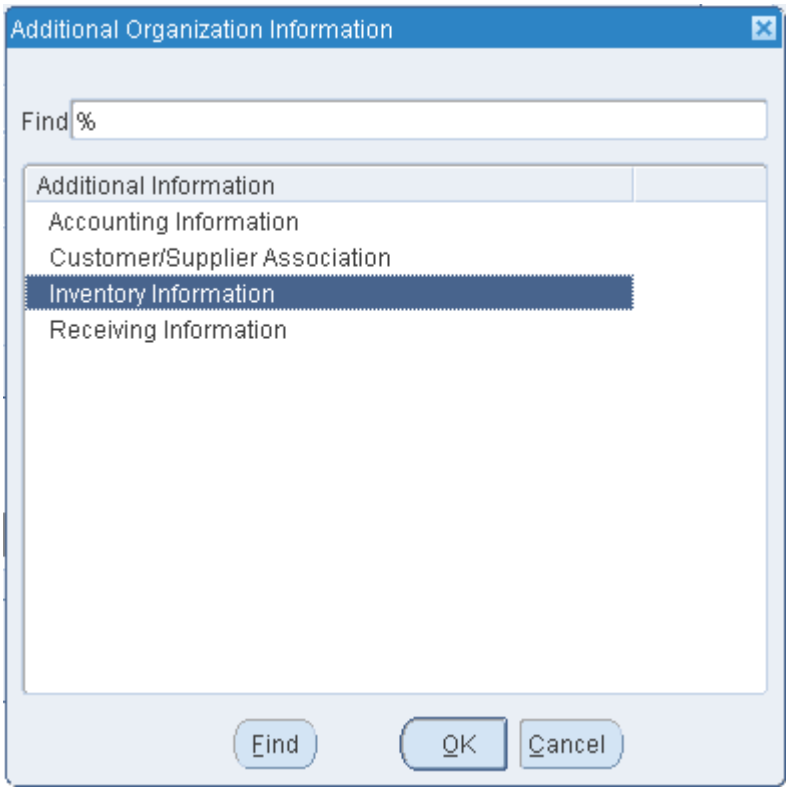
The OEM organization is the organization that buys an outsourced assembly, and ships subcontracting components to the manufacturing partners.

To set up OEM organizations:

1. From the Inventory responsibility, navigate to the Organization window.
2. Define the OEM organization as an inventory organization. Select the Location Address of Japan, Korea, or Taiwan if you are setting up Chargeable Subcontracting. You can select any country if you are setting up Buy/Sell Subcontracting.



3. Select Others. The Additional Organization Information window appears.



4. Select Inventory Information to view the Organization Parameters window.

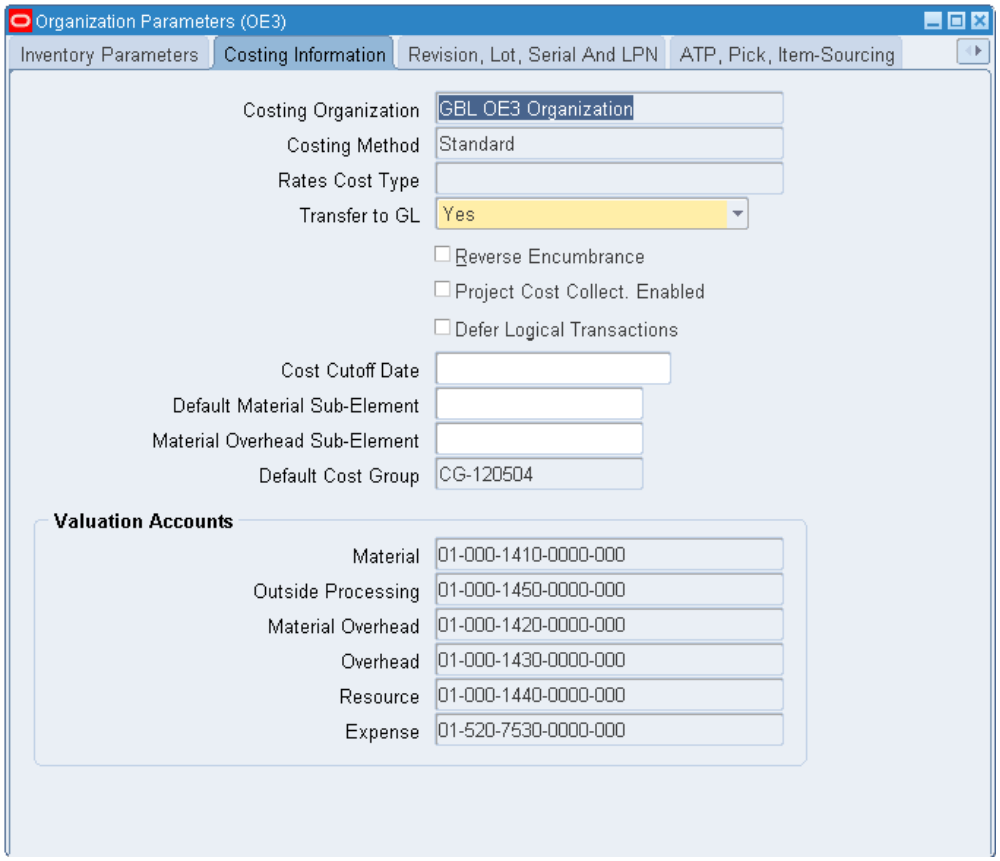
5. Select the Costing Information tab.

6. Set the Costing Method of the OEM Org as below:

   - For Chargeable Subcontracting, set the Costing to Standard.

   - For Buy/Sell Subcontracting, set the Costing Method to any of the following costing methods: Standard, Average, FIFO and LIFO.

7. Since the OEM is a regular inventory organization, select *Yes* for Transfer to GL to post all accounting transactions to the general ledger.



Note: Warehouse Management (WMS), Process, and EAM-enabled organizations are not supported as OEM organizations. If an organization is defined as WMS, EAM, or Process, then you cannot assign or define outsourced assemblies and subcontracting components to this organization.

8. Save your work.

   For additional information about organization setup, see: Defining

Inter-Organization Information, *Oracle Inventory User's Guide* and Organization Parameters Window, *Oracle Inventory User's Guide*.

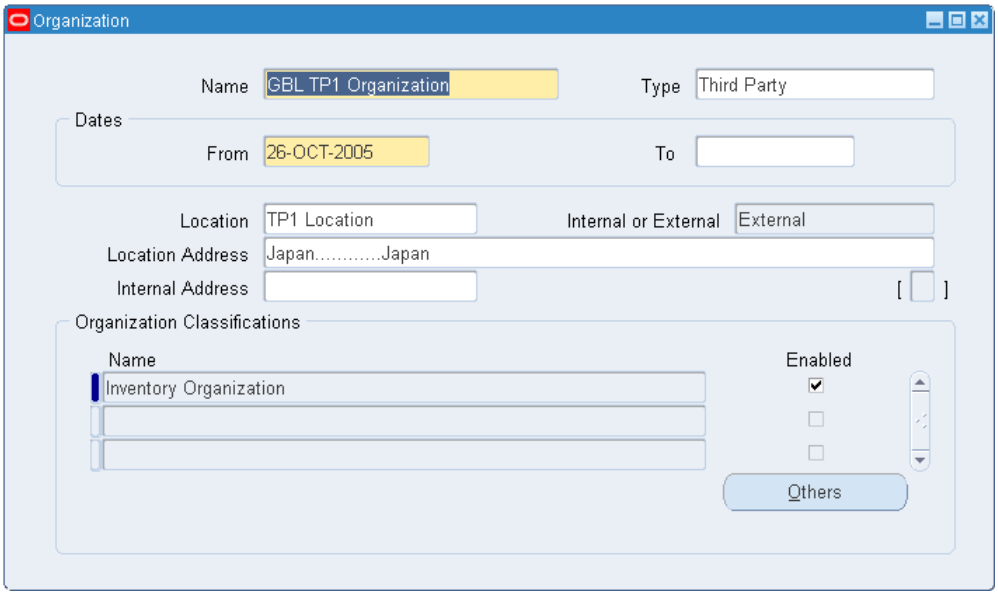
Setting Up Manufacturing Partner Organizations

To use the Chargeable and Buy/Sell Subcontracting features, define Manufacturing Partner Organization.

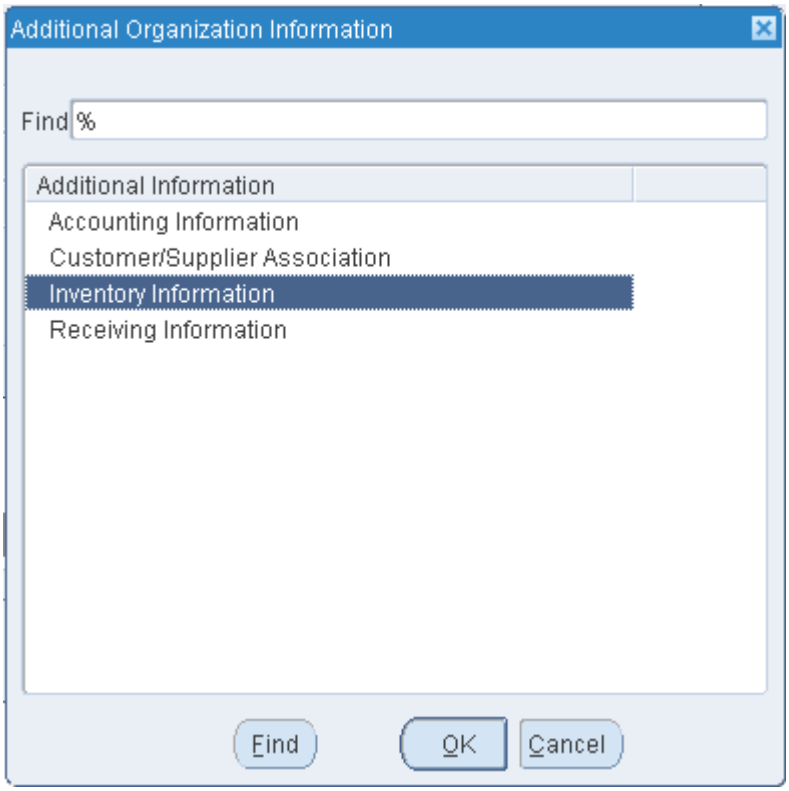
To set up MP organizations:

1. Navigate to the Organization window.

2. Define the MP organization as an inventory organization. Select the Location Address as Japan, Korea, or Taiwan for Chargeable Subcontracting. You can select any country for Buy/Sell Subcontracting.

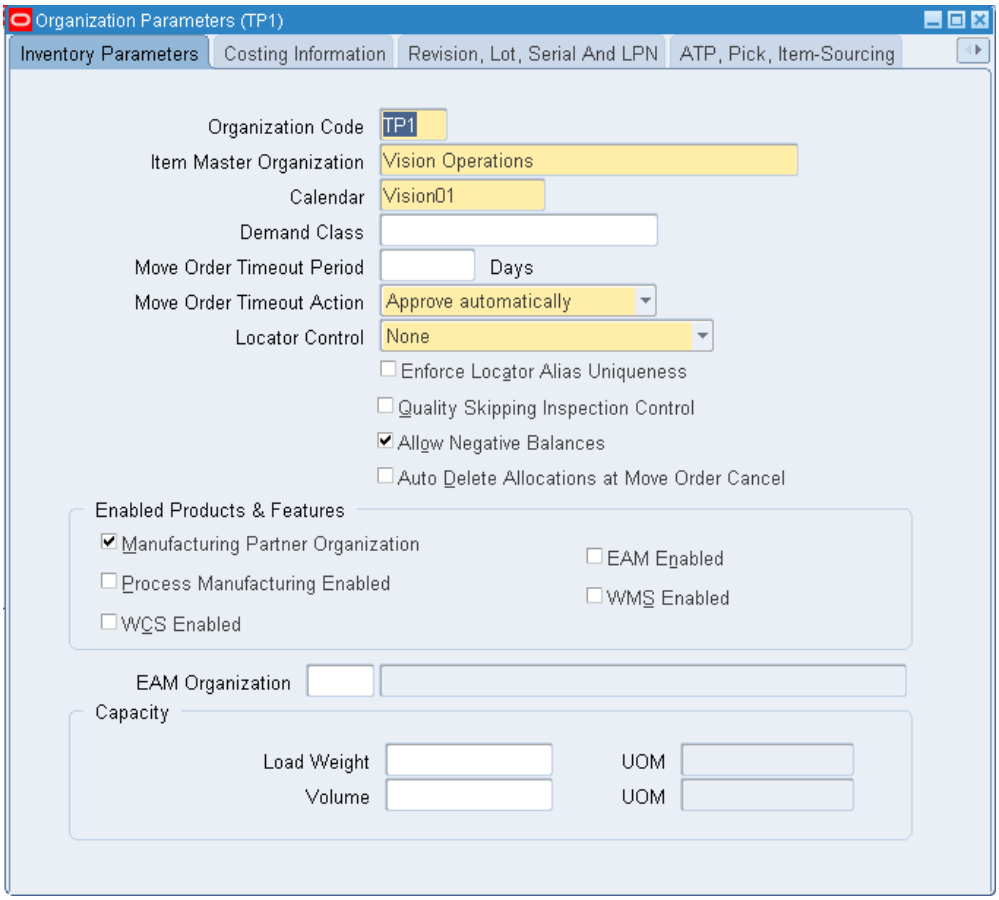


3. Click Others. The Additional Organization Information window appears.



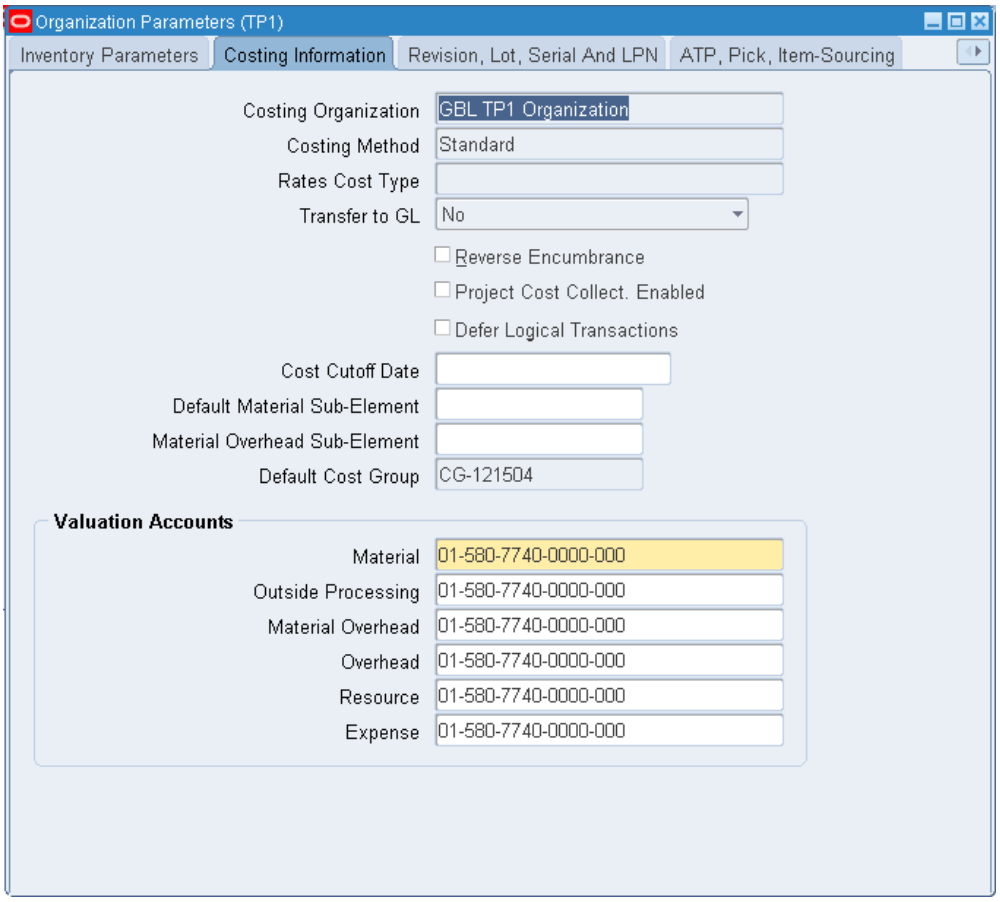
4. Select Inventory Information. The Organization Parameters window appears.

5. In the Organization Parameters window, select the Manufacturing Partner Organization indicator.



6. Select the Costing Information tab.

7. Select *No* for Transfer to GL as the MP organization is created for simulation and the accounting transactions for this organization should not be transferred to the general ledger.



8. Save your work.

   For additional information about setting up an Organization, see: Defining Inter-Organization Information, *Oracle Inventory User's Guide* and Organization Parameters Window, *Oracle Inventory User's Guide*.

To set up receiving options for MP organizations:

In both Chargeable and Buy/Sell Subcontracting practices, the MP procures subcontracting components from the OEM. To support this, the system automatically creates replenishment purchase orders and receives components in the MP organization. Set up the receiving options in the MP organization to enable this.

1. From the Purchasing responsibility, navigate to the Setup/Organizations/Receiving options page.

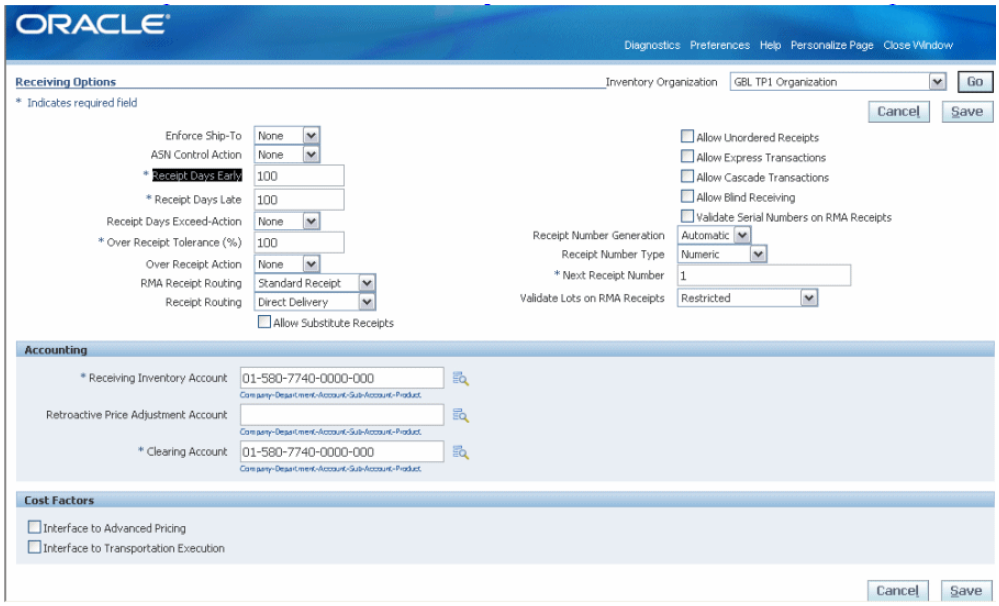
2. Select the MP Organization and click Go. The Receiving Options page appears.

3. Enter **Receipt Days Early** equals 100, **Receipt days Late** equals 100, and **Receipt Days Exceeded Action** equals none.

4. Enter **Over Receipt Tolerance** equals 100 and **Over Receipt Action** equals none.

5. Enter **Receipt Routing** equals Direct Delivery.

6. Set Mandatory Accounts as miscellaneous accounts and leave all others blank. This is because as the MP is created for simulation and the costs are not posted to the general ledger, the accounts are not significant.



7. Save your work.

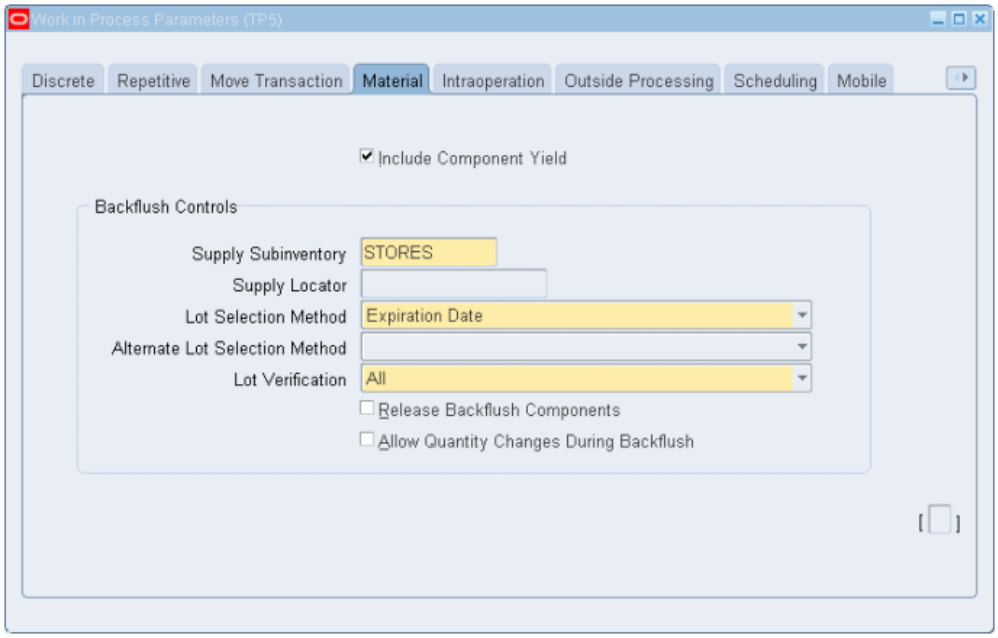
To define WIP parameters:

Define WIP Parameters for the MP organization. See: Defining WIP Parameters, *Oracle Work in Process User's Guide*. Accounts are not significant; therefore, you can set the WIP accounting class with miscellaneous accounts and then define it in the WIP Parameters window. The system uses the supply subinventory defined in the WIP Parameters window to receive the components when the replenishment purchase order is received in the MP organization. The system also uses it to backflush the inventory when the WIP job is completed for simulating the material consumption at the MP Organization after the outsourced assemblies are received against the subcontracting purchase orders in the OEM organization.

1. From the WIP responsibility, navigate to the Work in Process Parameters window.

2. Select the MP Organization.

3. Enter WIP parameters.



4. Save your work.

Defining Customers and Suppliers

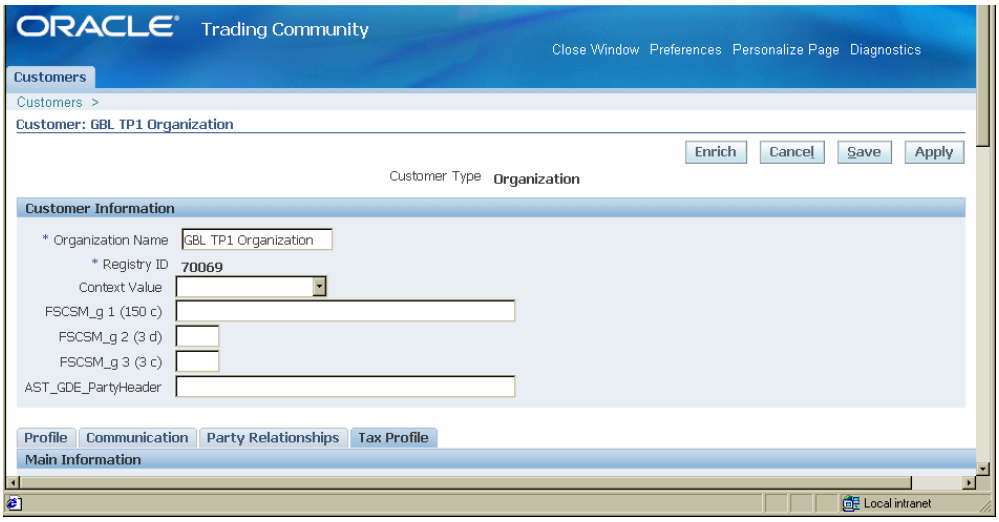
When using the Subcontracting application, the MP acts as both supplier and customer, and the OEM acts as a supplier. Define the OEM as a supplier/site, and the MP as both a customer/site and a supplier, and associate these roles in the OEM and MP organizations, respectively.

For additional customer setup information, see: Adding Customers, *Oracle Order Management User's Guide*.

To define a customer/site:

1. From the Order Management responsibility, navigate to the Customers page.

2. Add your Manufacturing Partner as a customer/site.



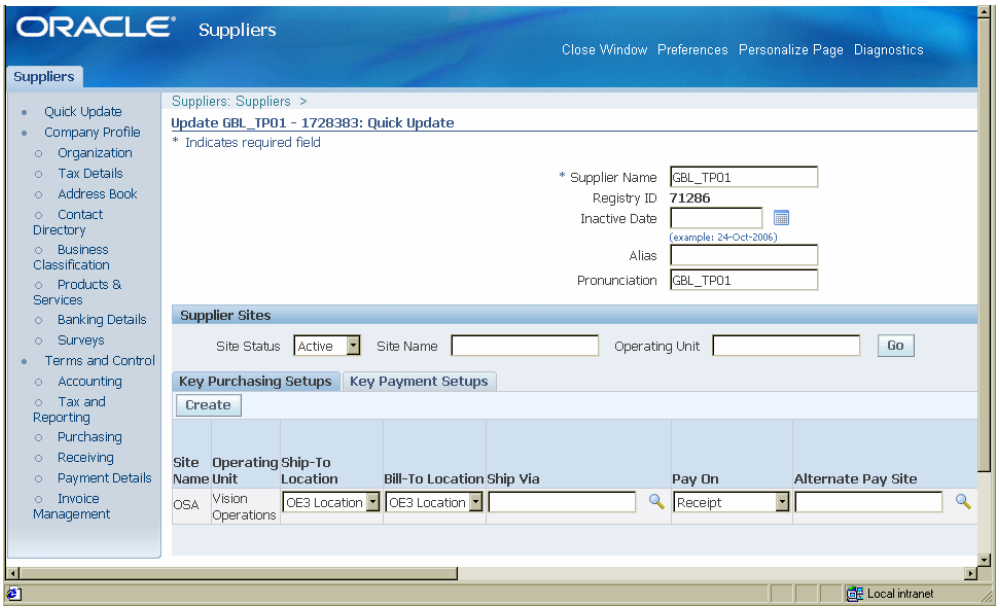
To define a supplier/site:

Set up both the MP and the OEM as suppliers.

For additional supplier setup information, see: Entering RFQ Supplier Information, *Oracle Purchasing User's Guide*.

1. From the Purchasing responsibility, navigate to the Suppliers page.

2. Enter supplier information.



3. Save your work.

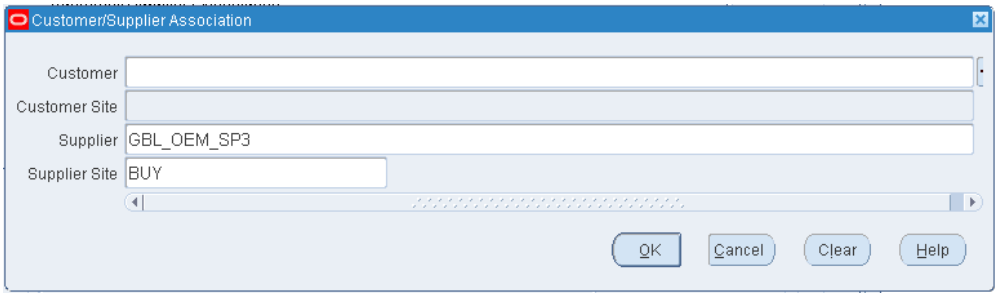
Associating Customers and Suppliers

For the OEM Organization, you must associate the supplier and supplier site. For the MP Organization, you must associate the customer and customer site, as well as the supplier and supplier site. The Advanced Supply Chain Planning (ASCP) application uses this information to transfer the net demands of assemblies and components between the OEM and MP organizations.

To associate customers and suppliers:

You must associate the supplier with the OEM. In this example, the OEM supplies components to the MP and maintains the role of a supplier.

1. From the Inventory responsibility, navigate to the Organization window.
2. Select your OEM organization.
3. Select Others. The Additional Organization Information window appears.
4. Select Customer/Supplier Association and click OK. The Customer/Supplier Association window appears.
5. Enter the **Supplier** that you are associating with the OEM.
6. Enter the **Supplier Site**.



7. Choose OK.

8. Save your work.

To associate customers and suppliers:

In this example, the MP supplies assemblies, procures components from OEM, and maintains the role as both supplier and customer.

1. From the Inventory responsibility, navigate to the Organization window.

2. Choose the MP organization.

3. Select Others. The Additional Organization Information window appears.

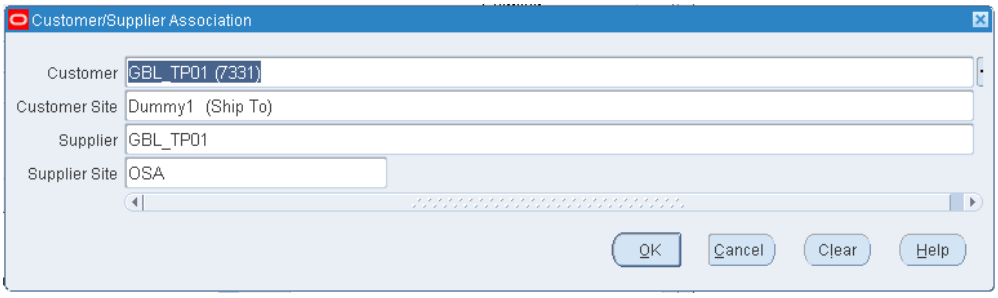
4. Select Customer/Supplier Association and select OK. The Customer/Supplier Association window appears.

5. Enter **Customer**. This entry is the MP organization.

6. Enter the **Customer Site** to which to ship.

7. Enter the **Supplier**. This entry is the MP organization.

8. Enter the **Supplier Site**.



9. Click OK.

10. Save your work.

Setting Up Item Definitions

You must define items and bills in the OEM and the MP organizations. Define items as:

- **Outsourced Assemblies:** Assembly items designed by the OEM and manufactured by the MP and the MP's site using components supplied by the OEM.

- **Subcontracting Components**: Components sent by the OEM to the MP for the manufacturing of outsourced assemblies. The two types of subcontracting components supported are:

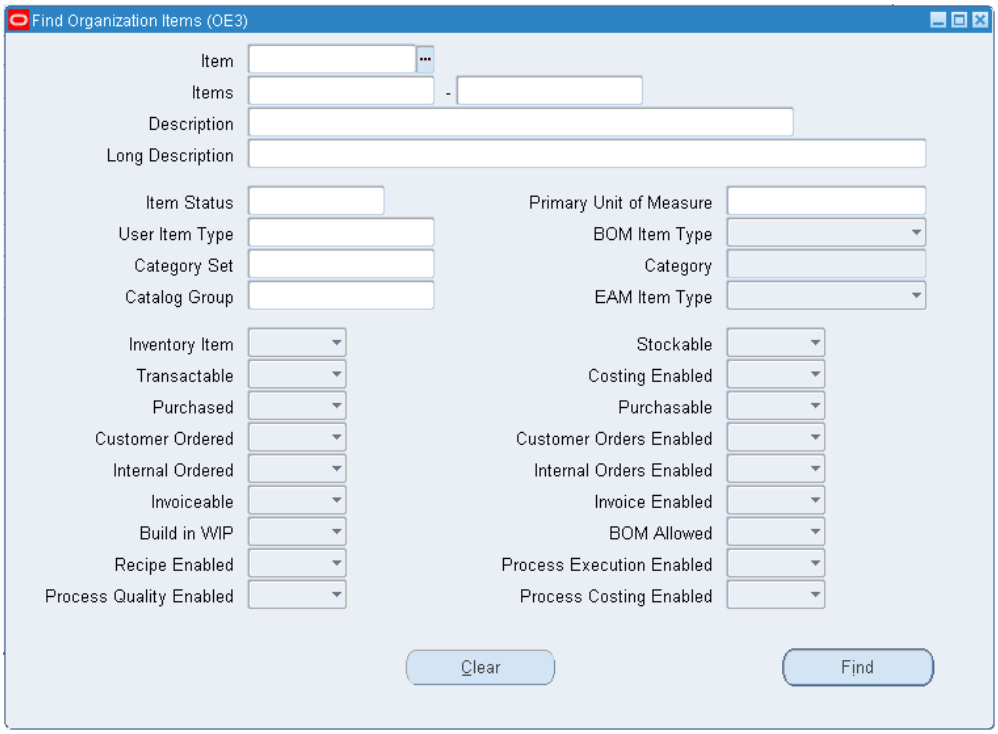
    - Pre-positioned - Components that are shipped to the MP without reference to any specific subcontracting order ahead of placement of such orders by the OEM. These components are typically low cost items and the OEM stores these components in larger quantities at Manufacturing Partner site well ahead of ordering outsourced assemblies.

    - Synchronized - Components that are shipped to the MP with reference to a specific subcontracting order along with the order. These components are generally high cost items and are shipped when the order is placed with the MP and in the quantities required to produce the outsourced assembly in the subcontracting order.

To define outsourced assemblies in the OEM organization:

You can follow the standard item setup steps for defining outsourced assemblies and subcontracting components. The following key attributes and values are used for defining an item as an outsourced assembly or a subcontracting component:

1. From the Inventory responsibility, navigate to the Organization Item window. The Find Organization Items window appears.

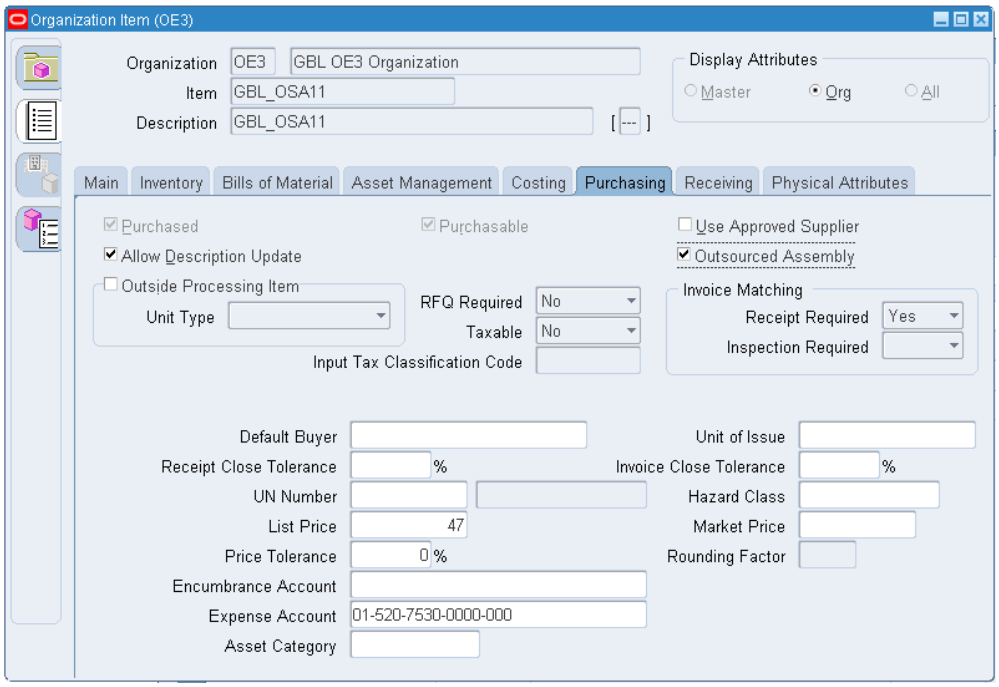


2. Enter Item search criteria for the OEM organization and click Find. The Organization Item window appears.

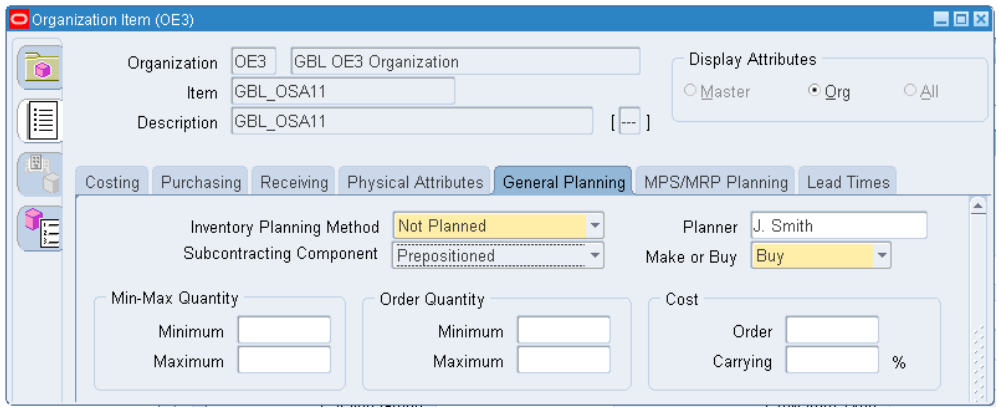
3. Select the Purchasing tab.

4. Define this item as an outsourced assembly by selecting the Outsourced Assembly checkbox.

   Note: You must set the profile option JMF:Enable Subcontracting to Yes to enable the Outsourced Assembly checkbox.

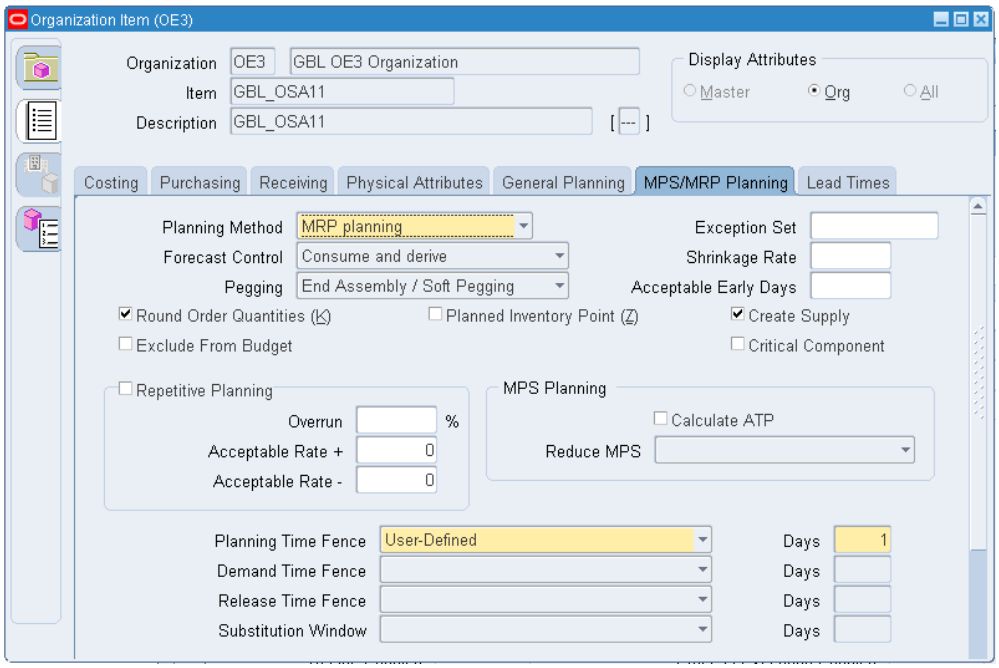


5. Select the General Planning tab and define the outsourced assembly as a Buy item for planning.



6. Select the MPS/MRP Planning tab and verify that **Release Time Fence** is empty (Null). This setting allows ASCP to release and transfer buy planned orders of assembly to purchasing as purchase orders or releases in the OEM organization.

> **Note:** Outsourced Assemblies can have routings in OEM organizations and it is not necessary to change the existing routings while outsourcing the assembly to an MP.



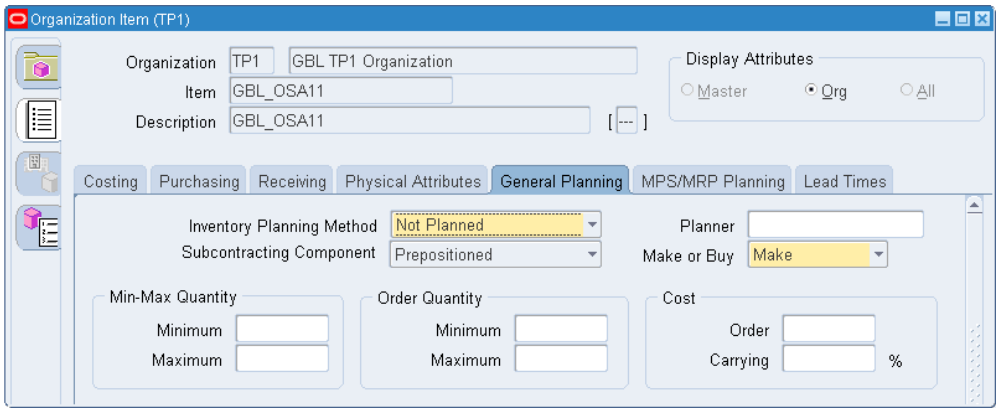
7. Save your work.

To define outsourced assemblies in the MP organization:

1. From the Inventory responsibility, navigate to the Organization Item window. The Find Organization Items window appears.

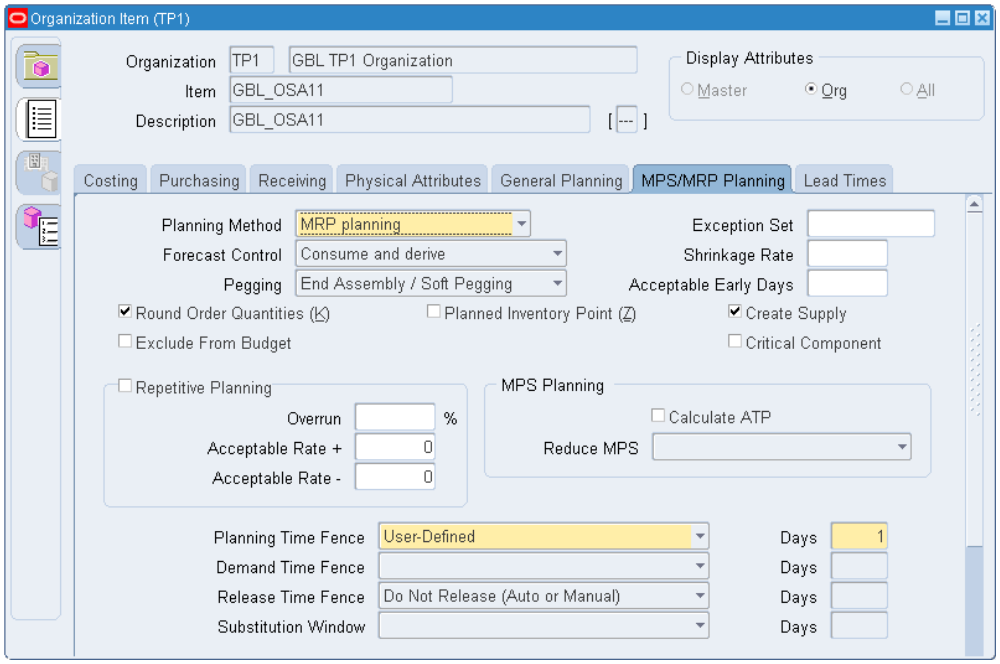
2. Enter Item search criteria for the MP organization and click Find. The Organization Item window appears.

3. Select the General Planning tab and define the outsourced assembly as a Make item for planning. Production of this assembly is simulated in the MP organization.



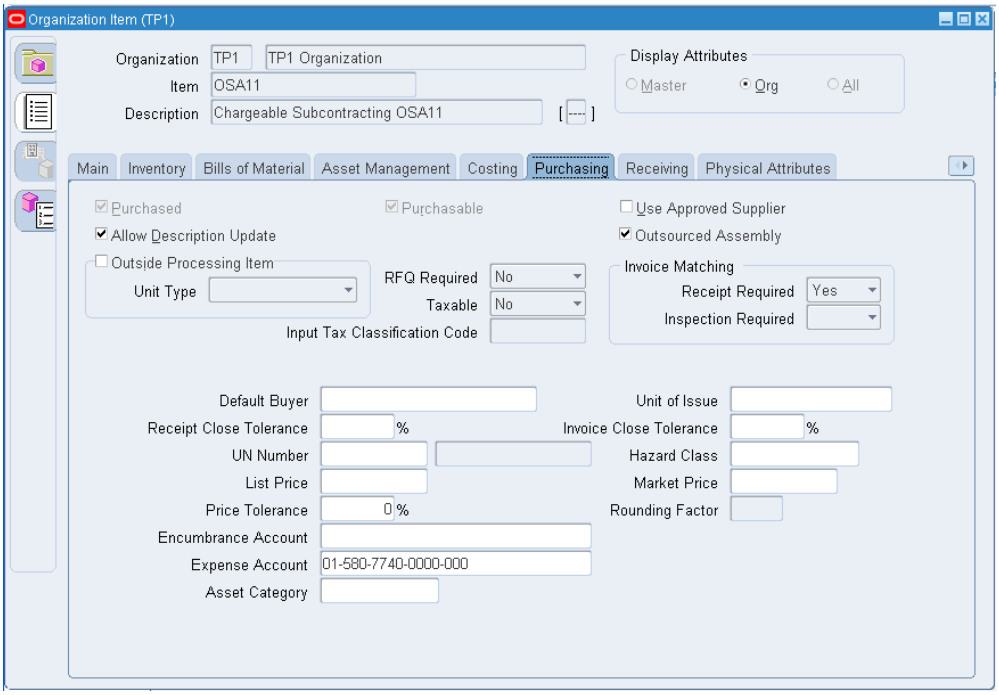
4. Select the MPS/MRP Planning tab and select Do Not Release (Auto or Manual) for **Release Time Fence**. This setting prevents Make planned orders of assembly from being transferred as discrete jobs in the MP organization.

   Note: Outsourced assemblies cannot have routings in MP organizations.



5. Select the Purchasing tab.

6. Define this item as an outsourced assembly by selecting the Outsourced Assembly checkbox.



Note: Outsourced assemblies cannot have routings in MP organizations.

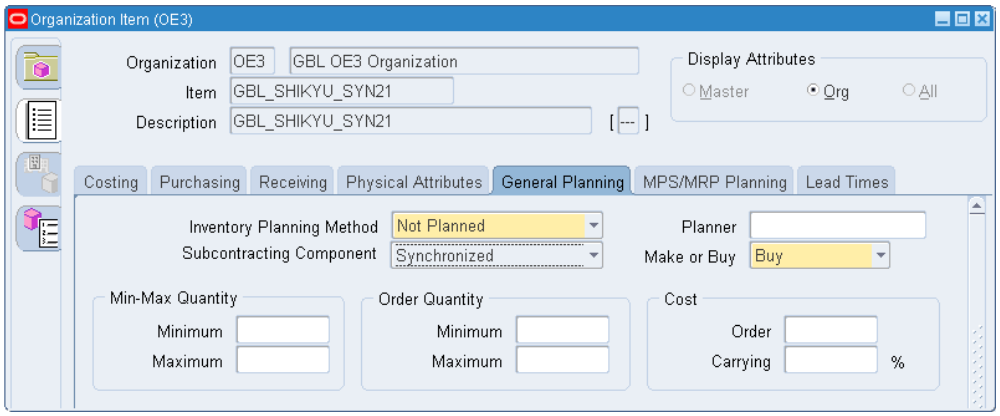
7. Save your work.

To define subcontracting components in the OEM organization:

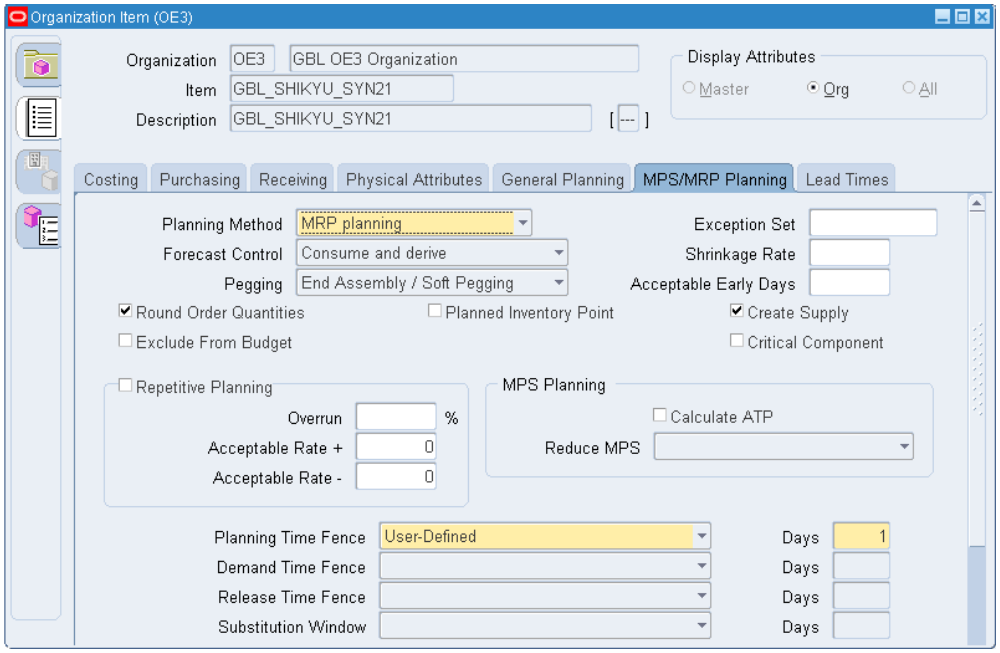
1. From the Inventory responsibility, navigate to the Organization Item window. The Find Organization Items window appears.

2. Enter Item search criteria for the OEM Organization and click Find. The Organization Item window appears.

3. Select the General Planning tab and enter the **Subcontracting Component**. Valid values are Synchronized or Prepositioned based on the subcontracting process requirement.



4. Select the MPS/MRP Planning tab and verify that **Release Time Fence** is empty (Null). This allows ASCP to release and transfer planned orders of components to purchasing as purchase orders or releases in the OEM organization.



5. Save your work.

To define subcontracting components in the MP organization:

1. From the Inventory responsibility, navigate to the Organization Item window. The Find Organization Items window appears.

2. Enter Item search criteria for the MP Organization and click Find. The Organization Item window appears.

3. Select the General Planning tab and enter the **Subcontracting Component**. Valid values are Synchronized or Prepositioned based on the subcontracting process requirement.

4. Select the MPS/MRP Planning tab and enter **Release Time Fence** values:

   Do not Release (Auto or Manual): Use this value when you use synchronized components. ASCP should not release planned orders of synchronized components in the MP organization.

   Null: Leave this field empty when using pre-positioned components.

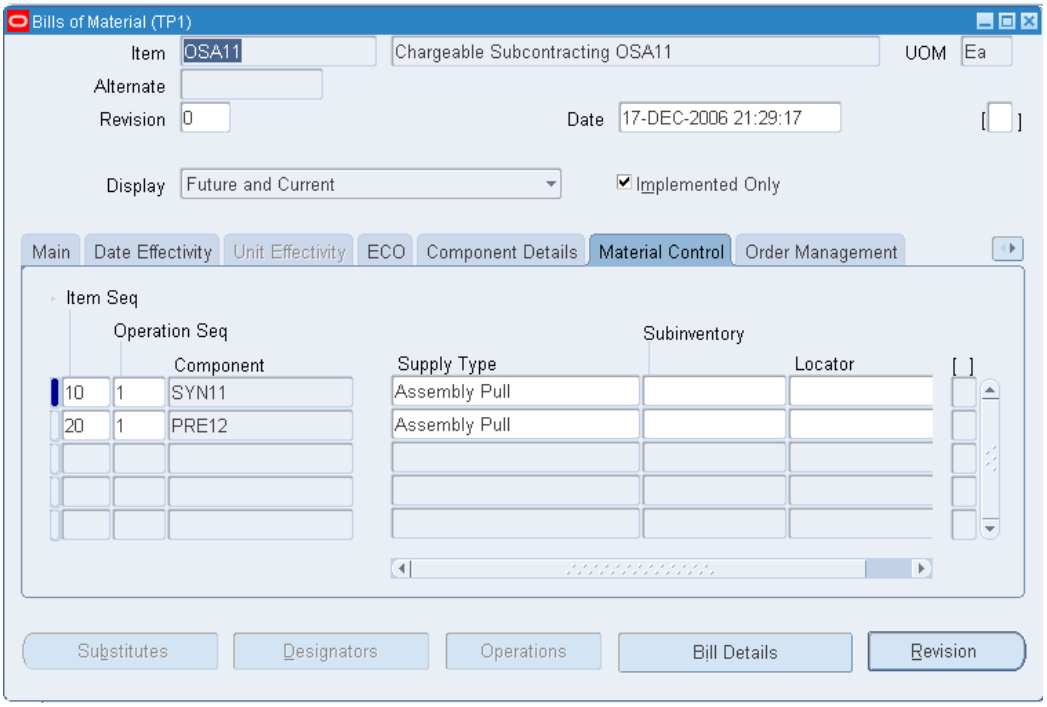
5. Save your work.

Setting Up Bills of Material for Outsourced Assemblies

Bills of Material (BOM) must be set up for outsourced assemblies in both the OEM and MP organizations. These two bills should be the same for proper planning and execution. If the BOM already exists for outsourced assembly in the OEM organization, then set up the same BOM in the MP organization. The prerequisites for outsourcing the assemblies are:

- You must define all of the components of the outsourced assembly as Subcontracting Components, either pre-positioned or synchronized in both OEM and MP organizations.

- In the MP organization, select the Material Control tab and define BOM Component and Supply Type as Assembly Pull.



Setting Up Specific Subcontracting Accounting for Chargeable Subcontracting

Subcontracting Accounting Process

The OEM ships components to the MP using a replenishment sales order for the manufacturing of an assembly, but the revenue is not recognized as sales revenue. This revenue is tracked in a separate account for analysis at a later stage.

The MP is not liable for the payment of components, therefore the OEM cannot consider the receivables amount of the replenishment sales orders as actual receivables, and the amount is tracked in a separate receivables account. COGS of Subcontracting Components are also tracked in separate accounts. Purchase price of the assembly is set up to include sales price of the components and the added value, which is always different than the standard cost of the assembly. The Purchase Price Variance (PPV) at the time of receiving the subcontracting order in the OEM organization is not a real purchase price variance, and must be tracked in a separate account. You must set up following accounts to use the subcontracting process:

- **Subcontracting Receivables**: Used to track the receivables from the sale of components to the MP.

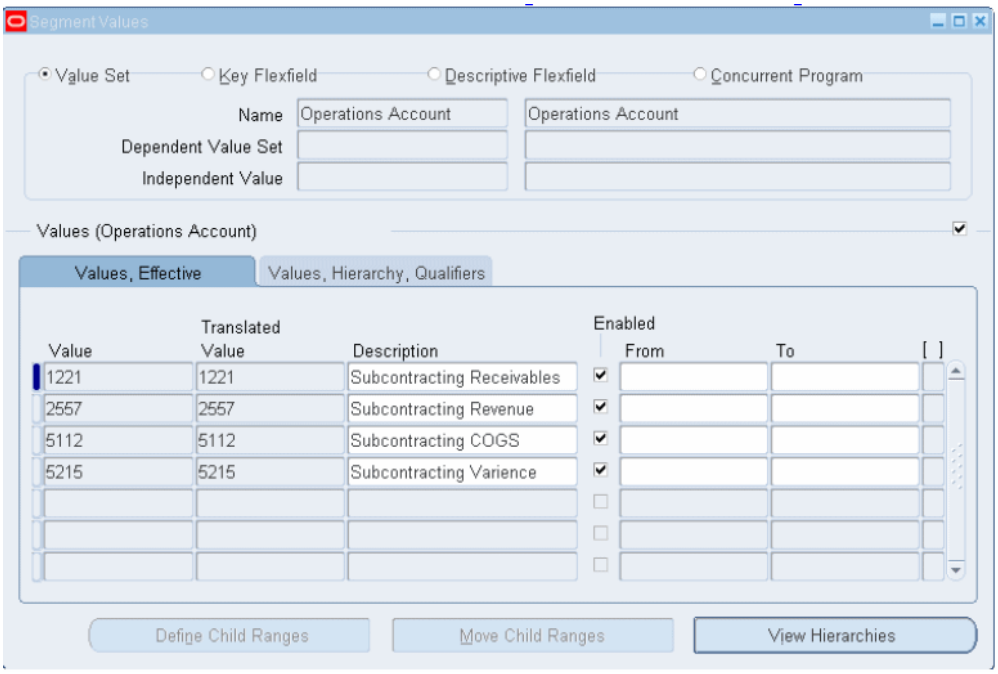
- **Subcontracting Revenue**: Used to track the revenue from the sale of components to the MP.

- **Subcontracting COGS**: Used to track COGS from the sale of components to the MP.
- **Subcontracting Variance**: Purchase price variance at the time of receiving assembly is posted to this account. This variance arises due to differences between the standard cost and purchase price of the assembly.

  See: Updating Balancing Segment Values, *Oracle General Ledger User's Guide.*

To define subcontracting accounts:

1. From the General Ledger responsibility, navigate to the Segment Value window. The Find Key Flexfield Segment window appears.
2. Select the Value Set indicator and select the Value Set Name.
3. Click Find. The Segment Values displays all Values (Value Set).
4. Enter account details for the four Subcontracting accounts described previously.



5. Save your work.

Related Topics

Transaction Batch Sources, *Oracle Receivables User's Guide*

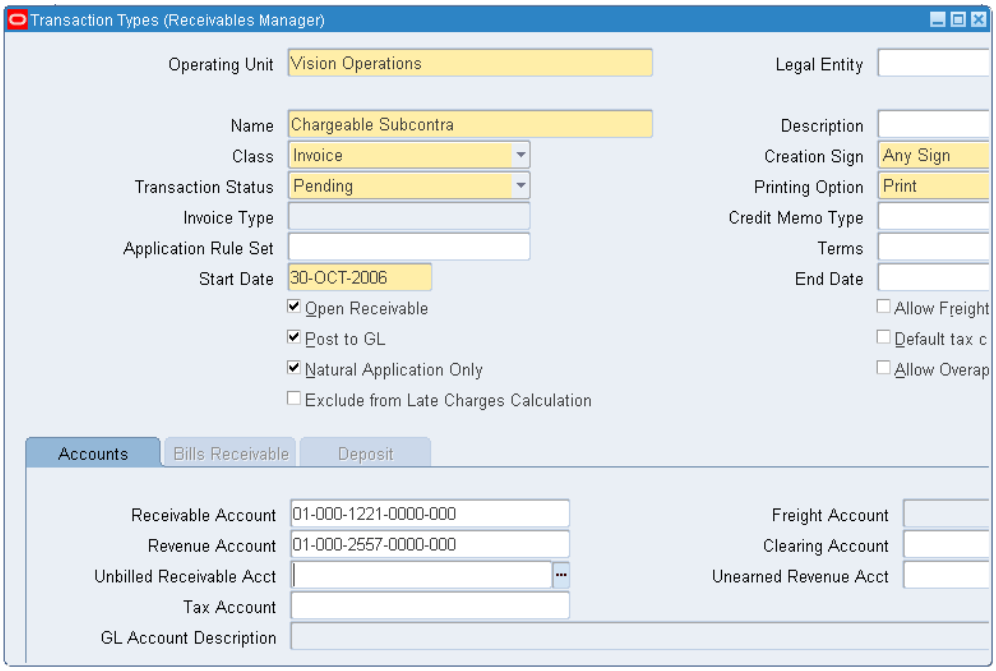
Subcontracting

Define a separate receivable transaction type and associate:

- Subcontracting receivables
- Subcontracting revenue accounts (from the previous step). See: Setting Up Subcontracting Accounting, page 2-25.

To define a receivables transaction type and associate it to Subcontracting receivables:

1. From the Receivables responsibility, navigate to the Transaction Types window.
2. Enter the receivables transaction type details.



3. In the Name field, enter the transaction type of Subcontracting.
4. For the Receivable Account, enter the subcontracting receivables account for tracking the subcontracting component receivable amount.
5. For the Revenue Account, enter the Subcontracting Revenue Account for tracking subcontracting component revenue.
6. Save your work.

Related Topics

Transaction Types, *Oracle Receivables User's Guide*

Defining Specific Transaction Sources for Chargeable Subcontracting

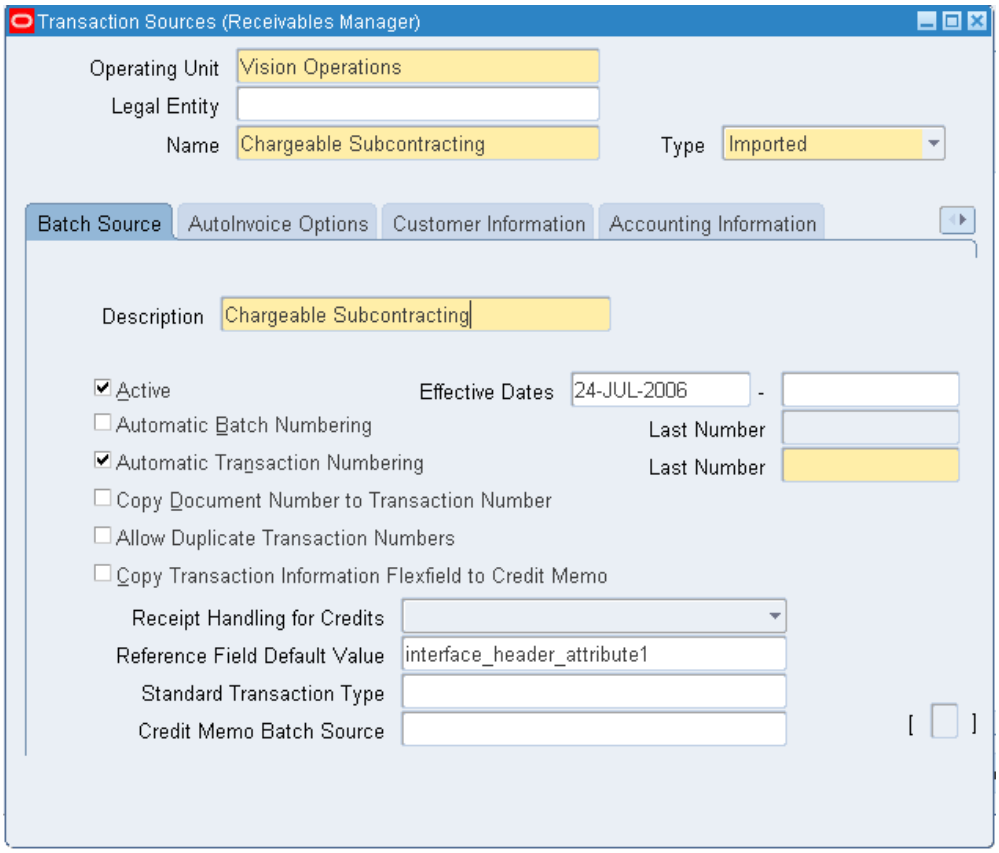
Batch sources control the standard transaction type assigned to a transaction and determine whether the Receivables application automatically numbers your transactions and transaction batches.

To associate a subcontracting receivables transaction type with an order management order type and line type, you must define a receivables transaction source. This step is referred to when receivables invoices are imported from order management to accounts receivable.

For transaction batch source setup information, see: Transaction Batch Sources, *Oracle Receivables User's Guide*.

To define a subcontracting transaction source:

1. From the Receivables responsibility, navigate to the Transaction Sources window.
2. Enter the Transaction Source: Subcontracting.



3. Save your work.

Setting Up Specific Order Management Transaction Types for Chargeable Subcontracting

You must set up a separate order type for creating replenishment sales orders for component shipments to the MP.

Receivables Transaction Type, Receivables Transaction Source, and Subcontracting COGS accounts created in previous steps must be associated with this Order Management transaction type. When the replenishment sales order for the subcontracting component is shipped and invoiced, COGS, revenue, and receivables are posted to subcontracting COGS, subcontracting revenue, and subcontracting receivables, respectively.

See: Accounting Setup.

To define Order Management transaction types:

1. From the Order Management responsibility, navigate to the Transaction Types window.

2. Select an **Operating Unit** (required).

3. Enter a **Description**

4. Select an **Order Category** (required).

5. Select a Fulfillment Flow.

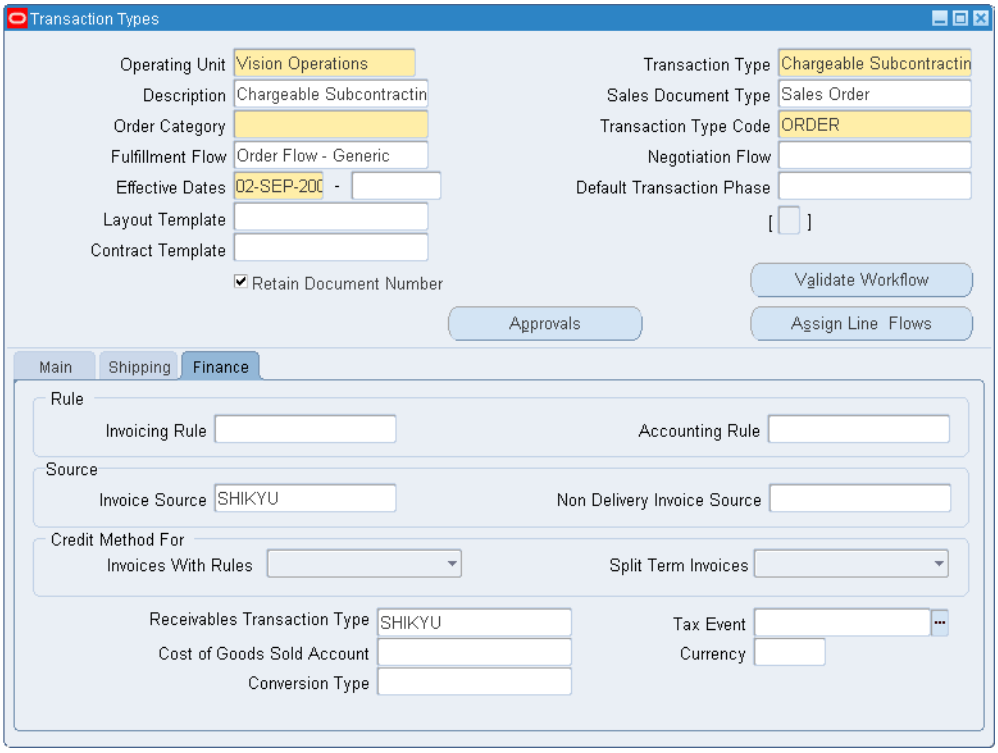
6. Enter **Effective Dates** (required).

7. Enter a **Transaction Type** (required).

8. Select a **Sales Document Type**.

9. Select a **Transaction Type Code** (required).

10. Select the Finance tab and enter an **Invoice Source** and a **Receivables Transaction Type** and COGS account defined in the previous setup for subcontracting process.



Note: To associate a subcontracting AR transaction type with an OM order type and line type, you must define a separate invoice source and AR transaction type, and attach them to the OM transaction type. This invoice source and transaction type are referred to when an AR invoice is imported from OM to AR. See:

Transaction Types, *Oracle Receivables User's Guide* and Setting Up Subcontracting Accounting, page 2-25.

11. Save your work.

Setting Up Standard Costs of Components and Assemblies for Chargeable Subcontracting

Set up the standard costs of subcontracting components and outsourced assembly in the OEM organization. The MP organization is a simulation organization, and accounting transactions are not transferred to GL. Therefore, no costing setup is required in the MP organization.

Standard Cost of Subcontracting Components in the OEM Organization

Subcontracting components can be purchase items or assembly items. The cost is set up like any standard component.

Standard Cost of Outsourced Assemblies in the OEM Organization

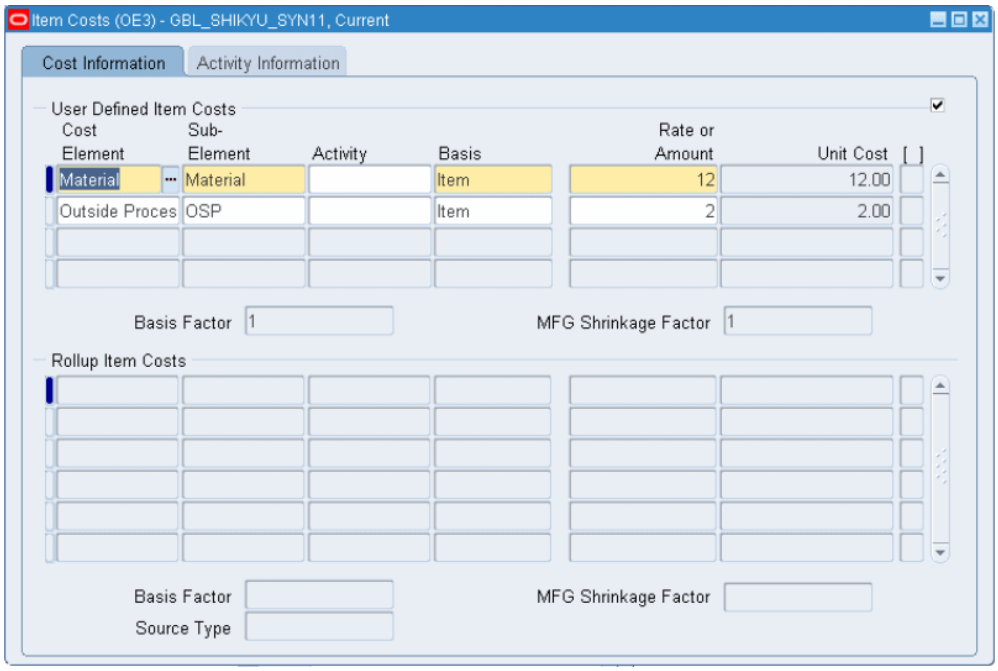
Standard cost of the outsourced assembly must include material cost and the added value. While setting up the cost, include component cost as material cost and added value as OSP (define an OSP resourced in the OEM organization and define an OSP charge as added value) charges and run cost update.

To set up a standard cost of an outsourced assembly:

1. From the Costing responsibility, navigate to the Item Costs window and select an OEM Organization. The Find Item/Cost Type window appears.

2. Click Find to open an existing assembly item and cost type, or click New to create a new item cost. The Item Costs Summary window appears.

3. Fill Component costs as Material cost and Value addition as OSP (define OSP resource before creating the cost).



4. Save your work.

5. Run Standard Cost Update to update the Frozen cost type with the Current cost type.

Defining Price Lists for Subcontracting Components

Define Price Lists for Subcontracting Components for both Chargeable and Buy/Sell Subcontracting. Sales price of the components are defined in the price lists and are associated with Customer Ship To and Bill To sites of the MP organization (customer sites represents the MP organization).

Sales Price of Pre-positioned Components

These components are shipped to the MP in bulk quantities in advance of the subcontracting order requirements. You can create the replenishment purchase order for these components in the primary UOM, or in a secondary UOM. Replenishment sales orders are created based on its replenishment purchase orders. Therefore, the sales order UOM is always the same as its corresponding replenishment purchase order UOM. You can define price lists in either the primary UOM, or in the secondary UOM, but only one UOM is effective at any point in time.

Sales Price of Synchronized Components

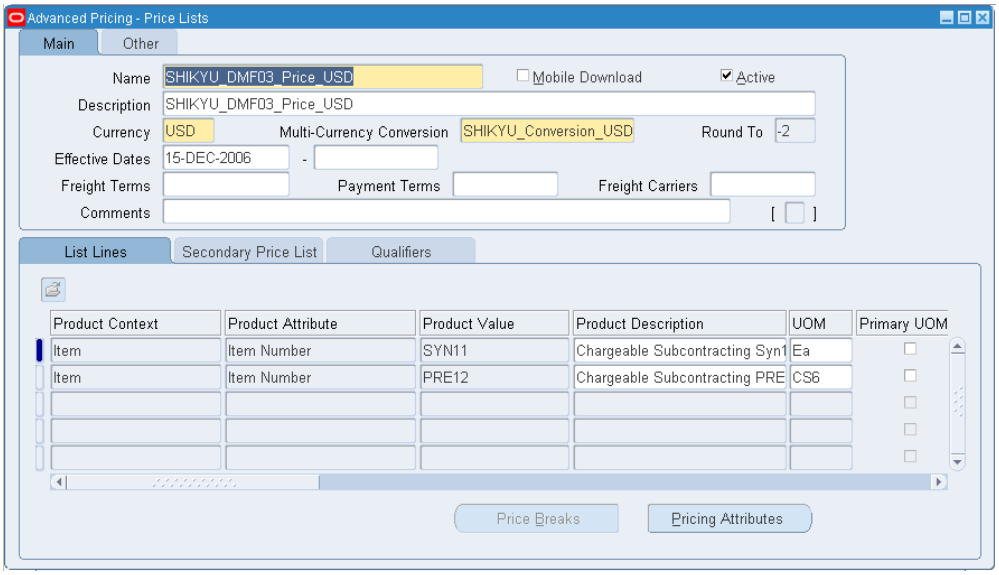
These components are shipped along with the subcontracting order. The Interlock Manager creates replenishment sales orders of these components always in the primary UOM of the component based on subcontracting order requirements. Since only

shipping of the components is always supported in the primary UOM, price lists are always created in the primary UOM for synchronized components.

To define price lists:

1. From the Order Management responsibility, navigate to the Pricing, Price Lists, Price List Setup, and Open Price List window.

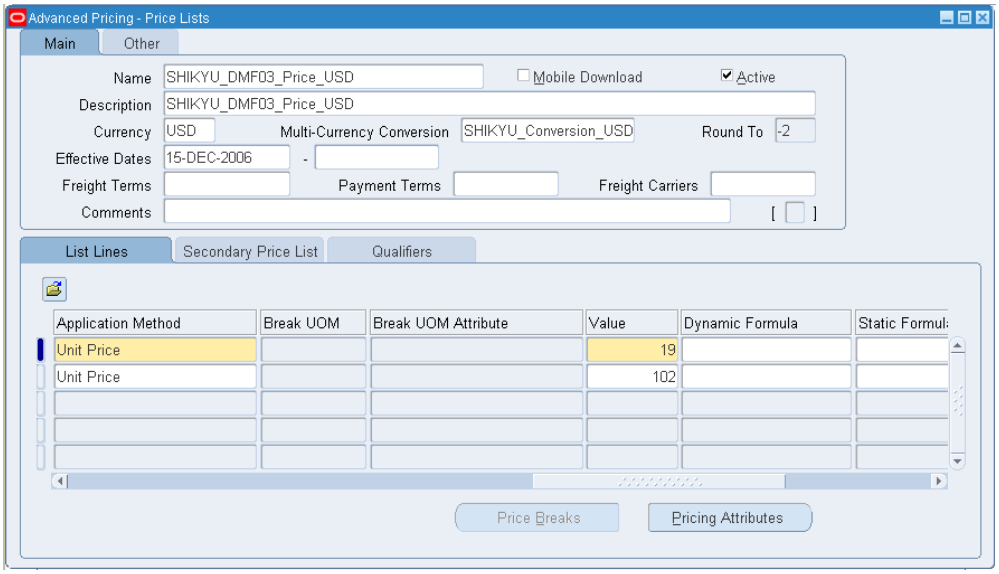
2. Define price lists in the transaction currency of the MP.



3. In the List Lines tab, enter a subcontracting component code for defining the price.

4. UOM should be the primary UOM for synchronized components. UOM for pre-positioned components can be either the primary or secondary UOM, however, only one UOM is effective at any time.

5. Enter Values (prices) in the UOM.

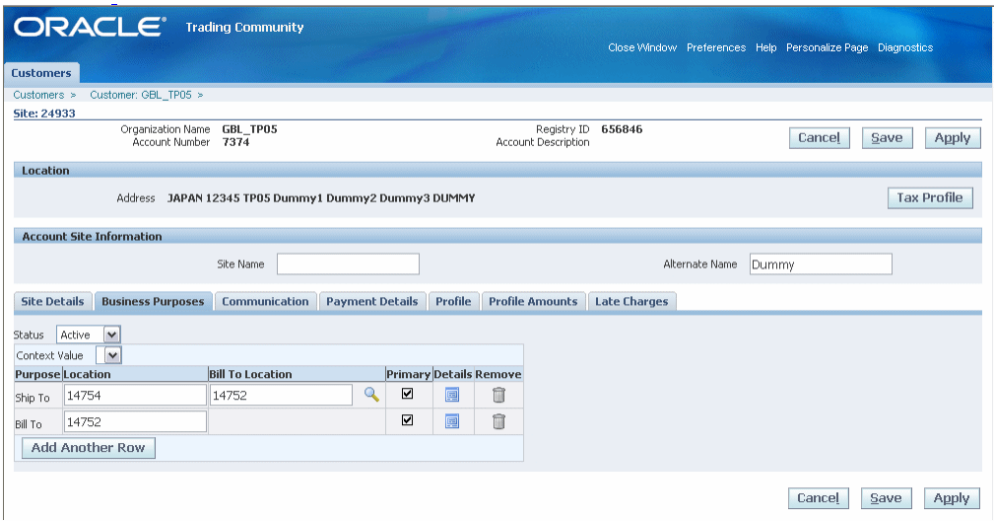


6. Save your work.

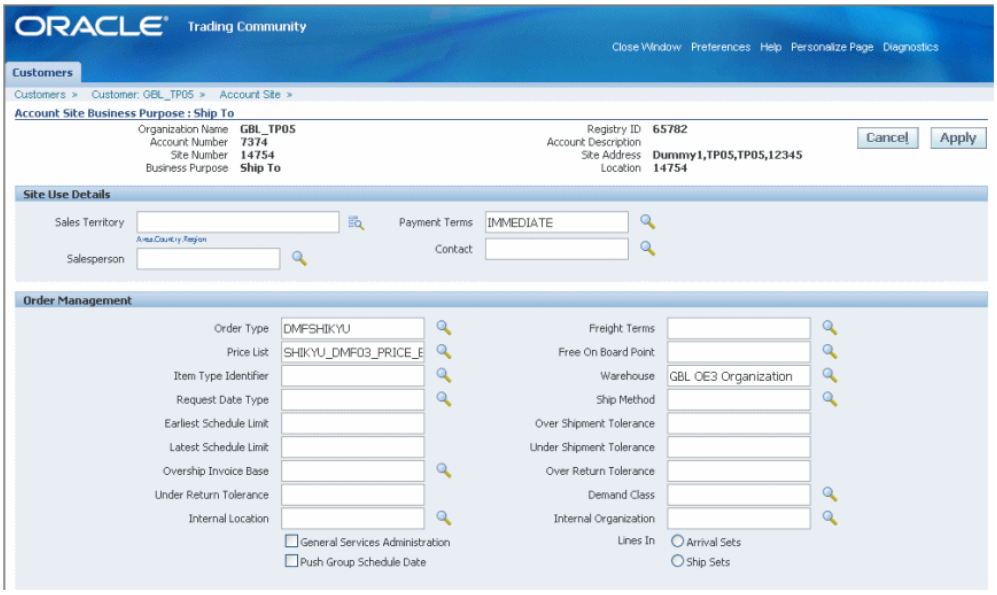
> **Important:** Do not define modifiers for subcontracting components. The Subcontracting process does not work correctly if modifiers are implemented.

To associate price lists with a customer site (MP):

1. From the Order Management responsibility, navigate to the Customers page.
2. Select the Business Purpose tab.



3. Navigate to the Ship-To Details page and associate the price lists defined in the previous step.



4. Associate the price list to the Bill-to details.

5. Save your work.

Setting Up Purchase Price of an Outsourced Assembly

In Chargeable Subcontracting, the OEM ships components to the MP, but retains the ownership of the components. When the OEM receives the assembly, the assumption is

that the components were returned from the MP and the inventory was adjusted accordingly. The OEM makes payment to the MP for the added value after netting the receivables invoices of the components shipped and receiving the payables invoices of the outsourced assemblies. This requires that the purchase price of the assembly is defined to include the components sales price and the added value in the manufacturing process..

Assembly Purchase Price = [(Component quantity based on the Bills * Component Sales price defined in the Price lists) + Value added during manufacturing of the Assembly at the MP].

For example:

Net Value Add per unit of Assembly A at Partner's site = $5

Selling Price per unit of Component B on Price List=$4

Selling Price per unit of Component C on Price List =$6

Component usage per unit of Assembly A = 2 units of Component B, 1 unit of Component C

Purchase Price per unit of A = [(2*$4 + 1*$6) + $5} = $19

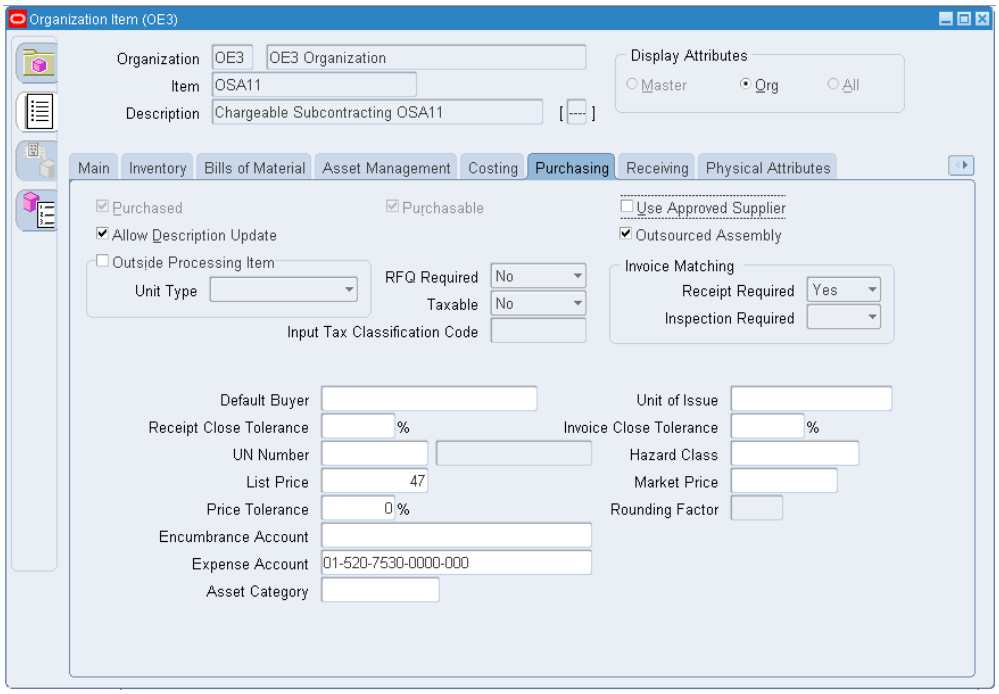
Once the purchase price of assembly is calculated based on the bills and price lists, setup should be:

- If the standard purchase order is used for procuring the assembly, then define the calculated assembly price in the Organization Items window.
- If a blanket release is used, then define a blanket agreement with the assembly price calculated as described previously.

The same reasoning can be applied to determine the purchase price of the outsourced assembly for Buy/Sell Subcontracting.

To set the purchase price of an outsourced assembly:

1. From the Inventory responsibility, navigate to the Organization Item window.
2. Enter an Organization and Item.
3. Select the Purchasing tab.
4. Enter the **List Price**.



5. Save your work.

Setting Up a Shipping Network

In both Chargeable and Buy/Sell subcontracting, components move from OEM organizations to MP organizations, and outsourced assemblies move from MP organizations to OEM organizations. To define inventory shipping networks between the OEM and the MP:

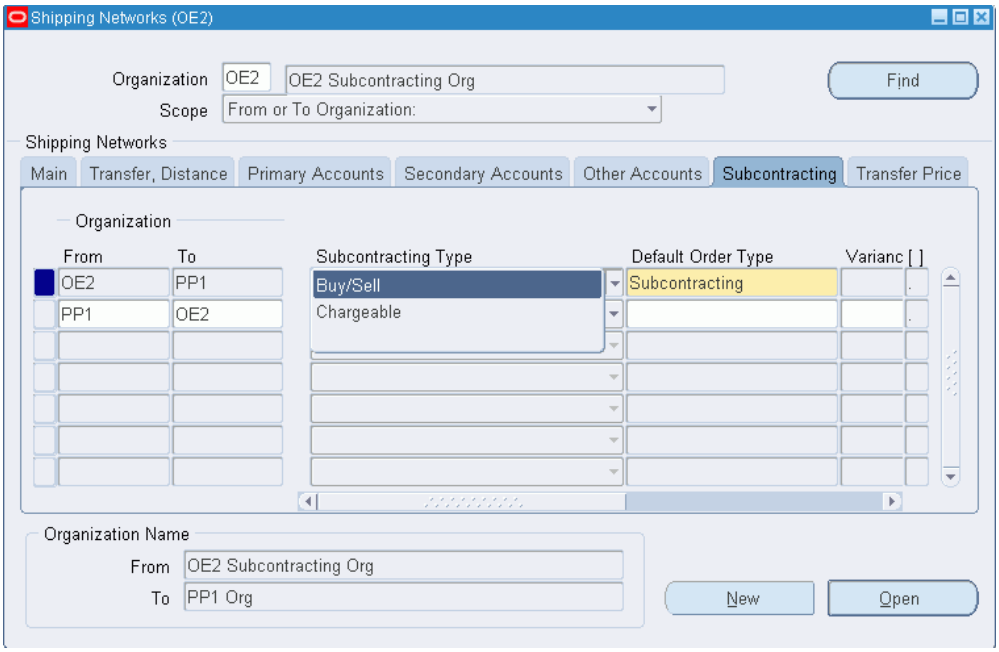
- Define a shipping network to enable material flow from OEM to MP, selecting the desired subcontracting relationship. Select either Chargeable or Buy/Sell from the Subcontracting Type.
- Define a shipping network to enable material flow from MP to OEM. Select blank from the Subcontracting Type LOV.

For additional information, see: Inter-Organization Shipping Networks, *Oracle Inventory User's Guide*.

To set up a subcontracting shipping network:

1. From the Inventory responsibility, navigate to the Shipping Networks window.
2. Select the OEM Organization, and the Shipping Networks window Appears.

3. Choose Find to open existing networks, or choose New to set up a new shipping network. Select the Subcontracting tab.



4. In the **Subcontracting Type** field, select either Chargeable or Buy/Sell to define the subcontracting relationship between the OEM and the MP.

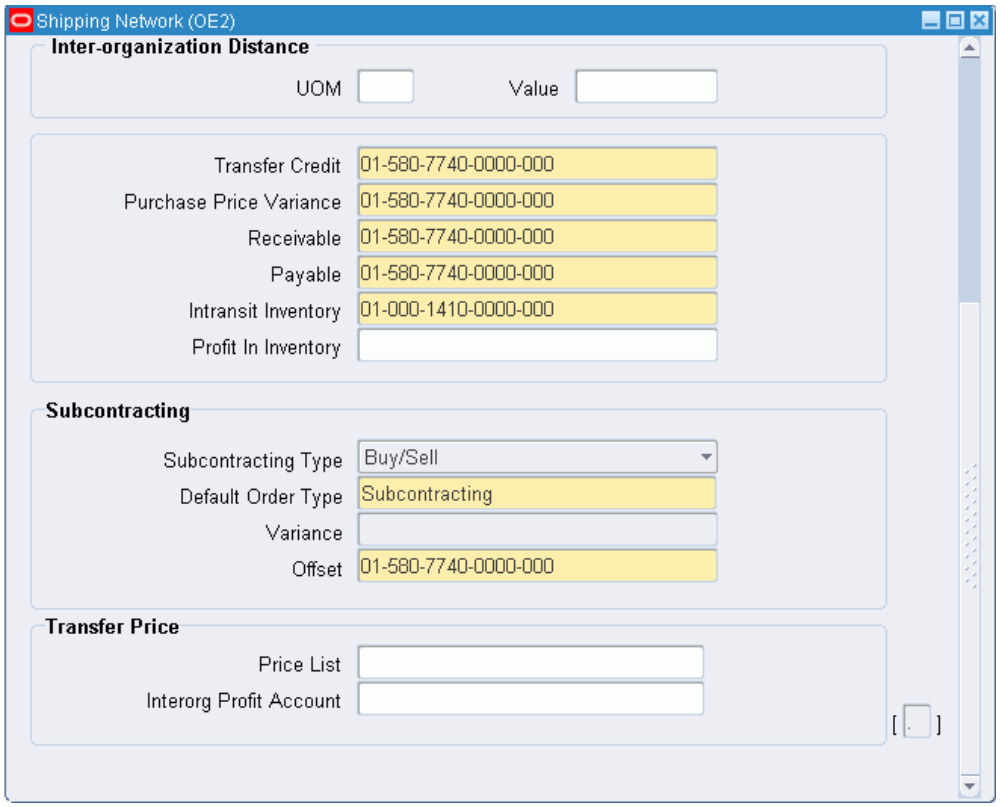
5. Specify the **Default Order Type** to be used for creating replenishment sales orders, and to ship components to the MP.

> **Note:** For Chargeable Subcontracting, specify the default order type as the Order Management transaction type defined in the previous steps using subcontracting specific accounts. The Order Management transaction type is used when the Interlock Manager concurrent program in subcontracting creates replenishment sales orders. For Buy/Sell Subcontracting, it can be a generic.

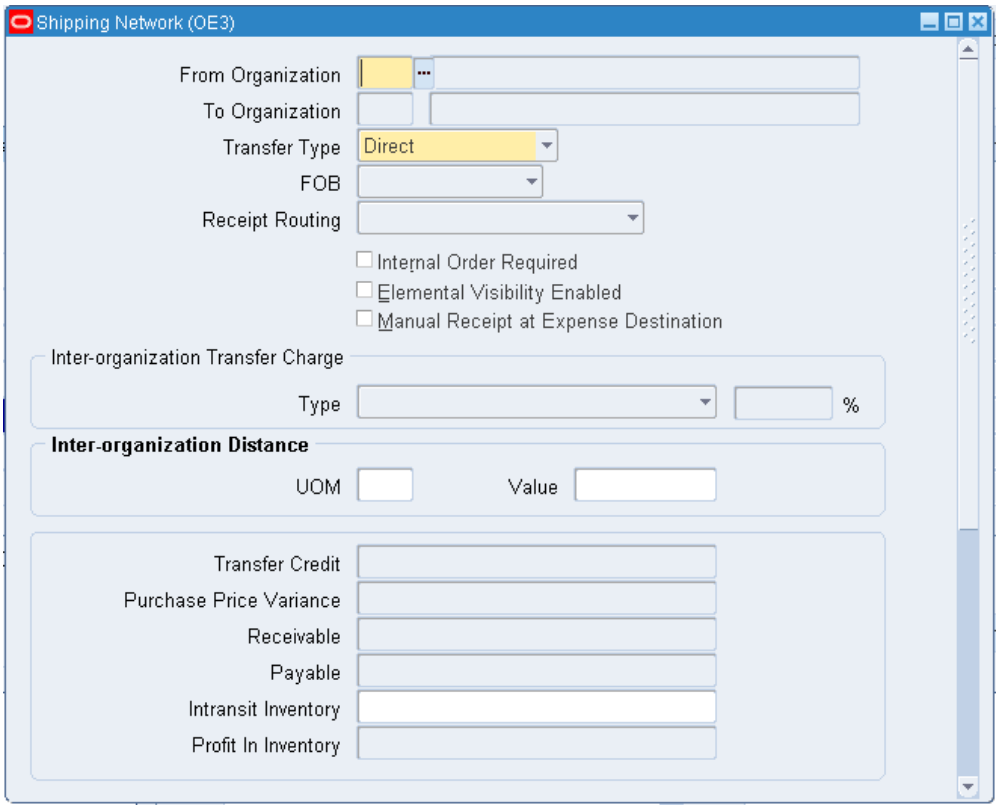
6. Select a **Variance** account for a Chargeable Subcontracting relationship to capture and track Purchase Price Variance of outsourced assembly receipts separately. Subcontracting Variance account set up on the Shipping Networks form will not be applicable for Buy/Sell.

7. Select an **Offset** account that is used for reducing the outsourced assembly on-hand quantity by miscellaneous issues, and is part of simulation. See the Subcontracting Process chapter for additional details.

8. Choose Open to view details in the Shipping Network window for a selected line.



9. If you choose New, then the Shipping Network window appears and you can enter additional network details.



10. Save your work.

> **Note:** At any point of time, an OEM can either have a Buy/Sell or a Chargeable Subcontracting relationship with a particular MP. However, on the other hand, an OEM can outsource the same assembly to multiple Manufacturing Partners by having either Chargeable or Buy/Sell relationship

Defining Sourcing Rules

Sourcing rules and bills of distribution determine the movement of material between organizations. These organizations include suppliers, manufacturers, and distribution facilities. You must define sourcing rules and assignments for the OEM and the MP organizations for planning purposes:

- In the OEM organization, define the sourcing rules to Buy components from the RMS, if the OEM procures components from an external supplier, and to Buy outsourced assemblies from the MP
- In the MP Organization, define the sourcing rules to Buy components from the

OEM, and Make assembly at the MP

Advanced Supply Chain Planning (ASCP) creates Make or Buy planned orders based on the sourcing rules.

For additional sourcing rules setup information, see: Defining Sourcing Rules, *Oracle Purchasing User's Guide* and the Oracle Master Scheduling/MRP and Oracle Supply Chain Planning User's Guide.

Defining Netting Agreements

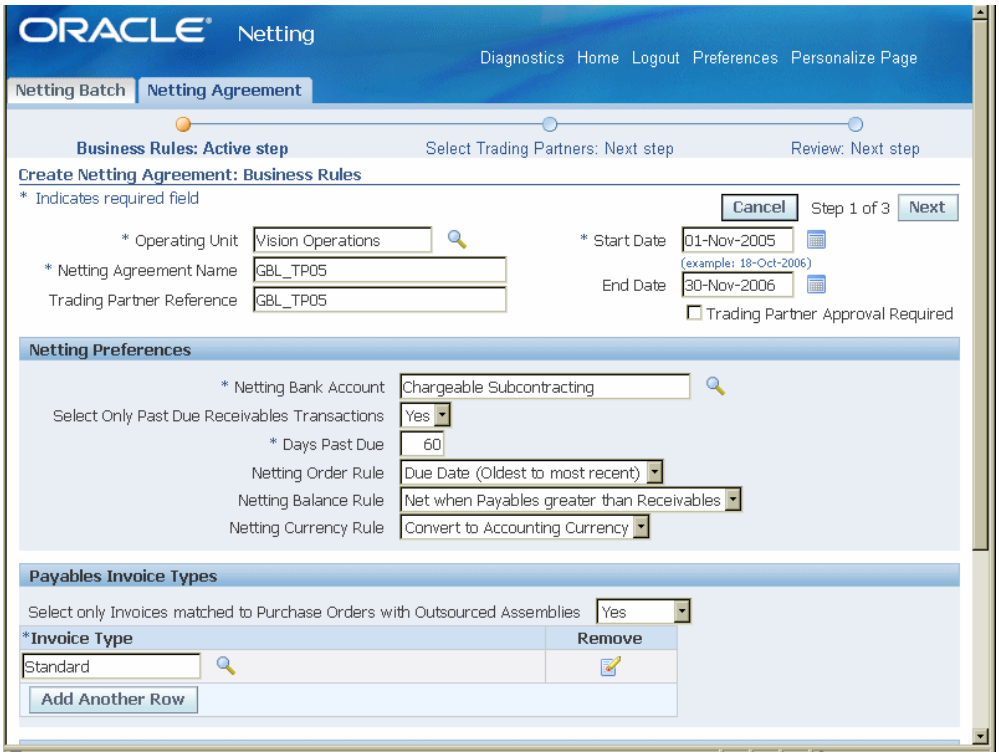
Netting agreements control how trading partners calculate net payables and receivables transactions. You must set up netting agreements to enable netting calculations for receivables invoices for components and for payables invoices for assemblies.

Note that while defining netting agreements is mandatory for Chargeable Subcontracting, it is optional for Buy/Sell Subcontracting.

For additional Subcontracting Netting Agreement information, see: Netting Agreement, *Oracle Payables User's Guide*.

To define netting agreements:

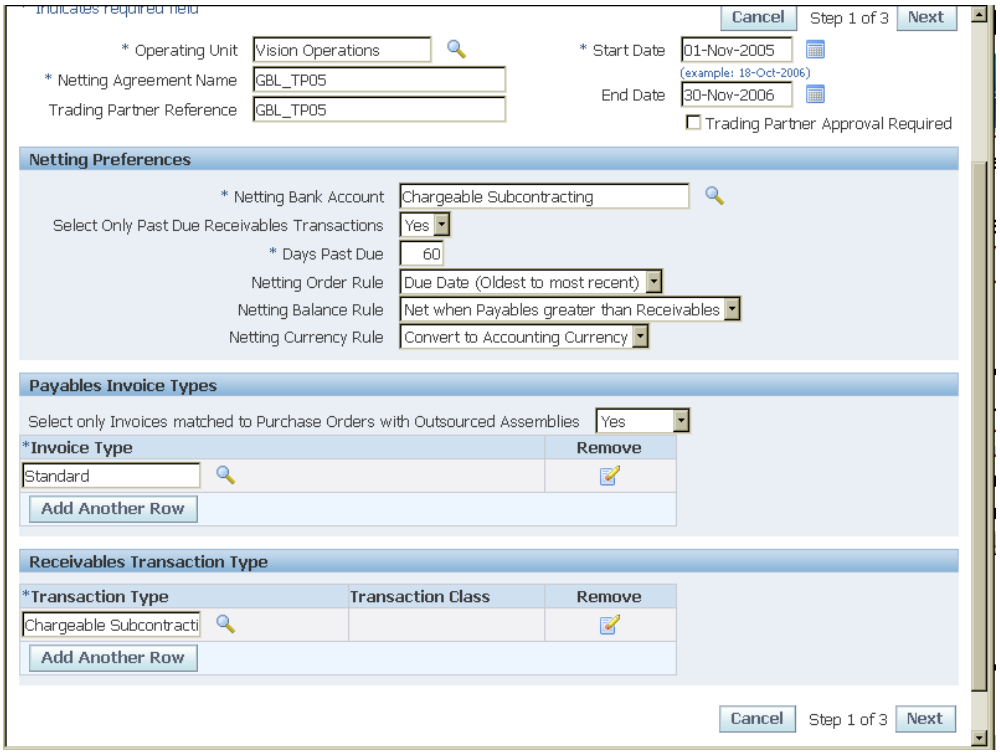
1. From the Payables responsibility, navigate to the Netting page.
2. Define the netting balance rule as Net When Payables Greater than Receivables. This setting ensures that the OEM always pays the added value to the MP.



3. In the Payable invoice type, set the option Select only Invoices matched to Purchase Orders with Outsourced Assemblies to Yes. This setting ensures that only payable invoices of outsourced assembles are included in the netting process. This option is available only when the Enable Subcontracting profile is set to Yes.

4. Set the Receivables Transaction type to be the same as the invoice source in the Order Management transaction type. Receivable transactions stamped with source are considered for netting.

5. Under Trading partners, enter the MP as both customer and supplier.



6. Save your work.

3

Subcontracting Process

This chapter covers the following topics:

- Subcontracting Planning
- Subcontracting Process Execution
- Subcontracting Concurrent Programs
- Interlock Manager
- Reconciliation Manager
- Auto Receive Components
- Process Receiving Transactions
- Processing Logic

Subcontracting Planning

The following sections describe the Subcontracting planning processes.

> **Note:** Chargeable Subcontracting and Buy/Sell Subcontracting share the same subcontracting planning process.

Overview

In the Subcontracting solution, Advanced Supply Chain Planning (ASCP) plans the component requirements in both OEM and MP organizations, and uses organization definitions (customer supplier associations) and sourcing rules defined as a part of the subcontracting setup steps. ASCP nets the demand and supply and creates planned orders for the components and assemblies in both the OEM and MP organizations. The setup for ASCP is the same as those of the standard planning setup for items. No special setups are required for subcontracting.

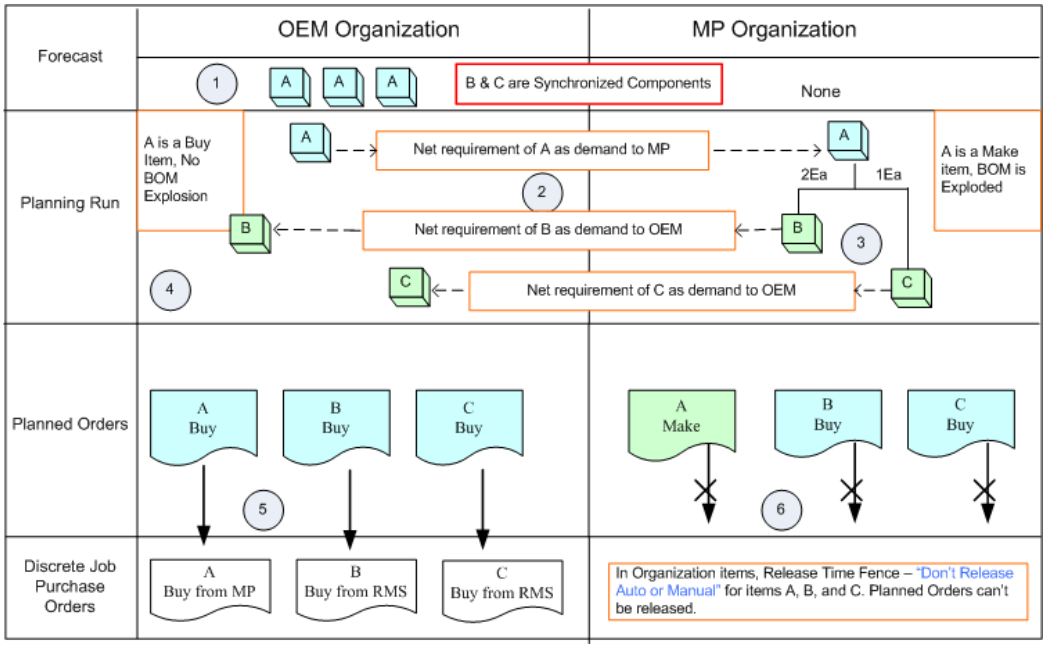
The steps required to set up and run ASCP are summarized as follows:

1. Add OEM and MP organizations to the planning instance.
2. Run collections and transfer data (items, sourcing rules, demand, supply, and so on) to the planning instance.
3. Define Organization security to run the plans for the OEM and MP organizations.
4. Define forecast sets for outsourced assembly if the outsourced assembly is an independent demand item. Otherwise, no forecast set definition is required.
5. Create and run the supply chain plans.
6. View the newly created planned orders by using the Planner Workbench.

For more detailed planning setup, refer to the *Oracle Advanced Supply Chain Planning User's Guide*.

Outsourced Assembly with Synchronized Components

In this scenario, the outsourced assembly is A and its components, B and C, are synchronized components.



The Planning process starts when:

1. The forecast is defined for an outsourced assembly in the OEM organization, if the outsourced assembly A is an independent demand item. If A is a dependent demand item, the demand comes from its parent assembly.

2. The planning run considers the forecast or dependent demand of A, calculates the net requirements of A in the OEM organization, and creates buy a planned order for assembly A in the OEM organization. A is a **buy** item and is sourced from MP organization, based on the sourcing rule and Organization Supplier customer associations. Therefore, the planned order demand of A in the OEM organization is transferred to the MP organization as demand of A.

3. In the MP organization, A is a **make** item, demand is netted, and a make planned order is created for Assembly A. When the BOM is exploded, components B and C requirements are calculated, netted, and buy planned orders are created. Since these components are sourced from the OEM organization (based on the sourcing rules, supplier and site associations of the OEM organization), the buy panned order demand for components B and C is transferred to the OEM organization.

4. In the OEM organization, components B and C requirements are netted because these components are sourced from RMS (based on sourcing rules). Therefore, buy planned orders are created for these components in the OEM organization.

5. In the OEM organization, buy planned orders can be transferred from Planning to Purchasing as purchase requisitions. (The release time fence is set to Null for outsourced assembly A, and components B and C in Organization Items.) Purchase orders and blanket releases are created from these purchase requisitions. Purchase orders and blanket releases created for outsourced assemblies are referred to as *subcontracting orders*.

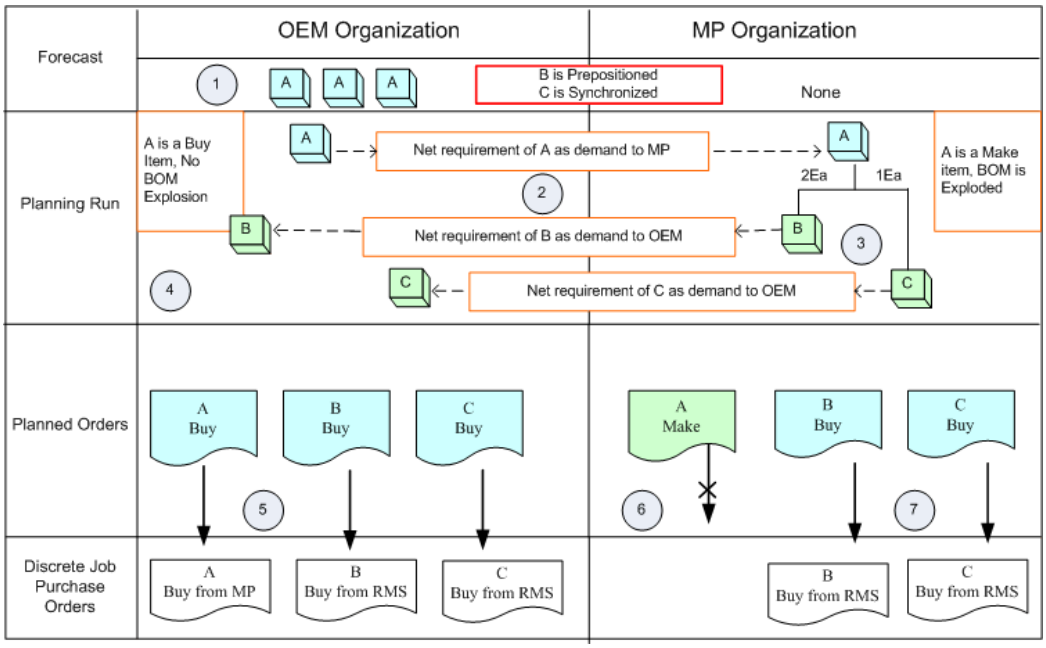
6. In the MP organization, make and buy planned orders of the outsourced assembly A and components B and C cannot be transferred as WIP jobs or purchase requisitions because the Release time fence is set to *Don't Release Auto or Manual* for all of them in the MP organization. For these planned orders, the Attribute Action is set to *None*, which prevents releasing these planned orders.

   Note: You can view planned work orders using the Planner Workbench.

The Interlock Manager concurrent request creates WIP jobs for assembly A and purchase orders for components B and C during the simulation run. This topic is discussed in detail in the execution section. These WIP jobs and purchase orders represent supply and are considered in subsequent planning runs.

Outsourced Assembly with Pre-positioned Components

In this scenario, the outsourced assembly is A and its components, B and C, are synchronized components:



The planning process is the same as that of the outsourced assembly with synchronized components. The only exception is that planned orders of pre-positioned components B and C can be transferred to Purchasing as purchase requisitions:

1. The forecast is defined for the outsourced assembly in the OEM organization, if the outsourced assembly A is an independent demand item. If A is a dependent demand item, demand comes from its parent assembly.

2. The planning run considers forecast or dependent demand of A, calculates the net requirements of A in the OEM organization, and creates a buy planned order for assembly A in the OEM organization. Since Assembly A is a buy item and is sourced from the MP organization, the planned order demand of A in the OEM organization is transferred to the MP organization as demand of A.

3. In the MP organization, A is a make item based on the organization, demand is net calculation, and a make planned order is created for Assembly A. When the BOM is exploded, the requirements for components B and C are calculated, the net calculated, and buy planned orders are created. Since these components are sourced from the OEM organization, buy planned order demand of components B and C is transferred to the OEM organization.

4. In the OEM organization, requirements for components B and C are netted because these components are sourced from RMS (based on sourcing rules). Therefore, buy planned orders are created for these components in OEM organization

5. In the OEM organization, buy planned orders can be transferred from Planning to Purchasing as purchase requisitions. (The release time fence is set to *Null* for outsourced assembly A, components B and C in organization items). Purchase

orders and blanket releases are created from these purchase requisitions. Purchase orders and blanket releases created for the outsourced assemblies are referred to as subcontracting orders.

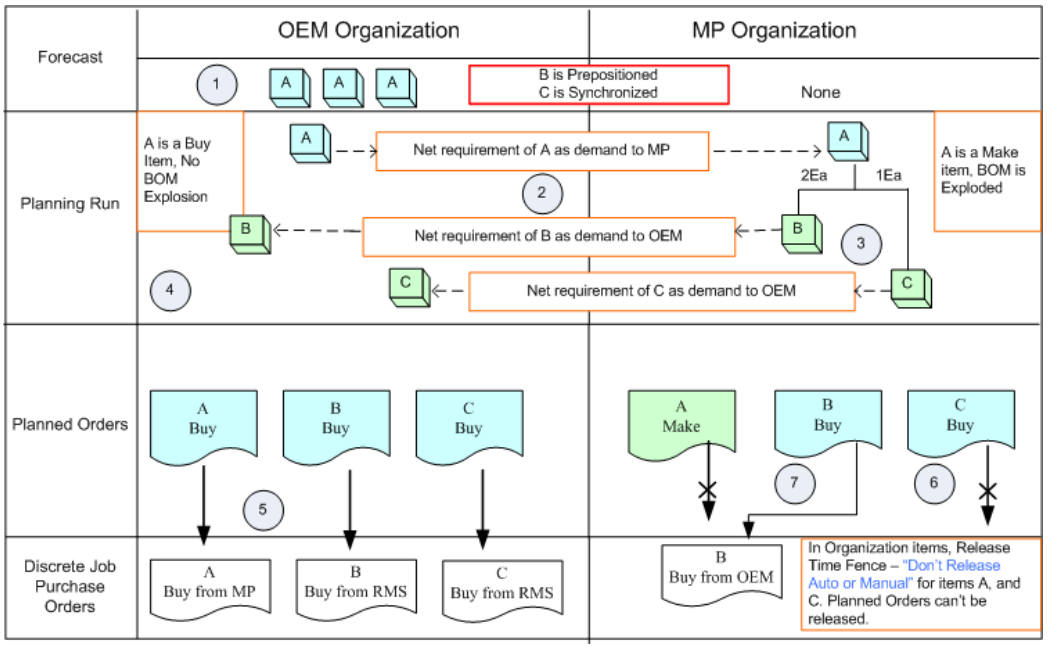
6. In the MP organization, make planned orders of outsourced assembly A can be transferred as WIP jobs as the release time fence is set to *Don't Release Auto or Manual* for the outsourced assembly in MP organization. The make planned order Attribute Action is set to *None* (it can be viewed on the planning workbench), which prevents the release of these planned orders.

7. Buy Planned orders of components B and C can be transferred to Purchasing as requisitions as the release time fence is set to *Null* for both the components in the MP organization.

The Interlock Manager concurrent request creates WIP jobs for assembly A during the interlock run. These WIP jobs represent supply, and are considered in subsequent planning runs.

Outsourced Assembly with Prepositioned and Synchronized Components

In this scenario, the outsourced assembly is A and its components, B and C are prepositioned and synchronized components respectively:



The planning process of the above process is a combination of the given processes involving synchronized components and prepositioned components:

1. The forecast is defined for the outsourced assembly in the OEM organization, if the outsourced assembly A is an independent demand item. If A is a dependent

demand item, then demand comes from its parent assembly.

2. The planning run considers forecast or dependent demand of A, calculates the net the requirements of A in the OEM organization, and creates a buy planned order for assembly A in the OEM organization. A is a buy item that is sourced from the MP organization, therefore, the planned order demand of A in the OEM organization is transferred to the MP organization as demand of A.

3. In the MP organization, A is a make item, demand is netted, and a make planned order is created for Assembly A. When the BOM is exploded, components B and C requirements are calculated, netted, and buy planned orders are created. Since these components are sourced from the OEM organization, the buy planned order demand of components B and C is transferred to the OEM organization.

4. In the OEM organization, components B and C requirements are netted, these components are sourced from the RMS (based on sourcing rules), and the buy planned orders are created for these components in the OEM organization.

5. In the OEM organization, buy planned orders can be transferred from Planning to Purchasing as purchase requisitions. Purchase orders and blanket releases are created from these purchase requisitions. Purchase orders and blanket releases created for the outsourced assembly are referred to as subcontracting orders.

6. In the MP organization, make planned orders of outsourced assembly A and Buy Planned orders of Component C cannot be transferred as WIP jobs because purchase requisitions as the Release Time Fence is set to *Don't Release Auto or Manual* in the MP organization. The Planned Order Attribute Action is set to *None* which prevents releasing these planned orders. You can use the Planner Workbench to view the planned orders.

7. Buy planned orders of components B can be transferred to Purchasing as requisitions as the Release Time Fence is set to *Null* for both the components in MP organization.

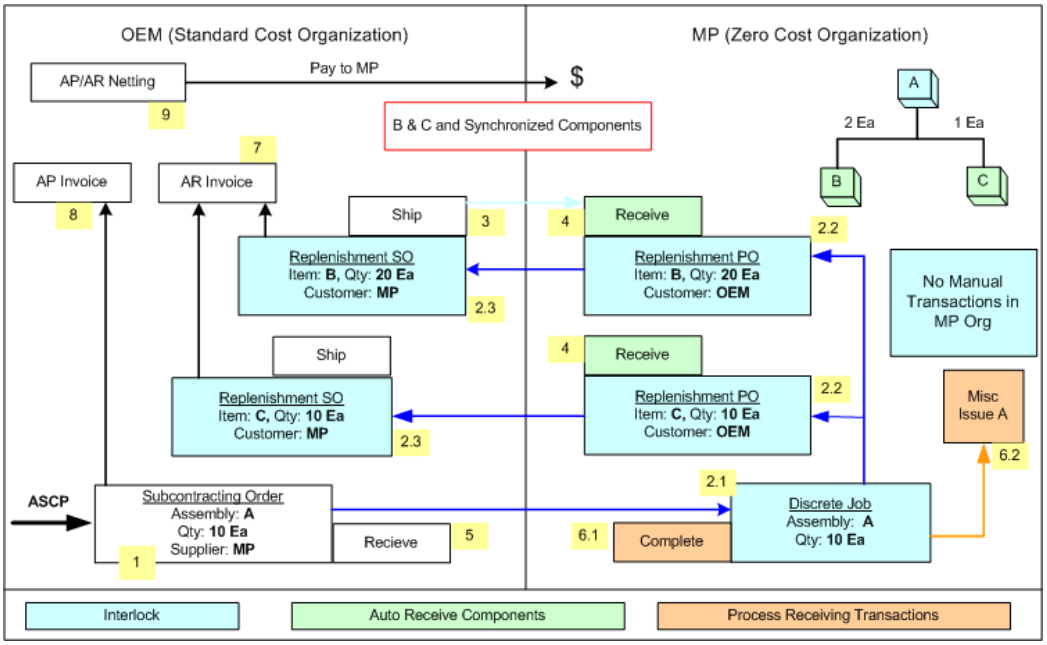
The Interlock Manager concurrent request creates WIP jobs for assembly A and replenishment purchase orders for component B during the interlock run. These WIP jobs and replenishment purchase orders represent supply, and are considered in the subsequent planning runs.

Subcontracting Process Execution

The Subcontracting execution process begins with the subcontracting orders for the outsourced assemblies and the replenishment purchase orders for the components. The following sections detail the process steps for each scenario.

Outsourced Assembly with Synchronized Components

In this scenario, the execution starts with the subcontracting orders being transferred from ASCP. You can also create subcontracting orders manually.



1. The execution process starts with the subcontracting order of Assembly A. These subcontracting orders are the standard purchase orders and blanket releases, and in the shipments, the outsourced assembly attribute is set to Yes, indicating that the purchase order is created for the outsourced assembly.

2. Interlock Manager picks up the subcontracting orders which were not processed in the previous run of the subcontracting orders and performs the following:

   - 2.1. The Interlock Manager creates a discrete job for the subcontracted order quantity for simulating the manufacturing in the MP organization.

   - 2.2. The OEM supplies components B and C which are required to manufacture this assembly . Since B and C are synchronized components, (meaning that these components need to be shipped along with the order), the Interlock Manager creates a replenishment purchase order for the components with the supplier associated with the OEM organization. The replenishment purchase order created in the MP organization denotes the supply and is considered by ASCP as supply.

   - 2.3. The Interlock Manager also creates a replenishment sales order for shipping the components in the OEM for the corresponding replenishment purchase order in the MP organization. Replenishment sales orders created in the OEM

will always have reference to its corresponding purchase order in the MP organization. Order type is retrieved from shipping networks (From Org: OEM and To Org: MP). The subcontracting default order type and the components price are picked from price lists associated with the customer site in the sales order (defined in the price lists setup). Sales orders are always created with a booked status and are ready for shipment. These replenishment sales orders are allocated to the respective subcontracting orders to meet the component requirements for manufacturing the assembly at the MP's site. (The Allocations Table in the Subcontracting Data Model holds this information for tracking.)

3. Replenishment sales orders created for the subcontracting components are used for shipping the components like any other standard sales orders.

4. The Auto Receive Components concurrent request picks up these shipments in the OEM organization, and creates receipts in the MP organization against the corresponding purchase order. Sales orders with shipped date and the in-transit lead time (defined in the shipping networks default shipping method) that is less than or equal to the current date, are automatically received to simulate the receipts in the MP organization.

5. The MP manufactures the components and ships the manufactured assemblies to the OEM, and the OEM receives these receipts like other purchase order receipts.

6. The Process Receiving Transactions concurrent request picks up these receipts in the OEM organization and performs the following:

   - 6.1. Completes the WIP job for the assembly. When the WIP job is completed , components are backflushed, and the inventory is reduced in the MP organization. However, the completed assembly in the MP remains in inventory.

   - 6.2. Reduces the inventory of assemblies (completed through discrete jobs) in the MP organization by performing by miscellaneous issues, to maintain the accuracy of the inventory records. This is because, the subcontracting order of the assembly is normally received in the OEM after the MP manufactures the assembly and sends it to the OEM.The Offset account defined in shipping networks is used for creating miscellaneous issues.

7. AR invoices are created for those components shipped to the MP.

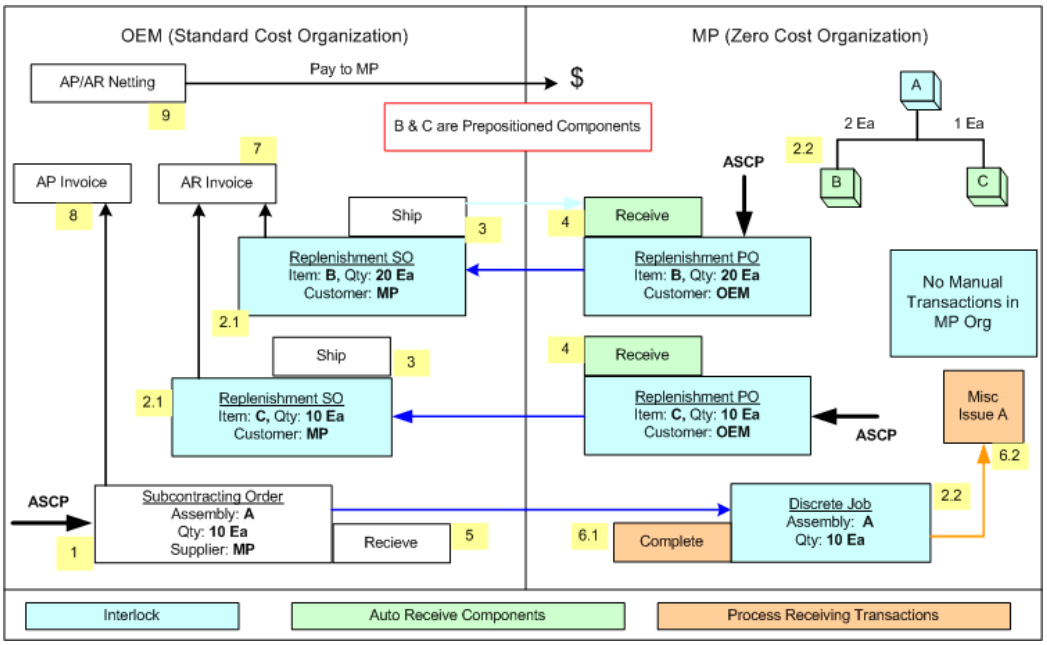
8. AP invoices are created for subcontracting orders received from the MP.

9. In Payables, based on the Netting agreement, AP and AR invoices are netted and payment is made to the MP.

Note: This step is optional for Buy/Sell Subcontracting.

Outsourced Assembly with Prepositioned Components

In this scenario, process execution begins with the subcontracting orders for the outsourced assembly and the replenishment purchase orders for the prepositioned components transferred from ASCP. You can also create subcontracting orders for outsourced assemblies and replenishment purchase orders for prepositioned components manually.



1. The execution process begins with the subcontracting order of the Assembly A and replenishment purchase orders of the prepositioned components. Subcontracting orders are the standard purchase orders and blanket releases, and if the shipments for the outsourced assembly are set to Yes, then the purchase order is created for the outsourced assembly. Replenishment purchase orders are the standard purchase orders or blanket releases created to simulate how MP procures components from the OEM.

2. Interlock Manager concurrent request selects:

    - 2.1. Replenishment purchase orders of the components in the MP, and creates corresponding replenishment sales orders in the OEM for shipment of components to the MP. Replenishment sales orders that are created in the OEM always reference their associated purchase orders in the MP organization. The order type is retrieved from default order type of the shipping network (From

Org: OEM and To Org: MP), and the components price is retrieved from the price lists associated with the customer site in the sales order. Sales orders are always created with booked status and are ready for shipment.

- 2.2. Interlock Manager then picks up the subcontracting orders that were not processed in the previous run of the subcontracting orders and creates a discrete job for the subcontracted order quantity for simulating the manufacturing in the MP organization. For manufacturing this assembly, components B and C are required in the MP organization, and the OEM must supply those materials to the MP. Since B and C are prepositioned components, meaning that components would have been shipped ahead of requirements, Interlock Manager does not create replenishment purchase orders or sales orders for these components. Instead, it looks for previously created and unallocated sales orders, and then makes allocations to these requirements. If unallocated replenishment sales orders are insufficient for the subcontracting order requirements, then Interlock Manager allocates to the available quantity and leaves the remaining quantity unallocated. (This situation should not happen if replenishments are available). If replenishments are available, then Interlock Manager attempts to allocate them in subsequent interlock runs.

3. Replenishment sales orders created for the subcontracting components are used for shipping the components like any other standard sales orders.

4. The Auto Receive Components concurrent request picks up these shipments in the OEM organization and creates receipts against the associated purchase orders in the MP organization. Sales orders with shipped date and in-transit lead time (defined in the shipping networks default shipping method) that is less than or equal to the current date will be automatically received to simulate the receipts in the MP organization.

5. The MP manufactures components and ships the manufactured assemblies to the OEM, and the OEM receives these receipts the same as other purchase order receipts.

6. The Receiving Transactions concurrent request picks up these receipts in the OEM organization and:

   - 6.1. Completes the WIP job for the assembly. When the WIP job is completed, components are backflushed, and the inventory is reduced in the MP organization. However, the completed assembly in the MP remains in inventory.

   - 6.2. Reduces the inventory of assemblies (completed through discrete jobs) in the MP organization by performing miscellaneous issues, for maintaining the accuracy of the inventory records. This is because, the subcontracting order of the assembly is normally received in the OEM after the MP manufactures the

assembly and sends it to the OEM. The Offset account defined in shipping networks is used for creating miscellaneous issues.

7. Account Receivables invoices are created for the components shipped to the MP.

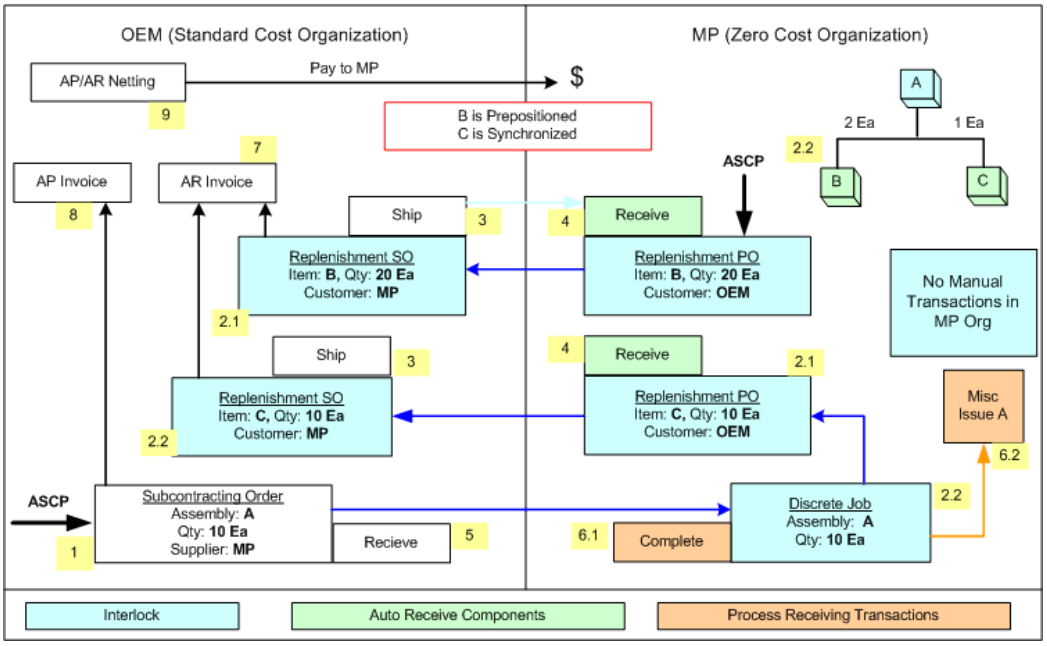
8. Accounts Payables invoices are created for the subcontracting orders received from the MP.

9. In Payables, based on the Netting agreement, AP and AR invoices are netted and payment is made to the MP.

   Note: This step is optional for Buy/Sell Subcontracting.

Outsourced Assembly with Prepositioned and Synchronized Components

In this scenario, execution begins with the subcontracting orders of the outsourced assembly and replenishment purchase orders of the pre-positioned components being transferred from ASCP. Also, you can manually create subcontracting orders for the outsourced assembly and replenishment purchase orders for the pre-positioned components.



1. The execution process begins with the subcontracting order for assembly A and the replenishment purchase order for prepositioned component B.

2. The Interlock Manager concurrent request:

- 2.1 Picks up the replenishment purchase for component B in MP and creates associated replenishment sales orders in OEM for shipment to MP.

- 2.2 Interlock Manager then picks up the subcontracting orders that were not processed in the previous run, and creates a discrete job for the subcontracting order quantity. To manufacture this assembly, MP needs components B and C, and OEM must supply those materials to MP.

  Because Component B is a prepositioned component, Interlock Manager looks for available replenishment sales orders and attempts to allocate them to satisfy the subcontracting order requirement.

- 2.3. Because component C is a synchronized component, Interlock Manager creates replenishment purchase order for this component.

- 2.4. Interlock Manager creates a replenishment sales order for component C with its associated replenishment purchase order in MP, and then allocates the sales order to the subcontracting order requirements.

  Note: Replenishment sales orders are created for shipping the components like other sales orders.

3. The Auto Receive Components concurrent request picks up these shipments in OEM and creates receipts in MP using the associated purchase order. Sales orders whose shipped date and In transit Lead time (defined in the shipping networks default shipping method) are less than or equal to the current date will be automatically received to simulate the receipts in MP organization.

4. MP manufactures the components and ships the manufactured assembly to OEM. OEM receives these receipts like other purchase order receipts.

5. The Process Receiving Transactions concurrent request picks up these receipts in OEM and:

   - Completes the WIP job for the assembly. When the WIP job is completed, components are backflushed, and the inventory is reduced in the MP organization. However, the completed assembly in the MP remains in inventory..

   - 6.2. Reduces the inventory of assemblies (completed through discrete jobs) in the MP organization by performing miscellaneous issues, for maintaining the accuracy of the inventory records. This is because, the subcontracting order of the assembly is normally received in the OEM after the MP manufactures the assembly and sends it to the OEM. The Offset account defined in shipping networks is used for creating miscellaneous issues..

The completed inventory of the assembly in MP is reduced by miscellaneous issues which causes the inventory figures in the MP organization to be accurate. The Offset account defined in shipping networks is used to create miscellaneous issues.

6. Accounts Receivables invoices are created for components shipped to MP.

7. Accounts Payables invoices are created for subcontracting orders received from MP.

8. In Payables, based on the Netting agreement, AP and AR invoices are netted and payment is made to the MP.

   Note: This step is optional for Buy/Sell Subcontracting.

Subcontracting Concurrent Programs

These sections describe the Subcontracting concurrent programs:

- Interlock Manager
- Reconciliation Manager
- Auto Receive Components
- Process Receiving Transactions

Interlock Manager

Interlock Manager is a concurrent request that should be run immediately after running the ASCP plan and transferring the planned orders for outsourced assemblies and subcontracting components to Purchasing. Interlock Manager picks up the subcontracting orders and replenishment purchase orders and performs the following:

- Creates discrete jobs for assemblies and replenishment purchase orders for synchronized components in the MP organization.
- Creates replenishment sales orders for pre-positioned and synchronized components in the OEM organization.
- Allocates the replenishment sales orders to the corresponding subcontracting order to meet the component requirements at the partner's facility.

Attributes of Interlock Manager

Selection of Subcontracting Orders for Processing

Interlock Manager processes the subcontracting orders only if the following conditions are satisfied:

- The MP organization cannot be WMS, Process, or EAM enabled.
- Outsourced assemblies or components cannot be lot and serial controlled in the MP organization.
- Inventory periods are open in the MP organization.
- WIP parameters are defined in the MP organization.
- **Allocations**

  allocations refer to the designation of replenishment sales orders to the respective subcontracting orders to meet the component requirements for manufacturing the assembly at the MP's site. Allocations are required for the proper planning, execution, and simulation of the manufacturing process at an MP site. In Chargeable Subcontracting, although the components are shipped, the OEM retains ownership. When the OEM receives assemblies from MP, it is assumed as though the components are brought back from the MP when the OEM receives the assemblies. To support this practice, the sales price of the components shipped or to be shipped needs to be the same as the current list price. Also, the purchase price of the assembly includes the sales price of the components. Including the sales process is necessary in order to track the component consumption at the MP by the sales price of the components.

When Interlock Manager makes allocations, it validates based on two conditions:

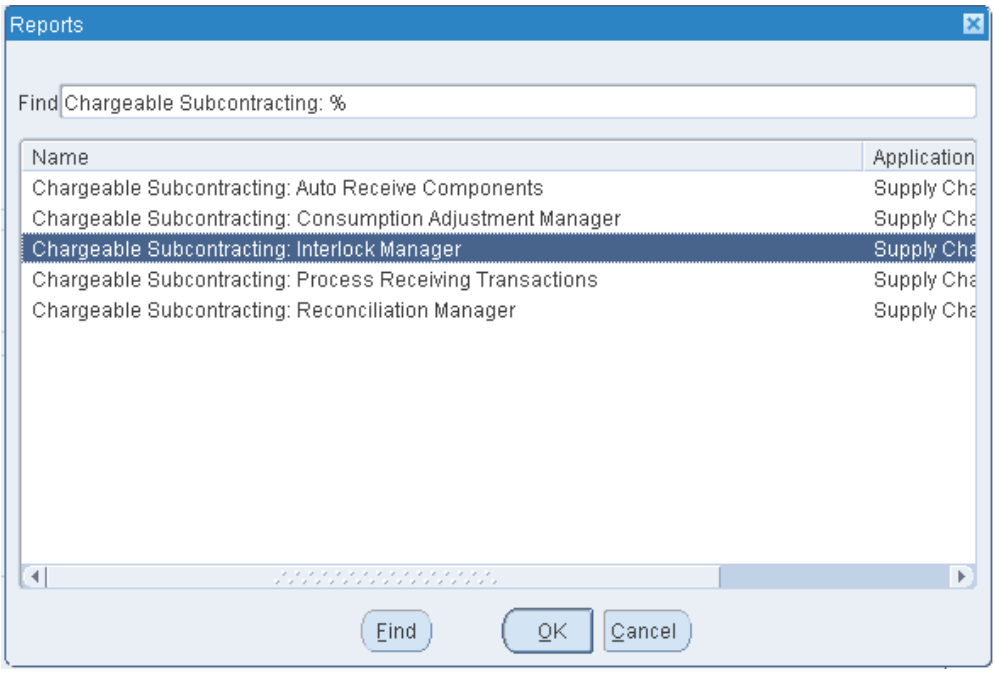
- Shipped components are available in the MP when the assembly is ready to be manufactured (replenishment sales order shipment date and the in transit lead time from the OEM to the MP is less than the discrete job start date).
- For Chargeable Subcontracting, sales price of the components shipped or to be shipped is the same as the current list price.

When both conditions are satisfied, Interlock Manager allocates the replenishment order to the subcontracting order. For synchronized components, replenishment sales orders are created and automatically allocated at the same time. For prepositioned components, components are shipped in advance of requirements to ensure that the sales price of the components shipped is allocated at the correct price for proper accounting.

To run Subcontracting: Interlock Manager

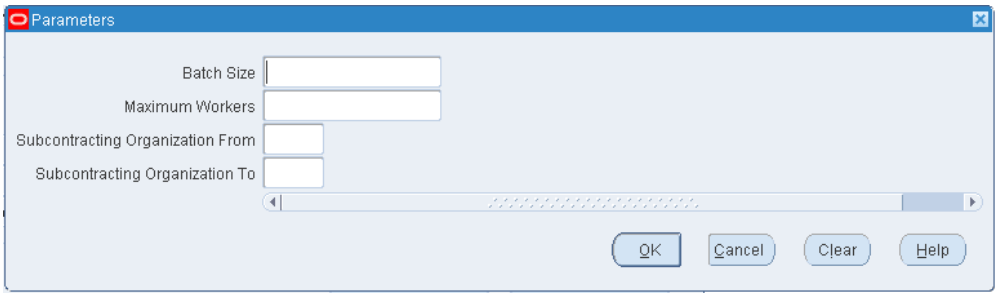
1. From the Subcontracting responsibility, navigate to the Requests window.
2. In the Name field, select Subcontracting: Interlock Manager.

3. Click OK. The Parameters window appears.



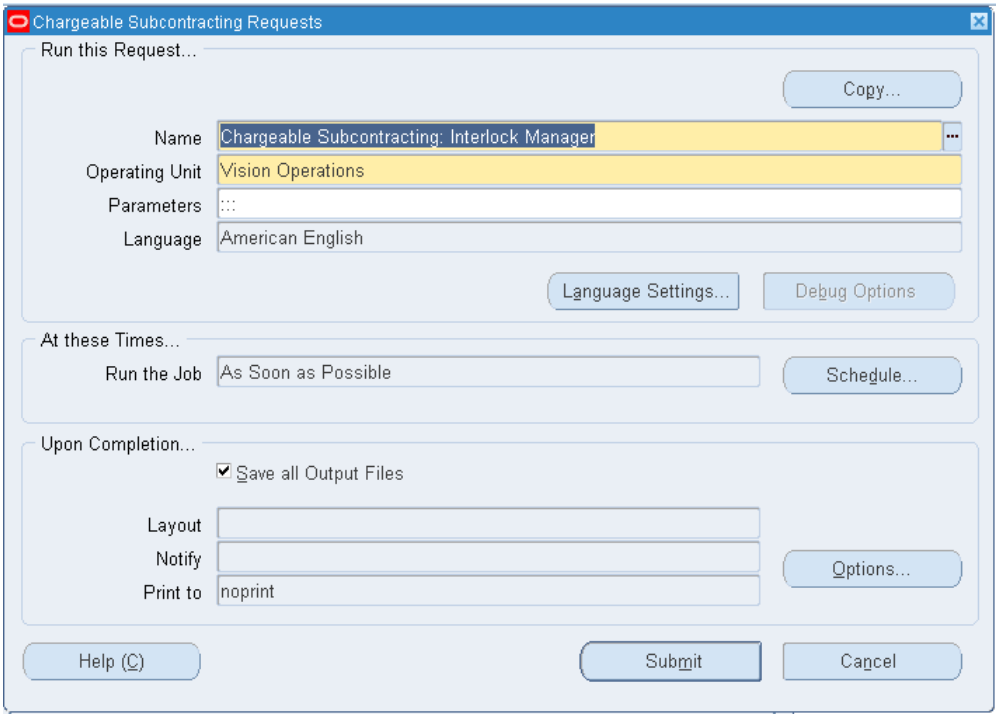
4. Enter these optional parameters:

   - Batch Size
   - Maximum Workers
   - Subcontracting Organization From
   - Subcontracting Organization To



5. Click OK.

6. Click Submit in the Subcontracting Requests window to run Interlock Manager.



Reconciliation Manager

The Reconciliation Manager concurrent request processes the change management of subcontracting orders. It identifies changes to the subcontracting orders and updates the discrete jobs, replenishment purchase orders, and replenishment sales orders.

These changes to subcontracting orders are considered for reconciliation:

- Subcontracting order quantity
- Promise or need-by dates
- Both quantity and dates
- Replenishment sales orders
- Cancellations

Change in the Subcontracting Order Quantity

Reconciliation Manager considers the change in the subcontracting order quantity and any increase or decrease in the quantity of the discrete job associated with the subcontracting order in the MP organization.

- If the subcontracting order is increased:

    - For synchronized components, new replenishment purchase orders and sales orders are created for any additional quantity for shipment of additional material from OEM to MP and then they are allocated to the subcontracting order.

    - For pre-positioned components, if sufficient unallocated replenishment quantity currently exists, then additional allocations will be made for the increased (additional) subcontracting order requirements. If the unallocated replenishment quantity is not sufficient, then no new replenishments will be created because by definition, these components are stored in advance and shortages do not occur; therefore, reconciliation does not take any action.

- If the subcontracting order quantity is decreased:
    - For synchronized components, allocations are decreased, leaving some unallocated replenishments. These replenishments are allocated to other requirements. Interlock Manager or Reconciliation Manager considers such unallocated replenishments of synchronized components (similar to prepositioned components), and then creates new replenishments.

    - For prepositioned components, allocations are decreased.

Changes to the Promise or Need-by Dates

Reconciliation Manager considers these changes to the promise or need-by dates:

- If the date is moved forward:
    - The discrete job associated with the subcontracting order is moved forward.

    - The subcontracting orders (replenishment purchase orders and replenishment sales orders for the components) and allocations are not changed.

- If the date is moved backwards:
    - The discrete job associated with the subcontracting order is moved backwards. If the new date is less than or equal to the current date, then the current date is set as the new date.

    - For synchronized components, associated replenishment purchase orders and replenishment sales orders are moved backwards. If the new date is less than the current date, then the date is moved back to the current date. The synchronized components are allocated to the subcontracting orders. Allocations are not changed.

    - For prepositioned components, allocations are removed and then new allocations are made based on the new due date.

Simultaneous Changes to Quantity and Dates

Reconciliation Manager:

1. Reconciles date changes.
2. Makes changes to the order quantity.

Changes in the Replenishment Sales Orders

Reconciliation Manager considers these changes to replenishment sales orders:

- Short shipments of the replenishment sales orders
- Replenishment sales order returns
- Over shipments
- Backorder sales orders
- Cancellation of replenishment sales orders

Interlock Manager considers changes to replenishment sales order quantities and dates. Interlock Manager:

- Changes the allocations so that the new shipment quantity is reflected in the subcontracting order requirements.
- Creates new replenishment sales orders, when applicable.

Auto Receive Components

The Subcontracting: Auto Receive Components concurrent request performs the following:

- Automatically receives subcontracting components into supplier organizations after the predefined in-transit lead time.
- Selects the shipped replenishment sales orders in the OEM organization based on the MP organization specified in the concurrent request parameters window.
- Creates component receipts for the corresponding purchase orders in the MP organization.
- Selects shipped sales orders that are expected to be received in the MP organization after considering the in-transit lead time defined in the shipping networks.
- Selects shipping transactions against subcontracting replenishment sales orders in the OEM organization after considering in-transit lead time defined in the shipping

networks.

- Creates receipts against corresponding replenishment purchase orders in the supplier organizations.

You can run this request daily, weekly, or periodically to create receipts of subcontracting components in the supplier organizations.

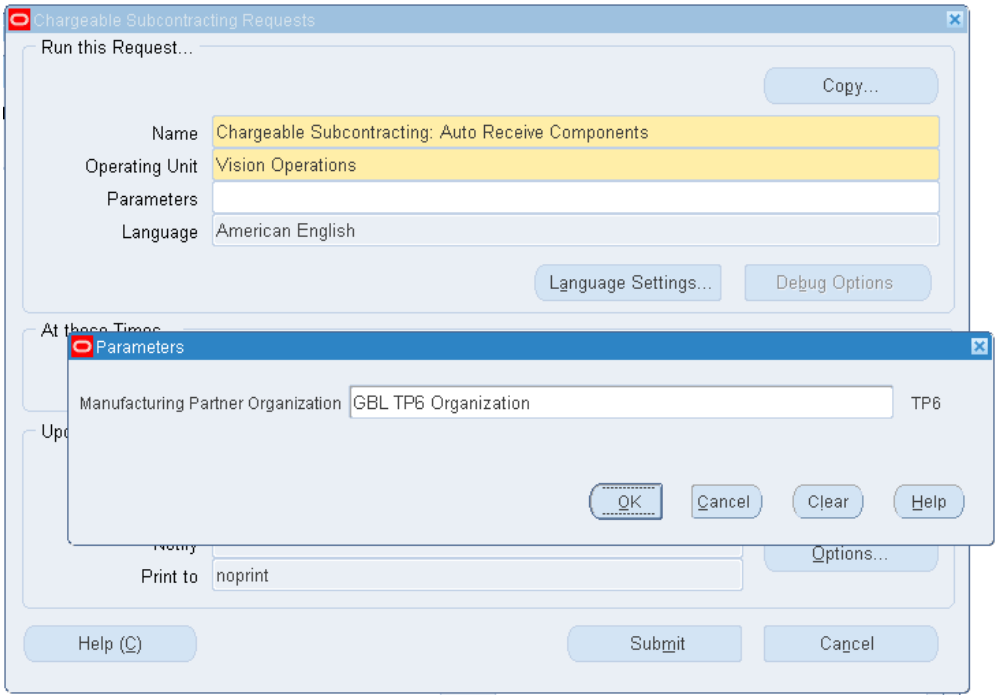
Note: You can track the status using the Subcontracting Workbench.

To run the Auto Receive Components concurrent request:

1. From the Subcontracting responsibility, navigate to the Subcontracting Requests window.

2. Select Subcontracting: Auto Receive Components in the Name field.

3. Click OK. The Parameters window appears.



4. Enter the Manufacturing Partner Organization and click OK.

5. Click Submit to run the request.

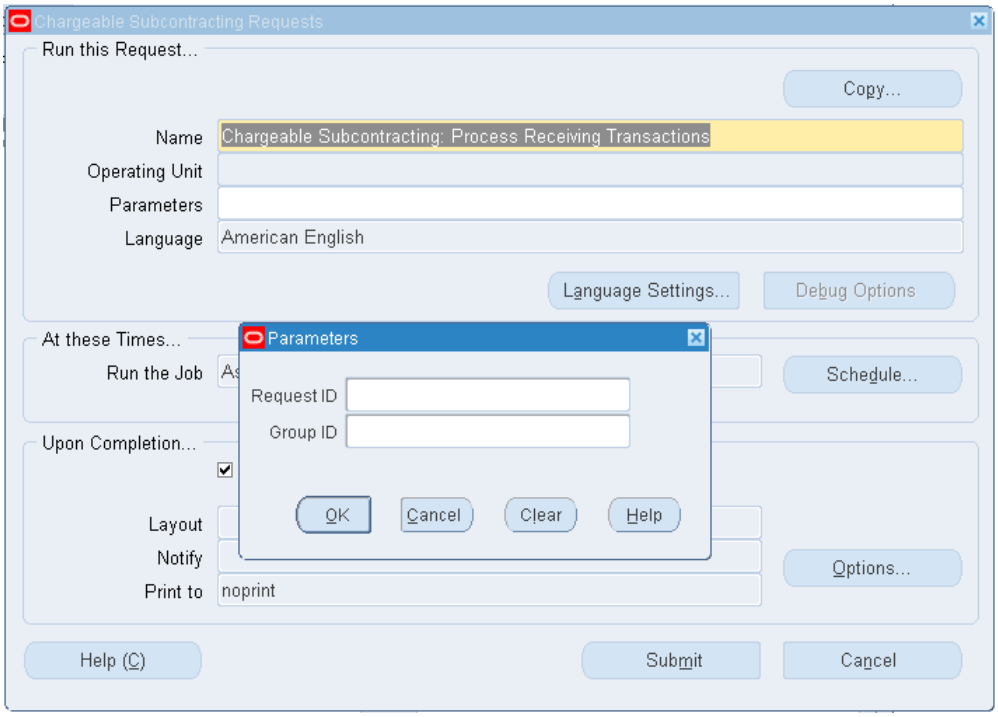
Process Receiving Transactions

The Subcontracting: Process Receiving Transactions concurrent request:

- Selects assembly receipts in the OEM organization and initiates WIP job completions and miscellaneous issues to adjust inventory in the MP organization.
- Processes assembly returns, receipts, return corrections of assemblies, and RMA receipts for components in the OEM organization.

To run the Subcontracting: Process Receiving Transactions concurrent request

1. From the Subcontracting responsibility, navigate to the Subcontracting Requests window.
2. Select Subcontracting: Process Receiving Transactions in the Name field.
3. Click OK. The Parameters window appears.



4. Enter an optional Request ID. Valid characters are 0 through 9.
5. Enter an optional Group ID. Valid characters are 0 through 9.
6. Click OK.

7. Click Submit to run the request.

Processing Logic

The Process Receiving Transactions manager picks up the subcontracting order receipts and RMA receipts for replenishment sales orders in the OEM. Then it creates corresponding transactions in the MP organization.

Subcontracting Order Receipts

Receipts are processed only if these conditions are satisfied:

- Subcontracting order is fully allocated
- Subcontracting is not over-received

> **Tip:** The subcontracting order receipt tolerance should be zero so that it will never be over-received.

Once the above conditions are satisfied, Interlock Manager:

- Completes the WIP job of the associated subcontracting order in the MP organization and then:
  - Backflushes the components and reduces the component inventory in the MP organization.
  - Moves the completed assemblies to inventory.
- Reduces the completed WIP job quantity in the previous step by miscellaneous issue for the assembly in the MP organization. The offset account defined in the subcontracting options in the shipping network is used for these miscellaneous issues.

Subcontracting Order Returns (RTVs)

The Pickup RTV program processes the subcontracting order transactions in the OEM organization and creates the following transactions in the MP organization:

- Increases the inventory of outsourced assembly in the MP organization using miscellaneous receipts, which represent the return of assemblies from the OEM.
- Creates assembly returns (WIP returns) in the MP organization for the associated discrete jobs, which:
  - Reduces the assembly inventory in the MP organization for returns to the shop floor.

- Reverses backflushed component transactions.

Subcontracting Order Receipt and RTV Corrections

The Process Receiving Transactions concurrent request handles receipt and return corrections for subcontracting orders in the OEM. It processes them as WIP completions or WIP returns in the MP organization.

Replenishment Sales Order Returns (RMA Returns)

The Process Receiving Transactions concurrent request executes the following for RMA returns associated with replenishment sales orders:

- Creates RMAs with references to the original replenishment sales order shipped to the MP organization. Otherwise the RMAs are not considered for processing.

- Selects the RMAs linked to the replenishment sales orders and then creates RTV transactions for the corresponding replenishment purchase order in the MP organization.

These steps are performed for accurate simulation of inventory at the MP site.

4

Subcontracting Workbench

This chapter covers the following topics:

- Overview
- Viewing Subcontracting Orders
- Viewing Replenishment Orders
- Consumption Adjustments
- Processing Consumption Adjustments

Overview

The Subcontracting Workbench User Interface enables you to view subcontracting orders and replenishment orders and helps you take appropriate actions for better control of the subcontracting process. Use the workbench to:

- View subcontracting orders
- View replenishment information for components
- Create manual shipment allocations
- Adjust subcontracting component consumptions

Related Topics

Viewing Subcontracting Orders, page 4-1Viewing Replenishment Orders, page 4-5

Viewing Subcontracting Orders

On the Components page of the Workbench, you can search and view Subcontracting Orders by manufacturing partner, or by an assembly. If you are using Project Manufacturing, then you can also search and view the subcontracting orders by project.

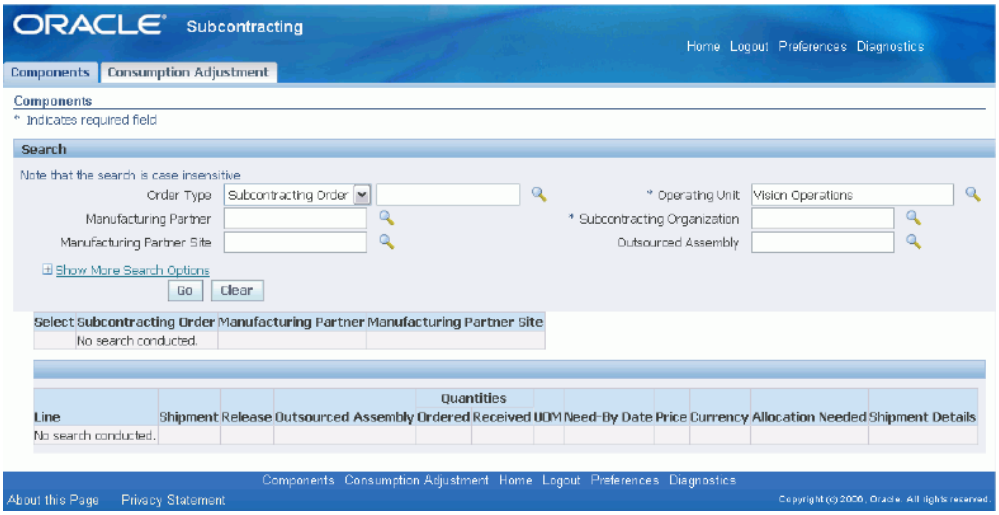
These subcontracting orders are regular purchase orders and releases created for outsourced assemblies. You can view header details in the Workbench.

Subcontracting order lines contain details of the outsourced assembly ordered through the MP.

Details of the components required for manufacturing the outsourced assembly at the MP's site can be viewed on the shipment details page.

To view subcontracting orders:

1. Navigate to the Subcontracting Workbench User Interface.



2. Select the Components tab.

3. Select the Subcontracting Order type from the list of values.

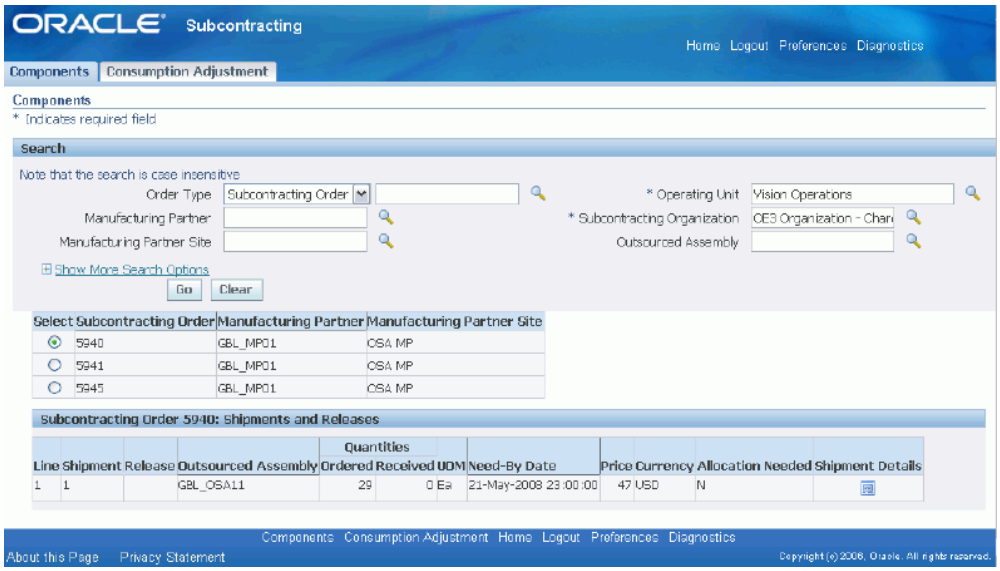
4. Enter an Operating Unit and Subcontracting Organization (required).

5. Enter additional search options as desired, and click Go.

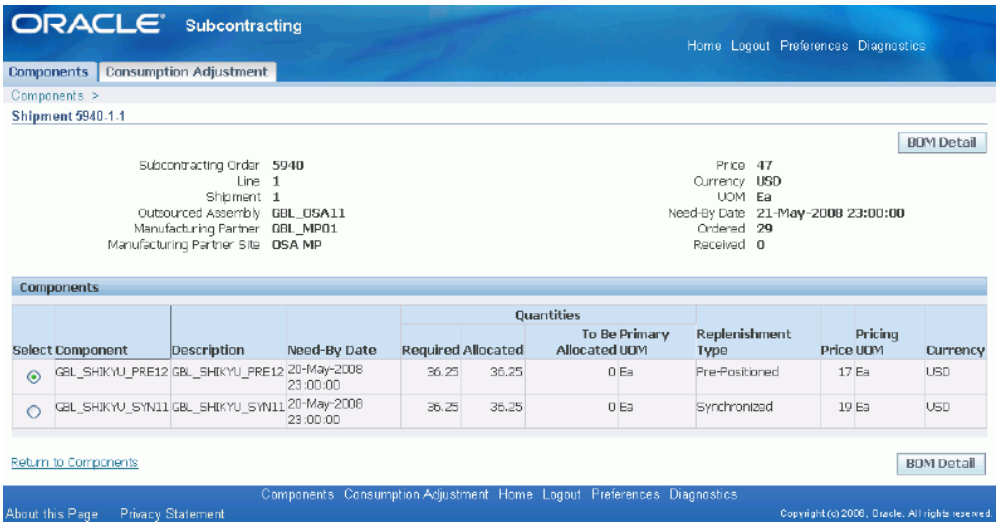
   Search parameters include:

   - Subcontracting Order and Order number, or Replenishment Order and Order number
   - Operating Unit
   - Subcontracting Organization
   - Outsourced Assembly
   - Subcontracting Order Date From and To

- Manufacturing Partner
- Manufacturing Partner Site
- Purchase Order Status
- Allocation Needed

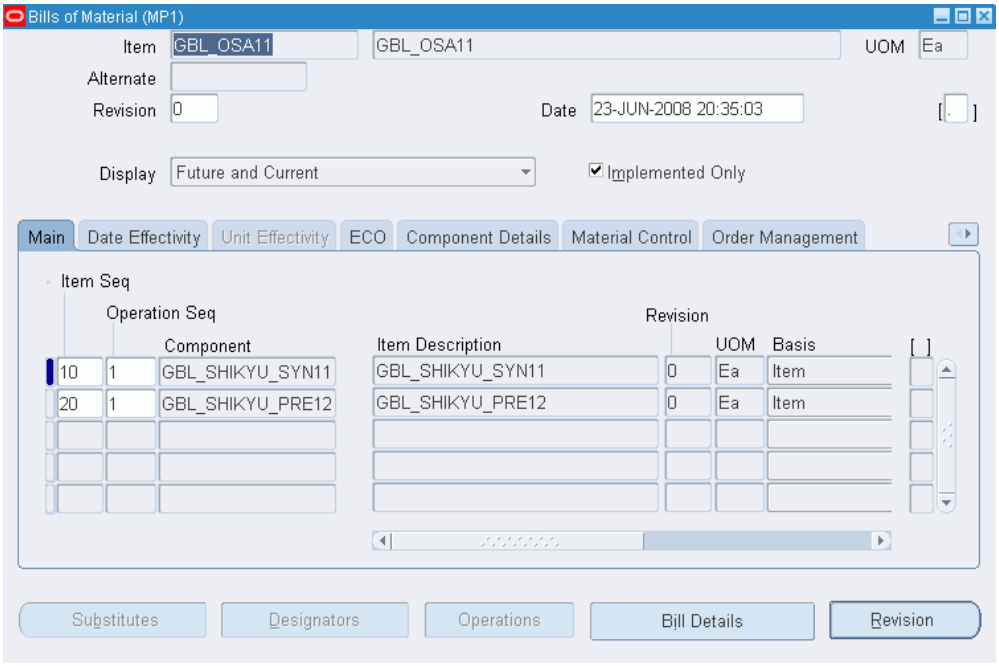


6. Click the Shipment Details icon to navigate to the shipment details page. The Shipment Details page displays the components to be shipped by the OEM to the MP for manufacturing the assembly.



This page shows the details of component requirements and allocations for manufacturing the assembly and list price (sales price) of the components at the time of creating the subcontracting order.

7. Click BOM Detail to view the current BOM details of the outsourced assembly.



The Bills Of Material window appears and displays component details. This is useful for comparing the components with the current BOM components in case the components are different from the BOM due to revision change introduced after creating the subcontracting order. You must cancel the subcontracting order and then recreate a new subcontracting order and run the Reconciliation Manager and

Interlock Manager. The new subcontracting order and components are created with the new BOM.

Viewing Replenishment Orders

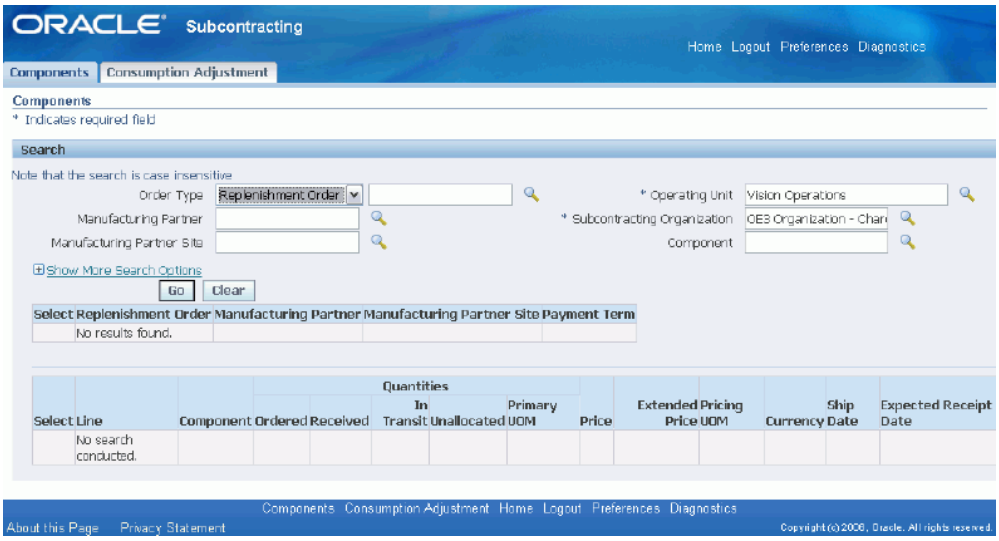
On the Components page of the Workbench, you can search and view replenishment orders created in the OEM organization for shipping components to the MP. You can search for replenishment orders by MP, by component, and by project. On the Components page:

- Search results display as replenishment order headers
- When selecting a specific order, you can view the replenishment sales order lines for shipping the components. For synchronized components, the replenishment order is allocated to one subcontracting order for the outsourced assembly. For pre-positioned components, the replenishment order is generally allocated to multiple subcontracting orders.
- Click Allocate Components to view and create allocations

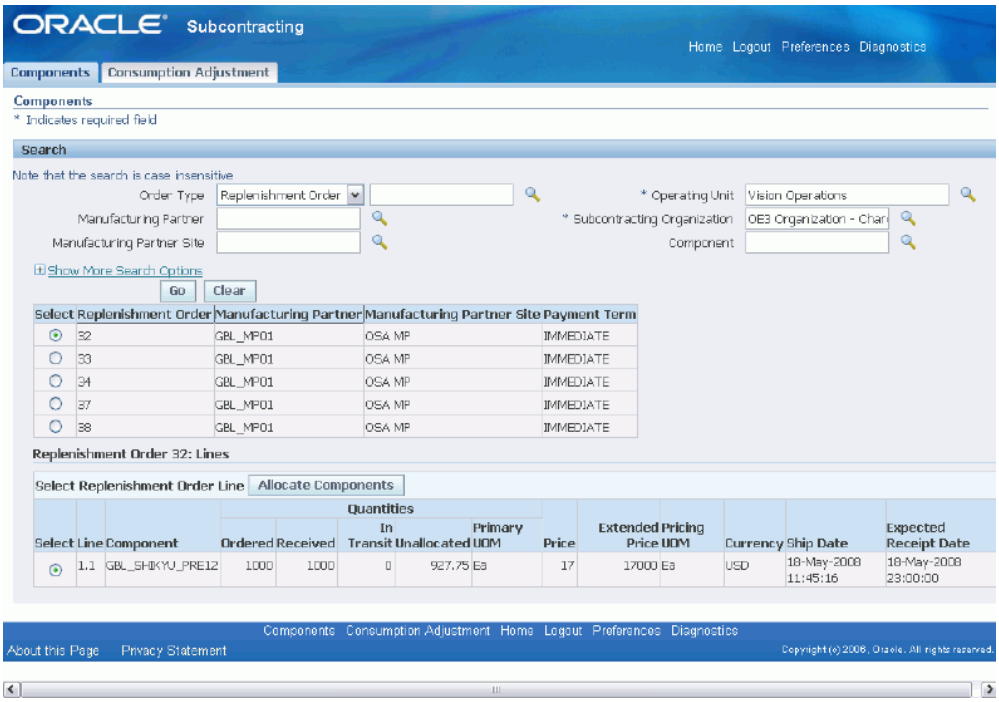
The Subcontracting workbench lets you manually allocate shipments if necessary.

To view replenishment orders:

1. Navigate to the Subcontracting Workbench User Interface.
2. Select the Replenishment Order type from the list of values.
3. Enter an Operating Unit and Subcontracting Organization (required).



4. Enter additional search options as desired, and click Go. The Components page appears and displays a list of Replenishment Orders. The page also displays order lines for selected orders.



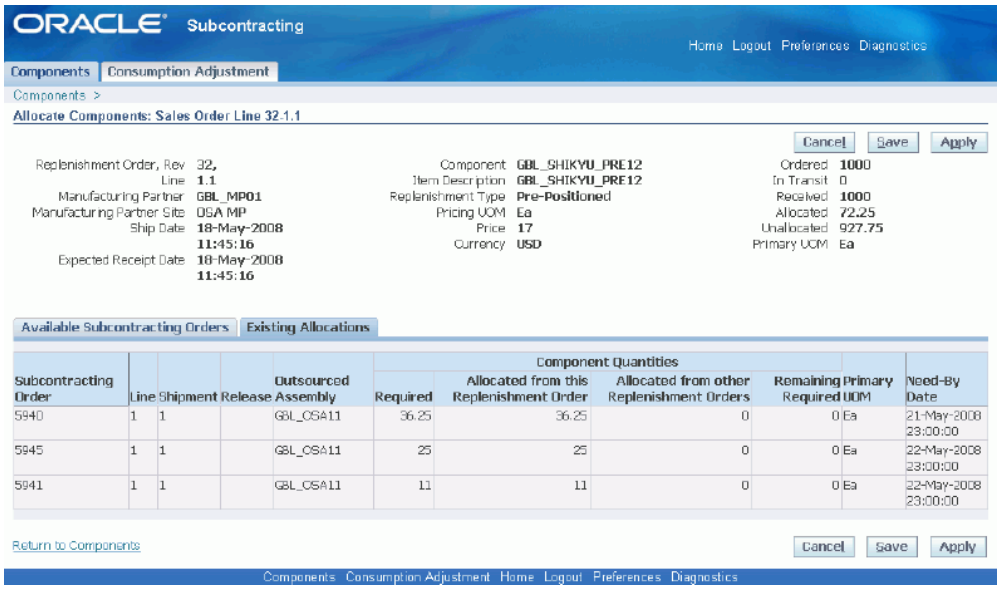
To view and create allocations:

On the allocations page, you can view existing allocations that were created by Interlock Manager, and create allocations manually if required. For synchronized components, replenishment orders are always created for the required quantity of the discrete job

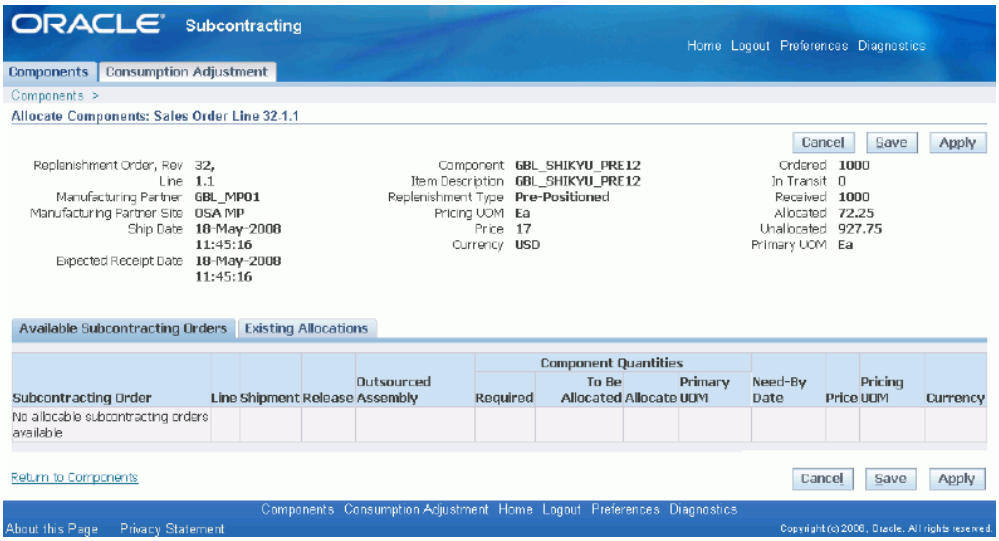
associated to a subcontracting order. These replenishment orders are always fully allocated. For pre-positioned components, replenishment orders are created well ahead of requirements, and are allocated periodically. As a result, these orders can have unallocated quantities.

1. From the Components page, click Allocate Components. The Allocations page appears and displays allocation details for the selected order.

2. Select the Existing Allocations tab to view details of the subcontracting orders allocated to the current replenishment order.



3. Select the Available Subcontracting Orders tab to display a list of subcontracting orders that require component allocations. For replenishment sales orders of pre-positioned components, there may be unallocated quantity. If pre-positioned components are not fully allocated, then you can manually allocated them in this page.



4. Enter the quantity to allocate in the Allocate column and click Apply.

Consumption Adjustments

Subcontracting orders are executed based on the planned component requirements as per the BOM of the outsourced assembly. It is assumed that the MP consumes the components based on the planned BOM component quantity and Yield, and the simulated inventory records of the MP organizations are processed accordingly. However, the MP might consume more or less components for manufacturing the assembly due to process variations, and the OEM must adjust the simulated records of the MP organization for proper inventory and financial accounting.

The MP sends a report of actual material usage at the period end, and the OEM verifies and adjusts the simulated records.

Use the Consumption Adjustments page to enter adjustments for the subcontracting component based on reports sent by the MP. You can search subcontracting order components by OEM organization, subcontracting order number, or component. Enter the actual consumption of the subcontracting order component at the manufacturer partner's facility.

The component adjustments reported through the workbench are further processed by the Subcontracting Consumption Adjustment Manager concurrent request. It adjusts subcontracting components on-hand quantity in supplier organizations, and adjusts allocations between subcontracting replenishment orders and subcontracting orders.

To report consumption adjustments:

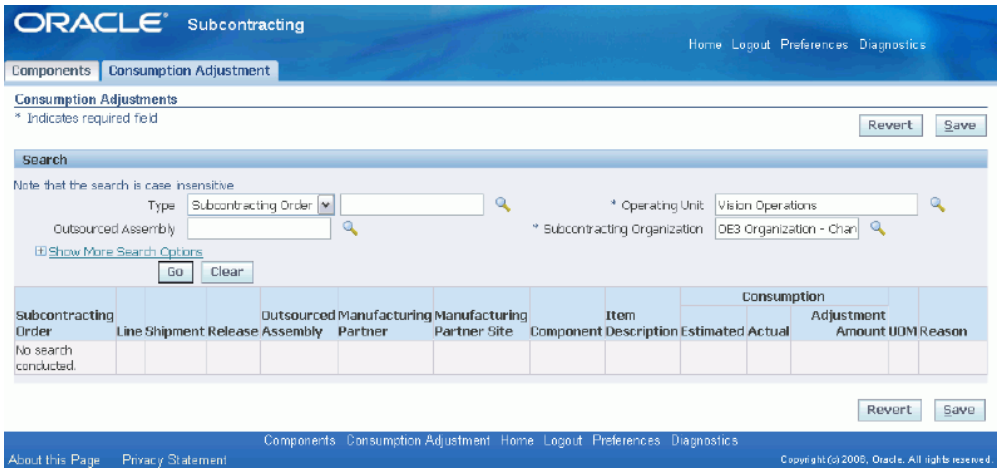
1. Navigate to the Subcontracting Workbench.

2. Select Consumption Adjustment.

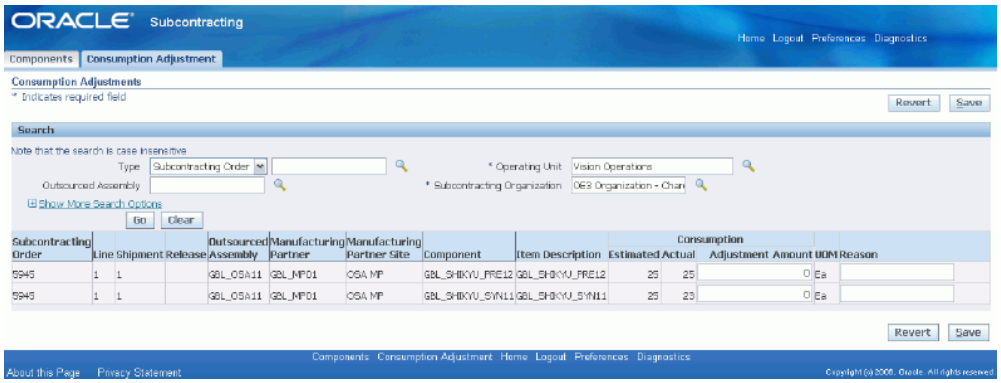
3. Select Subcontracting Order or Component (required).

   Note: If the adjustment type is by Subcontracting Order, then input into the Purchase Order number is required. If adjustment type is by Component, then input into the Component is required.

4. Enter an Operating Unit and Subcontracting Organization (required).



5. Enter additional search options as desired, and click Go. The Consumption Adjustments page appears and displays subcontracting order line details.



6. Enter the Adjustment Amount and a Reason for the adjustment.

7. Click Save.

   Note: The application displays required quantity based on the

BOM. Actual consumption will be the same as planned consumption. You must enter the variation in the consumption. If the consumption is more, then enter positive quantity in the adjustment amount indicating more consumption than planned quantity. If consumption is less, then enter quantity with a minus (-) sign, indicating that quantity consumed is less than the planned quantity.

Related Topics

Processing Consumption Adjustments, page 4-10

Processing Consumption Adjustments

The consumption adjustment processor processes adjustments entered on the workbench. Allocations are readjusted, and WIP component issues or WIP component returns are made to adjust the actual consumption of the simulated discrete job in the MP organization.

Processing Logic

This program picks up the positive and negative adjustments of the components entered on the workbench and process.

For positive component consumption adjustments, the program:

- Creates WIP issues for the discrete job associated with the subcontracting order in the MP organization
- Increases allocations for the subcontracting order
- If there is not enough replenishment available,, then the program does not process those adjustments entered on the workbench. This scenario probably will not occur because adjustments are made at the end of a period, by which time the OEM would have sent enough material to the MP for this additional requirement. This scenario could occur if you enter only positive adjustments first. Therefore, we recommend that you do not process all of the adjustments (positive and negative) at one time.

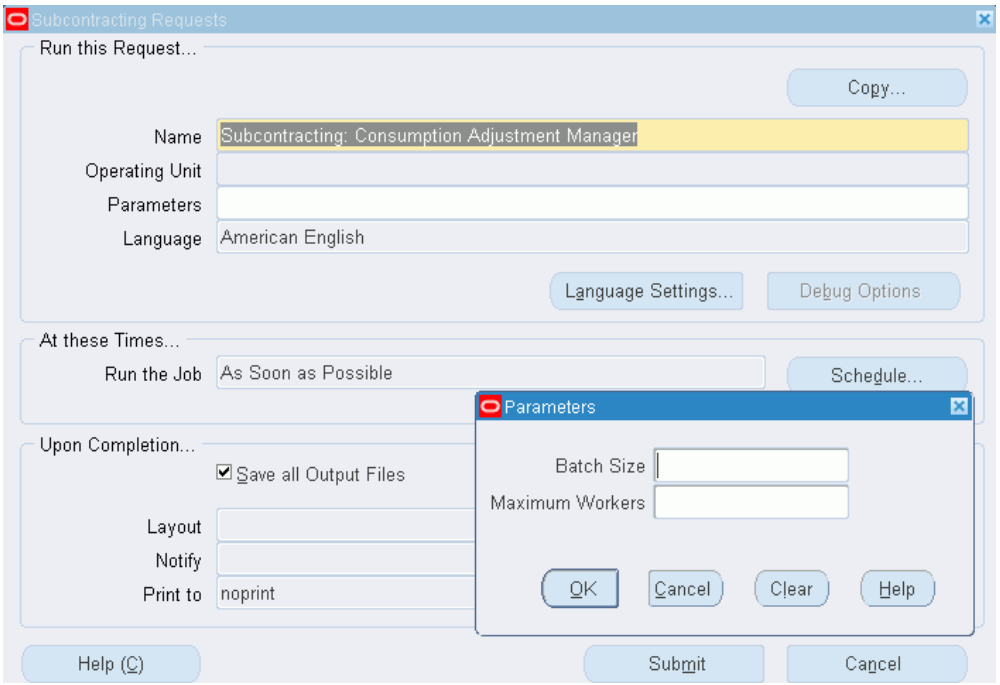
For negative component consumption adjustments, the program:

- Creates WIP returns for the discrete job associated with the subcontracting order in the MP organization
- Decreases allocations for the subcontracting order

To process consumption adjustments:

1. From the Subcontracting responsibility, navigate to the Subcontracting Requests window.

2. Select Subcontracting: Process Receiving Transactions from the Requests window and click OK. The Parameters window appears.



3. Enter an optional Batch Size. Valid characters are 0 through 9.

4. Optionally, enter a value for Maximum Workers. Valid characters are 0 through 9.

5. Click OK.

6. Click Submit to run the request.

5

Subcontracting Accounting Process

This chapter covers the following topics:

- Overview of the Chargeable Subcontracting Accounting Process
- Costs and Prices in Chargeable Subcontracting
- Replenishment Sales Orders - Accounting Transactions in Chargeable Subcontracting
- Subcontracting Orders - Accounting Transactions in Chargeable Subcontracting
- Overview of Buy/Sell Subcontracting Accounting Process

Overview of the Chargeable Subcontracting Accounting Process

The Chargeable Subcontracting Accounting Process considers the following:

- OEM ships components to the MP to manufacture the outsourced assembly, but retains the ownership of the components.

  Therefore, the MP is not liable for the payment for the components received from the OEM.

- MP manufactures the assemblies (added value) from the OEM supplied components, and ships them to the OEM.

- OEM receives the assemblies, and pays only the added value amount to the MP organization.

  Note: The MP organization is a simulated organization and is used for inventory planning and tracking and has no impact on costing. For this purpose, all accounting transactions in the MP organization are not posted to the general ledger (The Transfer to GL is set to No for the MP organization.)

For additional information, see: Setting Up Subcontracting Accounting, page 2-25.

Sales orders are used for shipping the components to the MP organization, and subcontracting orders are used to procure the assemblies from the MP. Invoices for Accounts Payables and Accounts Receivables are netted, and the OEM pays the MP only for the value added in the manufacturing at the MP's factory.

Key accounting concepts include:

- OEM makes a provisional sale and ships the components but retains the ownership. Therefore, accounting transactions associated with shipping subcontracting components should be tracked separately. These transactions are processed by posting to the Subcontracting COGS, Subcontracting Revenue, and Subcontracting Receivables accounts specifically defined for subcontracting, and are associated with the OM transaction type. This transaction type is defined in shipping networks and when the Interlock Manager creates replenishment sales orders for the components, they are created with the OM transaction type defined in the shipping networks. The respective accounts are posted during the execution of sales orders for subcontracting components.

- At period end, the OEM must account for the component inventory in its book of accounts. A report is provided to identify and calculate the component on-hand inventory and the value based on the simulated records.

  Important: You must manually enter the appropriate book of accounts and reverse the same entry at the beginning of the next period.

- The subcontracting order is used to procure the assembly from the MP. After receiving the assembly from MP, the OEM nets the Accounts Payables invoices with the Accounts Receivables invoices for the components shipped to manufacture the assembly. OEM makes the payment to the MP for the added value amount. The purchase price of the assembly is calculated based on the BOM requirement quantity and sales price of the components.

  See the sales price and purchase price setup of the components and assembly in Chapter 2.

- The purchase price of the assembly is defined to include the sales price of the components and added value amounts to support the payment process. Therefore, any purchase price variances associated to assembly receipts in the OEM should be tracked using a Subcontracting Variance account defined for subcontracting purposes. This account is associated with shipping networks, and when purchase order receipts are made, the purchase price variance is posted to the Subcontracting Variance account.

- Since the entire process uses the fixed sales price of the components, the standard

cost of components and assembly, and the purchase price of the assembly, any variations in the price and cost could affect the accounting process. A set of utilities (that is, reports) is provided to identify these changes and their effect.

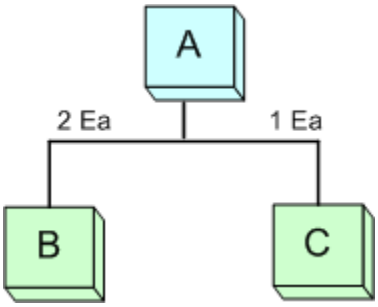
> **Important:** You must manually adjust the accounting records for consistency.

Costs and Prices in Chargeable Subcontracting

For subcontracting accounting, the costs and prices of the components and assemblies should be defined such that the net gain arising out the virtual sales transactions will be offset by the gain or loss associated with the purchasing of the assembly.

For details on setting up costs and prices, see *Setting Up Subcontracting*.

This figure illustrates the method for setting costs and prices. All amounts are in USD:



Item	Material Cost	OSP (Added Value by MP)	Unit Cost
B	2	-	2
C	3	-	3
A	2*2 + 3*1 = 7 USD	5	12

Item	Item Cost	Sales Price	Purchase Price	Gain/Loss per 1 Ea of Assembly A
B	2	4	N/A	2*(4 - 2) = 4
C	3	6	N/A	1*(6 - 3) = 3

Item	Item Cost	Sales Price	Purchase Price	Gain/Loss per 1 Ea of Assembly A
A	12	N/A	19	19 - 12 = 7

Gain or loss by shipping Components B and C to the MP on a replenishment sales order for manufacturing 1 each of Assembly A = 4 + 3 = **7 USD**

Gain or loss offset by purchasing 1 each of Assembly A from the MP = **7 USD**

The Original Equipment Manufacturer (OEM) should set up item prices so that the gain or loss by shipping the components to the MP is offset the gain or loss associated with the purchase of the assembly from the MP:

- Define material costs for the components. Define material and OSP charges for assembly and update standard costs in the OEM organization. OSP charges are the added-value amounts added by the MP organization. The costing in the MP organization is of no significance.

- Define the sales price of the components and purchase price of the assembly so that the gain or loss from the virtual sale of components to MP is offset by the purchase price of the assembly. Gain or loss is the difference between the components sales price and standard cost, and the offset is the difference between the purchase price of the assembly and its standard cost. In addition, the difference between the purchase price of assembly and the sales price of the component is the added-value amount. After the OEM receives the assembly, it makes a payment to the MP organization for the added-value amount.

- In the previous example, the respective standard cost of components B and C is 2 USD and 3 USD, and the respective sales prices are 4 USD and 6 USD. The sale of 2 units of B and 1 unit of C to the MP results in a virtual gain of 7 USD, 4 USD of which is from B and 3 USD of which is from C.

  To offset the virtual gain, the purchase price of assembly is set at 19 USD, and its standard cost is 12 USD. The difference in the purchase price and standard cost is 17 USD, which offsets the virtual gain due to the sale of components.

- The net amount of the Accounts Receivables invoice is 14 USD, 8 USD of which is for 2 units of B and 6 USD of which is for 1 unit of C. This net amount is calculated against an Accounts Payables invoice in the amount of 19 USD and the balance of 5 USD, which represents the added value that is paid to the MP organization.

Replenishment Sales Orders - Accounting Transactions in Chargeable Subcontracting

Accounting transactions associated with the provisional sale of components are tracked

in separate accounts.

At Ship Confirm Replenishment Sales Orders

This example shows the accounting entries at Ship Confirm: Components B and C. All amounts are in USD:

Account	Debit	Credit
For Component B (2 each)		
Deferred COGS (item cost 2 USD)	4	-
Inventory Valuation (item cost 2 USD)	-	4
For Component C (1 each)		
Deferred COGS (item cost 2 USD)	3	-
Inventory Valuation (item cost 2 USD)	-	3

These are regular transactions. Although the inventory appears as a credit to the OEM book of accounts, the OEM organization still owns the inventory. At the period end, run a report and calculate the on-hand inventory and value at the MP site, and then adjust the OEM books for proper accounting.

Invoicing Replenishment Sales Orders

This example shows the accounting entries for AR Invoice: Components B and C. All amounts are in USD:

Account	Debit	Credit
For Component B (2 each)		
Subcontracting COGS (deferred amount 4 USD)	4	-
Deferred COGS (deferred amount 4 USD)	-	4
Subcontracting AR (sales price 4 USD)	8	-
Subcontracting Revenue (sales price 4 USD)	-	8
For Component C (1 EA)		

Account	Debit	Credit
Subcontracting COGS (deferred amount 3 USD)	3	-
Deferred COGS (deferred amount 3 USD)	-	3
Subcontracting AR (sales price 6 USD)	6	-
Subcontracting Revenue (sales price 6 USD)	-	6

COGS, revenue, and receivable transactions associated with invoicing replenishment sales orders for subcontracting components are posted to subcontracting accounts for tracking.

Subcontracting Orders - Accounting Transactions in Chargeable Subcontracting

Subcontracting orders are the standard purchase orders or releases created to procure the outsourced assemblies from the MP. Purchase orders include these events:

1. Receiving the assembly into the receiving location
2. Delivering the assembly to Inventory

All amounts are shown is USD.

Receiving for Assembly A

Account	Debit	Credit
For Assembly A (1 each)		
Inventory Receiving (PO Price 19 USD)	19	-
AP Accrual (PO Price 19 USD)	-	19

These entries are similar to standard items.

Delivery for Assembly A

Account	Debit	Credit
For Assembly A (1 each)		
Inventory Valuation (Item Cost 12 USD)	12	-
Subcontracting Variance (PO Price - Item Cost)	7	-
Inventory Receiving (PO Price 19 USD)	-	19

Inventory is debited at 12 USD, which includes the component costs and added value. The purchase price variance is posted to the Subcontracting Variance account for tracking.

AP Invoicing for Assembly A

Account	Debit	Credit
For Assembly A (1 each)		
AP Accrual	19	-
Accounts Payable (Outsourced Assembly)	-	19

Accounting entries after the Accounts Payable invoice is created.

Once the Accounts Payables and Accounts Receivables invoices are ready to be processed, you must use the Accounts Payable and Accounts Receivables Netting functionality available in Oracle Payables, and make payments to the MP only for the added value in the outsourcing process.

Accounts Payables and Accounts Receivables Netting

Account	Debit	Credit
AP (Outsourced Assembly): 19 USD, Subcontracting AR: 14 USD		
AP (Outsourced Assembly)	14	-
Subcontracting AR	-	14

After netting Accounts Receivables, the amount of 14 USD is adjusted as a partial payment, and the balance of 5 USD can be paid to the MP.

For more details on AP and AR netting, see the *Oracle Payables User's Guide*.

In chargeable subcontracting, accounts are posted correctly if all standard costs, sales price, and purchase price of the components and assemblies are unchanged. These costs and prices could undergo changes due to various business reasons such as an increase in the cost of raw material, changes to added value charges, and so on, that forces the OEM to make changes in the standard cost prices and also the sales and purchase prices. These changes will result in an unrealized gain or loss and will influence accounting.

The following set of utilities and procedures are provided to help identify the impact of those changes in advance and assist you in managing them for proper accounting:

- Standard cost updates
- Sales price changes
- Consumption adjustments
- Component returns

Standard Cost Updates

You must run the Cost Update Analysis report to find the impact of proposed cost changes. This report gives the cumulative impact of all the components and assemblies by the MP for the proposed cost change. You must make manual adjustments to the general ledger accounts, and then update the standard costs of the components and assemblies as follows:

- Debit the Inventory Valuation account if the value is positive
- Credit the Inventory Valuation account if the value is negative

Sales Price Changes

The sales price of the components will generally be changed at the beginning of the period. Like standard costs, changes in sales price will also affect gain or loss.

The OEM must follow the following procedure to nullify the impact:

1. Reconcile the inventory in the MP organization by using the confirmation report.
2. Make *logical* returns of the unallocated replenishment sales order quantity by creating sales order returns (RMA). (Logical returns mean that the returns are made in the OEM records, but the components are still physically located in the MP organization.)
3. Change the component sales prices in the price list to the new sales price.

4. Create new replenishment purchase orders for the returned quantity and run the Interlock Manager:

    - Interlock Manager creates replenishment sales orders with the new price.
    - Makes logical shipments; components are still with the MP but shipments are registered with the new price.

After this process, you can continue with the execution process.

Consumption Adjustments

Variances in the consumption of components over the planned consumption based on the BOM are registered and processed using the consumption adjustment processing at the MP organization. This process will adjust the on-hand inventory of simulated records in the MP organization for planning and execution. However, the impact of the variances in OEM organization on payments process must be handled manually.

In the case of over consumptions, the MP consumes more quantity than the planned quantity, and the sales price of this excess consumption is not part of the purchase price of the assembly. Consequently, the Accounts Receivables amount will be more than the Accounts Payables amount and netting will suggest payments to the MP organization. To overcome this situation, the OEM must create a credit note for the excess consumption and then make payments for the value addition.

In the case of under consumptions, the MP consumes less than the planned quantity, resulting in the Accounts Payable amount being more than the Accounts Receivable amount, and netting will suggest paying more than the value addition. Creating a debit note for the less consumption amount, and then paying only the value addition, can resolve this condition.

Both the scenarios can be handled by using either by using proper netting setup or manually.

See the Accounts Payables and Accounts Receivables feature in the *Oracle Payables User's Guide*

Component Returns

The MP returns components to the OEM for various business reasons such as:

- Defective components
- Excess components due to better yield
- Obsolete components
- Logical returns due to price change

Differences in the standard cost at the time of shipping the components and at the time RMA receipts are created impact the gain or loss.

Use the following procedure to nullify any gain or loss due to returns:

1. Run the Cost Update Analysis report with the Period End option to calculate the gain or loss.

2. Debit the Inventory Valuation account if the value is positive.

3. Credit the Inventory Valuation Account if the value is negative.

Overview of Buy/Sell Subcontracting Accounting Process

In Buy/Sell Subcontracting, the sale of subcontracting components and the purchase of outsourced assemblies are treated as independent business transactions. They are similar to standard sales and purchase of items. Therefore, the specific accounting of subcontracting transactions required for Chargeable Subcontracting is not relevant in the context of Buy/Sell Subcontracting. Also, Subcontracting Receivables and Payables are generally not netted in Buy/Sell Subcontracting. The OEM pays the MP for purchasing the outsourced assemblies and the MP pays for buying the subcontracting components from the OEM. However, system allows for netting of Payables and Receivables even for a Buy/Sell relationship.

6

Reports

This chapter covers the following topics:

- Reports Overview
- Subcontracting: Subcontracting Order Report
- Subcontracting: Confirmation Report (External Mode)
- Subcontracting Confirmation Report (Internal Mode)
- Subcontracting: Cost Update Analysis Report

Reports Overview

Oracle's Subcontracting provides reports for managing fiscal and internal control. You can create your own layouts and publish your reports using Oracle XML Publisher.

XML Publisher is a template-based publishing tool that is delivered with the Oracle E-Business suite. This tool enables you to develop and maintain custom report formats. You can design and control how your reports are presented by using report templates. When you generate a report, XML Publisher merges report template files with report data to create documents that support numerous formatting options, such as color, images, font styles, and headers and footers.

Subcontracting: Subcontracting Order Report

The Subcontracting Order Report prints purchase order information about outsourced assemblies. In addition to printing purchase order report information (standard and BPA release), this report prints information about components that are required for manufacturing the assembly at the Manufacturing Partner (MP) site and replenishment sales orders created for shipping the components to the MP for manufacturing the assembly. The information in this report is grouped by subcontracting orders, replenishments, allocations, and so on and is printed by subcontracting order.

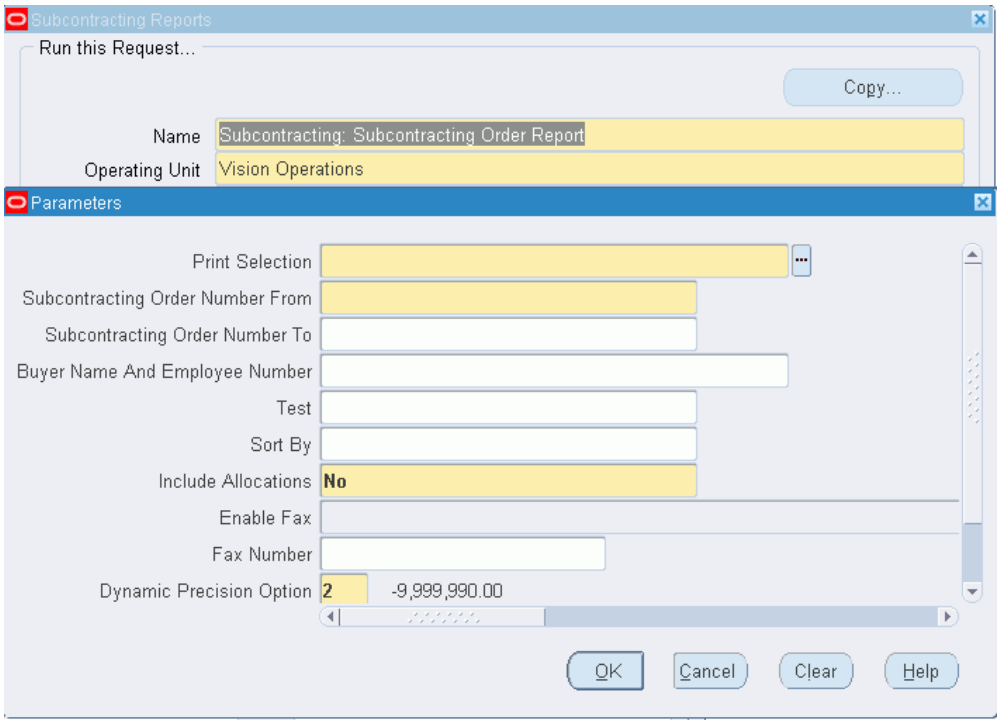
Report Parameters

This table lists and describes the report parameters:

Parameter	Required	Default Value	List of Values
Operating Unit (OU)	Yes	Current OU	List of OU to which the user has access
Print Selection	Yes	-	All, Changed, and New
Subcontracting Order Number From	Yes	-	PO Numbers
Subcontracting Order Number To	No	-	PO Numbers
Buyer Name and Employee Number	No	-	Buyer/Employee Name
Test	No	-	Yes/No
Sort By	No	-	Buyer/PO Number
Include Allocations	Yes	No	Yes/No
Enable Fax	No	-	Yes/No
Fax Number	No	-	-
Dynamic Precision Option	Yes	2	Precision
Print Canceled Lines	No	Yes	Yes/No
Approved	No	-	Yes/No

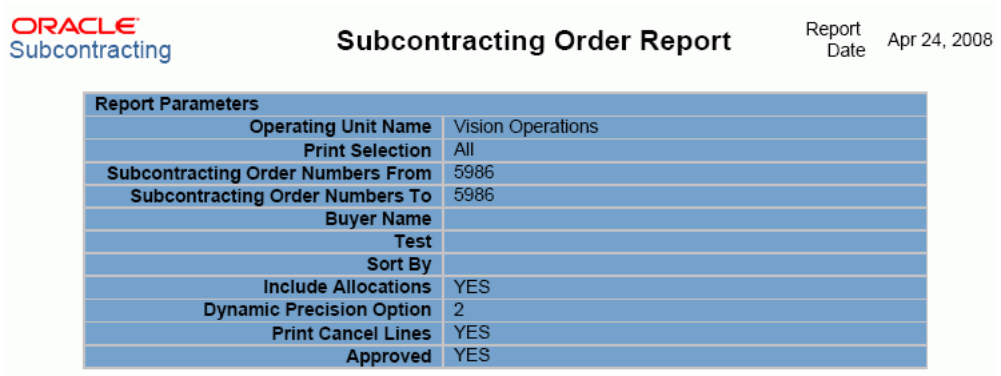
To run the Subcontracting Order Report:

1. From the Subcontracting responsibility, navigate to the Subcontracting Reports window.
2. In the Name field, select Subcontracting: Subcontracting Order Report.
3. Enter an Operating Unit (required). The Subcontracting Parameters window appears.



4. Enter report parameters and click OK. The Contracting Reports window appears.

5. Enter report request parameters and click Submit. You can view the report output after the concurrent request completes.

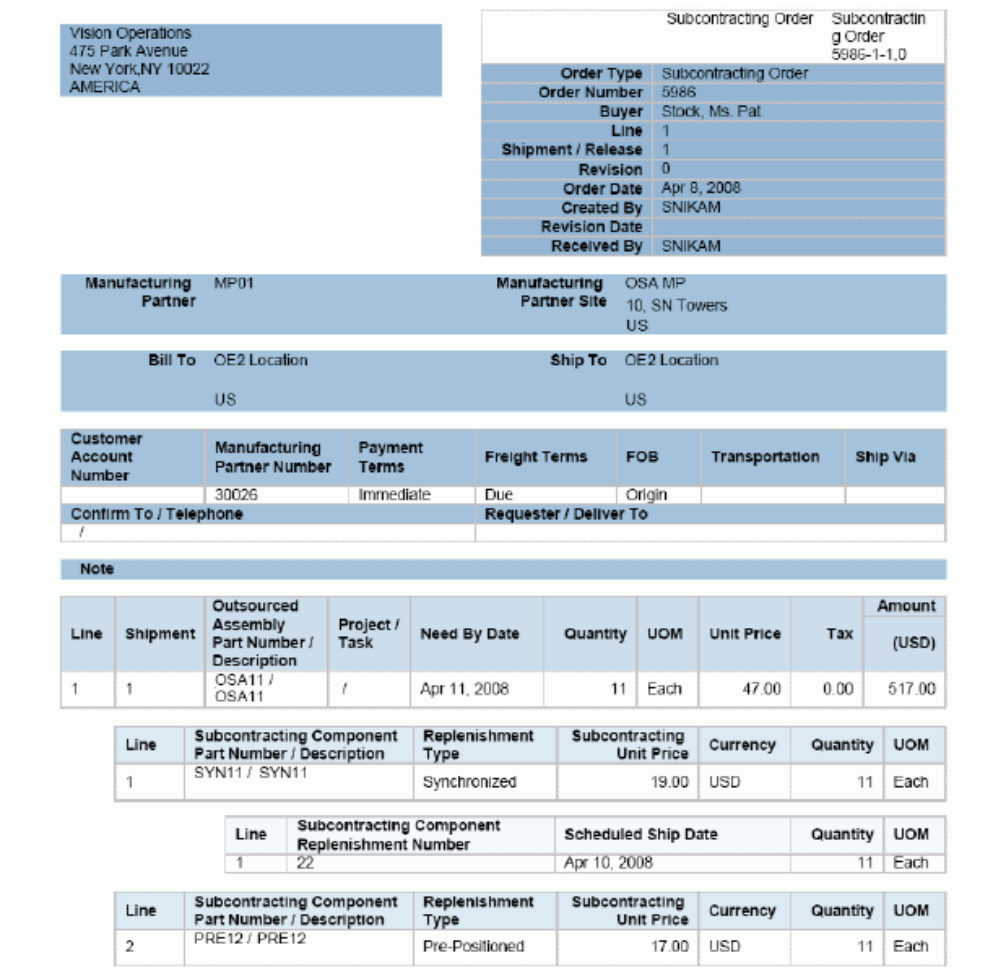


ORACLE Subcontracting

Subcontracting Order Report

Report Date Apr 24, 2008

Report Parameters	
Operating Unit Name	Vision Operations
Print Selection	All
Subcontracting Order Numbers From	5986
Subcontracting Order Numbers To	5986
Buyer Name	
Test	
Sort By	
Include Allocations	YES
Dynamic Precision Option	2
Print Cancel Lines	YES
Approved	YES



Vision Operations
475 Park Avenue
New York,NY 10022
AMERICA

	Subcontracting Order	Subcontracting Order 5986-1-1.0
Order Type	Subcontracting Order	
Order Number	5986	
Buyer	Stock, Ms. Pat	
Line	1	
Shipment / Release	1	
Revision	0	
Order Date	Apr 8, 2008	
Created By	SNIKAM	
Revision Date		
Received By	SNIKAM	

Manufacturing Partner	MP01	Manufacturing Partner Site	OSA MP 10, SN Towers US
Bill To	OE2 Location US	Ship To	OE2 Location US

Customer Account Number	Manufacturing Partner Number	Payment Terms	Freight Terms	FOB	Transportation	Ship Via
	30026	Immediate	Due	Origin		

Confirm To / Telephone	Requester / Deliver To
/	

Note

Line	Shipment	Outsourced Assembly Part Number / Description	Project / Task	Need By Date	Quantity	UOM	Unit Price	Tax	Amount (USD)
1	1	OSA11 / OSA11	/	Apr 11, 2008	11	Each	47.00	0.00	517.00

Line	Subcontracting Component Part Number / Description	Replenishment Type	Subcontracting Unit Price	Currency	Quantity	UOM
1	SYN11 / SYN11	Synchronized	19.00	USD	11	Each

Line	Subcontracting Component Replenishment Number	Scheduled Ship Date	Quantity	UOM
1	22	Apr 10, 2008	11	Each

Line	Subcontracting Component Part Number / Description	Replenishment Type	Subcontracting Unit Price	Currency	Quantity	UOM
2	PRE12 / PRE12	Pre-Positioned	17.00	USD	11	Each

Subcontracting: Confirmation Report (External Mode)

Use the Confirmation Report to reconcile inventory at the MP site at the end of the period. During the reconciliation process, the Original Equipment Manufacturer (OEM) prints the confirmation report in external mode to estimate the on-hand quantity and the consumption of components for each subcontracting order based on the simulated MP organization records. This report is sent to the MP for confirmation. The MP verifies records and returns the report with variations to the consumption. The OEM then adjusts the inventory in the simulated MP organization by making consumption adjustments and processes the variations. The adjustments increase the accuracy of the simulated records and reflect actual inventory at the MP for better planning and execution.

Confirmation Report in External Mode

At the end of the period, the OEM prints the Confirmation Report in External mode and sends it to the MP for component physical inventory in subcontracting. When a report

is printed in External mode, sensitive cost information does not appear on the report. One report is created for each MP. The MP fills in the on-hand quantity and actual consumptions of subcontracting components against subcontracting orders, along with reasons for any discrepancies. The MP then returns the report to the OEM for corrections.

The Confirmation Report prints:

- Estimated on-hand quantity by component based on the MP site simulation.
- Details of subcontracting orders that consumed components during a given period. Estimated on-hand and consumption quantities are based on bills of material quantities.
- Details of in-transit inventory (components shipped in OEM but not yet received in the MP organization based on the simulation).
- Details of sales orders not yet shipped.

This report does not print cost information.

Report Parameters

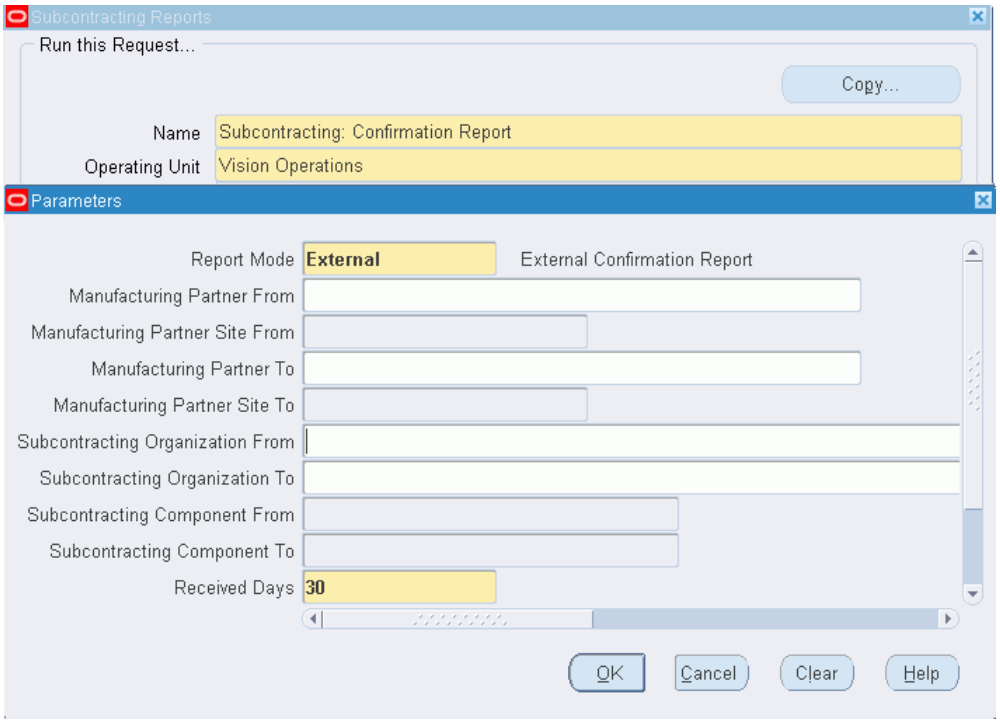
This table lists and describes the report parameters:

Parameter	Required	Default Value	List of Values
Report Mode	Yes	-	External or Internal
Manufacturing Partner From	No	-	All manufacturing partners
Manufacturing Partner Site From	No	-	All sites of the MP
Manufacturing Partner To	No	-	All manufacturing partners
Manufacturing Partner Site To	No	-	All sites of the MP
Subcontracting Organization From	No	-	All subcontracting organizations
Subcontracting Organization To	No	-	All subcontracting organizations

Parameter	Required	Default Value	List of Values
Subcontracting Component From	No	-	All subcontracting components
Subcontracting Component To	No	-	All subcontracting components
Received Days	Yes	10	-
Sort By	Yes	Supplier Site	Supplier Site (Item when the mode is set to External) This value is always Supplier Site
Currency Conversion Type	No	-	Defined types
Currency Conversion Date	No	-	Calendar

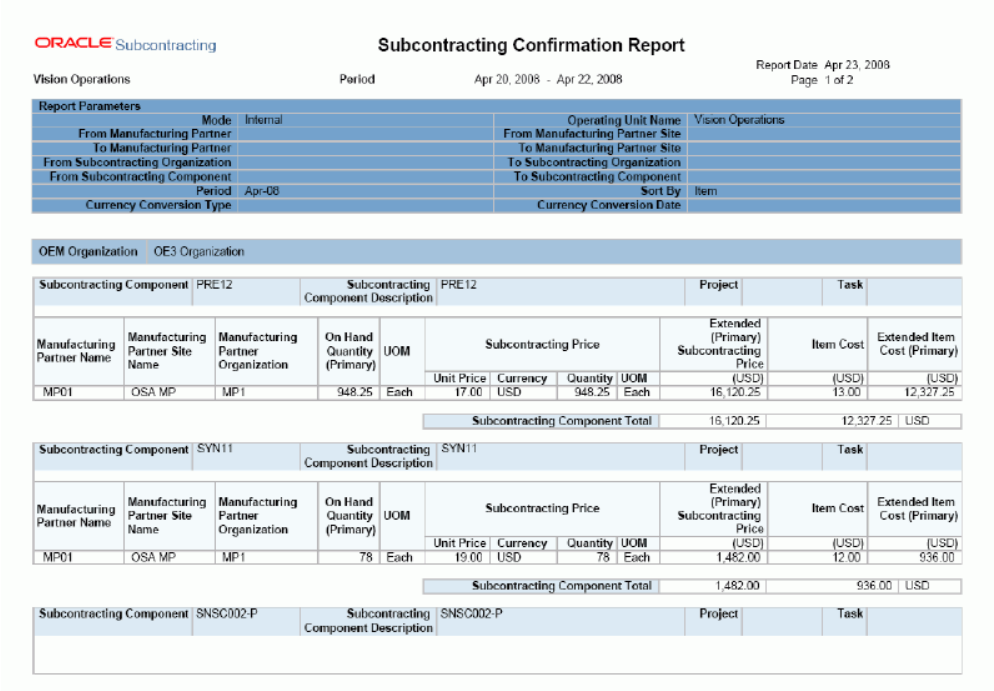
To run the Subcontracting: Confirmation Report in External mode

1. From the Subcontracting responsibility, navigate to the Subcontracting Reports window.
2. In the Name field, select Subcontracting: Confirmation Report.
3. Enter an Operating Unit (required). The Parameters window appears.



4. Enter report parameters and choose OK. The Subcontracting Reports window appears.

5. Enter report request parameters and choose Submit. You can view the report output after the concurrent request completes.



ORACLE Subcontracting

Subcontracting Confirmation Report

Vision Operations | Period: Apr 20, 2008 - Apr 22, 2008 | Report Date: Apr 23, 2008 | Page 1 of 2

Report Parameters			
Mode	Internal	Operating Unit Name	Vision Operations
From Manufacturing Partner		From Manufacturing Partner Site	
To Manufacturing Partner		To Manufacturing Partner Site	
From Subcontracting Organization		To Subcontracting Organization	
From Subcontracting Component		To Subcontracting Component	
Period	Apr-08	Sort By	Item
Currency Conversion Type		Currency Conversion Date	

OEM Organization: OE3 Organization

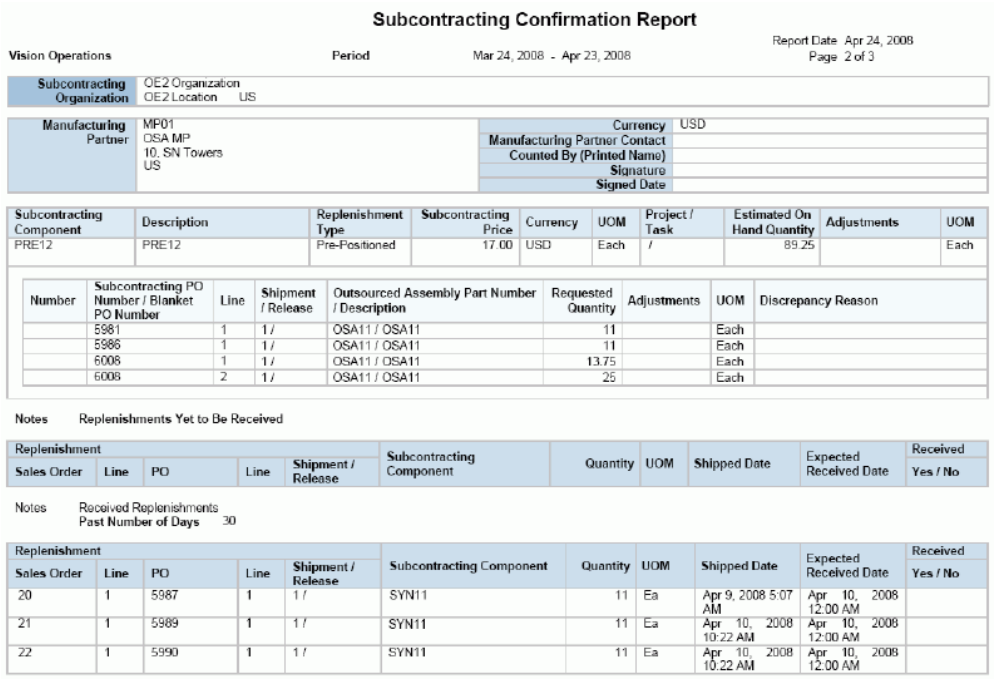
Subcontracting Component: PRE12 | Subcontracting Component Description: PRE12 | Project: | Task:

Manufacturing Partner Name	Manufacturing Partner Site Name	Manufacturing Partner Organization	On Hand Quantity (Primary)	UOM	Subcontracting Price				Extended (Primary) Subcontracting Price	Item Cost	Extended Item Cost (Primary)
					Unit Price	Currency	Quantity	UOM	(USD)	(USD)	(USD)
MP01	OSA MP	MP1	948.25	Each	17.00	USD	948.25	Each	16,120.25	13.00	12,327.25
							Subcontracting Component Total		16,120.25	12,327.25	USD

Subcontracting Component: SYN11 | Subcontracting Component Description: SYN11 | Project: | Task:

Manufacturing Partner Name	Manufacturing Partner Site Name	Manufacturing Partner Organization	On Hand Quantity (Primary)	UOM	Subcontracting Price				Extended (Primary) Subcontracting Price	Item Cost	Extended Item Cost (Primary)
					Unit Price	Currency	Quantity	UOM	(USD)	(USD)	(USD)
MP01	OSA MP	MP1	78	Each	19.00	USD	78	Each	1,482.00	12.00	936.00
							Subcontracting Component Total		1,482.00	936.00	USD

Subcontracting Component: SNSC002-P | Subcontracting Component Description: SNSC002-P | Project: | Task:



Subcontracting Confirmation Report

Vision Operations | Period: Mar 24, 2008 - Apr 23, 2008 | Report Date: Apr 24, 2008 | Page 2 of 3

Subcontracting Organization: OE2 Organization
OE2 Location US

Manufacturing Partner: MP01
OSA MP
10, SN Towers
US

Currency: USD
Manufacturing Partner Contact:
Counted By (Printed Name):
Signature:
Signed Date:

Subcontracting Component	Description	Replenishment Type	Subcontracting Price	Currency	UOM	Project / Task	Estimated On Hand Quantity	Adjustments	UOM
PRE12	PRE12	Pre-Positioned	17.00	USD	Each	/	89.25		Each

Number	Subcontracting PO Number / Blanket PO Number	Line	Shipment / Release	Outsourced Assembly Part Number / Description	Requested Quantity	Adjustments	UOM	Discrepancy Reason
	5981	1	1 /	OSA11 / OSA11	11		Each	
	5986	1	1 /	OSA11 / OSA11	11		Each	
	6006	1	1 /	OSA11 / OSA11	13.75		Each	
	6006	2	1 /	OSA11 / OSA11	25		Each	

Notes: Replenishments Yet to Be Received

Replenishment					Subcontracting Component	Quantity	UOM	Shipped Date	Expected Received Date	Received
Sales Order	Line	PO	Line	Shipment / Release						Yes / No

Notes: Received Replenishments
Past Number of Days: 30

Replenishment					Subcontracting Component	Quantity	UOM	Shipped Date	Expected Received Date	Received
Sales Order	Line	PO	Line	Shipment / Release						Yes / No
20	1	5987	1	1 /	SYN11	11	Ea	Apr 9, 2008 5:07 AM	Apr 10, 2008 12:00 AM	
21	1	5989	1	1 /	SYN11	11	Ea	Apr 10, 2008 10:22 AM	Apr 10, 2008 12:00 AM	
22	1	5990	1	1 /	SYN11	11	Ea	Apr 10, 2008 10:22 AM	Apr 10, 2008 12:00 AM	

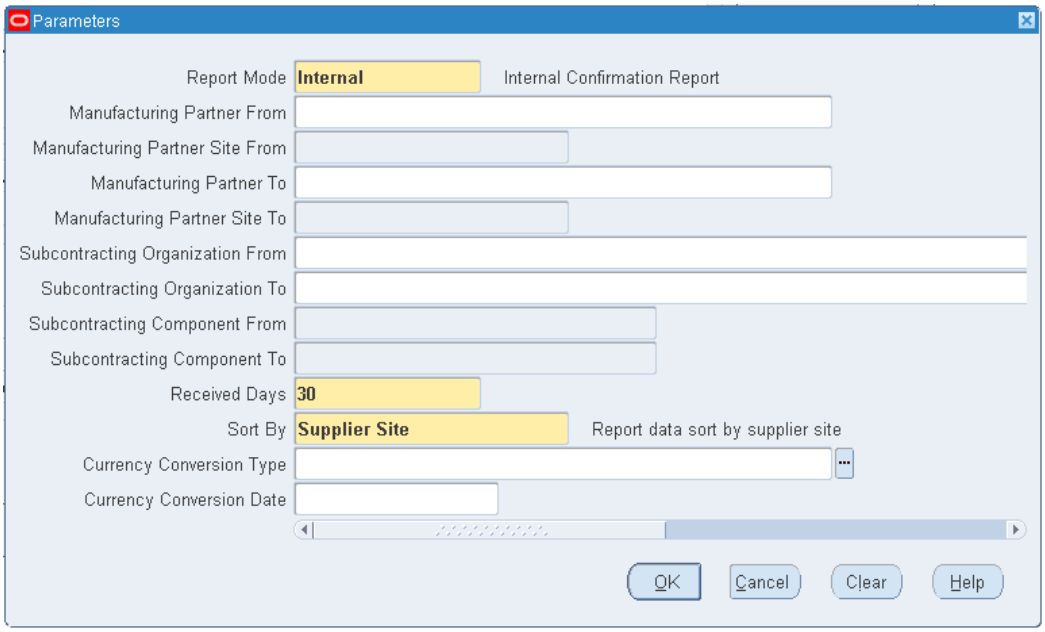
Adjustment columns in the report (Pages 2 and 3) are left blank. The MP is expected to enter the variations in these columns and return the report to the OEM.

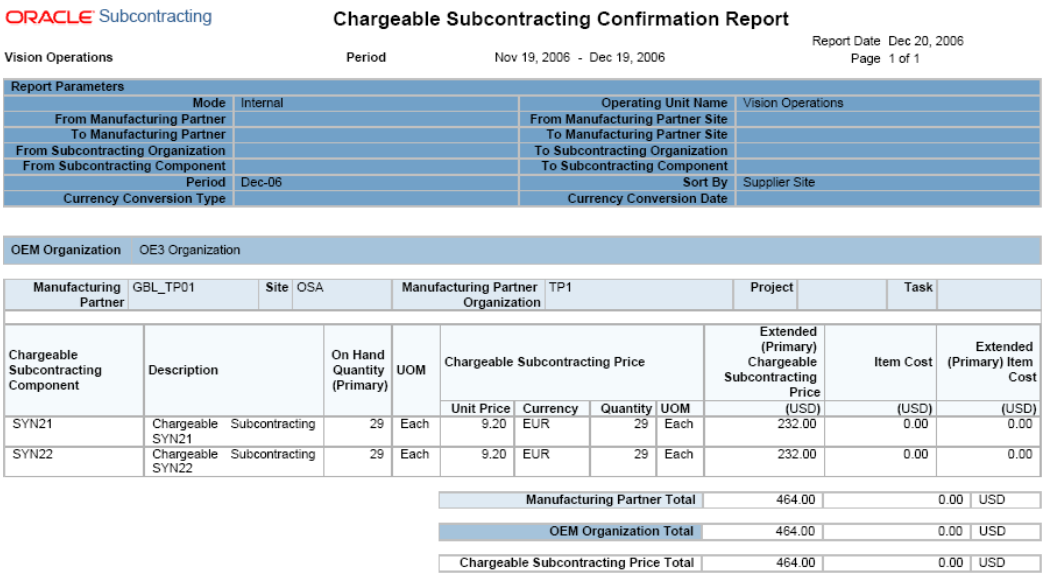
Subcontracting Confirmation Report (Internal Mode)

The Subcontracting Confirmation Report (Internal Mode) is applicable only to Chargeable Subcontracting. The Confirmation Report run in internal mode, calculates on-hand inventory, and its inventory value is based on the standard in the OEM organization. Component inventory is calculated based on the simulated records of the MP organization, and the on-hand inventory is multiplied with its standard cost in the OEM organization to arrive at the inventory value. The report prints:

- Component on-hand inventory
- Component standard cost
- Inventory value

The Confirmation Report for internal mode is run the same as external mode. The Report Mode parameter must be set to External. All other parameters remain the same.





ORACLE Subcontracting

Chargeable Subcontracting Confirmation Report

Report Date Dec 20, 2006

Vision Operations | Period | Nov 19, 2006 - Dec 19, 2006 | Page 1 of 1

Report Parameters			
Mode	Internal	Operating Unit Name	Vision Operations
From Manufacturing Partner		From Manufacturing Partner Site	
To Manufacturing Partner		To Manufacturing Partner Site	
From Subcontracting Organization		To Subcontracting Organization	
From Subcontracting Component		To Subcontracting Component	
Period	Dec-06	Sort By	Supplier Site
Currency Conversion Type		Currency Conversion Date	

OEM Organization: OE3 Organization

Manufacturing Partner	GBL_TP01	Site	OSA	Manufacturing Partner Organization	TP1	Project		Task	

Chargeable Subcontracting Component	Description	On Hand Quantity (Primary)	UOM	Chargeable Subcontracting Price				Extended (Primary) Chargeable Subcontracting Price	Item Cost	Extended (Primary) Item Cost
				Unit Price	Currency	Quantity	UOM	(USD)	(USD)	(USD)
SYN21	Chargeable Subcontracting SYN21	29	Each	9.20	EUR	29	Each	232.00	0.00	0.00
SYN22	Chargeable Subcontracting SYN22	29	Each	9.20	EUR	29	Each	232.00	0.00	0.00

Manufacturing Partner Total	464.00	0.00	USD
OEM Organization Total	464.00	0.00	USD
Chargeable Subcontracting Price Total	464.00	0.00	USD

The report shows on-hand inventory at the MP site and its value based on the standard cost of the component in the OEM organization.

Subcontracting: Cost Update Analysis Report

The Subcontracting Cost Update Analysis Report is applicable only to Chargeable Subcontracting. In the Subcontracting application, the price of components and outsourced assemblies is defined in such a way that gain or loss due to component sales is offset by the Purchase Price Variance (PPV) of assembly receipts. A change to the standard cost of either components or assembly creates an imbalance in gain or loss.

When costs of outsourced assemblies or subcontracting components are updated, you must create adjustment journal entries to eliminate unrealized gain or loss. The Cost Update Analysis Report shows the adjustment amount required for non-received subcontracting items, unshipped subcontracting components, and returned subcontracting components. You are responsible for creating adjustment accounting entries.

The Cost Update Analysis Report provides the OEM with a way to estimate the effect before the cost change. Based on this report, the OEM can adjust the general ledger accounts manually and then run a standard cost update. You can estimate the effect of the proposed standard cost by running the report with the Run parameter set to Before Cost Update.

Cost Update Analysis Report (Before Cost Update)

The Cost Update Analysis report with the Before Cost Update option selected prints the estimated effect of standard cost changes for both components and assemblies.

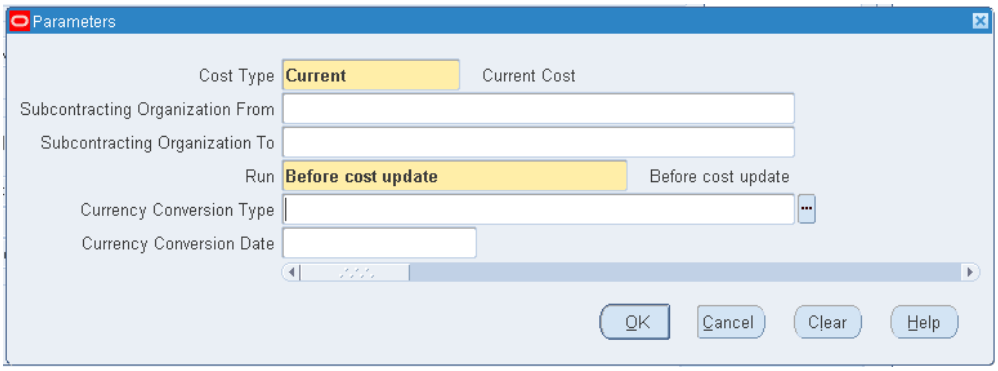
Report Parameters

This table lists and describes the report parameters:

Parameter	Required	Default Value	List of Values
Cost Type	Yes	-	All cost types
Subcontracting Organization From	No	-	All subcontracting organizations
Subcontracting Organization To	No	-	All subcontracting organizations
Run	Yes	Before Cost Update	Before Cost Update or At Period End
Currency Conversion Type	No	-	All defined conversion types
Currency Conversion Date	No	-	Calendar

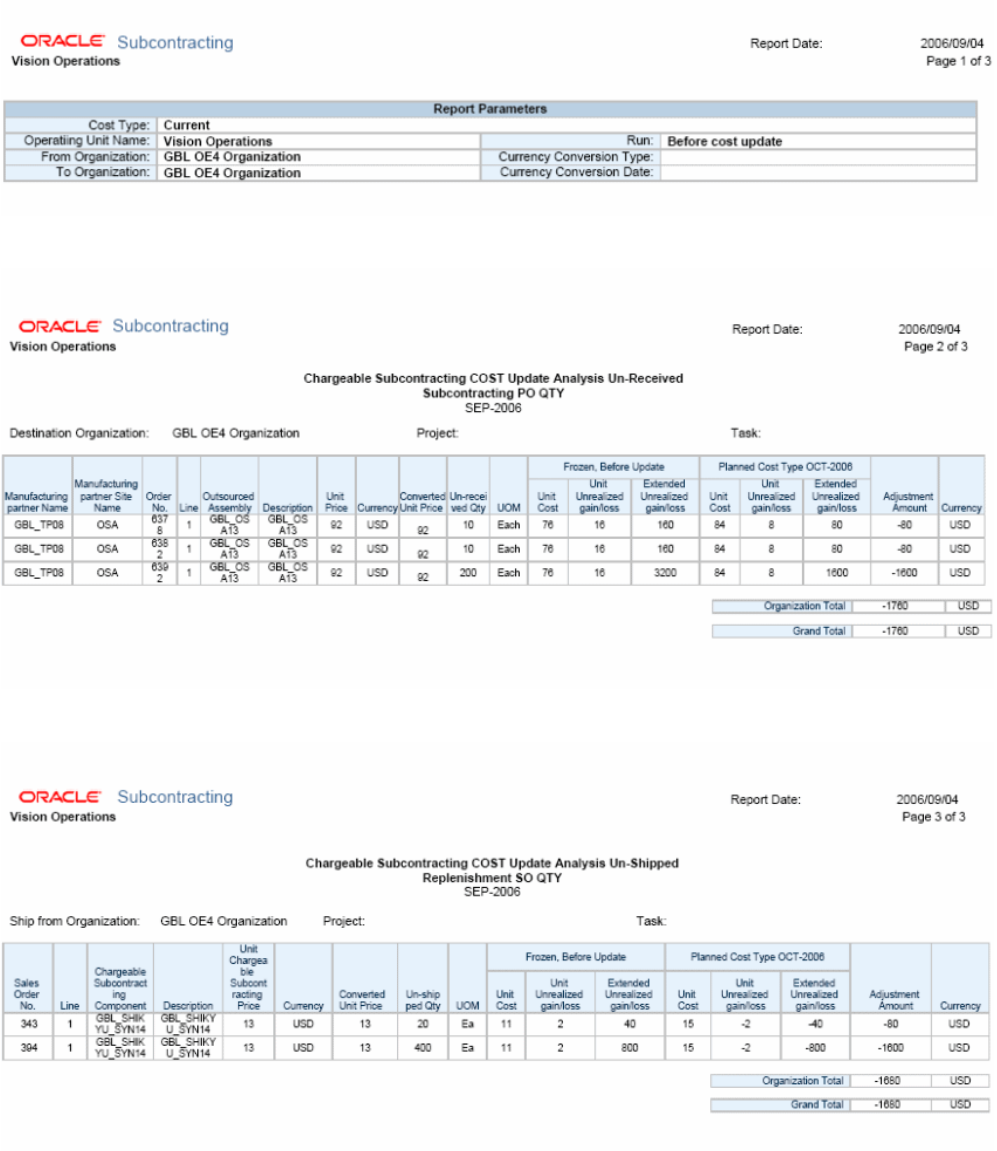
To run the Cost Update Analysis Report before a cost update:

1. From the Subcontracting responsibility, navigate to the Subcontracting Reports window.
2. In the Name field, select Subcontracting: Cost Update Analysis Report.
3. Enter an Operating Unit (required). The Parameters window appears.



4. Enter report parameters and click OK. The Subcontracting Reports window appears.

5. Enter report request parameters and click Submit. You can view the report output after the concurrent request completes.



ORACLE Subcontracting
Vision Operations

Report Date: 2006/09/04
Page 1 of 3

Report Parameters			
Cost Type:	Current		
Operating Unit Name:	Vision Operations	Run:	Before cost update
From Organization:	GBL OE4 Organization	Currency Conversion Type:	
To Organization:	GBL OE4 Organization	Currency Conversion Date:	

ORACLE Subcontracting
Vision Operations

Report Date: 2006/09/04
Page 2 of 3

Chargeable Subcontracting COST Update Analysis Un-Received Subcontracting PO QTY
SEP-2006

Destination Organization: GBL OE4 Organization Project: Task:

Manufacturing partner Name	Manufacturing partner Site Name	Order No.	Line	Outsourced Assembly	Description	Unit Price	Currency	Converted Unit Price	Un-received Qty	UOM	Frozen, Before Update			Planned Cost Type OCT-2006			Adjustment Amount	Currency
											Unit Cost	Unit Unrealized gain/loss	Extended Unrealized gain/loss	Unit Cost	Unit Unrealized gain/loss	Extended Unrealized gain/loss		
GBL_TP08	OSA	6378	1	GBL_OSA13	GBL_OSA13	92	USD	92	10	Each	76	16	160	84	8	80	-80	USD
GBL_TP08	OSA	6382	1	GBL_OSA13	GBL_OSA13	92	USD	92	10	Each	76	16	160	84	8	80	-80	USD
GBL_TP08	OSA	6392	1	GBL_OSA13	GBL_OSA13	92	USD	92	200	Each	76	16	3200	84	8	1600	-1600	USD
																Organization Total	-1760	USD
																Grand Total	-1760	USD

ORACLE Subcontracting
Vision Operations

Report Date: 2006/09/04
Page 3 of 3

Chargeable Subcontracting COST Update Analysis Un-Shipped Replenishment SO QTY
SEP-2006

Ship from Organization: GBL OE4 Organization Project: Task:

Sales Order No.	Line	Chargeable Subcontracting Component	Description	Unit Chargeable Subcontracting Price	Currency	Converted Unit Price	Un-shipped Qty	UOM	Frozen, Before Update			Planned Cost Type OCT-2006			Adjustment Amount	Currency
									Unit Cost	Unit Unrealized gain/loss	Extended Unrealized gain/loss	Unit Cost	Unit Unrealized gain/loss	Extended Unrealized gain/loss		
343	1	GBL_SHIKYU_SYN14	GBL_SHIKYU_SYN14	13	USD	13	20	Ea	11	2	40	15	-2	-40	-80	USD
394	1	GBL_SHIKYU_SYN14	GBL_SHIKYU_SYN14	13	USD	13	400	Ea	11	2	800	15	-2	-800	-1600	USD
														Organization Total	-1680	USD
														Grand Total	-1680	USD

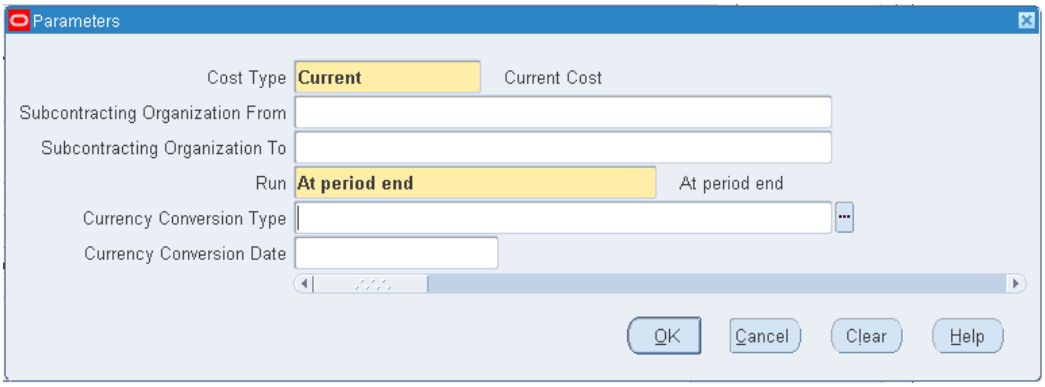
Pages 2 and 3 show the effect of assembly standard costs, and page 3 shows the effect of component costs. You must make general ledger entries based on the value of the cost effect.

To run the Cost Update Analysis Report at the end of a period:

The Cost Update Analysis Report run at the end of a period prints the effect of component returns due to the change in cost. The standard cost of the component can be different at the time the component is shipped to the MP and at the time when returns from the MP are realized. This difference causes imbalances in unrealized gain

and loss, and it must be estimated and adjusted at the end of the period.

The Cost Update Analysis Report at period end is run similarly to the Costs Update Analysis Report before a cost update. In the Parameters window, select At Period End in the Run field.



ORACLE Subcontracting
Vision Operations

Report Date: 2006/09/05
Page 1 of 2

Report Parameters			
Cost Type:	Current		
Operating Unit Name:	Vision Operations	Run:	At period end
From Organization:	GBL OE4 Organization	Currency Conversion Type:	
To Organization:	GBL OE4 Organization	Currency Conversion Date:	

ORACLE Subcontracting
Vision Operations

Report Date: 2006/09/05
Page 2 of 2

Chargeable Subcontracting COST Update Analysis Returned Chargeable Subcontracting Component Qty
SEP-2006

Ship from Organization: GBL OE4 Organization Currency: USD Project: Task:

Sales Order No.	Line	Chargeable Subcontracting Component	Description	Returned Qty	COGS at Saise Order Issue MMT		COGS Reversed by RMA		Adjustment Amount
					Unit Cost	COGS Amount	Unit Cost	COGS Amount	
348	1	GBL_SHIKYU_SYN14	GBL_SHIKYU_SYN14	5	11	55	15	75	20

Organization Total	20
Grand Total	20

You must make general ledger entries to offset unrealized gain or loss.

7

Subcontracting For Seiban-Based Manufacturing

This chapter covers the following topics:

- Overview of Seiban-Based Manufacturing
- Seiban-Based Manufacturing Setup
- Organization Setup
- Defining Cost Groups for MP Organizations
- Defining Seiban Numbers
- Organization Items
- Seiban-Based Subcontracting Planning
- Seiban-Based Subcontracting Execution

Overview of Seiban-Based Manufacturing

Oracle Subcontracting supports subcontracting in Seiban-Based Manufacturing. In Seiban-Based Manufacturing, outsourced assemblies and components are planned based on Seiban numbers (project numbers) using Advanced Supply Chain Planning (ASCP) and hard pegging. The subcontracting process is also executed using locator-controlled OEM and MP organizations and Seiban numbering.

The Subcontracting feature can be used in both discrete and Seiban-Based Manufacturing environments. The following sections describe the additional setup and execution steps required to use subcontracting in Seiban-Based Manufacturing.

Seiban-Based Manufacturing Setup

The setup steps described in the chapter Setting Up Subcontracting, apply to Seiban-Based Manufacturing. The sections that follow are for planning components and executing the subcontracting process using Seiban (project) numbers.

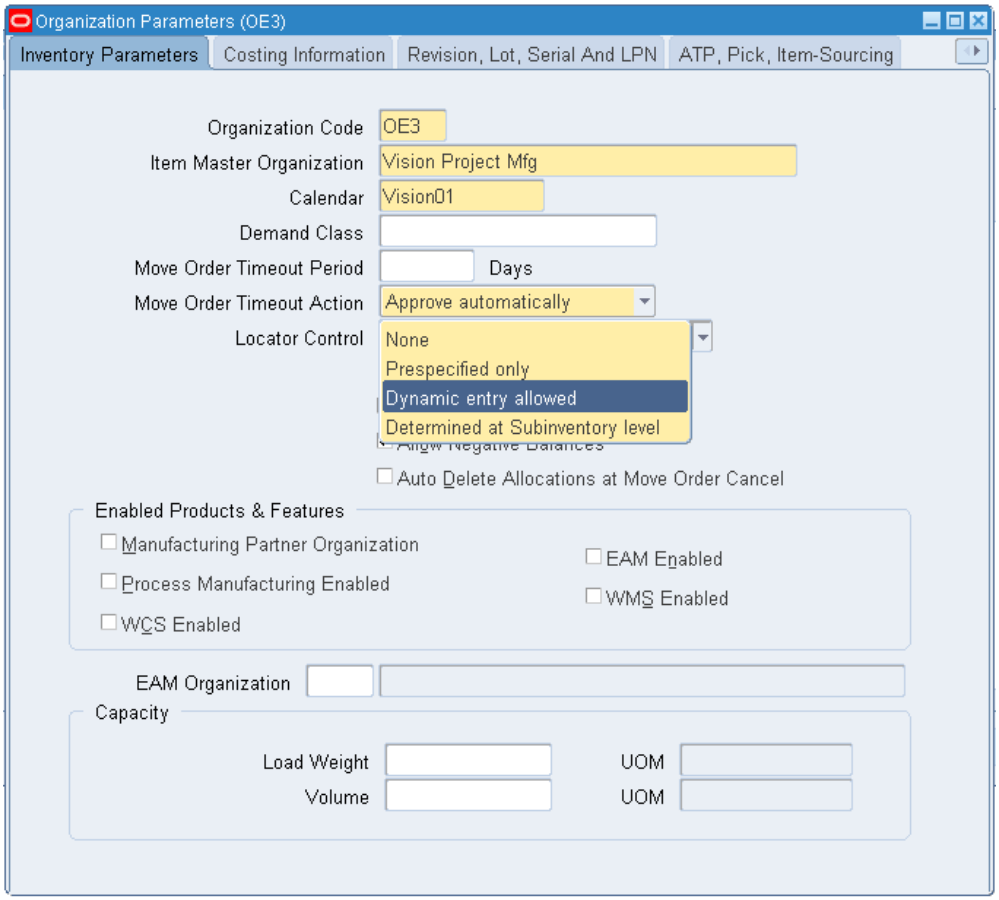
Organization Setup

Inventory Parameters

For Seiban-Based Manufacturing, Locator Control should be defined as dynamic entry allowed in Inventory parameters for both the OEM and MP organizations.

To set up Seiban inventory parameters:

1. From the Inventory responsibility, navigate to the Organization Parameters window.



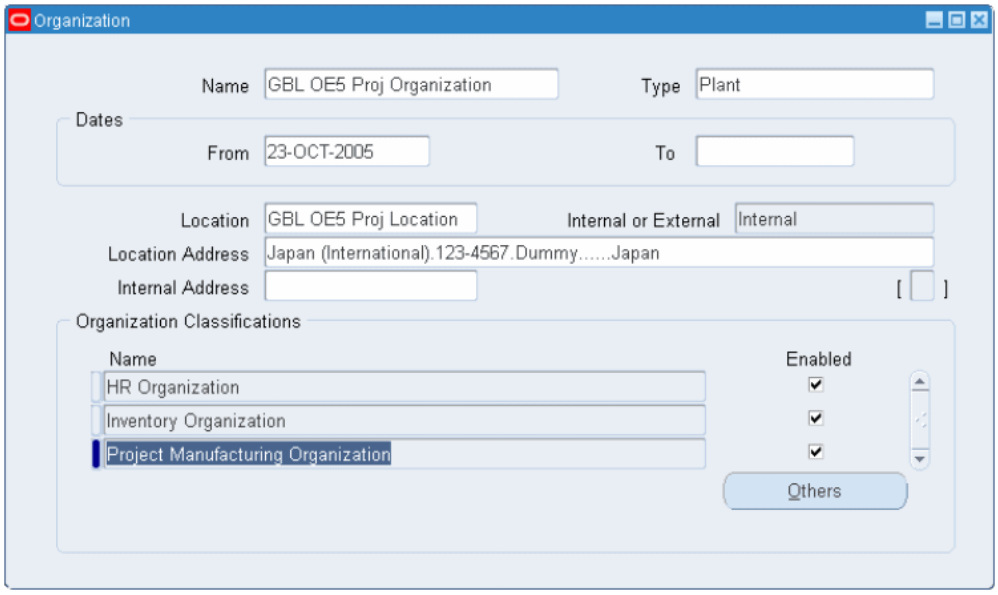
   You use locator control to identify project inventory.

2. Save your work.

Project Manufacturing Parameters:

Define the OEM and MP organizations as Project Manufacturing Organizations by adding Organization Classification as Project Manufacturing for both.

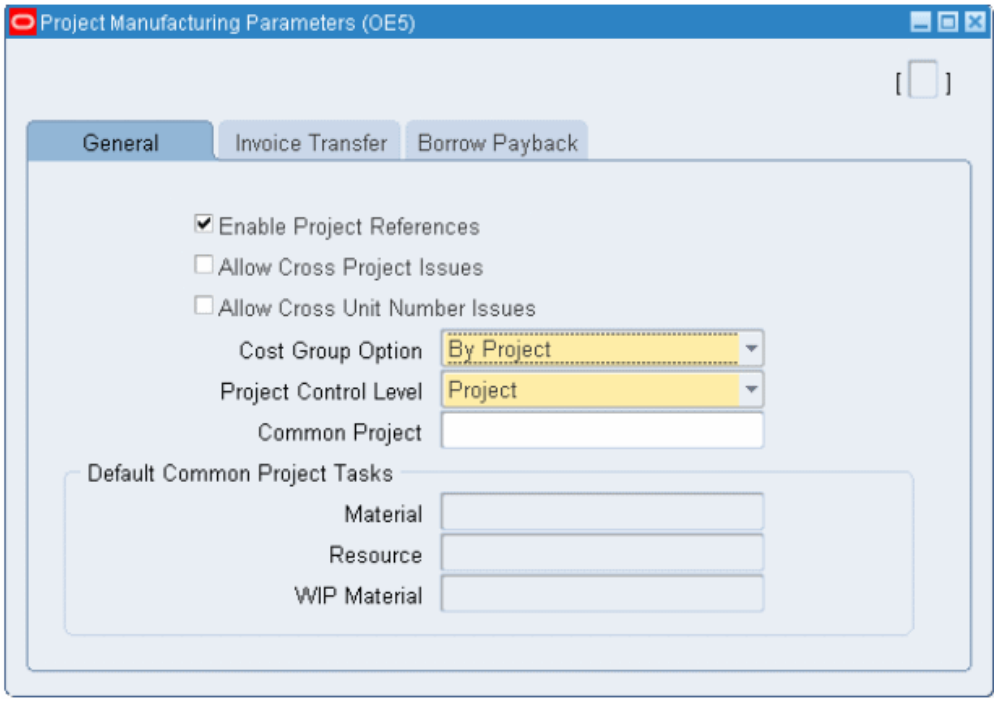
1. From the Inventory responsibility, navigate to the Organization window.



2. Navigate to the Project Manufacturing Parameters window, and click the General tab.

3. Select the Enable Project References indicator.

4. Set Project Control Level to Project.



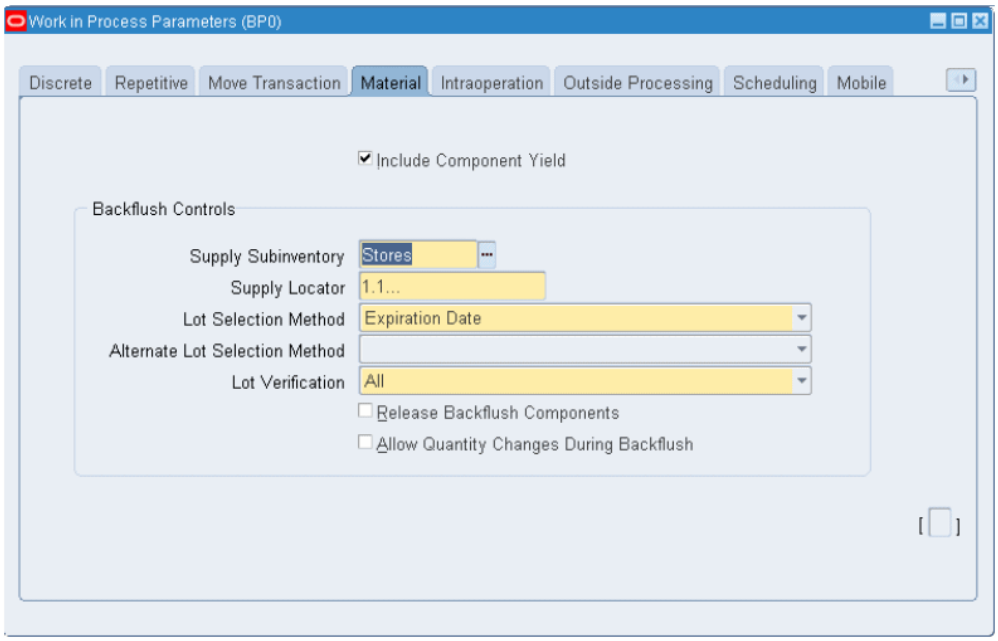
5. Save your work.

To define WIP parameters:

Seiban-Based Manufacturing uses locator-controlled subinventories for inventory transactions. To support the simulation of discrete jobs in the MP organization, supply subinventory should be a locator-controlled subinventory. Interlock Manager creates WIP jobs with this subinventory as component subinventory for back flushing. The Auto Receive concurrent program also receives components into this subinventory for simulation.

1. Navigate to the Work in Process Parameters window.

2. Select the Material tab and associate Locator Controlled Subinventory as Supply Subinventory. In addition, associate Supply Locator leaving Project/Task as blank. (For details about Locators in PJM, refer to the *Oracle Project Manufacturing User's Guide*.)



3. Save your work.

Defining Cost Groups for MP Organizations

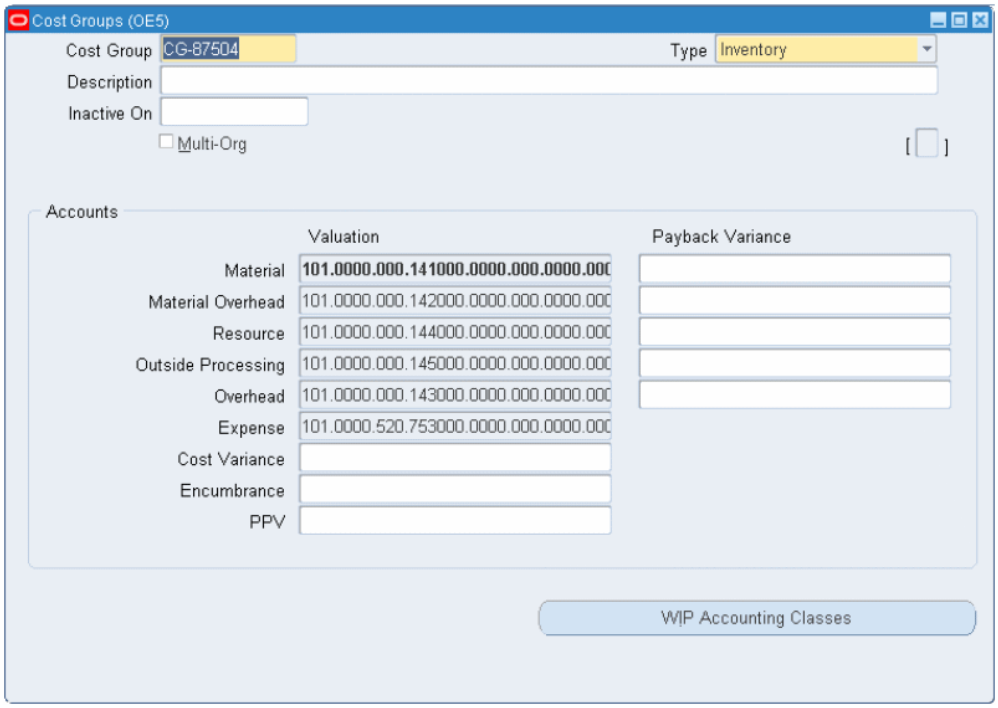
You must define Cost groups and associate a WIP accounting class (defined at the time of creating the WIP parameters for MP organizations). This action is required for simulating WIP jobs by project numbers, and it is part of the Project Manufacturing (PJM) setup.

See: *Oracle Project Manufacturing User's Guide*

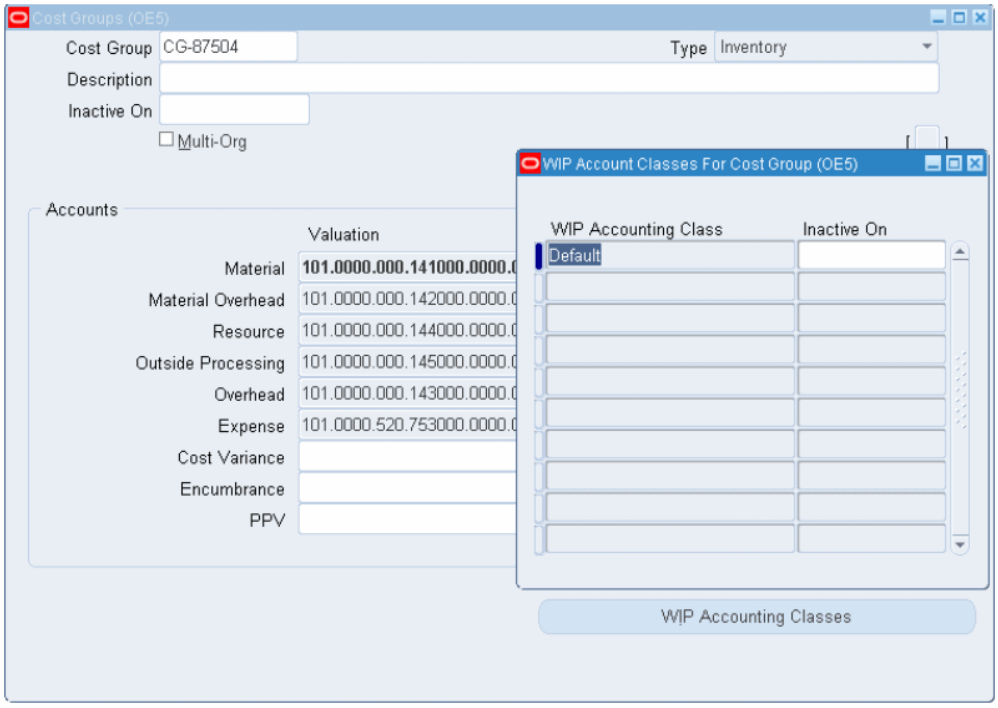
The MP organization is a zero-cost organization, and transfer to general ledger is set to No. Cost group setup is required to facilitate the simulation of assembly manufacturing in the MP organization using discrete jobs and project numbers. This setup does not have financial implications.

To define cost groups for MP organizations:

1. From the Cost Management responsibility, navigate to the Cost Groups window.
2. Define the cost group with Type set to Inventory. You can use any existing cost group.



3. Click WIP Accounting Classes to define WIP Accounting Classes for this cost group (use the same WIP accounting class defined at the time of defining WIP Parameters of MP Organization). The WIP Account Classes for Cost Group window appears.



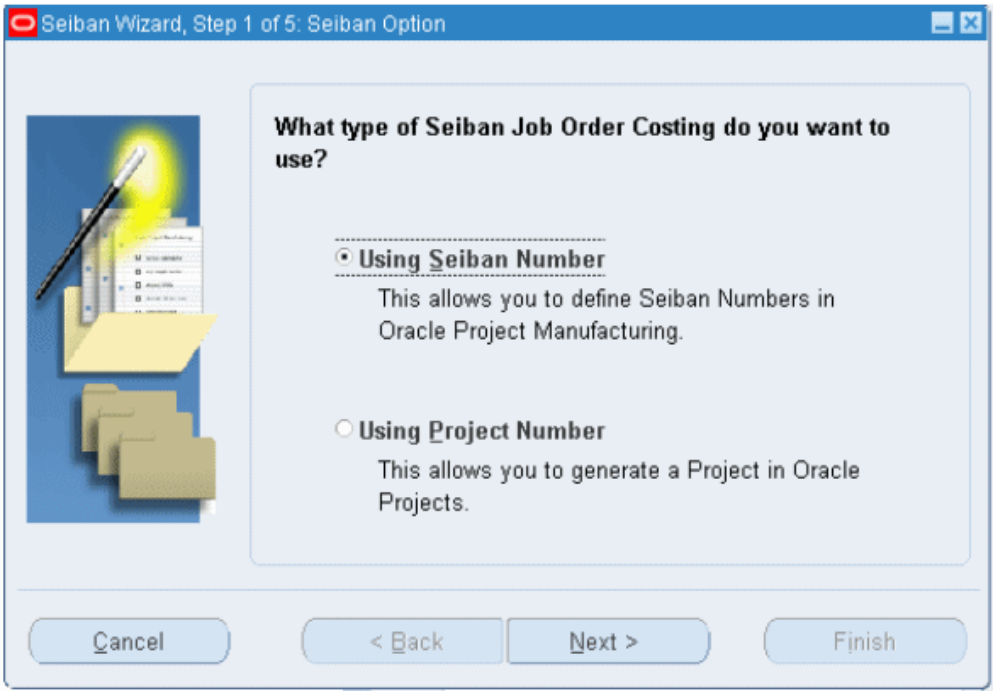
4. Save your work.

Defining Seiban Numbers

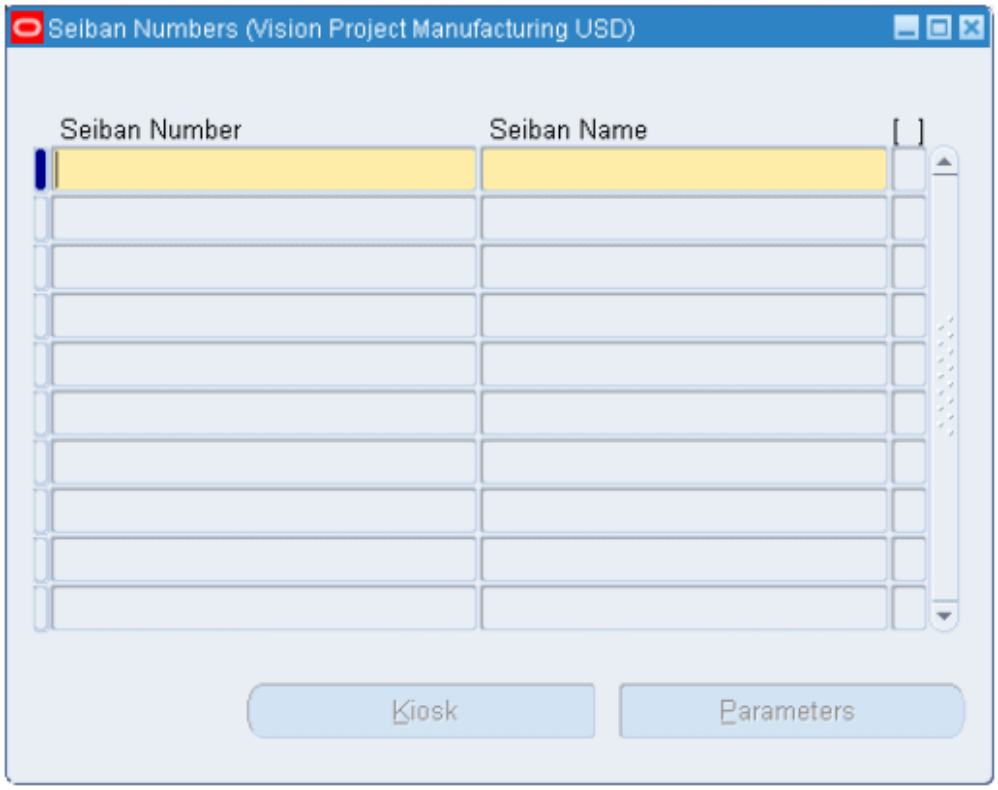
Before you plan and execute subcontracting in Seiban-Based Manufacturing environments, you define project numbers.

To define Seiban numbers:

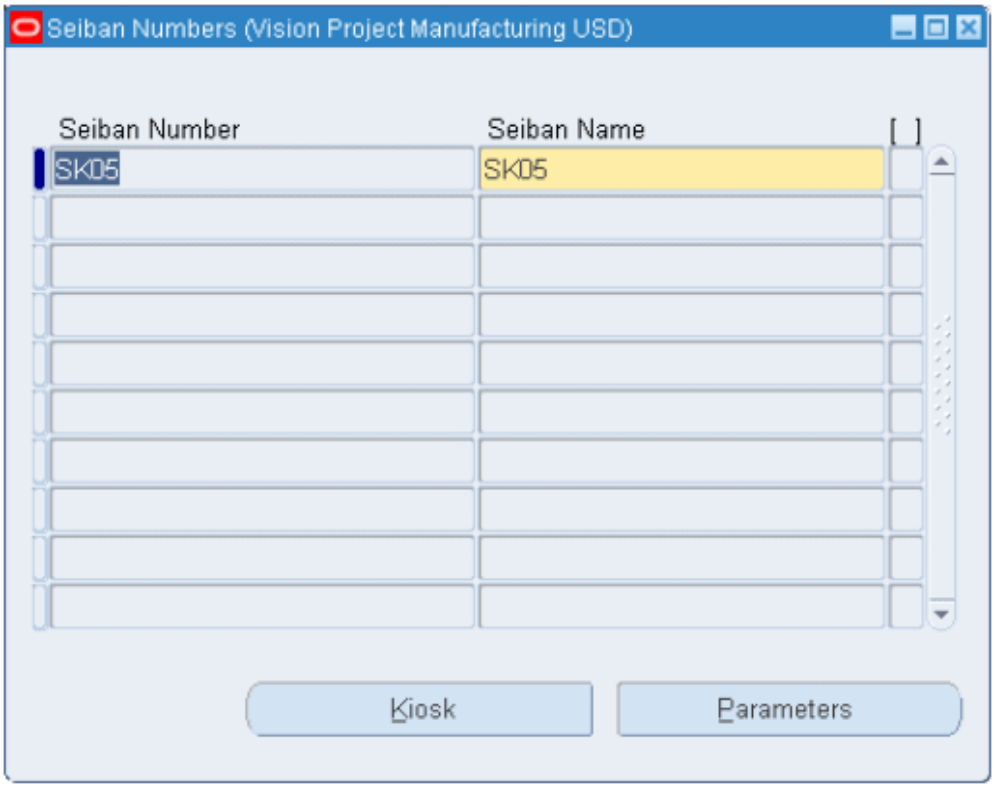
1. From the Project Manufacturing responsibility, navigate to the Seiban Wizard.



2. Select the Using Seiban Number indicator and click Next. The Seiban window appears.

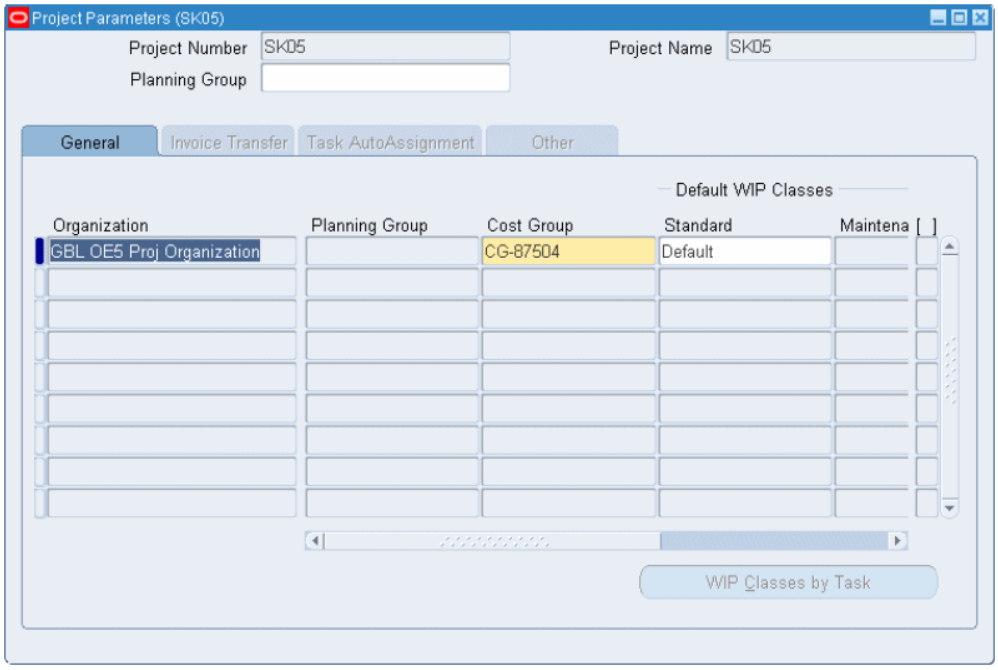


3. Enter Seiban (project) Numbers.



4. Save your work.

5. Click Parameters to define the parameters for the Seiban Number (project). The Project Parameters window appears.



6. Select the General tab and enter Inventory Organizations that use the project numbers. In this scenario, the OEM and MP organizations should be included.

7. Associate a cost group, which was defined in the previous procedure.

8. Associate a WIP Accounting Class. This value should be same as the WIP accounting class associated with the WIP parameters of the MP organization.

9. Save your work.

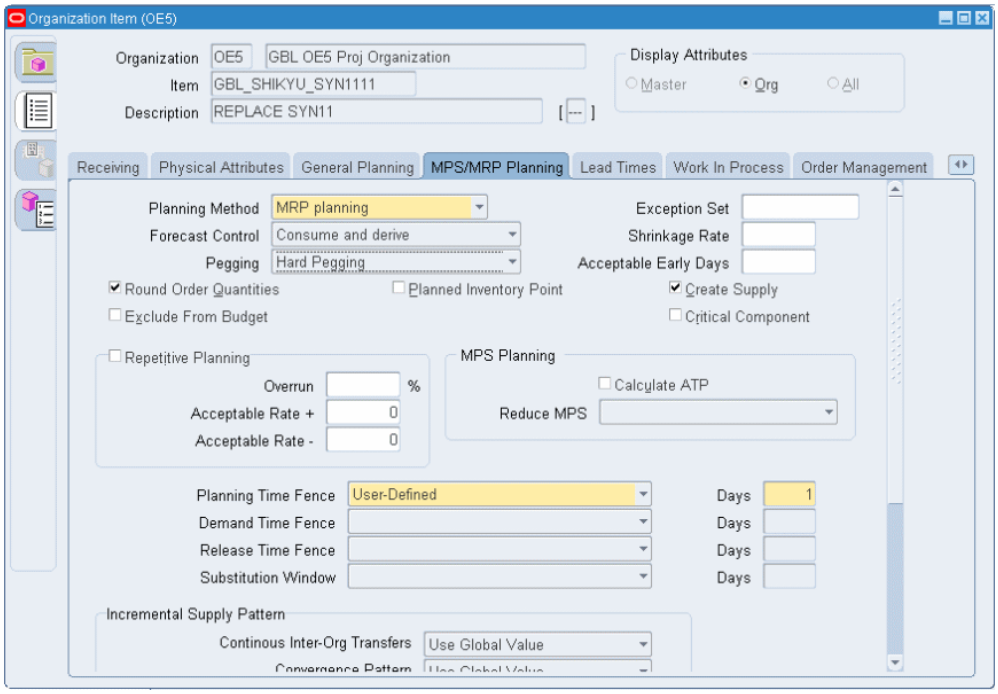
Organization Items

In Seiban-Based Manufacturing, outsourced assemblies and components must be defined as *hard pegged* items for planning and execution using Seiban numbers.

To define items as hard pegged:

1. From the Inventory responsibility, navigate to the Organization Item window.

2. Select the MPS/MRP Planning tab, and set the attribute Pegging to Hard Pegging. This information is used to for planning the demand and supply by project numbers.



3. Save your work.

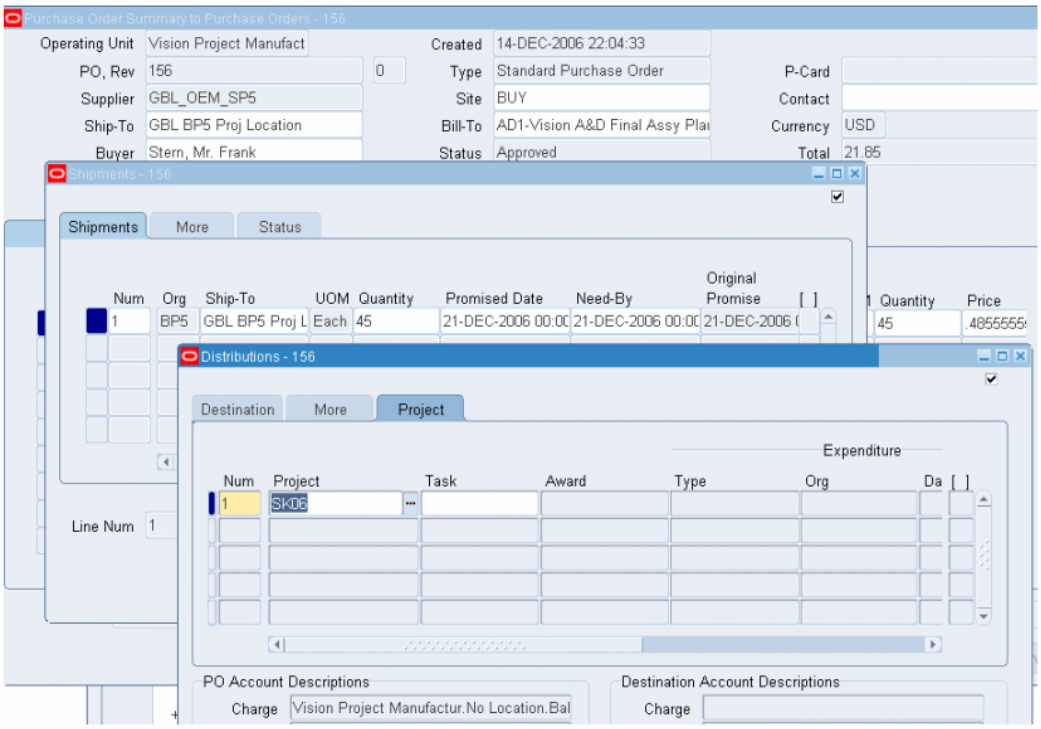
   All outsourced assemblies and subcontracting components should be defined as hard pegged in both OEM and MP organizations.

Seiban-Based Subcontracting Planning

The steps and processes of planning are similar to those of discrete manufacturing.

For Seiban-Based Manufacturing, the differences are:

- Forecast must be defined by project.
- ASCP plans the components and assemblies by project. Demand and supply are considered and calculated by project.
- Planned orders are created by project.
- Planned orders are outsourced as assemblies and pre-positioned components. They are transferred to purchasing as purchase requisitions. The purchase orders are created with project as shipment lines.
- For outsourced assemblies, the purchase order is called as a subcontracting order, and the project number is stamped in the purchase order line shipment distributions.



Note: Subcontracting Orders and Replenishment Purchase Orders of the pre-positioned components should always have one Shipment and Distribution for every purchase order line. Multiple shipments and distributions are not supported. When you create subcontracting orders and replenishment purchase orders manually, you can create multiple purchase order lines. However, only one shipment and distribution is allowed for each purchase order line. Interlock Manager discards purchase order lines if it has more than one shipment or distribution for each PO line, and it will not process them.

Seiban-Based Subcontracting Execution

The process for executing Subcontracting in the Seiban-Based Manufacturing environment is the same as for discrete manufacturing.

Interlock Manager

The Interlock Manager concurrent request picks up subcontracting orders and processes them by creating WIP jobs in the MP organization. Interlock Manager also creates replenishment purchase and sales orders, and it allocates the replenishment sales orders according to subcontracting order requirements in the same way described in the Subcontracting Process chapter of this guide.

- Work In Process (WIP) jobs are created with Seiban (project) references

- Replenishment purchase orders and replenishment sales orders are created with Seiban (project) references

- Allocations are made with the same conditions of shipment dates and price of replenishment order, and the project number must be the same for subcontracting orders and replenishment orders for allocation in the Seiban environment.

Auto Receive Components

Same as Discrete Manufacturing

Reconciliation Manager

Same as Discrete Manufacturing

Process Receiving Transactions

Same as Discrete Manufacturing

Subcontracting Workbench

Workbench functionality is the same as for Discrete Manufacturing. All search options can be executed with a Seiban (project) number. The project number is available in additional search options, and you can personalize the search and results to view them by project number.

Subcontracting Accounting

In Seiban-Based Manufacturing, accounting is the same as discrete manufacturing. Concepts and posting of accounts remain the same.

Reports

Seiban (project) numbers are printed with all the reports, and the remaining features and functions are the same as for Discrete Manufacturing.

8

Subcontracting Business Flows

This chapter covers the following topics:

- Drop Ship Components from RMS to MP
- Modeling Components for Drop Ship
- Planning Drop Ship Components
- Process Execution Drop Ship Components
- Multi-Level Outsourcing
- Outsourcing Phantom Assemblies
- Outsourcing Lot and Serial-Controlled Items

Drop Ship Components from RMS to MP

Oracle Subcontracting application supports drop shipping of components from the Raw Material Supplier (RMS) to the Manufacturing Partner (MP) from planning to execution as follows:

- All components of the outsourced assembly must be drop shipped from the RMS to the MP. Drop shipping of a few components of the outsourced assembly and normal shipping of the remainder to the MP is not supported.

- Subcontracting components are drop shipped to all of the MPs if defined. Drop shipping the same component to one MP and normal shipment to another MP is not supported.

- Both prepositioned and synchronized components can be drop shipped to the MP

Modeling Components for Drop Ship

Item Definition

For drop shipment, replenishment sales orders created for shipping the components from the OEM to the MP must have the source type as *External*. You can do this using two setup methods:

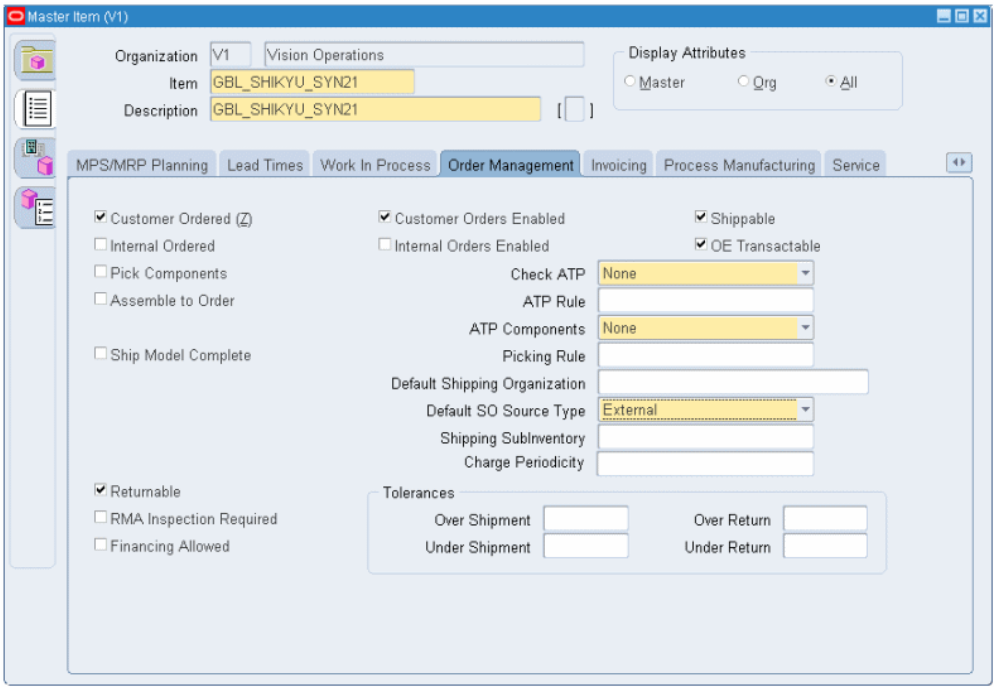
Method 1: Define Item Attribute Default Sales Order source type as *External* and define Order Management defaults so that this attribute is provided by default to the Sales Order line source type.

Method 2: Define Source Type as *External* in the Order Management Transaction Type window (this will be used for creating replenishment sales orders) and set Order Management Defaulting Rules to provide this source type by default from Order Management Transaction Type to the Sales Order line.

Also, define the Organization Item attribute Release Time Fence to *Don't Release Auto or Manual* for subcontracting components in the OEM organization.

To define attribute Source Type in items:

1. From the Inventory responsibility, navigate to the Master Item window.



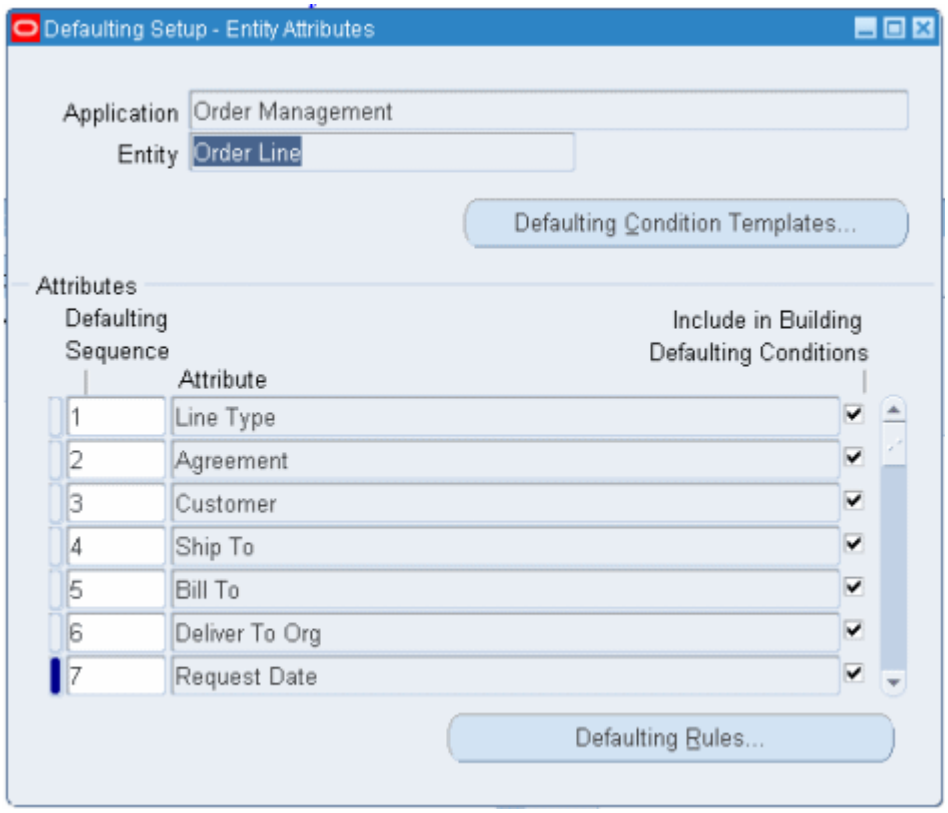
2. Select the Order Management tab and set Default SO Source Type to *External*.

3. Save your work.

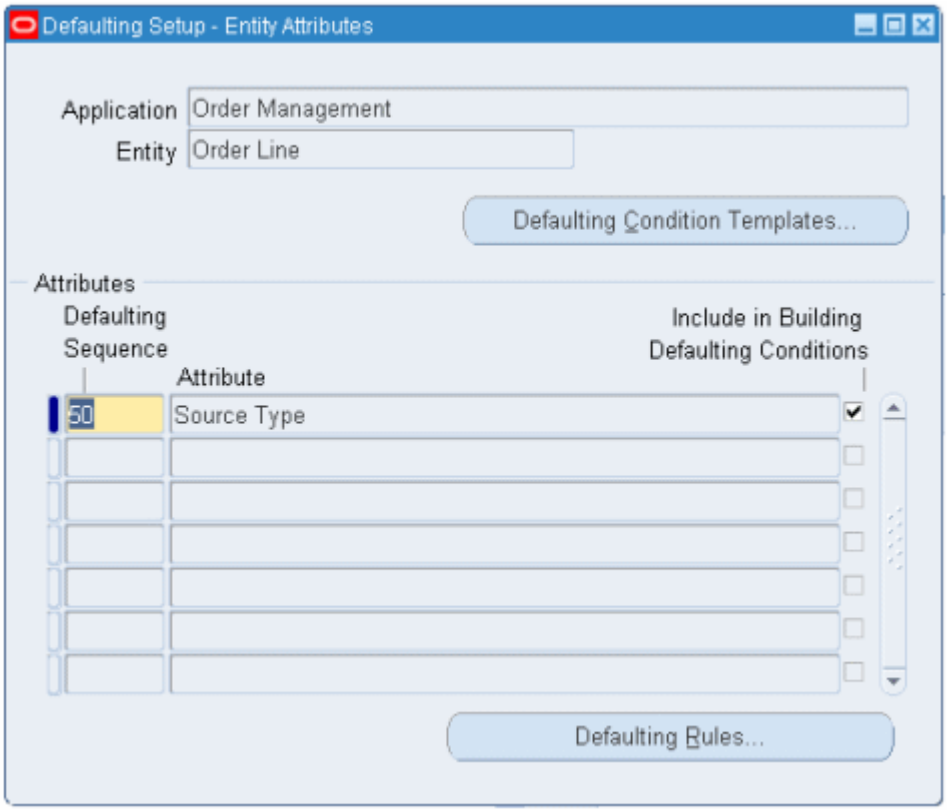
To define OM default rules:

1. From the Order Management responsibility, navigate to the Defaulting Setup window.

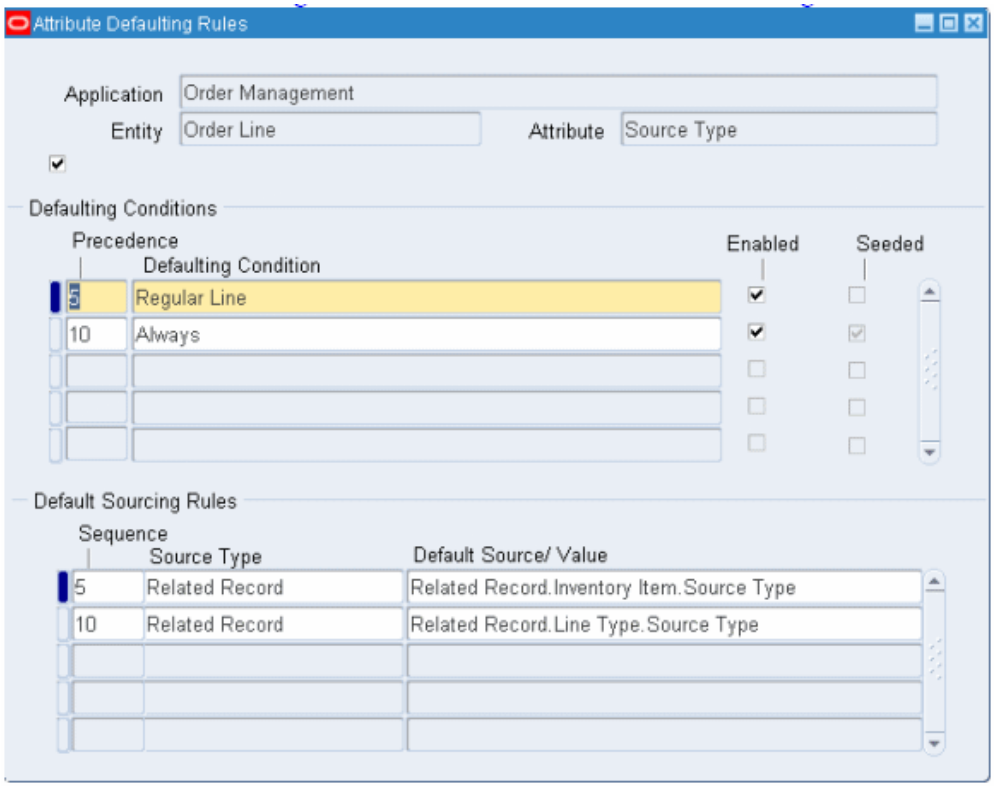
2. Search for default attributes:
   - Application: Order Management
   - Entity: Order Line



3. In the Attribute region, search for Source Type.



4. Click Defaulting Rules. The Attribute Defaulting Rules window appears.



5. Set defaulting conditions and rules for defaulting the Source Type from Items. See: *Oracle Order Management User's Guide* for Order Management defaulting rules.

Shipping Lead Times from the RMS to the MP:

Define the shipping Lead Time from the RMS to the MP in the shipping networks between the OEM and the MP. The application uses this lead time to simulate component procurement and to automatically receive drop ship components in the MP organization.

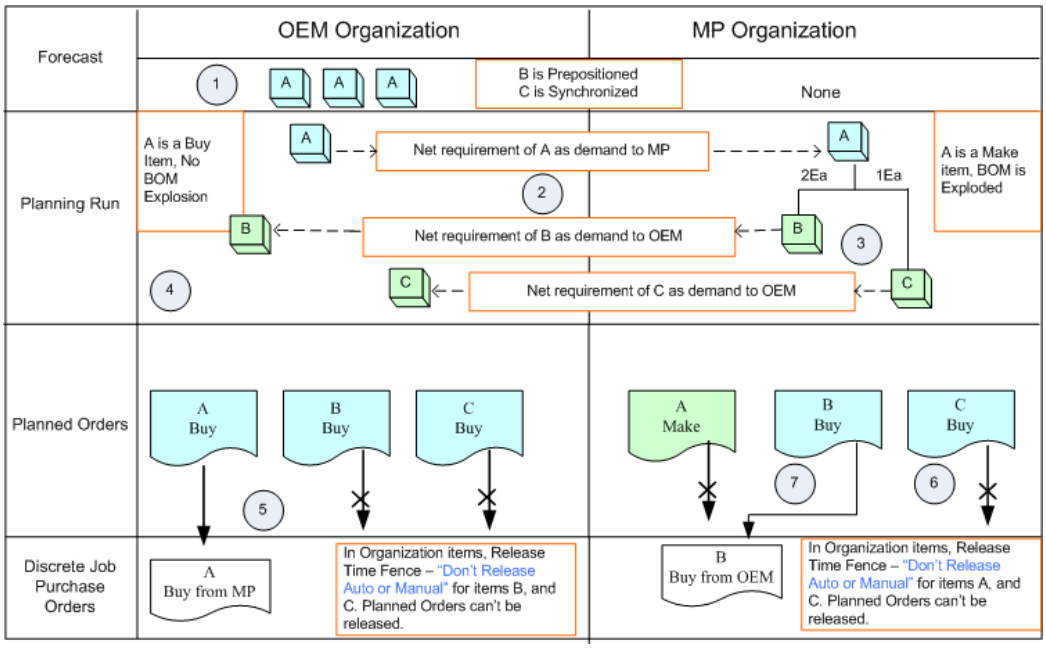
Others:

All other setup steps remain the same.

Planning Drop Ship Components

The planning functions for drop ship components are similar to those for standard items. However, the planned orders of the components in the OEM organization cannot be transferred as purchase orders because of the release time fence setup in the OEM organization. Drop ship purchase orders are created from drop ship replenishment sales orders for the components at a later stage for procuring components from the RMS.

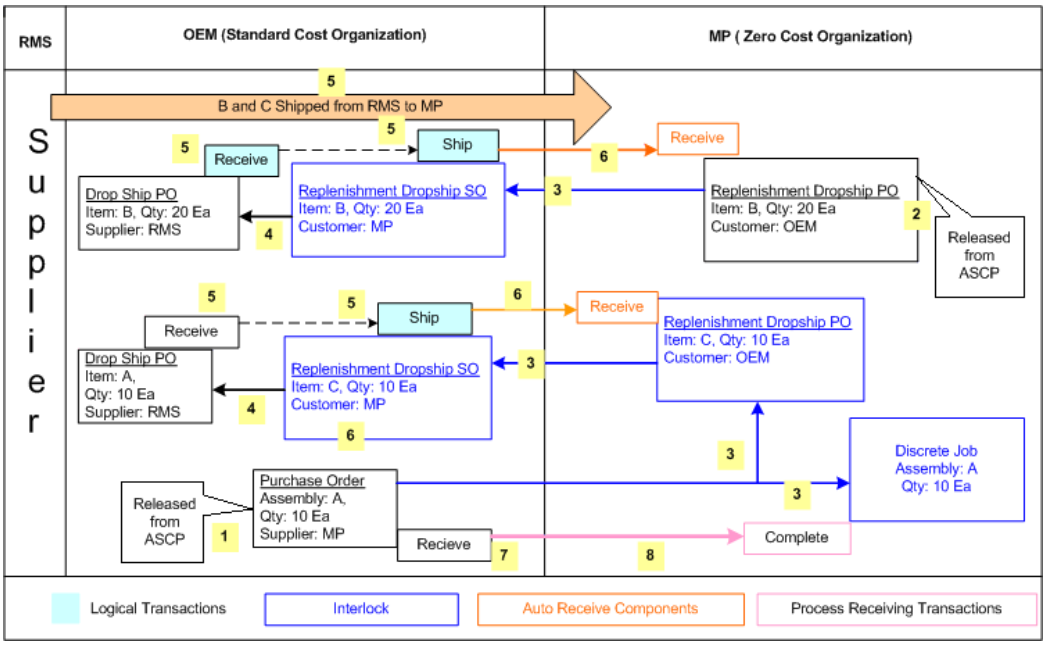
This diagram illustrates the planning process in a drop-shipment flow:



Process Execution Drop Ship Components

The process execution for Subcontracting is similar to that for standard items. Key aspects include:

- Interlock Manager creates replenishment drop ship sales orders in the OEM organization for components (based on the item and order management defaulting rules setup.)
- Drop ship purchase orders are created from replenishment drop ship sales orders. See: Drop Shipments, *Oracle Order Management User's Guide*
- When the RMS ships the components, the OEM is notified. The OEM reports the drop ship purchase order of the components received, and it updates the drop ship sales orders to Shipped status
- The Auto Receive Components concurrent request receives the components into the MP organization based on the shipping Lead Time set in shipping networks of the OEM and the MP.
- Payments to the RMS and the MP are similar to payments to standard purchasing and subcontracting, respectively.



The details of the process are:

1. Planned Order of A in ASCP is released as a purchase order in the OEM.

2. Planned Order of B (prepositioned component) is released as a purchase order in the MP.

3. The Interlock Manager concurrent request:

   - Picks the replenishment purchase orders of pre-positioned components B in the MP, and creates a drop ship sales order for B in the OEM

   - Picks purchase orders of outsourced Assembly A in the OEM and creates:

     - WIP job for A in the MP organization

     - Replenishment purchase order for Synchronized ship component C in the MP and drop ship sales order for C in the OEM

   - Makes allocations for the discrete JOB component requirements

4. Drop ship purchase orders are created from the drop ship sales orders.

5. The RMS ships components to the MP, and the OEM creates logical drop ship purchase order receipts for components B and C in the OEM organization. This action sets the corresponding drop ship sales order line status of B and C to Shipped.

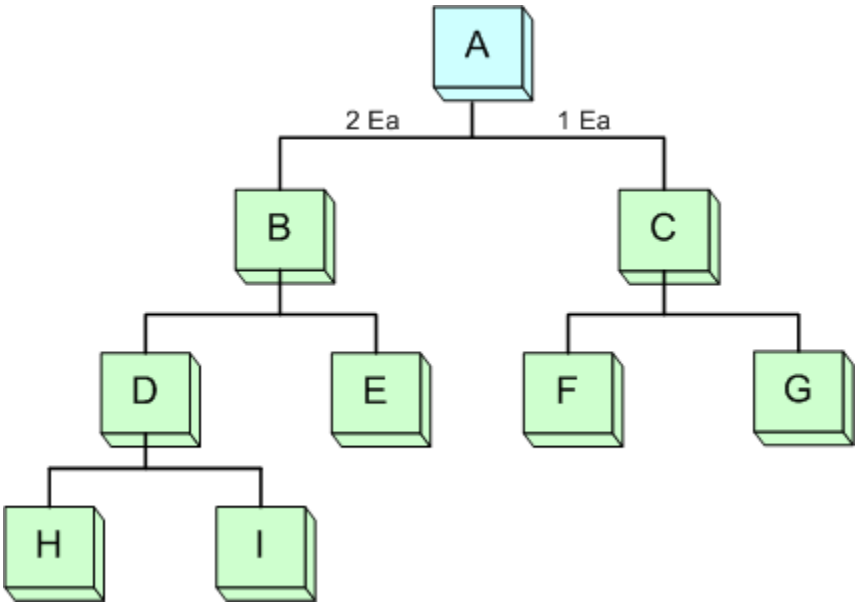
6. The Auto Receive Components concurrent request selects the component shipments in the OEM and creates purchase order receipts in the MP.

7. Purchase Orders of outsourced assemblies are received in the OEM organization.

8. The Process Receiving Transaction Processor selects assembly receipts in the OEM and completes the discrete job in the MP. This action also back flushes components B and C in the MP.

Multi-Level Outsourcing

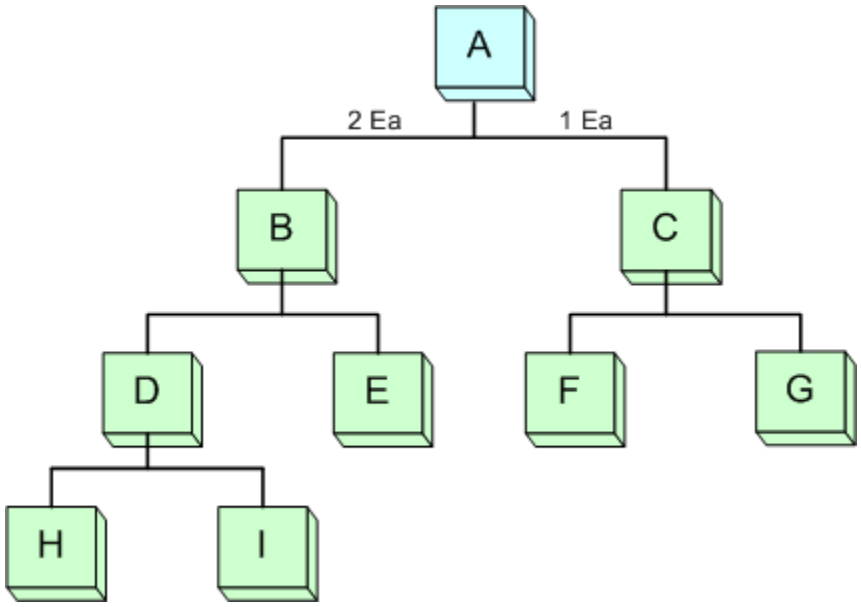
You can set up your system to outsource subassemblies at several levels of the final assembly. In the following example, A is the final assembly containing subassemblies D, B, and C. Using the Subcontracting application, you can set up your system to outsource all subassemblies and the final assembly or to outsource only a specified number of subassemblies and the final assembly. The only condition is that the outsourced assembly must return to the OEM from the MP before it is sent to the customer or sent to another MP for further processing.



Outsourcing Phantom Assemblies

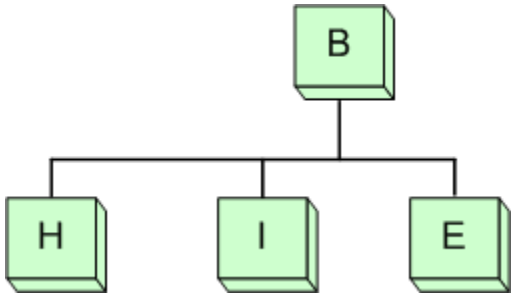
Subcontracting supports the outsourcing of phantom assemblies. You can define phantom bills of material (BOM) for design control purposes, and you can use the same BOM structure for outsourcing. Interlock Manager compresses the phantom BOM to a single-level bill of material with all the regular components and processes, making them similar to standard assemblies.

In this diagram, D is a phantom assembly and all others are standard assemblies and components. Assembly B is outsourced. The same phantom BOM structure is defined both in the OEM and the MP organizations, and all other setup steps are the same.



When Interlock Manager processes the subcontracting order of outsourced assembly B, it also compresses phantom assemblies and then processes the assembly as it would any other assembly.

This diagram illustrates Assembly B after BOM Compression.



All other execution processes are the same.

You can also outsource assemblies with multi-level phantoms. Interlock Manager compresses the BOM and then processes them as standard BOM.

Outsourcing Lot and Serial-Controlled Items

You can outsource lot and serial-controlled components and assemblies using Subcontracting. To do so:

- Items are defined as lot or serial-controlled items in the OEM organization and as standard items in the MP organization.

- Components are shipped in the OEM by lot and serial number. Components are received without lot and serial numbers in the MP because the MP is a simulation organization and there is no need to simulate with lot and serial numbers.

- Outsourced assembly is received in the OEM, and lot and serial numbers are created for the assemblies.

- Interlock Manager allocates replenishment sales orders (shipped using lot and serials) for the outsourced assemblies (received with lot and serials are created in OEM).

- Subcontracting Workbench displays allocations and replenishment sales order allocated and consumed for the outsourced assembly. However, the workbench does not display the lot and serial numbers of components shipped and assemblies received. You can track these using allocations.

9

Troubleshooting

This chapter covers the following topics:

- Overview
- Interlock Manager
- Auto Receive Components
- Process Receiving Transactions

Overview

Oracle Subcontracting, works effectively if you closely follow the setup steps described in Chapter 2 of this guide. If you set up subcontracting incorrectly, then some of the subcontracting concurrent programs will not process the data and the execution process will not function properly. You must correct an erroneus data setup and rerun the processes.

Use the checkpoints provided in this chapter to verify whether concurrent programs are not processing the data.

Interlock Manager

You can classify Interlock Manager process steps into three sets:

1. Creating WIP jobs in the MP organization. During this process, you can view subcontracting orders on the workbench. If WIP jobs are not created, then the subcontracting order is not visible on the Subcontracting Workbench.

2. Create replenishment Sales orders. You can view replenishment orders on the Subcontracting Workbench.

3. Allocate replenishment orders in accordance with subcontracting order requirements.

The Interlock Manager concurrent request executes all steps at once if the data is correctly set up. If the setup is not complete, then Interlock Manager may execute only a few steps or it may not execute any steps. Review the setup and make the necessary corrections.

Problem at Step 1: WIP Jobs Are Not Created in the MP Organization

Any of the following issues can cause this problem. Verify and correct the setup.

- The profile MO: Default Operating Unit is not set to the operating unit of the OEM organization
- The profile MO: Security is not set
- Inventory Periods are not opened in the MP organization
- WIP Parameters are not defined for the MP organization
- Customer and supplier relationships are not defined in the OEM and MP organizations
- Check the validity of BOM and components in the MP organization
- Check and ensure that routing does not exist in the MP organization
- Ensure that OEM and MP organizations are not Process, WMS, or EAM enabled organizations
- Check that components and assemblies are defined in the OEM and MP organizations as outsourced assemblies and are pre-positioned or synchronized components respectively. If this is the problem, then you must cancel the current PO and create a new PO with the same details.

Problem at Step 2: Interlock Is Not Creating Replenishment Orders

- Shipping networks are not defined for the OEM and MP
- No valid price exists for the components
- Document sequence is not defined for the Order Management transaction type associated in the shipping networks of OEM to the MP
- Profile sequential numbering is not set as Partially Used or Always used

Problem at Step 3: Replenishment Sales Orders are Not Allocated

In the case of synchronized components if the replenishment sales order is created, it will always be allocated, so this issue might not arise. In the case of prepositioned components, which would be a common problem, allocations are made to the existing replenishment sales orders.

- For Chargeable Subcontracting, the sales price of the replenishment sales order is different than the component price of the subcontracting order (you can see both the prices on the workbench).

- Replenishment sales order shipment date is earlier than the requirement date of the component.

Auto Receive Components

If auto receive is not receiving the components in the MP organization after shipping the components in the OEM organization, then these problems could occur:

- Replenishment sales order ship date plus shipment lead-time defined in the shipping networks between OEM to the MP is less than the current date (date at which the Auto Receive Components concurrent request is run).

- Purchasing periods are not open.

Process Receiving Transactions

If the Process Receiving Transactions concurrent request does not complete WIP jobs in the MP organization, then subcontracting order components may not be fully allocated.

A

Windows and Navigator Paths

This appendix covers the following topics:

- Windows and Navigator Paths

Windows and Navigator Paths

This table lists typical navigator paths. Text in brackets ([ ]) indicates a button.

Your system administrator may have customized your navigator.

Window Name	Navigation Path
Additional Organization Information	Inventory > Setup > Organizations > Organizations [Others]
Customers	Order Management > Customers > Standard
Customer/Supplier Association	Inventory > Setup > Organizations > Organizations [Others] > Customer/Supplier Association
Find Organization Items	Inventory > Items > Organization Items
Netting	Payables > Payments > Entry > Netting > Netting Agreement
Organization	Inventory > Setup > Organizations > Organizations
Organization Item	Inventory > Items > Organization Items > Find Organization Items [Find]

Window Name	Navigation Path
Organization Parameters	Inventory > Setup > Organizations > Organizations [Others] > Inventory Information
Segment Values	General Ledger > Setup > Financials > Values
Shipping Networks	Inventory > Setup > Organizations > Shipping Networks
Suppliers	Purchasing > Payables > Suppliers > Entry
Transaction Sources	Accounts Receivable > Setup > Transactions > Transaction Sources
Transaction Types	Order Management > Setup > Transaction Types > Define
Transaction Types (Receivables)	Accounts Receivable > Setup > Transactions > Transaction Types
Subcontracting Workbench	Subcontracting > Workbench

B

Subcontracting in Oracle Daily Business Intelligence

Subcontracting in Oracle Daily Business Intelligence

If you enable Subcontracting and Oracle Daily Business Intelligence (DBI), then some DBI dashboards and reports will be affected. The effect is summarized in the following sections.

See the *Oracle Daily Business Intelligence User Guide* and *Oracle Daily Business Intelligence Implementation Guide* for more information about DBI.

Inventory Management Dashboard and Reports

If Subcontracting is enabled, then:

- Inventory turns calculations include cost of goods shipped (COGS) for subcontracting components.
- The Manufacturing Partner (MP) appears in the Organization parameter, but data associated with the MP does not appear.

Manufacturing Management Dashboard and Reports

If Subcontracting is enabled, then the MP appears in the Organization parameter, but data associated with the MP does not appear.

Product Cost Management Dashboard and Reports

If Subcontracting is enabled, then:

- The MP appears in the Organization parameter, but data associated with the MP does not appear.

- The COGS calculation includes sales orders for subcontracting components. In the dashboard and reports, sales orders for subcontracting components are not distinguished from other sales orders.
- Fulfilled value includes sales order lines of type Subcontracting.
- The product gross margin includes the margin from shipping subcontracting components.
- The product gross margin report includes Return Material Authorizations from the MP against sales orders for subcontracting components.

Warehouse Management Dashboard and Reports

If Subcontracting is enabled, then the MP appears in the Organization parameter, but data associated with the MP does not appear.

Glossary

Original Equipment Manufacturer (OEM)

A company that owns the product designs that it sells, and manufactures the products either in its own factory or by outsourcing to Manufacturing Partners (MP).

Manufacturing Partner (MP)

A company that provides manufacturing services, and manufactures assemblies and products for OEMs.

Chargeable Subcontracting

In Chargeable Subcontracting, the Original Equipment Manufacturer (OEM) completely outsources the manufacturing of an assembly to an Manufacturing Partner (MP) and makes a provisional sale of components by invoicing the MP. The OEM retains the ownership of the components even after registering the sale of components. Chargeable subcontracting support is only for Japan, Taiwan, and Korea

Buy/Sell Subcontracting

In Buy/Sell Subcontracting the Original Equipment Manufacturer (OEM) completely outsources the manufacturing of an assembly to a Manufacturing Partner (MP) by buying the assembly from the MP and most importantly, sells the components to the MP that are consumed in the manufacturing of the assembly at the MP's premises. Buy/Sell subcontracting support is available for all countries.

Outsourced Assembly

Assembly item that is designed by the OEM, and outsourced to a MP for manufacturing at the latter's site.

Subcontracting Components

Components sent by the OEM to the MP for the manufacture of outsourced assemblies.

Pre-positioned

Components are shipped to the MP without reference to any subcontracting order ahead of assembly requirements. When the subcontracting order is created, these components are hard allocated.

Synchronized

Components shipped along with the order, to the MP with references to specific subcontracting orders.

Subcontracting Order

Purchase order (or Blanket Release) created by the OEM to procure outsourced assemblies from the MP.

Replenishment PO

Purchase order created for the MP in the Subcontracting process to procure subcontracting components from the OEM. This purchase order is not visible on the Subcontracting Workbench. The PO is also closed for invoicing.

Replenishment SO

Sales order created in the Subcontracting process to ship subcontracting components to the MP.

Allocations

Pegging of replenishment sales orders created in the OEM organizations in accordance with component requirements for the manufacture of outsourced assemblies at the MP site.

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