

# Oracle® Configure to Order

Process Guide

Release 11*i*

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Oracle Configure to Order Process Guide, Release 11i

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Primary Authors: Evelyn Tran, Valerie Dubois

Contributing Authors: Yuana Kumala, Perry Toscano, Usha Arora, Raja Ivaturi

Contributors: Thomas Dobbs, David Reitan

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# Send Us Your Comments

**Oracle Configure to Order Process Guide, Release 11i**

**Part No. A90459-05**

Oracle Corporation welcomes your comments and suggestions on the quality and usefulness of this document. Your input is an important part of the information used for revision.

- Did you find any errors?
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If you would like a reply, please give your name, address, telephone number, and (optionally) electronic mail address.

If you have problems with the software, please contact your local Oracle Support Services.



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# Preface

## Audience for This Guide

Welcome to Release 11i of the Oracle Configure to Order Process Guide

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

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

If you have never used Configure to Order, we suggest you attend one or more of the Oracle training classes available through Oracle University.

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

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

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

## How To Use This Guide

This guide contains the necessary information you need to comprehend and use Oracle Configure to Order. This preface explains how this implementation guide is organized and introduces other sources of information that can assist you in understanding Oracle Applications.

This guide contains the following chapters:

- Chapter 1 provides an overview of Oracle Configure to Order

- Chapter 2 details setup steps for Oracle Configure to Order
- Chapter 3 describes implementation for creating and processing configurations
- Chapter 4 details reserving inventory and workflows for supply to order.
- Chapter 5 describes Order Returns.
- Chapter 6 details updating configurations.
- Chapter 7 describes deactivating configurations.

## Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>

### **Accessibility of Code Examples in Documentation**

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### **Accessibility of Links to External Web Sites in Documentation**

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## Other 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 Order Management.

If this guide refers you to other Oracle Applications documentation, use only the Release 11i versions of those guides.

## Online Documentation

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

- Online Help - The new features section in the HTML help describes new features in 11i. This information is updated for each new release of the Oracle Order Management Suite Implementation Manual. The new features section also includes information about any features that were not yet available when this guide was printed. For example, if your administrator has installed software from a mini-packs an upgrade, this document describes the new features. Online help patches are available on MetaLink.
- 11i Features Matrix - This document lists new features available by patch and identifies any associated new documentation. The new features matrix document is available on MetaLink.
- Readme File - Refer to the readme file for patches that you have installed to learn about new documentation or documentation patches that you can download.

## Related User's Guides

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

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

If you require printed guides, you can purchase them from the Oracle Store at <http://oraclestore.oracle.com>.

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

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

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

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

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

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

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

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

This guide describes how to create various bills of materials to maximize efficiency, support customer requirements, improve quality and lower cost for the most sophisticated manufacturing environments. By detailing integrated product structures and processes, flexible product and process definition, and configuration management, this guide enables you to manage product details within and across multiple manufacturing sites.

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

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

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

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



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

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

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

This guide describes a variety of tools offered to manage and manipulate demand information for both design and operational phases. You can create forecasts, load these forecasts into master production schedules, and plan your end-items and their component requirements. You can also execute the plan, releasing and rescheduling planning suggestions for discrete jobs and repetitive schedules.

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

This guide describes how to enter sales orders and returns, manage spare parts, sales orders, copy existing sales orders, schedule orders, release orders, plan departures and deliveries, confirm shipments, create price lists and discounts for orders, and create reports.

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

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

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

This guide describes how to create and approve purchasing documents, including requisitions, different types of purchase orders, quotations, RFQs, and receipts. This guide also describes how to manage your supply base through agreements, sourcing rules and approved supplier lists. In addition, this guide explains how you can automatically create purchasing documents based on business rules through integration with Oracle Workflow technology, which automates many of the key procurement processes.

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

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

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

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

### **Oracle HRMS User's Guide**

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

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

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

## **Reference Manuals**

### **Oracle Technical Reference Manuals**

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

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

### **Oracle Manufacturing, Distribution, Sales and Service 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 open interfaces found in Oracle Manufacturing.

## **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 11.

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

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

# **Installation and System Administration**

## **Oracle Applications Concepts**

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

## **Installing Oracle Applications**

This guide provides instructions for managing the installation of Oracle Applications products. In Release 11*i*, much of the installation process is handled using Oracle Rapid Install, which minimizes the time to install Oracle Applications, the Oracle8 technology stack, and the Oracle8*i* Server technology stack by automating many of the required steps. This guide contains instructions for using Oracle Rapid Install and lists the tasks you need to perform to finish your installation. You should use this guide in conjunction with individual product user's guides and implementation guides.

## **Upgrading Oracle Applications**

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

## **Maintaining Oracle Applications**

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

run the AD utilities. This guide also provides information on maintaining the Oracle applications file system and database.

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

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

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

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

## **Other Implementation Documentation**

### **Multiple Reporting Currencies in Oracle Applications**

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

### **Multiple Organizations in Oracle Applications**

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

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

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

### **Oracle 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 11i. It includes new features, enhancements, and changes made to database objects, profile options, and seed data for this interval.

## **Oracle eTechnical Reference Manuals**

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

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

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

## **Oracle Applications Message Reference Manual**

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

# **Training and Support**

## **Training**

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

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

## **Support**

From on-site support to central support, our team of experienced professionals provides the help and information you need to keep Oracle Order Management working for you. This team includes your Technical Representative, Account Manager, and Oracle's large staff of consultants and support specialists with

expertise in your business area, managing an Oracle8i server, and your hardware and software environment.

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

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

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL\*Plus to modify Oracle Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data. Because Oracle Applications tables are interrelated, any change you make using Oracle Applications can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle Applications.

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

## **About Oracle**

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# Overview of Configure-to-Order Implementation

Topics covered in this chapter include:

- [Overview of Oracle Configure to Order](#) on page 1-2
- [Feature Highlight](#) on page 1-15
- [Examples Used in This Manual](#) on page 1-19

## Overview of Oracle Configure to Order

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

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

Configure to Order:

- includes Pick-to-Order (PTO) and Assemble-to-Order (ATO) items, models, and hybrids.

- supports building configurations using other configurations as sub-assemblies (multi-level configure to order)

- supports internal sourcing of ATO models at any level of BOM

- supports purchasing of ATO models and items at any level of the BOM

## Definitions

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

Assemble-to-Order model consists of:

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

### **Assemble-to-Order Item**

Assemble-to-Order item consists of:

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

There are three types of ATO items:

1. **AutoCreated Configuration Items:** Configuration items created by CTO for a sales order which was placed for a model and options. These items have the following attributes:
  - The ATO flag checked on the OM tab of the item master

- A Base Model defined on the BOM tab of the item master
  - The Autocreated Configuration flag is checked.
2. **Preconfigured Items:** An item defined by the user with a "Base Model" and a configured bill of material. These items have the following attributes:
    - The ATO flag checked on the OM tab of the item master
    - A Base Model defined on the BOM tab of the item master
  3. **Standard ATO Items:** These are standard items with the ATO flag checked on the OM tab of the item master.

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

Pick-to-Order model consists of:

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

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

Kit consists of:

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

### **Hybrid**

Hybrid consists of:

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

### **Multi-Level Assemble-to-Order Model (Multi-Level ATO Configuration)**

Multi-level Assemble-to-Order model consists of:

- A model bill of material with a non-phantom model as a component.
- Configuration manufactured from mandatory components, selected options, and configured sub-assemblies.

### **Multi-Level Assemble-to-Order Items**

Multi-level Assemble-to-Order item consists of:

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

### **Multi-Organization Assemble to Order Model (Multi-Organization ATO)**

Multi-Organization Assemble-to-Order model consists of:

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

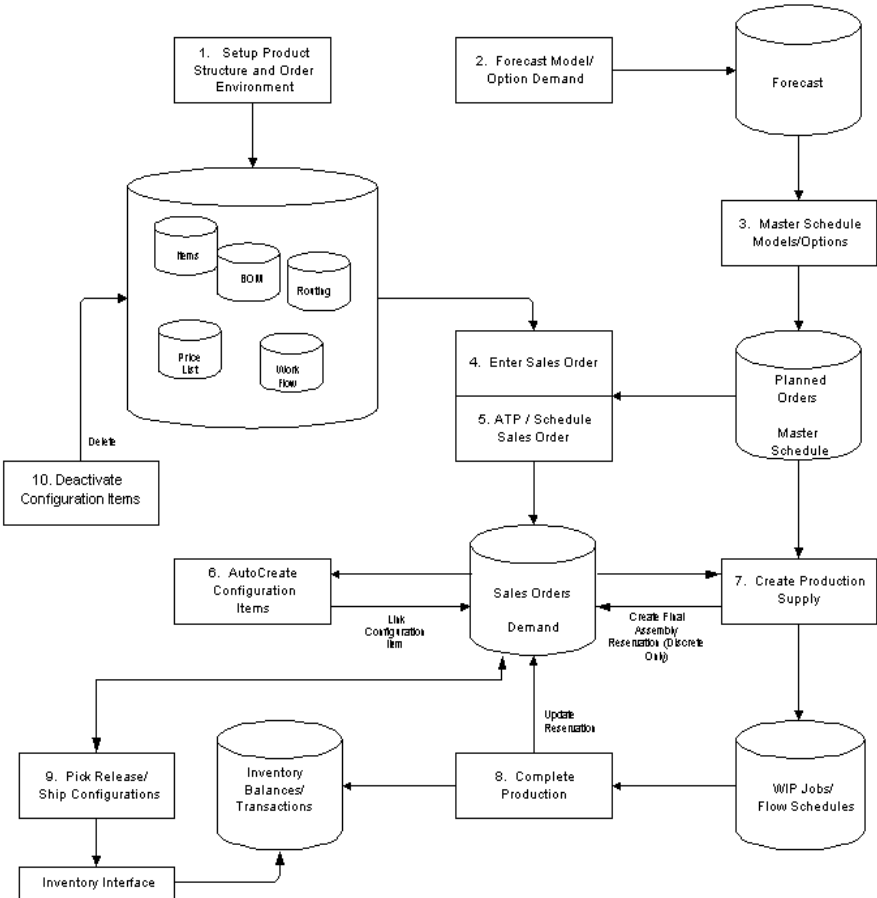
## **Process Flows**

There are three process flows illustrated here, one for single level, single organization make structures, one for multi-level, multi-organization make structures, and one for a purchased to order configuration.

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

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

Figure 1-1 Process Flow for Single Level, Single Organization ATO, and PTO



**Table 1–1 Single Level, Single Org Process Flow Steps**

#	ATO	PTO	Name	Description
1	Yes	Yes	Define Model and Option Class Bills of Material and optionally routings	Define model and option class bills and routings (optional) to control order management, master scheduling/MRP, work in process, and costing.
2	Yes	No	Forecast Model/Option Demand	Forecast demand for model, options, or both. Explode forecasts through planning bills to models and/or options.
3	Yes	No	Master Schedule Models and Options	Master schedule ATO models, options, or both.
4	Yes	Yes	Enter Sales Order	Enter sales orders for models with options.
5	Yes	Yes	Check ATP	Perform group ATP check for all supply-constrained components to find earliest possible ship date for configuration.
	Yes	Yes	Book and Schedule the Order	-
6	Yes	-	AutoCreate Configuration Items	<p>Automatically generate a new item number, bill, and routing for each new sales order and assign new item to sales order.</p> <p>Note: You could also 'progress the order' through 'create config item' in the workflow, which will create the new item, bill and routing for the configuration required for that sales order.</p>
7	Yes	-	Create Production Supply	<p>Discrete: Autocreate Final Assembly Orders automatically opens a discrete job for each new ATO configuration order. These work in process jobs are reserved to the sales orders.</p> <p>Flow: Use the line scheduling workbench to schedule your line based on sales orders. The sales order number is referenced on the flow schedule.</p> <p>Note: you could also "progress the order" through Create Production Supply which will automatically open a discrete job or create a flow schedule for the active configuration order line.</p>

**Table 1–1 Single Level, Single Org Process Flow Steps**

#	ATO	PTO	Name	Description
8	Yes	-	Complete Production	Complete configuration item to inventory. The work in process reservation or flow schedule reference is automatically converted into an inventory reservation.
9	Yes	Yes	Pick Release and Ship Configuration Orders	Pick Release all configuration sales orders.
10	Yes		Deactivate Configuration Items	Deactivate auto-generated configuration item numbers whose orders are complete more than x days ago.

### Example 2: Process Flow for Multi-Level, Multi-Organization ATO, and PTO

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**NOTE:** Oracle Advance planning and Scheduling (APS) must be installed to support Multi level and / or Multi-organization ATO models and ATO items.

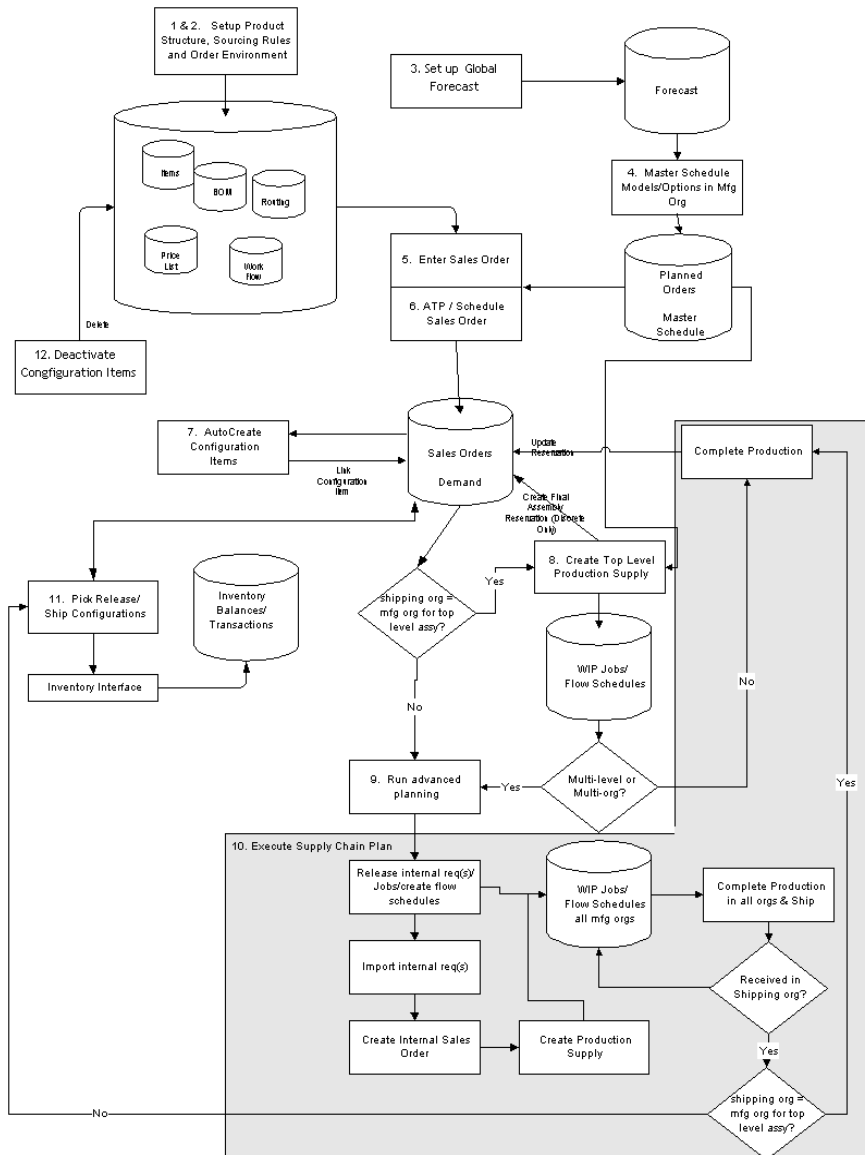
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The following diagram illustrates the flow of a multi-level, multi-org assemble-to-order sales order. Each numbered step is explained in the table following the diagram, and will be covered in detail in the following chapters.

**Figure 1-2 Process Flow for Multi-Level, Multi-Organization ATO, and PTO**





**Table 1–2 Multi Level, Multi Org Process Flow Steps**

#	ATO	PTO	Name	Description
1	Yes	Yes	Define Model and Option Class Bills of Material and routings (optional)	Define multilevel model and option class bills and routings (optional) to control order management, master scheduling/MRP, work in process, and costing.
2	Yes	Yes	Set-up sourcing rules, shipping networks, assignments sets, APS plans	Define sourcing rule, shipping networks, assignment sets, ATP rules, and APS plans to control multi-organizational sourcing.
3	Yes	No	Set up global forecast	Set up global forecast for the model, options, or both using demand planning.
4	Yes	No	Master Schedule Models and Options	Master schedule ATO models, options, or both in the manufacturing organizations using the forecast set.
5	Yes	Yes	Enter Sales Order	Enter sales orders for models with options.
6	Yes	Yes	Check ATP	Perform group ATP based on planning output to check for all supply-constrained components to find earliest possible ship date for configuration.
	Yes	Yes	Book and Schedule the Order	-
7	Yes	-	AutoCreate Configuration Items	Automatically generate a new item number, bill, and routing for all non-phantom models in the configuration structure in all potential sourcing organizations. The final configured assembly item is linked to the sales order.

**Table 1–2 Multi Level, Multi Org Process Flow Steps**

#	ATO	PTO	Name	Description
8	Yes	-	<p>Create Top Level Production Supply</p> <p>In a multi-level organization, you can create production supply in the shipping organization only if the final assembly is manufactured entirely in that organization.</p> <p>If the shipping organization does not manufacture the final assembly, or can partially source the assembly for a supplier or another organization, use advanced planning to recommend supply.</p>	<p>If the final assembly is being shipped from the manufacturing organization itself :</p> <p>Discrete: Autocreate Final Assembly Orders Automatically open a discrete job for the top level item on each new ATO configuration order. These work in process jobs are reserved to the sales order. This process could also create supply for lower level configurations, if they are being built or bought from the same organization.</p> <p>Flow: Use the Line Scheduling workbench to schedule your line based on sales orders. The sales order number is referenced on the flow schedule.</p> <p>Note: you can also “progress the order” through Create Production Supply which will automatically open a discrete job or create a flow schedule for the final assembly item of the active configuration order line. This process can optionally create supply for lower level configurations if they are being built or bought from the same organization.</p>
9	Yes	-	Plan lower level configuration supply	<p>In a multi-organization environment:</p> <p>Use advanced planning to generate and implement planned orders across your supply chain.</p>
10	Yes	-	Execute Supply Chain Plan	<p>Complete required manufacturing in the respective source organizations , and ship to the shipping organization.</p> <p>If the shipping organization is the same as the manufacturing organization of the top level configuration item, the work in process reservation or flow schedule reference is automatically converted into an inventory reservation when you complete the top level configuration item to inventory.</p>
11	Yes	Yes	Pick Release and Ship Configuration Orders	Pick Release all configuration sales orders.
12	Yes	-	Deactivate Configuration Items	Deactivate auto-generated configuration item numbers in an organization whose orders are complete more than x days ago. A configuration item will be deactivated if there is no sales order demand, or open supply or transactions in that organization,

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

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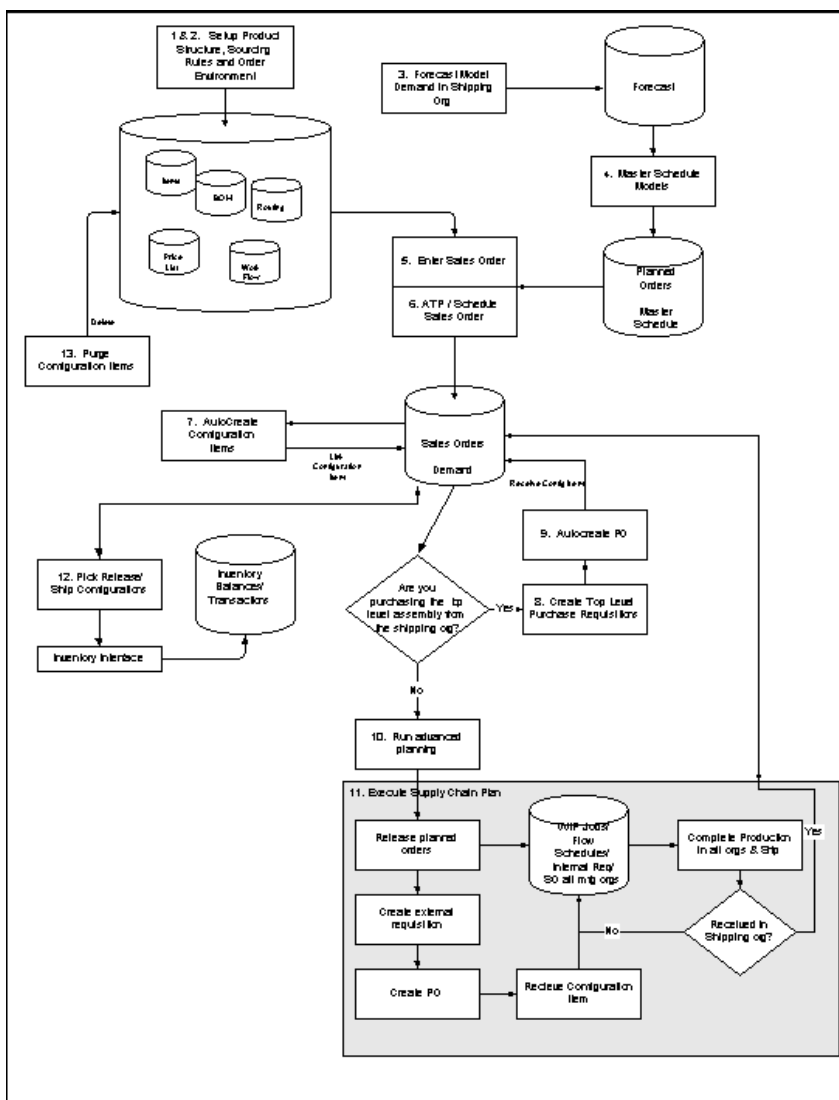
**NOTE:** Oracle Advance planning and Scheduling (APS) must be installed to support purchasing of ATO items.

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

Figure 1-3 Process flow for Purchase to Order Configurations



**Table 1–3 Procure to Order Process Flow Steps**

#	ATO	Name	Description
1	Yes	Define Model and Option Class Bills of Material and optionally routings	Define single or multilevel model and option class bills and optionally routings to control order management, master scheduling/MRP, work in process, and costing. The entire BOM for a purchased configuration should be created in the validation organizations and receiving organization. Routings for all models and option classes should be created in the receiving organization.
2	Yes	Set-up sourcing rules	Define a buy type sourcing rule for the models you will procure and assign it the assignment set specified in 'MRP: default sourcing assignment set' profile.
3	Yes	Forecast Model Demand	Forecast demand for the ATO model. All components and option classes should have their forecast control set to "Null" if you intend to buy the model configuration.
4.	Yes	Master Schedule the Top model	Master Schedule your Top ATO model
5	Yes	Enter Sales Order	Enter sales orders for models with options.
6	Yes	Check ATP, Book and Schedule the Order	Perform group ATP based on planning output to back off the lead time of the model for a promise date.
7	Yes	AutoCreate Configuration Items	Automatically generate a new item number, bill, and routing for all non-phantom models in the configuration structure. The BOM and routing are created in the receiving organization if they do not exist in any other organization. The final configured assembly item is linked to the sales order.

**Table 1–3 Procure to Order Process Flow Steps**

#	ATO	Name	Description
8	Yes	<p>Create Top Level Purchase Requisitions</p> <p>In multi-organization scenarios, you can create requisition supply only if the final assembly can only be purchased from that organization.</p> <p>If the shipping organization does not purchase the final assembly or can partially make or transfer the assembly from another organization, use advanced planning to recommend planned orders.</p>	<p>If the final assembly is being purchased directly from the shipping organization :</p> <p>Autocreate Purchase Requisitions automatically places a row in the req import tables for the top level purchased configuration or ATO item. Run Req import to create the requisitions. These requisitions are reserved to the sales order.</p> <p>Note: you could also “progress the order” through Create Supply Order Eligible which will also place a line in the req import tables for the order line.</p>
9	Yes	Create Purchase Orders	Create purchase orders or purchase order releases
10	Yes	Plan configuration supply	Use advanced planning to generate and implement planned orders if you are purchasing lower level configurations, or you are purchasing from an organization other than your shipping organization.
11	Yes	Execute Supply Chain Plan	Generate requisition and purchase order for the configuration item. Receive it into stock.
12	Yes	Pick Release and Ship Configuration Orders	Pick Release all configuration sales orders.
13	Yes	Deactivate Configuration Items	Deactivate auto-generated configuration item numbers in an organization whose orders are complete more than x days ago. A configuration item will be deactivated if there is no sales order demand, or open supply or transactions in that organization.

## Feature Highlight

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

### Product Definition

- Support for assemble-to-order (ATO), pick-to-order (PTO) and hybrid (PTO/ATO, ATO/ATO) product structures
- Support for Multi-level ATO and PTO-Multi-level ATO hybrids structures, which enables building configured items which have other configured items as sub-assemblies
- Ability to ship configured items from a warehouse
- Ability to purchase configurations at any level in your multi-level BOM structure.
- Planning support for complex configurations where lower level configurations are sourced across the supply chain.
- Options specific sourcing
- Mandatory and mutually exclusive option selection rules
- Option dependent routings
- Notification to the shipping organization when a change is made to the order request day, ship date, quantity, warehouse, configuration, or a line is split, after the configuration item has been created.

### Planning Configurations

- Forecast any planned item, anywhere on your bill of material, including models, options, and mandatory components, if your configurations are made in-house. Set up a global forecast using demand planning, if you transfer configurations across organizations.
- Use forecast sets as demand schedule for the manufacturing plan and use a manufacturing plan for ATP/Scheduling and planning supply
- Use Advanced Planning and Scheduling (APS) to check availability, schedule and plan supply across organizations. Promise based on matching configurations and option specific sources.
- Use constraint based planning to generate feasible plans based on material and capacity constraints

- Master schedule models and options in the manufacturing organizations.
- Define sourcing rule for models and options at any level in the BOM

## Ordering Configurations

- Interactive option validation/auto-selection using Oracle Configurator
- Multiply instantiate ATO models and sub-models using Oracle Configurator
- ATP inquiry across the supply chain based on option material and resource availability
- Match and re-use an ordered configuration or a configured subassembly
- Reserve to available onhand configuration (partial or full)
- Automatic configuration pricing calculation taking discounts account
- Order capture from any source (e.g. your web store)
- Workflow based order processing

## Manufacturing Configurations

- Automatic creation of unique configuration item, BOM, and routing for the top level model as well as lower level models. These are created in all the required organizations, based on sourcing information.
- Discrete manufacturing and flow manufacturing environment support for building all levels of the configuration.
- Supply chain cost roll up support for all sourced configurations.
- Automatic configuration lead time and cost calculation for all configured subassemblies and top level assemblies.
- Automatic final assembly work order creation for the top-level configuration (discrete manufacturing, single organization environment only).
- Constraint based finite scheduling of final assembly work orders within each manufacturing organization.
- Automatic flow schedule creation for the top-level configuration (flow manufacturing, single organization environment only).
- Automatic sales order reservation of top-level configuration upon production completion (single organization environment only).



- Supply chain planning support to create supply for configurations at all levels across the supply chain.

## Procuring Configurations

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

## Integration

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

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

- iSupplier Portal

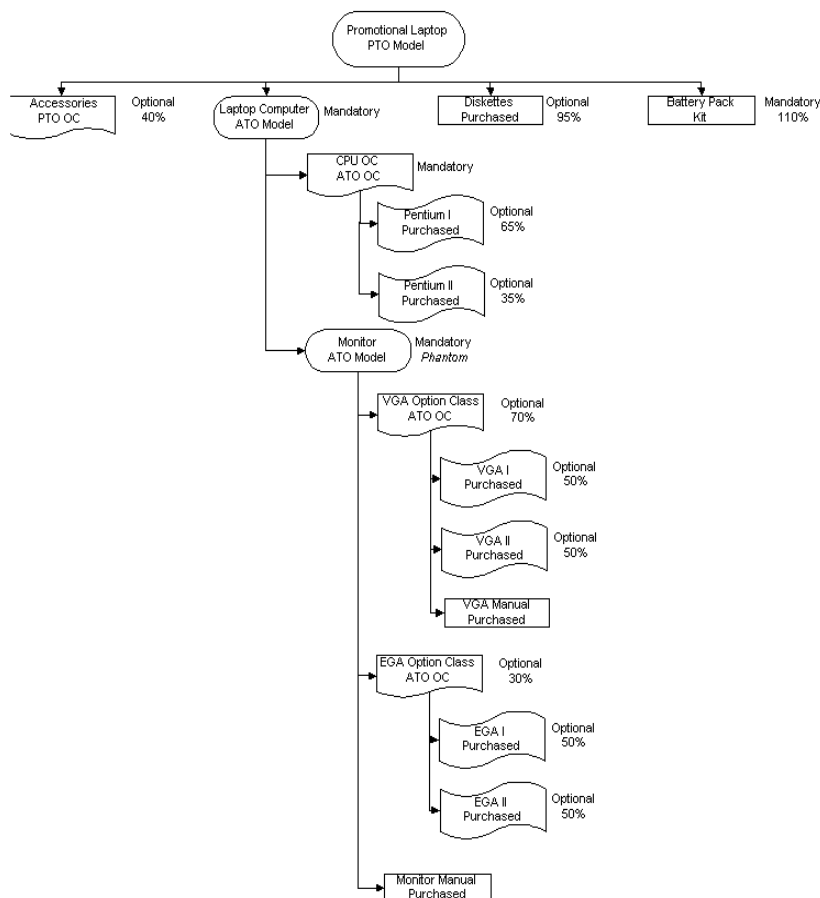
## Examples Used in This Manual

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

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

The following is an example of a hybrid (PTO/ATO) in the single level, single organization environment. It is for a PTO Model "Promotional Laptop" that has three pickable items: Diskettes, a Battery Pack, and the Laptop Computer ATO Model. The Laptop Computer Model is comprised of a phantom model for a Monitor, option classes for CPUs, VGAs, and EGAs, and the actual options. It is first shown as a diagram, then in a tabular format. It is used throughout the entire book for illustration.

**Figure 1-4 A hybrid (PTO/ATO) in the Single Level, Single Organization Environment**



**Table 1–4 A hybrid (PTO/ATO) in the Single Level, Single Organization Environment**

Level	Item	Item Type	Optional	Supply Type	Planning %	Qty	Mutually Exclusive
1	Promotional Laptop	PTO Model	-	-	-	-	-
.2	. Battery Pack	Kit	No	Assembly Pull	110%	-	-
.2	. Accessories	PTO Option Class	Yes	Assembly Pull	40%	-	No
.2	. Diskettes	Purchased Item	Yes	Assembly Pull	95%	-	-
.2	. Laptop Computer	ATO Model	No	Assembly Pull	100%	-	-
..3	.. CPU	ATO Option Class	No	Phantom	100%	-	Yes
...4	... Pentium I	Purchased	Yes	Assembly Pull	65%	-	-
...4	... Pentium II	Purchased	Yes	Assembly Pull	35%	-	-
..3	.. Monitor	ATO Model	No	Phantom	100%	-	No
...4	... VGA	ATO Option Class	Yes	Phantom	70%	-	No
....5	.... VGA Manual	Purchased Item	No	Assembly Pull	100%	-	-
....5	.... VGA1	Purchased Item	Yes	Assembly Pull	50%	-	-
....5	.... VGA2	Purchased Item	Yes	Assembly Pull	50%	-	-
...4	... EGA	ATO Option Class	Yes	Phantom	30%	-	No
....5	.... EGA1	Product	Yes	Assembly Pull	55%	-	-
....5	.... EGA2	Product	Yes	Assembly Pull	45%	-	-
...4	... Monitor Manual	Purchased Item	No	Assembly Pull	100%	-	-

**Example 2: A multi level ATO in a multi-organization environment**

The following is an example of a hybrid (PTO/ATO) in a multi-level, multi-organization environment. It uses the same PTO Model "Promotional Laptop" that has three pickable items: Diskettes, a Battery Pack, and the Laptop Computer ATO Model. However, now the Laptop Computer Model is sourced from another organization, and the monitor model has been made non-phantom and is sourced from a third organization.

In summary, the original structure is changed in the following ways:

The orders are placed in organization W1 (your warehouse)

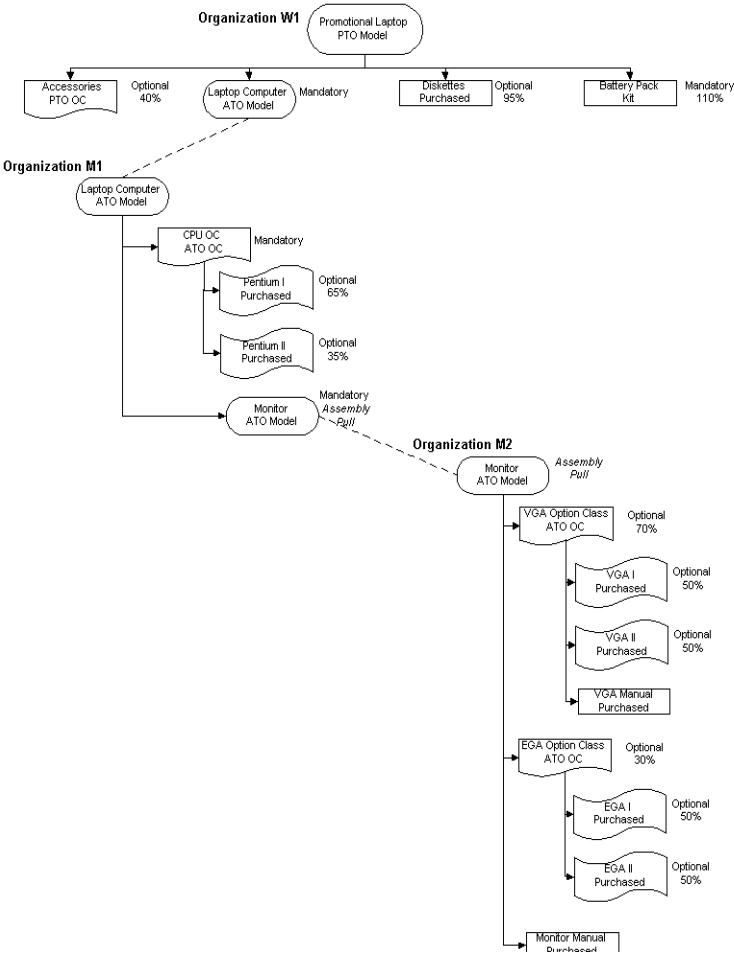
The Laptop Computer is made in organization M1

The Monitor sub-model is changed to Assembly Pull (from phantom) and is made in organization M2

There are sourcing rules set up such that W1 gets the laptop from organization M1, and M1 gets its monitors from M2.

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

Figure 1-5 A Multi Level ATO in a Multi-organization Environment



Note that if the Monitor Model was bought instead of made, the entire Monitor Model BOM should reside in the receiving organization (M1).



Topics covered in this chapter include:

- [Parameters](#) on page 2-2
- [Profiles](#) on page 2-7
- [Model Items, Bills, and Routing](#) on page 2-13
- [Preconfiguring Items](#) on page 2-27
- [Sourcing Setup for ATO Models](#) on page 2-32
- [Forecasting and Master Scheduling for ATO Models](#) on page 2-42
- [Order Management Setup](#) on page 2-50
- [Shipping Setup](#) on page 2-56
- [Purchase Pricing for Models and Supplier Communication](#) on page 2-58
- [Custom CTO Packages](#) on page 2-62

This section describes key parameters, profiles, and set-up considerations for CTO functionality.

## Parameters

### **BOM Parameters**

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

**Table 2–1 BOM Parameters**

<b>Field Name</b>	<b>Value</b>	<b>Usage Notes</b>
Create Lower Level Supply	You can choose one of the following values: No Auto-created Configuration items only ATO items and Auto-created Configuration Items	This parameter is used to indicate whether or not the system should create supply for lower level configurations and ATO items when progressing an order on-line in order management, or when using the Autocreate FAS batch program.  If set to No, the system will create supply only for the top level ATO item or configuration. This is the default value for this parameter.  If set to Auto-created Configuration items only, it will create supply for any lower level configuration that was generated because of the specific sales order configuration. Note that it will NOT create supply for any lower level configuration that was matched to a preconfigured item.  If set to ATO items and Auto-created Configuration Items, it will create lower level supply for all ATO items, preconfigured items and autocreated configured items. Note that supply will be created even for ATO items setup as standard Mandatory components on the model Bill. This option should be used only if you do not expect to have on hand for your ATO items and preconfigured items.
Inactive Status	The list of value consists of all the item statuses that are defined in the system.	The Deactivate Configuration Items program sets item status of configuration items to this value.
Numbering Segment	The list of value consists of all the item segments.	The item field is a flexfield that may contain multiple segments. Let's say you have a two segment item field. The two segments are Item-Group. Item, Group will show up in the LOV. The segment you choose here will be the field that the 'Numbering Method' applies.  NOTE: The numbering segment parameter must be set in the OE validation organization. The setting in all other organizations will be ignored

**Table 2–1 BOM Parameters**

Field Name	Value	Usage Notes
Numbering Method	You can choose one of the following values: Append with sequence Replace with sequence Replace with order, line number, shipment # User defined	Using the above example, let's say you choose the Item segment in the Numbering Segment. For an ATO model CN97444-Laptop, the configured item number will be the following for each Numbering Method: CN97444*1236-Laptop 1236-Laptop 45623*1*1-Laptop (45623 is the sales order number, 1 is the line number, 1 is the shipment number.)  User defined: The user defined method can be used to generate customized numbering for configuration items. Customized method can be implemented in the packages BOMCFGL.pls and CTOCUCNB.pls. For details on how to use these packages see <a href="#">Custom CTO Packages</a> .  NOTE: The numbering method parameter must be set in the OE validation organization. The setting in all other organizations will be ignored
Config BOM Creation Allowed	You can choose one of the following values: Yes No The default is set to Yes.	Set this to Yes in all organizations in which you plan to manufacture or purchase your configurations. It can be set to No in other organizations where a model BOM exists, but a config BOM is not necessary. For example, an OM validation organization that is not a manufacturing organization can be set to No.
Include Model/Option Class Items in Lead Time Rollup	You can choose one of the following values: Yes No The default is set to No.	This parameter determines if a lead time rollup is performed on the model and option class items in the organization. This defaults to no, as rolling up a lead time on the model or option class results in a highly inflated model lead time, which affects the "Estimated manufacturing start date" calculation in AutoCreate Configuration, and affects the offset used by planning with Planning to Forecast and used by ATP against the model.

### WIP Parameters

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

**Table 2–2 WIP Parameters**

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

### Order Management Parameters

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

**Table 2–3 OM Parameters**

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

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## Profiles

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**Note:** All profiles used by CTO are set at the site level by default. Changing them to a lower level could produce inconsistent results.

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### **BOM: Automatic Reservations**

Determines whether or not CTO will attempt to reserve available on-hand when matching during autocreate configuration item batch or on-line mode. If it is set to yes, and the program has found a match, and the schedule date is within the number of days defined by the profile OM: Reservation Time Fence, autocreate config will attempt to reserve any quantity available on hand.

### **BOM: Buy Cost Type for Configurations**

This profile determines the Buy Cost Type that will be used during the Configuration Cost Rollup. Please see Chapter 9 for details of the cost roll-up calculation.

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

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

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

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

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

### **BOM:Configurator URL**

In order to preconfigure items using BOM, this profile must be set to the proper URL for the configurator in your instance. See [Preconfiguring Items](#).

**BOM: Create Configuration Exception Behavior**

This profile indicates whether or not to create a configuration item, bill of materials and routing if option items would be dropped from the configuration bill of any organization that the bill is created in. The values for this profile are Create and Link Item and Do Not Create. See [Create Configuration Items](#) for information on how this profile affects autocreate configuration behavior.

**BOM: Default Blanket PO Release Method**

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

- Automatic Release/Review
- Automatic Release
- Release using Autocreate

See the *Oracle Purchasing User's Guide* for more on release method on Aisle.

**BOM: CTO Perform Cost Rollup**

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

**BOM: Perform Lead Time Calculations**

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



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

This profile determines if list price and purchase price rollup is performed when progressing an order to create a configuration item. The value of this profile also determines the default settings of the corresponding parameter in the autcreate configuration batch program. This profile is optional. If the profile is null, a purchase price rollup is performed when a configuration item is created by progressing the sales order. However, the parameter in the AutoCreate Configuration concurrent program defaults to No. See [Configuration Purchase Price Calculation Rollup](#) for more information.

**BOM: CTO Perform Flow Calculations**

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

**BOM: Send Notifications for Autcreate Config Exceptions**

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

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

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

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

**Table 2–4 BOM: Inherit Option Class Operation Sequence Number Example**

Level	Item	Item Type	Op Seq	Operation Sequence Inherited
. 2	. Laptop Computer	ATO Model		
.. 3	.. CPU	Option Class	30	Retains 30
... 4	... Pentium I	Option	1	Inherits 30
... 4	... 486 Processor	Option	1	Inherits 30
.. 3	.. Monitor	Option Class	40	Retains 40
... 4	... VGA	Option Class	1	Inherits 40
.... 5	.... VGA Manual	Included Item	1	Inherits 40
.... 5	.... VGA1	Option	1	Inherits 40
.... 5	.... VGA2	Option	1	Inherits 40

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

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

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

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

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

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

attribute set to Custom, CTO calls the function CTO\_CUSTOM\_MATCH\_PK (file CTOCUSMB.pls), instead of the standard match program.

The profiles BOM: Match to Existing Configurations and BOM: Use Custom Match Function replace BOM: Check for Duplicate Configuration, which is used in Release 10.7 and 11.

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

**Table 2–5 Match Profile Relationship**

Match Profile	Custom Match	Model Match Attribute	Result
Yes	Yes	Custom	Custom
Yes	Yes	No	No
Yes	Yes	Standard	Standard
Yes	Yes	NULL	Custom*
Yes	No	Custom	Custom
Yes	No	No	No
Yes	No	Standard	Standard
Yes	No	NULL	Standard
No	Any Value	Any Value	No

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

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

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

This site level profile option determines which ATP program will be used for ATP Check. To perform ATP calculations for multi-level and/or multi-organization configuration structures, this profile option must be set to 'ATP/CTP based on

planning output'. This option uses data from the Planning Data Store and lets you obtain multi-level supply-chain ATP results from a plan.

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

### **MRP: Calculate MATO Demand**

This profile is obsolete in 11i.10.

### **MRP: Default Sourcing assignment**

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

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

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

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

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

This profile option controls automatic reservations during scheduling. The profile option represents the number of days into the future that scheduling will reserve.

The default value is Null which means that scheduling will not automatically reserve. This profile option is used during autcreate config if the BOM: Automatic Reservations = 'Yes'

### **OM: Use Configurator**

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

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

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

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

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

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

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

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

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

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

### **Items Setup**

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

**Table 2–6 Item Attributes**

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

**Table 2–6 Item Attributes**

<b>Attribute</b>	<b>PTO Model</b>	<b>PTO Option Class</b>	<b>ATO Model</b>	<b>Option Class</b>	<b>ATO Item</b>	<b>Option (Component)</b>
Ship Model Complete	Yes or No (only applicable for PTO model)	n/a	n/a	n/a	n/a	n/a
Purchased / purchasable	No	No	Yes if you will be purchasing the model	Yes if you will be purchasing the model	Yes if you will be purchasing the ATO item	Yes if you will be purchasing the model
Lot/Serial Control	No	No	Yes, if you want the configuration to be lot/serial controlled. NOTE: Serial Control of "Unique within Item" will mean "Unique within base Model" for configurations.	No, unless you want to set the default serialization starting operation sequence number for the configuration based on the option class routing.	Depends	Depends
Match Configuration	N/A	N/A	Null if you want to default from profile, Standard if you want a standard match, Custom if you need a custom match. See <a href="#">Match Configurations</a>	N/A	N/A	N/A

**Table 2–6 Item Attributes**

Attribute	PTO Model	PTO Option Class	ATO Model	Option Class	ATO Item	Option (Component)
AutoCreated Configuration	N/A	N/A	N/A	N/A	N/A if no base model exists. Not enabled if base model exists and you want it treated as a preconfigured item. See <a href="#">Preconfiguring Items</a> .	N/A
Create Configuration Item, BOM	N/A	N/A	Depends on attribute settings. See <a href="#">Create Configuration Item, BOM Attribute</a> .	N/A	N/A	N/A
Base Model	N/A	N/A	N/A	N/A	The model the configured item is generated from. Null if the ATO item is not configured. This must be the same in all organizations.	N/A

### Create Configuration Item, BOM Attribute

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

- Based on Sourcing
 

This value creates Items, BOMs and Routings based solely on the ship from organization's sourcing.
- Items Based on Model, BOMs and Routings Based on Sourcing



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

- Based on Model

This value creates Items, BOMs and Routings in all organizations where the model item, BOM and Routing exist.

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

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

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

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

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

For option specific sourced (OSS) items, the organizations in which BOMs are created are further restricted by OSS rules. See [Impact of Option Specific Sources](#).

## Organization Assignment

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

**Table 2–7 Item/Organization Enablement**

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

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

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

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

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## Model and Option Class Bills of Material

### Model Bills of Material

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

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

If the supply type is set to phantom, no configuration item will be created during autcreate config, and the model and all its components will become part of the top level configuration BOM.

If the supply type is set to anything other than phantom, auto create config will create a configuration item for that model and only the config item will appear on the parent configuration BOM.

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

### Option Class Bills of Material

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

### BOM Attributes

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

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

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**Note:** If a sub-model can be multiply instantiated in the configurator, the planning percent on its parent should represent the average expected number of instantiations, multiplied by 100%. See: *Oracle Configurator User's Guide* for more information on multiple instantiation.

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- WIP-supply type:** In the case of a lower level model, a supply type other than phantom implies that the lower level model is to be treated as a configurable subassembly for which a configuration item and supply order needs to be created.

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

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**Note:** If you plan to multiply instantiate a lower level model, its WIP Supply Type on the BOM must be non-phantom. For more information on the use of this attribute for standard items, please see the *Oracle Bills of Material User's Guide*. For more information on setting up bills of material, please See: *Oracle Bills of Material User's Guide*.

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

**Table 2–8 BOM/Organization Enablement**

Transaction Flow Org	Item Validation Org	Receiving Org	Sourcing (Manufacturing) Org	Item Master Org	PO Validation Org
None	Complete Multi-level BOM (often common to the primary manufacturing organization for each level)	None if entire configuration is made in house. Complete structure if configuration is purchased. In 11i.10, the entire bill must exist in one and only one of the possible receiving organizations for a purchased configuration	Model and option class bills made in or sourced from organization	None	None

## Model and Option Class Routing

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

### Common Model Routing to Option Classes

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

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

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

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### Discrete Manufacturing

**Option Dependent Routing Steps** Oracle Bills of Material enables you to define option dependent operations in model or option class routings. You can specify that a routing step is option dependent which causes the configuration to include that routing step only if an option referencing that step was chosen. You can assign multiple routing steps to a single optional component in the model bill. You specify one value in the op sequence column on the main BOM window. The operation you specify on the main window is used as the back flush location for the item. Then, you can assign additional operation sequences to the components by using a child

window. The child window is available from any optional BOM component line by button.

**Table 2–9 Laptop Computer ATO Model BOM**

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

**Table 2–10 Routing for Laptop Computer ATO Model (commoned to the CPU Option Class)**

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

In the example above, a routing is created for the ATO model. A second routing is created for the ATO option class that uses the model routing as common. This is a typical set-up which enables the components on the option class BOM to reference operations on the Model BOM.

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

**Operation Sequence Inheritance** You can specify that items within the model structure inherit the operation sequence from their parent option class or model. You invoke

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

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

**Table 2–11 Operational Sequence Inheritance**

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

**WIP Serial Tracking for Configurations** WIP allows you to start serial tracking and genealogy at any operation on the job for assemblies that have predefined serial generation. If you want this functionality for your configurations, set the model to be under predefined serial control, and specify the default serialization starting operation sequence number on any mandatory operation in the ATO Model Routing. This information will then be copied to the configuration item routing. If you are using non-commoned option class routings, and you want the default serialization starting operation sequence number on the configuration to be one of the routing operations on the option class routing rather than one on the model routing, then the option class must also be set to pre-defined serial control. If you define a default serialization starting operation sequence number on both the model and option class routing, the setting on the option class will be ignored.

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

## Flow Manufacturing

**Option Dependent Event** A flow routing consists of processes, line operations and events. You can designate option dependent events by checking the Optional check box for an event. On your bills of material, the operation sequence refers to the



event sequence on a flow routing. Therefore, you associate an option with event sequences. As in discrete, a single option can reference multiple event sequences.

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

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

## Cataloging Configurations

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

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

**Table 2–12 Catalog Configurations Example**

Item	Catalog Group	Descriptive Element Name	Descriptive Element Value
Laptop Computer	Personal Computers	Processor Type OS	-
Pentium I	Processors	Processor Type	Slow

**Table 2–12 Catalog Configurations Example**

Item	Catalog Group	Descriptive Element Name	Descriptive Element Value
Pentium II	Processors	Processor Type	Fast
Windows	Operating Systems	OS	Windows
UNIX	Operating Systems	OS	Unix

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

**Table 2–13 Concatenated Description Example**

Item	Item Type	Element Name
CPU	Option Class	Processor Type
Operating System	Option Class	OS

More on cataloging configurations can be found in the CTO chapter of the *Oracle Bills of Material User's Guide*.

For multilevel configurations, the description of the parent configuration does not roll-up the description from child configurations.

See [Custom CTO Packages](#) for more information.

## Configuration Rules

Configuration rules will be defined in Oracle Configurator Developer.

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

## Preconfiguring Items

You can invoke Oracle Configurator from within Oracle Bills of Material to create a configured bill of material and routings for a pre-defined ATO item. This is very useful in a business to business environment where the same configuration is ordered repeatedly. Preconfigured items can be built to forecast and kept on hand. Customers can order the preconfigured items directly, as they would a standard ATO item.

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

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

The profile option BOM: Use OM Validation Org When Pre-Configuring Single Level Items determines whether the current organization or the OM validation organization is used when preconfiguring a single level BOM. Usually, this value should be set to Yes. This process will match to existing configurations, if the BOM: Match to existing configuration profile is set to Yes, and the model is set to perform matching.

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

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

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**Note:** Preconfiguration does not perform weight and volume calculations, lead time calculations, cost rollup, list price and purchase price rollup for the configuration items. To perform these calculations for your preconfigured items, use the appropriate batch processes described in [Optional Processing Programs](#).

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

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

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The BOM:Configurator URL profile option must be set properly to enable you to call the configurator from within BOM. See [Profiles](#) for more information on setting profile options.

## Enabling Items

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

When the item is automatically enabled in an organization, for attributes that have the attribute control set at the organization level, attribute values for these items are

inherited from the base model in that organization. Item attributes are copied from the preconfigured item if the attribute control is set at the master level.

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**Note:** Child configuration items are created as auto-created items with all attributes set as described in [Create Configuration Items](#). If you want the child configurations to be treated as preconfigured items, you must either:

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

or,

- Deselect the AutoCreated Configuration attribute on the configurations you want to treat as preconfigured items.
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**Note:** For preconfigured items, since the item is created by the user, item attributes are not copy from or validated against the base model item attributes. It is up to the user to set them appropriately. The Assemble to Order and Build in WIP flag must be checked. It is recommended you use the ATO item template for these items.

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

**Table 2–14 Preconfigured and Auto Created Item Differences**

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

## BOM and Routing Creation

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

See [Create and Process Configurations](#) for more on how the system determines where to create the item, bill, and routing. See [Create Configuration Items](#) for more information on BOM creation logic. See [Match Configuration Item](#) for more information about matching.

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

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## Option Specific Sourcing

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

- If, due to option specific sourcing, the preconfiguring organization is not a valid organization for configuration BOM creation, the item and its data are not created and an error message is displayed.
- BOMs and Routings are created for the preconfigured item and its child configuration items in all valid source organizations based on the option dependent sourcing rules of the configuration item. BOMs and Routings are not created in organizations that have Create Configuration Bill and Routing and the setting of the models Create Configured Item, BOM attribute set to No.

Preconfiguration does not perform weight and volume calculations, lead time calculations, cost rollup, list price and purchase price rollup for the configuration items. To perform these calculations for your preconfigured items, use the appropriate batch processes described in [Batch vs. Online Mode](#).

## Preconfiguring

### To preconfigure an item:

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

## Preconfiguring Items Example

As mentioned above, preconfiguring items will respect the multi-level structure and the sourcing rules you have defined for models at all levels of the BOM. As an example, use [Example 2: Process Flow for Multi-Level, Multi-Organization ATO, and PTO](#):

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

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

## Sourcing Setup for ATO Models

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

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

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

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

## Sourcing Assignments

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

If you have an item level assignment for the purposes of ATP and of planning feedback loop, you must ALSO have an org level Make At or Buy rule in the end



node in your sourcing chain to avoid a circular sourcing error in AutoCreate Config. For example, assume there is an item level assignment that says to transfer from M1 and M2. If M1 makes the configuration, it must have a org-level Make At rule assigned. If M2 buys the configuration, it must have an org level Buy From rule assigned.

Region or other assignments that cannot be defined on the source should never be assigned to the model itself, as they will not be applied to the configuration. To use these types of rules, create category level or higher assignments. A new category can be created for this model or group of models if it is necessary to assign a rule to a specific model.

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

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

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

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

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

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

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## Option Specific Sourcing (OSS)

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

If you have restricted options, you will need to specify the list of valid organizations and vendors where the model can be manufactured, stocked, transferred or procured if that option is chosen. This list of organizations will be overlaid with the model sourcing chain during ATP and Autocreate config to restrict the sourcing of a specific configuration based on the options that were chosen. See [Impact of Option Specific Sources](#) for more information.

### Using Option Specific Sourcing

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

#### **Example Where OSS set-up is NOT required**

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

- Japan Org
- US Org
- Europe Org

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

For releases prior 11i.10, you manually choose the warehouse on the sales order based on where the order originated (or used OM defaulting rules to do so). In this case, CTO creates the BOM only in the org against which the order is placed. This is still true if the model's Create Configuration Item, BOM attribute is set to "Based on Sourcing" (the default). No further set up is required.

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

#### **Example Where OSS set-up IS required:**

The ATO model can be made in any of six manufacturing organizations, and you want the choice of the manufacturing organization to be based on GOP, rather than

simple defaulting rules. However, if the customer chooses a specific option (for example a specific specialty coating for the product) it can only be made in Org1. Match is used on this model.

For 11i.10, if you want to use GOP to pick the warehouse or want to match during ATP, the model's Create Configuration Item, BOM attribute must be set to Based on Model so that the item, BOM, and Routing are created in all six manufacturing organizations, and future matches to the configuration item are valid and ATPable in all six manufacturing organizations.

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

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

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

## Setting up Option Specific Sourcing

### To setup option specific sourcing:

1. Navigate to Advanced Planning>Source Instance Setup>Sourcing> CTO Option specific sourcing
2. In the header, enter the following:
  - **Model Name:** List of values contains all ATO models in your item master
  - **Component Name:** List of values that contains all active items in the system. You should pick only options, options classes or sub-models that are components of the parent model specified
  - If an option is specified, the sourcing chain for a configuration with that option will be limited to the organizations and suppliers listed in the setup
  - If an option class is specified, the sourcing chain for a configuration with that option class chosen is limited to the organizations and suppliers listed in the setup. If there is setup for both an option class and an option underneath it, an intersection of the specified sources is taken to determine the valid sources for the configuration.

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

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

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

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

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

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

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In order for ATP to consider option specific sourcing, any model with option specific sources defined, or any model with child models with option specific sourcing defined must have ATP Components set to something other than None. If this is not done, you could schedule against an invalid organization. If this happens,

autocreate config will error out. Components with Option Specific Source lists do not have to be ATPable.

### Option Specific Sourcing Example

Model BOM in the item validation org is:

Model1

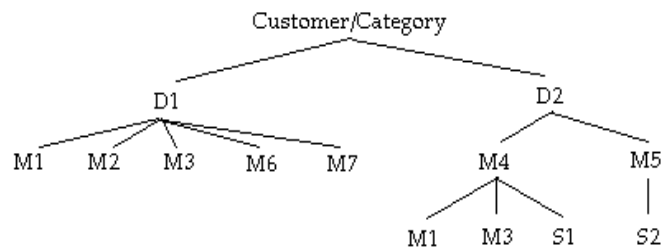
- OC1
  - O1
  - O2
  - O3
  - O4

Model2

- OC2
  - O5
  - O6

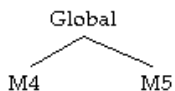
Model1 sourcing:

**Figure 2–1 Model1**



Model2 sourcing:

**Figure 2–2 Model2**



**Table 2–15 Sourcing Rules**

Sourcing rule	Org / Global	Type	Org	Supplier	Alloc%	Rank
SR11	Item	Transfer	D1		40%	1
		Transfer	D2		60%	1
SR12	Org D1	Transfer	M1		30%	1
		Transfer	M2		30%	1
		Transfer	M3		30%	1
		Transfer	M6		40%	1
		Transfer	M7		100%	2
SR13	Org D2	Transfer	M4		50%	1
		Transfer	M5		50%	1
SR14	Org M4	Transfer	M1		50%	1
		Transfer	M3		25%	1
		Buy		S1	25%	1
SR15	Org M5	Buy		S2	100%	1
SR16	Item	Transfer	M4		40%	1
		Transfer	M5		60%	1

**Table 2–16 MRP Sourcing Assignments**

Assigned to	Org	Item/	BOD/SR
Customer		Model1	SR11
Model-Org	D1	Model1	SR12
Model-Org	D2	Model1	SR13

**Table 2–16 MRP Sourcing Assignments**

Assigned to	Org	Item/	BOD/SR
Model-Org	M4	Model1	SR14
Model-Org	M5	Model1	SR15
Item		Model2	SR16

#### Additional requirements

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

Setup the option specific source lists listed in [Table 2–17](#).

**Table 2–17 Option Specific Source Lists**

Model	Component	Org	Vendor	Vendor Site
Model1	O1	D1		
		D2		
		M4		
		M1		
		M3		
		M6		
Model1	O2	D1		
		D2		
		M4		
		M2		
		M3		
		M6		
Model1	O3	D2		
		M4		
			S1	Ste1

**Table 2–17 Option Specific Source Lists**

Model	Component	Org	Vendor	Vendor Site
Model1	O4	D1		
		M2		
		M6		
		M7		
Model2	O5	M4		

### Impact on Sourcing Assignments for the Model

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

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

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

### Interactions with other features

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

The model order line is promised by looking at model sourcing rule and the list of organizations specified for the selected option items. In certain setups, a specific configuration for this model may not have a valid source. If this happens, during availability check the user will get an error stating no valid sources exist based on



option specific sourcing. To avoid this, the user should create configurator rules to ensure non-valid configurations are not configured and sent to ATP.

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

### Additional tips

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

## Forecasting and Master Scheduling for ATO Models

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

### ASCP vs. MRP?

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

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

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

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

- **Pre-configuration forecast consumption:** If a forecast exists for the matched item at any level in your configuration, its forecast is consumed first, then the model and option forecast will be consumed, if needed.
- **Planning for option dependant resources:** When planning to a forecast, APS applies the planning percentages to the option dependant resources in addition to the optional material. This means that a planned order for the ATO Model will have it's resource usage reduced proportionally based on how often that resource is expected to be optionally used.
- **Supplier Capacities for ATO Models:** You can specify a supplier capacity for an ATO model. ASCP plans constrain all purchase requirements for the ATO model and all configurations based on the capacity definition of the ATO model. You cannot define a capacity for a specific configuration.
- **Support for Multi-organization ATO models:** If you have a multi-organization ATO BOM structure or do not manufacture in the shipping organization, you must use ASCP and DP for global forecasting. MRP forecasting processes does not support multi-organization forecast consumption.

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

MRP can be used to plan for configurations that:

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

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

## Forecasting

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

### Forecast Control

Use the Forecast Control item attribute to tell the system the types of demand that you place for models, option classes, options, and mandatory components. MRP

and ASCP use the Forecast Control value you assign to each assemble-to-order and pick-to-order item when forecasting and master scheduling models and options.

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

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

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

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

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

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

If you forecast demand for a mandatory component, either directly or through forecast explosion, then set Forecast Control to Consume or Consume and Derive. If

you set the f/c control to None for a mandatory component, then planning generates planned order demand directly from the model. This means that the demand is proportionate for the ATO model demand.

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**Note:** If your configurations will be purchased from a supplier—even some of the time—set the forecast control to Null on all of the model's components. Planning will not derive the forecast for lower level options. Planning will still consume the forecast for the model.

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### Global vs. Local Forecast

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

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

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

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

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

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

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

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

### Forecasting Preconfigured Items

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

#### Example

You plan to make a total of 100 of ModelA each week, of which you expect 40 to be of a specific popular configuration. Create a forecast for 40 of the popular configuration, and a forecast of 60 for ModelA. If entering a forecast directly for a component of ModelA, adjust its forecast to NOT include the dependant demand from the popular configuration.

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

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

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

## Demand Planning for Configurations

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

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

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

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

## Planning and Master Scheduling Model and Options

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

### Advanced Planning

Oracle's advanced planning and scheduling solution allows you to accurately plan your models and options across your supply chain. As sales orders consume forecasts, the actual configuration demand replaces the model and option class demand.

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

- The assignment set assigned on your plan must equal the one assigned to the MRP: Default Assignment set on the source.

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

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

### **Phantom Sub-Models:**

A phantom sub-model is treated like a non-phantom model for the purposes of ATP and planning. This means:

- Its resources would be counted twice if the phantom model routing is commoned to its parent routing.
- Its lead-time for lower level components would be offset inaccurately. This affects only ATP



- The forecast explosion for lower level components (date and quantity) would be LT offset incorrectly. This means you would forecast requirements too early in time and cause excess inventory.

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

## **MRP**

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

## **Production Relief**

Production relief, also known as MPS relief, is the process that replaces planned supply with actual supply when you create a work order to build a manufactured item, or when you create a purchase requisition to buy a purchased item. Each time you create a work order or purchase requisition, you create actual supply. If the actual supply is planned, then you typically want to reduce the planned supply by the work order or purchase requisition quantity to avoid overstating supply. When a purchase order, purchase requisition or discrete job is created for a member of a product family, the MPS is relieved for the member items as well as the product family.

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

## **Shipment Relief**

Shipment relief, also known as MDS relief, is the process that reduces anticipated demand when you ship product that satisfies a sales order. Each time you ship a product to a customer, you satisfy demand. If the demand is included on your master demand schedules, then you typically want to reduce the anticipated demand by the sales order quantity to avoid overstating demand. Master

Scheduling/MRP automatically relieves master demand schedules when you ship a sales order for a configuration. If you have not reloaded your master demand schedule after the AutoCreate Configuration process, there will be no master demand schedule for the configuration item.

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

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

## Order Management Setup

### Pricing

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

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

You then can enter lines for only the items that have a non-zero price.

## Workflow

### Setup for Configuration Line Workflow

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

### To assign the Configuration Line Workflow to the order line type:

(N) Order Entry > Setup > Transaction Types > Define

1. Query the Transaction Type corresponding to your ATO Model order type.
2. Click Assign Line Flows. This will open the Line Workflow Assignments form.
3. Create a line workflow assignment with the following values:
  - Line Type = Your order line type
  - Item Type = Configured Item
  - Process Name = Line Flow - Configuration.

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

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

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### Customize the Order Processing Workflow

This section provides details on customizing the workflows if it is needed by your business. See *Using Oracle Workflow in Oracle Order Management Guide* for more information on the OM workflows used by CTO.

The ATO Model Line, the Configuration Line, and the ATO Item workflow can be customized by adding blocks or approval activities or by removing some optional blocks and activities.

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

**Table 2–18 ATO Model Mandatory Workflow Activities**

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

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

**Table 2–19 Configuration Line Workflow Activities**

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

**Table 2–19 Configuration Line Workflow Activities**

<b>Configuration Line Workflow Activity</b>	<b>Mandatory</b>	<b>Comments</b>
Autocreate Req	No	Not required if ATO models and ATO items are never purchased.
Purchase Release, Line - Deferred	No	Not required if you will never dropship an ATO model or item.
Wait for PO Receipt	No	Not required if ATO models and ATO items are never purchased.
Ship Line	Yes	-
Fulfill Line	Yes	-
Close Line	Yes	-

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

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

**Table 2–20 ATO Item Workflow Activities**

<b>ATO Item Line Workflow Activity</b>	<b>Mandatory</b>	<b>Comments</b>
Enter Line	Yes	-
Schedule Line	Yes	-
Create Supply Order Eligible	Yes	-
Check Supply Type	No	Not Required if routings for all models and ATO items are only Discrete routings or flow routings and ATO models and ATO items are not purchased.
Create Work Order Process	No	Not Required if Routing of all models used is flow routing
Create Flow Schedule	No	Not Required if Routing of all models used is discrete routing.
Autocreate Req	No	Not required if ATO models and ATO items are never purchased.

**Table 2–20 ATO Item Workflow Activities**

ATO Item Line Workflow Activity	Mandatory	Comments
Purchase Release, Line - Deferred	No	Not required if you will never dropship an ATO model or item.
Wait for PO Receipt	No	Not required if ATO models and ATO items are never purchased.
Ship Line	Yes	-
Fulfill Line	Yes	-

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

Note that activities marked as No in the mandatory column in both the above tables can be removed from Create Supply Order process. The Create Supply Order process is used in both Configuration line workflow and ATO item workflow and hence changes to this process will affect both the line flows.

### Customization to Workflow

Customers will be able to customize the seeded workflow using Oracle Workflow Builder if they have special requirements. The notification message can also be customized.

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

## Constraints

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

### To remove the delete constraint:

(N) Order Management > Setup > Rules > Security > Processing Constraints

1. Do a find on Entity "Order Line" for application "Oracle Order Management"
2. Look for a non-seeded delete constraint, with conditions of "any booked order line" and "any non-RLM line".
3. Disable the entire constraint (from the constraints portion of the form).

For more information on order management constraints for configurations, see [Order Changes and Returns](#).

### OM Validation Organizations

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

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

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

## Shipping Setup

### Item Attribute

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

### BOM Attributes

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

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



**Required to Ship:** Indicates whether the component is required to ship the order. You can only update this check box if the Assemble to Order item attribute for the assembly item in the Define Item window is disabled.

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

## PTO Models and packing lists

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

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

### Example:

Before Pick Release:

Model Qty = 10 Ready to Release

component 1 Qty = 10 Ready to Release

component 2 Qty = 10 Ready To Release

After Pick Release

Model Qty = 10 Staged

component 1 Qty = 5 Staged

component 2 Qty = 5 Staged

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

## Staging Sub Inventory

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

## Purchase Pricing for Models and Supplier Communication

This section describes how to set-up purchasing data to enable purchase price calculation and channels for communicating configuration details to your supplier.

### Purchase Price Calculation

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

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

#### List Price Calculation Setup Requirements

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

#### Blanket Price Calculation Setup Requirements

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

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

- Price breaks assigned to the model will be copied to the configuration item. Any price breaks assigned to option classes or options will be ignored. For ATO Models, the price breaks must not be organization specific. In other words, the "Org" and "Ship to" fields must be blank.

- If you have assigned your model sourcing rules at the item level, the sourcing rules must have both a supplier, and supplier site and must have both a start and end date. Your blankets do not need effective and disable dates. But if they have them, they must be inside the effective dates on the sourcing rule. The latest blanket is used for the calculation instead of the one defined in the model ASL. This blanket is linked to the new configuration ASL.
- If you have assigned sourcing rules to your model at any other level (e.g. item-org), the blanket PO(s) must have both effective and disable dates on the terms tab. Additionally, if you have multiple blankets defined for a single model, the effective dates on all blankets must be the same.

Next, in each requisitioning organization, define global approved supplier, supplier sites for the ATO Model that point to the appropriate blanket. These ASLs can point to either a local or a global agreement. See the Define Approved Suppliers Lists section in the *Oracle Purchasing User's Guide* for more information.

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

### Limitations of Blanket Purchase Orders for Models

- If the profile PO: Automatic Document Sourcing is set to Yes:
  - CTO still requires ASLs to be defined for the model to determine the valid vendor, vendor sites and PDOI will create ASLs for the configuration.
  - However, the latest blanket will be used for the calculation instead of the one defined in the model ASL.
- The MRP: Default Assignment Set must be the same for all responsibilities, or you may run into inconsistencies in OM, PO and APS.
- CTO will not over-write an existing price in an existing blanket. CTO will also not overwrite the list price when progressing the order manually via the actions button. The Purchase Price Calculation batch program has a *parameter to specify whether or not to overwrite the list price*. So, if you negotiate a special price for a pre-configured item and enter it on the blanket for the model or the list price on the item master, CTO will not over-write this price. However, this also means that CTO will not recalculate and overwrite an existing entry in a blanket when you match to an existing configuration, or when you run the batch program manually, even if prices for the options on the current valid blanket have changed. CTO will calculate a price for any valid blanket that does NOT have an entry for the matched configuration. Therefore, it is suggested that you set up a new blanket each time you renegotiate prices with your supplier, rather

than just updating the prices on the existing blanket. This way, as soon as the new blanket becomes effective, CTO will automatically recalculate a new price based on the new blanket prices for any matched configuration or any time the batch process is run.

- Retroactive pricing is not supported for configurations. If you change the price of a model or option price, the price on existing configurations in the blanket is not recalculated. You will have to manually update the configuration prices directly to affect existing POs or Reqs.
- If users “expire” a blanket line for a configuration, they must also remove the ASL document reference if they want to recalculate a new price for the configuration
- If users “cancel” a blanket line for a configuration, a new price will NOT be calculated for the configuration
- CTO uses the sys date to look for valid blankets and sourcing rules. Prices for a configuration will be based on the blanket that was valid on the day the configuration is created. Therefore, it is recommended that you run the Purchase Price batch program for all open sales orders on the day you cut over to a new blanket to recalculate valid prices on the current valid blanket.
- If you have not defined sourcing rules for your model, and you have multiple blankets defined for different suppliers that are all effective for the same period, a sourcing rule will be created for the configuration with 100% allocation to one of the Suppliers, and 0% allocation to the others.
- If you are using global agreements, blanket price roll-up creates a new entry in the global agreement, and enables it in all the operating units in which the model line was enabled. An ASL will also be created in all the enabled operating units, even if one didn't exist for the model.

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

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

## Note to Buyer/Note to Receiver

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

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

## iSupplier Portal

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

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

1. Log on as the system administrator.
2. Make sure Personalize Self-Service Defn. profile is set to 'Yes' in your user/responsibility level.
3. Make sure Disable Self-Service Personal profile is not set to 'Yes' in your default/user/responsibility level.
4. Open the iSupplier Portal full access.
5. Open an active PO, it will now have links "Personalize Region" on top of every region.
6. Click the link to personalize that region. This will take you to a new page.
7. Choose Personalization Level Site/Organization/Responsibility level.
8. Click Next. This will take you to the next screen.
9. Enter the responsibility/Site name.
10. Click Next.
11. This will bring up the last page to create/update the personalization.
12. Add the column for configuration details.

This will enable a column called “configuration” on the iSupplier Portal PO details page. Any item on the PO that has a base model, will have a link activated in this column that will take the supplier to a page that displays all the option classes and options that were chosen in order management. If the configuration item has been de-linked from the sales order, the BOM will be displayed based on the actual configuration BOM in an organization, based on the following logic:

- Display BOM from the first receiving organization on the PO in which it exists.
- If BOM does not exist in any of the receiving organizations on the PO, display BOM from the first organization within this Set of Books in which it exists.
- If BOM does not exist in any of these organizations, display a “BOM not found” message.

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

## Supplier Item Descriptions

CTO displays the supplier item descriptions for the model, option class and options on the iSupplier Portal configuration details page and in the item level text attachment that is generated during auto create config for buy configurations.

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

## Custom CTO Packages

### Catalog Descriptions of Multi-Level Models

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

CTO provides a custom package "CTO\_CUSTOM\_CATALOG\_DESC" to allow customers to create custom catalog descriptions. Details of the package are as follows:

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

Package Name: CTO\_CUSTOM\_CATALOG\_DESC

Procedure Name: user\_catalog\_desc

You can alter the default behavior in two ways:

1. Change the Return Value of this function to 'Y' in order to roll up the description of the child models to the parent models.
2. Add custom code and change the return value of this function to 'C' to get a customized description.

user\_catalog\_desc has 3 parameters:

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

p\_params is a record-type and contains the following 2 elements:

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

p\_catalog\_dtls is a table of records which contains the following 2 elements:

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

p\_catalog\_dtls(i).cat\_element\_name will contain the element name in its "i"th index.

You need to update p\_catalog\_dtls(i).cat\_element\_value with an appropriate value of corresponding cat\_element\_name.

x\_return\_status is the OUT parameter which should be set to one of the following values:

FND\_API.G\_RET\_STS\_SUCCESS to indicate success

FND\_API.FND\_API.G\_RET\_STS\_ERROR to indicate failure with expected status

FND\_API.FND\_API.G\_RET\_STS\_UNEXP\_ERROR to indicate failure with unexpected status

## Copy Category Sets

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

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

Package Name: CTO\_CUSTOM\_CATEGORY\_PK

Function Name: COPY\_CATEGORY

Function copy\_category has following parameters:

Pcategory\_set\_id in Number,

Porganization\_id in Number

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

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

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**Note:** Copying the sales and marketing category to the configuration item will make the configuration item available to users in all CRM applications, including Sales Opportunities. Generally, this should NOT be copied.

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## Custom Numbering Method

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

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

File Name: BOMCFGIB.pls

Package Name: BOMPCFGI

Function Name: user\_item\_number



Function `user_item_number` accepts `model_line_id` as input parameter and returns name of the item in `varchar2`.

To generate custom numbers for lower level configurations of preconfigured items, add your custom code to `CTO_CUSTOM_CONFIG_NUMBER` package. Details of the package are as follows:

File Name: `CTOCUCNB.pls`

Package Name: `CTO_CUTOM_CONFIG_NUMBER`

Function Name: `USER_ITEM_NUMBER`

Function `USER_ITEM_NUMBER` has following parameters :

`Model_item_id` in `Number`,

`Model_line_id` in `Number`,

`Param1` in `Vvarchar2`

`Param2` in `Vvarchar2`

`Param3` in `Vvarchar2`

`Param4` in `Vvarchar2`

`Param5` in `Vvarchar2`

Input parameters `param1` to `param5` are for future use.

If you want to use the same numbering logic for both sales order and preconfigured cases, you should put all custom code in `CTOCUCNB.pls`. Then create code in `BOMCFGIB.pls` calling `CTO_CUSTOM_CONFIG_NUMBER.user_item_number`

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

---

---

**Note:** If you want to have different logic for autcreate and pre-config cases, you can still achieve it by putting all custom logic in `CTOCUCNB.pls`, since the input to the API will be different. For autcreate cases, `model_line_id` parameter will be NOT NULL and `model_item_id` will be NULL. For pre-config cases, `model_line_id` parameter will be NULL and `model_item_id` will be NOT NULL.

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## Custom Purchase Price Roll-ups

By default, CTO calculates both list price and blanket prices for purchased configurations. CTO provides two custom packages to allow users to modify the way the price roll-up is done.

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

File Name: CTOCULPB.pls

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

Function Name: get\_list\_price

Function get\_list\_price has following parameters

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

And returns the price as a number.

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

File Name: CTOCUPPB

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

Function Name: Get\_Purchase\_price

Function Get\_Purchase\_price has following parameters:

P\_item\_id in Number,

P\_vendor\_id in Number,

P\_Vendor\_site\_id in Number

This is a boolean function.

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

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

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## Match Configurations

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

File Name: CTOCUSMB.pls

Package Name : CTO\_CUSTOM\_MATCH\_PK

Procedure Name: .find\_matching\_config

Function find\_matching configurations has following parameters

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

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

## Custom Check Supply Creation API

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

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

Custom API is called as part of a private API CTO\_UTILITY\_PK.cto\_can\_create\_supply() before executing the default logic.

The signature for the API is as follows:

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

**API:**

```

Check_supply(
P_in_params_rec          IN          CTO_CUSTOM_SUPPLY_CHECK_PK.in_params_rec_type,
X_out_params_rec        OUT NOCOPY  CTO_CUSTOM_SUPPLY_CHECK_PK.out_params_rec_type,
  X_return_status        OUT varchar2,
  X_msg_count            OUT number,
  X_msg_data            OUT varchar2
);

```

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

- **Config\_item\_id number:** inventory item id of the item for which supply is desired
- **Org\_id number:** ship from org id on the order line

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

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

Excepted return values:

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

## Custom Recipients for Create Configuration Error Notifications

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

The signature for the custom hook is as follows:

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

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

- OPT\_DROPPED\_AND\_ITEM\_CREATED(1): A user selected option was dropped from a BOM in one of the organizations in which the BOM was created
- OPT\_DROPPED\_AND\_ITEM\_NOT\_CREATED(2): BOM was NOT created because a user selected option would have been dropped from a BOM in one of the organizations in which it should have been created

- `EXP_ERROR_AND_ITEM_CREATED(3)`: There was an expected error, but the item was created anyway.
- `EXP_ERROR_AND_ITEM_NOT_CREATED(4)`: There was an expected error, and the item was not created.

If the API returns null CTO will send notifications to the default recipients intended for the error type.

See [Configuration Creation Error Handling](#) for more information on the seeded notifications and errors.



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# Create and Process Configurations

Topics covered in this chapter include:

- [Enter Configured Orders](#) on page 3-2
- [Create Configuration Items](#) on page 3-16
- [Supplying Unique Configurations](#) on page 3-52
- [Pick Release and Ship Confirm](#) on page 3-73
- [Intercompany Invoicing](#) on page 3-74

## Enter Configured Orders

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

### Release 11i Order Management Overview

One of the major features in R11i Order Management is the integration of Oracle Configurator. Oracle Configurator provides graphical configuration interface, dynamic validation and other features that make the order configuration a totally different experience.

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

## Enter Configured Orders

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

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

As explained in the set-up chapter, orders entered in Order Management can be configured using either Oracle Configurator or the Order Management Options Window. See [Profiles](#) for more information on the profile option that controls this behavior.



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

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## View Selected Options

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

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

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

## Dropshipping Configurations

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

If you always dropship an item, you can designate it as a dropship item by setting up its supply source type to 'External' in on the OM tab in the item master. All orders for this item by default will be dropship orders. You can also explicitly choose the 'External' supply type on the order line in the sales order pad. Each line of a Non ship model complete PTOs may be dropshipped from a different supplier based on your sourcing rules.

As with standard items, planning can not be used for External ATO orders. You can not perform an ATP inquiry or reserve on-hand to a dropship ATO order. The

schedule date is defaulted from the request date. Shipsets or Arrival sets can not be drop-shipped. See: the *Oracle Order Management Implementation Manual* and user's guide for more information on drop shipping.

## Check ATP for ATO Models

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

## ATP Based on Planning Output

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

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

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

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

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

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

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

### ATP And Option Specific Sourcing

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

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

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

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

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

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

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

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

### Rescheduling

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

Rescheduling after a configuration item is created and linked is always done based on the linked configuration and its supplies. If the rescheduling is happening as part of a configuration change, the system verifies that the new configuration matches an existing configuration. If it does, and the matched configuration is planned, the rescheduling is done according to the new matching configuration's

supply. If it does not match or the matched configuration is not planned, the rescheduling is done from a run-time BOM generated from the model and options.

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

## ATP Based on Collected Data

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

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

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

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

## Intercompany Setups

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

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

configured item if you want to exempt it from the normal transfer price calculation during invoicing.

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

## Match Configuration Item

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

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

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

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

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

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

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

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

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

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

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

The match is done by comparing the current configuration with the table bom\_ato\_configuration. This table is loaded only if the match profile is on at the time of configuration item creation and the model match attribute is either null, standard, or custom. You will not be able to match to any configurations created before the match profile is turned on and the model profile is set.

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

### Prerequisites

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

[BOM: Match to Existing Configurations](#)

[BOM: Use Custom Match Function](#)

### Perform Match

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

**Sales Order Pad Actions Button - Match** This action performs a match. If a match is found for the top level assembly, the system links the matched item to the order line. If there is onhand inventory for this linked item, you have a choice to make a reservation or not.

**AutoCreate Configuration Concurrent Program** This program performs a match. If a match is found, the system links the matched item to the order line. For multi-level configurations, auto create config will try to match and re-use lower level configurations if a match for top level assembly is not found. If BOM: Automatic Reservations is set to Yes, and the order schedule date is within the OM:

Reservation Time Fence, the program will automatically reserve any available on hand.

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

**Preconfiguration** The preconfiguration process also attempts to perform a match. If a match is found for the top level item, you will be asked if you want to use it instead of creating a new bill for the new item. If a matched configuration is found and you choose to use the matched configuration, the bill of materials of the matched configuration displays. For multi-level configurations, the system tries to match and re-use lower level configurations if a match for top level assembly is not found. See [Preconfiguring Items](#) for more information.

At the time of configuration item creation, if the profile BOM: CTO Create Configuration Exception Behavior is set to Create BOM CTO displays a warning message and puts the order on hold if selected options are dropped from the config BOM in any organization where BOM is created. A notification about the dropped components is sent to the planner of the item in the organizations where the BOM was created without the selected components. If match is enabled on the base model any orders that use the matched configuration item is also placed on hold.

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

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

See [Create Configuration Item, BOM Attribute](#) for more information.

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

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

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

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## Workflow for Configured Orders

### Seeded Workflow

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

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

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

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

### **Workflow Activities for ATO Model**

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

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

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

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

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

See [Setup for Configuration Line Workflow](#) for more information.

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

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

- Enter
- Schedule

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

### ATO Model Line vs. Configuration Item Line

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

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

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The following describes the differences between the two lines.

**Table 3–1 ATO Model vs. ATO Configuration Order Line Workflows**

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

### Order Line Statuses

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

**Table 3–2 Line Status for Both the ATO Model and the Configuration Line**

Order Line Type	Line Status	Status Description	Comments/Tips
ATO Model	Entered	The line is entered and not booked.	-
	Booked	The line is booked.	The status remains Booked until the configuration item is shipped.
	Fulfilled	After the configuration line is shipped, the model line shows this status. It is eligible for invoicing.	-
	Closed	The line is closed.	-
-	Fulfilled	The line is shipped.	-
-	Closed	Closed Line	Line will close once invoiced
Configuration	Awaiting Shipping	Supply is available and reserved to the order line	
	Awaiting Supply	You have bypassed the autocreate processes and are waiting for supply from elsewhere (usually planning)	This status is used any time you bypass the autocreate supply processes. Product can be shipped while a line is in this status.
	Entered	Configuration has been created but the order is not yet booked.	
	Booked	Configuration is created, order line is booked, and the order line will be drop shipped.	
	PO Created	A purchase order has been created and reserved to the sales order line for the entire line quantity.	This status is used only if you create purchase requisitions using autocreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for "external" (dropshipped) order lines.

**Table 3–2 Line Status for Both the ATO Model and the Configuration Line**

Order Line Type	Line Status	Status Description	Comments/Tips
	PO Partial	You have a partial reservation for a purchase order, and the rest of the order quantity is reserved to inventory.	This status can occur if you create a PO with the autcreate supply process and it is partially received. If you manually reserve on-hand to an order line and create a PO for the difference, the status is also PO-Partial. This status is used only if you create purchase requisitions using autcreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for external (dropshipped) order lines.
	PO Req Created	A requisition has been created and reserved to the sales order line for the entire line quantity.	This status is used only if you create purchase requisitions using autcreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for "external" (dropshipped) order lines.
	PO Req Requested	A row has been inserted in the req interface tables for this order line for the entire line quantity.	The line will remain at this status until the user runs Requisition import. This status is used only if you create purchase requisitions using autcreate purchase requisitions batch program or by progressing an internal sales order line from create Supply Eligible. This status is not used for "external" (dropshipped) order lines.
	Production Open	When a work order is linked or a flow schedule is referenced to the order line, the configuration line shows this status.	The cursor must be on the configuration order line in order to run Progress Order -> Create Supply

**Table 3–2 Line Status for Both the ATO Model and the Configuration Line**

Order Line Type	Line Status	Status Description	Comments/Tips
	Production Partial	you have a partial reservation for a WIP job or a reference to flow schedules and the rest of the order quantity is reserved to inventory.	You can be in this status if there is a partially completed WIP job or flow schedule that you created through the autocreate supply process. If users manually reserve on-hand to an order line associated with a make item and create supply for the difference, the status will also be Production Partial
	Supply Eligible	A configuration item has been created for the line, the line is booked and is waiting for the autocreate supply processes.	
	Supply Open	There is more than one type of supply reserved to this sales order line.	
	Supply Partial	There is more than one type of supply and on hand reserved to this sales order line.	

## Create Configuration Items

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

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

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**Note:** CTO will create a config item for all scheduled order lines before or after booking. Since configuration validation is enforced only at booking, this means a configuration could be created for a configuration that is not valid. At the time of booking, if the configuration is invalid, you will be required to change it to a valid configuration, which will delink the original configuration. That allows you to create a new one. However, the old configuration will still exist in the system and may have been planned. Since planning has no visibility to whether an order is booked or not, these planned orders can even be released. It is suggested that you schedule AFTER booking whenever possible to ensure planning sees only valid configurations.

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## Batch vs. Online Mode

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

### AutoCreate Configuration Items

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

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

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

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

Schedule Ship Date - Order Lead Time

Example: Schedule Ship Date = 6/20/2000

Order Quantity = 10

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

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

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

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

**Perform Leadtime Calculation** If you specify Yes, manufacturing and cumulative lead times are calculated for the configuration item based on the configuration item routing in all organizations where the configuration routing is created. If you specify No, the configuration item lead-time attributes default from the base model.

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

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

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

**Perform Purchase Price Rollup** If this parameter is set to Yes the program will allow the user to perform a list price and purchase price rollup for all configurations created. This parameter gets defaulted from the profile BOM: CTO Perform Purchase Price Rollup. To calculate lead times at a later date, run the CTO Lead Time Purchase Price concurrent program. See [CTO Purchase Price Calculation Concurrent Program](#) for more information on how this calculation is performed.

**Perform Cost Rollup** If this parameter is set to yes, the program will perform a cost rollup in all organizations where the new configuration item can be made or received. For configuration with the Create Configured Item, BOM attribute set to Based on Sourcing or BOM Based on Sourcing, these organizations are limited to the ship from organizations sourcing chain. This parameter gets defaulted from the profile BOM: CTO Perform Cost Rollup. To calculate lead times at a later date, run



the CTO Cost Rollup Calculation concurrent program. See [CTO Calculate Cost Rollup](#) for more information.

**Notify User for Exceptions** This parameter gives you the option of receiving notifications if the batch program is run manually. This parameter gets defaulted from the profile BOM: Notify User for Autocreate Config Exceptions.

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

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**Note:** If you are using APS to plan your configurations, you must create configured items for all scheduled sales orders prior to running your collections and plan. Any sales order without a configuration item linked to it WILL NOT BE PLANNED. Therefore, if you are using APS, it is recommended that you schedule this program in a request set with collections. In this scheduled program, without a sales order or release offset days specified, and with leadtime, flow, purchase price and cost parameters set to yes.

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### Sales Order Pad Action Button - Progress Order

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

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

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## Configuration Items

### Process Description

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

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

### Configuration Item

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

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

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

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

See [Impact of Option Specific Sources](#) for more information on option specific sourcing.

**Items Based on Model, BOMs Based on Sourcing** Creates items in all organizations where the Model item exists. With this setting, option specific sourcing set ups do not affect where the item is created.

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

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

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

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

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

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

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

The configuration item is assigned to all the item categories to which the model was assigned, with the exception of the sales and marketing category. There is a custom program that can be used to assign the item to other categories. See [Custom CTO Packages](#) for more information about this program.

The default sub-inventory and default locator are also copied from the model to the configuration item.

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

### Hard Coded Item Attributes

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

**Table 3–3 Hard Coded Item Attributes**

Item Master Tab	Attribute Name	Column Name (Table: MTL_SYTEM_ITEMS)	Value
N/A	Organization	ORGANIZATION_ID	Organizations in which item is created
Main	User Item Type	item_type	Based on Profile BOM: Configuration Item Type
Inventory	Inventory Item	inventory_item_flag	Y
Inventory	Stockable	stock_enabled_flag	Y
Inventory	Transactable	mtl_transactions_enabled_flag	Y
Inventory	Reservable	reservable_type	1 (Yes)
Bills of Material	Base Model	base_item_id	Base Model's Item Id
Bills of Material	BOM Allowed	bom_enabled_flag	Y
Bills of Material	BOM Item Type	bom_item_type	4 (Standard item)
Costing	Include in Rollup	default_include_in_rollup_flag	Y

**Table 3–3 Hard Coded Item Attributes**

Item Master Tab	Attribute Name	Column Name (Table: MTL_SYTEM_ITEMS)	Value
Purchasing	List Price	LIST_PRICE_PER_UNIT	Calculated in PO validation organizations, based on pricing setup
Purchasing	Purchased	purchasing_item_flag	Y
Purchasing	Purchasable	purchasing_enabled_flag	Y
Physical Attributes	Unit Volume	unit_volume	Calculated based on options selected
Physical Attributes	Unit Weight	unit_weight	Calculated based on options selected
Work in Process	Build in WIP	build_in_wip_flag	Y
Order Management	ATP Components	atp_component_flag	See <a href="#">Check ATP</a>
Order Management	Assemble to Order	replenish_to_order_flag	Y
Order Management	Check ATP	atp_flag	Set to ensure consistent ATP before and after configuration item creation. See <a href="#">Check ATP</a>
Order Management	Customer Ordered	customer_order_flag	Y
Order Management	Customer Orders Enabled	customer_order_enabled_flag	Y
Order Management	Internal Ordered	internal_order_flag	Y
Order Management	Internal Orders Enabled	internal_order_enabled_flag	Y
Order Management	OE Transactable	so_transactions_flag	Y
Order Management	Pick Components	pick_components_flag	N
Order Management	Shippable	shippable_item_flag	Y

**Table 3–3 Hard Coded Item Attributes**

Item Master Tab	Attribute Name	Column Name (Table: MTL_SYTEM_ITEMS)	Value
Invoicing	Invoice Enabled	invoice_enabled_flag	Y
Invoicing	Invoiceable Item	invoiceable_item_flag	Y
N/a	{Hidden Field}	INVENTORY_ITEM_ID	Generated from sequence
Work In Process	Supply Type	wip_supply_type	Top level configuration: Assembly Pull. Lower level configurations: Set based on BOM level supply type
N/a	{Hidden Field}	segment<n>	<n> is the number specified in BOM parameter 'Config segment number' and this segment will be populated by CTO based the 'config numbering method' BOM parameter. All other segments will inherit the model value.
BOM	Autocreated Configuration	auto_created_config_flag	Y
N/a	{Hidden Field}	option_specific_sourced	1 if the configuration was created based on option specific sourcing

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

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

- When the model's ATP flag is set to Material Only or Resource and Material, CTO sets the Check\_ATP flag on the configuration item to Material Only and inherits its ATP\_components value from the model.

### Item Attributes that are hard coded if Model value is null

These Attributes are hard coded if the Model value is null, otherwise they are inherited from the Model.

**Table 3–4 Hard Coded Item Attributes for a Null Model Value**

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

### Item Attributes that are not populated

These attributes are not populated by the autcreate configuration process.

**Table 3–5 Item Attributes Not Populated**

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

**Table 3–5 Item Attributes Not Populated**

Item Master Tab	Attribute Name	Item Attribute
Service	[Serviceable Product] Recovered Part Disposition	RECOVERED_PART_DISP_CODE
Service	[Serviceable Product] Defect Tracking Enabled	DEFECT_TRACKING_ON_FLAG
Service	[Installed Base] Asset Creation	ASSET_CREATION_CODE
Service	Provisionable	COMMS_ACTIVATION_REQD_FLAG
Web Option	Orderable on the Web	ORDERABLE_ON_WEB_FLAG
Web Option	Back Orderable	BACK_ORDERABLE_FLAG
Web Option	Web Status	WEB_STATUS
N/a	{Hidden Field}	VOL_DISCOUNT_EXEMPT_FLAG
N/a	{Hidden Field}	COUPON_EXEMPT_FLAG

### Configured Item Level Inventory Setups

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

- User defined costs
- Descriptive element values
- Categories
- Related items
- Subinventories (Except Lead times)
- Secondary locators
- Cross references
- Item subinventory defaults
- Item locator defaults
- Pending status
- ABC assignments



The following are not copied:

- Manufacturer part numbers
- Item safety stock

## Configuration BOM

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

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

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

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

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

See [Impact of Option Specific Sources](#) for more information on option specific sourcing.

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

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The configuration item bill of material in any organization contains the chosen options and all mandatory components whose effective date in that organization is less than the scheduled ship date AND disabled date is greater than or equal to the estimated release date. The estimated release date is the schedule ship date minus

the total of fixed lead time of model in the manufacturing organization plus the order quantity times the variable lead time of model in the manufacturing organization.

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

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

See [Custom Recipients for Create Configuration Error Notifications](#).

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Items on new configuration BOMs are sequenced such that the Item Sequence reflects the logical sequence on the original Model and Option Class BOMs. The Item Sequence increment is based on the profile BOM: Component Item Sequence Increment. Note that if the same option appears more than once on the indented model structure, and is assigned to the same operation sequence, it will be combined into one entry under the first parent. BOMs created before the 11i.9 upgrade are not restructured.

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

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### Example 1: Single level, Single Organization example:

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

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

**Table 3–6 BOM for Laptop Computer Example**

Level	Item	Item Type	Optional	Selected
.1	. Laptop Computer	ATO Model	No	Yes
..2	.. CPU	ATO Option Class	No	Yes
...3	... Pentium I	Purchased	Yes	-
...3	... Pentium II	Purchased	Yes	Yes
..2	.. Monitor	ATO Model (phantom)	No	Yes
...3	... VGA	ATO Option Class	Yes	Yes
....4	.... VGA Manual	Purchased Item	No	-
....4	.... VGA1	Purchased Item	Yes	Yes
....4	.... VGA2	Purchased Item	Yes	-
...3	... EGA	ATO Option Class	Yes	-
....4	.... EGA1	Product	Yes	-
....4	.... EGA2	Product	Yes	-
...3	... Monitor Manual	Purchased Item	No	-

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

**Table 3–7 Single Level Configuration BOM**

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

**Table 3–7 Single Level Configuration BOM**

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

**Example 2: Multi-level, Multi-organization example**

In a multi-organization set-up, the model bill of material in the sourcing organization is used for the creation of a configuration bill of material. The configuration bill of material is only created in the respective sourcing organization.

Assuming the same options were selected as in Example 1, but the set-up has changed to the multi-level, multi-organization of example 2 in chapter 1, the following tables show the configuration bills of material in the respective manufacturing (sourcing) organizations. Notice that the Laptop configuration BOM has the monitor configuration as a sub-assembly.

**Table 3–8 Multi-level Configuration BOM in M1**

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

**Table 3–9 Multi-level Configuration BOM in M2**

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

### Example 3: Purchased Configuration

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

## Configuration Routing

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

See [Configuration BOM](#) for more information.

## Sourcing Assignment Creation

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

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

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

- If option specific sourcing is set up, new sourcing rules and assignments will be created for the configuration based on the option specific rules and the sourcing chain.

See [Impact of Option Specific Sources](#) for more information on option specific sourcing.

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

## De-link Configuration Item

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

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

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

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**Note:** With the addition of the change order process it is recommended that you do not manually de-link a configuration item.

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

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

## Link Configuration Item

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

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

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

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

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

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

## Configuration Lead Time Calculation

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

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

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

See [Profiles](#) and [BOM: Perform Lead Time Calculations](#) for more information.

## Configuration Item Cost Rollup

This is an optional process that occurs during the AutoCreate Configuration process. You can choose to automatically perform cost roll-up during autcreate configuration of the item by setting appropriate profile options and the parameters of the AutoCreate Configuration Batch program. It can also be run for all sales orders and preconfigured items using the CTO Calculate Cost Rollup concurrent program See [CTO Calculate Cost Rollup](#) for more information. Also see [Profiles](#), and [BOM: CTO Perform Cost Rollup](#).

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

During the autcreate configurations process, CTO copies the cost of the base model to the configuration item in each organization in which the configuration item is assigned. Costs are copied in the valuation cost type of the costing organization. The user-defined cost is copied in all types of costing organizations. In Average, LIFO and FIFO costing organizations, the cost in the respective rate types is also copied.

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

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

A non-updateable cost type CTO has been seeded to facilitate costing of configurations. A single level cost rollup is performed in the CTO cost type, using the cost type specified in the profile BOM: CTO Buy Cost type as the buy cost type.



For make configurations, since this cost-type holds no costs for the model and options, the roll-up will be done based on the valuation cost of the model and options, and an entry for the configuration will be placed in the CTO cost type.

If the organization is using standard costing, CTO will then update the frozen cost of the configuration with the cost rolled up in the CTO cost type. If the costing organization is an average, LIFO, or FIFO organization, the valuation cost of the item is not updated and the cost in CTO cost type serves as an estimated cost.

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

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

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

CTO does not perform an automatic cost roll-up for preconfigured items. However, the user defined and item costs are copied to the pre-configured item.

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**Note:** Do not perform a cost roll-up on the model itself. The model is not expected to have a rolled up cost since it is not a standard item, and will cause your pre-configured item cost to be incorrect.

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### Costing of Matched Configurations

If the profile Match to Existing Configurations has been set to Yes, the autcreate configuration process may find a match to an existing item. The matched item may be an autcreated or pre-configured item for which cost in the current organization

may or may not have been previously rolled up. CTO will decide whether or not to perform a cost rollup of a matched configuration based on the following rules:

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

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**Note:** If you have manually changed the frozen cost of the configuration before it has been transacted, it will be over-ridden by the roll-up cost calculated by CTO.

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

## Configuration Purchase Price Calculation Rollup

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

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

**See**  
[Profiles](#)

[BOM: CTO Perform List Price and Purchase Price Rollup](#)

## Purchase Price Calculation

### Model Items, Bills, and Routing

The price calculation is done in the following ways:

#### Using List Prices

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

#### Using Blanket Purchase Orders for Models

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

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

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

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

When the batch program is launched without any order-specific parameters, blanket prices are rolled up for all configurations that meet the parameter criteria

irrespective of their make/buy sourcing rules and attributes. The prices are rolled up for all global blankets associated with model ASL.

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

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

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

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

See [Configuration Item Cost Rollup](#) for more information. The *Oracle Purchasing User's Guide* has more details on PDOI, blankets and ASLs. Look at [Purchase Price Calculation](#) and [Custom CTO Packages](#) for information on using custom hooks in the AutoCreate Configuration batch program to do your own price calculation.

## Configuration Creation Error Handling

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

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

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

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

### Expected Error Types

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

1. Option Items dropped from BOM 2. If the profile [BOM: Create Configuration Exception Behavior](#) is set to Create and Link Item, one notification is sent to a specified user for the item-organization combination where the components are dropped.

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

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

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

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

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

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

The notification message contains specific error message for the problem encountered. Notification is sent to the `planner_code` specified on the model-organization combination in the shipping organization. If the planner code value is null or not a valid work flow user then, the notification is sent to the system administrator. These types of errors include:

- Model BOM/Routing Not available in manufacturing org determined by OSS sourcing
  - Create item error
  - Create BOM error
  - Inherit operation sequence error, etc.
  - Create routing error
4. Other expected errors for which item was created. Some expected errors occur after the item has been created, which will result in one notification being sent to a specified user for that item in the item-org combination where the error occurred.

The notification message will contain specific error message for the problem encountered. Notification is sent to the `planner_code` specified on the model-organization combination for which the error occurred. If the planner code value is null or not a valid work flow user then, the notification is sent to the system administrator. These types of errors include:

- Lead Time calculation failed
- Cost Rollup failed (buy cost not defined, etc.)
- List Price & Purchase Price Rollup failed

## Optional Processing Programs

### CTO Calculate Cost Rollup

This program allows you to perform a cost rollup for previously created configuration items in a given organization. If the organization is not specified, cost rollup is performed in all organizations where the config item is enabled. The sourcing, parent child relationship is determined and the cost for the configuration item in all the organizations specified is calculated.

Cost is automatically calculated for the selected configuration items and their child configuration items in all organizations where the BOM exists. If a cost already exists in the Valuation cost type (matched items), that cost is used and cost is not re-calculated.

**Organization:** You can optionally specify an organization. A supply chain cost rollup will be performed on all configuration items in this organization, as well as organizations in its sourcing chain where a BOM exists.

**Configuration:** If you specify a specific configuration without an organization, then a supply chain rollup will be performed for this configuration and its children in all organizations where a BOM exists. If you specify it with an organization, the program will do a supply chain roll-up for this configuration and its children in this organization and its sourcing chain.

**Base Model:** If you specify a base model without an organization, then a supply chain rollup will be performed for all configurations based on this model, and their children, in all organizations where a BOM exists. If you specify it with an organization, the program will do a supply chain roll-up for all configurations enabled in the organization and based on this model. It will include the selected items children and their sourcing chain.

**Created Days Ago:** Program will rollup purchase prices for any configuration item that was created within the specified number of calendar days and meets the other program parameters.

### Calculate Lead Time

CTO provides a Calculate Lead Time concurrent program to calculate the lead time for any sales order or preconfigured item.

You can launch this concurrent program from the Bills of Material > ATO menu. The program supports the following parameters:

**Organization** You can optionally specify an organization in which to perform the roll-up.

**Configuration Item** Specify a specific existing configuration for which you want to perform the rollup.

**Base Model ID** If you specify a base model, all configurations with that base model that meet the rest of the program parameter criteria will be rolled up.

**Created Days Ago** Program rolls up purchase prices for any configuration item created within the specified number of calendar days and meets the other program parameters.

**Load Type** Choose between:

- Autocreated Configuration Items only
- Preconfigured items only
- Autocreated and Preconfigured Items

This determination between the type of items is done based on the Autocreated Configuration item attribute.

### **CTO Purchase Price Calculation Concurrent Program**

CTO also provides a CTO Purchase Price Calculation concurrent program to calculate the purchase price for any sales order or preconfigured item. This can also be used to recalculate a price if the autocreate config program is unable to calculate the price for any reason. It should also be used to recalculate blanket prices for all open sales orders on the day you cut over to a new blanket for a model.

You can launch this concurrent program from the Bills of Material > ATO menu. The program supports the following parameters:

**Sales Order Number:** You can specify a specific sales order number.

**Sales Order Line:** If you have entered a specific sales order, you can also specify a specific sales order line.

**Organization Code:** You can optionally specify an organization. Only those sales orders with this organization as the shipping warehouse will be processed.



**Offset Days:** The program will calculate the price for only those sales orders that are scheduled to ship on or before the system date plus the offset days (using BOM calendar days).

**Overwrite List Price:** If you specify Yes, the program will overwrite existing list prices on the configuration items for which it is performing the calculation. If you specify No, the program will not overwrite existing list prices. The default is No.

**Configuration Item:** Specify a specific existing configuration for which you want to perform the rollup.

**Base Model ID:** If you specify a base model, all configurations with that base model that meet the rest of the program parameter criteria will be rolled up.

**Created Days Ago:** Program will rollup purchase prices for any configuration item that was created within the specified number of calendar days and meets the other program parameters.

**Load Type:** Choose between:

- Autocreated Configuration Items only
- Preconfigured items only
- Autocreated and Preconfigured Items

This determination between the type of items is done based on the Autocreated Configuration item attribute.

## Impact of Option Specific Sources

If you use option specific sourcing, option specific sourcing setups will add additional restrictions to how configuration Item, BOM, Routing and sourcing assignments are created.

### Pruning the Sourcing Tree For OSS Models

For all Option specific sourced configurations, CTO prunes the model sourcing with a Option specific source list you provide it. CTO allows you to specify the list of organization where a model's configuration can be distributed, manufactured, or procured with a specific option item. This list of organization information is stored in a CTO table at setup.

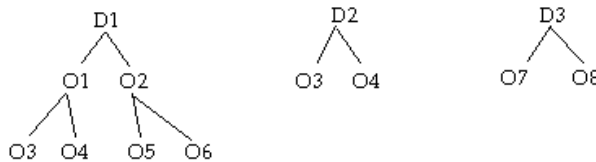
If there is an OSS configuration, CTO looks at the list of valid organizations defined for each option item for this configuration. If more than one option item decides model sourcing, the intersection of all of the components' list of organizations are taken as valid organization for this configuration.

The list you specify determines where this configuration can be distributed, manufactured, or transferred. The pruned sourcing tree is then used to create the item, BOM and Routing according to the "Create Configuration Item, BOM" item attribute.

### Model Sourcing Tree Example

If the model sourcing tree looks as follows:

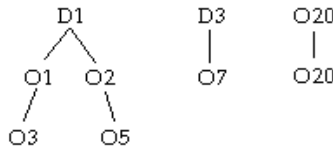
**Figure 3–1 Source Trees**



The intersection list is D1, O1, O3, O2, O5, D3, O7 and O20.

After pruning with top model sourcing, the sourcing tree looks as follows:

**Figure 3–2 Pruned Source trees**



The assignment for the receiving organization D2 is not considered for pruning, because D2 is not part of the valid organization specified, so the whole assignment is not considered as valid. Therefore distribution from org D2 and the whole assignment in that organization is invalid. Also, note that organization O20 is not part of the model sourcing tree, but since organization O20 is part of the intersection list, CTO creates an explicit sourcing rule for organization 20.

The model's sourcing tree is pruned with the intersection organization list. If needed new sourcing rules assignments are identified for this configuration.

The logic to prune model sourcing based on intersection list is as follows.

1. The intersection list is stored in a temporary table.
2. The sourcing assignments are retrieved. This includes all of the sourcing assignments for model in default assignment set, which has receiving organization as one of the org in the intersection list. Store these assignments in temp table.
3. Item level assignment and customer-item assignments for this model are retrieved and added to the temporary table.
4. Valid sourcing rows are identified for each assignment in the temporary table, by comparing the source organization with the intersection list and marking them as valid.
5. Assignments with valid source organizations are assigned to the new configuration item.
6. For organizations in the intersection list that are not part of model sourcing tree the following must be done:
  - If the planning make/buy code for the configuration in that organization is Make, insert a new assignment with 100% make in that organization.
  - If the planning make/buy code is Buy, ignore that organization.

You cannot create a sourcing rule with 100% buy without specific vendor information. An organization is valid if the planning make/buy code is Buy. Only organizations with explicit buy rules are considered valid organizations for Buy models.
7. The Option specific sourced attribute for this configuration is updated.
8. A list for BOM creation is created from the leaf node organizations from valid assignments. In the [Model Sourcing Tree Example](#) that would be O3, O5, O7, and O20.

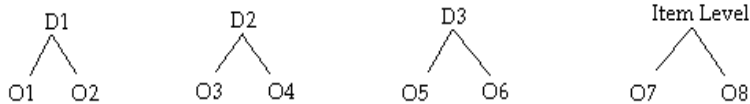
**Item Sourcing Rules** In general, the item level sourcing rule is used for any item in the organization that does not have an explicit sourcing rule.

For an option specific source model, the item level sourcing rule is used only for the organizations in the sourcing tree that do not have an explicit sourcing rule. This is because the provided list is the list of manufacturing/distribution organizations. ATP also uses that list to determine ship from organizations

### ATO Model Tree Example

Assume Model1 is an option specific sourced ATO model with the following sourcing tree defined:

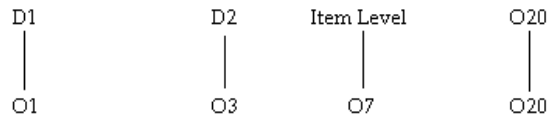
**Figure 3–3 Item Sourcing tree**



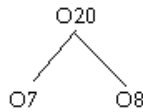
The valid list of organizations for model1-Opt1 is D1, O1, D2, O3, O7 and O20. The ship from organization is specified as O20. ATP then satisfies the order in organization 20 by looking at the item level rule. The order is satisfied by looking at supply/capacity in organization O7.

CTO creates configuration item C1\* for this order with the following sourcing rule:

**Figure 3–4 Pruned trees**



ATP uses the sourcing item level sourcing rule for org O20, but CTO creates 100% make according to the rule for organization O20. To avoid this inconsistency, make sure all organizations listed are part of the model sourcing tree. In this case, an explicit rule in organization O20 should be created:

**Figure 3–5 Explicit rule**

All organizations that are in the OSS list should be part of the model sourcing tree. This recommendation applies only if the model has item level sourcing.

**Pruning Source Trees With Multiple Levels** In a multi level model, the lower level model's option specific sourcing restricts the top configuration's manufacturing organization. For example, due to a specific option item, a lower level model can be restricted so that it is manufactured in org1, org2, and org3 only. Any configuration that has this configuration for a child can only be built in org1, org2 and org3. The top-level configuration's sourcing cannot be simply copied from model sourcing. The model sourcing must be pruned with the lower level configuration's valid organizations.

CTO creates the BOM for this top configuration in only those organizations where the top configurations can be manufactured/procured. CTO prunes the top model sourcing chain with the lower model's list of valid organizations.

All organizations where there is an explicit buy rule exists are considered valid organizations for the top model. This is because when the top model is procured, the lower level model sourcing does not impact the top model. Organizations that have no explicit sourcing rule and the planning make/buy code set to Buy are not valid. CTO cannot create an explicit sourcing rule for this organization without any vendor information. You must specify an explicit buy rule to consider the organization as valid.

### **Option Specific Sourcing and AutoCreate Configuration**

For Option Specific sourced models, if the model Create Config Item, BOM attribute is set to Based on Sourcing or Item Based on Model, BOM Based on Sourcing, CTO creates the BOM and routing only in those organizations where this configuration can be either manufactured or externally requisitioned. CTO derives valid sourcing rules and creates valid assignments for new configurations based on the model-sourcing rule and any option specific sourcing organizations. If the model attribute is set to Based on Model, the configuration item is created in all organizations where the base model is enabled. The BOM and routing is created

only in those organizations where the configuration can be manufactured or externally requisitioned.

In a multi-level model case, lower level model sourcing affects the top model's sourcing. Even if the top model does not have any option specific sourcing defined, the lower level model's option specific sources restrict the organizations where the top configurations can be manufactured. If the parent model manufacturing organizations are restricted by a lower level model's option specific sourcing, CTO considers the top model as an option specific model, too.

### **Sourcing rules and Assignments**

After all option specific sourcing models are pruned, sourcing assignments for each pruned configuration are created.

CTO creates a new sourcing rule that contains the pruned sourcing rules of the model. For sourcing rules that are not pruned, CTO reuses the sourcing rules assigned to the model. An identical one is reused.

New sourcing rules are created for pruned assignments. For assignments with all valid nodes, the model assignment is copied. Only active planning sourcing rules are considered. The new assignments are then stored in a temporary table. This table has the rank and allocation % for each organization from model.

### **Option Specific Sourcing Examples**

See the [Option Specific Sourcing Example](#) in [Option Specific Sourcing \(OSS\)](#) for more information.

### **Option Specific Sourcing During Configuration Item Creation Example**

The configuration item is created and assigned to organizations based on the Config Item, BOM, Routing Creation attribute and the Option Specific Sources List.

Within the list of organizations determined for an order based on the new model attribute, the BOM and routing is created only in the valid manufacturing or external requisitioning organizations. An organization is considered a valid manufacturing requisitioning organization if:

- There is a full or partial Make At or Buy From Rule assigned to the organization in the MRP:Default Assignment Set, and the organization is in the option specific source list for the configuration.
- There is no sourcing for the organization in the MRP:Default Assignment Set, but the organization is in the option specific source list for the configuration.

In the [Option Specific Sourcing Example](#), if the new model attribute is set to Based on Model, and the customer orders Model1-O1-O2-Model2-O5, the configured Model1 BOM and Routing is created in both M3 & M6, regardless of whether D1 or D2 is chosen as the ship from organization on the sales order. The item is created everywhere the model is enabled.

If, on the other had, the new model attribute is set to Based on Sourcing, and the customer orders Model1-O1-O2-Model2-O5, the configured Model1 BOM and Routing is created in both M3 & M6 if the order comes in against D1, but is created only in M3 if the order comes in against D2. The configured item is created only in the D1, M3, M6, D2, M4, M3, the OM validation organization, and the PO validation organizations. This is not a recommended set-up if you want to use global ATP on the configured item, or are using matching with PDS ATP.

If the Config Item, BOM, Routing Creation attribute is set to Item Based on Model, BOM and Routing Based on Sourcing, then the BOM and routing is created as described in the Based on Sourcing example, and the item is created everywhere. This is not a recommended set-up if you want to use global ATP on the configured item, or are using matching with PDS ATP.

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**Attention:** Single source users must create option specific valid source lists if the model attribute is set to Based on Model.

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**Attention:** If you are using Option Specific Sourcing, the same assignment set must be specified in MRP: Default Assignment Set, MRP: ATP Assignment Set, MSC: ATP Assignment Set, and on the plan being used by ATP and planning.

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CTO creates item and Model-Org level assignments in the MRP:Default Assignment Set for the configuration item, based on the Option Specific Sourcing, and the assignments associated with the Config Item, BOM, Routing Creation attribute.

### **Child Models Impacting Parent Model Sourcing Example**

There are cases when a parent model has no Option Specific Sourcing defined, but the child model does. In this case, CTO derives the appropriate sourcing for the top model based on the sourcing of the child, and create the parent's BOM and Routing only in the valid organizations based on the child's restrictions:

M1

- M2 (non-phantom)
  - Opt2
  - M3 (non-phantom)
    - Opt3

M1 & M3 have no sourcing, but are enabled and make in Org1, Org2, Org3 and Org4. All models have a BOM and Routing in each of those organizations.

M2 is enabled and make in Org1, Org2, Org3 and Org4. It has a BOM and routing in each of those organizations. It has a sourcing assignment in Org3 that is 50% make at Org3, 50% transfer from Org4.

The valid organization list for M2-Opt2 includes Org2, Org3 & Org4.

The valid organization list for M3-Opt2 includes only Org4.

The order comes in for M1-M2-Opt2-M3-Opt3, and is booked and scheduled against Org3. If the Config item, BOM, and Routing Creation attribute is set to Based on Model, CTO creates M1\*1, M2\*2 and M3\*3 in all organizations that have the model enabled. It is Make At in all organizations. In addition it:

- Creates the BOM and Routing for M3\*1, only in Org4. A sourcing assignment is created for M\*3 in Org4 that says make at Org4. M3\*1 is marked as created with option specific sources.
- Even though M2 option specific list said Org 2, Org 3 & Org 4 are valid, since M3\*1 cannot be made in Org2, and there is no sourcing for it from Org2, M2\*1 also cannot be made in Org2. Similar logic exists for Org 3. Therefore, CTO further restricts the valid list and creates the BOM and Routing only in Org 4, and create only the sourcing assignment in Org3 to transfer from Org4. M2\*1 is marked as created with option specific sources.
- M1\*1 has no option specific valid organizations, implying it can be made anywhere it has a BOM. However, because of the Option Specific Sourcing for the child models, the only valid sources for the M1\*1 are Org 3 or Org4. CTO therefore creates the BOM and Routing for M1\*1 only in Org 3 & Org 4. CTO also creates 100% Make At sourcing assignments in Org3 & Org4, even though the model has no sourcing, for use in validating the ship from organization when matching to this configuration in the future or when an order is entered directly. M1\*1 is marked as created with option specific sources:

Assume another order comes in for the same configuration against Org1, and match is on. The item has been created but not collected or planned. ATP calls CTO for a



match and Option Specific Sourcing. CTO returns a match and a list of valid organizations based on their sourcing rules.

- **M1\*1: Org 3 & Org4:** M1\*1 is marked as having option specific sources, even though the model was not, so CTO now returns organizations based on the config items sourcing assignment)
- **M2\*1: Org3 & Org4**
- **M3\*1: Org4**

CTO returns a failure because Org 1 is not a valid source for the configuration. ATP fails with an error indicating Org1 is not a valid source for this configuration.

If you collect and plan the configuration items the logic is the same as for a non-collected matched item.

Finally, assume an order is entered for M1\*1 directly, without any configuration. In this case, since CTO marked it as having option specific sources, it will behave as any ATO item with option specific sources.

If Config item, BOM and Routing Creation is set to Based on Sourcing, CTO creates M1\*1 in Org3 & 4 plus the OM validation organization, and M2\*1 in Org3 & 4 plus the OM validation organization and PO validation organizations, and M3\*1 in Org4 plus the OM validation organization.

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**Attention:** If a model is procured, any Option Specific Sourcing on its children are ignored. This is because the ENTIRE configuration is bought from the source indicated on the parent.

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### Blanket price rollup

With Option Specific sourcing, some specific configuration for a model can be procured only from some specific vendors. The vendors who can supply these configurations are defined in the Option Specific sourcing rule.

If a configuration has an option specific sourcing rule the blanket price rolls up only valid vendor blankets for that configurations. CTO looks at the configuration item sourcing rules to identify the list of all possible vendors for these configurations. Blanket prices is rolled up only for valid vendors who are also part of the ASL model.

If the configuration is flagged as Parent OSS in the item master, or if the configuration has no option specific sourcing defined, CTO rolls up all of the blankets that are defined in Model ASL.

CTO performs list price rollup in all possible PO validation org where that configuration item is enabled.

### Error Handling

Autocreate config validates the ship from organization, and errors out if the ship from organization is not part of the valid option specific source list. You may run into this scenario if a model with an option specific setup is not ATP, or you are drop shipping a configuration that has option specific sourcing.

## Supplying Unique Configurations

You can create final assembly work orders, flow schedules or purchase requisitions to supply configurations and ATO items. The details of each is described below.

### Supply Creation Workflow

The workflow subprocess for create supply checks to see if the configuration supply should be created by CTO. If it is, the workflow will stop at Create Supply Order Eligible; otherwise it will move to Ship Line activity.

The program skips the supply process in the following situations:

- The 100% transfer from rule is assigned to the item in the shipping organization.
- Multiple types of source rules are assigned to the item in the shipping organization. For example: 50% make, 50% buy.
- User defined logic exists. See [Custom Check Supply Creation API](#).

The line status will be "Awaiting Supply" until an inventory reservation is made. However, the line can be picked and shipped without reserving material.

If supply is to be created by CTO, the workflow determines what type of supply to create, based on setups in the shipping organization, when you progress through the Create Supply Order Eligible Activity:

- If the item is a make item with no sourcing rules assigned to it, or has a 100% make at sourcing rule, and has either a discrete routing or no routing associated with it, a discrete job will be created.
- If the item is a make item with no sourcing rules assigned to it, or has a 100% make at sourcing rule, and has a flow routing associated with it, a flow schedule will be created.

- If the item is a buy item with no sourcing rules assigned to it, or has only buy from sourcing rules associated with it, a purchase requisition will be created.
- If the sales order line is marked as external, a drop ship purchase requisition will be created, regardless of the sourcing on the item.

## Discrete Manufacturing

*Oracle Work In Process User's Guide* provides complete information on how you manage work orders and shop floor activities. The following information is only intended to provide some additional tips and hints on managing work orders in a configuration environment.

### Create Final Assembly Work Orders

Oracle Applications provides you with various methods of creating work order to fulfill a configuration sales order. The following table explains the benefits and the implementation consideration of each method.

**Table 3–10 Comparison of Methods to Create Final Assembly Work Orders**

Method	Description	Implementation Consideration	Reference Document
1.AutoCreate FAS concurrent program	<p>- This is a concurrent program that you can launch from Work in Process menu.</p> <p>-It can be run at any frequency you specify to create work orders for the configured assembly.</p> <p>- The top level work order is reserved to the sales order.</p> <p>- Lower level supplies are not reserved to the sales order.</p>	<p>- This program can only be used if your final assembly is manufactured in the shipping organization. In all other cases, advanced planning is used to create planned orders based on the demand in the shipping organization.</p> <p>- Typically used to create supply for short term demand in a single organization environment.</p> <p>-Useful in a single organization, high volume, short product lead time environment where you may need to run this program more than once a day</p> <p>-Creates one work order for the top level assembly for the full order quantity If you have multiple levels of configurations or ATO items in your shipping organization, this program can create supply for the lower level items as well, if the BOM parameter "Create lower level supply" is set properly. Lower level supply can be of any type (work order, flow schedule or PO). Lower level supplies will not be reserved to the sales order.</p> <p>For lower level ATO items or configurations in other organizations, planning must be run to create supply for the lower level assemblies.</p> <p>-This program does not take capacity into consideration</p> <p>- This program will create a work order for the unreserved portion of a sales order line and its sub-assemblies in the shipping organization.</p> <p>- If you have created supply for a lower level purchased configuration through this process, you will need to run requisition import with import source code 'CTO-LOWER LEVEL' to create the requisition.</p>	<p><i>Oracle Work in Process User's Guide</i></p>

**Table 3–10 Comparison of Methods to Create Final Assembly Work Orders**

Method	Description	Implementation Consideration	Reference Document
2. Progress Order (action) from Sales Order Pad	<p>-From the Sales Order Pad in Order Management, you can invoke Progress Order action to create a work order for an order line.</p> <p>- This creates a work order for the configuration item.</p> <p>- Top level work order is reserved to the sales order.</p> <p>Lower level supplies are not reserved to the sales order.</p>	<p>- This option can only be used if your final assembly is manufactured in the shipping organization. In all other cases, advanced planning is used to create planned orders based on the demand in the shipping organization.</p> <p>-Need to manually progress the order (in Order Management) one at time.</p> <p>-In single organization environment, progress order is a way to create supply for a single order with minimum delay. If you have an urgent order that needs to be pushed to manufacturing, this may be a way to quickly progress an order to production. If you have multiple levels of configurations or ATO items in your shipping organization, this program can create supply for the lower level items as well, if the BOM parameter "Enable lower level supply creation" is set properly. Lower level supply can be of any type (work order, flow schedule or PO). Lower level supplies will not be reserved to the sales order.</p> <p>For lower level ATO items or configurations in other organizations, planning must be run to create supply for the lower level assemblies.</p> <p>-Creates one work order for the top level assembly for the full order quantity.</p> <p>-If you have created supply for a lower level purchased configuration through this process, you will need to run requisition import with import source code 'CTO-LOWER LEVEL' to create the requisition.</p> <p>- This activity will not be accessible from the sales order pad if supply (Discrete job/ Flow Schedule/ Purchase requisition/Purchase order/Inventory reservations) has been created for this any part of this order line.</p>	<p><i>Oracle Order Management User's Guide</i></p> <p><i>Oracle Advanced Planning and Shipping User's Guide</i></p>

**Table 3–10 Comparison of Methods to Create Final Assembly Work Orders**

<b>Method</b>	<b>Description</b>	<b>Implementation Consideration</b>	<b>Reference Document</b>
3. Planner's Workbench	<p>- Planning can be run periodically to create planned orders based on sales orders for configured product.</p> <p>-From the Planner's Workbench, you can release planned orders to work orders or internal requisitions for configurations.</p> <p>-The work order is not reserved to sales order;</p>	<p>- In a multi-organization, advanced planning must be used to generate planned orders for your configurations.</p> <p>-With Advanced Planning and Scheduling products, a single plan can be used for your entire supply chain. In addition, material and resources constraints can be considered during the planning process.</p> <p>-Enables the planner to manage configured and non-configured demand the same way.</p> <p>-Limited by planning run frequency.</p> <p>-Work orders are not reserved to the sales order.</p> <p>Prior to shipping, users must manually reserve finished assembly to the sales order, or run the Reserve Orders concurrent program to do so automatically.</p>	<i>Oracle Master Scheduling /MRP User's Guide</i>

**Table 3–10 Comparison of Methods to Create Final Assembly Work Orders**

<b>Method</b>	<b>Description</b>	<b>Implementation Consideration</b>	<b>Reference Document</b>
4. Create Discrete Job	<p>-You can manually create a job for a configured item.</p> <p>- If the top level configured assembly is being manufactured in the shipping organization, it's work order can be reserved to the sales order.</p> <p>-You can reserve the work order to multiple sales orders.</p>	-Manual process, only used for exceptions.	<i>Oracle Work in Process User's Guide</i>

### **Autocreate FAS Batch Program**

Please see the *Oracle Work in Process User's Guide* for details of the AutoCreate FAS batch program.

### **Work Order Reservation**

If you use method 1 & 2 (see above) to create the work order for top level configurations, the top level work order is automatically reserved to the sales order. If you use method 3 & 4 for a top level configuration that is manufactured in the shipping organization, you can manually reserve the work order to the sales order (if necessary).

If your product is manufactured in an organization other than your shipping organization, you can reserve the material for the sales order after it has been received in the shipping organization. The reservation can be done manually from the sales order, or by using the Reserve Orders batch process provided by Order

Management. Work orders in other organizations will not be reserved against the sales order.

Lower level supplies are not reserved to the sales order.

### **Complete an Assembly**

When a work order for the top level configuration has been reserved to the sales order, the finished assembly will be automatically reserved against the sales order when you complete the assembly from WIP.

Note that you will not be able to see the job number on the sales order once the job has been completed.

### **Perform an Assembly Return**

When you perform assembly return from WIP on a work order that had been reserved to a sales order, the system will automatically un-reserve the on-hand inventory from the sales order. However the system will not automatically reserve the work order to the original sales order. If you need to reserve the work order to the original sales order or to a different sales order, you can do this by entering the sales order number in the WIP Completions form when you perform return transaction.

### **Transfer Reservation from One Sales Order to Another**

If you need to transfer WIP reservation from one sales order to another sales order, you need to delete the existing WIP reservation for sales order 1 and add a new reservation for sales order 2. Sales order 1 and sales order 2 must have the same configuration item.

You can do this in Discrete Job form in Oracle Work In Process.

For more information about discrete work orders, please See: *Oracle Work In Process User's Guide*.

### **Supply Chain Execution in a Multi-Organization Environment**

In a multi-organization environment, advanced planning is used to generate and manage planned orders across the supply chain for all levels of the configuration. In the multi-organization example in chapter one, an order is taken for a configured laptop. Advanced planning is run and creates the following planned orders:

1. Planned internal requisition in the shipping organization (W1) to source the configured laptop from organization M1.
2. Planned order for the configured Laptop in organization M1.



3. Planned internal requisition in organization M1 to source the configured monitor from organization M2.
4. Planned order for the configured monitor in organization M2.
5. Planned purchase requisitions for any material that is needed in either M1 or M2 to fulfill the order.

The planner would release all planned orders to create the appropriate work orders and requisitions. Internal requisitions are converted to internal sales orders via a background process, and purchase requisitions are converted to purchase orders via the normal purchasing process.

M2 manufactures and completes the monitor, then ships it to organization M1. M1 manufactures and completes the laptop, then ships it to organization W1. The laptop is reserved to the sales order, picked and shipped.

A generic process flow describing this is presented in Chapter 1.

For more information about Advanced Planning and Scheduling, please See: *Oracle Advanced Planning Users Guide*.

For more information about Purchasing, please see: *Oracle Purchasing Users Guide*.

For more information about internal orders, please see: *Oracle Inventory User Guide*

## Flow Manufacturing

*Oracle Flow Manufacturing Implementation Manual* and user's guide provides complete information on implementing flow manufacturing at your facility. The manual covers flow line design, line balancing, production execution and kanban planning and execution.

The *Oracle Flow Manufacturing Implementation Manual* explains how flow manufacturing supports building customized products. See: *Oracle Flow Manufacturing Implementation Manual*.

The following information provides some additional tips and hints when you deploy flow manufacturing in a configure to order environment.

### Create Final Assembly Flow Schedules

Oracle Applications lets you create flow schedules via the Line Scheduling Workbench in Flow Manufacturing or the Sales Order Pad in Order Management. The following table provides some explanation of each method.

**Table 3–11 Comparison of Methods to Create Flow Schedules**

<b>Method</b>	<b>Description</b>	<b>Implementation Consideration</b>
1. Line Scheduling Workbench or the Flow Schedule tab on Flow Manufacturing Self Service	<p>-You can use the Line Scheduling Workbench or the Flow Schedule tab on Flow Manufacturing Self Service"</p> <p>-You can create flow schedules for planned orders and sales orders</p> <p>- Flow schedules created from the sales orders will reference the sales order and order line.</p>	<p>-Scheduler can manage configured and non-configured orders in the same workbench, and can sequence orders according to their scheduling rules.</p> <p>-Scheduling is constrained to the line rate. The scheduler can view orders that could not be scheduled because of the constraint from the same workbench.</p> <p>-Feeder Line Synchronization can be used to create lower level flow schedules.</p> <p>-Advanced Planning and Scheduling must be used for lower level or multi-org configurations.</p>

**Table 3–11 Comparison of Methods to Create Flow Schedules**

Method	Description	Implementation Consideration
2. Progress Order (action) from Sales Order Pad	<p>-A way to create supply for a single order line when the top level configuration is manufactured in the shipping organization</p> <p>- Flow schedules created from the sales orders will reference the sales order and order line.</p>	<p>- Valid only if the top level configuration is manufactured in the shipping organization.</p> <p>-This method provides a way to create production schedules for the top level assembly for urgent orders in a single organization environment.</p> <p>-Need to manually progress the order (in Order Management) one at a time.</p> <p>- Schedules are created first in, first out. No sequencing is performed. The order is scheduled at the first available spot between today plus the manufacturing lead time and the order schedule date.</p> <p>- Scheduling is still constrained to the line rate. This may cause a flow schedule to be created for only a partial quantity. In this case, the scheduler must use the line scheduling workbench to manage the unscheduled portion of the order quantity.</p> <p>-If you have multiple levels of configurations or ATO items in your shipping organization, this program can create supply for the lower level items as well, if the BOM parameter "Enable lower level supply creation" is set properly. Lower level supply can be of any type (work order, flow schedule or PO). Lower level supplies will not reference the sales order.</p> <p>- For lower level ATO items or configurations in other organizations, planning must be run to create supply for the lower level assemblies.</p> <p>- This activity will not be accessible from the sales order pad if supply (Discrete job/ Flow Schedule/Purchase Requisition/Purchase order/ Inventory reservations ) has been created for this any part of this order line.</p>
3. Feeder Line Synchronization	<p>- Creates flow schedules for configured (and non-configured) sub-assemblies based on the flow schedule for the parent item.</p>	<p>- Valid in a multi-level, single organization environment only</p> <p>- Sub-assemblies are scheduled to complete just when they are required for the parent assembly.</p> <p>- Enables a single organization flow manufacturing company to produce multi-level configurations to order without running planning.</p>

## Flow Schedules and Order References

Top level flow schedules that are created from sales orders are referenced - not reserved - to the sales order. This means you can see the order number and order line on the flow schedule and the supply to order workbench, but you will NOT see the flow schedule number in the reservations form accessible from Order Management or Inventory. Supply for lower level configurations or ATO items will not reference the sales order. If the configuration is delinked from the sales order for any reason, the reference will be automatically removed.

The Flow Line Scheduling Workbench allows you to reference existing flow schedules to un-referenced orders. This allows pre-building ATO items or common configurations to forecast, and later, linking flow schedules to the sales orders to move the workflow. See the *Oracle Flow Manufacturing User's Guide*.

## Complete an Assembly

When a flow schedule is referenced to a sales order, the finished assembly will be automatically reserved against the sales order when you complete the assembly using Work Order-less Completions.

## Perform an Assembly Return

When you perform assembly return from WIP on a flow schedule that has a sales order reference, the system will automatically un-reserve the on hand inventory from the sales order. The un-completed flow schedule will still be referenced to the sales order.

## Supply Chain Execution in a Multi-Organization Environment

In a multi-organization environment, advanced planning is used to generate and manage planned orders across the supply chain for all levels of the configuration. However, in flow, planned orders cannot be released to flow schedules from the planners workbench. Instead, schedulers would implement planned orders from the line scheduling workbench.

In the multi-organization example in chapter one, an order is taken for a configured laptop. Advanced planning is run and creates the following planned orders:

1. Planned internal requisition in the shipping organization (W1) to source the configured laptop from organization M1.
2. Planned order for the configured Laptop in organization M1.
3. Planned internal requisition in organization M1 to source the configured monitor from organization M2.

4. Planned order for the configured monitor in organization M2.
5. Planned purchase requisitions for any material that is needed in either M1 or M2 to fulfill the order.

The planner would release planned orders to create the internal requisitions and purchase requisitions. Internal requisitions are converted to internal sales orders via a background process, and purchase requisitions are converted to purchase orders via the normal purchasing process.

The schedulers in organizations M1 & M2 would go to the line scheduling workbench for their respective lines and schedule the planned orders for flow schedules.

M2 manufactures and completes the monitor, then ships it to organization M1. M1 manufactures and completes the laptop, then ships it to organization W1. The laptop is reserved to the sales order, picked and shipped.

For more information about Advanced Planning and Scheduling, please See: *Oracle Advanced Planning User's Guide*.

For more information about Purchasing, please see: *Oracle Purchasing User's Guide*.

For more information about internal orders, please see: *Oracle Inventory User's Guide*

## Purchasing

*Oracle Purchasing User's Guide* provides complete information on how you manage requisitions and purchase orders. The following information is only intended to provide some additional tips and hints on managing requisitions in a configuration or ATO environment.

### Create Purchase Requisitions

Oracle Applications provides you with various methods of creating requisitions to fulfill a configuration or ATO sales order. The following table explains the benefits and the implementation consideration of each method.

**Table 3–12 Comparison of Methods to Create Purchase Requisitions**

Method	Description	Implementation Consideration	Document
1. AutoCreate Req concurrent program	<p>- This is a concurrent program that you can launch from Bill of Material menu.</p> <p>The program creates a record in the req import table for each order line that meets the program parameters.</p> <p>Note that req import needs to be run to generate the requisition.</p> <p>-It can be run at any frequency you specify to put a record in the req import tables</p> <p>- The requisition, when created, is reserved to your sales order. The reservation is transferred to the purchase order created for the item, and then to inventory upon receipt.</p>	<p>Valid only if the ATO item or configuration item is a buy item without any sourcing rule , or has a buy-type sourcing rules in the shipping org.</p> <p>- ATO items must be "Build In Wip", even if they are being procured.</p> <p>- If you would like requisitions to be created immediately, you can create a request set to launch AutoCreate Req, followed immediately by Req Import. Set the supply type parameter on the req import program to "CTO" to create a requisition only for the items created through the autcreate req process. You can launch it a second time with supply type 'CTO-LOWER-LEVEL' to create a requisition for any lower level procured assemblies (if the parameter "Enable lower level supply creation" is not No).</p> <p>- Typically used to create supply for short term demand in a procure to order environment.</p>	Oracle Purchasing

**Table 3–12 Comparison of Methods to Create Purchase Requisitions**

Method	Description	Implementation Consideration	Document
2. Progress Order (action) from Sales Order Pad	-From the Sales Order Pad in Order Management, you can invoke Progress Order from 'Create Supply Eligible.' "If the ATO item is a "buy" item or has 'Buy' Sourcing rules, a record will be created in the req import tables -The requisition, when created, is reserved to the sales order.	<p>- Valid only if the ATO item or configuration is a buy item, or has a buy-type sourcing rule in the shipping org -Need to manually progress the order (in Order Management) one at time.</p> <p>- ATO items must be "Build In Wip", even if they are being procured.</p> <p>-In a Procure to Order Environment, progress order is a way to create supply for a single order with minimum delay. If you have an urgent order that needs to be pushed to purchasing, this may be a way to quickly progress an order to production. Note that Req Import needs to be run to actually create the requisition.</p> <p>- This activity will not be accessible from the sales order pad if an inventory reservation has been created for any quantity for this order line.</p>	<i>Oracle Order Management User's Guide</i>

**Table 3–12 Comparison of Methods to Create Purchase Requisitions**

Method	Description	Implementation Consideration	Document
3. Advanced Planners Workbench	<p>- Advanced planning can be run periodically to create planned purchase requisitions based on sales orders for configured product.</p> <p>-From the Planner's Workbench, you can release planned orders to requisitions for configurations.</p> <p>-The requisition is not reserved to sales order</p>	<p>- Details of the configuration are communicated via text attachments to the PO or can be seen in the iSupplier Portal.</p> <p>-With Advanced Planning and Scheduling products, a single plan can be used for your entire supply chain. In addition, material and resources constraints can be considered during the planning process.</p> <p>-Enables the planner to manage configured and non-configured demand the same way.</p> <p>-Requisitions are not reserved to the sales order.</p> <p>Prior to shipping, users must manually reserve the inventory to the sales order, or run the "Reserve Orders" concurrent program to do so automatically.</p>	<p>Oracle Advanced Planning and Scheduling</p> <p>Oracle Purchasing</p>

### **Autocreate Purchase Requisition Batch Program**

You can launch this concurrent program from the Bills of Material >ATO menu. The program supports the following parameters:

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

**Sales Order Line:** If you specified a sale order, you can also specify a specific sales order line. If the parameter is blank, it will create the configurations for any eligible lines on the sales order.



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

**Offset Days:** The program will process only those sales orders which are scheduled to ship on or before the system date plus the offset days (using BOM calendar days)

### **Requisition and Purchase Order Reservation**

If you use method 1 & 2 (see above) to create the requisition for an ATO item or configuration, the requisition is automatically reserved to the sales order. When the PO is created, the reservation will be transferred to the purchase order. If you use method 3, you cannot reserve the material to the sales order until receipt into inventory.

Note that you will not be able to see the PO number on the sales order once the entire PO has been received.

### **Managing Changes in Purchasing**

Changes to a requisition (other than requisition cancellation) will NOT be reflected in the reservation to the sales order. Therefore, it is recommended that users never change a req with source type CTO.

If the PO is cancelled without canceling the requisition, the reservation is transferred back to the req. If both are cancelled, the reservation is removed. In the latter case, you can run the autocreate purchase requisition batch program to create a new requisition for sales order.

If a partial PO quantity cancelled, or the PO qty is reduced, then the reservation quantity is reduced accordingly. Again, run the autocreate purchase requisition batch program to create a new requisition for the outstanding quantity.

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**Note:** Once a sales order reservation to the PO has been removed (either automatically or manually), it cannot be manually re-reserved. You can manually reserve on-hand stock to the sales order or the autocreate purchase requisition batch program can pick it up again and create a new supply order along with a new reservation.

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### **Receive an Assembly**

When a purchase order has been reserved to the sales order, the inventory will be automatically reserved against the sales order when you receive the purchase order.

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**Note:** This process does not support the receipt of substitute items. The user will be able to receive a substitute item, but the sales order will remain for the original item. The user will have to manually cancel the original order line and add a new line for the substituted item prior to shipment.

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### **Perform an Assembly Return**

When you perform a return to vendor on material that had been reserved to a sales order, the system will automatically un-reserve the on-hand inventory from the sales order. However the system will not automatically reserve the purchase order to the original sales order. It is suggested that you close the existing purchase order and let the system generate a new requisition and purchase order for the returned material.

### **Create Dropship Requisitions**

Drop ship functionality allows you to take an order from your customer for ATO and non ship model complete (non SMC) PTO and PTO-ATO hybrid configurations and fulfill it directly from your supplier's site. The functionality does not support dropshipments of ship model complete (SMC) PTO or SMC PTO-ATO hybrid configurations.

Dropship is implemented for ATO items in the same manner as it is for standard items, which means planning cannot be used. For more details on dropshipping configurations, please see the *Oracle Order Management User's Guide* and the *Oracle Order Management Implementation Manual*.

Oracle Applications provides you with various methods of creating dropship requisitions to fulfill a configuration or ATO item sales order.

The following table explains the benefits and the implementation consideration of each method.

**Table 3-13 Comparison of Methods to Create Drop Ship Requisitions**

<b>Method</b>	<b>Description</b>	<b>Implementation Consideration</b>	<b>Document</b>
1. AutoCreate DropShip Req concurrent program	- This is a concurrent program that can be run at any frequency you specify to put a record in the req import tables for external sales order lines	<ul style="list-style-type: none"> <li>- Valid only if the ATO item or configuration order line has supply source type as 'External'.</li> <li>- Creates a record in the req import table for each order line that meets the program parameters.</li> <li>- Note that req import needs to be run to generate the requisition.</li> <li>- If you would like requisitions to be created immediately, you can create a request set to launch AutoCreate DropShip Req, followed immediately by Req Import.</li> <li>- There is no reservation between the req/po and the order line status on the configuration line will remain at "awaiting Receipt" until the line is shipped.</li> </ul>	<i>Oracle Order Management</i>
2. Progress Order (action) from Sales Order Pad	-From the Sales Order Pad in Order Management, you can invoke Progress Order from 'Create Supply Eligible'. If the ATO Item, Configuration. on an external order line, a record will be created in the req import tables -The requisition is NOT reserved to the sales order.	<ul style="list-style-type: none"> <li>- This option is valid only for ATO Items and configurations that are on an external order line.</li> <li>-Need to manually progress the order (in Order Management) one at time.</li> <li>-In a Procure to Order Environment, progress order is a way to create supply for a single order with minimum delay. If you have an urgent order that needs to be pushed to purchasing, this may be a way to quickly progress an order to production.</li> <li>Note that Req Import needs to be run to actually create the requisition.</li> <li>- There is no reservation between the req/po and the order line status on the configuration line will remain at awaiting receipt until the line is shipped.</li> </ul>	<i>Oracle Order Management User's Guide</i>

### **Autocreate DropShip Requisition Batch Program**

You can launch this concurrent program from the Bills of Material >ATO menu. The program supports the following parameters:

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

**Sales Order Line:** If you specified a sale order, you can also specify a specific sales order line. If the parameter is blank, it will create the configurations for any eligible lines on the sales order.

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

**Offset Days:** The program will process only those sales orders which are scheduled to ship on or before the system date plus the offset days (using BOM calendar days).

### **Requisition and Purchase Order Link**

There are no reservations for drop shipped order lines. To see the requisition or purchase order number that was created for the order, select the external order line, and go to Actions > Additional Line Information > Dropship tab. To manage changes to the order or purchase order, use the OM Sales Order to Purchase order discrepancy report.

### **Receive an Assembly**

You must perform a logical receipt of the purchase order, which will trigger a logical shipment on your sales order. See the *Order Management User's Guide* for more information.

### **Communicating Configuration Details to Your Supplier**

When purchasing a configuration, a purchase order or blanket release is created for the configuration item itself. CTO provides two methods to communicate the configuration details to your supplier: item attachments and the iSupplier Portal.

During AutoCreate Config, CTO creates a supplier-type, item level attachment in the PO validation organization. The attachment contains the models, option classes and options that were chosen during the configuration session. This attachment can be automatically printed, faxed, e-mailed, or transmitted by EDI or XML.

Suppliers can also see details of the purchased configuration from the iSupplier Portal via a link off the PO details page. When clicking on this link, the supplier can see the model and options that were chosen in order management. They can view

any supplier or miscellaneous item attachments on the options, and they can export the data to excel, or download a text version of the file. See [iSupplier Portal](#)

### **User Item Description**

If the user in Order Management enters a User Item Description for an ATO item, it will be used as the description of the item in purchasing. This can enable users to create orders for one time items. In case of a configured item, the base model's user item description will be copied to configuration item, which will be used as the description in PO. For more information on User Item Description, see the *Oracle Order Management User's Guide*.

### **Reserve Supply**

Reservation for an ATO model sales order is placed against the configuration item. The following table describes the various method of reserving a supply.

**Table 3–14 Various Methods of Reserving Supply**

<b>Supply Type\</b>				
<b>Method</b>	<b>Onhand</b>	<b>Work Order</b>	<b>Req/PO</b>	<b>Description</b>
Automatic	Match action from Sales Order Pad	-	-	-If a match is found, and there is available inventory in the shipping organization, the system gives you an option to make reservation.  -The cursor must be on the ATO model order line when you perform the Match action.
-	-AutoCreate Orders from WIP, when the shipping organization is the same as the top level manufacturing organization.	-AutoCreate Orders from WIP, when the shipping organization is the same as the top level manufacturing organization.	-	-If a match is found, if "BOM: Automatic Reservations is Yes", and, if you are within the "OM: Reservation Time Fence" and if there is available inventory in the shipping organization, the system will make an inventory reservation.  It will then create a work order for the remaining quantity, and reserve the work order to the sales order line.
-	-	-	Autocreate Req	Autocreate requisitions places a record in the req import tables for each eligible order line. When the requisition is created, it is reserved to the sales order.
-	Work Order Completion Form in WIP	-	-	-If the work order is reserved to a sales order, the reservation is transferred to inventory when you complete finished assembly.
-	Work Orderless Completion Form in Flow Manufacturing	-	-	-When you perform an assembly completion for a flow schedule that is tied to a sales order, the system automatically places a reservation on the finished assembly against the sales order demand for the configuration item.
-	PO Delivery	-	-	When a PO distribution is delivered to inventory, the reservation from the purchase order is transferred to inventory.

**Table 3–14 Various Methods of Reserving Supply**

Supply Type\				
Method	Onhand	Work Order	Req/PO	Description
Manual	Reservation from Sales Order Pad in OM.  (Sales Order Pad -> Tools->Scheduling->Reserve)	-	-	-You can reserve available inventory in the shipping organization to an internal ATO item order line or a configuration order line.  -The Cursor must be on the desired order line when you perform reservation.
-	INV Reservations form	-	-	-You can reserve available inventory in the shipping organization to a configuration or an ATO item internal order line via the Reservation window in Inventory
-	-	Discrete Jobs Form in WIP	-	-You can manually reserve a work order for your top level configuration item to one or more sales orders through the Discrete Job window, if the manufacturing organization is the same as the shipping organization.
-	Reserve Orders Concurrent Program	-	-	You can schedule the reserve orders concurrent program to run on a regular basis to reserve your on hand to a sales order automatically. This is especially useful in a multi-organization environment, or any environment where you are using planning to create your supply and the reservation is not done automatically upon completion or receipt.

## Pick Release and Ship Confirm

Once the assembly has been received into inventory in your shipping organization, the sales order is ready to be picked and shipped to customer. If your top level assembly was made in or bought for your shipping organization, and the supply was reserved or referenced to the sales order, the resulting on-hand inventory will be reserved to the sales order and your sales order will automatically be eligible for shipping. If your supply was created via planning, you will need to manually reserve the material to your sales order before you can proceed to shipping. This

chapter provides explanation of some settings for configured order that will affect shipping for configured products.

See [Shipping Setup](#) for more information on shipping setup for CTO. For a complete guide on shipping, please refer to *Oracle Shipping Execution User's Guide*.

## Intercompany Invoicing

This section gives an overview of Intercompany Invoicing for configured items. See the Intercompany chapters of the *Oracle Inventory User's Guide* for more information.

### Traditional Intercompany

For transaction flows with Advanced Accounting turned off, the models and options of a configuration are all invoiced individually. The system determines what models and options to invoice based on the option lines on the sales order to which the configuration item is linked.

### Enhanced Intercompany

For transaction flows with Advanced Accounting turned on, the configuration itself is invoiced. If the pricing option on the transaction flow is transfer price, a transfer price is calculated for the configuration item at the time of invoicing by summing up the transfer price of all options and option classes selected. This transfer price is NOT stored on the intercompany price list, but is dynamically recalculated each time an invoicing account occurs. If a transfer price already exists for the configuration item for any reason, it is not recalculated. The system determines what models and options to include in the roll-up based on the option lines on the sales order to which the configuration item is linked. If the configuration is not linked to any sales order, it is determined by traversing the configuration BOM.

If the pricing option on transaction flow is setup to be PO Price, the PO price for the configured item is used during intercompany invoicing.

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**Note:** For configured items created before 11/9 that are not currently linked to any sales order, transfer prices on mandatory components will also be included in the rolled up transfer price. If no transfer price is defined for these components, it will be taken as 0.

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**Note:** Enhanced intercompany is not supported for shipments between two internal organizations.

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# Supply To Order Workbench

The topic covered in this chapter is

- [Supply to Order Workbench](#). on page 4-2

## Supply to Order Workbench

This section describes the various methods of reserving onhand inventory and work orders to an ATO model sales order or ATO item. It also describes reservations made to requisitions and purchase orders for ATO items.

### Overview of the Supply to Order Workbench

The concept of the Supply to Order Workbench is to give the customer service representative additional details of a multi-level ATO configuration and top-level supply that is linked to the current sales order for a configuration, ATO item, or Drop Shipped Order line. The goal is to provide them with a single source of information to give their customers accurate order statuses. It is a self-service application that can be accessed through the sales order header or lines, by clicking Actions and choosing Supply to Order Workbench.

You can access the Supply to Order Workbench within Order Management from the Supply to Order Workbench action menu. You can also bring up the Supply to Order Workbench independently via the menu option in the self-service application menu. The Supply to Order Workbench Search page accessed from this menu option allows you to search by an Order context or Line context.

From the Order tab, you can search using the following criteria: Order Number, Customer Name, From Order Date, or To Order Date. If you select Advanced Search you can also search by Order Type and Created By.

From the Line tab, you can search using the following criteria: Order Number, Item, From Schedule Ship Date, or To Schedule Ship Date. If you select Advanced Search you can also search by Base Model, Option Item, Source Type, and Line Status.

The Supply to Order workbench is available from the actions menu in Order Management and is active for any ATO item order line, any dropship orders line and any configuration item line, or any ATO Model lines which have configuration items created. Note that the workbench cannot be invoked until the configuration item is created for ATO model orders (including drop shipped orders).

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**Note:** You must have access to the Supply to Order Workbench Manager responsibility to be able to access the workbench.

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**Note:** When the workbench is invoked from the sales order, you can view the information for that specific order only. Orders and order lines searches are not accessible.

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However, if you try to invoke the workbench and there is no valid line for which to display the information, a message is displayed in the status bar informing the user that there are no lines to be displayed. It can be invoked from the order header when the order contains an ATO item, configuration item, or an external (drop shipped) order line. It can be invoked at the line level when the user is on an ATO item, configuration item, or an external (drop shipped) order line. In both cases, it will be available only after the order has been booked. The workbench will not be invoked until the configuration item is created for ATO model lines.

The workbench Orders tab displays the Supply to Order Details which consists of two pages, Supply to Order Lines and the Active Supply Page. Both are explained in detail below.

### Supply to Order Lines

The Supply to Order Lines page displays context information from the sales order header at the top of the page. When invoked from order header, it lists all the top-level configuration items, ATO items, or drop shipped standard items for that sales order. When invoked from a line it lists the specific line only. Each line displays the item description, quantity, and line status from Order Management, and an active link that describes the type of active supply associated with the order line. You will be able to see links to WIP Jobs, Flow Schedules, Requisitions, or Purchase orders that are reserved or referenced to the sales order line. You can click on the active link to go view details of the supply on the Active Supply Details page, described below.

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**Note:** Inventory reservations are NOT shown on this page.

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**Note:** Drop Ship POs details will be displayed even after the drop ship PO has been received. However, all other types of supply will no longer be displayed after the supply order is completed and the reservation has transferred to inventory.

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If you have any multi-level configurations, the top-level configuration or will have an arrow indicating there is more information. Click on the arrow to see the indented structure of the configuration items will also be displayed. There is also a expand all and collapse all option. Note that for the lower level configurations, the line number and line status displayed is for the corresponding lower level model, so the user can cross-reference the configuration id shown in the workbench with the sales order line of its base model. Lower level configurations cannot have supply reserved to the sales order, so you will not be able to see any supply details for these configurations.

The Export button is provided for users to export the information in the table to excel.

### Active Supply Details

The Active Supply Details Page can only be accessed from the link on the Supply to Order Lines tab for a given sales order line. The page displays context information from the line at the top of the page, then lists all the open supplies (WIP Jobs, Flow Schedules, Requisitions or Purchase Orders) for the sales order line.

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**Note:** Inventory reservations are shown in the header of this page.

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This page has three tabs: Main, Work in Progress, and PO. The Main tab contains information relevant to all types of supply: the Supply Type, UOM, Doc Number, Status, Expected Completion Date, and Need by Date.

The WIP tab contains details specific to WIP jobs: Job start date, Start Quantity, Scrap Quantity and WIP Job Lot Number. The Purchasing tab contains details specific to purchasing: Document Revision, Line, Supplier, and Supplier Site. You can add Job or PO descriptive flex fields to the tabs by personalizing the page.

### Personalizing the Supply to Order Workbench

Only the Administrator user can personalize a page. You can personalize for a responsibility, Function, or Localization. See the *OA Framework User's Guide* for more information.

#### To personalize the Supply to Order Workbench:

1. Log in to application as the system administrator.

2. Make sure Personalize Self-Service Defn profile is set to 'Yes' at your user/responsibility level.
3. Make sure Disable Self-Service Personal profile is not set to 'Yes' at your default/user/responsibility level.
4. Query the sales order and invoke the Workbench.
5. Now the workbench will have links "Personalize Region" on top of every region.
6. Click on the link to personalize that region, which will take you to a new page.
7. Choose Personalization Level at either the Site, Organization, or Responsibility level.
8. Click Next. This will take you to the next screen.
9. Enter the responsibility or Site name.
10. Click Next.
11. This will bring up the last page to create or update the personalization. If there is an existing personalization, you can modify it. Otherwise you can create new personalization.
  - The label of the region can be modified by entering a value in the new label field.
  - The order of the column displayed can be changed.
  - New columns can be added by moving column from available column list to column displayed list.
  - Columns can be removed from the display by moving the columns from the 'column displayed' list to the 'column available' list.
  - To change the column labels, press the advanced setting button. This will bring a new page and you can edit the column label in the New Column Label column.
  - For table regions, you can modify the sorting fields or enter a new sorting field in sorting settings. You can also give filtering condition for the table data by entering condition for each/any of the columns displayed.
12. Click Apply in all pages to save the changes.

This will save the personalization and make it effective for the site, organization or responsibility.





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## Order Changes and Returns

Topics covered in this chapter include:

- [Order Changes](#) on page 5-2
- [Processing Constraints](#) on page 5-5
- [Re-instituting Prior Processing Constraints](#) on page 5-7

## Order Changes

Order Management provides you with the ability to automate the process of changing various types of orders. However, system and processing constraints can prevent specific changes to an order depending on the flow status.

The *Order Management User's Guide* provides a detailed description of the processing constraints.

Users can make changes to an ATO model line without delinking the configuration item.

**Table 5–1 Summary of Allowed Changes To an ATO Model Line**

<b>Change</b>	<b>Allowed</b>	<b>Reservation /Flow Schedule Impact</b>
Schedule Ship Date	Until line is shipped	No change to reservation/reference
Request Date/Scheduled Arrival Date	Until line is shipped	No change to reservation/reference
Order Line Quantity	Until line is shipped	Reservation is decreased if quantity decreases and reservation exists
Cancellation	Until line is shipped	Reservation/reference is removed
Configuration Change	Until line is shipped	Reservation/reference is removed, and configuration item is delinked
Manual De-link of Config Item	Until line is shipped	Reservation/reference is removed, and configuration item is delinked
Unschedule	Until line is shipped	Reservation/reference is removed, and configuration item is delinked
Warehouse change	Until supply is created and reserved/referenced, if model attribute Create Configured Item, BOM is set to Based on Model. Not allowed if attribute is set to Based on Sourcing, or Item Based on Model, BOM Based on Sourcing	N/A: Must remove reservation or reference in order to change the warehouse
Manual splits	Until supply is reserved/referenced	N/A: Must remove reservation or reference in order to split the line.

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**Note:** The Order Line quantity increase will not result in a reservation increase. Users should run the appropriate create supply batch program to create more supply. Or, in the case of a work order, they could manually increase the quantity on the work order and then increase the reservation.

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**Attention:** Order Management has a delete constraint that prevents the deletion of a line after booking. This will prevent you from being able to change the configuration of a model after it has been booked. This is a 'non-seeded' constraint that should be removed if you need to make changes to your configurations after booking. See [Order Management Setup](#) for more information.

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**Note:** Since a configured BOM is created with only seven decimal places on component items, change management compares the old and new quantities on options after rounding to seven decimal places. If there is no change after rounding a quantity to seven decimals, CTO does not consider this as a configuration change and does not delink the configuration item.

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Once a change is made, Order Management will try to reschedule the order with the changes. If rescheduling succeeds then system will store the changes, otherwise the system will not save the changes.

## Notification of the Change

A notification of the changes made are sent to either the planner or the buyer for any ATO configuration whose workflow is at ship line.

A configuration line workflow will be at ship line if material or supply is reserved to the sales order line, or the workflow is set to skip the autcreate supply process entirely. For configured items and "make" ATO items, notification will be sent to the planner of the top model/item in the shipping organization. For purchase to order ATO items or configurations, a notification will be sent to the buyer on the requisition, if one exists, or the buyer specified on the top model/item in the shipping organization. The planner or buyer should be a valid workflow user. If the planner or buyer is not valid workflow user then notification will be sent to the

SYSADMIN user by default. The default user can be customized by changing the Change Order Administrator attribute default value in the workflow. Please see the inventory user manual to know how to setup the planner code to an item.

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**Note:** These changes could cause data inconsistency between Order Management, WIP, and PO if action is not taken by the planner to update associated WIP jobs, flow schedules, or purchase orders.

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### Drop Shipped Configurations

The CTO change order process does not send notifications for drop shipped orders. If you change the request date on a drop ship order before it is interfaced to purchasing, the scheduled ship date will not change. You must change the scheduled ship date manually.

Most order changes on a drop ship sales order can be automatically communicated to the purchase document, as long as an ASN or receipt has not been performed.

For configurations:

- A non-system constraint exists that does not allow re-configuration (add option, delete option, quantity change) of ATO Model and its children after a PO has been approved. The condition of the constraint is PO Approved.
- You will not be able to manually de-link the config item for an ATO Model if the related drop ship PO is approved
- When OM deletes the config item line due to re-configuration, Purchasing cancels or deletes the related line/shipment depending on PO status. If PO is not approved, then the PO line/shipment can be deleted. If PO is approved, then the PO Line/shipment is canceled.

See [De-link Configuration Item](#) for more information. *Fulfillment* in the *Oracle Order Management User's Guide* has more information on drop ship change management.

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**Attention:** If the ATO Model is re-configured, the Purchase Order line/shipment tied to the Configuration Item loses its relationship to the Sales Order Line. Purchasing will not be able to derive any Sales Order Information for any exception handling. Due to this reason, it is recommended not to disable the new re-configuration constraints. You will have to manually handle any resulting exceptions due to the disabling of the constraints.

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## Processing Constraints

Order Management still has some seeded processing constraints for configurations that deny certain actions when the workflow reached certain status.

### **ATO Model**

For ATO Model order line, there are still processing constraints that prevent certain order changes.

After a configuration item is created, users cannot delete the top model order line. You can cancel the top model by setting the quantity to zero or clicking Actions.

There is also an Order Management constraint that prevents cancellation or reduction in quantity of an ATO model line if the configuration line is interfaced to shipping and some deliveries are staged. This is a 'non seeded' constraint. If this constraint is removed then the staged lines can be canceled. It is recommended that you do not remove this constraint.

Users also cannot cancel any quantity on the model line that is associated with a closed delivery on the configuration line. However, if the configuration line is interface to shipping and there are no staged deliveries, but there are some closed deliveries, then the model quantity which is not yet closed can be canceled.

### **Option Items**

There is a delete constraint that prevents the deletion of a line after booking. This will prevent you from being able to change the configuration of a model after it has been booked. This is a 'non-seeded' constraint that should be removed if you need to make changes to your configuration after booking.

### **Configuration Item**

For the configuration order line, there is a processing constraint that prevents updating anything on the configuration line. To make changes to the configuration line's dates or quantities, change the ATO model line and the changes will cascade to the configuration item.

### **ATO Item**

For ATO Item order line, there is a processing constraint that prevents the user from changing the warehouse after a work order, flow schedule, purchase requisition, or purchase order has been created and reserved to the ATO item.

There is also an OM constraint that prevents cancellation or reduction in quantity of an ATO item line if the line is interfaced to shipping and some deliveries are staged. This is a 'non seeded' constraint. If this constraint is removed then the staged lines can be canceled. It is recommended that you do not remove this constraint.

Users also cannot cancel any quantity that is associated with a closed delivery. However, if the line is interface to shipping and there are no staged deliveries, but there are some closed deliveries, then the unclosed qty in the order line can be canceled.

### **Remnant ATO Model Lines**

All lines in a PTO Model can become remnant if the PTO model is partially shipped. Additionally, all lines will become remnant if any item under a non-ship model complete PTO Model is dropshipped and has been partially or fully received.

If you are using PTO-ATO Hybrids, you will not be able to change any of the following on the remnant ATO Model lines:

Request date, schedule ship date, schedule arrival date, quantity, or configuration. You also cannot delete and cannot invoke the configurator.

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

## Re-instituting Prior Processing Constraints

Prior to 11i Family Pack E, Order Management had additional seeded processing constraints for configurations that denied certain actions when the workflow reached certain status. The original processing constraints are described here, along with details on how to re-instate them if your business requires them.

### Prior ATO Model Constraints

For ATO Model order line, there were processing constraints that prevented certain order changes.

After a configuration item is created, these actions were not allowed:

- Increasing / Decreasing quantity
- Updating schedule ship date
- Modifying selected options (add or delete options)
- Canceling line

### Prior ATO Item Constraints

For ATO Item order line, there were processing constraints that prevented certain order changes.

After a work order or flow schedule was created and reserved to the ATO item, these actions were not allowed:

- Increasing / Decreasing quantity
- Updating schedule ship date
- Canceling line

After ship notified of the ATO item, these actions were not allowed:

- Updating scheduled ship date
- Updating ordered quantity
- Canceling order line

### To re-institute these constraints

If needed, the above removed conditions can be added as a non seeded condition. The tables below are the exact conditions that were removed in OM Family Pack E. They can be added exactly as shown to keep the old functionality. Please refer to

*Oracle Order Management User's Guide* to know how to add conditions to the existing constraints.

Note that only the conditions were removed in OM Family Pack E. The validation templates for those conditions are still available to use.

**Table 5–2 Cancel Constraint**

Operation	Attribute	User Action
CANCEL	-	Not Allowed

**Table 5–3 Cancel Constraint Conditions**

Group	Scope	Validation Entity	Record Set	Validation Template
6	Any	Order Line	Line	ATO
6	Any	Order Line	Line	Ship notified
6	Any	Order Line	Line	Standard item
7	Any	Order Line	Line	Configuration Created

**Table 5–4 Update Ordered Quantity Constraint**

Operation	Attribute	User Action
UPDATE	Ordered Quantity	Not Allowed

**Table 5–5 Update Ordered Quantity Constraint Conditions**

Group	Scope	Validation Entity	Record Set	Validation Template
6	Any	Order Line	Line	ATO
6	Any	Order Line	Line	Ship notified
6	Any	Order Line	Line	Standard item
8	Any	Order Line	Line	Configuration Created



**Table 5–6 Delete Constraint**

Operation	Attribute	User Action
DELETE	-	Not Allowed

**Table 5–7 Delete Constraint Conditions**

Group	Scope	Validation Entity	Record Set	Validation Template
3	Any	Order Line	Line	Configuration Created

**Table 5–8 CREATE Line Constraint**

Operation	Attribute	User Action
CREATE	-	Not Allowed

**Table 5–9 Create Constraint Conditions**

Group	Scope	Validation Entity	Record Set	Validation Template
3	Any	Order Line	Line	Configuration Created

**Table 5–10 Update Scheduled Ship Date Constraint**

Operation	Attribute	User Action
UPDATE	Schedule Ship Date	Not Allowed

**Table 5–11 Update Scheduled Ship Date Constraint Conditions**

Group	Scope	Validation Entity	Record Set	Validation Template
2	Any	Order Line	Line	ATO
2	Any	Order Line	Line	Ship notified
2	Any	Order Line	Line	Standard item
4	Any	Order Line	Line	Configuration Created



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# Updating Existing Configurations

This chapter covers

- [Updating Existing Configurations](#) on page 6-2

## Updating Existing Configurations

If you are using match, and you change any of the following setups on your model, you will need to run the CTO Update Config and Optional Processing Request Set to ensure that your existing configurations are updated to reflect the changes.

- Addition or change of sourcing rules, assignments, or option specific sourcing
- Change of the Create Configured Item, BOM attribute setting
- Change of ATP attributes
- Enable the model item in a new organization

If you are not using match, you can choose to run this program if you want the setups applied to configurations on existing sales order lines.

The Update Existing Configurations concurrent batch program automatically creates configuration data in all necessary organizations for existing configurations.

The following table describes when to use this program and how the program creates data. The item attribute column refers to the item attribute Create Configured Item, BOM. See [Model Items, Bills, and Routing](#) for more information.

**Table 6–1 Updating Existing Configurations**

Item Attribute	Sourcing Change	Match	Run Program	Reason	Program behavior
1	Y	Y	Yes	Create data based on newly setup multiple sources or OSS and for future matches.	The program will create data based on the item attribute for all canned configurations having open orders, whose base models have multiple sources or OSS setup.
1	Y	N	Depends	Customers do not need to run program if match is off and they do not want to use the newly setup multiple sources or OSS on existing open order lines. They should run it if they want to apply the multiple sources or OSS on existing orders.	If run, the program will create data based on the item attribute, for all configurations on open order lines whose base models have multiple sources or OSS setup.
1	N	Y	No	Customer chose to set profile to 1 even though match is on.	
1	N	N	No	Not needed.	
2	Y	Y	Yes	Create data based on newly setup multiple sources or OSS and for future matches.	The program will create data based on the item attribute for all canned configurations having open orders, whose base models have multiple sources or OSS setup.
2	Y	N	Depends	Customers need to run this program only if they want to use the newly setup multiple sources, OSS, shipment transaction flows or global procurement on existing open order lines.	If run, the program will create items for all existing configurations on open order lines in all organizations where the model exists. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **The program will create BOMs and Routings for all configurations on open order lines whose base models have multiple sources or OSS setup.

**Table 6–1 Updating Existing Configurations**

<b>Item Attribute</b>	<b>Sourcing Change</b>	<b>Match</b>	<b>Run Program</b>	<b>Reason</b>	<b>Program behavior</b>
2	N	Y	Yes	To create items everywhere. Customer may have set profile to 2 because they want to use global procurement or transaction flows.	The program will create items everywhere for all configurations on open order lines. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **BOM & Routings will not be created since multiple sources or OSS are not setup.
2	N	N	Depends	Customers need to run this program only if they want to use the newly setup shipment transaction flows or global procurement on existing open order lines.	If run, the program will create items for all existing configurations on open order lines in all organizations where the model exists. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **BOM & Routings will not be created since multiple sources or OSS are not setup.
3	Y	Y	Yes	Customer chose to create data everywhere	The program will create data everywhere for all canned configurations. **

**Table 6–1 Updating Existing Configurations**

Item Attribute	Sourcing Change	Match	Run Program	Reason	Program behavior
3	N	Y	Yes	Customer chose to create data everywhere	The program will create data everywhere for all canned configurations. **
3	Y	N	Depends	Customers need to run the program only if they want to use the newly setup multiple sources, OSS, shipment transaction flows or global procurement on existing open order lines.	If run, the program will create items for all existing configurations on open order lines in all organizations where the model exists. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **The program will create BOMs and Routings in all organizations where the model BOMs and Routings exist for all configurations on open order lines.
3	N	N	Depends	Customers need to run the program only if they want to use the newly setup shipment transaction flows or global procurement on existing open order lines.	If run, the program will create items for all existing configurations on open order lines in all organizations where the model exists. It will perform purchase price and list price rollup in all organizations where the item gets created by this program. **The program will create BOMs and Routings in all organizations where the model BOMs and Routings exist for all configurations on open order lines.

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**Note:** You can run the Update Existing Configurations program by itself, or as part of the Update Config and Optional Processing Request Set. If you choose to run it by itself, you should also run the optional programs for the newly updated configurations.

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## Update Existing Configurations

The Update Existing Configurations concurrent program has the following parameters:

- Items
  - All models

- Item Category (all models in this item category)
- Specific Configuration item (this configuration item)
- Category Set (enabled if item category is selected)
- Item Category (enabled only if Category Set is selected)
- Configuration item (enabled only if Configuration Item option is selected in 1)
- Has sourcing changed?
  - Yes
  - No
- Process non-matchable models?
  - Yes
  - No
- Upgrade Mode
  - Update Items
  - Update Items and Update ATP attributes
  - Update ATP attributes

## Using Update Existing Configurations

You can use the Update Existing Configurations concurrent program to update all existing models, all models in item category, or a single configuration item. This program will create all items and items data. This program also creates new sourcing for the items, but in a new assignment set, CTO Update Configurations, seeded for the purpose of this program. Once all items have been created, sub-requests are launched for the AutoCreate BOMs Across Organizations program. One sub-request is launched per 100 items. These sub programs create BOMs and routings, and perform flow calculations for the items created by the parent program. The program also replaces the sourcing in MRP: Default Assignment Set with new sourcing created by the earlier program in the new seeded assignment set, if BOM creation succeeds.



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**Note:** It is possible that items may be created in new organizations, and the sub programs could fail the BOM creation process. This is why sourcing is not updated until BOM creation succeeds.

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### Item

- **All models:** If you select all models, all existing models on open order lines and in the match tables are upgraded. You can do additional filtering by other input parameters).
- **Item Category:** Allows you to specify a specific item category set and category to upgrade.
- **Specific Configuration Item:** Allows you to specify a configuration item to upgrade.

**Category Set** The Category set which includes the upgrade category described below. Enabled only if Item Category is specified in [Item](#).

**Item Category** Define a new Item Category for the purposes of this program and put all models to be upgraded in this category before running the program. The program processes all configurations of these models and their child models. If you choose to put only top level models in the category, configurations of child models are automatically processed, even if they are not assigned to the category, if they are part of the same order line as the top parent or if they are canned for matching. However, order lines for the child configuration item itself will not be processed. Parent models of the model in the category (if any) will not be processed if they are not assigned to the category. Hence, users are recommended to put all models related to each other in this category to avoid having inconsistent data being processed. After the program processes the models successfully, they will be automatically removed from the category. If the same model needs to be processed again due to a new feature being enabled, it should be put in the category again. Users should not use an existing category for this program, since at the end of the program all item assigned to this category will be removed from the category. Enabled only if Item Category is specified in [Item](#).

**Configuration Item** This option processes a specified configuration item only. Select the configuration item with the Configuration item parameter.

**Sourcing Changes** If sourcing has changed on any of the models specified in the Items parameter, select Yes. Defining Option Specific Sourcing is considered a sourcing change. If sourcing has not changed on any models, select No. If this parameter is selected as No, the concurrent program processes only configuration items with the Configured Item, BOM creation attribute set to Based on Model or Item Based on Model, BOM Based on Sourcing. If this parameter is set to Yes, all configuration items are processed. If sourcing (or OSS) has changed, this parameter must be set to Yes, otherwise you could end up with configuration data created in organizations that do not match the configuration item sourcing.

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**Note:** If you change the sourcing, and supply is already created for a sales order based on old sourcing, the existing sales orders may have supply created in the wrong organization. The next plan run should indicate excess supply in that organization.

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**Process Non-Matchable Models** Select No if you do not want to use newly setup features on existing order lines. This option is available only for models that have the Enable Configuration Matching attribute set to No. Open order lines for models that have this attribute set to Standard match or Custom match are always upgraded.

**Upgrade Mode** Select Update Items to create items, BOMs, and Routings in additional organizations based on the sourcing changes and the setting of the Configured Item, BOM creation attribute. This will not update ATP attributes.

Select Update ATP attributes to update only the ATP attributes on the selected configuration items. If the profile INV:Capable to Promise is set to Based on Planning Output, and match is enabled, run this program in ATP attributes mode for all of your existing configurations.

Select Update Items and Update ATP Attributes to create the item, BOMs and routings, and update the ATP attributes on all existing instances of the selected configuration item.

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**Note:** It is recommended that you update all models in batches by putting them in the category one batch at a time. This improves performance and avoids redundant processing.

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**Note:** This process will update both autocreated and preconfigured items.

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## Details of Data Created and Updated By This Program

The program creates the following data:

**Sourcing rules** Sourcing rules are deleted and re-created for each item that is processed. New sourcing is created based on the new sourcing defined for the model and the value of item attribute Create Configured item, BOM. The program does not recreate sourcing for the following items:

Configuration items in match tables that are not linked on open sales order lines and have item attribute set to Based on Sourcing or Items Based on Model, BOMs and Routings Based on Sourcing (if match is being used).

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**Note:** When a match is found for such an item, the AutoCreate Configurations program creates the data and sourcing based on the model sourcing. Match during ATP is not possible for such items; however, the recommended attribute setting if Match is being used with PDS ATP is Based on Model.

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**Item creation** Items are created in the organizations required based on the new sourcing defined for the model and the value of item attribute Create Configured item, BOM, if it does not already exist. If the item is an auto-created item in all organizations, it inherits item attributes from the model item in that organization. If the item is a pre-configured item in at least one organization, it inherits item attributes either from the model item in that organization, or from the pre-configured item, based on the item attribute control level. If the item is a pre-configured item in more than one organization, any one organization is randomly selected to inherit the item attributes.

**BOM and Routing creation** BOMs and Routings are created in the organizations required based on the new sourcing defined for the model and the value of item attribute Create Configured item, BOM, if it does not already exist. The program does not check for dropped components on the BOM in existing organizations. If there are dropped components in the new organizations where the BOM is created, all open order lines to which this configuration item is linked are put on hold. Dropped components effectivity is checked based on:

- Sysdate if match is being used and the item is not linked to any open sales order
- Schedule ship date of one of the order lines to which this item is linked (randomly picked)

The program creates data for the following items (depending on the parameters selected):

- Configuration items linked on open sales order lines
- Additional configuration items in match tables that are not linked on open sales order lines and have item attribute set to Based on Model (if match is being used)

This includes pre-configured items in the matched tables and matched on open order lines.

The program does not create data for the following type of items:

- ATO items created manually.
- Pre-configured items that have a match attribute set to No.
- Pre-configured items ordered directly on open order lines.
- Auto-created configuration items that are de-linked from all open sales order lines, and are not canned for future matching, but are being ordered as ATO items on the order line.

Data is not created for a particular item for the following type of errors:

- Dropped components on a BOM. If dropped components are found while creating the BOM for a configuration item in a certain org, the BOM will be created or not created based on the profile [BOM: Create Configuration Exception Behavior](#). If the profile is set to not create the BOM, BOMs, Routings, and sourcing are not created for this configuration item in all organizations. Optional processing is also not performed for this item. However, configuration items are created for this item. Parent configuration BOMs are also created.
- Lower level configuration item does not exist in BOM creation org. Configuration BOM are not created if any of the lower level configuration items do not exist in this organization. In this case, BOMs, Routings, and sourcing are not created for this configuration item in all organizations. Optional processing is not performed for this item. However, configuration items are created for this item. This may happen if you choose not to create data for pre-configured items, and the pre-configured item is a child on an auto-created item BOM.

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**Note:** If any items fail correct the issue and resubmit the item for processing by adding it to the assignment set again. Or you can process them directly.

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## Before Running Update Existing Configuration

It is recommended that you make setup changes to a subset of models rather than trying to change them all at once. Perform the following steps for the items you are changing before running the Update Existing Configuration concurrent program:

- Setup Option Specific Sourcing if applicable.
- Setup Multiple Sourcing if applicable.
- Setup Shipment and Procurement Transaction flows if applicable.
- Setup Global Procurement and Blanket Agreements if applicable.
- Set the following profiles, if they are not already set:
  - [BOM: CTO Perform Cost Rollup](#)
  - [BOM: CTO Perform List Price and Purchase Price Rollup](#)
  - [BOM: CTO Perform Flow Calculations](#)
  - [BOM: Perform Lead Time Calculations](#)
- Set the BOM parameter Create Configuration BOM to No in organizations where you do not want configuration BOMs to be created (OM validation organization, for example).
- Set the following attributes for all models you are going to update, or, if you want to default from the profile, leave them null:
  - Configured Item, BOM creation
  - Enable Configuration Matching
- De-activate configurations and run update pending status to deactivate as many old configurations as possible. This will improve the performance of the update program.
- Purge data from matched tables for configurations you no longer want to match and are not ready to be deactivated. This will improve the performance of the update program.



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# Deactivating Configuration Items and Purging Data

This chapter provides information on:

[Deactivate Configuration Items](#) on page 7-2

[Order Purge](#) on page 7-7

[Purge Match Tables](#) on page 7-7

## Deactivate Configuration Items

Bills of Material enables you to automatically deactivate item numbers associated with deactivated configuration orders. You can also deactivate configuration items to remove them from item master reports and screens before you actually purge them from the database. Deactivating a configuration from all organizations also removes it from the match tables, so that new orders will not match to a deactivated configuration. You can deactivate both autocreated and preconfigured ATO items.

When you set up Inventory and Bills of Material, you can define an item status to identify deactivated configuration items. You can use this status to disable the configuration item from all Oracle Manufacturing functions. You would normally specify No for each of the following item attributes for inactive configuration items:

- BOM allowed
- Build in WIP
- Transactable
- Stockable

When defining bills of material parameters, specify the item status to use for deactivated configuration items.

You can also set up an item template that can be used to set the status of attributes that are not available in the BOM status form. Typically, deactivated items are not:

- Purchased or purchasable
- Planned
- Forecasted
- Customer ordered, or customer orderable
- Internal ordered, or internal orderable
- Orderable on the web

See [BOM Parameters](#) for more information.

## Match and Deactivation

If match is enabled on a model you cannot deactivate its configurations in the context of a single organization. You must go to the master organization and deactivate all configurations. When run in the master organization, the deactivate program confirms that there is no open supply or demand for the configuration in



any of the child organizations and then deactivates it in all organizations, including the master, and removes it from the match tables.

The Deactivate concurrent batch program has a parameter that deactivates the base model and all its configurations in that organization. This allows you to stop producing an entire model in a specific organization. If match is enabled for a base model, then the program should be run from the master organization.

## Deactivate Concurrent Program

The deactivate program can be run for configurations in any organization if the item status attribute is controlled at organization level, and the base model is not using match. If the attributes are controlled at the master level or match is being used, deactivate must be run in the master organization.

You can run the Deactivate Configuration Items concurrent program to automatically deactivate all configuration items that have no open sales orders or on-hand inventory, and whose most recent transaction date is more than the number of days ago you specify. Each deactivated configuration item has its status updated and the item template applied, if specified in the program. Deactivated configurations are removed from the matching tables, so that future configurations cannot match to deactivated items.

### To deactivate configuration items:

1. From Bills of Material menu, navigate to the Submit Requests window.
2. Select Request and select Deactivate Configuration Items.

The Deactivate Concurrent Batch program has following parameters:

- Organization ID  
The organization you want to deactivate configuration items in. If you specify an item master organization, the configurations is deactivated in this organization and all child organizations. The default is Current organization.
- Configuration Item  
Deactivates a specific configuration. If this is enabled, all other parameters, except Transacted Days Ago and Apply Item Template are ignored if a value is entered for this parameter.
- Base Model Item

If specified, deactivates the model and all its configurations in that organization. This allows you to stop producing an entire model in a specific organization. LOV includes all items assigned to this organization with a BOM item type of Model and with the ATO attribute checked.

- Option Item

Enabled only if base model is specified. Allows deactivation of only those configurations of a model for which this option is specified as an optional component. When the match is enabled for a base model and the deactivation program is executed in a child organization, the program deactivates an OSS configuration in that organization but does not remove the configuration from the match tables. This program does not update the sourcing rules, so they must be manually updated.

- Transacted Days Ago

Configuration items with material transactions outside of the time frame are evaluated for deactivation. The default is 90.

- Apply Item Template

Allows users to choose an item template to apply to all deactivated configurations. This allows users to control the settings of item attributes NOT controlled by the BOM item status. Note that the attribute settings in BOM item status will over-ride the settings of the template when the update pending status' program is run.

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**Note:** Always use the deactivation batch program to disable configuration items. Configuration items should not be manually disabled from the Items form.

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**Note:** Deactivate does NOT update sourcing rules for a configuration. If you deactivate in an organization other than the master organization, you will need to update your sourcing rules manually.

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**Note:** You need to run the Update Pending Status program to actually change the status of the item.

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## Conditions For Deactivating

All configuration items that meet the following conditions are selected for deactivation:

- **No Open Demand:** There should not be any open demand for the configuration item (in context organization). Open demand is identified by open sales orders, quotes, and planned orders. Future demand (demand in interface tables) will also count as demand.
- **No Open Supply:** There should not be any supply created for the configuration item in the current organization, that is, in the organization where deactivation process is run. Open supply is identified by discrete jobs, flow schedule, purchase orders, purchase requisitions, and inventory reservations.

In the case of a cancellation or de-link, there might be supply created for the configuration item in another organization with no demand associated with it in this organization. In this case, we will deactivate the configuration item in this organization.

### Example:

Item C\*1 is sourced in organization O1 from organization O2.

There is sales order demand in O1 and planned order demand in O2. A work order for C\*1 is created in O2.

Now, the order is canceled and demand for C\*1 is removed from organizations O1 and O2.

If the Deactivation process is run in O1, we will find no demand for C\*1 in any organization, and no supply in organization O1. Even though there is open supply in organization O2, the item will be deactivated in organization O1. The item will not be deactivated in organization O2.

We will only deactivate the item in the organization where the program is being run. This is because the same item could be enabled in other organizations due to different reasons:

As a result of the Create Configuration process, in the case of a multi-organization configuration.

Enabled manually to be used as a pre-defined ATO Item in other organizations

If the item needs to be deactivated in all organizations, the Deactivate Configuration Items process needs to be run in all organizations when the item attribute specified as Inactive Status is controlled at the organization level. It should be run in the

master organization when the attribute Inactive Status is controlled at the master level.

### **No Material Transactions**

There should not be any material transactions in current organization for the item 'n' days before the Deactivation process is run. 'n' is defined by the input parameter 'Number of Days.' Hence, if we find any material transactions for the item in the last 'n' days, the item will not be deactivated. Material transactions are checked only in the organization in which the program is run.

### **No On Hand**

Items are not deactivated in an organization if there is any on hand in that organization.

### **Does Not Exist in Child Organization**

For any organization, child organizations may have been setup. If the item is available in the child organization then, that item will not be deactivated in the master organization when the attribute specified as Inactive Status is controlled at the organization level. First, run the program once in each child organization. If the attribute is set at master level, then the item is automatically deactivated in the child organizations before it is deactivated in the master organization.

### **Does Not Have a Common BOM and Routing**

The items (to be deactivated) BOM and Routing should not be commoned by any other item which is currently active. If it is then item will not be deactivated.

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**Note:** You can delete item information for deactivated configurations from the database, including the bills of material and routings. The ability to delete configuration items is subject to the same deletion constraints that operate for other item types as well.

See Also: Deleting Items, Bills, Routings, Components, and Operations.

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## Order Purge

In Release 11i CTO tables are populated during scheduling of an order and creation of configuration item. When user runs a Order Purge program of Order Management, related data of an order inserted in CTO Tables are also purged.

## Purge Match Tables

If the profile BOM: Match to Existing Configurations is on, the table bom\_ato\_configurations is populated every time a new configuration is created so that if similar configuration is created in future, the configuration item can be matched from this table. If it is not purged of old data, this table can grow very large and might affect the Match and Reserve performance.

This table is purged automatically anytime you deactivate a configuration item through the process described earlier in this chapter. However, it is also possible to remove specific items from the table before it is deactivated by running the Purge Configuration Items concurrent program. You may want to do this on items in which you want to process existing sales orders for the item, but you do not want to take any new sales orders for the item.

### **To purge specific configurations:**

1. From Bills of Material menu, navigate to the Submit Requests window.
2. Select single request and select Purge Configuration Items.
3. Enter the criteria for the items that you want purged from the table:
  - Item Created Days Ago: Configuration items created earlier then sysdate minus this number are purged
  - Last Referenced Days ago: Configuration items that were last matched before sysdate minus this number are purged
  - Base Model: All configurations generated from a specific base model are purged
  - Configuration item: A specific configuration is purged



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