

11i Overview of Engineering Process

Student Guide

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Preface

Profile

Before You Begin This Course

Before you begin this course, you should have the following qualifications:

Thorough knowledge of *Oracle Inventory*.

Prerequisites

Required Prerequisites:

Oracle Inventory

Suggested Prerequisites:

11i Overview of Inventory Management

11i Setting Up and Implementing Inventory Management 1&2

11i Defining and Maintaining Items

11i Inventory Controls

11i Issue and Transfer Material

11i Material Movement

11i Cycle Counting

11i Physical Inventory

11i Inventory Replenishment 1

11i Inventory Replenishment 2

How This Course Is Organized

11i Overview of Engineering Process is an instructor-led course featuring lecture and hands-on exercises. Online demonstrations and written practice sessions reinforce the concepts and skills introduced.

Related Publications

Oracle Publications

Title	Part Number
<i>Oracle Engineering User's Guide, R11i</i>	<i>A75090-01</i>
<i>Oracle Bills of Material User's Guide, R11i</i>	<i>A75087-01</i>
<i>Oracle Inventory User's Guide, R11i</i>	<i>A83507-01</i>

Additional Publications

- System release bulletins
- Installation and user's guides
- *read.me* files
- *Oracle Magazine*

Typographic Conventions

Typographic Conventions in Text

Convention	Element	Example
Bold italic	Glossary term (if there is a glossary)	The <i>algorithm</i> inserts the new key.
Caps and lowercase	Buttons, check boxes, triggers, windows	Click the Executable button. Select the Can't Delete Card check box. Assign a When-Validate-Item trigger to the ORD block. Open the Master Schedule window.
Courier new, case sensitive (default is lowercase)	Code output, directory names, filenames, passwords, pathnames, URLs, user input, usernames	Code output: <code>debug.set ('I', 300);</code> Directory: <code>bin (DOS), \$FMHOME (UNIX)</code> Filename: Locate the <code>init.ora</code> file. Password: User <code>tiger</code> as your password. Pathname: Open <code>c:\my_docs\projects</code> URL: Go to <code>http://www.oracle.com</code> User input: Enter <code>300</code> Username: Log on as <code>scott</code>
Initial cap	Graphics labels (unless the term is a proper noun)	Customer address (<i>but</i> Oracle Payables)
Italic	Emphasized words and phrases, titles of books and courses, variables	Do <i>not</i> save changes to the database. For further information, see <i>Oracle7 Server SQL Language Reference Manual</i> . Enter <code>user_id@us.oracle.com</code> , where <i>user_id</i> is the name of the user.
Quotation marks	Interface elements with long names that have only initial caps; lesson and chapter titles in cross-references	Select "Include a reusable module component" and click Finish. This subject is covered in Unit II, Lesson 3, "Working with Objects."
Uppercase	SQL column names, commands, functions, schemas, table names	Use the SELECT command to view information stored in the <code>LAST_NAME</code> column of the EMP table.

Convention	Element	Example
Arrow	Menu paths	Select File—> Save.

Brackets	Key names	Press [Enter].
Commas	Key sequences	Press and release keys one at a time: [Alternate], [F], [D]
Plus signs	Key combinations	Press and hold these keys simultaneously: [Ctrl]+[Alt]+[Del]

Typographic Conventions in Code

Convention	Element	Example
Caps and lowercase	Oracle Forms triggers	When-Validate-Item
Lowercase	Column names, table names	SELECT last_name FROM s_emp;
	Passwords	DROP USER scott IDENTIFIED BY tiger;
	PL/SQL objects	OG_ACTIVATE_LAYER (OG_GET_LAYER ('prod_pie_layer'))
Lowercase italic	Syntax variables	CREATE ROLE <i>role</i>
Uppercase	SQL commands and functions	SELECT userid FROM emp;

Typographic Conventions in Navigation Paths

This course uses simplified navigation paths, such as the following example, to direct you through Oracle Applications.

(N) Invoice > Entry > Invoice Batches Summary (M) Query > Find (B) Approve

This simplified path translates to the following:

1. (N) From the Navigator window, select Invoice > Entry > Invoice Batches Summary.
2. (M) From the menu, select Query > Find.
3. (B) Click the Approve button.

Notations :

(N) = Navigator

(M) = Menu

(T) = Tab

(I) = Icon

(H) = Hyperlink

(B) = Button

Typographical Conventions in Help System Paths

This course uses a “navigation path” convention to represent actions you perform to find pertinent information in the Oracle Applications Help System.

The following help navigation path, for example—

(Help) General Ledger > Journals > Enter Journals

—represents the following sequence of actions:

1. In the navigation frame of the help system window, expand the General Ledger entry.
2. Under the General Ledger entry, expand Journals.
3. Under Journals, select Enter Journals.
4. Review the Enter Journals topic that appears in the document frame of the help system window.

Getting Help

Oracle Applications provides you with a complete online help facility.

Whenever you need assistance, simply choose an item from the Help menu to pinpoint the type of information you want.

To display help for a current window:

1. Choose Window Help from the Help menu, click the Help button on the toolbar, or hold down the Control key and type 'h'.

A web browser window appears, containing search and navigation frames on the left, and a frame that displays help documents on the right.

The document frame provides information on the window containing the cursor. The navigation frame displays the top-level topics for your responsibility, arranged in a tree control.

2. If the document frame contains a list of topics associated with the window, click on a topic of interest to display more detailed information.

3. You can navigate to other topics of interest in the help system, or choose Close from your web browser's File menu to close help.

Searching for Help

You can perform a search to find the Oracle Applications help information you want. Simply enter your query in the text field located in the top-left frame of the browser window when viewing help, then click the adjacent Find button.

A list of titles, ranked by relevance and linked to the documents in question, is returned from your search in the right-hand document frame. Click on whichever title seems to best answer your needs to display the complete document in this frame. If the document doesn't fully answer your questions, use your browser's Back button to return to the list of titles and try another.

11i Overview of Engineering Process

Chapter 1

11i Overview of Engineering Process

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Objectives

After completing this module, you should be able to do the following:

- **Describe at a high level how to use Oracle engineering products (Oracle Engineering and Oracle Bills of Material) to:**
 - **Set up items, bills of material and the workday calendar.**
 - **Perform transfers, engineering change orders, mass changes and deletions.**

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Agenda

Agenda

- Overview of Oracle engineering products
- Items and Bills of Material
- Routings
- Product Maintenance
- Summary

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Agenda

Agenda

- **Overview of Oracle engineering products**
- Items and Bills of Material
- Routings
- Product Maintenance
- Summary

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Product Overview

- The Oracle engineering products include Oracle Bills of Material and Oracle Engineering.
- You use Oracle Bills of Material to do the following:
 - Create and maintain production items
 - Create and maintain production bills of materials
 - Create and maintain production resources, departments, routings, and lead times
 - Perform mass changes
 - Delete product information
 - Maintain the workday calendar

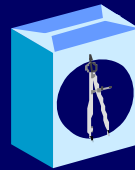


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Product Overview

- You use Oracle Engineering to do the following:
 - Create and maintain engineering items
 - Create and maintain engineering bills of materials
 - Create and maintain engineering resources, departments, routings, and lead times
 - Transfer engineering product information to production
 - Process engineering change orders
 - Perform mass changes
 - Delete product information



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Product Integration

Oracle Engineering integrates with the following applications:

- **Oracle Inventory**
- **Oracle Bill of Materials**
- **Oracle Work In Process**
- **Oracle Purchasing**
- **Oracle Master Scheduling/MRP and Oracle Supply Chain Planning**
- **Oracle Capacity**
- **Oracle Order Entry**

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Product Integration

Oracle Engineering integrates with the following applications:

- **Oracle Cost Management**
- **Oracle Workflow**
- **Oracle Human Resources**
- **Oracle Alert**
- **Oracle Applications for the Web**

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Product Integration

Oracle Bills of Material integrates with the following applications:

- **Oracle Inventory**
- **Oracle Engineering**
- **Oracle Work in Process**
- **Oracle Purchasing**
- **Oracle Master Scheduling/MRP and Oracle Supply Chain Planning**
- **Oracle Capacity**
- **Oracle Order Entry**
- **Oracle Cost Management**

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Agenda

Agenda

- Overview of Oracle engineering products
- **Items and Bills of Material**
- Routings
- Product Maintenance
- Summary

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Items and Bills of Material

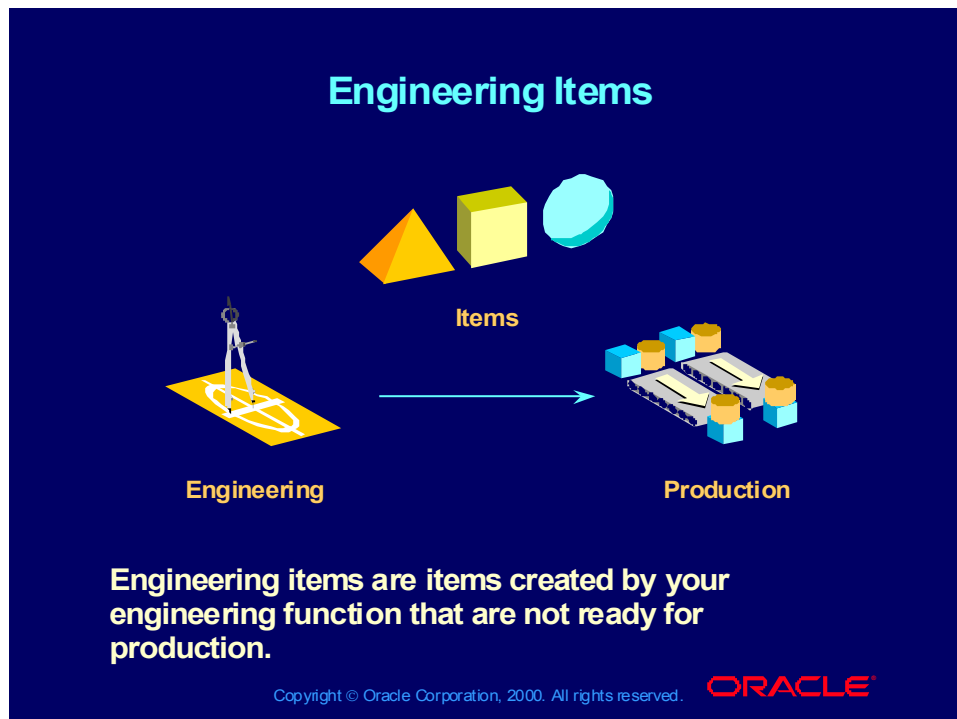
You can use Oracle Engineering to:

- **Define engineering items**
- **Create and copy item templates**
- **Create bills of material**
- **Copy and change bills of material**
- **Review items and bills of material**

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Engineering Items



Engineering Items

- ***Prototypes*** is another term used to name the items that are not ready for production.
- Item templates are used to create and change item attributes consistently.
- You must go through the same steps to create engineering items that you do for production items.
- Engineering items have the item attribute: Engineering Item selected. Items in production do not have this item attribute selected.

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Engineering Items

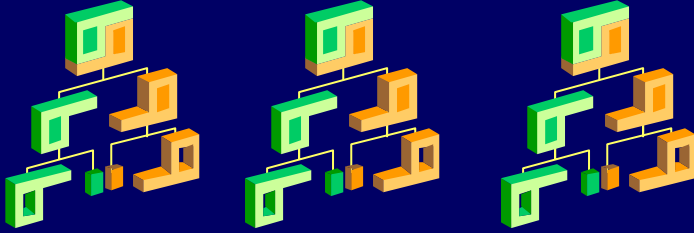
You can also use Oracle Engineering to:

- **Copy item templates and engineering items**
- **Search for engineering items**
- **Identify the difference between engineering and production items**
- **Review items to determine and change their attributes**

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Bills of Material

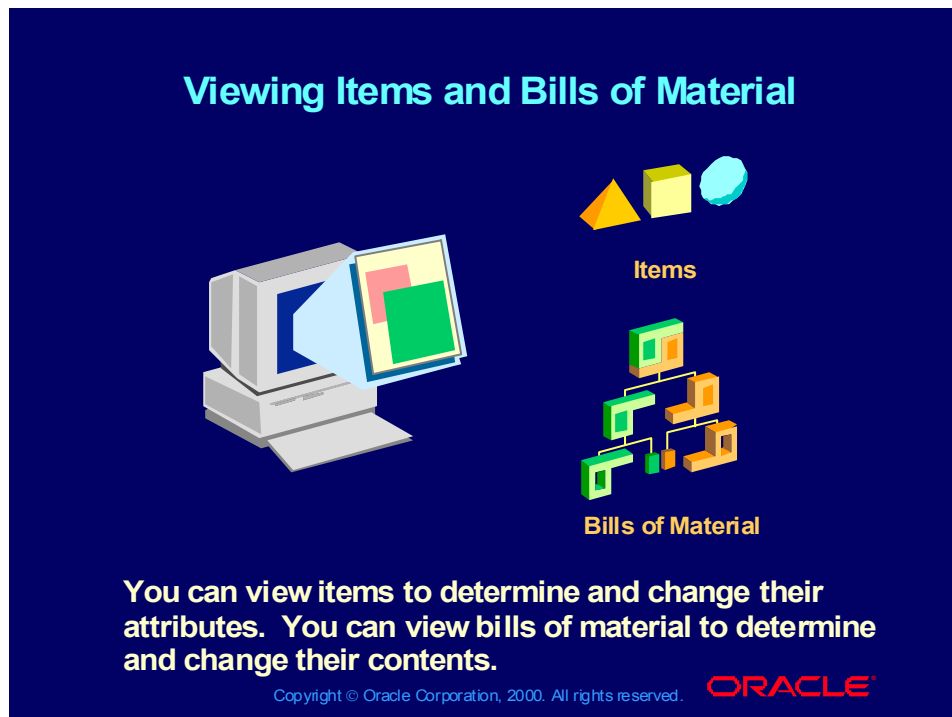


Bills of Material

- **Bills of material are used to:**
 - **Manufacture assemblies and subassemblies**
 - **Configure sales orders**
 - **Explode aggregate forecasts**
 - **Calculate standard costs**

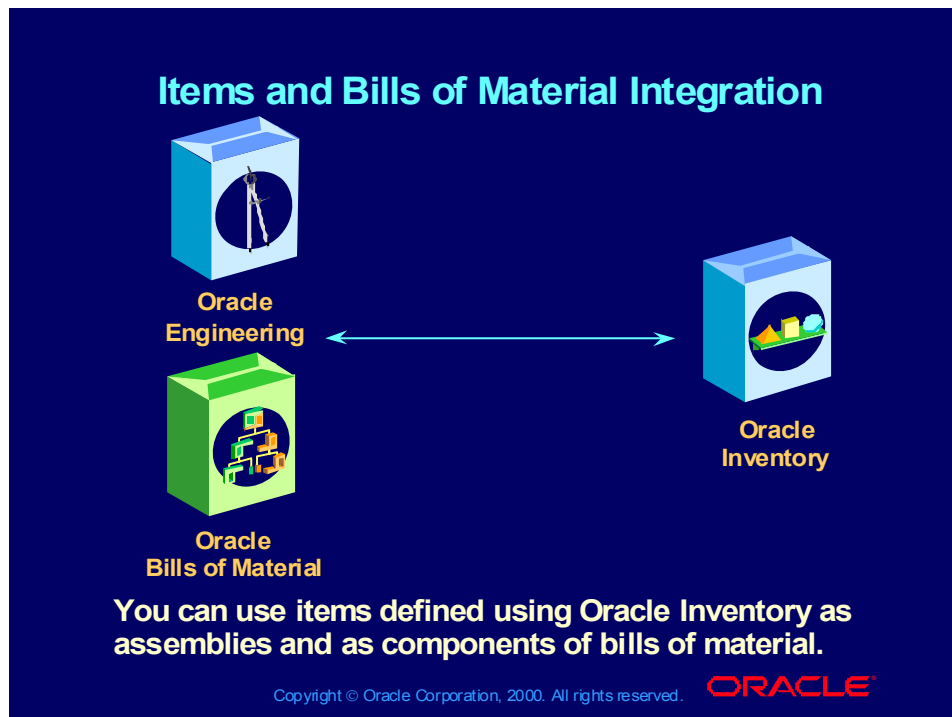
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Viewing Items and Bills of Material

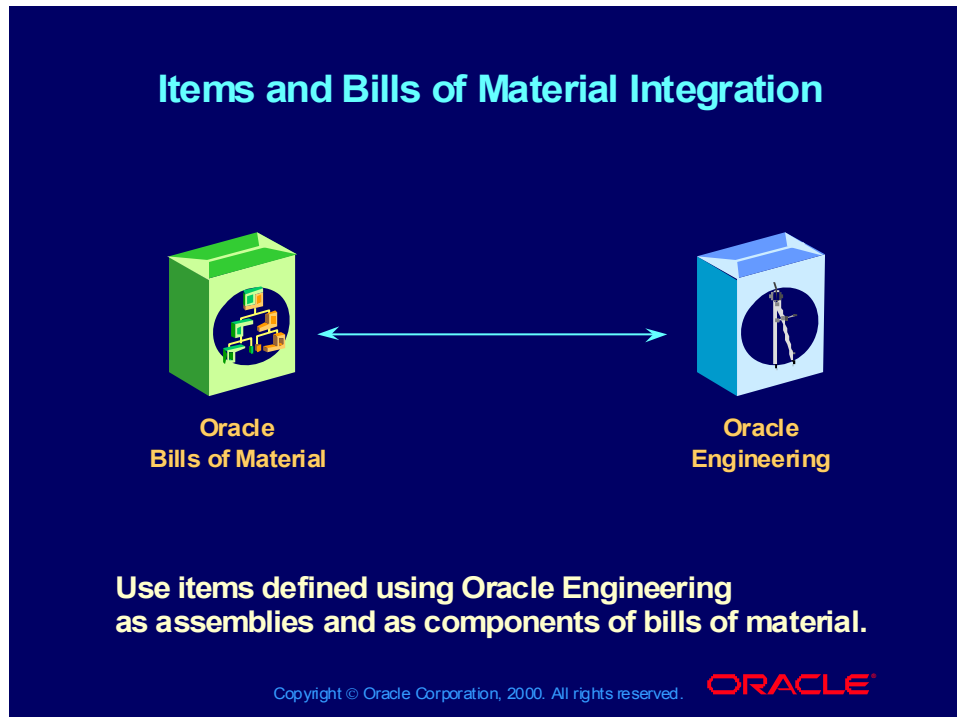


(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Bills of Material > Overview

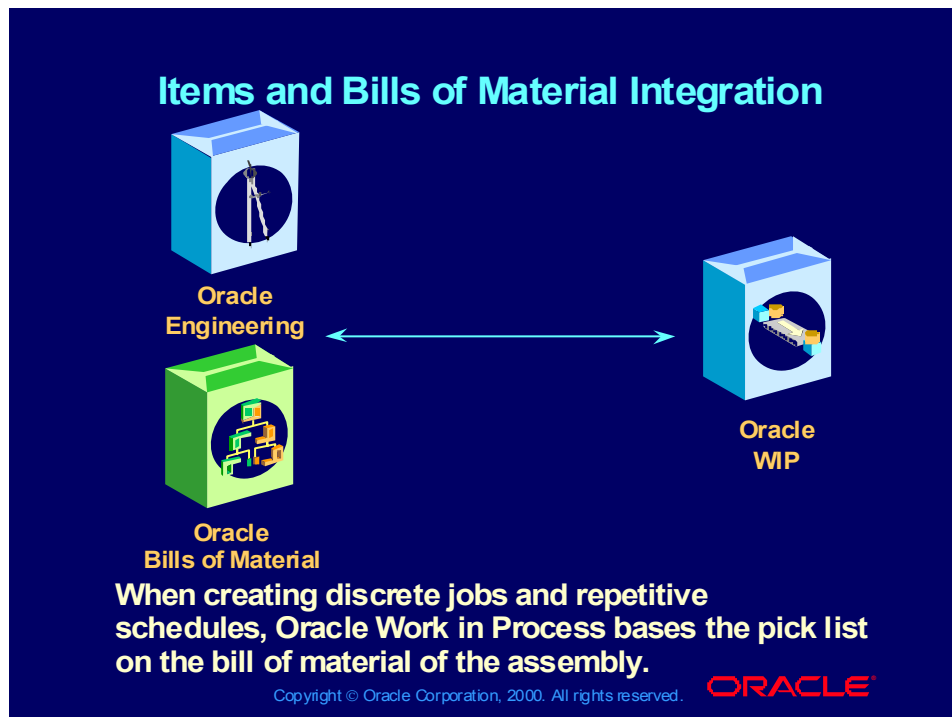
Items and Bills of Material Integration



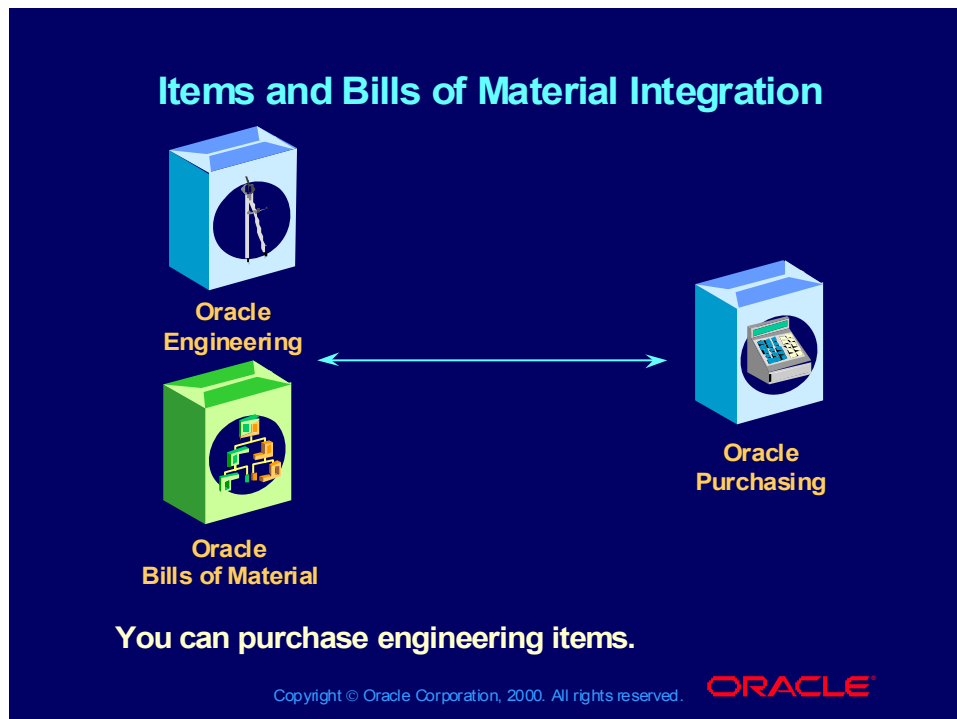
Items and Bills of Material Integration



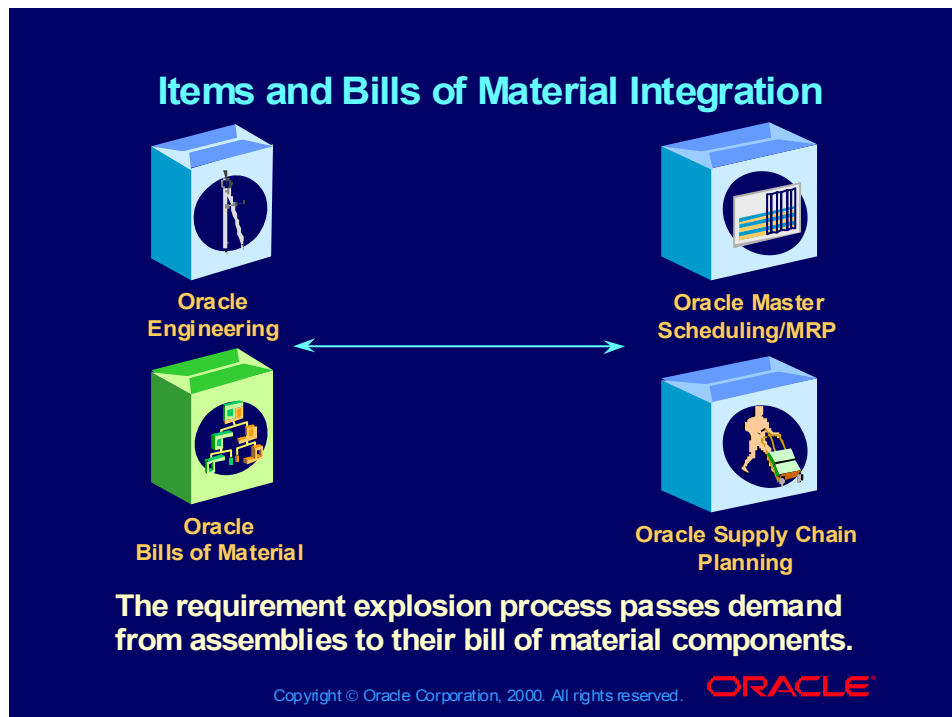
Items and Bills of Material Integration



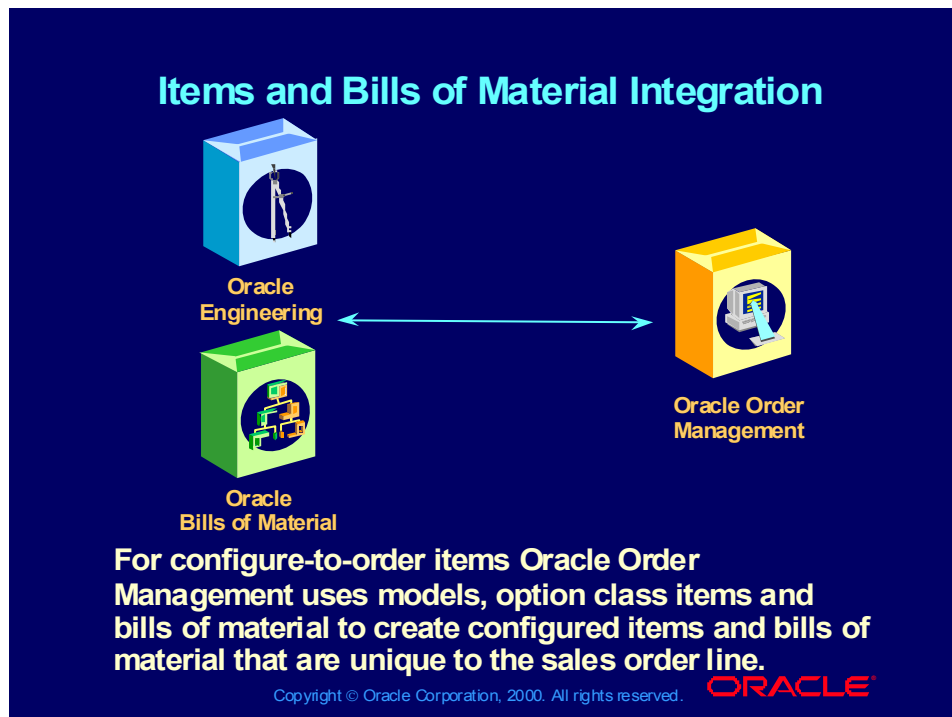
Items and Bills of Material Integration



Items and Bills of Material Integration



Items and Bills of Material Integration



Agenda

Agenda

- Overview of Oracle engineering products
- Items and Bills of Material
- **Routings**
- Product Maintenance
- Summary

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Routing Objectives

- **Create a workday calendar**
- **Define resources and departments**
- **Create routings**
- **Calculate lead times**
- **View routings**

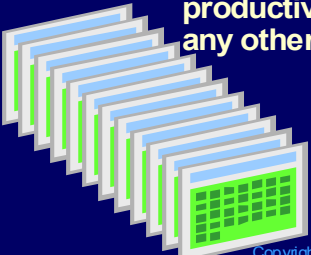
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Workday Calendar Overview

Workday Calendar Overview

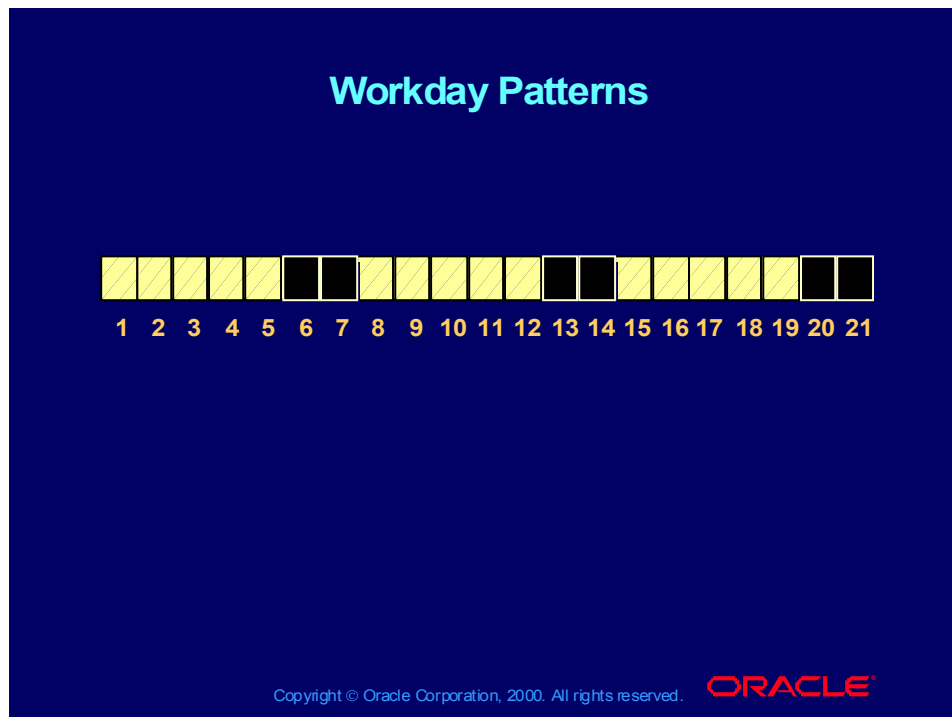
- Use the workday calendar to specify to the Oracle manufacturing applications your workdays, your non-workdays, and your shifts.
- Workday exceptions make allowances for the days that will not conform to the workday pattern.
- Shifts are the times when workers will be productive and do not include breaks, lunch or any other scheduled nonproductive time.



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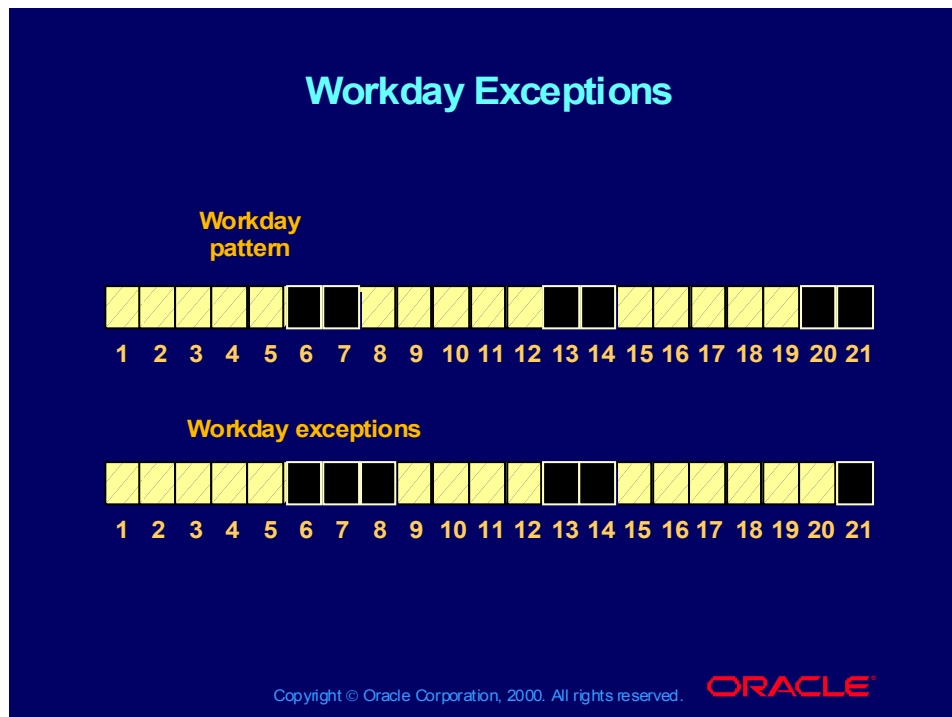
(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings > Workday Calendar > Defining a Workday Calendar

Workday Patterns



(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings
> Workday Calendar > Defining a Workday Calendar > Creating a Workday
Pattern

Workday Exceptions



(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings
> Workday Calendar > Defining a Workday Calendar > Assigning Workday or
Shift Exceptions

Resources and Departments

- **Resources are anything—except component material—used to manufacture, cost, or schedule products.**
- **A department is a collection of resources designed to perform certain tasks.**
- **A department class is a collection of departments.**

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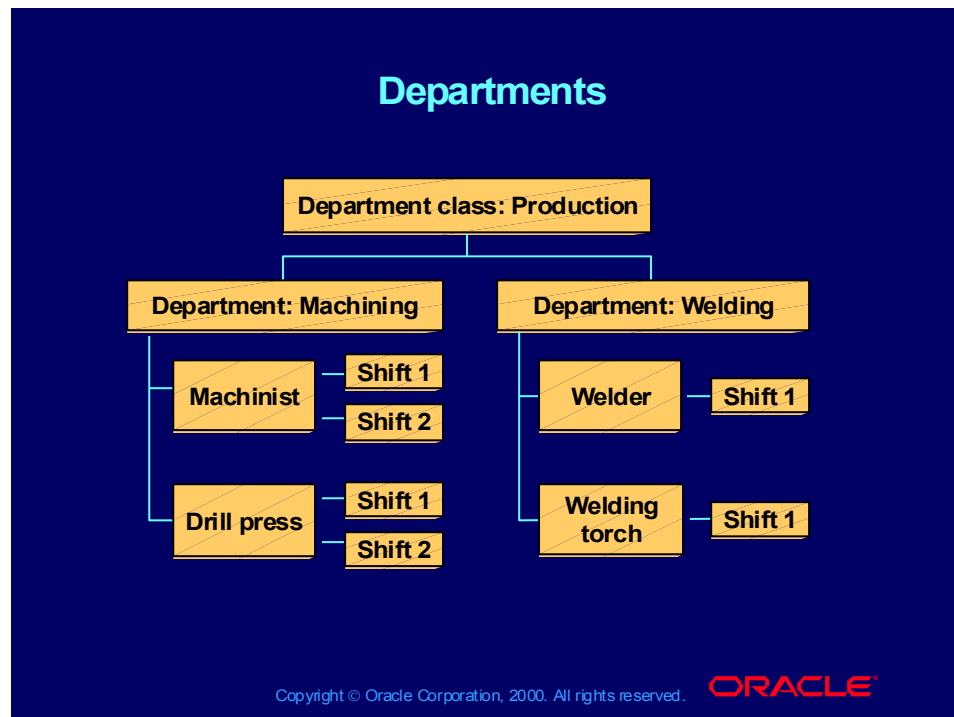
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Resources

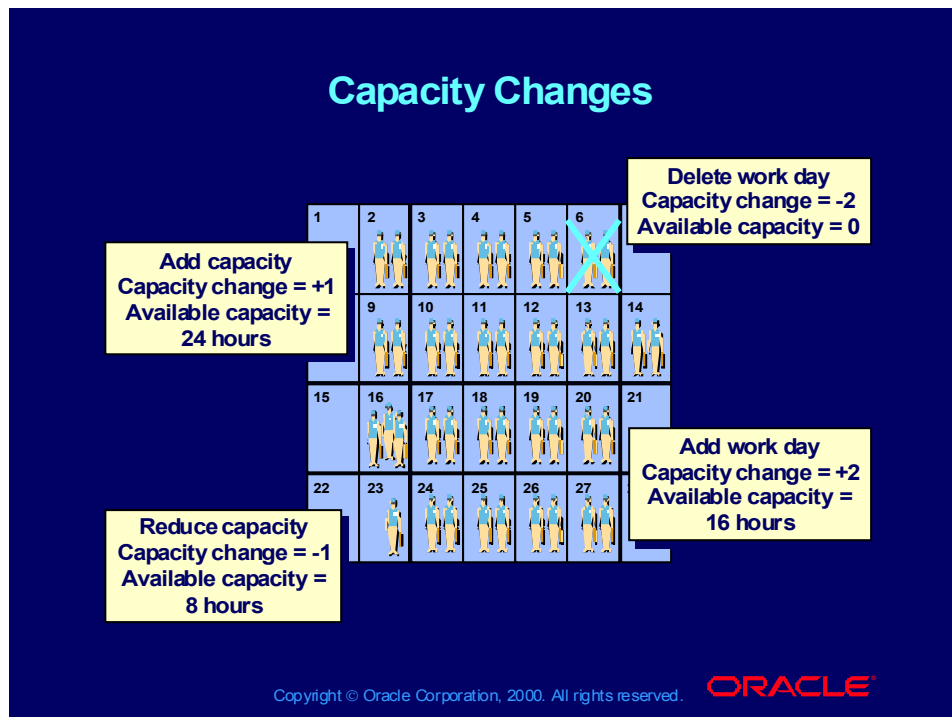


(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings
> Resource Usage

Departments



Capacity Changes



Create Routings

Create Routings

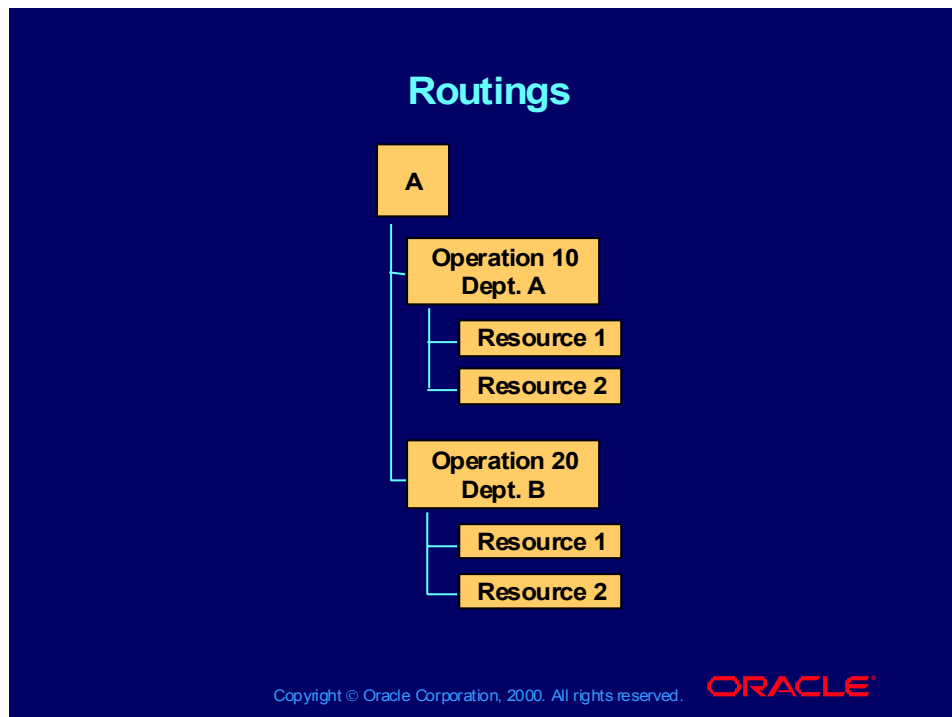
- Use routings to specify the processes that you use to manufacture discrete and repetitive assembly items.
- Assign department resources to an operation.
- Use the common routings feature to have identical routings for more than one item
- Create routings by copying an existing routing.
- Review the information entered with the reports and view screens.

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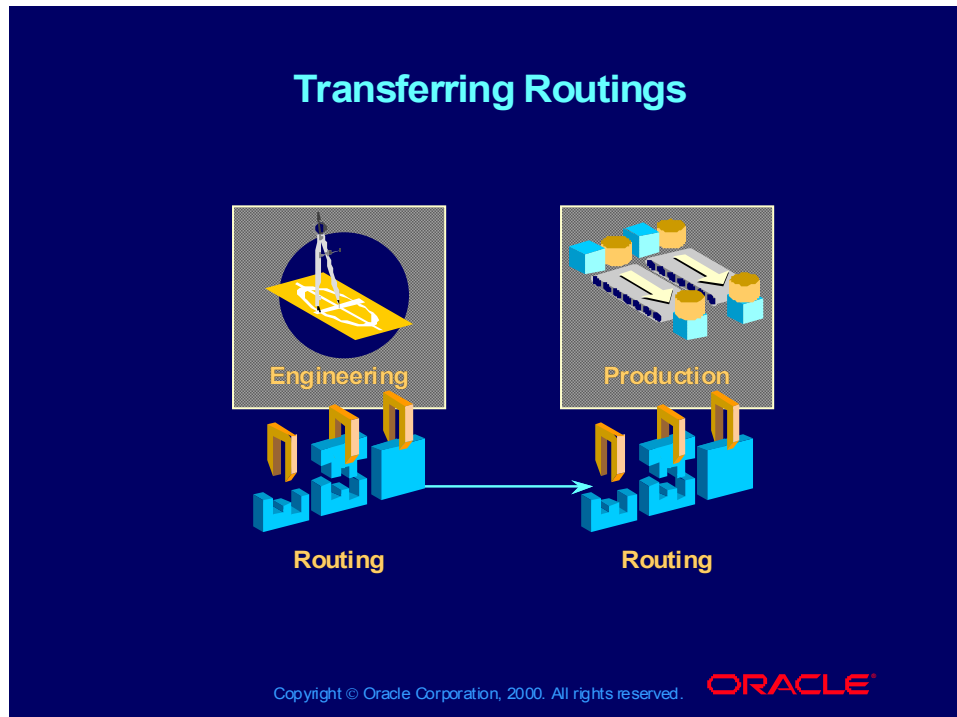
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(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings
> Defining a Routing > Creating a Routing

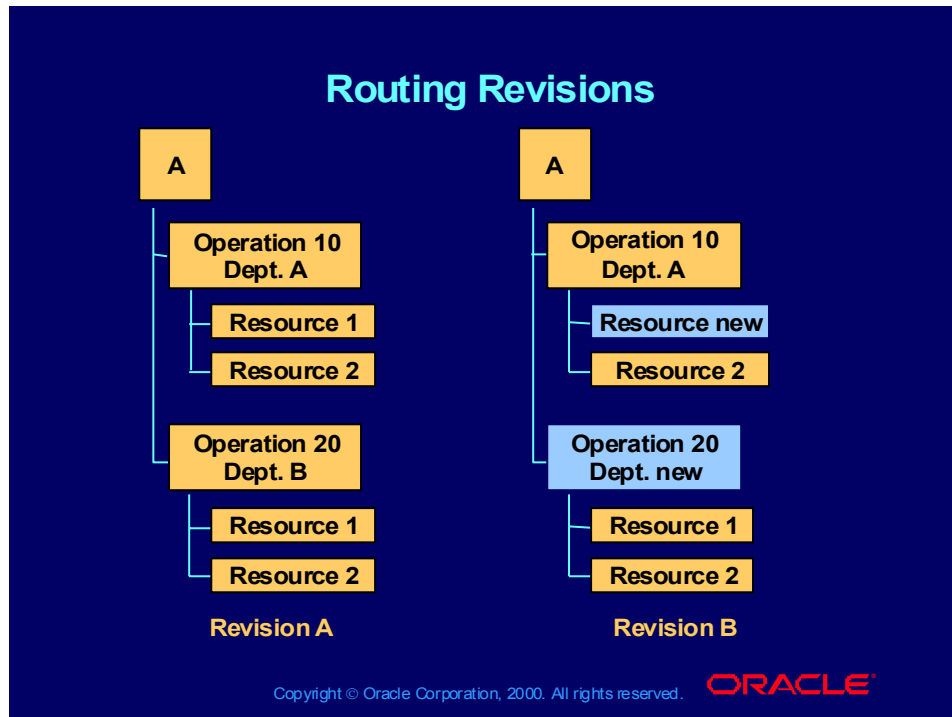
Routings



Transferring Routings

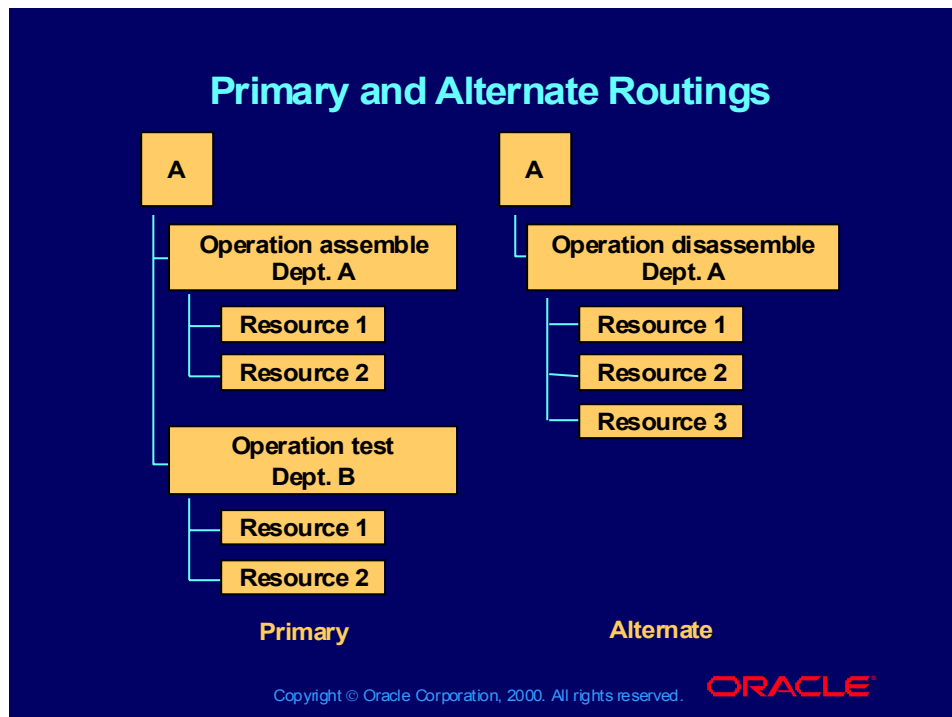


Routing Revisions

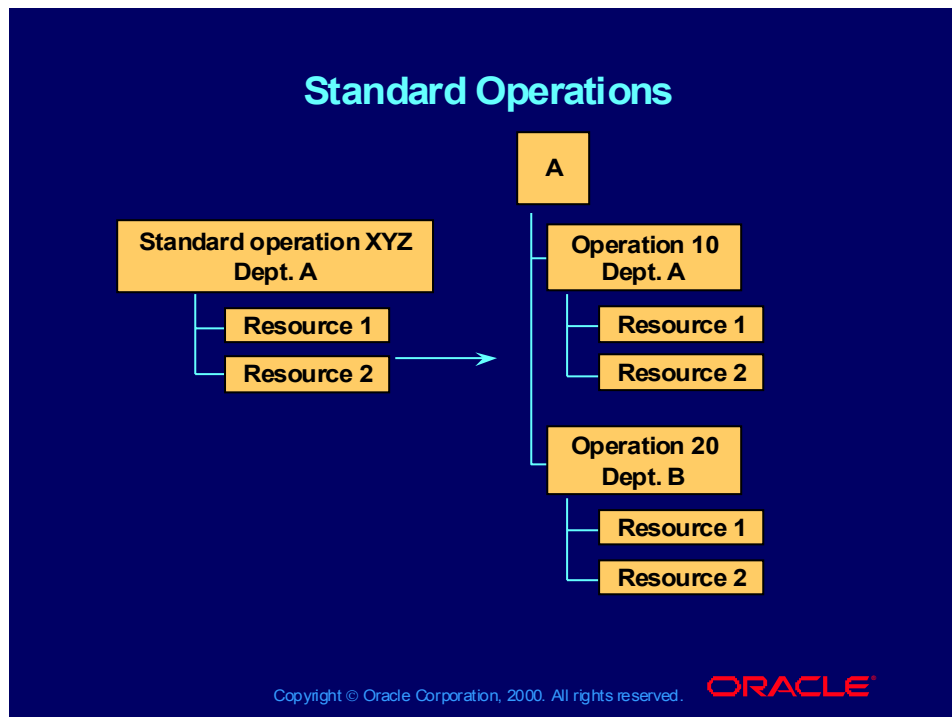


(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings
> Defining a Routing > Creating a Routing Revision

Primary and Alternate Routings

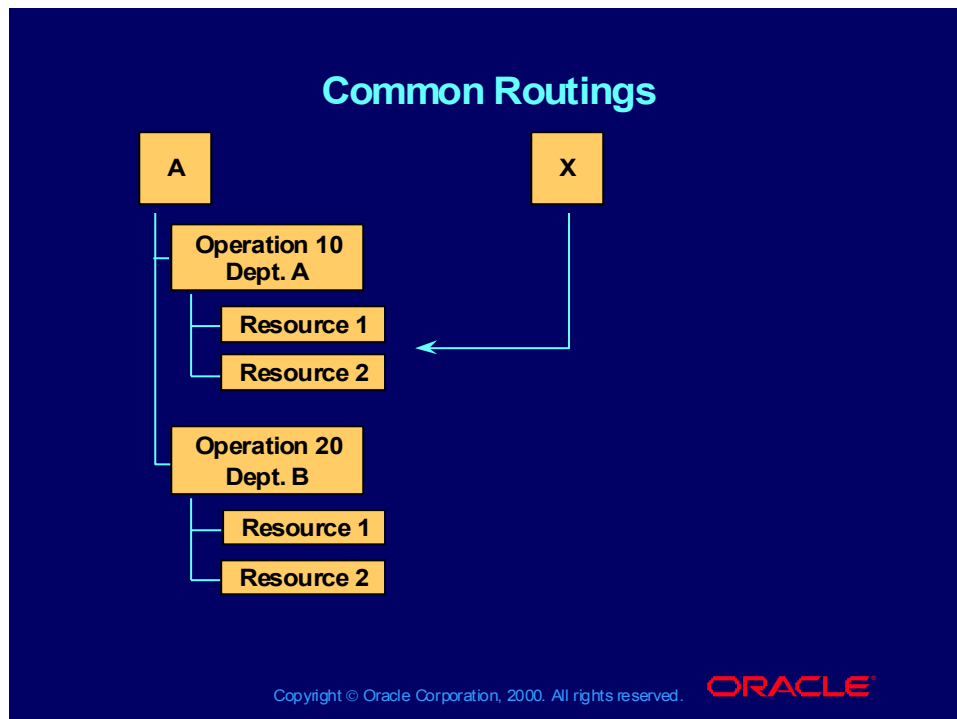


Standard Operations

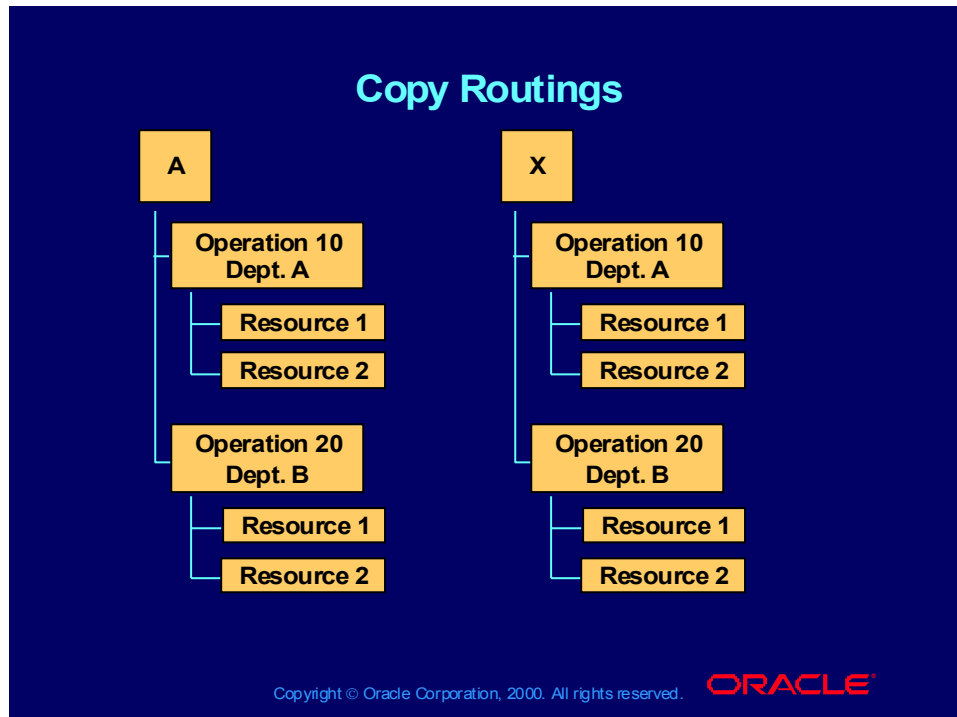


(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings
> Defining a Routing > Creating a Standard Operation

Common Routings

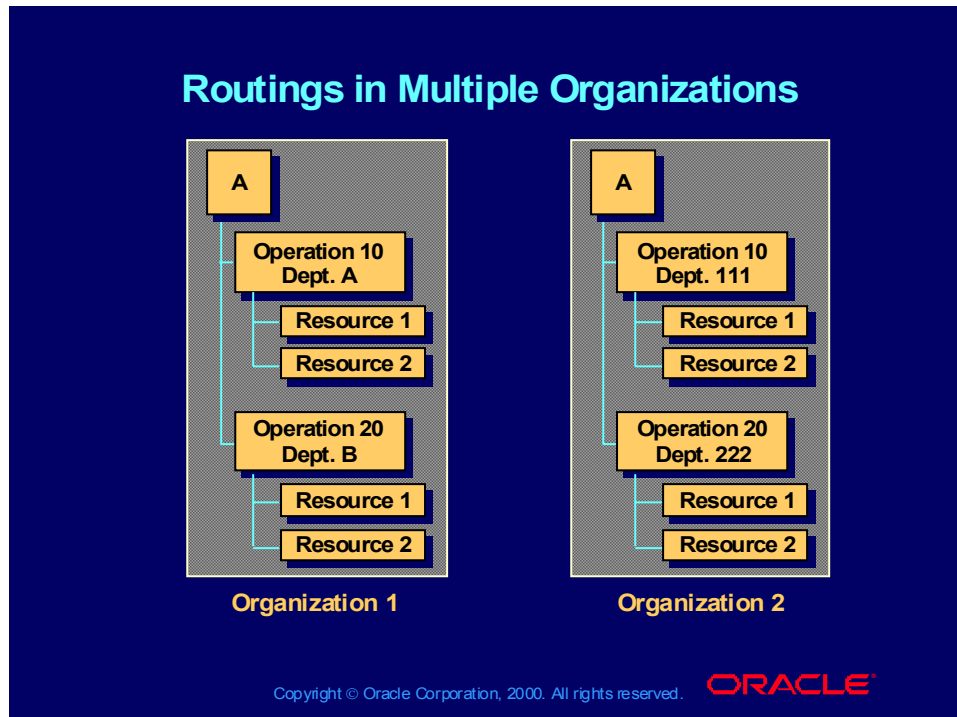


Copy Routings

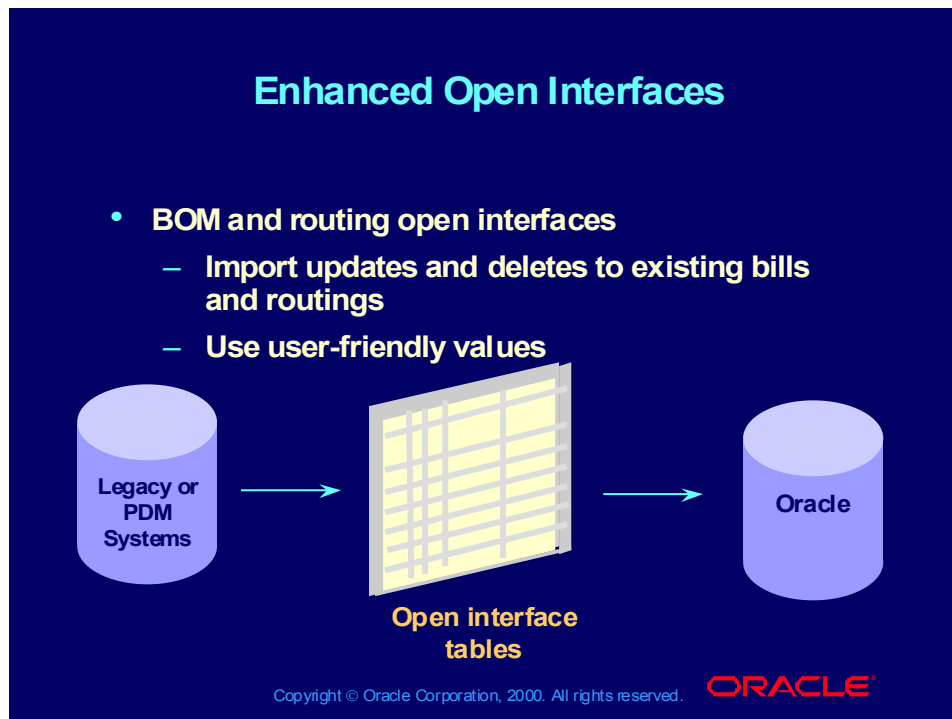


(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings
> Defining a Routing > Copying Bill and Routing Information

Routings in Multiple Organizations



Enhanced Open Interfaces



Enhanced Open Interfaces

- BOM and Routing Open Interfaces were enhanced in R11 to support updates and deletes.
- To identify existing data to update or delete, you can use “user-friendly” values (e.g., use assembly number rather than assembly id).

Calculate Lead Times

Calculate Lead Times

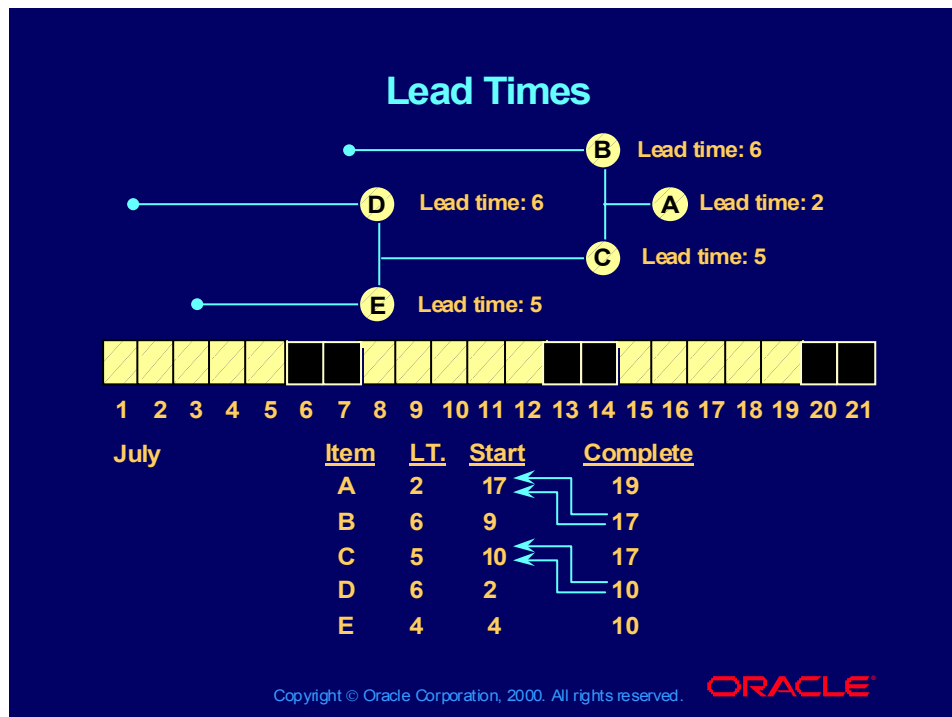
- Plan material and resources quickly and accurately.
- Establish appropriate planning time fences for products.
- Create purchase orders for material, accounting for vendor lead time.
- Schedule material to arrive at an operation where it is consumed.
- Schedule each resource at an operation where it is consumed.
- Promise accurate product shipment dates.

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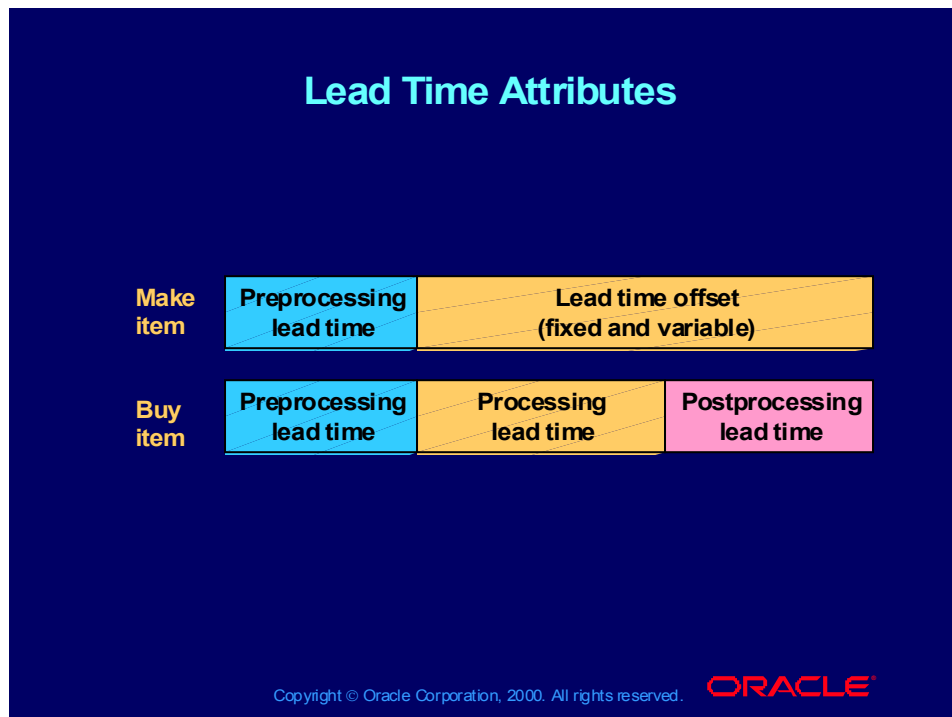
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(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings > Lead Time Management > Overview

Lead Times

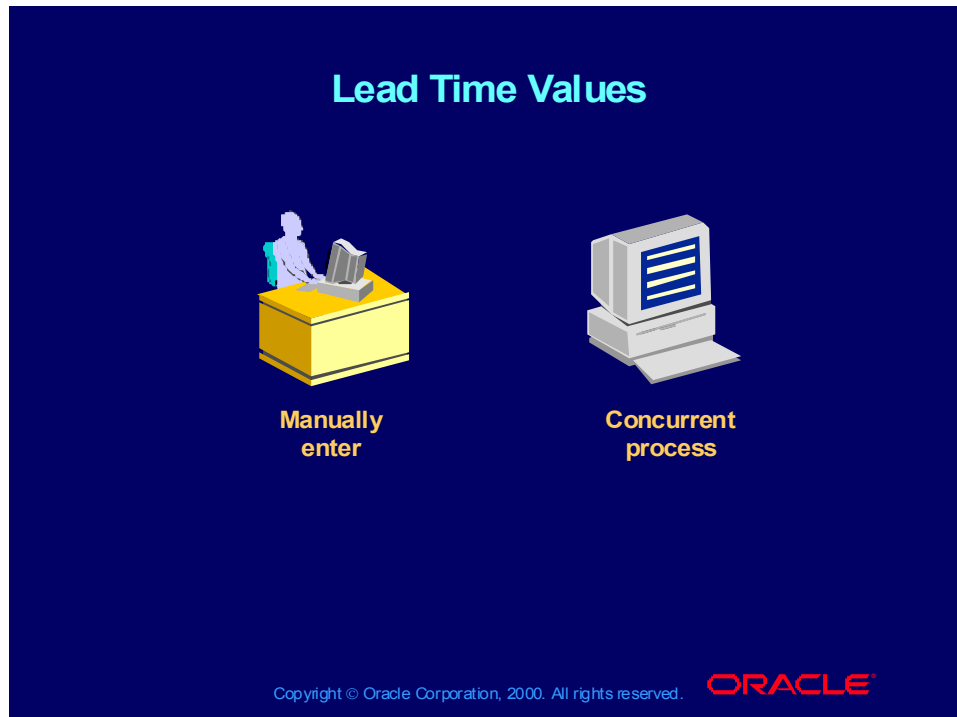


Lead Time Attributes

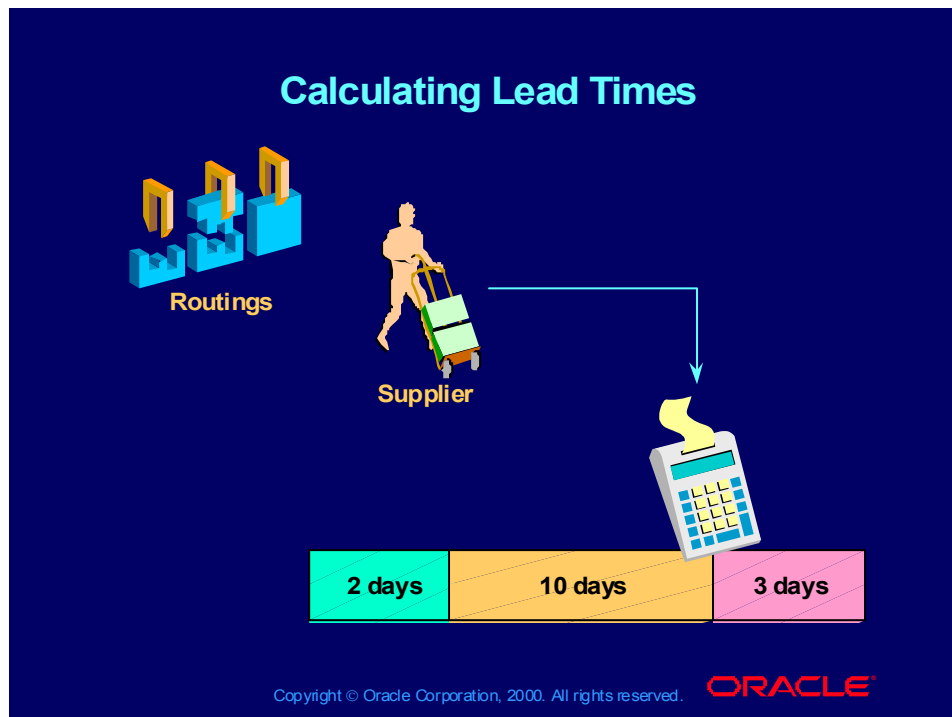


(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings > Lead Time Management > Item Lead Time Attributes

Lead Time Values

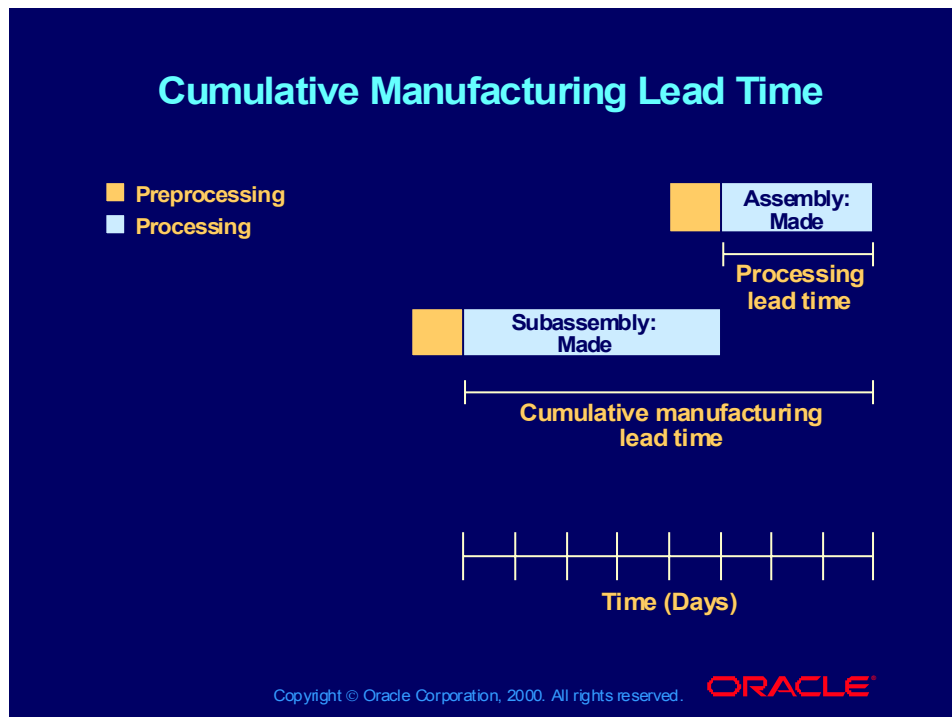


Calculating Lead Times



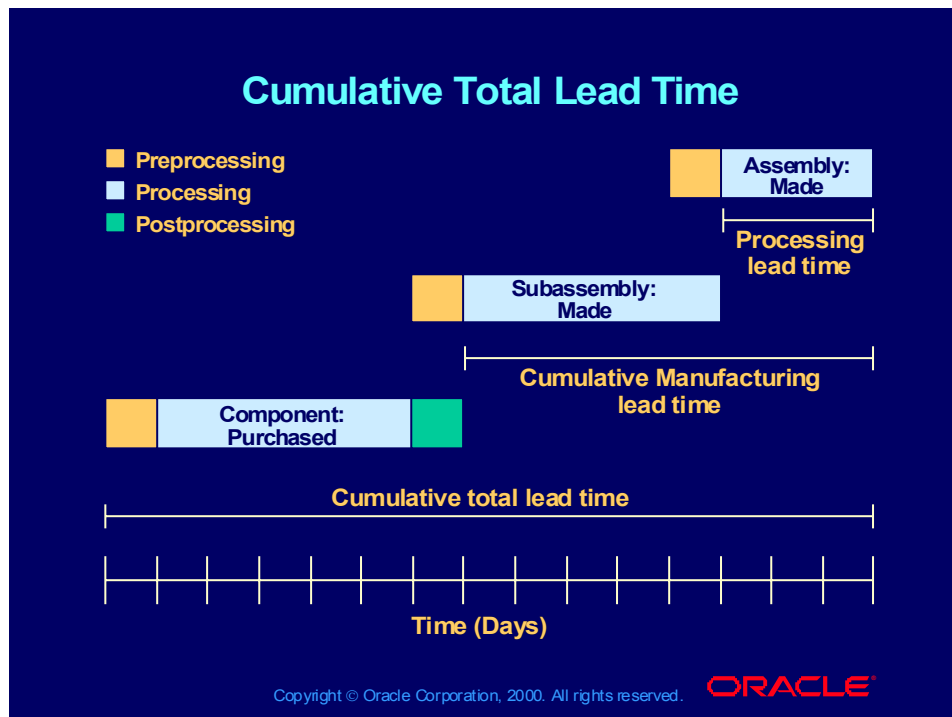
(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings
> Lead Time Management > Calculating Lead Times

Cumulative Manufacturing Lead Time



(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings > Lead Time Management > Manufacturing Lead Time Computations

Cumulative Total Lead Time



(Help) Oracle Manufacturing Applications > Oracle Bills of Material > Routings > Lead Time Management > Cumulative Lead Time Computations

Agenda

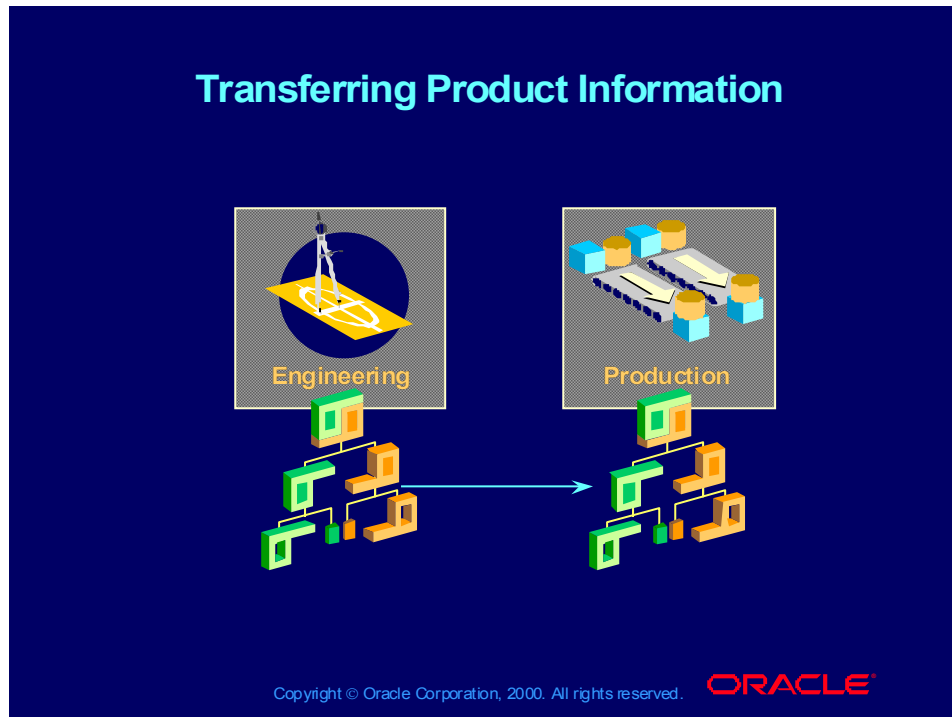
Agenda

- Overview of Oracle engineering products
- Items and Bills of Material
- Routings
- **Product Maintenance**
- Summary

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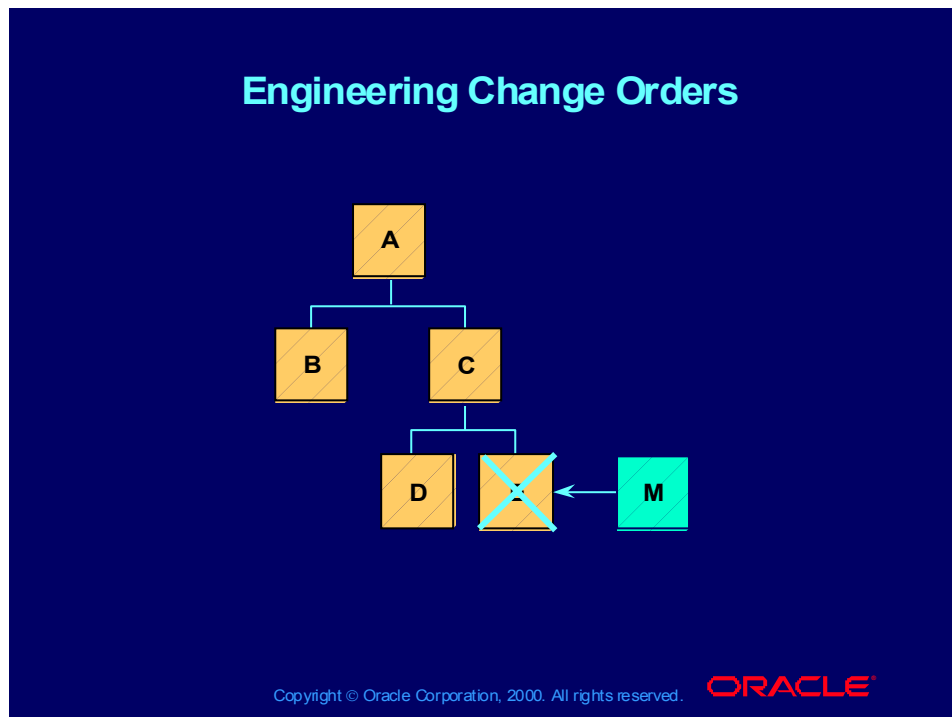
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Transferring Product Information



- When you decide that engineering information is ready for production, you transfer the product information (items, bills of material, and routing) from engineering to manufacturing.
- Transferring removes the information from the engineering side and adds it to the manufacturing side.
- Copying leaves the information in the engineering side and creates a new item, BOM, and routing on the manufacturing side.

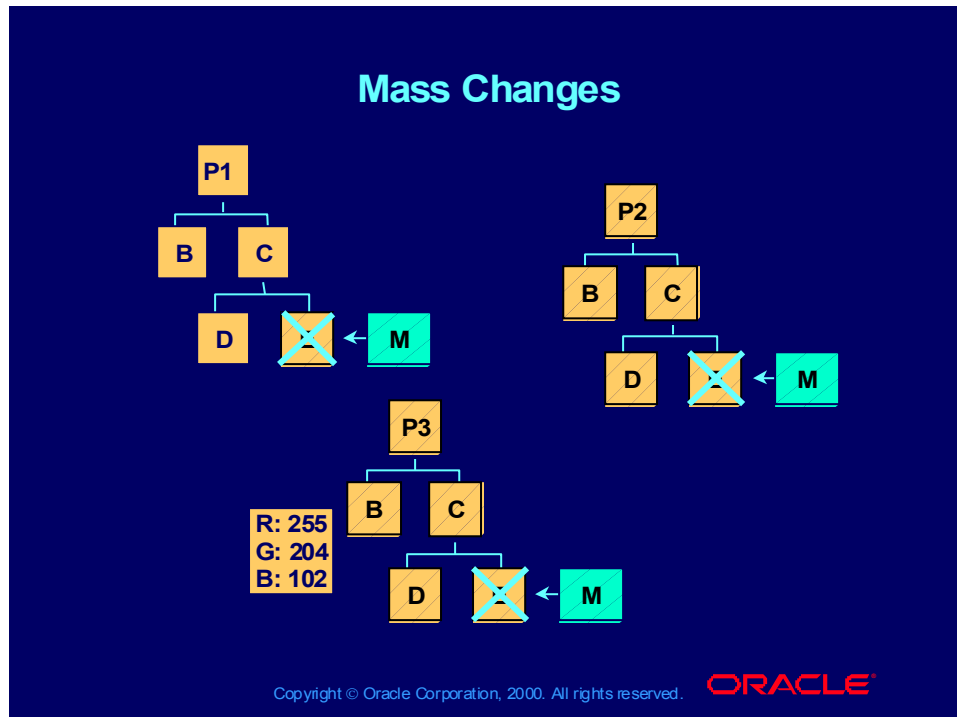
Engineering Change Orders



(Help) Oracle Manufacturing Applications > Oracle Engineering > Engineering Change Orders > Overview

- An engineering change order (ECO) is an order to change bills of material.
- You can control the engineering change order approval process by using Oracle Workflow.
- You can track the components being discontinued, the new components being added, and their effectivity dates.
- You can also enter information on substitution components.

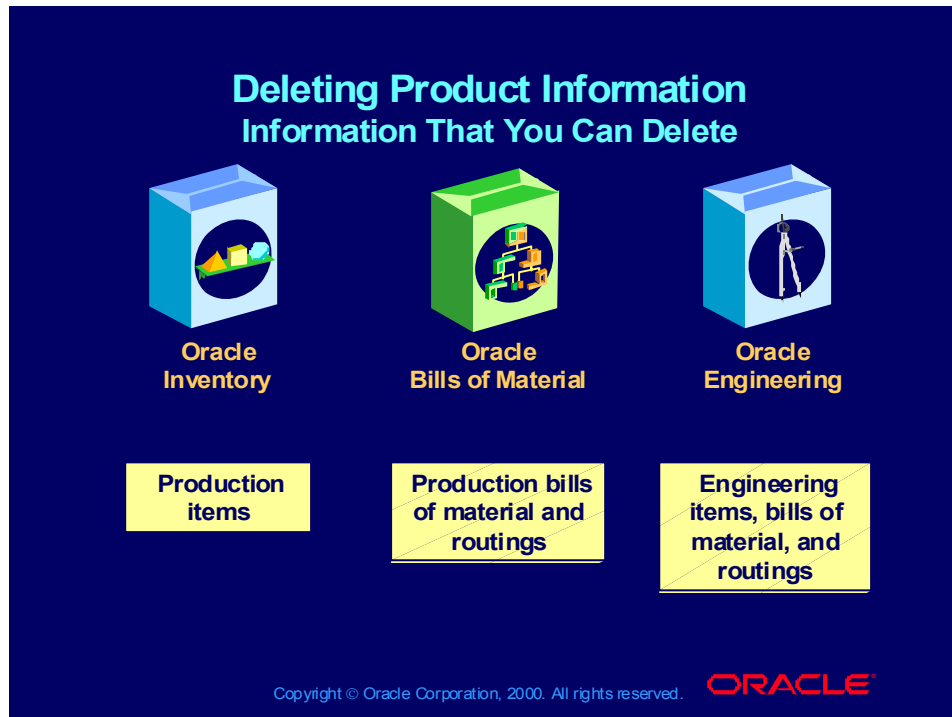
Mass Changes



(Help) Oracle Manufacturing Applications > Oracle Engineering > Engineering Change Orders > Mass Changing ECOs

- Using mass changes, you can perform the same change to multiple bills of material.
- You can search for all BOM that contain specific components that you want to change.
- You can review your entries and changes for accuracy and effectivity.

Deleting Product Information



- When you decide that product information is no longer useful, you can delete and archive it.
- You can delete information that was input incorrectly.
- You can only delete information that will not violate the delete constraints.
- You can use preset constraints and create your own.
- You can check the information you want to delete before you delete it.

Agenda

Agenda

- Overview of Oracle engineering products
- Items and Bills of Material
- Routings
- Product Maintenance
- **Summary**

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Course Summary

- We have discussed the following topics:
 - Viewing product integration
 - Defining engineering items
 - Creating and copying item templates
 - Creating bills of material
 - Copying and changing bills of material
 - Reviewing items and bills of material
 - Creating workday calendars
 - Defining resources and departments

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Course Summary

- **Creating routings**
- **Calculating lead times**
- **Transferring product information**
- **Creating engineering change orders**
- **Conducting mass changes**
- **Deleting product information**

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