

Oracle® Manufacturing Scheduling

User's Guide

Release 11i

May 2000

Part No. A77021-01

Part No. A77021-01

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Oracle Manufacturing Scheduling User's Guide, Release 11i

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

- Did you find any errors?
- Is the information clearly presented?
- Do you need more information? If so, where?
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- What features did you like most about this manual?

If you find any errors or have any other suggestions for improvement, please indicate the chapter, section, and page number (if available). You can send comments to us in the following ways:

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- FAX - (650) 506-7200
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Redwood Shores, CA 94065
Phone: (650) 506-7000

If you would like a reply, please give your name, address, and telephone number below.

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

Preface

Welcome to the *Oracle® Manufacturing Scheduling User's Guide, Release 11i*.

This user's guide includes the information you need to work with Oracle Manufacturing Scheduling effectively. It contains detailed information about the following:

- Overview and reference information
- Specific tasks you can accomplish using Oracle Manufacturing Scheduling
- Oracle Manufacturing Scheduling setup
- Oracle Manufacturing Scheduling functions and features
- Oracle Manufacturing Scheduling windows
- Oracle Manufacturing Scheduling processes
- Implementation Suggestions

This preface explains how this user's guide is organized and introduces other sources of information that can help you.

About This User's Guide

This guide contains overviews as well as task and reference information about Oracle Manufacturing Scheduling. This guide includes the following chapters:

- Chapter 1 describes the constraint-based scheduling engine and the Oracle Manufacturing Scheduling Workbench, which are components of the Oracle Manufacturing Scheduling Application.
- Chapter 2 provides setup procedures for both Oracle Manufacturing Scheduling and Work in Process Applications.

Note: Implementation information and procedures are contained in this chapter.

- Chapter 3 explains how to use the Oracle Manufacturing Scheduling Workbench to manually or automatically reschedule jobs, operations, and resources.
- Chapter 4 explains how to create and schedule a new job—and how Oracle Manufacturing Scheduling accepts all jobs, including Assemble to Order jobs, from Oracle Work in Process.
- Chapter 5 describes how scheduling exception messages are used to manage your shop floor and work in process jobs and resources.
- Chapter 6 explains how Oracle Manufacturing Scheduling lets you reschedule the entire shop floor.
- The Appendix provides you with complete navigation paths to all windows in Oracle Manufacturing Scheduling.

Audience for This Guide

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

- The principles and customary practices of your business area
- Oracle Work in Process

If you have never used Oracle Work in Process, we suggest you attend one or more of the Oracle Manufacturing training classes available through Oracle University.

- The Oracle Applications graphical user interface

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

Do Not Use Database Tools to Modify Oracle Applications Data

We STRONGLY RECOMMEND that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle Applications tables, unless we tell you to do so in our guides.

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

Because Oracle Applications tables are interrelated, any change you make using an Oracle Applications form can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications forms, you might 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 forms to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. But, 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.

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 Manufacturing Scheduling.

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

Online Documentation

All Oracle Applications documentation is available online (HTML and PDF). The technical reference guides are available in paper format only. Note that the HTML documentation is translated into over twenty languages.

The HTML version of this guide is optimized for onscreen reading, and you can use it to follow hypertext links for easy access to other HTML guides in the library. When you have an HTML window open, you can use the features on the left side of the window to navigate freely throughout all Oracle Applications documentation.

- You can use the Search feature to search by words or phrases.
- You can use the expandable menu to search for topics in the menu structure we provide. The Library option on the menu expands to show all Oracle Applications HTML documentation.

You can view HTML help in the following ways:

- From an application window, use the help icon or the help menu to open a new Web browser and display help about that window.
- Use the documentation CD.
- Use a URL provided by your system administrator.

Your HTML help may contain information that was not available when this guide was printed.

Related User's Guides

Oracle Manufacturing Scheduling shares business and setup information with other Oracle Applications products. Therefore, you may want to refer to other user guides when you set up and use Manufacturing Scheduling.

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>.

User Guides Related to All Products

Oracle Applications User Guide

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

You can also access this user guide online by choosing *Getting Started and Using Oracle Applications* from the Oracle Applications help system.

Oracle Alert User Guide

Use this guide to define periodic and event alerts that monitor the status of your Oracle Applications data.

Oracle Applications Implementation Wizard User Guide

If you are implementing more than one Oracle product, you can use the Oracle Applications Implementation Wizard to coordinate your setup activities. This guide describes how to use the wizard.

Oracle Applications Developer's Guide

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

Oracle Applications User Interface Standards

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

Oracle Applications Demonstration User's Guide

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

User Guides Related to This Product

Oracle Bills of Material User's Guide

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

Oracle Business Intelligence System Implementation Guide

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

BIS 11i User Guide Online Help

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

Oracle Capacity User's Guide

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

Oracle General Ledger User's Guide

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

Oracle HRMS Documentation Set

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

Oracle Inventory User's Guide

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

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

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

Oracle Order Management User's Guide

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

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.

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 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.

Installation and System Administration

Oracle Applications Flexfields Guide

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

Oracle Applications Product Update Notes

If you are upgrading your Oracle Applications, refer to the product update notes appropriate to your update and product(s) to see summaries of new features as well as changes to database objects, profile options, and seed data added for each new release.

Oracle Applications Upgrade Preparation Manual

This guide explains how to prepare your Oracle Applications products for an upgrade. It also contains information on completing the upgrade procedure for each product. Refer to this manual and the *Oracle Applications Installation Manual* when you plan to upgrade your products.

Oracle Applications System Administrator's Guide

This manual provides planning and reference information for the Oracle Manufacturing Scheduling System Administrator.

Other Sources

Training

We offer a complete set of formal training courses to help you and your staff master Oracle Manufacturing Scheduling and reach full productivity quickly. We organize these courses 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, or you can arrange for our trainers to teach at your facility. 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 Manufacturing Scheduling 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 Oracle8 server, and your hardware and software environment.

About Oracle

Oracle Corporation develops and markets an integrated line of software products for database management, applications development, decision support and office automation, as well as Oracle Applications. Oracle Applications provides the E-business Suite, a fully integrated suite of more than 70 software modules for financial management, Internet procurement, business intelligence, supply chain management, manufacturing, project systems, human resources and sales and service management.

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

Oracle is the world's leading supplier of software for information management, and the world's second largest software company. Oracle offers its database, tools,

and application products, along with related consulting, education and support services, in over 145 countries around the world.

Thank You

Thank you for using Oracle Manufacturing Scheduling and this user's guide.

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

Oracle Applications Documentation Manager
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Or, send electronic mail to **appsdoc@us.oracle.com**.

Manufacturing Scheduling

This chapter introduces Oracle Manufacturing Scheduling and describes the constraint-based scheduling engine, the Scheduler Workbench, and the menus and toolbar associated with the workbench. The following topics included are:

- [Overview of Manufacturing Scheduling](#) on page 1-2
- [Constraint-Based Scheduling](#) on page 1-3
- [Manufacturing Scheduler Workbench Navigation](#) on page 1-4
- [Workbench Menus and Toolbar](#) on page 1-9

Overview of Manufacturing Scheduling

The Oracle Manufacturing Scheduling application is a Work in Process web-based shop floor scheduling solution. Oracle Manufacturing Scheduling consists of two major components:

- Constraint-based scheduling engine
- Scheduler Workbench

The constraint-based scheduling engine schedules jobs and operations based on user-predefined priorities, resources, and material constraints. You can reschedule single jobs and operations or the entire shop floor.

The Scheduler Workbench lets you graphically view and reschedule single jobs and operations based on constraints, such as resource or material shortages. It provides you with a visual display (Gantt chart) of jobs on the shop floor. You can interactively reschedule jobs, operations, and resources. You can manually control the rescheduling or let the system automatically optimize the schedule based on resource and material constraints. The Scheduler Workbench interfaces directly with Oracle Work in Process. See: [Manufacturing Scheduler Workbench](#) on page 1-4.

Features

The Manufacturing Scheduling product provides the following features:

- Graphically view shop floor jobs, operations, and resources
- User friendly drag and drop mechanism to reschedule jobs, operations, and resources
- Fully integrated with Oracle Work in Process
- Ability to schedule jobs based on available resources and material
- Ability to reschedule jobs due to resource and material shortages (machine breakdown, employee sickness, material availability)
- Ability to maintain schedules
- Adjustable bucket sizing that affects the Gantt chart and associated resource load versus capacity view
- All rescheduling is what if analysis until the rescheduling is saved
- Ability to undo all changes prior to saving

Constraint-Based Scheduling

The constraint-based scheduling engine factors resource and material availability when scheduling and rescheduling jobs and operations.

The constraint-based scheduling engine lets you:

- Schedule single discrete jobs and operations
- Reschedule all jobs or pending scheduling jobs on the entire shop floor

Scheduling Single Discrete Jobs

When each discrete job is created and saved, you receive a request ID. When the request has completed, you can view the updated start and completion dates of your job and operations.

If you enter a start date, the system calculates a completion date when the constraint-based scheduling engine runs. If you want a different completion date than the calculated completion date to drive the scheduling of your job, specify that date in the Requested Due Date field on the Scheduling tab of the Discrete Jobs window.

If the constraint-based scheduling engine cannot meet your requested start date or calculated start date (if you specify a completion date the system calculates the start date) due to resource and/or material availability, it schedules the job in the first available time slot where resource and/or material are available. Planned material receipts are calculated.

If resources and material are not available within the current scheduling horizon, your job will be scheduled at the end of the scheduling horizon and you might receive an exception message in the Oracle Application request log.

For detailed information, see: [Creating and Scheduling a New Job](#) on page 4-1.

Rescheduling All Jobs or Pending Scheduling Jobs

When you reschedule all jobs or pending scheduling jobs from the Schedule Discrete Jobs window, the constraint-based scheduling engine uses the requested due date and scheduling priority. The highest priority jobs are scheduled first. Jobs with the same priority are scheduled based on the earliest requested due date. Firm jobs and any associated operations are not rescheduled.

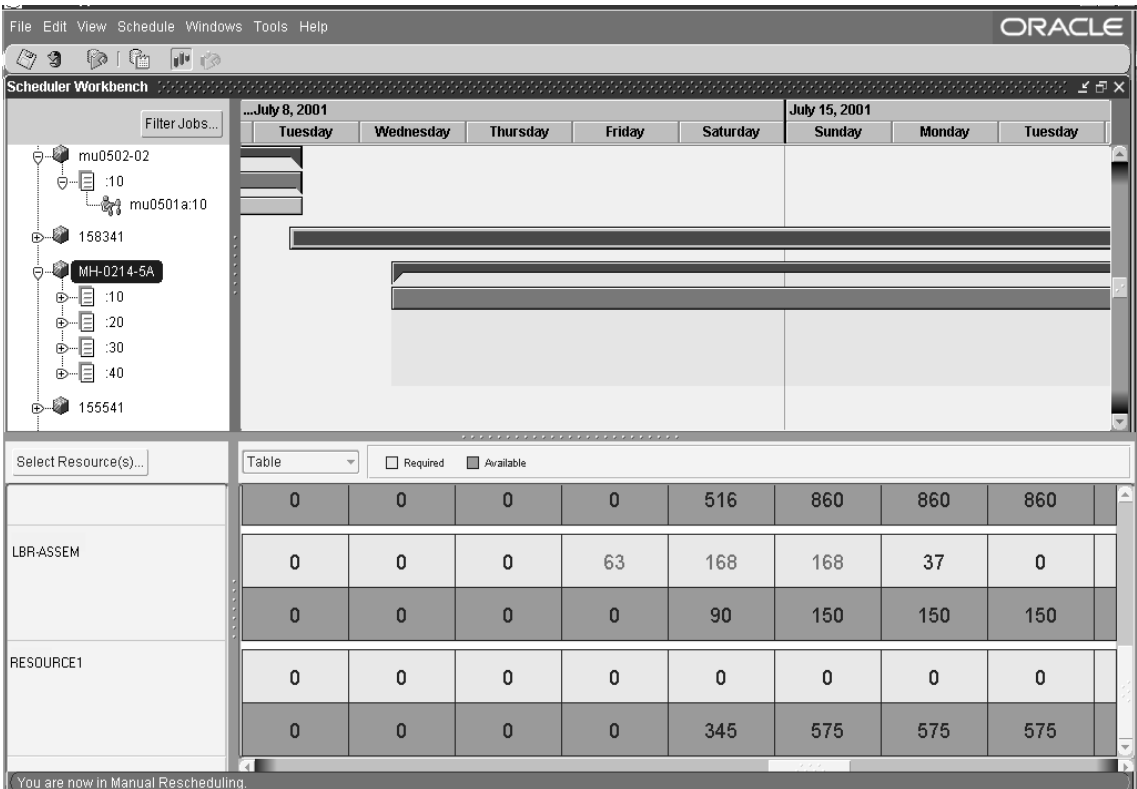
For detailed information, see: [Rescheduling All Jobs or Pending Scheduling Jobs](#) on page 6-2.

Manufacturing Scheduler Workbench Navigation

The Scheduler Workbench enables you view all jobs on the shop floor. You can interactively reschedule jobs, operations, and resources. The workbench comprises four panes:

- Top left pane: Tree Hierarchy (default)
- Top right pane: Gantt Chart (default)
- Bottom left pane: Select Resource(s)
- Bottom right pane: Resource Load Versus Capacity

The Scheduler Workbench defaults to the Tree Hierarchy and Gantt Chart panes. The Select Resource(s) and Resource Load Versus Capacity panes appear when you choose Show/Hide Resource Load on the toolbar. A Status bar, that appears at the bottom of the window, indicates the current scheduling mode of operation and also displays messages.



Tree Hierarchy Pane

This pane displays the contents of the workbench. There are three levels of information or branches in the hierarchy of the tree: job, operation, and resource. The Tree Hierarchy is dynamically created when you launch the workbench, which defaults to show only unreleased, released, and on hold jobs. You can update the display at any time by choosing Update Shop Floor Snapshot on the toolbar. You can also choose the Filter Jobs button to display specific jobs in the Tree Hierarchy pane and corresponding Gantt Chart pane—used when issues such as machine breakdown, component shortage, or absent employees impact the schedule. See: [Filtering Jobs](#) on page 3-3.

Expanding and Collapsing Jobs or Operations

You can expand a job and its operation(s) in the Tree Hierarchy pane to view the associated resources. Likewise, you can collapse an operation or job in the Tree Hierarchy.

- ❑ To expand a job:

Point and click on the (+) symbol next to a job.

The job expands showing the respective operation(s). The symbol next to the selected job changes to (-); the symbol next to the operation is (+).

- ❑ To expand an operation:

Point and click on the (+) symbol next to an operation.

The operation expands showing its associated resources(s). The symbol next to the selected operation changes to (-).

- ❑ To collapse an operation:

Point and click on the (-) symbol next to an operation.

The operation collapses. The symbol next to the selected operation changes to (+).

- ❑ To collapse a job:

Point and click on the (-) symbol next to a job.

The job collapses. The symbol next to the selected job changes to (+).

Gantt Chart Pane

This pane consists of a timeline, that appears at the top, and a horizontal bar chart. The timeline represents a time axis (bucket) for the horizontal bar chart. The Gantt chart directly reflects the tree hierarchy. The left side of a horizontal bar represents the start date; the right side of a horizontal bar represents the end date. The magenta vertical line represents today's date, which is located at the left edge of the Gantt Chart pane by default.

This pane lets you:

- Manually reschedule jobs, operations, and resources, see: [Manually Rescheduling Start and End Dates](#) on page 3-11
- Automatically reschedule jobs and operations—resources are adjusted according to the newly realized requirements, see: [Automatically Rescheduling Jobs and Operations](#) on page 3-12
- View rescheduling activities in the Resource Load Versus Capacity pane by appropriately choosing Refresh Resource Load on the toolbar as follows:
 - In manual mode—after saving changes
 - In automatic mode—prior to saving changes
- View property windows for jobs, operations or resources are available in the Gantt Chart pane. These windows contain information about dates, quantities, and descriptions of the scheduling data. See: [Job Properties Window](#) on page 3-5, [Operation Properties Window](#), on page 3-6 and [Resource Properties Window](#) on page 3-8.
- View exception messages related to jobs and resources requiring attention. see: [View All Exceptions Window](#) on page 5-5.

Changing the Timeline

You should change the timeline in the Gantt Chart pane to view at least one complete operation.

■ To change the timeline

1. Right click on the timeline.

A drop-down menu appears which lets you increment the timeline in:

- Months
- Weeks
- Days
- Hours
- 30 Minutes
- 15 Minutes
- Horizontal Sliding Bar - Lets you fine tune the bucket width.
 - * The left-most position shows the minimum bucket width
 - * The right-most position shows the maximum bucket width

2. Choose the appropriate increment to resize the buckets so that at least one complete operation is viewable.

Select Resource(s) Pane

This pane consists of resources selected through the Select Resource(s) window. When you choose the Select Resource(s) button, the Select Resource(s) window appears. This window lets you select the available resources to display in the Resource Load Versus Capacity pane.

Resource Load Versus Capacity Pane

This pane shows the Required resource load versus the Available resource capacity for the selected resource(s) that appear in the Select Resource(s) pane. This pane shares the same timeline as the Gantt Chart pane and reflects the rescheduling activity in the Gantt Chart pane after the changes are saved.

Note: The rescheduling changes can be displayed in automatic mode prior to saving, and in manual mode after saving.

The Required resource load, Available resource capacity, and Overload resource capacity key indicators appear to the right of the graphic drop-down menu. The key indicators are:

Required: Number of units required by the resource for all jobs in that time bucket.

Available: The number of resource capacity units in that time bucket (all of which could already be assigned).

Overload: Number of resource units that are required but already committed.

The graphic drop-down menu provides the following choices:

Table: Shows in tabular form. The top number represents the Required resource load; the bottom number represents the Available resource capacity.

Continuous: Shows a continuous graph. Non-bucketed lines representing Required, Available, and Overload resources accurate to the minute.

Bar: Shows a bar graph. The number on the left represents the Required resource load; the number on the right represents the Available resource capacity.

When you select:

- Table or Bar—the Required and Available key indicators appear
- Continuous—the Required, Available, and Overload key indicators appear

When the Required resource load is greater than the resource capacity, the Required resource load number appears red.

Note: Resource load includes all shop floor demand, not just demand displayed on the workbench.

Scrolling and Resizing the Panes

The vertical and horizontal scroll bars let you display all the contents of a pane. You can resize a pane by dragging the vertical or horizontal border line to the desired position.

When scrolling in the automatic mode, first start dragging the job or operation, then use the lower horizontal scroll bar to scroll the screen to the left or right. The job or operation will remain fixed on the Gantt Chart pane while the background time period scrolls left or right, respectively.

Workbench Menus and Toolbar

The menus provide you with these choices:

Menu	Menu Item	Description
File	Revert and Refresh	Restores latest database view.
	Save and Refresh	Saves latest changes to database.
	Close	Closes Scheduler Workbench.
Edit	Cut	Removes selection and stores it in clipboard.
	Copy	Copies selection and stores it in clipboard.
	Paste	Copies selection from clipboard to selected location.
	Clear Selected	Clears selection without storing it in clipboard.
	Select All	Highlights all the information.
View	Bar Inspector	Displays Bar Inspector window that shows start and end dates of selected job, operation, or resource.
	Resource Load	Shows or hides Select Resource(s) and Resource Load Versus Capacity panes.
	Refresh Resource Load	Refreshes Resource Load Versus Capacity pane with latest changes.
	Filter Jobs	Displays Filter Jobs window that lets you display specific jobs in the Tree Hierarchy pane and corresponding Gantt Chart pane by entering data in the respective fields and/or checking the respective check boxes.
Schedule	Manual/ Automatic Scheduling	Displays dialog box to flag Manual or Automatic job scheduling.
	Take Shop Floor Snapshot	Takes snapshot of system information on the shop floor.
	Adjust Resource Capacity	Accesses the Departments window from Oracle Bills of Materials so you can adjust resources at your operations

Menu	Menu Item	Description
	Schedule Multiple Discrete Jobs	Access the Schedule Discrete Jobs request window.
	View all Exceptions	Displays the View All Exceptions inquiry window.
Tools	WIP Parameters	Accesses the Work in Process Parameters window from Oracle Work in Process
	Create/Modify Discrete Jobs	Accesses Discrete Jobs window from Work in Process so you can create or modify jobs.
	View Item Supply/Demand	Accesses the Supply/Demand Detail window from Oracle Inventory.
	Show Discrete Workstation	Access the Work in Process Discrete Workstation
Help		Displays Manufacturing Scheduling window information and Oracle Applications Library.

Workbench Toolbar

The following icons on the toolbar reference the menu items of the same name:

- Save and Refresh.
- Revert and Refresh
- Take Shop Floor Snapshot.
- Automatic/Manual Scheduling
- Show/Hide Resource Load
- Refresh Resource Load

See Also

[Defining a Department](#), *Oracle Bills of Material User's Guide*

[Defining WIP Parameters](#), *Oracle Work in Process User's Guide*

[Reviewing Exception Messages](#) on page 5-2

[Defining Discrete Jobs Manually](#), *Oracle Work in Process User's Guide*

[Viewing item Supply/Demand Information](#), *Oracle Inventory User's Guide*

Setting Up

This chapter provides information about setting up Oracle Manufacturing Scheduling as well as the necessary Oracle Work in Process application functionality. The following topics included are:

- [Overview of Setting Up](#) on page 2-2
- [Setup Flowchart](#) on page 2-2
- [Setup Checklist](#) on page 2-3
- [Setup Steps](#) on page 2-4
- [Defining WIP Parameters](#) on page 2-5
- [Profile Options](#) on page 2-7
- [Defining WIP Resource Definition](#) on page 2-8
- [Defining WIP Scheduling Priority](#) on page 2-10

Overview of Setting Up

This section contains an overview of each step you need to complete to set up Oracle Manufacturing Scheduling. For instructions on how to complete each task, see the setup sections indicated in each step below.

You may not need to perform some of the steps below if you've already performed a common-application setup (setting up multiple Oracle Applications products).

Related Product Setup Steps

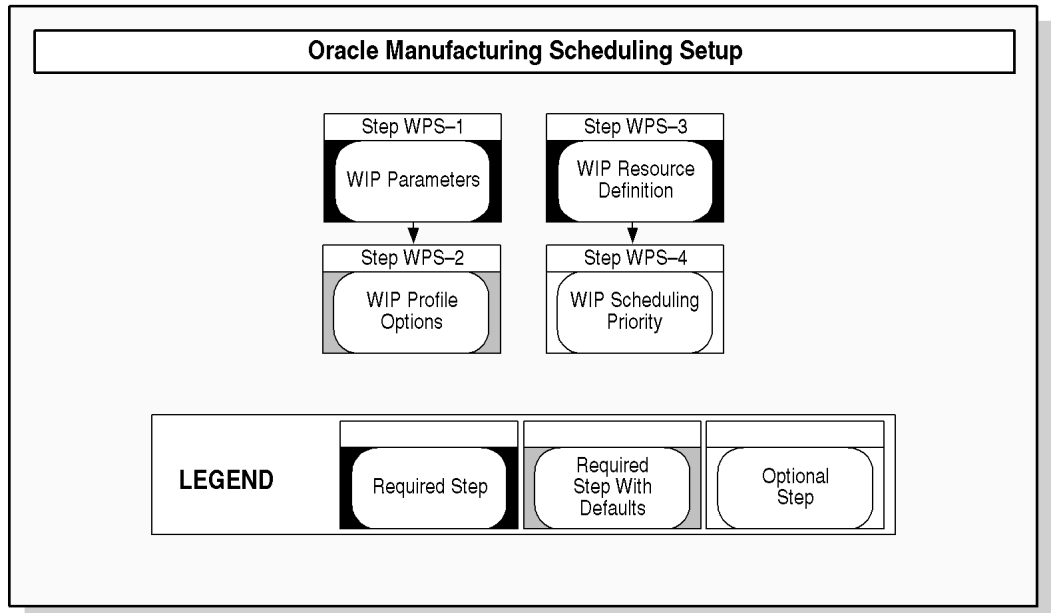
Oracle Manufacturing Scheduling requires that Oracle Work in Process Release 11i be set up for discrete jobs. See: [Overview of Setting Up](#), *Oracle Work in Process User's Guide*.

Setup Flowchart

Some of the steps outlined in this flowchart and setup checklist are:

- Required
- Required Step With Defaults
- Optional

Required Step With Defaults refers to setup functionality that comes with pre-seeded, default values in the database; however, you should review those defaults and decide whether to change them to suit your business needs. If you need to change them, you should perform that setup step. You need to perform Optional steps only if you plan to use the related feature or complete certain business functions.



Setup Checklist

The following table lists setup steps. After you log on to Oracle Applications, complete these steps to implement Oracle Manufacturing Scheduling.

Step No.	Required	Step
Step 1	Required	Defining WIP Parameters
Step 2	Required	Defining WIP Profile Option
Step 3	Required	Defining WIP Resource Definition
Step 4	Optional	Defining WIP Scheduling Priority

Setup Steps

For each step, a Context section indicates whether you need to repeat the step.

Step 1 Defining WIP Parameters

WIP parameters define modes of operation and default values that affect Work in Process.

Default: Defaults to unchecked *Use Constraint Based Scheduler* check box.

Default: Defaults to *Resource Only* in the Constraints drop-down menu.

Default: There is no default for the Horizon (days) field. You need to enter a value.

Context: You need to perform this step initially and as needed.

See: [Defining WIP Parameters](#) on page 2-5.

Step 2 Defining WIP Profile Option

You can select either concurrent or interactive processing while defining jobs.

Default: If you skip this step, defaults to *Interactive definition* in User Value drop-down menu.

Context: You need to perform this step whenever you want to change the discrete job creation definition.

See: [Profile Options](#) on page 2-7.

Step 3 Defining WIP Resource Definition

You must schedule a resource as Yes, Prior, or Next to enable the constraint-based scheduling engine to properly calculate the capacity for the resource.

Default: If you skip this step, defaults to *No* in the Scheduled drop-down menu.

Context: You need to perform this step initially for each resource assigned to an operation sequence in a routing.

See: [Defining WIP Resource Definition](#) on page 2-8.

Step 4 Defining WIP Scheduling Priority

You can select any priority number from 1 to 9999.

Default: If you skip this step, defaults to *10* in the Scheduling Priority field.

Context: If certain jobs have a higher priority, you need to perform this step every time a job is created from the Discrete Jobs window or prior to mass rescheduling of the shop floor.

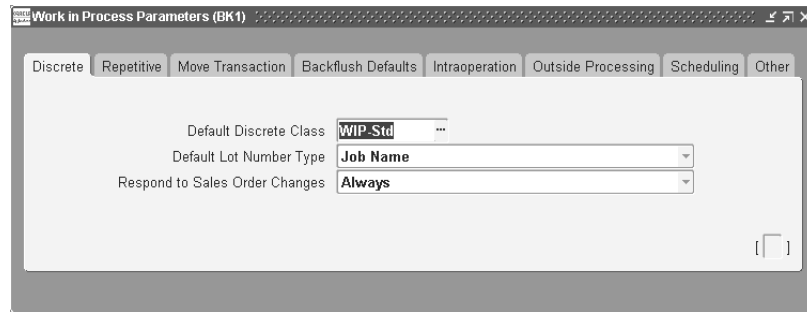
See: [Defining WIP Scheduling Priority](#) on page 2-10.

Defining WIP Parameters

WIP parameters define modes of operation and default values that affect Work in Process.

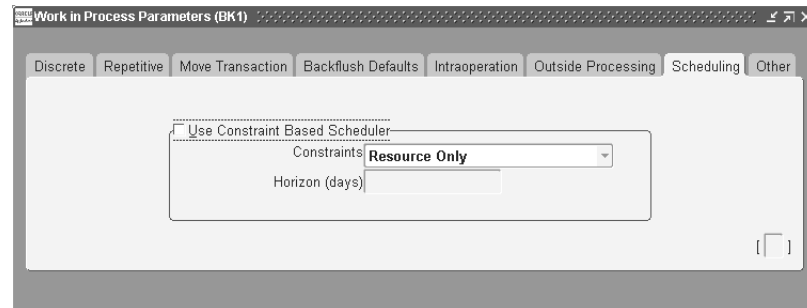
■ To define work in process parameters

1. Navigate to the [Work in Process Parameters](#) window.



The Work in Process Parameters window appears.

2. Select the Scheduling tab.



3. Check the Use Constraint Based Scheduler check box.

4. From the Constraints drop-down menu select Resource Only or Resource and Material.
5. In the Horizon (days) field, enter a scheduling horizon adequate to calculate your resources and material.

Note: The scheduling horizon should be at least as long as your longest job. You should add additional time to take into consideration future material receipts.

Note: When using this application with an advanced planning product, you can select a shorter scheduling horizon (as short as one day is allowed) so as to not override all your planning.

6. Save your work.

See Also

[WIP Parameters](#), *Oracle Work in Process User's Guide*

[Defining WIP Parameters](#), *Oracle Work in Process User's Guide*

Profile Options

During your implementation, you set a value for each Oracle Work in Process profile option used in Oracle Manufacturing Scheduling to specify how the application controls access and processes data.

Generally, your system administrator sets up and updates profile option values. The *Oracle Applications System Administration User's Guide* contains more information on profile options.

Profile Option Settings

Only one profile option needs to be set for oracle Manufacturing Scheduling, WIP:Define Discrete Jobs Form. This specifies the scheduling processing used when new jobs are created from the Discrete Jobs window.

Profile Option	User	System Administrator				Requirements	
	User	User	Resp	App	Site	Required?	Default Value
WIP: Define Discrete Jobs Form	,	,	,	,	,	Required	Interactive Definition
Key	, - 0	You can update the profile option. You can view the profile option value but you cannot change it. You cannot view or change the profile option value.					

You can select either concurrent or interactive processing while scheduling jobs.

- *Concurrent definition:* Best for scheduling multiple jobs. The system does not freeze while waiting for the execution of a transaction to complete. If you selected *Concurrent definition*, the following sequence occurs:
 - Bill of Material loads.
 - Routing loads.
 - Scheduling engine runs in the background. Status is Pending Bill Load unless an exception is realized.
 - If the scheduling engine can schedule the job without any exceptions, the job will be scheduled. The status may change to Pending Scheduling if an

exception occurs during the scheduling process. You can read any exception messages in the request log file.

- *Interactive definition*: Best for scheduling only a few jobs. The system freezes while the transaction is executing. You can not open any other application. When the job is scheduled, control returns to you. If you selected *Interactive definition*, the following sequence occurs:
 - Application momentarily locks you out.
 - Bill of Material loads.
 - Routing loads.
 - Control returns to you while the scheduling engine is running in the background. The status is Pending Scheduling during this time.
 - If the scheduling engine can schedule the job without exceptions, the job will be scheduled. Otherwise, the status remains at Pending Scheduling and you must read the exception messages in the request log file.

See Also

[Overview of User Profiles](#), *Oracle Applications User's Guide*

[Setting Up Your Personal Profile](#), *Oracle Applications User's Guide*

Defining WIP Resource Definition

You must schedule a resource as Yes, Prior, or Next to enable the constraint-based scheduling engine to consider the capacity for the resource.

■ To schedule a work in process resource

1. Navigate to the Resources window in Oracle Bills of Material.

The Resources window appears.

2. Select the Scheduling tab.

Seq	Resource	Available 24 Hours	Assigned Units	Schedule
10	BK_Asm-2	<input type="checkbox"/>	1	Yes
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		

3. In the Schedule field select a value for this resource:

Yes: Include this resources when scheduling an operation from a job and calculating manufacturing lead time for the assembly.

No: Do not include scheduling the operation or calculating the lead time.

Prior: Include this resource when scheduling a job or schedule by backward scheduling the previous operation from the end of this resource. Use this option when setup resources can work in parallel with previous operations.

Next: Include this resource when scheduling a job or schedule by forward scheduling the next operation from the start of this resource. Use this option when the teardown of the current operation can overlap with the execution of the next operation.

Note: If you do not select Yes, Prior, or Next, the constraint-based scheduling engine will not consider the capacity for the resource.

Note: If you have a change in available resources, you can edit the Assigned Units field.

4. Save your work.

See Also

[Assigning Operation Resources](#), *Oracle Bills of Material User's Guide*

[Resource Usage](#), *Oracle Bills of Material User's Guide*

[schedule Field](#), *Oracle Bills of Material User's Guide*

Defining WIP Scheduling Priority

When scheduling multiple jobs, you can select a specific job and enter a requested due date that is different than the completion date. The system may recalculate the completion date. The requested due date is user-defined and will never be recalculated by the system. You can also assign a scheduling priority number for this job. The prerequisite for this functionality is that the Use Constraint Based Scheduler check box is checked (see: [Defining WIP Parameters](#) on page 2-5). When scheduling multiple jobs the following criteria is used:

- Schedules the highest priority job first—regardless of the date of the Requested Due Date field. Insures that resources and material are allocated to the highest priority jobs.
- Prioritizes jobs with the same user-defined priority based on the earliest date of the Requested Due Date field or Job Completion Date field of each job if the requested due date is not provided

■ **To select the scheduling priority**

1. Navigate to the [Discrete Jobs](#) window.

2. Select the Scheduling tab.

The screenshot shows the 'Discrete Jobs (WPS)' window with the 'Scheduling' tab selected. The window contains several input fields and tabs. The 'Job' field is set to '115697' and the 'Type' is 'Standard'. The 'Status' is 'Pending Scheduling'. The 'Quantities' section has 'Start' and 'MRP Net' fields. The 'Dates' section has 'Start' and 'Completion' fields. The 'Requested Due Date' field is empty, and the 'Scheduling Priority' field is set to '10'. The 'Sales Orders', 'Operations', and 'Components' buttons are at the bottom.

Field	Value
Job	115697
Assembly	
Class	
Status	Pending Scheduling
Type	Standard
UOM	
Firm	<input type="checkbox"/>
Start (Quantities)	
MRP Net (Quantities)	
Start (Dates)	
Completion (Dates)	
Requested Due Date	
Scheduling Priority	10

3. In the Requested Due Date field enter a date (optional).
4. In the Scheduling Priority field, enter a number ranging from 1 to 9999, with 1 being the highest priority.

The default priority is 10.

5. Save your work.

Using the Scheduler Workbench

This chapter explains how to launch the Manufacturing Scheduler Workbench, filter jobs, change the timeline, and select resources. It also explains how to manually or automatically reschedule jobs, operations, and resources. The following topics included are:

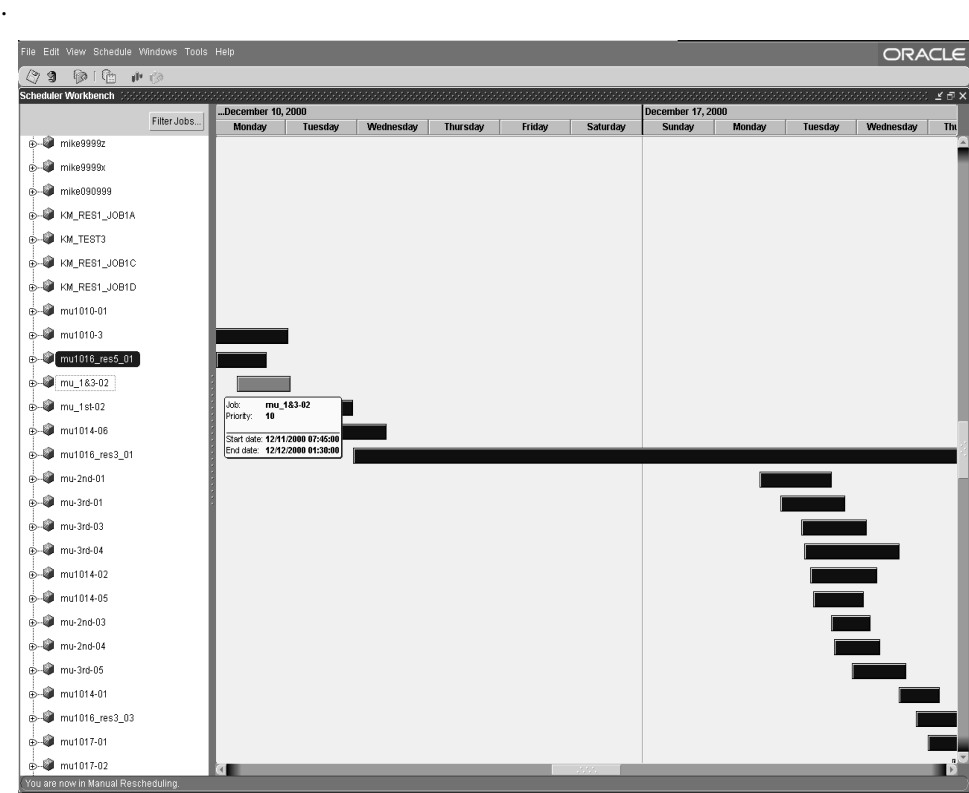
- [Overview of Workbench](#) on page 3-2
- [Launching the Workbench](#) on page 3-2
- [Filtering Jobs](#) on page 3-3
- [Viewing a Property Window](#) on page 3-4
- [Showing Select Resources and Resource Load Versus Capacity Panes](#) on page 3-9
- [Rescheduling Jobs, Operations, and Resources in the Gantt Chart](#) on page 3-11

Overview of Workbench

The Manufacturing Scheduling Workbench enables you to select specific jobs, expand and collapse jobs and operations in the Tree Hierarchy. You can display resources in the Select Resources pane, and view its capacity and load in the Resource Load Versus Capacity pane. You can also select a job in the Gantt Chart pane and manually or automatically reschedule the job and its associated operations or resources.

Launching the Workbench

You launch the workbench by navigating to the Scheduler Workbench window from the Scheduling Workbench menu item in Oracle Manufacturing Scheduling. The workbench appears and shows all the jobs in the Tree Hierarchy and Gantt Chart panes.



Filtering Jobs

You can filter jobs when issues such as machine breakdown, component shortage, or absent employees impact the schedule. You can view a graph or table representing resource load versus capacity in both bucketed and continuous form. Filter criteria (resource, department, component item) are used to find jobs that are affected. You can filter out the jobs on the trees than do not meet the criteria, or highlight the job operations that do.

■ To filter jobs

1. Choose Filter Jobs from the tree pane, or the View menu.

The screenshot shows the 'Filter Jobs' dialog box. It has a title bar with the text 'Filter Jobs' and a close button (X). The dialog is divided into several sections. The top section contains two dropdown menus: 'Department' and 'Resource'. To the right of these are two checkboxes: 'Immediate Dispatch' and 'Upstream Dispatch'. Below these are three text input fields: 'Job', 'Assembly', and 'Component Used', each followed by an ellipsis button (...). To the right of these input fields is a 'Job Status' section containing five checkboxes: 'Released' (checked), 'Unreleased' (checked), 'On Hold' (checked), 'Complete Charges' (unchecked), and 'Complete No Charges' (unchecked). At the bottom of the dialog are three buttons: 'Apply', 'OK', and 'Cancel'.

2. Enter Department, Resource, Job, Assembly, and Component information.
3. Choose the dispatch information you want to use for filtering, the values are:
Immediate Dispatch: Used in conjunction with department or resource job filter criteria. Includes jobs where there is quantity in an operation assigned to the selected department or resource.
Upstream Dispatch: Used in conjunction with department or resource job filter criteria. Includes upstream jobs where there is quantity in an operation assigned to the selected department or resource.

4. In the Job Status area, check the criteria you want to use for filtering, the values are:

Released: The work has begun and the discrete job is transactable.

Unreleased: The job is planned but not released for work to begin and not yet transactable.

On Hold: The job is prevented from progressing through the order cycle.

Complete Charges: The job is complete and charges are allowed.

Complete No Charges: The job is complete but charges are not allowed.

5. Choose Apply.

The Scheduler Workbench refreshes and shows the selected job(s) associated with the information you entered.

Viewing a Property Window

Property windows for jobs, operations or resources are available in the Gantt Chart pane. These windows contain information about dates, quantities, and descriptions of the scheduling data. See: [Job Properties Window](#), [Operation Properties Window](#), and [Resource Properties Window](#).

■ To view a property window

- ☐ Left double-click on a job, operation, or resource in the Tree Hierarchy or Gantt Chart pane
- ☐ Right click on a job, operation, or resource.

A drop-down menu appears.

Choose Properties. The property window for the respective job, operation, or resource appears.

Job Properties Window

Job Properties:129245

Job Properties

Job: 129245

Assembly: ABC_Rotor
ABC Rotor

Start Date: 06/05/2001 11:00:00
End Date: 06/15/2001 12:00:00
Priority: 10
Status: Released
Firm: No
Schedule Group:

Quantity: 10
Progress: 41%

BOM Revision: A
Routing Revision: A
Demand Class:
Kanban:
Line:
Task:

OK

A description of some of the fields in the Job Properties window follows:

Start Date: The specified or calculated date the job will start.

End Date: The specified or calculated date the job will end.

Priority: Identifies which item/activity to begin first, second, and so forth.

Status: The stage in the life cycle of a job (Released, Unreleased, Complete, Complete-No Charges, On Hold, Canceled, Closed). See: [Discrete Job Statuses](#), *Oracle Work in Process User's Guide*.

Firm Flag: Denotes a job that cannot be modified by the planning or rescheduling process.

SchedulingGroup: A collection of jobs defined by the scheduler or planner.

Progress: This value is calculated by the percent completed of all operations based on the time of each operation.

BOM Revision: The bill revision specified for the job.

Routing Revision: The routing revision specified for the job.

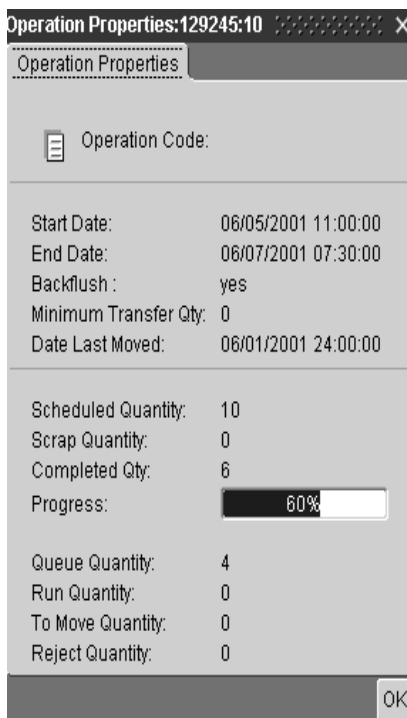
Demand Class: An optional grouping of similar customers or sales orders as defined in Oracle Master Planning/MRP and Oracle Supply Chain Planning.

Kanban: A visual signal used in material replenishment.

Line: Production line.

Task: A subdivision of project work as defined in Oracle Project Manufacturing.

Operation Properties Window



The screenshot shows a window titled "Operation Properties:129245:10". Inside, there is a tab labeled "Operation Properties". Below the tab, there is a section for "Operation Code:" with a list icon. The main area contains several fields with their values:

Start Date:	06/05/2001 11:00:00
End Date:	06/07/2001 07:30:00
Backflush :	yes
Minimum Transfer Qty:	0
Date Last Moved:	06/01/2001 24:00:00
Scheduled Quantity:	10
Scrap Quantity:	0
Completed Qty:	6
Progress:	60%
Queue Quantity:	4
Run Quantity:	0
To Move Quantity:	0
Reject Quantity:	0

An "OK" button is located at the bottom right of the window.

A description of some of the fields in the Operation Properties window follows:

Operation Code: A label that defines a standard operation as defined in Oracle Work in Process.

Start Date: The specified or calculated date the operation will start.

End Date: The specified or calculated date the operation will end.

Backflush: Enabled Yes or No.

Minimum Transfer Quantity: The minimum number of assemblies to move from your current operation to the next. Oracle Work in Process warns you when you move less than the minimum transfer quantity.

Scheduled Quantity: The quantity scheduled for this job.

Scrap Quantity: The quantity in the Scrap intraoperation step.

Completed Qty: The quantity with the status of Complete.

Progress: Percent completed of the Scheduled Quantity.

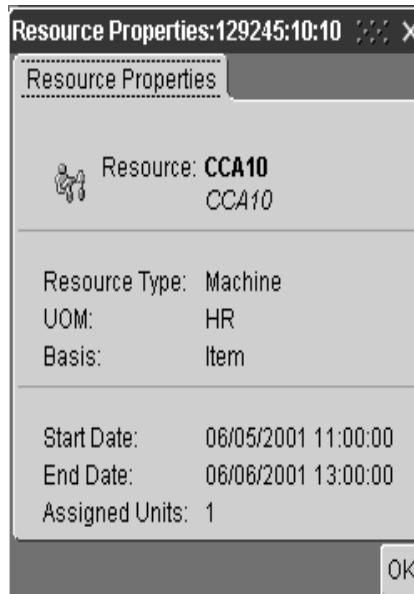
Queue Quantity: The quantity in the Queue intraoperation step.

Run Quantity: The quantity in the Run intraoperation step.

To Move Quantity: The quantity currently in the To Move intraoperation step.

Reject Quantity: The quantity in the Reject intraoperation step.

Resource Properties Window



The screenshot shows a window titled "Resource Properties:129245:10:10". Inside, there is a tab labeled "Resource Properties". Below the tab, there is a resource icon (a person) and the text "Resource: CCA10" followed by "CC410" on the next line. Below this, there are three rows of information: "Resource Type: Machine", "UOM: HR", and "Basis: Item". Further down, there are two rows of dates: "Start Date: 06/05/2001 11:00:00" and "End Date: 06/06/2001 13:00:00". At the bottom, it says "Assigned Units: 1". An "OK" button is located in the bottom right corner.

Resource:	CCA10
CC410	
Resource Type:	Machine
UOM:	HR
Basis:	Item
Start Date:	06/05/2001 11:00:00
End Date:	06/06/2001 13:00:00
Assigned Units:	1

A description of some of the fields in the Resource Properties window follows:

Resource Type: The name of resource (such as machine or person).

Basis: Item or lot.

Start Date: The specified or calculated date the resource usage will start.

End Date: The specified or calculated date the resource usage will end.

Assigned Units: The number of resource units assigned to work at an operation in a routing.

Showing Select Resources and Resource Load Versus Capacity Panes

The Scheduler Workbench lets you show or hide job operations from the resources listed, and the resources in relationship to the capacity available. You can identify problems for analysis so that tasks can be modified—for example, the order in which the resource performs these tasks or the shifting the tasks across the other resources.

■ To show the Select Resources and Resource Load Versus Capacity Panes

- ☐ Choose Show/Hide Resource Load from the View menu or toolbar.

The Select Resources and Resource Load Versus Capacity panes appear.

■ To hide the Select Resources and Resource Load Versus Capacity Panes

- ☐ Choose Show/Hide Resource again from the View menu or toolbar.

The Select Resources and Resource Load Versus Capacity panes do not appear.

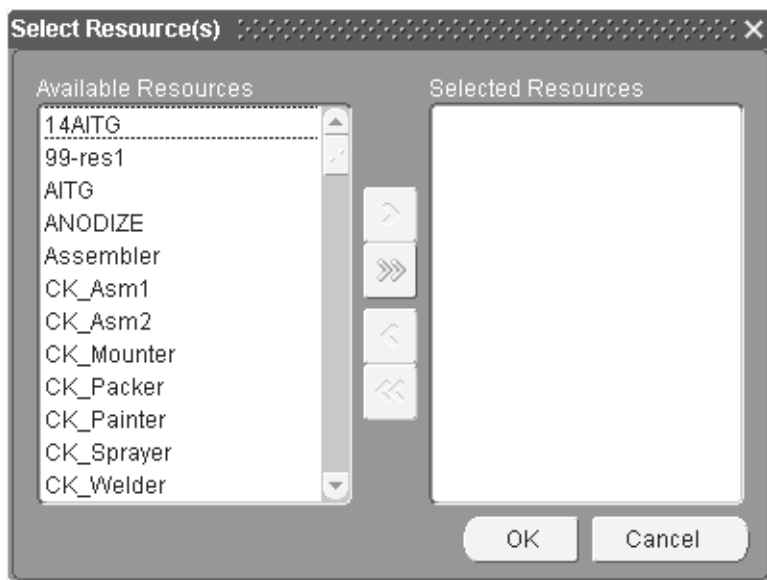
Note: The Resource Load Versus Capacity will not change if you filter jobs in the Gantt chart because the total demand placed on those resources by all jobs on the shop floor has not changed.

Selecting a Resource

You can select a specific resource. If you are uncertain of the resource name, expand a job and an operation and view the specific resource of interest. Select a resource bar with your mouse pointer (yellow text bubble appears which indicates the name of the resource). The name of the resource is also available on the Resource Properties window.

■ To select a resource

1. In the Select Resource(s) pane choose the Select Resources button.



The Select Resource(s) window appears.

2. In the Available Resources pane select a resource.
3. Choose the right arrow button.

The resource appears in the Selected Resources pane.

4. Choose OK.

The name and description of the resource appears in the Select Resources pane and its corresponding graphic display for the resource appears in the Resource Load Versus Capacity pane. This represents the resource load for all jobs on the

shop floor requiring this resource. The default graphic view is Table. The Required and Available key indicators appear.

5. From the graphic drop-down menu choose Continuous.

A continuous line graph appears. The Required, Available, and Overload key indicators appear.

6. From the graphic drop-down menu choose Bar.

A bar graph appears. The Required and Available key indicators appear.

Rescheduling Jobs, Operations, and Resources in the Gantt Chart

You can manually or automatically reschedule the start and end dates of a job, operation, or resource:

- ☐ For Manual Mode (Manual rescheduling is the default mode):

- Grab and drag the start or end of a bar
- Use the Edit Schedule window

You can invoke the Bar Inspector window that shows the start and end dates of a selected job, operation, or resource.

- ☐ For Automatic Mode:

- Grab and drag the start or end of a bar
- Invoke the Automatic Rescheduling window

Manually Rescheduling Start and End Dates

You can manually reschedule any job, operation, or resource without regard for constraints or scheduling rules.

■ To manually forward or backward reschedule using the pointer

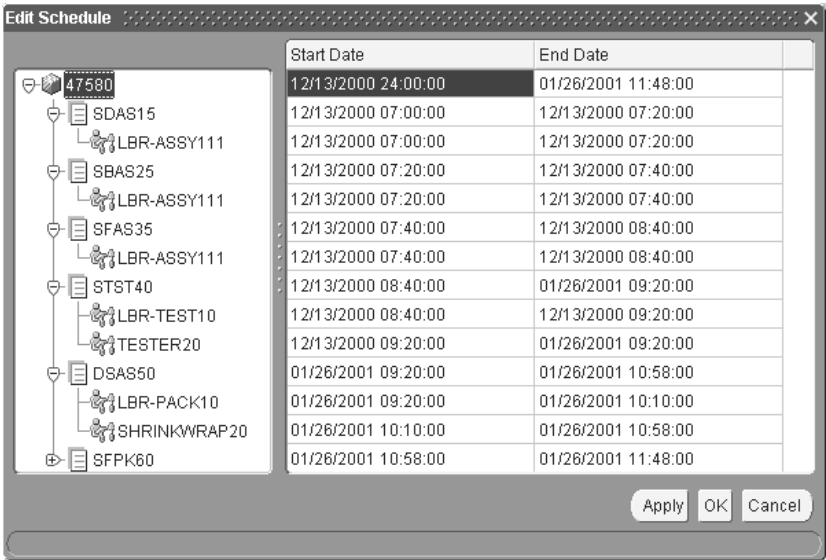
1. Point at the start or end of a job, operation, or resource bar.
2. Grab and drag to the right (forward) or left (backward).

The beginning or end of the bar moves to the right or left, respectively.

3. Save your work.

► **To manually forward or backward reschedule using the editor**

- 1. Right click on any bar.
- A drop-down menu appears.
- 2. Choose Edit Schedule.



The Edit Schedule window appears.

- 3. In the Start Date and/or End Date fields, enter the new start and/or end date for the required job or operation.
- 4. Choose Apply.
- The bar moves to the new start and/or end date.
- 5. Save your work.

Automatically Rescheduling Jobs and Operations

You can automatically reschedule any job or operation. The required resource and material are used as the determining factor. The automatic scheduler enables you to specify the start and end dates, forward or backward schedule a job, and schedule an operation using the midpoint or midpoint forward scheduling method. You can initiate automatic rescheduling by moving jobs and operations with the mouse pointer or through the Automatic Reschedule window.

The constraint-based scheduling engine uses your date if constraints allow, or it moves the job and/or operation forward to the first available time slot as resources and material are available.

The following is recommended:

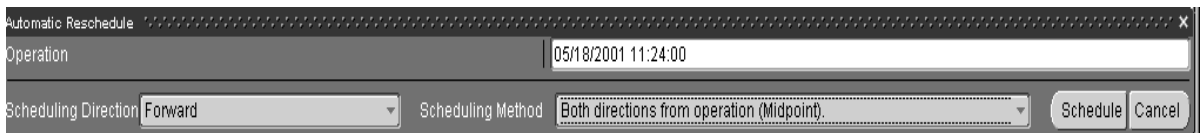
- Take a snapshot before rescheduling
- Periodically take a snapshot to ensure the capacities used by the constraint-based scheduling engine are correct

D To automatically forward or backward reschedule a job using the pointer

1. Toggle or select Automatic/Manual Scheduling from the menu or toolbar.

You can also right click on a job or operation in the Gantt Chart pane, choose Automatically Reschedule from the drop-down menu, and specify the date and direction you want the scheduler to use

2. Point at the beginning or end of a job.
3. Grab and drag to the right (forward) or left (backward). The Automatic Reschedule window appears.



4. Verify date and scheduling direction.
5. Choose Schedule.

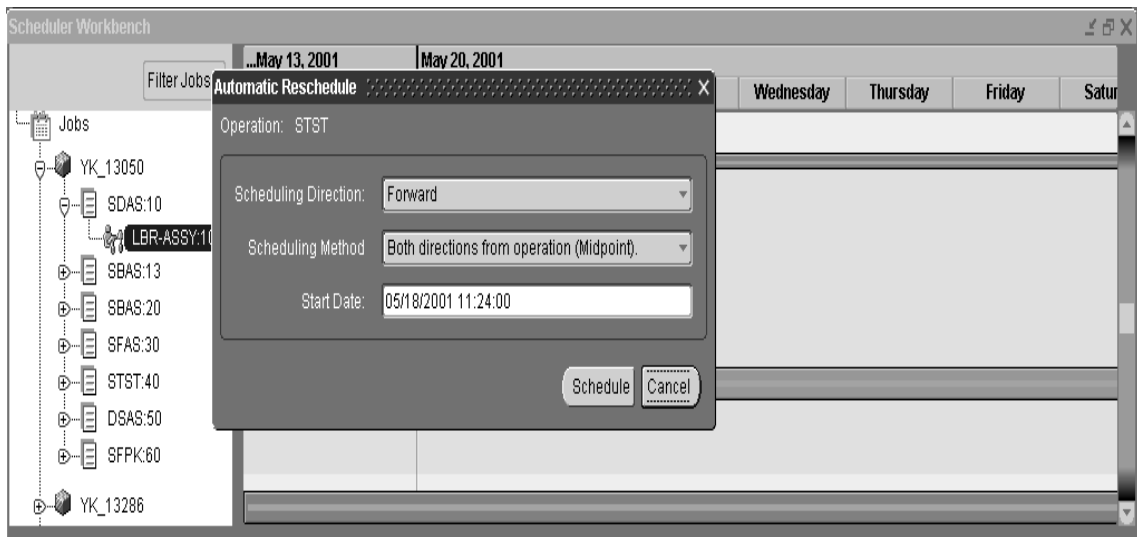
The constraint-based scheduling engine uses the selected date or searches for the first available time slot as resources and material are available.

6. Choose Refresh Resource Load to view changes prior to saving.
7. Save your work.

D To automatically forward or backward reschedule a job using the rescheduler

1. Place your cursor on the start (forward scheduling) or end (backward scheduling) portion of a job, left click on the light blue portion of the job, and drag the job right (forward) or left (backward).

The Automatic Reschedule window appears.



2. In the Scheduling Direction field select Forward or Backward.
3. Select the start or end date.
4. Choose Schedule.

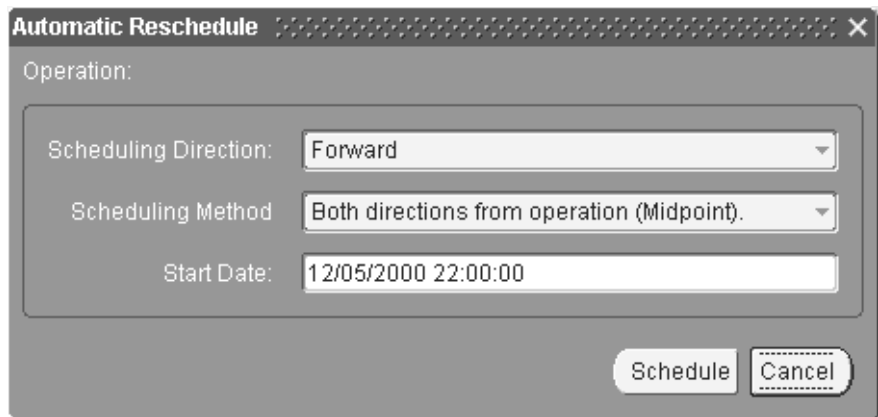
The job attempts to start on the date requested as constraints allow, or moves forward until the next available time slot is found. The job's operations and resources move with the job.

5. Choose Refresh Resource Load on the toolbar to view changes prior to saving.
6. Save your work.

► **To automatically forward or backward reschedule an operation using the rescheduler**

1. Place your cursor on the start or end portion of an operation, left click on the light blue portion of the operation, and drag the operation right (forward) or left (backward).

The Automatic Reschedule window appears.

The image shows a software dialog box titled "Automatic Reschedule". It has a standard window border with a close button (X) in the top right corner. Below the title bar, the word "Operation:" is followed by a large, empty rectangular text input field. Below this, there are three rows of controls. The first row is labeled "Scheduling Direction:" and has a dropdown menu currently showing "Forward". The second row is labeled "Scheduling Method" and has a dropdown menu currently showing "Both directions from operation (Midpoint)". The third row is labeled "Start Date:" and has a text input field showing "12/05/2000 22:00:00". At the bottom right of the dialog, there are two buttons: "Schedule" and "Cancel".

2. In the Scheduling Direction field select Forward or Backward.
3. In the Scheduling Method field select the appropriate method.

Both directions from operation (Midpoint): Reschedules all prior and next operations when a time slot is found for this selected operation. Prior operations are backward scheduled, m=next operations are forward scheduled. The constraint-based scheduling engine looks for sufficient resources to allow the operation to be placed at its newly desired time slot while finding a time slot for all prior and next operations—keeping all operations in their original sequence.

Forward from operation (Midpoint Forward): Moves only the selected and next operations, keeping them in sequence, when a time slot is located to move this specified operation. Prior operations will not be rescheduled.

Note: Use Midpoint Forward when you have already started a job and have activity in any operation.

4. Select the start or end date.
5. Choose Schedule.
6. Save your work.

Creating, Scheduling, and Importing Jobs

This chapter explains how to create and schedule jobs, and how Oracle Manufacturing Scheduling accepts all jobs and schedules from Oracle Work in Process— including ATO (Assemble to Order) jobs. The following topics included are:

- [Overview of Creating, Scheduling and Importing Jobs](#) on page 4-2
- [Creating and Scheduling a New Job](#) on page 4-2
- [Creating Final Assembly Orders](#) on page 4-4
- [Importing Jobs and Schedules](#) on page 4-4

Overview of Creating, Scheduling and Importing Jobs

Oracle Manufacturing Scheduling enables you to maintain the scheduling of discrete jobs based on resource and material constraints. You use the Work in Process windows and load program to perform these tasks including the Discrete Jobs window, the AutoCreate Final Assembly Orders window, and the Import Jobs and Schedules window.

Creating and Scheduling a New Job

Refer to the Oracle Work in Process task for creating and scheduling discrete jobs. See: [Defining Discrete Jobs Manually](#), *Oracle Work in Process User's Guide* and [Defining Discrete Jobs Manually](#), *Oracle Work in Process User's Guide*.

Note: To use the constraint-based scheduling engine to schedule your jobs, you must check the Constraint Based Scheduling check box on the Scheduling tab of the WIP Parameters window. You also must complete all other setup requirements as specified in [Setup Steps](#) on page 2-4 in Chapter 2, Setting Up.

■ To create and schedule a new job

1. Navigate to the [Discrete Jobs](#) window in Oracle Work in Process.
2. Choose New
The Discrete Jobs window appears.
3. Enter the name of a job.
4. In the Type field select Standard.
5. In the Assembly field select an assembly from the List of Values.
6. Enter a class.
7. With the constraint-based scheduling engine active, the Status field is automatically set to Pending Scheduling. See: [Defining WIP Profile Options](#) on page 2-7.
8. Ensure that the Firm check box is not checked.
If the Firm check box is checked the job will not be automatically rescheduled.
9. In the Quantities region enter a quantity in the Start field.

10. In the Dates region enter a date in the Start or Completion field.
11. Select the Scheduling tab.

The screenshot shows the 'Discrete Jobs (WPS)' window. At the top, there are fields for Job (115697), Type (Standard), Assembly, Class, Status (Pending Scheduling), UOM, and a checkbox for Firm. Below these are two sections: 'Quantities' with Start and MRP Net fields, and 'Dates' with Start and Completion fields. A tabbed interface at the bottom includes 'Bill', 'Routing', 'Job History', 'Schedule Group, Project', 'Scheduling' (which is selected), and 'More'. The 'Scheduling' tab contains fields for 'Requested Due Date' and 'Scheduling Priority' (set to 10). At the very bottom are buttons for 'Sales Orders', 'Operations', and 'Components'.

12. Optionally, select a Requested Due Date.

Note: Enter a requested due date if you want the constraint-based scheduling engine to schedule as close to this date as possible. The requested due date is considered based on the priority you assign to this job.

13. Optionally, enter a scheduling priority.
14. Select the other tabs to ensure that there are no other specific user requirements.
15. Save your work.

Creating Final Assembly Orders

You can automatically create final assembly orders for ATO (Assemble to Order) items entered in Oracle Order Management. You can also associate sales orders to discrete jobs for ATO items, thereby allocating production to specific customers.

After running AutoCreating Final Assembly Orders, discrete jobs are created with Pending Scheduling status if the organization is set to use the constraint-based scheduling engine.

For detailed information, see [AutoCreating Final Assembly Orders](#), *Oracle Work in Process User's Guide*.

Note: When you autcreate discrete jobs for ATO items, the status of these job are set to Pending Scheduling. You must use the Schedule Discrete Jobs window to schedule pending jobs.

For additional information, see [Final Assembly Orders](#), *Oracle Work in Process User's Guide*.

Importing Jobs and Schedules

When importing jobs and schedules you can perform the following tasks:

- Load information into the Work Order Interface.
- Import data from the Work Order Interface.

Note: Jobs are automatically scheduled when they are imported, unless you set the Scheduling Method to Manual or set Allow-Explosion to No in the import table before importing the jobs.

See Also

[Importing Jobs and Schedules](#), *Oracle Work in Process User's Guide*.

Work Order Interface, *Oracle Manufacturing APIs and Open Interfaces Manual*

Exception Messages

This chapter describes how scheduling exception messages are used to manage your shop floor and work in process jobs and resources.

Reviewing Exception Messages

A range of exception messages are provided in Oracle Manufacturing Scheduling so you can manage your scheduling by displaying jobs and resources requiring attention. Exception messages may be created after drop and drag scheduling on the Scheduler Workbench, after creating or scheduling discrete jobs, and after scheduling the entire shop floor.

For each exception that occurs, you can view the message, where the problem occurred and the severity, and details of the job. Messages can be one of three types: error, exception, or warning.

- An error message indicates that the job was not scheduled as shown in this example:

Oracle Manufacturing Scheduling could not schedule job due to activity on this job while schedule was running. Please re-launch the scheduler.

- An exception message informs you about a problem that should be corrected, but lets you know that the job is not cancelled as shown in this example:

Oracle Manufacturing Scheduling delayed the job because the requested start date is before today's date.

- A warning message indicates an inconsistency, however the job is still scheduled:

The discrete job completes earlier than the requested due date.

There are several ways to view exception messages in Oracle Manufacturing Scheduling:

Navigate to the Scheduling Exceptions window

You can view exception messages for jobs or resources from the Scheduling Exceptions window. You can view the full text of the exception messages, delete messages, and mark messages to show that they have been read.

Right click on a job or resource in the Scheduler Workbench

You can view exception messages for a single job or resource by accessing the View Exceptions window. Right click on any bar, a drop-down menu appears and choose View exceptions. This window displays in inquiry mode only.

Access the View All Exceptions window from the Schedule menu

This window displays information for all jobs and resources in inquiry mode only.

Scheduling Exceptions Window

To view and process exception messages:

1. Navigate to the Scheduling Exceptions window.
2. In the Find Scheduling Exceptions window choose Find to show all exception messages.

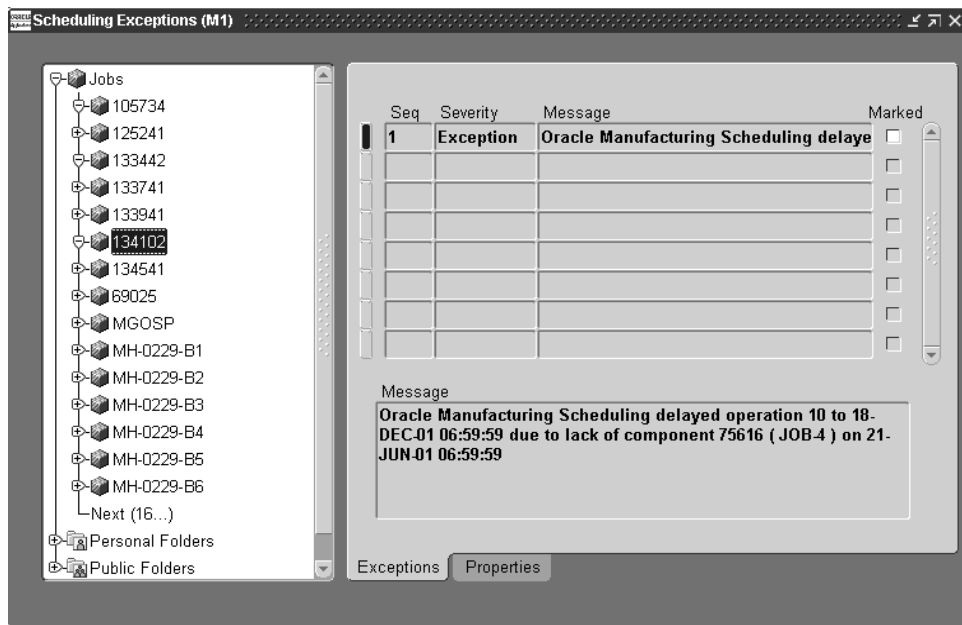
You can limit the number of records displayed by entering job scheduling or date information. See: [Using Query Find](#), *Oracle Applications User's Guide*.

3. Select a job from the Tree Hierarchy pane to view exceptions.

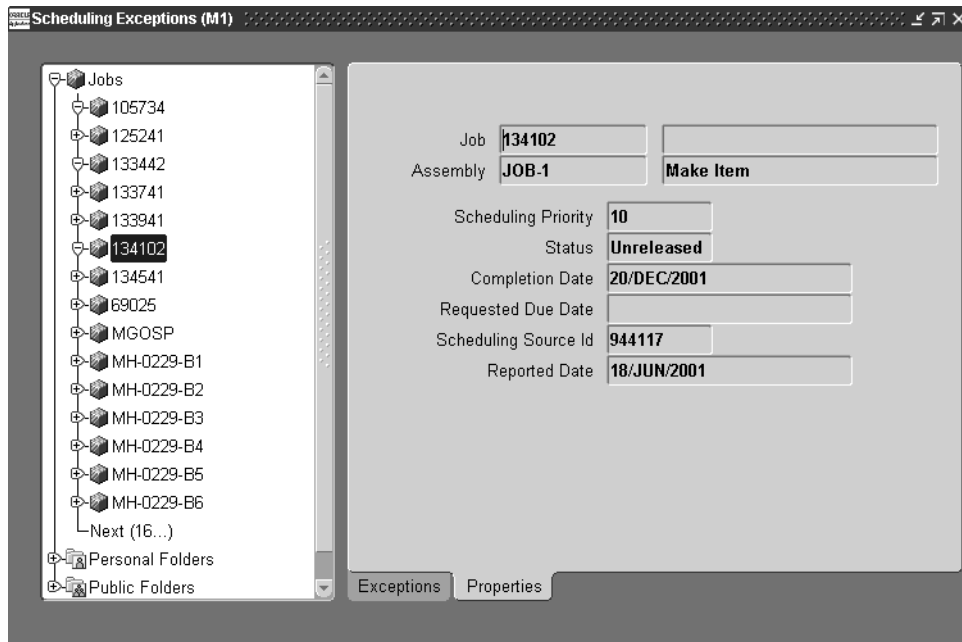
You can view exception messages by either exception or properties.

4. Choose the Exceptions tab to view jobs by exception message.

In addition to the full text of the message, information is displayed in which operation sequence the exception occurred and the severity.

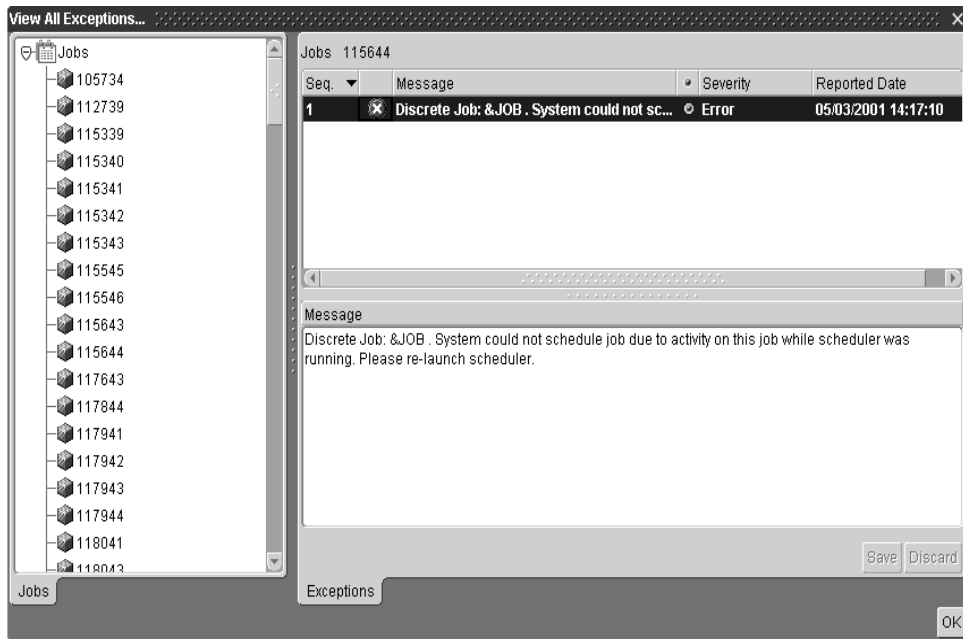


5. Optionally, you can mark a message to indicate that it has been read. Check the Marked box if you want to flag the message as read.
6. Choose the Properties tab to view the properties for the job that the exception message is flagging.



View All Exceptions Window

In the Schedule menu you can also access the View All Exceptions window. This window displays the same information as shown in both tabs of the Scheduling Exceptions window—in inquiry mode only.



Rescheduling Discrete Jobs

This chapter explains how Oracle Manufacturing Scheduling lets you reschedule the entire shop floor using forward or backward scheduling. The following topics included are:

- [Overview of Rescheduling Discrete Jobs](#) on page 6-2
- [Rescheduling All Jobs or Pending Scheduling Jobs](#) on page 6-2

Overview of Rescheduling Discrete Jobs

When rescheduling jobs you can perform the following tasks:

- Reschedule all jobs or pending scheduling jobs using forward or backward scheduling
- Reschedule jobs with or without a routing reference. For detailed information, see [Rescheduling Discrete Jobs](#), *Oracle Work in Process User's Guide*.
- Add, update, delete, reschedule, and view operations. For detailed information, see [Adding and Updating Operations](#), *Oracle Work in Process User's Guide*.
- Use midpoint rescheduling to reschedule around a bottleneck job operation. For detailed information, see [Midpoint Rescheduling](#), *Oracle Work in Process User's Guide*.
- Modify discrete job operations, import modified jobs and schedules, and replan planned orders. For detailed information, see [Discrete Rescheduling](#), *Oracle Work in Process User's Guide*.

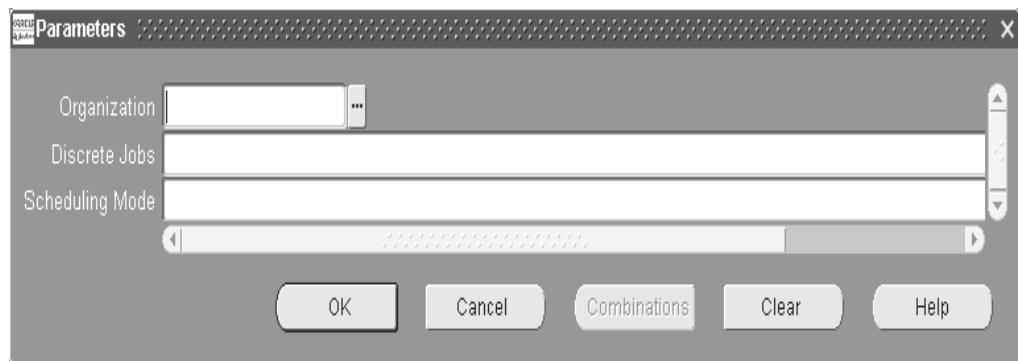
Rescheduling All Jobs or Pending Scheduling Jobs

You can reschedule all jobs or pending scheduling jobs.

■ To reschedule all jobs or pending scheduling jobs

1. Navigate to the [Schedule Discrete Jobs](#) window.

The Parameters window appears.



2. Select an organization.
3. In the Discrete Jobs field select All Jobs or Pending Scheduling Jobs.

Note: Autocreate Jobs for ATO items are initially scheduled as pending scheduling and require this procedure for scheduling.

4. In the Scheduling Mode field, select either Forwards from start date or Backwards from completion date.
5. Choose OK.

The Schedule Discrete Jobs window appears. See: [Submitting a Request](#), *Oracle Applications User's Guide*.

6. Choose Submit.

A Decision window appears which indicates the request ID number. You can record this number for future reference.

Windows and Navigator Paths

This appendix provides the default navigator path for Oracle Work in Process and Bill of Materials windows accessed from the Manufacturing Scheduling Application.

Windows and Navigator Paths

For windows and detailed information described in other manuals:

See...	Refer to this manual for a complete form description
BOM	Oracle Bill of Materials User's Guide
User	Oracle Application User's Guide
WIP	Oracle Work in Process User's Guide

Brackets ([]) indicate a button.

Window Name	Navigation Path
Discrete Jobs	WIP > Discrete > Discrete Jobs
Personal Profile Values	WIP > Other > Profile
Schedule Discrete Jobs	Manufacturing Scheduling > Scheduling Workbench > Schedule Discrete Jobs
Scheduling Exceptions	Manufacturing Scheduling > Scheduling Exceptions
Standard Operations	BOM > Routings > Standard Operations
View All Exceptions	Manufacturing Scheduling > Schedule menu
Work in Process Parameters	WIP > Setup > WIP Parameters

Glossary

A

active schedule

A schedule currently running on a production line. A schedule can be active past its scheduled completion date or before its scheduled start date.

alternate bill of material

An alternate list of component items you can use to produce an assembly.

alternate routing

An alternate manufacturing process you can use to produce an assembly.

assemble-to-order (ATO)

An environment where you open a final assembly order to assemble items that customers order. Assemble-to-order is also an item attribute that you can apply to standard, model, and option class items.

assembly

An item that has a bill of material. You can purchase or manufacture an assembly item. For more information, see [assemble-to-order \(ATO\)](#) and [bill of material](#).

assembly completion pull transaction

A material transaction where you backflush components from inventory to work in process as you complete the operation where the component is consumed. See [operation completion pull transaction](#).

assembly completion transaction

A material transaction where you receive assemblies into inventory from a job or schedule upon completion of the manufacture of the assembly.

assembly move completion transaction

A move transaction that completes assemblies into inventory.

assembly scrap transaction

A move transaction where you charge a scrap account as you move assemblies into a Scrap intraoperation step. This reduces the value of your discrete job.

assembly UOM item

A purchasing item associated with an outside resource that you purchase using the assembly's unit of measure. The assembly's unit of measure should be the same as the purchasing item's unit of measure.

asset subinventory

Subdivision of an organization, representing either a physical area or a logical grouping of items, such as a storeroom where quantity balances are maintained for all items and values are maintained for asset items.

assigned units

The number of resource units assigned to work at an operation in a routing. For example, if you have 10 units of machine resource available at a department, you can assign up to 10 of these units to an operation in a routing. The more units you assign, the less elapsed time Work in Process schedules for the operation.

available capacity

The amount of capacity available for a resource or production line.

available-to-promise (ATP)

Ability to promise product for customer orders based on uncommitted inventory, planned production, and material.

Available To Transact (ATT)

Quantity on hand less all reservations for the item which may be transferred within or out of inventory.

B

backflush transaction

A material transaction that automatically issues component items into work in process from inventory when you move or complete the assembly. Also known as post-deduct or pull.

backward scheduling

A scheduling technique where you specify a production end date and Oracle Manufacturing calculates a production start date based on detailed scheduling or repetitive line scheduling.

bill of material

A list of component items associated with a parent item and information about how each item relates to the parent item. Oracle Manufacturing supports standard, model, option class, and planning bills. The item information on a bill depends on the item type and bill type. The most common type of bill is a standard bill of material. A standard bill of material lists the components associated with a product or subassembly. It specifies the required quantity for each component plus other information to control work in process, material planning, and other Oracle Manufacturing functions. Also known as product structures.

C

cancelled job

A discrete job you no longer want to work on. You cannot make transactions, move assemblies, or apply or update costs.

closed job

A discrete job that is unavailable for charges or any type of transaction. Closing a job calculates final costs and variances and creates history for the job.

complete charges

The job is complete and charges are allowed.

complete no charges

The job is complete but charges are not allowed.

completed assembly

An assembly you built on a discrete job or repetitive schedule and received into inventory.

completed job

A discrete job whose quantity planned equals the number of assemblies actually completed.

completion date

The date you plan to complete production of the assemblies in a discrete job.

completion subinventory

An inventory location at the end of your production line where you receive completed assemblies from work in process. Often this is the supply subinventory for subassemblies or finished goods inventories for final assemblies.

component demand

Demand passed down from a parent assembly to a component.

component item

An item associated with a parent item on a bill of material.

component yield

The percent of the amount of a component you want to issue to build an assembly that actually becomes part of that assembly. Or, the amount of a component you require to build plus the amount of the component you lose or waste while building an assembly. For example, a yield factor of 0.90 means that only 90% of the usage quantity of the component on a bill actually becomes part of the finished assembly.

current on-hand quantity

Total quantity of the item on-hand before a transaction is processed.

D**demand class**

A classification of demand to allow the master scheduler to track and consume different types of demand. A demand class may represent a particular grouping of customers, such as government and commercial customers. Demand classes may also represent different sources of demand, such as retail, mail order, and wholesale.

department

An area within your organization that consists of one or more people, machines, or suppliers. You can also assign and update resources to a department.

detailed scheduling

A method of scheduling production that considers minute to minute resource availability information as well as exact resource requirements from routings.

discrete job

A production order for the manufacture of a specific (discrete) quantity of an assembly, using specific materials and resources, in a limited time. A discrete job collects the costs of production and allows you to report those costs—including variances—by job. Also known as **work order** or **assembly order**.

discrete manufacturing

A manufacturing environment where you build assemblies in discrete jobs or batches. Different from a repetitive production environment where you build assemblies on production or assembly lines at a daily rate.

E**efficiency**

A productivity measure that focuses on actual performance against a standard. Expressed in a percentage figure, it is calculated by dividing actual resource time charged to a task by the standard resource requirements for the same task.

F**final assembly order**

A discrete job created from a configuration or an assemble to order item and linked to a sales order. Also known as final assembly schedule.

firm flag

Denotes a job that cannot be modified by the planning or rescheduling process. See *Oracle Master Planning/MRP User's Guide* and *Oracle Supply Chain Planning User's Guide*.

first unit completion date

The date and time you plan to complete production of the first assembly on a repetitive schedule. This date equals the first unit start date plus the lead time.

first unit start date

The date and time you plan to begin production of the first assembly on a repetitive schedule. This date equates to the start of your lead time.

forward scheduling

A scheduling technique where you specify a production start date and Oracle Manufacturing calculates a production end date using either detailed scheduling or repetitive line scheduling.

I**immediate dispatch**

Used in conjunction with department or resource job filter criteria. Includes jobs where there is quantity in an operation assigned to the selected department or resource.

intraoperation steps

The particular phases within an operation. There are five intraoperation steps in Work in Process: Queue, Run, To Move, Reject, and Scrap.

issue transaction

A material transaction to issue component items from inventory to work in process.

item-based resource

A resource whose usage quantity is the amount required per assembly unit you make.

J**job status**

An Oracle Manufacturing function that lets you describe various stages in the life cycle of a discrete job and control activities that you can perform on the job.

L

last unit completion date

The date and time you plan to complete production of the last assembly on a repetitive schedule. This date equates to the first unit completion date plus processing days.

last unit start date

The date and time you plan to begin production of the last assembly on a repetitive schedule. This date is the first unit start date plus processing days.

lot based resource

A resource whose usage quantity is the amount required per job or schedule.

M

manual resource

A resource manually charged to a discrete job or repetitive schedule.

mass loading

An Oracle Manufacturing function to create one or more discrete jobs or repetitive schedules based on planned orders or schedules in your MRP or master production schedule.

mass rescheduling

An Oracle Manufacturing function where you can reschedule or change the status of one or more discrete jobs based on your planned reschedule recommendations in your MRP or MPS.

material requirement

An inventory item and quantity needed to build an assembly on a job or repetitive schedule. Discrete job and repetitive schedule material requirements are created based on the component items defined on the assembly's bill of materials. Issue transactions fulfill material requirements.

material transaction

Transfer between, issue from, receipt to, or adjustment to an inventory organization, subinventory, or locator. Receipt of completed assemblies into inventory from a job or repetitive schedule. Issue of component items from inventory to work in process.

midpoint scheduling

A scheduling technique where you specify an operation start or end date and Oracle Manufacturing automatically calculates production start and end dates.

move transaction

A transaction to move assemblies from operation to operation or within an operation on a discrete job or repetitive schedule.

MRP net quantity

The quantity planning views as supply coming from a discrete job on the scheduled completion date.

O**on hold job/schedule**

A job or repetitive schedule not accepting further activity and is therefore untransactable.

operation

A step in a manufacturing process where you perform work on, add value to, and consume department resources for an assembly.

operation code

A label that identifies a standard operation.

operation completion pull transaction

A material transaction where you backflush components from inventory to work in process as you complete the operation where the component is consumed. For more information, see [backflush transaction](#).

operation completion transaction

A move transaction from one operation to the next where you have completed building the assembly at that operation. In this process, you can also charge resources and overheads and backflush component items.

operation overlap scheduling

A scheduling technique that allows you to schedule resource activities in the prior and next operations to overlap with the current operation.

operation sequence

A number that orders operations in a routing relative to each other.

organization

A business unit such as a plant, warehouse, division, department, and so on. Order Entry refers to organizations as warehouses on all Order Entry windows and reports.

outside operation

An operation that contains outside resources and possibly internal resources as well.

outside processing

Performing work on a discrete job or repetitive schedule using resources provided by a supplier.

outside processing operation

Any operation that has an outside processing resource. *See* [outside resource](#).

outside resource

A resource provided by a supplier you include in your routings, such as supplier sourced labor or services. This includes both **PO move** and **PO receipt** resources.

overload capacity

Number of resource units that are required but already committed.

P**pending**

A status where a process or transaction is waiting to be completed.

planned order

A suggested quantity, release date, and due date that satisfies net item requirements. MRP owns planned orders, and may change or delete the orders during subsequent MRP processing if conditions change. MRP explodes planned orders at one level into gross requirements for components at the next lower level (dependent demand). Planned orders along with existing discrete jobs also serve as input to capacity requirements planning, describing the total capacity requirements throughout the planning horizon.

Q

quantity completed

For an operation on a discrete job or repetitive schedule, the quantity of the assembly that you transacted beyond the Run intraoperation step. For a discrete job or repetitive schedule, the quantity of the assembly that you received into inventory.

quantity in operation

The quantity of an assembly in an operation on a discrete job or repetitive schedule. This includes the quantities in each of the intraoperation steps.

quantity on hand

Current quantity of an item in inventory.

quantity remaining

The quantity of an assembly remaining to be completed at an operation in a discrete job or repetitive schedule. This is the sum of the quantities in all intraoperation steps at all operations before the current operation, plus the quantities in the Queue and Run intraoperation steps at the current operation.

quantity required

The total quantity of a component item required to produce all the assemblies in a discrete job or repetitive schedule as determined by the usage quantity on the bill of materials, the production quantity, and the component yield.

queue

An intraoperation step in an operation where assemblies are waiting to be worked on. The default intraoperation step for every operation in a routing.

R

release date

The date when you release a discrete job or repetitive schedule to the shop floor signifying that work can begin and the discrete job or repetitive schedule becomes transactable.

released job/schedule

A discrete job or repetitive schedule that you have signified available to be worked on and transactable.

requested due date

The job due date. In Manufacturing Scheduling, you assign the requested due date in conjunction with the scheduling priority. The rescheduling engine uses this information to prioritize and reschedule all jobs or pending scheduling jobs.

required capacity

The amount of capacity required for a resource or production line.

reschedule

To modify the schedule of a discrete job. You can reschedule a discrete job by changing the start date, completion date, job quantity or any operation date on the routing. Planning can automatically reschedule jobs that are not firm based on planning requirement changes.

resource

Anything of value, except material and cash, required to manufacture, cost, and schedule products. Resources include people, tools, machines, labor purchased from a supplier, and physical space.

resource basis

The basis for resource usage quantity that indicates whether that quantity is required per item or per lot.

resource requirement

A resource and quantity needed to build an assembly on a job or repetitive schedule. Discrete job and repetitive schedule resource requirements are created based on the resource requirements specified on the assembly's routing. Resource transactions fulfill resource requirements.

resource sequence

The number that indicates the order of a resource in an operation relative to other resources.

run

An intraoperation step where you move assemblies that you are working on at an operation.

S

schedule group

An identifier used to group jobs for scheduling and releasing purposes. For example, you might group together all jobs that must be completed on a specific date and are being built on the same production line. Jobs within a schedule group can be sequenced.

scheduled resource

A resource on a routing that is scheduled by Work in Process.

scrap

An intraoperation step where you move assemblies that cannot be reworked or completed.

shift

A scheduled period of work for a department within an organization.

shop floor status

An Oracle Manufacturing function that lets you restrict movement of assemblies at an operation and intraoperation step within a discrete job or repetitive schedule.

standard operation

A commonly used operation you can define as a template for use in defining future routing operations.

start date

The date you plan to begin production of assemblies in a discrete job.

subassembly

An assembly used as a component in a higher level assembly.

subinventory

Subdivision of an organization, representing either a physical area or a logical grouping of items, such as a storeroom or receiving dock.

supplier

Provider of goods or services.

supply subinventory

The subinventory you use as a primary source of supply to meet a specific material requirement in a discrete job or repetitive schedule. In Release 9, this is the backflush subinventory for pull material or the primary issue subinventory for push material.

T**to move**

An intraoperation step where assemblies can either be completed to a subinventory or wait to be moved to another operation.

transaction date

The date you enter and Oracle Manufacturing maintains for any manufacturing transaction. The date must fall within an open accounting period and be greater than the release date for transactions on a discrete job or repetitive schedule.

U**unit of measure**

The unit that the quantity of an item is expressed.

unreleased job/schedule

A discrete job or repetitive schedule planned but not released for work to begin and not yet transactable.

UOM

See [unit of measure](#).

upstream dispatch

Used in conjunction with department or resource job filter criteria. Includes upstream jobs where there is quantity in an operation assigned to the selected department or resource.

usage rate

The amount of a resource consumed at an operation.

W

WIP accounting class

A set of accounts that you use to charge the production of an assembly. You assign accounting classes to discrete jobs and repetitive schedules. Each accounting class includes distribution accounts and variance accounts. Also used in cost reporting.

WIP move resource

A resource automatically charged to a discrete job or repetitive schedule by a move transaction. Resources are automatically charged when a forward move occurs, or uncharged when a backward move occurs.

work in process

An item in various phases of production in a manufacturing plant. This includes raw material awaiting processing up to final assemblies ready to be received into inventory.

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