

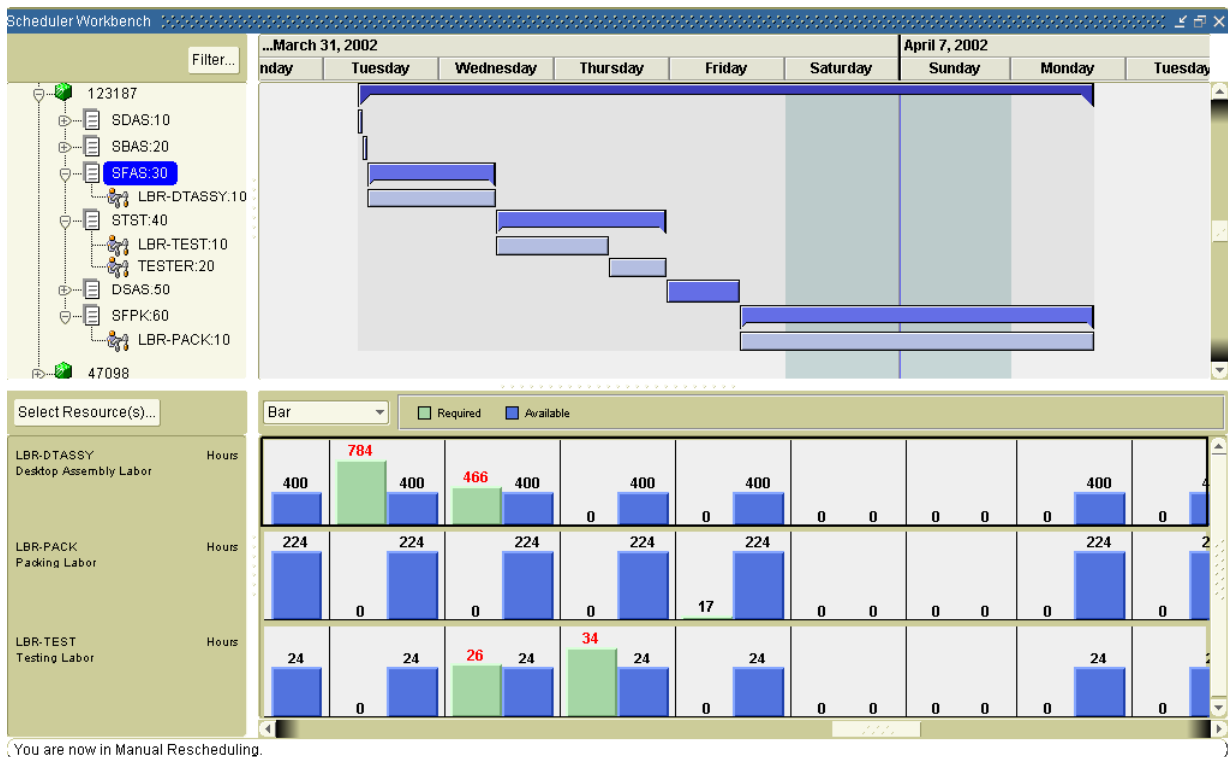
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ORACLE MANUFACTURING SCHEDULING 11i

Scheduling the manufacturing floor is a critical piece of the business cycle. Oracle® Manufacturing Scheduling enables managers to improve the productivity and efficiency of their operations by providing measures to analyze, control, and manage operations performance. Oracle Manufacturing Scheduling is part of the Oracle E-Business Suite, an integrated set of applications that are engineered to work together.

With Manufacturing Scheduling, you can answer tough business questions, including:

- Where are my production bottlenecks and how can I eliminate them?
- Can the efficiency of resources be improved?
- What jobs are scheduled today?
- In what order are the jobs scheduled to be started?
- What resources are assigned to any given job or operation?
- If a resource becomes unavailable, what jobs are affected?
- Do I have any overloaded resources today? If so, for which operations?



The Scheduler Workbench displays the current state of your shop floor.

Industry statistics point out that most companies operate below optimum efficiency. An organization must manage its operations well in order to meet customer demands profitably. Manufacturing

Scheduling assesses the efficiency and effectiveness of manufacturing operations while allowing users to intervene when they deem necessary. It helps shop floor scheduling personnel to be proactive by providing timely information regarding delayed jobs and orders and by highlighting capacity constraints.

Manufacturing Scheduling provides information to:

- Monitor timely completion of jobs
- Reduce non-productive or set-up times
- Assess capacity utilization and constraints
- Identify and eliminate production bottlenecks

Maximize Manufacturing Operations

Oracle Manufacturing Scheduling, a comprehensive shop floor scheduling tool, provides robust scheduling capabilities for a wide range of manufacturing environments. In a world where speed and time to market are critical and resources are scarce, Manufacturing Scheduling mitigates the impact of constraints in the factory so that your company can exceed customer expectations while achieving its operational goals.

Manufacturing Scheduling can model:

- labor and machine resources with both fixed and variable run times
- simultaneous and alternate resources
- batched and overlapping operations
- equipment setups and changeovers
- capacity adjustments
- job priorities

Based on a plant's scheduling objective, it schedules jobs and operations in a way that maximizes use of shop resources while respecting the constraints of resources and materials.

Manufacturing Scheduling develops a feasible schedule based on the characteristics and constraints of your manufacturing environment. It drives to achieve on-time completion of jobs on the shop floor by squeezing the inefficiencies out of the manufacturing process. This is accomplished by minimizing negative impacts of a variety of factors such as poor sequencing, wait time, disruptive expediting, and product quality problems.

Expand Shop Floor Visibility

Manufacturing Scheduling produces a shop floor schedule that dispatches manufacturing orders to resources in a manner that maximizes their productivity. Users, however, need not be exposed to

the complexity of the scheduling algorithms and routines because the results of scheduling activities can easily be viewed and understood through the Scheduler Workbench.

Manufacturing Scheduling Workbench

A visual display of jobs, operations, and resources via an advanced graphical interface allows you to view your entire shop floor in one instance, complete with resource load. Coupled with interactive “drag and drop” rescheduling capability, you can view and quickly reschedule jobs, operations, and resources.

The Manufacturing Scheduling Workbench is an extremely flexible tool for you to quickly address changes as a result of unforeseen circumstances, such as material or other resource shortages; or simply to maintain an optimal schedule to efficiently utilize resources and maximize shop floor productivity.

“Drag and Drop” Reschedule Jobs, Operations, and Resources

The Manufacturing Scheduling Workbench includes a visual display (Gantt chart) of jobs that allows you to view work scheduled on your shop floor over time. The advanced graphical interface allows you to “drag and drop” to reschedule a particular job or operation based on resource and/or component constraints.

Resource Load vs. Capacity Graph and Table

You can view a forward-looking resource load projection compared to available capacity. The resource load display (required hours versus available hours) is positioned directly under the Gantt chart and shares the same bucketed timeline.

Automatically Reschedule Jobs or Operations based on Constraints

You can use constraint-based scheduling to compute the optimal start and end dates for a job or job operation that you drag from one position on the Gantt chart to another position. For example, if you drag a job operation from one day to another, the constraint-based scheduler will automatically position it at an optimal time when there are resources and/or material available to work on it. You can choose to have the constraint-based scheduler either forward, forward midpoint, midpoint, or backward reschedule the selected job or operation.

Simulate Schedules

You can perform “What-if Analysis” by moving numerous jobs or operations without being required to save your changes. You can review the effect of rescheduling one job or many jobs before deciding to save your changes. While the constraint-based scheduler is running, you may execute other transactions, such as move transactions, so it does not interfere with productivity.

Manually Reschedule Jobs, Operations, or Resources

You can also use manual scheduling to reschedule jobs or operations by dragging them to any location on the timeline. You can click and drag the beginning or end of a job or operation to extend or shorten its duration. As with automatic scheduling, you can wait to save your changes only when you are satisfied with them.

React Quickly to Changes

In factories, changes that can negatively impact the effectiveness of the shop floor schedule can occur at any time. These changes can be imposed by your customers or can come from within your own operations. To stay on track, it is imperative to have a manufacturing scheduling tool that can quickly analyze the impacts of changing conditions and modify the current schedule as necessary. Manufacturing Scheduling is designed to stay in synch with the state of the factory floor through quick snapshot updates, eliminating the need for time consuming data uploads and downloads. After taking a snapshot, users can reschedule the shop floor and quickly receive a new shop schedule which has placed jobs around any new constraints, like an equipment breakdown or a parts shipment that has been delayed.

A scheduling system that is dynamic and reactive to changes is a valuable tool when changes occur. It will help you answer urgent business questions such as:

- I have a resource shortage (machine breakdown, employee sick), what operations and jobs are affected?
- Do I have any overloaded resources? If so, for which operations?
- A customer wants his order delivered three days earlier than originally scheduled. Can we do that? What other orders will it affect and how much will they be affected?
- A job has been canceled; is there work that can be pulled in to take advantage of resources that have been freed up?

Manufacturing Scheduling can answer these questions and many more.

Integrate into the Supply Chain

Manufacturing Scheduling helps ensure that individual plants meet the dates for completion of activities as recommended by the supply chain plan. It is this complete integration between Oracle Advanced Supply Chain Planning and Oracle Manufacturing Scheduling that is a key to optimizing job scheduling throughout the supply chain.

Tight Integration with Advanced Supply Chain Planning

In an environment where discrete jobs are released into manufacturing from Advanced Supply Chain Planning (ASCP), jobs are created with the exact scheduling data recommendations as calculated by the detailed scheduler in ASCP. In this way, production schedulers see resource loads in the Scheduler Workbench which are a direct result of ASCP's recommended schedule. Users can then choose to run with their shop loaded as planned, or fine tune the scheduling by rescheduling all jobs in Manufacturing Scheduling. This fine tuning can dispatch work to individual machines, sequence production by setup to minimize changeovers, and adjust for events which occurred more recently than the planning data collection.

Manufacturing Scheduling's integration into the supply chain plays an important role in the area of material constraints, too. By recognizing the delivery schedules of component suppliers, Manufacturing Scheduling gives production schedulers a complete view of material availability - what, when, and how many. Having purchase order deliveries included in component availability

means users see production schedules that are reflective of events at their suppliers' factories as well as inside their own.

Scheduling Support for ATO/CTO, Manually Created and Imported Jobs

In addition to jobs recommended from planning, Manufacturing Scheduling supports new final assembly schedules created for assemble-to-order (ATO) or configure-to-order (CTO) production as well as jobs created manually (e.g. build-to-stock) or imported into Work in Process. Whether originally scheduling a single job or rescheduling the entire shop floor, the manufacturing scheduler includes requirements of all these types of jobs and generates a shop schedule with optimal dates based on overall resource and component constraints along with relative job priorities.

Oracle E-Business Suite—The Complete Solution

Oracle E-Business Suite enables companies to efficiently manage customer processes, manufacture products, ship orders, collect payments, and more—all from applications that are built on a unified information architecture. This information architecture provides a single definition of your customers, suppliers, employees, products—all aspects of your business. Whether you implement one module or the entire Suite, Oracle E-Business Suite enables you to share unified information across the enterprise so you can make smarter decisions with better information.

KEY FEATURES

Flexible and Advanced Graphical User Interface to Customize Your Shop Floor Viewing Requirements

- Full 'Drag and Drop' and 'Point and Click' user functionality
 - Reschedule Jobs and Operations*
 - Expand and Collapse Jobs, Operations, and Resources on Graphical Job Tree*
 - Resize Panes*
- Filter only the jobs you want to view using any combination of filter criteria
 - Department, Resource*
 - Customer, Sales Order*
 - Specific Job*
 - Assembly*
 - Components Used*
 - Job Status*
- Configure bucket size to meet your needs
 - 15 minutes to one month*
 - Buckets are scaleable using variable bucket sizing control*
- Graphically View Resources and Resource Load Capacity for specific resources
- Quickly View Detailed Properties of any Job, Operation or Resource

Automatically Reschedule Jobs and Operations

- From WIP forms or from the Workbench
- One at a time or the entire shop floor
- Forward and Backward Reschedule Jobs
 - Batching*
 - Equipment Setups / Changeovers*
 - Capacity Adjustments*
 - Job Priorities / Firming*
 - Overlapping Operations*

- Midpoint and Forward Midpoint Reschedule Operations

Manually Reschedule Jobs and Operations

- From the WIP Reschedule form
- From the Scheduler Workbench
 - 'Drag and Drop' or type in the start and end dates with the Edit window*

Schedule and Prioritize Jobs

- All jobs
 - Planning recommendations*
 - ATO/ CTO auto-created final assembly orders*
 - Manually created jobs*
 - Imported jobs*
- Multiple scheduling objectives
 - Maximize ontime completion and delivery*
 - Sequence operations based on machine setup*
 - Minimize wait time between operations*

Shop Floor Modeling Capabilities

- Simultaneous Resources*
- Alternate Resources*

Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
USA

Worldwide Inquiries:
650.506.7000
Fax: 650.506.7200
<http://www.oracle.com>

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