

Oracle® Process Manufacturing

Integration with Advanced Planning and Scheduling User's Guide

Release 11*i*

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Send Us Your Comments

Oracle Process Manufacturing Integration with Advanced Planning and 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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- FAX: 650-506-7200 Attn: Oracle Process Manufacturing
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Preface

Welcome to the *Oracle Process Manufacturing Integration with Advanced Planning and Scheduling User's Guide*. This user's guide includes the information you need to work with APS data within Oracle Process Manufacturing (OPM).

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

Intended Audience

This guide assumes that you have working knowledge of your business area's processes and tools. It also assumes that you are familiar with OPM and Oracle Applications Advanced Planning and Scheduling. If you have never used these applications, we suggest you attend one or more of the training classes available through Oracle World Wide Education.

This guide also assumes that you are familiar with the Oracle Applications graphical user interface. To learn more about Oracle Applications graphical user interface, read the *Oracle Applications User's Guide*.

About This Guide

This guide contains overviews as well as task and reference information. It includes the following:

Name	Description
OPM/APS Integration - Introduction	Discusses the advantages of using APS and provides overview on mapping OPM Data to APS, setting up Oracle Applications, and OPM functional changes.
Setting Up OPM Data for Use with APS	Discusses how OPM data maps to Oracle Applications and what you need to consider when setting up OPM data when using APS.
Setting Up Data in Oracle Applications	Discusses data set up in Oracle Applications when using OPM.
Using APS Data in OPM	Provides procedures for using the APS suggestions in OPM.
Appendix	Provides the OPM APS navigator paths.

Information Sources

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

Online Documentation

Oracle Applications documentation is available on CD-ROM, except for technical reference manuals. User's guides are available in HTML format and on paper. Technical reference manuals are available on paper only. Other documentation is available on paper and sometimes in PDF format.

The content of the documentation remains the same from format to format. Slight formatting differences could occur due to publication standards, but such differences do not affect content. For example, page numbers are included on paper, but are not included in HTML.

The HTML documentation is available from all Oracle Applications windows. Each window is programmed to start your web browser and open a specific, context-sensitive section. Once any section of the HTML documentation is open, you can navigate freely throughout all Oracle Applications documentation.

Related Documents

Oracle Process Manufacturing shares business and setup information with other Oracle products. You may find the following Oracle Applications user's guides useful:

- *Oracle Applications User's Guide Release 11i*
- *Oracle Application's Flexfields Guide Release 11i*
- *Oracle Workflow User Guide*
- *Oracle Applications System Administrator's Guide Release 11i*
- *Oracle General Ledger User's Guide Release 11i*
- *Oracle Payables User's Guide Release 11i*
- *Oracle Receivables User's Guide Release 11i*
- *Oracle Human Resources North American User's Guide Release 11i*
- *Oracle Purchasing User's Guide Release 11i*

Oracle Process Manufacturing Guides

The following is a list of documentation in each product group for OPM Release 11i:

Financials

- *Oracle Process Manufacturing Accounting Setup User's Guide*
- *Oracle Process Manufacturing Cost Management User's Guide*
- *Oracle Process Manufacturing Manufacturing Accounting Controller User's Guide*
- *Oracle Process Manufacturing and Oracle Financials Integration User's Guide*

Inventory Control

- *Oracle Process Manufacturing Intrastat Reporting User's Guide*
- *Oracle Process Manufacturing Inventory Management User's Guide*
- *Oracle Process Manufacturing Physical Inventory User's Guide*

Logistics

- *Oracle Process Manufacturing Order Fulfillment User's Guide*
- *Oracle Process Manufacturing Purchase Management User's Guide*

Process Execution

- *Oracle Process Manufacturing Process Operation Control User's Guide*
- *Oracle Process Manufacturing Production Management User's Guide*

Process Planning

- *Oracle Process Manufacturing Capacity Planning User's Guide*
- *Oracle Process Manufacturing Capacity Planning with RHYTHM Factory Planner User's Guide*
- *Oracle Process Manufacturing MPS/MRP and Forecasting User's Guide*

Product Development

- *Oracle Process Manufacturing Formula Management User's Guide*
- *Oracle Process Manufacturing Laboratory Management User's Guide*
- *Oracle Process Manufacturing Quality Management User's Guide*

Regulatory

- *Oracle Process Manufacturing Regulatory Management User's Guide*

System Administration and Technical Reference

- *Oracle Process Manufacturing Implementation Guide*
- *Oracle Process Manufacturing System Administration User's Guide*
- *Oracle Process Manufacturing Technical Reference Manuals*

Training

Oracle offers a complete set of formal training courses to help you master Oracle Process Manufacturing and reach full productivity quickly. We organize these courses into functional learning paths, so you take only those courses appropriate to your area of responsibility.

You have a choice of educational environments. You can attend courses offered by Oracle Education Services 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's structure, terminology, and data as examples in a customized training session delivered at your own facility.

Conventions

The following conventions are used in this guide:

Bolded Text

Buttons, fields, keys, menus, and selections are bolded in procedures only. For example: To access the next window, click **OK**. Otherwise, references to these features appear in regular type.

Additional Menu Options

Only nonstandard menu options are discussed. Standard menu bar options (such as Save) are not discussed. These standard options are described in the *Oracle Applications User's Guide Release 11i*. Only menu options unique to the use of the specific window are discussed.

Field References

References to fields within procedures are in bold type. References within the body of this guide appear in regular type.

Required Fields

The word Required appears as the last word in the field description of all required fields. When the field is required contingent on the entry in another field, or only in specific situations, "Required if..." is the last sentence of the field description.

Fields Reserved for Future Use

Fields with no current processing implications are referenced by the statement "This field is not currently used" or "Reserved for future use." Do not use these fields for your own reference data, because there are plans to link future functionality to these fields. Fields intended for informational purposes only are referenced by the statement "This field is for informational purposes only."

Pending/Completed Transactions

Discussions about processing transactions that use the words pending and completed refer to the status of a transaction. Pending and completed do not refer to the database tables that are updated as a result of transactions (for example, some completed transactions are stored in the Pending Transactions table).

Procedures

Most topics contain a procedure with numbered steps. Any actions which are subordinate to a step are assigned letters. You can customize your Oracle Application, therefore, all procedures are suggestive only. Navigate to windows and between responsibilities in a way that works best for your particular setup. Also note that fields may appear in a different order than they are discussed.

Use of the Word Character

The word character means an alphanumeric character. Characters that are numeric or alphabetic only are referenced specifically. Depending on your system security profile, you may not have access to all of the windows and functions described in this guide. If you do not see a menu option described in this guide, and you want access to it, contact your System Administrator.

Do Not Use Database Tools to Modify Oracle Applications Data

Oracle Applications tables are interrelated. As a result, any change you make using Oracle Applications can update many tables at once. If you modify the Oracle Applications data using anything other than Oracle Applications, you could change a row in one table without making corresponding changes in related tables. If your tables are not synchronized with each other, you risk retrieving erroneous information and receiving unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also track who changes information. If you enter information into database tables using database tools, you could 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.

Consequently, we strongly recommend that you never use SQL*Plus or any other tool to modify Oracle Applications data unless otherwise instructed by Oracle Support Services.

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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, an integrated suite of more than 45 software modules for financial management, supply chain management, manufacturing, project systems, human resources, sales, and service management.

Oracle Products are available for mainframes, minicomputers, personal computers, network computers, and personal digital assistants, allowing 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 applications products, along with related consulting, education, and support services in over 140 countries around the world.

Thank You

Thank you for choosing Oracle Process Manufacturing and this user's guide.

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

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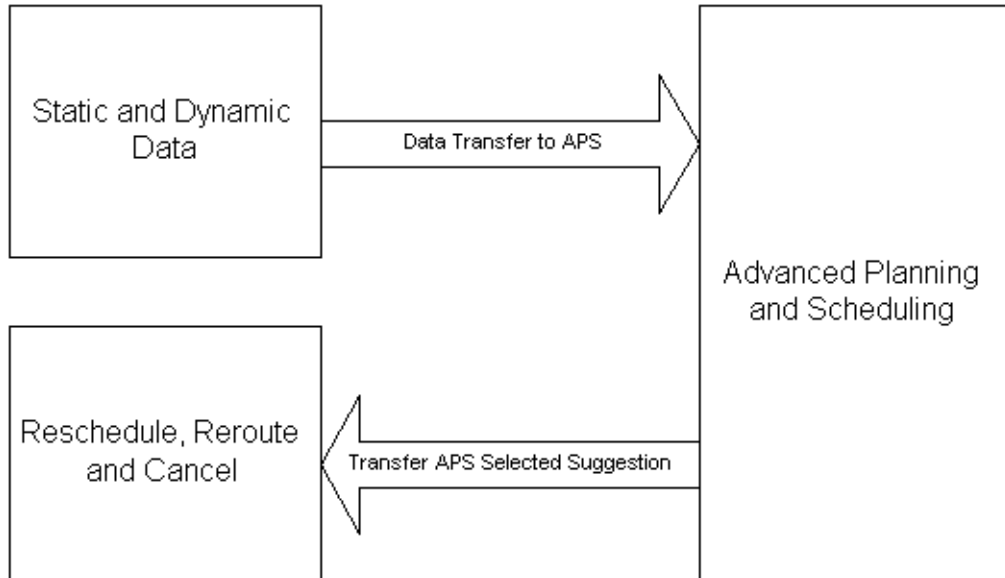
Or, send an electronic mail message to appsdoc@us.oracle.com

Using Advanced Planning and Scheduling with Oracle Process Manufacturing

The integration of Oracle Process Manufacturing (OPM) with Oracle Advanced Planning and Scheduling (APS) can help you increase your planning efficiency which can give you a competitive edge. The integration consists of the following features:

- Constraint-based planning that ensures that the plan is feasible and respects all of your constraints.
- Performance management enabled through the Oracle APS integration with Oracle BIS and Oracle Workflow. This allows you to:
 - Easily and quickly evaluate a plan based on its impact to target key performance indicators (KPIs)
 - Manage by exception – receive notifications when corrective actions are required
- The ability to collect data from multiple instances.
- Mixed mode manufacturing that enables you to choose the best method to produce each of your products, and combine all of these methods within the same plant/company.

APS To OPM Flow



Advantages of Using APS

APS with OPM offers you the following advantages:

Optimization

You can optimize your plans to financial and other enterprise strategic objectives. Since you can name and save your plans, you can run several plans optimized to different sets of objectives, then employ the Planner Workbench graphical user interface to quickly compare Key Performance Indicators and action messages associated with alternative plans.

Penalty Costs

APS also has some built-in optimization objectives such as weighing the penalty costs of late orders against expedited production and delivery costs. You can affect the solution by entering penalty factors, applied as a percent of cost. The optimization process attempts to drive costs out of the solution.

Mapping OPM Data to APS

Using APS puts certain restrictions on how you set up the data listed below. For example, one OPM warehouse must map to one inventory organization in Oracle Applications. If more than one warehouse is mapped to an inventory organization, you will lose all of the distinctive behavior of the warehouse when the planning data is retrieved by OPM from APS.

- Organizations
- Items
- Warehouses
- Formulas and Routings
- Resources
- Demand Schedule
- Production and Sales Orders, Forecasts, and Onhand Inventory
- Production Definitions

Setting Up Oracle Applications

Since OPM is integrated with Oracle Purchasing, additional setup in Oracle Applications is required. The following data must be set up for OPM to interface properly with APS:

- Organizations
- Items
- Sourcing Rules
- Vendors
- Shipping Methods
- Locations
- Vendors and POs

OPM Functional Changes

With the OPM integration to APS, the following changes have occurred in the existing methodology:

- OPM MRP does *not* need to be executed.
- Finite scheduling is accomplished seamlessly within the Oracle Applications suite. You do not need an outside vendor.
- Planning rules are set up in Oracle Applications not OPM.
- All planning activities can occur on a separate server.
- You are not restricted to a material plan.
- OPM structure needs to mimic Oracle Applications organization structure.

Planning Changes in OPM

If you do not need finite scheduling, then do not change the planning method. You can continue to use the OPM Process Planning applications as in previous releases. If you want to use finite scheduling functionality available in the Advanced Planning and Scheduling, make the following changes:

- Set up your planning rules in Oracle Applications instead of OPM.
- Purchase a separate server for all planning activities. Purchasing a separate server is not mandatory, but it is recommended due to the heavy processing load created with APS.
- Create multiple plans using different scenarios (then decide which plan to use).
- Set up an organization structure in Oracle Applications that mimics the OPM organization structure by mapping a warehouse to an inventory organization.

Setting Up OPM Data for Use with APS

If you are using Oracle Advanced Planning Scheduler (APS), you must set up Oracle Process Manufacturing (OPM) data so that it can be properly processed. For Release 11i, you must understand the differences in data structure between Oracle Applications and OPM in order to properly set up and use the OPM data with APS. The following topics on organization structure for Oracle Applications and OPM are discussed:

- Setting Up OPM Data - Overview
- Oracle Applications Organization Structure
- OPM Organization Structure
- OPM Item Master
- Units of Measure, Types and Conversions
- Formulas, Effectivities and Routings
- Resource Information and Capacity Planning
- Plant Warehouse Effectivities
- Shop Calendars
- MPS Schedule Parameters
- Production Orders
- Onhand Inventory

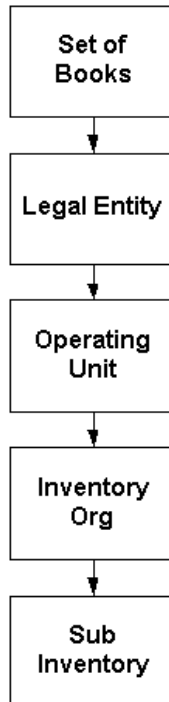
Setting Up OPM Data - Overview

When setting up OPM data to use with APS you have to consider the differences between Oracle Applications and OPM for the following data:

- Organization structure
- Resource warehouses
- Item set up
- Units of measure, Types and conversion.
- Formulas
- Effectivities
- Routings
- Resources
- Plant/Warehouse Effectivities
- Shop Calendars
- MPS Schedule Parameters
- Sales Order Demand

Oracle Applications Organization Structure

Before you define any type of organization in Oracle Applications, you must define a set of books. Once a set of books is defined, you can define the legal entities, operating units, inventory organizations, and sub-inventories of your company as shown in the chart below.



Entering Transactions and Storing Information in Oracle Applications

Transactions and other information are entered and stored at different levels of the organization structure when using Oracle Applications.

The following information is stored at the operating unit level:

- Sales orders
- Forecast
- Purchase orders

The following information is stored at the inventory organization level:

- Work-in-process
- Planning data

Onhand balances are stored at the sub-inventory level.

Setting Up Organizations in Oracle Applications

When using APS with OPM, you need to be aware of the following when setting up organizations in Oracle Applications.

- You must define one Oracle Applications organization for each OPM organization.
- Each OPM warehouse must have a corresponding Oracle Applications organization that is defined as an inventory organization.
- To track inventory costs for both OPM and Oracle Applications, you must set the `GL$FINANCIAL_PACKAGE` profile option equal to `ORAFIN`.
- APS does not recognize the location level, so no special considerations are needed for locations when integrating OPM with APS. OPM data can still use location control, but APS will not recognize that location control is in use.

OPM Organization Structure

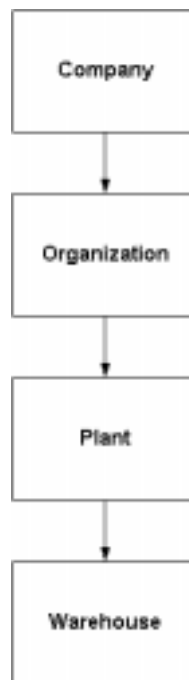
OPM organizations are structured as follows:

- OPM organizations can be companies, parent organizations, staff organizations, inventory organizations, or manufacturing plants.
- OPM organizations defined as companies must maintain a balanced set of books. A company in OPM equates to a set of books defined in Oracle Applications.

Different types of OPM organizations map to the Oracle Applications organization structure as follows:

- OPM organizations map to legal entities and operating units.
- OPM plants map to inventory organizations (with some modifications).

OPM warehouses map to inventory organizations and sub-inventories.



Entering Transactions and Storing Information in Oracle Process Manufacturing

Transactions and other information are entered and stored at different levels of the organization structure when using OPM.

OPM stores the following information at the organization level:

- Sales orders
- Forecast
- Purchase orders

OPM stores the following information at the plant level:

- Production
- Planning
- Onhand balances are stored at the warehouse level.

Setting UP Organizations in OPM

Before you set up organizations in OPM, you need to:

- Develop the organization scheme
- Decide whether or not to use the plant indicator. The plant indicator:
 - Allows production to occur
 - Controls other documents and inventory ownership
 - Does not control PROD and can control other docs plus INV
- Decide whether or not to use the POC indicator. The POC indicator:
 - Allows the collection of routing and resource data for production batches
 - Can be turned off and on
- Each OPM warehouse must have a corresponding inventory organization in Oracle Applications.
- If you plan to use the capacity planning function in APS, each OPM production plant must own one resource warehouse.
- Multiple production plants can draw raw material inventory from one warehouse to meet their production demand, but model this through transfers for visibility.

- Multiple production plants can supply one warehouse (distribution center), but you should model this through transfers for visibility.

Resource Warehouses

In OPM, warehouses are linked to plants. You should consider the following when creating resource warehouses:

- Resource warehouses are used for capacity planning
- Define the warehouse to be used for production in the plant
- Setting the Plant Indicator on the Organizations window allows for resource warehouse definition
- Plant Warehouse Effectivity

OPM Item Master

When setting up OPM Item Master for use with APS, you need to be aware of the following:

- OPM items are automatically created in Oracle Applications. The OPM items can be used within all Oracle Applications inventory organizations.
- APS uses lot control and lot expiration dates for planning.
- Although Oracle Applications only allows the use of one unit of measure per item, you can still use the dual unit of measure functionality in OPM. Item data is reported in the primary UOM.
- Trigger GMF_IC_ITEM_MST_BIUR_TG ensures that both the OPM and the Oracle Applications item masters contain the same items. A re-synchronization routine can be executed to ensure that, as new Oracle Applications inventory organizations are created, all items are added to the new inventory organization.
- Status Control in Oracle Applications allows for nettability of inventory.

OPM Units of Measure, Types and Conversions

When setting up units of measure (UOM), you must consider how the unit of measure ID code, unit of measure type, and unit of measure conversion will map over to Oracle Applications

Note: UOM Types must be added in OPM because APPLs allows the use of upper and lower case.

Setting Up Units of Measure

For UOM set up, you need to be aware of the following:

- OPM allows 4 characters for the UOM and Oracle Applications allows 3. To ensure the uniqueness of unit of measures in both OPM and Oracle Applications, an algorithm verifies that the truncated OPM unit of measure or organization does not match a pre-existing Oracle Applications unit of measure. If a unit of measure is not unique, the algorithm searches for a character to substitute that makes the unit of measure unique. Because of this, the 3 character code entered into Oracle Applications from OPM may not be the value you expected to find.
- GMF_SY_UOMS_MST_BIUR_TG synchronizes OPM with Oracle Applications

Setting Up UOM Types

When setting up UOM Types, you need to be aware of the following:

- Trigger GMF_SY_UOMS_TYP_BIUR_TG automatically ensures the uniqueness of UOM types that are integrated into Oracle Applications from OPM.
- Applications item_id and uom_code tie the UOM conversion, UOM and item together.

Setting Up UOM Conversions

When setting up UOM conversions, you need to be aware of the following:

- The UOM codes associated with the UOM conversion can change due to truncation from 4 to 3 characters. The new 3 character UOM code is stored in the Oracle Applications UOM conversion table with the corresponding new UOM conversion record.

- The UOM conversions trigger GMF_IC_ITEM_CNV_BIUR_TG synchronizes the two systems and automatically ensures the uniqueness of UOM conversions that are integrated into Oracle Applications from OPM.

Formulas, Effectivities, and Routings

Formulas in OPM are the same as bills of material (BOMs) in Oracle Applications. Oracle Applications has different rules from OPM for BOMs, effectivities, and routings.

Setting Up Formulas

When setting up formulas, you need to be aware of the following:

- APS can only accept one product per formula, OPM allows for more.
- If an OPM formula has multiple effectivities for a product or for coproducts, a different formula is effectively viewed by APS. A different formula is reported for co-products with effectivities.
- APS expects only one product per bill of material (in OPM, a formula) and this causes the OPM co-products and by-products to be reported as components with negative quantities.
- Linear and fixed scaling is implemented.
- Item quantities are reported in the primary UOM.

Setting Up OPM Effectivities

When setting up effectivities, you need to be aware of the following:

- A one-to-one relationship exists between effectivities and plants. When an effectivity is defined for a specific plant, any warehouse that is defined to replenish the item in the effectivity will have a version of the effectivity in APS.
- A one to one relationship exists between effectivities and inventory organizations. When more than one of these warehouses are mapped to the same inventory organization, only one effectivity will be written.
- Effectivity defines the primary product.
- If the effectivity is global then the effectivity is applied to all plants where the item can be produced.
- The following effectivity functions can be used with APS:
 - Minimum and maximum quantities
 - Start and end effective dates
 - Formula and routing assignments
 - Preference is used to break ties

Setting Up OPM Routings

The OPM routing maps closely to the Oracle Applications routing but there are some restrictions. When setting up routings, you need to be aware of the following:

- The flexibility that OPM has for the routing quantity is restricted by Oracle Applications because the quantity must be in the unit of measure of the product being routed to scale properly. The integration takes care of any necessary conversions, but the user interface shows the converted quantity and unit of measure instead of the original quantity and unit of measure defined in OPM.
- In APS, only the primary and auxiliary resources have functionality. With OPM CRP, you have the option of using alternate resources. Resources are assigned a Plan Type indicating primary (1), auxiliary (2), or secondary (0) on the Operations window. In APS, secondary resources are ignored.
- APS uses resource count and usage quantity information. You record resource count and usage quantity information in the Operations window. For example, if two identical blenders are used for mixing, enter 2 in the Count field. If the resource can mix 200 gallons per hour, enter 200 in the Process Quantity field and 1 in the Usage Quantity field.
- APS enables you to use more than one resource at the same time during an operation, but you can not complete more than one operation in a routing at the same time.
- APS enables you to overlap an operation with another operation, but this restricts OPM's functionality of allowing concurrent operations and multiple dependent operations. Since APS does not provide a way for the user to allow concurrent operations instead of multiple dependent operations (or vice versa), concurrent operations are not allowed with APS.
- Routing quantity uses the base UOM of the effectivities product and will be converted to the UOM of product.
- OPM step = Oracle Applications operation.
- OPM activity = Oracle Applications operation resource sequence.
- OPM routing resource = Oracle Applications operation resource.
- Each activity must have ONLY one primary resource per step. If there were more, the first is selected and the others are ignored. If none exists, then activity is not reported.

Resource Information and APS Capacity Planning

The Resource Information window defines a relationship between a plant and the resource. In Oracle Applications:

- APS acknowledges the plant via the resource warehouse associated with the plant.
- The resource warehouse is associated with an inventory organization. APS will have all the resources defined as a department in an inventory organization. The resource warehouse that has been defined for an inventory organization will be used to denote the department. This is NOT done in the Oracle Applications database.

You can use APS to develop capacity plans for your resources. The resource warehouse for the plant indicates to APS the need to perform capacity planning. The APS capacity planning function assumes that all resource capacity is measured in to the unit of measure you set up in the Profile Option BOM:Hour or is convertible to that UOM. The Assigned Quantity field on the Resource Information window indicates the number/quantity of the resource used in the specified plant for which you are defining production costs and usage availability. The number you enter depends on how broad a resource categorization you are defining. For example, if you defined the resource as "Blender 1" (a specific machine) you would enter "1". If you use three blenders in the production line, and you defined the resource as "Blenders" (rather than defining each individual machine) enter "3".

The cost of using a resource for one unit of measure (for example, the cost of running a mixer for one hour) that you define in OPM Cost Management is also used by APS, but this cost needs to be recorded in the Nominal Cost field on the Resource Information window. APS assumes the unit of measure for all resources is an hour.

Plant Warehouse Effectivities

Plant warehouse effectivities define plant/warehouse relationships. Plant warehouse effectivities specify the warehouses from which a plant consumes each item when it is used as an ingredient in a batch. They also specify the warehouses that a plant replenishes with each item when the item is a product of a batch.

On the Plant Warehouses window, global and warehouse items are valid. If the Warehouse Item field is left blank for a particular warehouse, then any item can be consumed from or replenished to that warehouse. The plant warehouse effectivity item consumption and replenishment rules are enforced by APS for both global and warehouse items.

Note that setting global rules increases the amount of data transferred since all warehouse item data is transferred, regardless of whether or not the warehouse items are actually consumed or replenished from the warehouse.

You can transfer items between warehouses as long as the item is defined in plant warehouse effectivities as a global or a specific rule. The consumption and replenishment indicators for the item/warehouse combination can be turned off and the item/warehouse combination can still be considered for transfers.

Shop Calendars

You should be aware of the following when setting up shop calendars in OPM:

- When the shop calendar is interfaced to APS, four relationships are created; the production calendar, weekly buckets, period buckets, and net available resources. The production calendar indicates the days planning can occur. The weekly buckets represent the weeks on which planning can occur and the period buckets represent months. The resources are applied to the shifts, defining the time available for production, which creates the fourth relationship, net available resources.
- OPM shop calendars must be carefully defined to avoid shift duplication in APS. When planning shifts in the OPM shop calendar, do not allow a shift to go past 12 a.m. APS expects shifts to occur during a calendar day (12 a.m. to 11:59 p.m.) but OPM allows shifts to go past 12 a.m. and into the next day.
- When an OPM shift overlaps with a shift the next day, one longer shift is created. If a shift engulfs another shift the next day, the engulfed shift disappears. Since APS does not account for shift overlaps, it is possible for duplicate shift names to appear within the same day.
- During the automatic definition of organization parameters, a calendar must be entered. The system creates a dummy calendar or uses an existing calendar in Oracle Applications. The OPM interface substitutes the correct shop calendar defined on the MPS Schedule for the dummy calendar.

MPS Schedule Parameters

When you define master production schedule (MPS) parameters in OPM, you indicate which plants are included in a schedule and select the criteria for including different sources of inventory supply and demand. The MPS schedule parameters serve the same purpose in APS and are used to create the APS Master Demand Schedule. The APS master demand schedule includes all plants linked to the MPS schedule in the MPS Schedule Parameters window detail.

You must consider the following when setting up schedules in MPS:

- The MPS schedule must have a unique, five character name. The APS master demand schedule name consists of the MPS schedule name and the warehouse name. For example, a MPS schedule named SCHED1 for resource warehouse RSW1 would result in a master demand schedule named SCHED1/RSW1.
- The Make to Stock field on the MPS Schedule Parameters window allows you to choose whether or not to include forecasts as a source of demand. The Make to Order field allows you to choose whether or not to include sales orders as a source of demand. The Plant Warehouse Effectivity window defines the items and warehouses from which to pull the demand for each plant linked to the MPS schedule.

MPS and OPM Sales Orders

The MPS schedule collects unshipped sales order information based on the following criteria:

- You select Include Sales Orders in the Make to Order field on the MPS Schedule Parameters window.
- The sales order lines are scheduled to ship from warehouses that are listed as warehouses for a plant on the MPS schedule.
- These same rules apply to the APS master demand schedule.
- Ensure that a plant is linked to only one MPS schedule. If more than one MPS schedule is linked to one plant, the sales order demand for the plant will be duplicated in all of the MPS schedules that contain the plant.

MPS and Forecasts

The setup steps necessary to use forecast consumption for APS are the same setup steps you must complete when using forecast consumption in OPM. Forecast information created and linked to an MPS schedule in OPM is used by APS to create the master demand schedule. The forecasts used by the MPS schedule are specified on the Forecast Schedule Association window. A forecast can contain any number of items in various warehouses, but the schedule only uses those items that are valid to consume for a warehouse according to the Plant Warehouses window.

If you want to use forecast information when creating the master demand schedule, you must select Include Sales Forecasts in the Make to Stock field and Include Sales Orders in the Make to Order field of the MPS Schedule Parameters window. Since one forecast can be used in multiple MPS schedules, be careful not to duplicate the demand for an item in a warehouse.

Production Orders

APS views production orders as follows:

- APS views pending OPM production orders as a source of supply and demand.
- APS can only view pending OPM production orders (firm planned orders, pending batches, and work-in-process batches) for those items that have a item/warehouse/plant relationship defined on the Plant Warehouses window.
- You must turn on Production Operations Control (POC) for a plant and you must define a resource warehouse for a plant if you want to create capacity plans for the plant. If POC is turned on, OPM collects the plant's routing and resource requirements once a batch is created and the batch information is transferred to APS. If a plant does not have a resource warehouse, routing and resource data is not transferred to APS.
- The ingredients for a batch must come from a single warehouse/inventory organization. APS does not allow the allocation of ingredients from multiple inventory organizations. OPM works around this issue by using the work-in-process warehouse or the resource warehouse, if available, as the single source of ingredients inventory when the batch has multiple sources or destinations. The work-in-process warehouse or the resource warehouse shows APS from where to allocate inventory.
- The quantity of a batch product's line items is reported in the converted primary unit of measure of the item.
- Firm planned orders are viewed by APS the same as batches, except the firm planned order routing and resource requirements are not considered. Routing and resource requirements are considered once a firm planned order is converted into a batch and POC is on for the plant.
- Production rules (defined in OPM Inventory) are not required, but they do ensure that batches created meet fixed and variable leadtime requirements.

Onhand Inventory

When considering onhand inventory, you need to be aware of the following differences in APS:

- APS only sees the on-hand inventory of item/warehouse combinations defined for the plant that is attached to the MPS schedule.
- If a lot has expired, APS considers the lot as unavailable inventory at the time it expires. It also does not suggest that you use the available lot that is closer than the other lots to expiring.
- OPM and APS observe lot statuses and will not consider a lot for consumption unless the lot status identifies the lot as nettable. The balance will not be sent APS if the lot is not nettable.

Setting Up Data in Oracle Applications

Data must be set up in Oracle Applications as well as OPM. The following topics are discussed:

- Automatically Creating Applications Organizations
- Automatically Creating Items
- Defining Sourcing Rules
- Assignment Sets
- Creating APS Plans

Automatically Creating Oracle Applications Organizations

OPM users will need to create Oracle Applications organizations to be mapped to OPM organizations. In order for these Applications organizations to map correctly, you must define the organization parameters for the system to use when creating the organizations:

- Define inventory parameters for each organization code that maps to an OPM organization.
- Associate each organization code created with a set of books.
- Assign any calendar to each organization code in the inventory parameters. The correct shop calendar is provided to APS when the manufacturing calendars are collected and transferred to APS. In the Costing Information tab of the Organization Parameters form, select costing settings.

Automatically Create Oracle Items

The OPM Item Master trigger automatically creates items in Oracle Applications that map to OPM items. These new Applications items are defined as inventory items. The following list shows the item attributes that can be assigned to newly created items:

- General Planning tab:
 - Make or Buy (required)
 - Minimum and maximum order quantity
 - Define the fixed days supply
 - Fixed lot multiplier (used to calculate the Economic Order Quantity)
 - Fixed order quantity
 - Safety stock
- MPS/MRP Planning tab:
 - Planning method: MRP Planned (required)
- Lead Times tab:
 - Fixed or variable lead time entered
- Purchasing tab:
 - List price
 - Purchasable (checkbox)
- MPS/MRP Planning tab:
 - Planning time fence
 - Demand time fence
 - Safety stock
- Work in progress
 - Built in WIP (required if producible)

- Order Entry tab:
 - ATP Components
 - Cecj ATO
- Main tab:
 - Primary unit of measure equals the OPM item primary unit of measure
(Caution: The user should not change this UOM because it is mapped to the UOM value that exists in OPM)
- Inventory tab:
 - Inventory Item (checkbox)

Defining Sourcing Rules

Sourcing rules and bills of distribution determine the movement of material between organizations. These organizations include supplier, manufacturing, and distribution facilities. The total allocation percentage for all sources within a rank must add up to 100%. The sources with the highest rank (lowest numerical value) will have the highest priority in allocations. When sources of the highest rank have no more capacity, allocation will be performed for sources in the next highest rank.

Using sourcing rules, you can define from where you receive materials. If you transfer materials from an organization, define the source and destination organization, the lead time, and the shipping method. If you manufacture materials, define which organization receives the manufactured items. If you purchase materials, define the vendor and the organization that receives the items.

Follow the Oracle Applications methodology for setting up sourcing rules. For more information about sourcing rules, refer to the *Supply Chain Planning user guide*.

Assignment Sets

The supply chain for different products can vary. Items are associated with their sourcing rules in an assignment set. In effect, the assignment set creates the sourcing and transfer links between organizations for a particular item.

Different supply chains can be modeled by creating alternative assignment sets.

The assignment set to be used for generating a supply chain plan is specified in the planning options for the supply chain plan name. You can name and create several alternative supply chain plans, then use the Planner's WorkBench to compare key performance indicators resulting from your alternative plans.

Assignment sets give you the ability to combine many sourcing rules into a group and to source by item or by item/organization.

See the *Supply Chain Planning User's Guide* topic on *Assignment Sets*.

Creating APS Plans

MRP, DRP, and MPS plans are created in APS. You choose which type of plan for APS to create. APS pulls data from the database instances that you specify. You can also specify which data to pull and how often to pull. For example, you could pull master data daily and supply/demand data more frequently.

You can select from the following time granularities to represent the planning horizon:

- Days
- Weeks
- Months

In addition, you can specify the portion of the time horizon in which scheduling should occur and the time granularities during this period. You can select from the following time granularities for the scheduling horizon:

- Minutes
- Hours
- Days

When setting up the options for your plan, you specify the organizations covered by your plan, the MDS that is driving your production plan, and the assignment sets you want to use. After you have set your plan options, you use the Launch window to initiate the planning calculations.

Using APS Data in OPM

Planning suggestions based on data collection retrieved from OPM by the APS Planner Workbench are sent back to OPM Process Planning. You can react to the suggestions accordingly. The following topics are discussed:

- Rescheduling Existing Batches
- Scheduling New Batches from APS Planner Workbench Suggestions
- Accepting or Rejecting APS Planner Workbench Cancellation Suggestions

Using the APS Data in OPM - Overview

The APS system calculates planning suggestions (either reschedule orders, the creation of purchasing or production orders, or cancel orders) in APS. You can selectively release the APS planning suggestions to OPM. For example, you can release suggestions by item or by inventory organization. When the planning suggestions are released, the purchase orders are sent to Oracle Purchasing and planned orders and production orders related to OPM organizations are sent to OPM. For OPM, the planner has the option of executing some or all of the planning suggestions by creating either new firm planned orders or production orders, rescheduling existing firm planned orders or production orders or cancelling existing firm planned orders or production orders. You can execute the planning suggestion release process from APS multiple times, but not for the same planning suggestions. Once planning suggestions have been released, you can not release them from APS again.

Rescheduling Existing Batches

Once you receive information back from an APS Planner Workbench run, you can view the reschedule suggestions in OPM. You view this information on the Reschedule Update window.

Rescheduling Existing Batches - Procedure

1. Navigate to the **Reschedule Batches** window.
2. Complete the fields as described.
3. Click **Reschedule**.

Reschedule Update - Buttons

Reject

Click this button if you reject the selected suggestions for rescheduling thereby maintaining existing dates for batches/FPOs for rescheduling.

Reschedule

Click this button to reschedule the selected batches.

Cancel

Click this button to cancel and exit the window without taking any action.

Reschedule Update Window - Field References

Plant Code

Enter the code for the plant for which you submitted an APS Planner Workbench run.

Group ID

From the list, select the group ID whose suggestions you want to approve. The group ID was displayed when you selected a group of suggestions you want to release from the APS Planner Workbench run. The list displayed contains the date and the remaining suggestions associated with the group ID.

Date

The date is populated when you select the group ID. This is the date that the group ID was generated from the APS Planner Workbench run.

Update Details

Select

Click this check box if you want to reschedule the listed batch/FPO

Warehouse

Displays the warehouse in which the batch is scheduled.

Type

Displays either batch or FPO.

Batch

Displays the batch or FPO number.

Old PST

Displays the original planned start time

Plan PST

Displays the suggested planned start time.

Planned Quantity

Displays the planned batch quantity.

Plan end Date

Displays the planned end date.

Product

Displays the code for the primary product produced by the batch.

Routing

Displays the code for the routing of the batch/FPO's primary product.

Scheduling New Batches from APS Planner Workbench Suggestions

Once you receive suggestions back from an Oracle Applications APS Planner Workbench run, you can view the new batch suggestions in OPM and convert them into OPM production batches or FPOs. You view this information on the Imported Batches window.

Scheduling New Batches from Suggestions - Procedure

1. Navigate to the **Imported Batches** window.
2. Complete the fields as described.
3. Click **Convert**.

Imported Batches - Buttons

Reject

Click this button if you want to reject the suggestions for creating new batches/FPOs.

Convert

Click this button if you want to convert the imported batches into OPM production batches or FPOs. After clicking Convert, the OPM Process Execution APIs create new batches/FPOs and you may be prompted for more data input based on your setup.

Cancel

Click this button to cancel and exit the window without taking any action.

Imported Batches - Field References

Plant Code

Enter the plant code (organization code) associated with the APS Planner Workbench run.

Group ID

From the list, select the group ID whose suggestions you want to approve. The group ID was displayed when you selected a group of suggestions you want to

release from the APS Planner Workbench run. The list displayed contains the date and the remaining suggestions associated with the group ID.

Date

The date is populated when you select the group ID. This is the date that the group ID was generated from the APS Planner Workbench run.

Approve As

Select batches or FPOs.

Order Details

Select

Click this box to select the batches/FPOs you want to approve.

Warehouse

Displays the warehouse associated with the batches/FPOs.

Batch/FPO

If you have manual document ordering, enter the code for the batch or FPO otherwise the code is automatically generated.

Product

Displays the code of the primary product produced by the batch.

Planned Qty

Displays the planned quantity of the primary product.

UOM

Displays the units of measure in which the primary product is produced.

Start Date

Displays the start date of the batch/FPO.

Description

Displays a description of the product produced by the batch.

End Date

Displays the date by which the product will be produced.

Formula

Displays the name of the formula on which the production batch is based.

Routing

Displays the routing code of the primary product produced by the formula.

Accepting or Rejecting APS Planner Workbench Cancellation Suggestions

Once you receive suggestions back from an Oracle Applications APS Planner Workbench run, you can view the cancellation suggestions in OPM and accept or reject the suggestions. Rejecting the cancellation suggestions keeps the batch/FPO, as originally scheduled. You view this information on the Batch Cancellations window.

Accepting or Rejecting Cancellation Suggestions - Procedure

1. Navigate to the **Batch Cancellations** window.
2. Complete the fields as described.
3. Click **Cancel** to cancel the batches/FPOs or **Reject** to reject the cancellation suggestion and schedule the batches/FPOs.

Batch Cancellations - Buttons

Reject

Click this button if you want to reject cancellation of the batches/FPOs. The FPOs or Batches remain scheduled.

Cancel Batch

Click this button if you want to cancel the batches/FPOs from OPM production.

Cancel

Click this button to cancel and exit the window without taking any action.

Batch Cancellations - Field References

Plant Code

Enter the plant code (organization code) associated with the APS Planner Workbench run.

Group ID

From the list, select the group ID whose suggestions you want to approve. The group ID was displayed when you selected a group of suggestions you want to

release from the APS Planner Workbench run. The list displayed contains the date and the remaining suggestions associated with the group ID.

Date

The date is populated when you select the group ID. This is the date that the group ID was generated from the APS Planner Workbench run.

Order Details

Select

Click this check box to select the batches/FPOs you want to cancel or reject cancellation (in effect schedule).

Warehouse

Displays the warehouse associated with the batches/FPOs.

Type

Displays either batch or FPO.

Batch/FPO

Displays the batch or FPO number.

Old PST

Displays the original planned start time

Plan PST

Displays the suggested planned start time.

Product

Displays the code of the primary product produced by the batch.

Planned Qty

Displays the planned quantity of the primary product.

Plan End Date

Displays the date by which the product will be produced.

Routing

Displays the routing code of the primary product produced by the formula.

A

Appendix

This topic explains the typical APS navigation paths in OPM. The following topic is covered:

- OPM APS Navigator Paths

OPM APS Navigator Paths

Although your System Administrator may have customized your Navigator, typical navigation paths are described in the following table. In some cases, there is more than one way to navigate to a window. This table provides the most typical default path.

Window	Path
Reschedule Update	OPM Process Planning:Capacity Planning:Production Updates:APS Reschedule
Imported Batches	OPM Process Planning:Capacity Planning:Production Updates:APS New Batch
Batch Cancellations	OPM Process Planning:Capacity Planning:Production Updates:APS Cancel Batch

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