
EnterpriseOne Production and Distribution Planning 8.12 Implementation Guide

July 2006

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EnterpriseOne Production and Distribution Planning Preface

This preface discusses related documentation.

Related Documentation

Supply Chain Planning Hardware and Software Requirements Guide contains essential information describing deployment and supplemental third party software options for EnterpriseOne Supply Chain Planning applications. You should be familiar with the contents of this guide.

EnterpriseOne Supply Chain Planning 8.12 Supply Chain Business Modeler PeopleBook contains information about how to import EnterpriseOne XML packages into Supply Chain Business Modeler and how to convert data into the format required for Supply Chain Planning programs like Production and Distribution Planning.

PART 1

Getting Started with Production and Distribution Planning

Chapter 1

Getting Started with Production and Distribution Planning

Chapter 2

Starting Production and Distribution Planning

CHAPTER 1

Getting Started with Production and Distribution Planning

This chapter provides an overview of EnterpriseOne Production and Distribution Planning business processes and discusses:

- EnterpriseOne Production and Distribution Planning overview.
- EnterpriseOne Production and Distribution Planning business process.
- EnterpriseOne Production and Distribution Planning integrations.
- EnterpriseOne Production and Distribution Planning implementation.

EnterpriseOne Production and Distribution Planning Overview

EnterpriseOne Production and Distribution Planning is a tactical planning tool for the entire supply chain network, helping to optimize the day-to-day flow of goods from supplier to manufacturer, manufacturer to distributor, and distributor to customer. Production and Distribution Planning helps you to solve important business challenges to produce plans that respect constraints within your supply chain and that are optimized around your key cost drivers and to support day-to-day management of the supply chain.

In a manufacturing environment, Production and Distribution Planning is used for tactical planning, deployment scheduling, and customer service. Normally, the information required by Production and Distribution Planning is imported overnight from various external transaction systems, and run in batch mode on the solvers to generate the deployments and net requirements. When the tactical planner, deployment scheduler, or customer service representative begins work, the system is ready, and the solve results and alerts are available for review.

The logistics or tactical planner ensures that sufficient inventory is in the system and that adequate resources are available to handle the projected flow of product through the network. This check ensures that inventory can get to the right place at the right time and in the right quantity so that customer orders can be filled. The key task of the tactical planner is to optimize resources available throughout the network to meet customer demand. In carrying out distribution planning tasks, the tactical planner must take into account sourcing and inventory build information determined by a strategic planner, as well as forecast information from demand planning. Typically, the tactical planner works with solve results that are generated after the fixed production.

The goal of the deployment scheduler is to create a set of deployments specifying how inventory should be distributed throughout the network. The deployment scheduler is also responsible for ensuring that inventory is available in the right place, at the right time, and in the right quantity so that customer orders can be met. The classic problem for a deployment scheduler is customer demand exceeding available inventory. Typically, the deployment scheduler works with solve results that are generated before the fixed production timefence.

The benefits of Production and Distribution Planning are both quantitative and qualitative:

- Provides tactical supply chain network.
- Facilitates planning and collaboration.
- Enhances revenue opportunities.
- Helps to reduce cost of goods sold by eliminating unnecessary handling, storage, and transportation.
- Improves your plant, warehouse, and transportation assets usage.
- Helps to reduce inventory levels across the extended supply chain.
- Enables you to react to unexpected situations in a timely and optimal manner.

Production and Distribution Planning produces optimal deployments and net requirements to direct the tactical and operational planning stages for an enterprise. The system helps you to:

- Build or import a model that represents your purchasing, sales, production, inventory, and distribution network.
- Solve for optimal, time-phased deployments and net requirements of products.
- Compare solve results for deployments and net requirements and run what-if scenarios.
- Display real-time data about the supply chain in views that can be configured to meet the needs of your enterprise.
- Add, change, and delete data through the views.
- Approve and publish data such as customer orders, deployments, and net requirements.
- View real-time alerts that provide information about exception conditions in the supply chain.
- Navigate between views to display related data or locate the source of a problem in the supply chain.
- Import data from and export data to other systems.
- Create and maintain shipments (in Vehicle Loading).

EnterpriseOne Production and Distribution Planning Business Process

Implementing Production and Distribution Planning for your organization involves designing the system's business structure and then putting that structure in place.

This diagram displays an overview of the Production and Distribution Planning business process:



Production and Distribution Planning

Model Generation

To ensure that you are working with the up-to-date information, you can obtain data from the Enterprise Resource Planning (ERP) system. Normally, the information that is required by Production and Distribution Planning, such as customer orders, work orders, dynamic data, and static data, is imported overnight from various external transaction systems and run in batch mode on the solvers to generate the deployments and net requirements.

Run Overnight Solve

This business process assists users to solve their business problem by obtaining either net requirements, deployments, or both from the Production and Distribution Planning system and exporting the results of the solve to an ERP system.

You can run a solve for Production and Distribution Planning data and for Vehicle Loading data using several different algorithms. The algorithms determine how to best use manufacturing and distribution resources to ensure that demands on products are met. The algorithms also produce files that create an audit trail displaying how the system creates solutions for the business problem.

Review Reports and Alerts

After you run a solve, you need to run an integrity check, analyze the resulting reports, and check all of the alerts. An alert is a dynamic message that notifies you about exception conditions that you might need to address. Production and Distribution Planning generates alerts based on predefined or user-defined conditions. For example, Production and Distribution Planning generates an alert when inventory quantities fall below safety stock levels. An alert notifies you of potential problems in real-time so that you can address the problems and avoid unwanted situations, such as inventory shortages.

Using the alerts as a management-by-exception tool, you can review the impact of the created deployments or net requirements on the distribution network. The alerts indicate problems such as insufficient capacity or transportation resources. For a capacity problem, you can decrease the net requirements, reroute the inventory flow, or procure additional resources. For transportation problems, you can select alternative modes of transportation or contract additional carriers. As part of the review process, the tactical planner or deployment scheduler drills down to and opens views - possibly changing data in the views.

Manage Exceptions

Using the alerts as a management-by-exception tool, review the impact of the created deployments or net requirements on the distribution network. The alerts indicate problems such as insufficient capacity or transportation resources. For a capacity problem, the tactical planner or deployment scheduler can decrease the net requirements, reroute the inventory flow, or procure additional resources.

Approve and Publish Optimized Plans

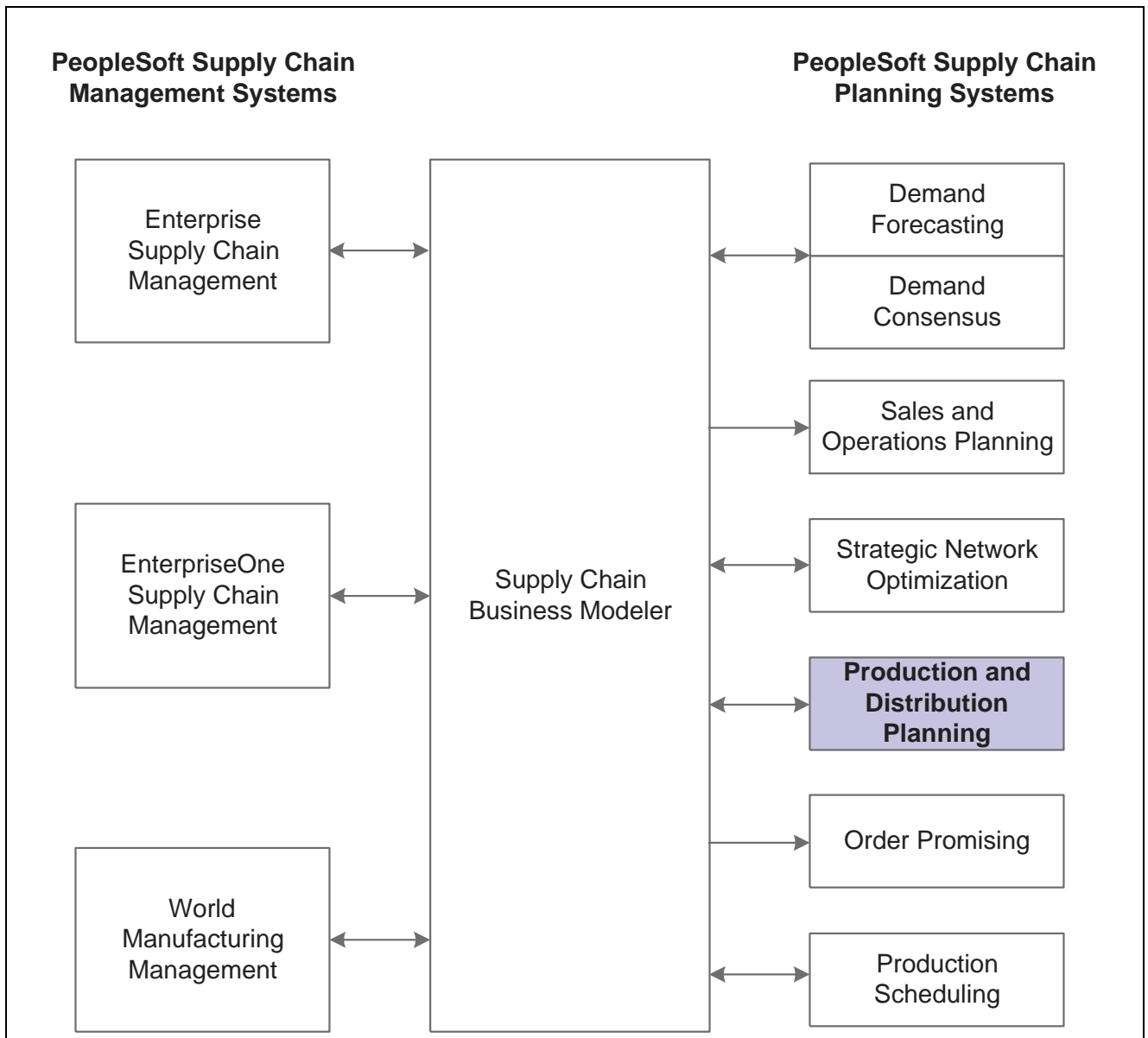
You can approve and publish acceptable deployments or net requirements so that they become accessible to any external system. Net requirements need to be approved and published to make them available for use by a production scheduling system. Deployments need to be approved and published so that they can be imported into VL to be assigned to specific vehicle loads.

EnterpriseOne Production and Distribution Planning Integrations

EnterpriseOne Production and Distribution Planning integrates with EnterpriseOne Supply Chain Management and Supply Chain Planning applications using EnterpriseOne Supply Chain Business Modeler. Supply Chain Business Modeler is a central data warehouse that enables you to convert data to the representation required by Production and Distribution Planning and other supply chain systems.

You can import data from Production and Distribution Planning into Supply Chain Business Modeler and convert it to the representation required by other applications. Similarly, you can import data from other supply chain systems into Supply Chain Business Modeler and convert it to the representation required by Production and Distribution Planning.

The following graphic shows EnterpriseOne Supply Chain Management and Supply Chain Planning systems that Production and Distribution Planning integrates with using Supply Chain Business Modeler:



EnterpriseOne Production and Distribution Planning Integrations

- **Supply Chain Management Systems**

Enterprise Supply Chain Management, EnterpriseOne Supply Chain Management, and World Manufacturing Management can provide EnterpriseOne Production and Distribution Planning with the supply chain data that the application needs to create optimal deployment, production, and purchase order recommendations. The data includes information about items, branches, inventory policies, and manufacturing processes. After Production and Distribution Planning creates optimal deployment plans, production plans, and purchase order recommendations, you can import the plans into a EnterpriseOne Supply Chain Management system for further refinement or implementation. You can also refine optimized plans from Production and Distribution Planning in EnterpriseOne Production Scheduling before importing the data into a Supply Chain Management system.

- **EnterpriseOne Demand Forecasting and EnterpriseOne Demand Consensus**

EnterpriseOne Demand Consensus and Demand Forecasting can provide EnterpriseOne Production and Distribution Planning with enterprise demand forecasts and inventory safety targets. Production and Distribution Planning can then create optimal deployment, production, and purchase order recommendations for meeting the demand forecasts.

- EnterpriseOne Strategic Network Optimization

EnterpriseOne Strategic Network Optimization can provide EnterpriseOne Production and Distribution Planning with inventory build targets and sourcing recommendations for a supply chain. Production and Distribution Planning can then create optimal deployment, production, and purchase order recommendations for meeting the targets and recommendations.

- EnterpriseOne Production Scheduling

EnterpriseOne Production and Distribution Planning can provide optimal deployment and production plans to EnterpriseOne Production Scheduling. The production scheduling applications can then produce optimal production schedules for meeting the production targets.

EnterpriseOne Production and Distribution Planning Implementation

You can divide EnterpriseOne Production and Distribution Planning implementation into these phases:

- Setting up the application environment.
- Setting roles and permissions.
- Importing enterprise data.
- Setting up the data model.

Setting Up the Application Environment

Setting up the application environment involves creating repositories to store your business data and validating your data model. The application environment can be customized to suit your business needs. This table lists the steps required to set up the application environment:

Step	Reference
Create custom repositories.	“Creating Data Repositories”
Set Production and Distribution Planning environment variables.	“Appendix A: Environment Variables.”
Set environment variables for auto-launching and auto-exporting.	“Pre-Loading and Auto-Exporting Views.”

Setting Roles and Permissions

Roles and permissions govern user access to data and application functionality. This table lists the steps required to grant appropriate roles and permissions to users:

Step	Reference
Modify the WorkGroup and WorkGroupView tables.	“Appendix AA: Workgroup Management Tables.”
Define user accounts and assign user roles to users.	“Appendix Y: Security Management Tables.”
Define access controls for user roles.	“Appendix Y: Security Management Tables.”
Set security for importing external data and clearing data.	“Appendix Y: Security Management Tables.”

Importing Enterprise Data

Importing enterprise data from external systems is important for building accurate data models in Production and Distribution Planning. This table lists the steps required for populating the repository with data:

Step	Reference
Import Enterprise data.	“Populating Repositories with Data.”
Run scripts before or after importing data.	“Populating Repositories with Data,” Running Pre- and Post- Import Scripts.

Setting Up the Data Model

Setting up the data model can involve defining model data in views and tables. This table lists the steps required to define your data model using views and tables:

Step	Reference
Define Distribution Management.	“Building PDP Data Models,” Distribution Management.
Define Facility Management.	“Building PDP Data Models,” Facility Management.
Define Inventory Management.	“Building PDP Data Models,” Inventory Management.
Define Item Management.	“Building PDP Data Models,” Item Management.
Define Demand Management.	“Building PDP Data Models,” Demand Management.
Define Production Management.	“Building PDP Data Models,” Production Management.
Define System Management	“Building PDP Data Models,” System Management.
Perform integrity checks.	“Verifying Data Integrity.”

CHAPTER 2

Starting Production and Distribution Planning

This chapter provides an overview of starting Production and Distribution Planning and discusses how to:

- Start the Control Panel.
- Start and Stop Servers.
- Start the Desktop.

Understanding Starting Production and Distribution Planning

Starting Production and Distribution Planning involves starting the following PDP components:

1. Control Panel.

The Control Panel is the central interface for importing data, creating and maintaining PDP data repositories, administering and maintaining Production and Distribution Planning, and starting and stopping servers.

2. PDP and solver servers.

The PDP and solver servers make data from the PDP database available to users from their desktops.

The data includes both static and dynamic data. Static data includes information about facilities, products, policies, and other basic components of an enterprise that does not change frequently. Dynamic data includes forecasts, production schedules, and deployment information from ERP systems and, because it changes frequently, must be imported at regular intervals.

3. Starting PDP Desktops.

The desktop includes the following areas:

Desktop Area	Description
Alert meter	<p>The alert meter displays a histogram of the existing alerts in order of priority.</p> <p>Alerts are messages that notify you about exception conditions that you need to address. Production and Distribution Planning generates alerts based on predefined or configurable conditions. For example, Production and Distribution Planning generates an alert when inventory quantities fall below safety stock levels. Alerts notify you of potential problems so that you can address the problems and avoid unwanted situations, such as inventory shortages.</p>

Desktop Area	Description
Alert dynamic filter	The alert dynamic filter pane is the area in which you can sort and filter alerts according to your needs. Sort and filter options and the alert tree order are saved for use in subsequent sessions.
Alert pane	The alert pane displays the existing alert view. You initialize it by selecting the alert view from the navigation tree. The system automatically opens the first view when you first start the Production and Distribution Planning desktop.
Navigation tree	The navigation tree organizes Production and Distribution Planning and Vehicle Loading information into folders, based on the information that is contained in each folder. Production and Distribution Planning views are divided into eight main folders. These folders are further subdivided into subfolders that contain the views or other information that is related to the main category.
View dynamic filter pane	The view dynamic filter pane is the area in which you can sort and filter the information in your views.
View pane	Views display the information in the data model in the desktop user interface. A view includes fields from various database tables and additional calculated fields. You can configure view for different business needs or use the Chart tool to display the contents of the views in an easy to identify graphical format. All the views that you open are viewed in this pane. The view pane can be minimized, resized, or maximized.

When you first start PDP installed, you can view data from a sample data repository called demo_bikes. You can then create your own data model in Production and Distribution Planning.

Starting the Control Panel

From the Control Panel, you can start the PDP and solver servers. You can also create repositories, load data, and administer PDP from the Control Panel.

This section discusses how to:

- Start the Control Panel in Windows..
- Start the Control Panel in UNIX.

Starting the Control Panel in Windows

To start the Control Panel in Windows, do one of the following:

- From the Start menu, choose Programs, EnterpriseOne Supply Chain Planning 8.12, Production and Distribution Planning, PDP Control Panel.
- From a command prompt, navigate to the *path*\scp\8.12\common\start directory, where *path* is the directory where Production and Distribution Planning is installed, and enter the following command:

```
run_pdp_control_panel.vbs
```

Starting the Control Panel in UNIX

To start the Control Panel in UNIX, navigate to the *path*/scp/8.12/common/start directory from a command prompt, where *path* is the directory where Production and Distribution Planning is installed, and enter the following command:

```
./run_pdp_control_panel.sh
```

Starting and Stopping the PDP and Solver Servers

You can start the PDP and Solver servers after you start the Control Panel. The PDP and Solver servers make data from the data model available to PDP desktops and enable users to submit solve requests from their desktops.

This section describes how to:

- Start PDP and Solver servers.
- Stop PDP and Solver servers.

Starting the PDP and Solver Servers

To start the PDP and Solver servers:

1. In the Control Panel, click Servers on the PDP tab in the navigation area.
2. On the Servers tab, double-click Start PDP Servers.
3. In the Information window, click OK.
4. On the Servers tab, double-click Start Solver Servers.
5. In the Information window, click OK.

Stopping the PDP and Solver Servers

To stop the PDP and Solver servers:

1. In the Control Panel, click Servers on the PDP tab in the navigation area.
2. On the Servers tab, double-click Stop PDP Servers.
3. In the Confirmation window, click Yes.
4. On the Servers tab, double-click Stop Solver Servers.
5. In the Confirmation window, click Yes.
6. In the Information window, click OK.

Starting the PDP Desktop

After you start the PDP and solver servers, you can start PDP desktops.

Note. When you start the PDP desktop, you might receive an error from the licensing system. For more information about resolving licensing errors, see the Production and Distribution Planning 8.12 User Guide.

This section discusses how to:

- Start the PDP Desktop in Windows.
- Start the PDP Desktop in UNIX.

Starting the PDP Desktop in Windows

In Windows, you can start a PDP desktop from the Start menu, from a command prompt, or from the Control Panel.

1. Do one of the following:

- From the Start menu, choose Programs, EnterpriseOne Supply Chain Planning 8.12, Production and Distribution Planning, and PDP Desktop.
- From a command prompt, navigate to the *path/scp/8.12/common/start* directory, where *path* is the directory where Production and Distribution Planning is installed, and enter the following command:

```
./run_pdp_desktop.vbs
```

In the Production and Distribution Planning window, select a repository and click OK.

- In the Control Panel, click Desktop on the PDP tab in the navigation area. Double-click Regular User.

2. In the Login window, enter your name and password.

When you first log in, the default login name is SystemAdmin and the password is systemadmin. The system prompts you to change this password when you first log in.

User names and passwords are case-sensitive.

Starting the PDP Desktop in UNIX

In UNIX, you can start the PDP Desktop from a command prompt or from the Control Panel.

To start the PDP Desktop in UNIX:

• 1. Do one of the following:

- From a command prompt, navigate to the *path/scp/8.12/common/start* directory, where *path* is the directory where Production and Distribution Planning is installed, and enter the following command:

```
./run_pdp_desktop.sh
```

In the Production and Distribution Planning window, select a repository and click OK.

- In the Control Panel, click Desktop on the PDP tab in the navigation area. Double-click Regular User.

• In the Login window, enter your name and password.

When you first log in, the default login name is SystemAdmin and the password is systemadmin. The system prompts you to change this password when you first log in.

User names and passwords are case-sensitive.

PART 2

Creating and Populating PDP Data Repositories

Chapter 3
Creating Data Repositories

Chapter 4
Populating Repositories with Data

Chapter 5
Verifying Data Integrity

Chapter 6
Clearing and Deleting Data

Chapter 7
Viewing and Editing Data in Production and Distribution Planning

Chapter 8
Building PDP Data Models

CHAPTER 3

Creating Data Repositories

This chapter provides an overview of PDP data repositories and discusses how to create repositories.

Understanding Data Repositories

A data repository in Production and Distribution Planning contains all data tables in the EnterpriseOne Production and Distribution Planning database. It stores information about the enterprise and is designed to represent the business objectives of the enterprise. When you build a data model, you enter enterprise-specific information into either tables or views. Various tables in the database use the information that you entered in the views to create the data model.

EnterpriseOne Production and Distribution Planning supports the following database types:

- Flat File Database

A flat file database is a directory that contains files that represent data tables. Each file contains data in readable text format, aligned in columns, and typically separated by tabs. A flat file database can be token-delimited or fixed format. In APAG, used by EnterpriseOne Production and Distribution Planning, flat files contain data and the definition of the data. The other information, including type, length, and key, is created in the storage definition.

- Oracle Database

An Oracle database is managed by a Relational Database Management System (RDBMS) and contains the definition of the data (including type, length, and key) as well as the data.

Creating Custom Repositories

After you have installed Production and Distribution Planning, you can create custom repositories to store your data.

Note. If Production and Distribution Planning is not licensed correctly, you will not be able to create new repositories.

To create custom repositories:

1. In the Control Panel, click the PDP tab on the Navigation bar.
2. Click Utilities.
3. Double-click Create Repository.
4. Complete the following fields and click OK:

- Name. Do not use the name demo_bikes or an existing name.
 - Location. Specify the directory where you want to create the new repository.
 - Type Specify whether you want to create a FlatFile or an Oracle repository.
5. If you are creating an Oracle repository, complete the Database name, User ID, and Password fields in the Relational Database Information window, and click OK.

CHAPTER 4

Populating Repositories with Data

After creating a repository in Production and Distribution Planning, you must populate the repository with data. You can import data into flat file repositories, load data into Oracle database repositories, or migrate data from previous Production and Distribution Planning versions.

This chapter discusses how to:

- Import data in Supply Chain Planning XML format into flat file repositories.
- Import tab-delimited data into flat file repositories.
- Load data from flat file repositories into Oracle repositories.
- Migrate data from previous Production and Distribution Planning versions.

Importing Data in Supply Chain Planning XML Format into Flat File Repositories

Using a connector that is provided with Production and Distribution Planning, you can import data in Supply Chain Planning XML 3.2 format into flat file repositories.

Supply Chain Planning XML 3.2 format is a data format for integrating EnterpriseOne Supply Chain Management and Planning applications using EnterpriseOne Supply Chain Business Modeler. Supply Chain Business Modeler is a configurable data warehouse that converts supply chain data to the representation required by EnterpriseOne Production and Distribution Planning and other supply chain systems. After importing data into Supply Chain Business Modeler and converting it to the required representation, you can export the data in Supply Chain Planning XML format for use in Production and Distribution Planning.

When you use the PDP Connector to import data into Production and Distribution Planning, the system updates tables in the data repository with the imported data. When you import data into the LotStatus table, the system appends all imported records to the existing database table. For all other data tables, the system compares the primary keys of records in the imported data and in the repository. If a record in the imported data has the same primary key as a record in the table, the system saves the new record in the repository. If a record in the imported data has a primary key that does not exist in the table, the system appends the record to the table.

Supply Chain Business Modeler also enables you to create model generation rules files that specify how to use Supply Chain Planning XML data in Production and Distribution Planning. When you create and run a model generation scenario in Supply Chain Business Modeler, you select options and create a model generation rules (.mgr) file that specifies how to use the data in Production and Distribution Planning.

To populate Production and Distribution Planning with data from Supply Chain Business Modeler, you must:

1. Export data from the Tactical model in Supply Chain Business Modeler. You must export the following data packages:
 - Base.xml

- Manufacturing.xml
 - Customer.xml
 - SalesOrders.xml
 - Calendar.xml
 - EnterpriseForecast.xml
 - Configuration.xml
 - InventoryBuildTargets.xml
 - InventorySafetyTargets.xml
 - Distribution.xml
 - BeginningInventory.xml
 - NetDeploymentRequirements.xml
 - NetProductionRequirements.xml
 - PurchaseOrders.xml
 - TransferOrders.xml
 - Supplier.xml
 - WorkOrders.xml
2. Create a model generation rules file using Supply Chain Business Modeler.
 3. Use the PDP connector to import data in Supply Chain Planning XML 3.2 format into Production and Distribution Planning.

This section discusses how to:

- Create model generation rules files in Supply Chain Business Modeler.
- Import Supply Chain Planning XML data into a flat file repository.

Note. You can also export data from Production and Distribution Planning in Supply Chain Planning XML 3.2 format using the PDP connector.

See [Chapter 14, “Exporting Data from Production and Distribution Planning,” Understanding Exporting Production and Distribution Planning Data, page 175.](#)

Creating Model Generation Rules Files in Supply Chain Business Modeler

You can specify how to use data from Supply Chain Business Modeler in Production and Distribution Planning by creating Supply Chain Business Modeler model generation rules files. When you create a model generation scenario in Supply Chain Business Modeler, you select options for creating and solving a data model in Production and Distribution Planning. When you run the model generation scenario, Supply Chain Business Modeler creates a model generation rules (.mgr) file that the PDP Connector can use when importing data.

You can specify the following model generation rules for Production and Distribution Planning:

Rule	Description
Pre-Existing Purchase Orders	This rule specifies whether or not to represent purchase orders as work orders in the data model. The rule can be activated and deactivated within a scenario. If the rule is activated, purchase orders are modeled as work orders so that they can be considered as available inventory by Optimal Supply Planning. You can specify an offset date that represents the Horizon Start date. Optimal Supply Planning considers the purchase order to be a work order if the arrival date of the purchase order precedes the end of the constrained timeframe.
Purchase Order Recommendations	<p>This rule is used to generate purchase order recommendations as a result of an Optimal Supply Planning solve. This rule can be activated and deactivated within a scenario.</p> <p>Using the Purchase Order Recommendations rule, the connector creates manufacturing routings for purchased items. By default, only Supply Planning generates purchase order recommendations. Optimal Supply Planning can generate purchase order recommendations if the purchased items are associated with a routing in the model. This rule models the purchase order lead time as a move time in the routing. In the event that there is a customer order for a finished good, Optimal Supply Planning creates dependent demand and a net requirement for the purchased item. The net requirement for the purchased item will be flagged as a purchase order.</p> <p>Purchase order recommendations can be sent back to Supply Chain Business Modeler to be transferred to an ERP system for approval.</p>

Before you can create or modify model generation scenarios in Supply Chain Business Modeler, you must:

- Ensure that an extract area and at least one data folder exists for saving data files that you export from Supply Chain Business Modeler.

See "Creating Extract Areas and Data Folders," Setting Up Extract Areas and Data Folders, EnterpriseOne Supply Chain Business Modeler 8.12 PeopleBook.

- Save any Tcl scripts that you want to run as pre-export or post-export scripts in the Scripts folder of the extract area.

See "Scripts Folders," Setting Up Extract Areas and Data Folders, EnterpriseOne Supply Chain Business Modeler 8.12 PeopleBook.

To create and modify model generation scenarios using EnterpriseOne Supply Chain Business Modeler:

1. In EnterpriseOne Supply Chain Business Modeler, do one of the following:

- To create a model generation scenario, click the Model Generation Scenarios button in the Shortcuts bar. Select File, Add Model Generation Scenario. Click Next.
- To modify a model generation scenario, click the Model Generation Scenarios button in the Shortcuts bar. In the Model Generation Scenario Navigator, right-click the model generation scenario and select Modify Scenario. Click Next.

2. In the Scenario Definition window, complete the following fields:

Name Enter a name for the model generation scenario. The resulting model generation rules file will have the same name as the model generation scenario, with the .mgr extension. For example, if the model generation scenario name is scenario1, the resulting rules file will be scenario1.mgr.

Model Enter the name of the model from which the data was exported.

3. In the Data Location window, complete the following fields:

Extract Area Enter the name of the extract area where the exported data packages are saved. You cannot create a model generation scenario an extract area exists.

Data Folder Select the name of the data folder where the exported data for the model generation scenario is saved. The model generation rules (.mgr) file will be created in this data folder when you run the model generation scenario.

4. In the Application Integration Profile window, complete the following fields:

Application integration profile Select the name of the Supply Chain Planning application where a model will be generated using the exported data.

5. In the Pre-Existing Purchase Orders window, complete the following fields:

Model purchase orders so that OSP can see them This parameter determines if purchase orders are modelled as work orders so that they can be recognized by OSP (Optimal Supply Planning).

Values are:

Yes: The connector will model purchase orders as work orders so that Optimal Supply Planning can consider the supplied items as inventory.

No: The connector will not model purchase orders as work orders.

The default value is *No*.

Horizon starts on This parameter determines the start of the planning horizon.

Values are:

Today: The planning horizon starts on the current day.

Selected Date: The planning horizon starts on a selected date specified by the *Date* parameter.

The default value is *Today*.

Date (YYYY-MM-DD) The date on which the planning horizon begins. This date is used by Optimal Supply Planning to determine whether a purchase order should be considered as a work order in the data model.

6. In the Purchase Order Recommendations window, complete the following fields:

Model so OSP can generate Purchase Order Recommendations This parameter determines whether the connector models purchased items using manufacturing routings in the data model so that Optimal Supply Planning can generate purchase order recommendations.

Values are:

Yes: The connector will create routings for purchase items.

No: The connector will not create routings for purchase items.

The default value is *No*.

Horizon starts on	This parameter determines the start of the planning horizon. Values are: <i>Today</i> : The planning horizon starts on the current day. <i>Selected Date</i> : The planning horizon starts on a selected date specified by the <i>Date</i> parameter.
Date (YYYY-MM-DD)	The date on which the planning horizon begins. This date is used by the connector to determine the purchase order lead time and the effective dates for the manufacturing representation.

Importing Supply Chain Planning XML 3.2 Data into Flat File Repositories

After you export data from the Supply Chain Business Modeler Tactical model in Supply Chain Planning XML 3.2 format and create a model generation rules file, you can import the data into a Production and Distribution Planning flat file repository.

See [Chapter 4, “Populating Repositories with Data,” Creating Model Generation Rules Files in Supply Chain Business Modeler, page 22.](#)

To import Supply Chain Planning XML 3.2 data into a flat file repository:

- Do one of the following to start the PDP Connector:
 - In Windows, from the Start menu, choose EnterpriseOne Supply Chain Planning 8.12, Production and Distribution Planning, and then PDP Connector, or, from a command prompt, navigate to the *path/scp/8.12/common/start* directory, where *path* is the directory where Production and Distribution Planning is installed, and enter the following command:


```
run_pdp_connector.bat
```
 - In UNIX, from a command prompt, navigate to the *path/scp/8.12/common/start* directory and enter the following command:


```
run_pdp_connector.sh
```
- In the command shell, specify the Production and Distribution Planning package by entering the following command:


```
package require Pdp
```
- In the command shell, enter the following command:


```
pdp::model refresh [-gzip] SCBMDataFolder PDPDataFolder modelGenerationRulesFile
```

 where:
 - gzip* is an optional parameter that allows Production and Distribution Planning to read in compressed XML files from Supply Chain Business Modeler. This command looks for compressed XML files as input in the source data directory and generates Production and Distribution Planning flat files in the destination data directory.
 - SCBMDataFolder* is the location of the source Supply Chain Business Modeler data directory. If the directory name includes a space, it must be enclosed in quotation marks.
 - PDPDataFolder* is the location of the destination Production and Distribution Planning data directory. If the directory name includes a space, it must be enclosed in quotation marks.

- *modelGenerationRulesFile* is the location and name of the model generation rules file created in Supply Chain Business Modeler.

Note. When entering file locations in this command, either use a double backward slash (\\) or a forward slash (/) between directory names. The backward slash (\) is an escape character in Tcl commands.

Importing Tab-delimited Data into Flat File Repositories

You can import tab-delimited flat file data into flat file repositories in Production and Distribution Planning.

This chapter provides an overview of tab-delimited data for importing into flat file repositories and discusses how to:

- Import tab-delimited data into flat file repositories.
- Run pre- and post-import scripts.

Note. If you want to populate an Oracle repository with data, you can first import the data into a flat file repository and then load the data into the Oracle repository.

Understanding Tab-Delimited Data for Importing into Flat File Repositories

Data for importing into Production and Distribution Planning must be in tab-delimited flat files that correspond to the structure of data tables in Production and Distribution Planning repositories.

To determine the correct name and structure for each tab-delimited import file, you can view Object Definition (ODEF) files that are provided with Production and Distribution Planning. The ODEF files specify what the fields represent, their data types, and their length. For example, the file CUSTOMER_ORDER.import_ODEF describes the CUSTOMER_ORDER.import file. Object definition files are saved in the directory specified by the NMX_3D_IMPORT_PATH environment variable.

Note. Do not delete or modify the object definition files.

This table lists possible names for tab-delimited data files that you can import into Production and Distribution Planning:

Tab-Delimited Data File	Description
CUSTOMER_ORDER.import CUSTOMER_ORDER_ITEM.import	Customer order data from an external customer order management system. Imported data is stored in the CustomerOrder and CustomerOrderItem tables.
DEMAND_ALLOC.import DEMAND_EXCEPTION_ALLOC.import	Demand data from an external system.
DEPLOYMENT.import	Deployment data from an external system.
EXTERNAL_ALERT.import	Alerts from an external system. Alerts are usually triggered by an external system, and the information to trigger them is user-defined. Imported data is stored in the ExternalAlert table.

Tab-Delimited Data File	Description
FORECAST.import	Forecast data from an external forecast management system. Imported data is stored in the Forecast table.
INVENTORY_BALANCE.import	Inventory balance information from an external system.
INVENTORY_POLICY_BUILD.import INVENTORY_POLICY_MASTER.import INVENTORY_POLICY_MAXIMUM.import INVENTORY_POLICY_SAFETY.import INVENTORY_POLICY_STORAGE.import	Inventory policy data from external systems. Imported data is stored in the InventoryPolicy tables.
LOT_STATUS.import	Inventory levels at a particular point in time from an external system. Imported data is stored in the LotStatus table.
MATERIAL_ALLOCATION.import	Material allocation data from an external system.
NET_REQUIREMENTS.import NET_REQ_CO_PRODUCT.import NET_REQ_MAT_CONSUMPTION.import NET_REQ_RES_UTILIZATION.import	Net requirements data from an external system.
ORDER_ALERT.import ORDER_DEPLOYORDER_ALLOC.import ORDER_DEPLOYPLAN_ALLOC.import ORDER_NETREQ_ALLOC.import ORDER_STARTINV_ALLOC.import	Customer order data from an external system.

Tab-Delimited Data File	Description
RETURNABLES_PRODUCTION.import	<p>Imports data for reusable products. Reusable products can include returnable containers, such as pallets or bottles. Data about reusable products, you must define the following information:</p> <ul style="list-style-type: none"> • The reusable products must be defined as items. • The relationship between the reusable products and the finished products that are associated with them must be defined in the BOMR table. • The finished products that are associated with the reusable products must have a forecast. <p>When you import returnables production, Production and Distribution Planning calculates the forecast for the finished products that are associated with the containers and offsets it by a certain time period. The current value of the offset is 0. The system then multiplies the containers by a depreciation factor and imports the information into the Production table. The current value of the depreciation factor is 10 percent.</p> <p>The information about returnables production appears in the Schedule Production and Inventory Status views. The calculations for returnables production are predefined in the file IMPORT_RETURNABLES_PRODUCTION.pre. Data is stored in the Production table.</p> <p>After an import, the original import file is renamed RETURNABLES_PRODUCTION.import.bak and can be used if you need a backup file.</p>
SAFETY_COVER.import	Safety stock information from an external system.
SHIPMENT.import SHIPMENT_ITEM.import	You can import data for in-transits and planned transfers from an external order management or shipping system. Imported data is stored in the Shipment and ShipmentItem tables.
SOURCING.import	You can import a new or updated sourcing matrix from an external system, such as EnterpriseOne Enterprise Planning. Imported data is stored in the Sourcing table.
SUBSTITUTED_DEMAND.import SUBSTITUTED_MATERIAL.import SUBSTITUTED_MR.import	Substitution information from an external system.
SUPPLY_ALLOC.import SUPPLY_OUTPUT.import	Supply data from an external system.

Tab-Delimited Data File	Description
VEHICLE_LOAD.import VEHICLE_LOAD_ITEM.import	Vehicle load information from an external system.
WORK_ORDER.import WORK_ORDER_BOMR.import WORK_ORDER_CO_PRODUCT.import WORK_ORDER_MAT_CONSUMPTION.import WORK_ORDER_OPERATION.import WORK_ORDER_RES_UTILIZATION.import	Work order data that has been created by the Production Scheduling system. Data is stored in the WorkOrder table.

This table shows possible data types for data in the tables:

Data Type	Storage Type	Description
NameString	string 80	Character string class to hold readable names and codes.
TextString	string 255	Character string class to hold free text descriptions.
LocationCode	string 80	String to hold location codes.
ItemCode	string 80	String to hold item codes.
LaneCode	string 80	String to hold lane codes.
CharString	string 1	Character string to hold single character options.
YorN	string 1	Indicates yes or no. Values are: <ul style="list-style-type: none"> • Y: Yes. • N: No.
UOM	string 80	Unit of measure.
Double	NMX_double	Double precision floating point.
Quantity	NMX_double	Stores quantities. Usually associated with a unit of measure.
Cost	NMX_double	Stores usage or penalty costs.
Integer	NMX_integer	All integers.
Count	NMX_integer	Holds non-negative integers.

Data Type	Storage Type	Description
Boolean	string 1	Indicates true or false. Values are: <ul style="list-style-type: none"> • 0: False. • 1: True.
Date	NMX_date	APAg date-time in format %d-%b-%Y %H:%M:%S. Date-time fields are mapped to the database's date-time format. For example, the DATE data type is used for Oracle tables.
Rate	NMX_double	Holds conversion rates, factors, or ratios.
LongString	LONG	Character string class to hold long strings.

Character data fields, referred to as strings, are stored as variable length fields (VARCHAR2 in Oracle). No blank padding exists, resulting in efficient storage. The string lengths for each storage type are the maximum field sizes, in characters.

Note. Tables and fields must be completed unless otherwise indicated.

Importing Tab-delimited Data into Flat File Repositories

After you prepare tab-delimited data files for importing into Production and Distribution Planning, you can import the data into flat file data repositories.

When you import data, the system updates tables in the data repository with the imported data. When you import data into the LotStatus table, the system appends all data records to existing data in the table. When you import data into any other data table, the system compares the primary keys of records in the import file with records in the existing table. If a record in the import file has the same primary key as a record in the table, the system replaces the existing record with the new record. If a record has a primary key that does exist in the repository table, the system appends the record to the data file.

Your user role must have access rights that allow you to import data. User roles are assigned rights in each workgroup to import specific types of data. Data that is affected by import commands is not limited by workgroup and user role. When you execute an import command, all data of the specified data type is imported.

If the import file or the object definition file is missing when you try to import data, a message warns you that the file is missing.

Importing Tab-delimited Data into Flat File Repositories

Before you import tab-delimited data, ensure that the PDP servers are running and that the data files that you want to import are in the directory specified by the NMX_3D_IMPORT_PATH environment variable.

To manually import data into flat file repositories:

1. From the File menu, choose Import, and then choose the data that you want to import.
A warning message appears, asking whether you want to continue.
2. Click OK.

Importing Tab-delimited Data Using Scripts

You can use pre-defined scripts to trigger automatic or dynamic imports while Production and Distribution Planning is running. Scripts can be triggered manually, by a CRON job, or by the script that is used to populate the import files. Scripts are located in the *path/scp/8.12/pdp/tcl* directory, where *path* is the directory where Production and Distribution Planning is installed.

To import tab-delimited data using scripts:

1. From a command prompt, navigate to the following directory, where *path* is the directory where Production and Distribution Planning is installed.

```
path/scp/8.12/common/start
```

2. Enter the following command to start the Control Panel in batch mode:

```
run_pdp_control_panel -b -l
```

3. Enter the following command to import the data:

```
runAction DoAutoImport -MVC:TCLFILE=path/scp/8.12/pdp/tcl/file
```

Where *path* is the directory where Production and Distribution Planning is installed and *file* is the name of one of the predefined scripts listed in this table:

File	Description
3D_Import_All.tcl	Imports data into all tables.
3D_Import_CustomerOrder.tcl	Imports data into the CustomerOrder and CustomerOrderItem tables.
3D_Import_ExternalAlert.tcl	Imports data into the ExternalAlert table.
3D_Import_Forecast.tcl	Imports data into the Forecast table.
3D_Import_InventoryPolicy.tcl	Imports data into the InventoryPolicy table.
3D_Import_LotStatus.tcl	Imports data into the LotStatus table.
3D_Import_Shipment.tcl	Imports data into the Shipment and ShipmentItem tables.
3D_Import_Sourcing.tcl	Imports data into the Sourcing table.
3D_Import_WorkOrder.tcl	Imports data into the WorkOrder table.

Running Pre- and Post- Import Scripts

You can run custom scripts automatically before and after importing data into Production and Distribution Planning. For example, you can create a script that copies work order data to a specific directory and file before you import the data into Production and Distribution Planning.

When you create a script to run before an import, you must use the name of the view with the prefix "IMPORT_" and the suffix ".pre.bat". Similarly, scripts that run after an import must be named using the name of the view with the prefix "IMPORT_" and the suffix ".post.bat". If the view contains a details area, it calls scripts with the prefix "IMPORT_" and the suffix "_Detail.pre.bat" and "_Detail post.bat" for the view.

You must save pre- and post scripts in the directory specified by the NMX_3D_SCRIPTS environment variable.

Possible names for pre- and post- scripts are:

- IMPORT_CUSTOMER_ORDER
- IMPORT_CUSTOMER_ORDER_ITEM
- IMPORT_DEPLOYMENT
- IMPORT_DEPLOY_ORDER_ALERT
- IMPORT_EXTERNAL_ALERT
- IMPORT_FORECAST
- IMPORT_INVENTORY_POLICY
- IMPORT_LOT_STATUS
- IMPORT_NET_REQUIREMENT
- IMPORT_RETURNABLES_PRODUCTION
- IMPORT_SAFETY_COVER
- IMPORT_WORK_ORDER
- IMPORT_SHIPMENT
- IMPORT_SHIPMENT_ITEM
- IMPORT_SOURCING

Loading Data from Flat File Repositories into Oracle Repositories

You can load data from flat files into Oracle repositories in Production and Distribution Planning. You must create the repository before loading the data.

Note. In a flat file database, an empty field or double quotes ("") represent a NULL value.

To load data from a flat file repository into an Oracle repository:

1. In the Control Panel, click Utilities on the PDP tab in the navigation area.
2. Double-click Load Data.
3. Complete the following fields:
 - Load from directory
Specify the path to the flat file repository that contains data for importing into the database.
 - Load into repository
Specify the name of the repository into which you want to load the data.
The Database user and User password fields are automatically completed when the Load into repository field is completed.
4. Click Load Data.

Migrating Data to Production and Distribution Planning 8.12

You can migrate data from Production and Distribution Planning 8.11.1, 8.11, 8.10, and 4.0 repositories to Production and Distribution Planning 8.12 repositories. You can migrate data from flat file or relational database repositories on the same machine as Production and Distribution Planning 8.12 or on other machines to which you have file system access.

To migrate all necessary data from previous versions to 8.12, including workgroup and role information, you must run the Migrate Data utility from the Control Panel. To ensure the integrity of your data, you can run integrity checks either as a part of the migration process or as a separate function.

You can migrate data stored in flat file or relational database repositories. Before you migrate data, you must create a new repository that will store the migrated data. Do not remove tables created in the new repository.

During data migration, the following tables are not migrated:

- AlertSource
- AlertSourceView
- Command
- SystemAlert
- System_OptionValues
- HyperLink
- HyperLinkMap
- SCV_View
- ViewParameter
- IntegrityCheck
- SolveStatus

During data migration, the following tables are migrated only if you choose the option to migrate workgroup tables in the migration dialog:

- RoleACL
- WorkGroupView

The following tables are merged to their respective tables during migration:

- RoleACL
- WorkGroupAlert
- WorkGroupView

The Production and Distribution Planning 8.12 solver requires a planning unit for resources in order to create net requirements. When you migrate Production and Distribution Planning 4.0 data to Production and Distribution Planning 8.12, the system assigns HOURS as the default value for `std_plan_unit` in the Item table and `quantity_unit` in the MfgOperationBOMR table. The system also adds time conversion factors between DAYS, HOURS, MINUTES, and SECONDS to the UnitConversion table.

Note. User-configured alerts and drill-downs are not migrated when you migrate data. You must recreate user-configured alerts and drill-downs after a data migration.

To migrate data to Production and Distribution Planning 8.12:

1. In the Control Panel, click Utilities on the PDP tab in the navigation area.
2. Double-click Migrate Data.
3. In the Migrate Data window, complete the following fields:

Migration From Version	Select the version of Production and Distribution Planning from which you want to migrate data.
Storage type	Select the type of repository from which you are migrating data.
Repository location	If you are migrating data from a flat file repository, specify the location of the repository from which you are migrating data. The path must include the PDPOP_Database directory.
Database name	If you are migrating data from an Oracle repository, specify the name of the database from which you are migrating data.
User ID	If you are migrating data from an Oracle repository, specify the User ID for the database from which you are migrating data.
Password	If you are migrating data from an Oracle repository, specify the password for the database from which you are migrating data.
Repository	Select the repository to which you want to migrate data.
Migrate workgroup view	Select this checkbox if you want to migrate workgroup view tables from the source repository.

4. Click Migrate Data.

CHAPTER 5

Verifying Data Integrity

This chapter provides an overview of data integrity and discusses how to:

- Verify data integrity.
- Evaluate data integrity errors.

Understanding Data Integrity

You can verify the integrity of the data in the Production and Distribution Planning database to ensure that your optimized plans are accurate and complete. For example, if you run a solve and not all the items are solved for, you might want to run a data integrity check on the unsolved items to see if there is an error in your data.

The Advanced Planning Agent file, `IntegrityCheck.prj`, contains data flows that you can run to check the integrity of the data in the Production and Distribution Planning database. The data flows check for inconsistencies in the database and generate a table that contains the questionable data.

Note. Only one user can run data integrity checks at one time.

You cannot run data integrity checks or open the Integrity Error view from a location that is using model server proxies.

You can run data integrity checks within the Production and Distribution Planning desktop, the Control Panel, or in batch mode.

To run data integrity checks using the Production and Distribution Planning desktop, your user role must have data integrity check access rights in at least one of the work groups to which it belongs. User roles are assigned access rights in each work group to run data integrity checks on specified types of data. If your user role does not have data integrity check access rights for a data type, the data type option is grayed out in the menu.

The data affected by data integrity checks is not limited by work group and user role. When you run a data integrity check command, the system checks all data of the specified data type. There are no access restrictions if you check data integrity through the Control Panel.

Typically, data integrity checks run in batch mode after your data has been loaded overnight into the Production and Distribution Planning database. When you finish running a data integrity check from the desktop or in batch mode, you can view the reported errors by opening the Integrity Error view. The Integrity Error view lists the tables and fields in which the data integrity checks found an error, the error, and an error code.

Note. Depending on the size of the database, data integrity verification can run for a few seconds to a few hours (if you select All). Users can not be actively solving in the Production and Distribution Planning system during this time. Before you run the data integrity checks, ensure that doing so will not adversely affect other users.

This table shows how the data integrity checks are divided into data types:

Menu Option	Meaning
All	Runs all data integrity checks.
Customer Order	Runs data integrity checks for the customer order interface.
Facility	Runs data integrity checks for facility management.
Forecast	Runs data integrity checks for the forecast interface.
Inventory	Runs data integrity checks for inventory management.
Item	Runs data integrity checks for item management.
Model	Runs data integrity checks to ensure that the data type and content of a field is valid. For example, the data integrity check flows might check to ensure that a field with a data type YorN contains a Y or N value.
Network	Runs data integrity checks for distribution network management.
Production	Runs data integrity checks for production management.
Shipping	Runs data integrity checks for the shipping interface.
System	Runs data integrity checks for alerts, views, and drill-downs.
Workgroup	Runs data integrity checks for work group management.
VL External Interface	Runs data integrity checks for VL.

Verifying Data Integrity

After you have completed migrating your data, you can run data integrity checks to verify the data was migrated successfully without errors. Error codes are returned for each error that is detected.

To verify data integrity:

1. In the Control Panel, click Utilities on the PDP tab in the navigation area.
2. Double-click Check Integrity.
3. Choose one of the following options in the Integrity check flow field:
 - All
Runs all data integrity checks.
 - Customer Order
Runs data integrity checks for customer order interface.

- Facility
Runs data integrity checks for facility management.
 - Forecast
Runs data integrity checks for forecast interface.
 - Inventory
Runs data integrity checks for inventory management.
 - Item
Runs data integrity checks for item management.
 - Model
Runs data integrity checks to ensure that the data type and content of a field is valid. For example, the data integrity check flows can check to ensure that a field with a data type Y or N contains a Yes or No value.
 - Network
Runs data integrity checks for distribution network management.
 - Production
Runs data integrity checks for production management.
 - Shipping
Runs data integrity checks for shipping interface.
 - System
Runs data integrity checks for alerts, views, and drill-downs.
 - Workgroup
Runs data integrity checks for work group management.
 - VL External Interface
Runs the data integrity checks related to data external to VL and data that was imported from PDP into VL.
4. Click OK
- You can then open the Integrity Error view to see the results.

Evaluating Data Integrity Errors

To evaluate data integrity errors:

1. In the Production and Distribution Planning navigation tree, open the System Administration folder.
2. Open the Integrity Error view.

CHAPTER 6

Clearing and Deleting Data

You can delete specific data from Production and Distribution Planning repositories or clear entire data tables.

Your user role must have access rights that allow you to clear data. User roles are assigned access rights in each workgroup to clear specific types of data. However, data that is affected by clear commands is not limited by workgroup and user role. When you execute a clear command, all of the data of the specified data type is removed from the database tables.

This chapter discusses how to:

- Delete data using views.
- Clear specific data in flat file repositories.

Deleting Data Using Views

When you delete data in a view, the deletion cascades throughout the Production and Distribution Planning data model, and automatically deletes all relevant data from all related views. For example, if you delete a user ID in the User Setup view, data related to that user ID in the Role view is also deleted. Once you save the data in a view, deletions cannot be undone, so use caution when deleting important structural elements such as locations or products.

For tables that are shared by Production and Distribution Planning and Vehicle Loading, a deletion in either system cascades throughout the other data model. The delete function between the two systems enables you to delete information in one place and have the change propagated throughout the data model. Changes are saved in the data model.

Deleting Specific Data from Repositories

You can delete data for specific carriers, items, item categories, lanes, locations, and vehicle types from repositories by doing the following:

- Specifying which data you want to delete from the repository.
- Running a utility to delete the specified data. You can run the utility from the Control Panel GUI or using a command.

Note. Before running the utility to delete data from a repository, you must ensure that Production and Distribution Planning views are closed and that PDP servers are not running.

Specifying Data to Delete

You can specify particular carriers, items, item categories, lanes, locations, and vehicle types to remove from a repository by adding records in the DeleteObject table. Each record that you add to the DeleteObject table must include the following information:

```
"tableName" "primaryKeyField" "fieldValue"
```

Where

- *tableName* is the name of the table with the data that you want to delete.
- *primaryKeyField* is a primary key field that identifies entries in the table.
- *fieldValue* is the primary key field value that identifies the data that you want to delete.

The following table shows sample records for the DeleteObject table:

DeleteObject Table Record	Description
"Carrier" "code" "CarrierABC"	Clear all data for carrier CarrierABC from the repository.
"Item" "code" "2001"	Clear all data for item 2001 from the repository.
"ItemCategory" "category_name" "BICYCLE"	Clear all data from the repository for the BICYCLE item category. This clears all data at the category level, not at the item level.
"Lane" "code" "ZURICH^PARIS"	Clear all data for the ZURICH^PARIS lane from the repository.
"Location" "code" "PARIS"	Clear all data for the PARIS location from the repository. Clears all lanes for the specified location as well.
"VehicleType" "code" "VehicleType123"	Clear all data for the VehicleType123 vehicle type from the repository.

Clearing Specified Data Using the Control Panel GUI

To clear specified data using the Control Panel GUI:

1. In the Control Panel, choose Utilities and double-click Delete Cascade.
2. Choose one of the following options from the drop-down list:

Items	Delete item data that is specified in the DeleteObject table from the repository.
Locations and lanes	Delete location and associated lane data that is specified in the DeleteObject table from the repository.
Lanes	Delete lane data that is specified in the DeleteObject table from the repository.
Categories	Delete item category data that is specified in the DeleteObject table from the repository.

Beginning Inventories, Forecasts, and Work Orders	Delete beginning inventory, forecast, and work order data that is specified in the DeleteObject table from the repository.
Vehicle Types	Delete vehicle type data that is specified in DeleteObject table from the repository.
Carriers	Delete carrier data that is specified in the DeleteObject table from the repository.
All Objects	Delete all data that is specified in the DeleteObject table from the repository.

3. Click OK to clear the data from views.

You can verify the results in the log file in the *path\scp\8.12\pdp\logs* directory in Windows or the *path/scp/8.12/pdp/logs* directory in UNIX, , where *path* is the directory where Production and Distribution Planning is installed.

Clearing Specified Data Using a Command

To clear specified data using a command, at a command prompt, enter the following command from the *path\scp\8.12\pdp\tcl* directory in Windows or the *path/scp/8.12/pdp/tcl* directory in UNIX, where *path* is the directory where Production and Distribution Planning is installed.

```
DeleteCascade IM | LL | LA | CAT | EI | LC | SR | ALL
```

The following table describes the results of including the optional parameters.

IM	Delete item data that is specified in the DeleteObject table from the repository.
LL	Delete location and associated lane data that is specified in the DeleteObject table from the repository.
LA	Delete lane data that is specified in the DeleteObject table from the repository.
CAT	Delete item category data that is specified in the DeleteObject table from the repository.
EI	Delete beginning inventory, forecast, and work order data that is specified in the DeleteObject table from the repository.
LC	Delete vehicle type data that is specified in DeleteObject table from the repository.
SR	Delete carrier data that is specified in the DeleteObject table from the repository.
ALL	Delete all data that is specified in the DeleteObject table from the repository.

Clearing Entire Tables

You can clear data tables in Production and Distribution Planning repositories from the desktop or using

Clearing Data Using the Desktop

You can clear all of the following types of data from tables in a PDP data repository using the desktop:

To clear data using the desktop:

1. In the PDP desktop, from the Actions menu, choose Clear and select a type of data.
Each menu option for a type of data clears the specified table, except Customer Order, which clears CustomerOrder and CustomerOrderItem; and Shipment, which clears Shipment and ShipmentItem.
2. Click OK.
The Clear command removes all of the data from the specified table.

Clearing Data From Tables Using Commands

To clear data using batch mode:

File Name	Description
3D_Clear_CustomerOrder.tcl	Clears the CustomerOrder and CustomerOrderItem tables.
3D_Clear_Deployment.tcl	Clears the Deployment table.
3D_Clear_ExternalAlert.tcl	Clears the ExternalAlert table.
3D_Clear_Forecast.tcl	Clears the Forecast table.
3D_Clear_InventoryPolicy.tcl	Clears the InventoryPolicy table.
3D_Clear_LotStatus.tcl	Clears the LotStatus table.
3D_Clear_NetReq.tcl	Clears the NetReq table.
3D_Clear_SafetyCover.tcl	Clears the SafetyCover table.
3D_Clear_Shipment.tcl	Clears the Shipment and ShipmentItem tables.
3D_Clear_Sourcing.tcl	Clears the Sourcing table.
3D_Clear_WorkOrder.tcl	Clears the WorkOrder table.
3D_Clear_WorkOrderBOMR.tcl	Clears the WorkOrderBOMR table.
3D_Clear_WorkOrderOperations.tcl	Clears the WorkOrderOperations table.

Running Pre- and Post- Scripts

You can run custom scripts automatically before and after clearing data in Production and Distribution Planning.

When you create a script to run before a clear procedure, you must use the name of the view with the prefix "CLEAR_" and the suffix ".pre.bat". Similarly, scripts that run after a clear procedure must be named using the name of the view with the prefix "CLEAR_" and the suffix ".post.bat". If the view contains a details area, it calls scripts with the prefix "CLEAR_" and the suffix "_Detail.pre.bat" and "_Detail post.bat" for the view.

You must save pre- and post scripts in the directory specified by the `NMX_3D_SCRIPTS` environment variable.

This table lists possible names for pre- and post- scripts:

- `CLEAR_CUSTOMER_ORDER`
- `CLEAR_CUSTOMER_ORDER_ITEM`
- `CLEAR_DEPLOYMENT`
- `CLEAR_EXTERNAL_ALERT`
- `CLEAR_FORECAST`
- `CLEAR_INVENTORY_POLICY`
- `CLEAR_LOT_STATUS`
- `CLEAR_NET_REQUIREMENT`
- `CLEAR_SAFETY_COVER`
- `CLEAR_WORK_ORDER`
- `CLEAR_SHIPMENT`
- `CLEAR_SHIPMENT_ITEM`
- `CLEAR_SOURCING`

CHAPTER 7

Viewing and Editing Data in Production and Distribution Planning

This section provides an overview of views and discusses how to:

- Drill down to related views.
- Customize views.
- Change view names and locations in the navigation tree
- Change data in views.

Note. For information about elements in the data model, see Building Models

Understanding Views

Views in the Production and Distribution Planning desktop display data from the data model. Each view shows related fields from various database tables and additional calculated fields. For example, the Inventory Status view has fields that display model information such as locations and products and inventory information such as beginning inventory and safety stock. Many views, such as inventory status and utilization information reports, are used for reporting purposes.

You can configure views to suit different business needs. For example, fields in each view have default field names, and some views contain fields that are hidden by default. You can change the names and configure the views to display hidden fields.

View names appear in a navigation tree at the left of the Production and Distribution Planning desktop. You can change the names and locations of the views in the tree. Each view group is divided into subcategories and folders that contain information on specific topics. This table lists the subcategory folders within each view group:

Folder	Description
Data Views	Data views show dynamic data that changes regularly. Data is usually imported at regular intervals from an external system.
Model Views	Model views show static data that does not change regularly. Static data defines the basic components of an enterprise.
Reports	Report views show information for reporting. They display and calculate data in a meaningful way for an enterprise. You cannot edit data in Report views.

Chart Views

Chart views in Production and Distribution Planning display data in a line graph format. At the bottom of a chart view is a data selection field. Only data that matches the value in the field is displayed in the graph. When you open a Chart view, you see the first item in the selection list, but you can display your data in any of the following configurations:

- Display data in the graph for items in the selection list.
- Display data in the graph for the first item in the selection list.
- View data for a point on a graph.

You can print a graph to a file in PostScript or X-Window dump (xwd) format or directly to a PostScript printer. You can configure the display of the Chart Tool in a variety of ways.

Drilling Down to Related Views

Many views have drill-downs that allow you to access views with related data. For example, if you are looking at inventory status information in a view, you can navigate to another view to see the origin of that inventory information. You can also drill down from alerts to access views that contain data related to the alerts. Drill-downs enable you to quickly locate and react to problems. You can only drill down to views that are assigned to your user role and workgroup.

To determine which view fields have related reviews to which you can drill down, see the view descriptions in appendices at the end of this PeopleBook.

To drill down to a related view:

In a view, do one of the following:

1. Click a data field for which you want to obtain more information. From the Actions menu, choose Drilldown and then choose the name of the view to which you want to navigate.
2. Right-click the data field for which you want to obtain more information, choose Drilldown from the menu, and then choose the name of the view to which you want to navigate.

Customizing Views

You can customize views and save the display options. This section discusses how to:

- Hide, display, and move columns.
- Change column widths.
- Customize field names.
- Filter data.
- Set data precision for fields.
- Change the date format.
- Highlight data in fields.

- Save view display options.

Hiding, Displaying, and Moving Columns

You can customize views by hiding, displaying, and changing the order of columns. You can hide columns in views if they are not needed to create valid records in the table. You cannot hide columns that contain required information.

To hide, display, and move columns in a view:

1. In a view, click the summary or detail area that you want to customize.
2. From the Tools menu, choose Hide/Show Columns.
3. In the Column Configuration window, do one of the following:
 - To show or hide a column, select a column name and click the left or right arrow keys to move it to the Hidden Columns or Visible Columns field.
 - To change the column order, select the name of a field and click the Up and Down buttons to move it to the desired location.
4. Click OK.

Changing Column Widths

To change column widths in a view, do one of the following:

- To change the width of one column, drag the lines between the column headings to the desired position.
- To change all columns to their default widths, click in the summary or detail area of a view and then choose Resize Columns from the Actions menu.

Changing Field Names

To change field names in a view:

1. Click the summary or detail area where you want to change view names.
2. Choose Configure Fields from the Tools menu. In the Configure Fields window, double-click the displayed name that you want to change and enter a new column name.
3. Click OK.

Filtering Data

You can filter records in views so that they display only the records that are important to your business. At any time, to show all records for a particular view, you can override the filters that you have defined.

When you filter the summary or details records in a two-pane view, records are displayed according to either the summary or detail filters, as follows:

- If you filter detail records, only the detail records that match the filter expression are displayed.
- If you filter summary records, only the summary records that match the filter expression are displayed. Only the detail records associated with the filtered summary records are displayed.

Setting Data Precision for Fields

You can specify the number of decimal places (precision) in a field.

To change data precision for a field:

1. In a view, click the summary or detail area where you want to set the precision of the displayed data.
2. From the Tools menu, choose Configure Fields.
3. In the Configure Fields window, enter the number of decimal places that you want displayed for each field.
4. Click OK.

Changing the Date Format

To change the date format:

1. From the Tools menu, choose Date Format.
2. In the Configure Date Format window, select a date format from the drop-down menu, and click OK.

Highlighting Data in Fields

You can highlight data in fields by displaying the data in different colors. You can display all data in a field in the same color, or display data in different colors when the values match certain conditions.

Some views and reports contain data that is highlighted to alert you to a specific circumstance. For example, in the Inventory Status report, when projected inventory moves below zero, the data is highlighted in red in the associated view. The colors used to highlight data can be customized to suit your individual preferences.

In views that display projected inventory data, certain values have default highlighting expressions. You can change the formula that sets these colors. The formula is defined by the highlighting expression for the Projected Inventory field. The circumstances under which the Projected Inventory field is highlighted are:

Problem	Color
Below zero	Red
Below safety stock	Orange
Below build	Violet
Above maximum	Blue

The expression is:

```
IF (ProjectedInv+0.1<0,RED(), IF (ProjectedInv+0.1<Safety,ORANGE(),
IF (ProjectedInv+0.1<Build,VIOLET(), IF (ProjectedInv-0.1>Maximum,BLUE(),
BLACK()))))
```

In views that display capacity utilization data, certain values have default highlighting expressions. You can change the formula that sets these colors. The formula is defined by the highlighting expression for the Total Capacity Utilization field. The Total Capacity Utilization field is highlighted under these circumstances:

Problem	Color
Total capacity used is greater than the total capacity.	Blue
Total capacity used is greater than the standard capacity	Violet
Total capacity used is less than minimum capacity.	Red

The expression is:

```
IF (TotalCapacityUsed-0.1>TotalCapacity, BLUE(),
IF (TotalCapacityUsed-0.1>StandardCapacity, VIOLET(),
IF (TotalCapacityUsed+0.1<MinimumCapacity, RED(), BLACK())) )
```

To highlight data in a field:

1. In a PDP view, click a summary or detail area with the field where you want to highlight data.
2. From the Tools menu, choose Highlight.
3. In the Highlight Expressions window, enter a color function or conditional expression in the Highlight Definition column for each field.

To display all data in a field in one color, enter one of the following color functions:

- BLACK()
- BLUE()
- GREEN()
- ORANGE()
- PINK()
- RED()
- VIOLET()
- YELLOW()

The function name must be capitalized.

4. To display data in a field in a different color depending on a specific condition, type an expression in the field using the following syntax:

```
IF (condition, colorFunction1, colorFunction2)
```

Where:

- *condition* is a mathematical expression that can be true or false. The expression can include field and display names, numeric values, and the following mathematical symbols: + - / * = < and >.

Field and displayed names in conditions act as variables and must have a numeric data type such as integer, quantity, or cost. Numeric data is right-aligned in view fields. The field name can be the name of the field for which you are entering a highlighting expression or the name of another field in the view. If a displayed name contains spaces, you must include single quotation marks around the name.

- *colorFunction1* is the color for displaying data in the field if the condition is true.
- *colorFunction2* is the color for displaying the data if the condition is false.

For example, you can use the following expression to display a field value in red if the Quantity field value is over 100 and in black if the Quantity field value is less than or equal to 100: `IF (Quantity>100,RED(),BLACK())`

You can also nest conditional expressions in highlighting expressions. For example, by entering the following expression for the Safety field, you can display Safety field values in red when they are greater than 100, in red when they are less than 100 and the Build value is less than 50, and in blue if they are less than 100 and the Build value is greater than 50: `IF (Safety>100,RED(),IF (Build<50,RED(),BLUE()))`

5. Click OK.

Saving View Display Options

After changing the appearance of a view, you can save the configuration so that the view appears the same each time you open it.

A separate configuration can be saved for each view for each workgroup and role combination. When you save view configurations, the system saves configuration files with the role, view, and workgroup names in the `path\scp\8.12\pdp\res_custom` directory in Windows or the `path/scp/8.12/pdp/res_custom` directory in UNIX, where *path* is the directory where Production and Distribution Planning is installed.

Note. If you use model server proxies and you save user-configured display options, they are saved to the local site only. If you save user-configured display options at a central site, they are not saved at the proxy site. If you save user-configured display options at a proxy site, they are not saved at the central site.

In UNIX, if one person saves a view configuration file for which other users do not have write permission, other users with the same role in the same workgroup cannot save a configuration for the view. For example, if you have a umask of 022, and save a view configuration, other Production and Distribution Planning users with the same workgroup and role in your environment cannot change and save the view configuration unless you give them write permission to the configuration file.

To save view display options:

1. Click in the View.
2. From the File menu, select Save View Configuration.

Changing View Names and Locations in the Navigation Tree

To change view names and locations in the navigation tree:

1. Open the view.cfg file.
Scroll to the bottom of the file.
2. Type the system name at the beginning of the row, and then press the Tab key.
3. Type the new information in the view_name, display_name, and folder columns, respectively, separating each piece of information by a tab.

Note. If you want to save a view in more than one main folder, separate each main folder with a semi-colon. For example, if you want to save a view in the Reports folder of Inventory Management and the Data folder of Demand Management, type `Inventory Management/Reports; Demand Management/Data` in the folder column.

4. Type 3 in the category column.
5. Type 1 in the state column.

Editing Data in Views

You can edit the data in a view and save it to the repository.

Note. You cannot edit data values in Report views.

This section discusses how to:

- Duplicate rows.
- Find and replace data values.

Duplicating Rows

You can create a new row immediately below the row you have selected. The new row contains data that is identical to the original row. After duplicating a row, you can change data values in the new row to ensure that its primary key is different than the original row.

To duplicate a row, do one of the following:

- In a view, select a row and choose Duplicate Row from the Edit menu.
- In a view, right-click a row and choose Duplicate Row from the menu.

Finding and Replacing Data Values

You can find and replace data values in data or model views.

To find and replace data values:

1. Click in the view where you want to find or replace data values.
2. From the Edit menu, choose Find/Replace.
3. Complete the following fields:

Search in	Select the field where you want to search for a value.
Find what	Enter the data value that you want to find or replace.
Replace with	(Optional) If you want to replace the specified data value, enter the value that you want to replace it with.
Search	Select whether you want to search down or up the rows in the view.

Match Exact

Select this option to only find or replace values that match the entire field value.

4. Do one of the following:

- To find the specified value, click Find.
- To replace the first data value matching the specified criteria, click Replace.
- To replace all of the data matching the specified criteria, click Replace All.

CHAPTER 8

Building PDP Data Models

This chapter discusses how to model and edit the following supply chain elements in Production and Distribution Planning:

- Item management.
- Facility management.
- Inventory management.
- Demand management.
- Distribution management.
- Production management.
- Manufacturing operations.
- Manufacturing routings.
- Alternate materials and resources.
- System management.
- Production schedules.
- Work orders.

Note. You can edit Production and Distribution Planning data using views or database tables. The data tables are stored in the directory of your data repository.

This chapter provides examples of how you may want to set up various components of your model. These examples are not intended as definitive procedures.

Item Management

This section provides an overview and discusses how to:

- Define products or materials.
- Define item and resource consumption.
- Define forecast consumption rules.
- Define product categories.
- Define the display of product category data.
- Define unit conversions.

Understanding Item Management

The basic component of the data model is called an item. Materials, resources, and finished products are all examples of items. When you create a model for an enterprise, information about the materials, resources, and finished products is critical to the success of the model. For this reason, completing the item management portion of the model is one of the first steps in setting up a model.

When you create a new model, some enterprise-specific information is required. Other information is optional and can be completed to further customize your model. The table below lists the views and tables that you must complete and those that are optional:

View	Table	Required/Optional
Item Master	Item	Required
Item Group	ItemGroup	Optional
Item Category	ItemCategory	Optional
Resource		Required
Resource Group		Optional
Unit Conversion	UnitConversion	Required

Defining Products or Materials

When you add a product or material to a model, you must complete certain required views or tables to ensure the model's integrity. You can also complete optional views to further customize your model. The table below lists the views or tables that you must complete and those that are optional when you add a product or material:

View	Table	Required/Optional
Item Master	Item	Required
Item Group	ItemGroup	Optional
Item Category	ItemCategory	Optional
Unit Conversion	UnitConversion	Required
Inventory Policy	InventoryPolicy	Required
Safety Network	SafetyNetLoc	Optional
Forecast Profile	ForecastProfile	Optional
Sourcing	Sourcing	Required
Item Shipping Process	LaneShipItem	Required
Item Calendar		Optional
Location Manufacturing Routing	LocMfg	Required

View	Table	Required/Optional
Manufacturing Bill of Resource	BOMR	Required
Workgroup	WorkGroup	Optional
Manufacturing Routing	MfgRouting	
Manufacturing Operation	MfgOperation	
	LaneShipItem	Required
	ItemFacility	Optional
	ItemExceptionCalendar	Optional

Defining Item and Resource Consumption

When you define an item, you can specify whether the item can be consumed during production. If the item is consumable during production, you can further define whether the item is reusable after consumption.

If you use tables to define item consumption for a product, material, or resource, choose the appropriate value in the consumable field of the Item table.

If you use views to define item consumption for a product or material, choose the appropriate value in the Consumable field of the Item Master view. If you are defining item consumption for a resource, choose the appropriate value in the Consumable field of the Resource view. Values are:

Value	Description
Y	The item can be consumed, but it cannot be used after consumption.
N	The item cannot be consumed.
R	The item can be consumed, and it can be used again after consumption. This value is available only for products and materials.

Item consumption is typically defined as follows:

Item	Value in Consumable Field
Product	N
Material	Y
Resource	Y
Re-usable container	R
Any item included in a BOMR	Y

Defining Forecast Consumption Rules

The forecast consumption rule is applied to customer orders and forecasts to calculate effective demand quantities. For example, when you set the rule to ORDER, Production and Distribution Planning considers only customer order quantities to calculate effective demand. Production and Distribution Planning does not consider forecast quantities.

Forecast consumption rules can be changed once within the horizon and separated by a timefence. A timefence is the number of days from the start of the horizon when the forecast consumption rule changes. The first rule applies from the start of the horizon to the timefence. The second rule applies from the timefence to the end of the horizon.

To define forecast consumption rules using views:

1. In the Item view, choose a forecast consumption rule for each product and material from the Consumption Rule field.
2. Set the forecast consumption rule for materials to ORDER. The demand for materials is based on the manufacturing requirements for products.

Values for products are:

Value	Description
FORECAST	When calculating effective demand, Production and Distribution Planning uses only forecast quantities.
GREATER	When calculating effective demand, Production and Distribution Planning uses the greater of customer order and forecast quantities. Production and Distribution Planning calculates effective demand by adding the order quantities for the period and adding the forecast quantities for the period, and then using the greater of the two aggregate values. If periods are daily, Production and Distribution Planning uses the greater of the two values.
ORDER	When calculating effective demand, Production and Distribution Planning uses only customer order quantities. Use this rule for all materials.
SUM	When calculating effective demand, Production and Distribution Planning uses the sum of the forecast and customer order quantities.

You can also choose a timefenced forecast consumption rule. Supported timefenced forecast consumption rules are as follows:

- FORECAST-GREATER
- ORDER-FORECAST
- FORECAST-ORDER
- ORDER-GREATER
- FORECAST-SUM
- ORDER-SUM
- GREATER-FORECAST

- SUM-FORECASTS
 - GREATER-ORDER
 - SUM-GREATER
 - GREATER-SUM
 - SUM-ORDER
3. If you define a timefenced forecast consumption rule, in the Consumption Time Fence field, type the number of days from the start of the horizon before the forecast consumption rule changes.

To define forecast consumption rules and timefence using tables

1. In the Item table, type a forecast consumption rule for each product and material in the FC_rule field.
2. Set the forecast consumption rule for materials to ORDER. Demand for materials is based on the manufacturing requirements for products.
3. Set the forecast consumption rule for products to one of the values listed below:

Value	Description
FORECAST	When calculating effective demand, Production and Distribution Planning uses only forecast quantities.
GREATER	When calculating effective demand, Production and Distribution Planning uses the greater of customer order or forecast quantities. Production and Distribution Planning calculates effective demand by adding the order quantities for the period, adding the forecast quantities for the period, and then using the greater of the two aggregate values. If periods are daily, Production and Distribution Planning uses the greater of the two values.
ORDER	When calculating effective demand, Production and Distribution Planning uses only customer order quantities. Use this rule for all materials.
SUM	When calculating effective demand, Production and Distribution Planning uses the sum of the forecast and customer order quantities.

You can also use a timefenced forecast consumption rule. Supported timefenced forecast consumption rules are as follows:

- FORECAST-GREATER
- ORDER-FORECAST
- FORECAST-ORDER
- ORDER-GREATER
- FORECAST-SUM
- ORDER-SUM
- GREATER-FORECAST
- SUM-FORECASTS

- GREATER-ORDER
 - SUM-GREATER
 - GREATER-SUM
 - SUM-ORDER
4. If you define a timefenced forecast consumption rule, in the FC_rule_timefence field of the Item table, type the number of days from the start of the horizon before the forecast consumption rule changes.

Defining Product Categories

You create product categories so that the Inventory Status Product Category report can display data that has been aggregated by category. The display of aggregated data shows you aggregate or subtotal amounts across the entire network for specific product categories. The solvers do not recognize product categories. They recognize product groups that you define in the Item Group view. In addition, product categories can only include individual products and materials. They cannot include product or material groups.

Access the Product Category view.

To define product categories:

1. Right-click the detail area and select Insert Row from the shortcut menu.
2. Complete the following fields:

Category Name	Assign a name for the category. The name that you use should identify the characteristic that links the products in the category.
Category Type	Assign a category type. The Inventory Status Product Category report filters data by category type. For example, if you create a category type Size, the view displays data for each category that belongs to type Size.

3. From the File menu, choose Save.
4. Click the number to the left of the record that you just added.
5. Right-click the detail area and select Insert Row from the shortcut menu.
A new record that corresponds with the summary record appears.
6. In the Product field, select the product to include in the category.
7. From the File menu, choose Save.

Note. For faster performance, if you define product categories in the views, close the Inventory Status Product Category report since this view is refreshed after each save.

To define product categories using tables:

1. In the Category table, type PRODUCT in the object field.
2. In the name field, type the name of the category. The name that you use should identify the characteristic that links the products in the category. For example, if you create a category for all 16-ounce products, the name might be 16oz_products.
3. In the type field, type the category type. The Inventory Status Product Category report filters data by category type. For example, if you create a category type SIZE, the view displays data for each category that belongs to type SIZE.

Optionally, in the description field, type a description of the category.

Optionally, complete the fields userfield_1 to userfield_3 fields.

4. In the ItemCategory table, in the category_name field, type the name of the category. This name is the same one that you used in step 2.
5. In the item_code field, type the product that is included in the category. The item_code must be for an individual product, not a product group.
6. Repeat steps 4 and 5 until all of the products in the category are entered.

Defining the Display of Product Category Data

After you have defined product categories, you can modify your workgroup parameters so that the Inventory Status Product Category report displays data by category type. Specifying the category parameters is only necessary if you include this view in the workgroup.

If you do not set the category parameter for the workgroup, the Inventory Status Product Category report displays all of the categories that contain products, which are assigned to the workgroup. In each category, you can only see the products that are specified in the product parameter for the workgroup. If two categories contain the same product, only the first category record that is displayed in the view shows information for the product.

To define the display of product category data using views

1. In the Workgroup view, click the Product field for the workgroup with parameters that you want to set, and select the product or products that you want to display for the workgroup from the drop-down list.
2. In the Product Category field for the same workgroup, select a category type from the drop-down list.
3. From the File menu, choose Save.

For example, you can define two product categories as follows:

Category Name	Category Type	Products in the Category
16oz	SIZE	A16oz, B16oz
32oz	SIZE	A32oz, B32oz

In the workgroup named WorkGroup1, you want to see data for the products A16oz, B16oz, A32oz, and B32oz. You also want this data aggregated by the product category of type SIZE in the Inventory Status Product Category report.

To view the product data in the way you want, modify the WorkGroup1 parameter criteria in the Workgroup view.

To define the display of product category data using tables

1. In the WorkGroup table, in the par_product field, type the product codes that are included in the product category type that you want to display.
2. In the par_product_category field, type the category type.

For example, suppose you define two product categories as follows:

Category Name	Category Type	Products in the Category
16oz	SIZE	A16oz, B16oz
32oz	SIZE	A32oz, B32oz

Suppose that in the workgroup named WorkGroup1, you want to see data for the products A16oz, B16oz, A32oz, and B32oz. You also want this data aggregated by the product category of type SIZE in the Inventory Status Product Category report. To view product data as you want to see it, you would modify the WorkGroup1 parameter criteria in the WorkGroup table as follows:

Field	Value
par_product	A16oz, B16oz, A32oz, B32oz,
par_product_category	SIZE

Defining Unit Conversions

You define unit conversions to map between items that are measured in different units. Production and Distribution Planning supports two types of unit conversion:

- Standard Unit Conversions
- Product-specific Unit Conversions

Standard unit conversions are used to exchange measures within and between standard systems of measure. Examples of standard unit conversions are:

- Converting between different units within the same dimension and system of measure. Examples are converting liters to milliliters, kilograms to grams, and weeks to days.
- Converting between different units within the same dimension but across different systems of measure. Examples are converting cubic meters to cubic feet, and kilograms to pounds.

Product-specific unit conversions are used to map between units of measure for specific products and other units of measure. Examples of product-specific unit conversions are:

- Converting between different units within the same dimension. An example is converting cases to pallets. This conversion might be product-dependent because a single pallet can hold a different number of cases, depending on the volume and weight of the product.
- Converting between different units across different dimensions. An example is converting one case of ProductA into the equivalent weight in pounds, or converting one pallet of ProductB into the equivalent volume in cubic feet.

To convert all units from a base unit, you determine that a base unit and other units are defined by how many base units each contains. For example, suppose the product A16oz has a base unit of measure of CASE. If you want to convert kilograms to cases, you need to know how many CASE units are in each kilogram. If one case weighs 20 kilograms, then one kilogram contains 1/20 case. Therefore, each kilogram contains 0.05 cases. You do not define an environment variable if you are converting from a base unit.

Note. All input quantities to Production and Distribution Planning must be in standard planning units.

Access the Unit Conversion view.

To define unit conversions:

1. In the summary area, select the product, material, or resource to which the unit conversion applies.
2. Right-click the detail area and select Insert Row from the shortcut menu.
3. Complete the following fields:

Dimension	Specify the dimension for the base unit. For example, if the base unit is kilograms, the dimension is WEIGHT. If you are defining unit conversions for cases, pallets, or related containers, the dimension is COUNT.
Unit	Specify the name for the base unit of measure. Each product can have only one base unit of measure.
Factor	Specify a value of 1.
Offset	Do not enter a value in this field.

4. From the File menu, choose Save.

Your base unit is now defined. You now need to create another record to define the other units that you want to convert.

Note. If you add a product or material in the Item Master view while the Unit Conversion view is open, you must close, and then re-open the Unit Conversion view before you define unit conversions for the new product.

To define unit conversions using tables

1. In the UnitConversion table, type the item code to which the unit conversion applies in the product field. If you are defining a standard unit conversion for all items, type STANDARD.
2. In the dimension field, type the dimension for the base unit. For example, if the base unit is kilograms, the dimension is WEIGHT. If you are defining unit conversions for cases, pallets, or related containers, type COUNT.
3. In the unit field, type the name for the base unit of measure. Each product can have only one base unit of measure.
4. In the factor field, type a value of 1.
5. Do not complete the offset field.

Your base unit is now defined. You now need to create another record to define the other units that you want to convert.

6. Create another record with the same value in the product field.
7. In the dimension field, type the dimension for the unit that is being compared to the base unit.
8. In the unit field, type the name for the unit of measure that is being compared to the base unit.
9. In the factor field, type one of the following:
 - If you are converting *from* a base unit, type the number of base units that the unit contains.
 - If you are converting *to* a base unit, type the number of units that the base unit contains.

Facility Management

This section provides an overview and discusses how to:

- Define locations.
- Define calendar exceptions.
- Define location categories.
- Define the display of location category data.
- Define shipping, receiving, and producing calendars.

Understanding Facility Management

Facilities are the locations in a data model and their shipping, receiving, and producing calendars. The views or tables that define facility management are part of the static data model.

When you create a new model, some enterprise-specific information is required. Other information is optional and can be completed to further customize your model. The table below lists the views or tables that you must complete and those that are optional:

View	Table	Required/Optional
Location	Location	Required
Item Calendar		Optional
Location Category	LocationCategory	Optional
	ExceptionCalendar	Optional
	ItemFacility	Optional
	ItemExceptionCalendar	Optional

Defining Locations

When you add a location to an existing model, you must complete certain required views or tables to ensure the integrity of the model. You can also complete optional views or tables to further customize your data model. The table below lists the views or tables that you must complete and those that are optional when you add a location:

View	Table	Required/Optional
Location	Location	Required
Item Calendar		Optional
Location Category	LocationCategory	Optional
Inventory Policy	InventoryPolicy	Required

View	Table	Required/Optional
Safety Network	SafetyNetLoc	Optional
Storage Capacities		Required
Forecast Profile	ForecastProfile	Optional
Sourcing		Required
Resource Capacity		Required
Location Manufacturing Process		Required
Workgroup	WorkGroup	Optional
System Plan		Optional
	ExceptionCalendar	Optional
	ItemFacility	Optional
	ItemExceptionCalendar	Optional
	SafetyNetLoc	Optional
	StorageType	Required
	StorageTypeCap	Optional
	Lane	Required
	LocResCap	Required
	LocMfg	Required
	System_Option	Optional

To define a location:

1. In the Location view, right-click the summary area and select Insert Row from the shortcut menu.
2. Complete the following fields:

Location	Specify a name that identifies the location.
Type	Select a type of location from the drop-down list. Choose one of DC, PLANT, PLANT_DC, CUSTOMER or SUPPLIER.
Priority Class Role	Specify a role that identifies the location in the supply chain. Choose one of UPSTREAM, INTERMEDIATE, or DOWNSTREAM.
Shipping Calendar	Specify the default shipping availability for the location in the shipping calendar. The value consists of seven digits that represent the days Monday to Sunday, from left to right. Use 0 for days when shipping is not available at this location, or 1 for days when shipping is available.

Receiving Calendar	Specify the default receiving availability for the location in the receiving calendar. The value consists of seven digits that represent the days Monday to Sunday, from left to right. Use 0 for days when shipments can not be received at this location, or 1 for days when shipments can be received.
Producing Calendar	Specify the default production availability for the location in the producing calendar. The value consists of seven digits that represent the days Monday to Sunday, from left to right. Use 0 for days when production is not available at this location, or 1 for days when production is available.
Inventory Balance Class Zone	Select the inventory balancing class at the specified location. The inventory balancing class must be defined using the Inventory Balance view.
Timeshift Hours	Specify the number of hours out of a 24-hour day that are available for shipping, receiving, and production at this location.. The value must be a positive number that is less than or equal to 24.

3. From the File menu, choose Save.

Defining Calendar Exceptions

To define calendar exceptions:

1. In the Location view, click the number to the left of a location record in the summary area.
2. Right-click the detail area and select Insert Row from the shortcut menu.

A new record that corresponds with the summary record appears.

3. Complete the following fields:

Exception Date	Specify the date on which the exception occurs.
Shipping	Specify a value of 1 to indicate that no shipping is available from this location on this date.
Receiving	Specify a value of 1 to indicate that this location can not receive shipments on this date.
Producing	Specify a value of 1 to indicate that no production is available at this location on this date.

4. From the File menu, choose Save.

Defining Location Categories

To define location categories:

1. In the Location Category view, right-click the summary area and select Insert Row from the shortcut menu.
2. Complete the following fields:

Category Type	Specify a type of location category. This categoryInventory Status Location Category view filters by category type. For example, if you create a category type REGION, the view displays data for each category that belongs to the type REGION.
Category Name	Specify a name for the category. The name that you use should identify the characteristic that links the locations in the category. For example,

if you create a category for all locations in eastern North America, the category name might be EASTERN.

3. From the File menu, choose Save.
4. Click the number to the left of the record that you just added.
5. Right-click the detail area and select Insert Row from the shortcut menu.
A new record that corresponds with the summary record appears.
6. In the Location field, select a location to include in this category.
7. Repeat steps 5 and 6 until all of the locations in the category are entered.
8. From the File menu, choose Save.

Note. For faster performance, if you define location categories in the views, do so only when the Inventory Status Location Category view is closed.

To define location categories using tables

1. In the Category table, type LOCATION as the value in the object field.
2. In the name field, type the name of the category. The name that you choose should identify the characteristic, which links the locations in the category. For example, if you create a category for all locations in eastern North America, the category name might be EASTERN.
3. In the type field, type the category type. The Inventory Status Location Category view filters by category type. For example, if you create a category type REGION, the view displays data for each category that belongs to the type REGION.
Optionally, in the description field, type a description of the category.
Optionally, complete the fields userfield_1 to userfield_3
4. In the LocationCategory table, in the category_name field, type the name of the category. This name is the same one that you used in step 2.
5. In the location_code field, type the location that is included in the category.
6. Repeat steps 4 and 5 until all of the locations in the category are entered.

Defining the Display of Location Category Data

After you have defined location categories, you can modify your workgroup parameters so that the Inventory Status Location Category view displays data by category type. Specifying the category parameters is only necessary if you include the Inventory Status Location Category view in the workgroup.

If you do not set the category parameter for the workgroup, the Inventory Status Location Category view displays all of the categories that contain locations that are assigned to the workgroup. In each category, you can only see the locations that are specified in the location parameter for the workgroup. If two categories contain the same location, only the first category record that is displayed in the view shows information for the location.

To define the display of location category data using views

1. In the Workgroup view, click the Location field for the workgroup with parameters that you want to set and select the location code or codes for the location category type that you want to display.
2. In the Location Category field for the same workgroup, select the category type.

3. From the File menu, choose Save.

To define the display of location category data using tables

1. In the WorkGroup table, in the par_location field, type the location codes that are included in the location category type that you want to display.
2. In the par_location_category field, type the category type.

For example, suppose you define two location categories as follows:

Category Name	Category Type	Locations in the Category
MIDWEST	REGION	Chicago, Cleveland
EAST	REGION	Boston, Montreal, Shopmart

Suppose that in the workgroup named WorkGroup2, you want to see data for the locations Chicago, Cleveland, Boston, Montreal, and Shopmart. You also want this data aggregated by the location category of the type REGION in the Inventory Status Location Category view. To view location data as you want to see it, you modify the WorkGroup2 parameter criteria in the Work Group table as follows:

Field	Value
par_location	Chicago, Cleveland, Boston, Montreal, Shopmart
par_location_category	REGION

Example: Displaying Data By Category Type Using Views

For example, you can define two location categories as follows:

Category Name	Category Type	Locations in the Category
MIDWEST	REGION	Chicago, Cleveland
EAST	REGION	Boston, Montreal, Shopmart

In the workgroup named WorkGroup2, you want to see data for the locations Chicago, Cleveland, Boston, Montreal, and Shopmart. You also want this data aggregated by the location category of the type REGION in the Inventory Status Location Category view. To view location data as you want, you modify the WorkGroup2 parameter criteria in the Workgroup view.

Defining Shipping, Receiving, and Producing Calendars

You can define shipping, receiving, and producing calendars for each location. You can also define exceptions to each location calendar.

In addition to defining shipping, receiving, and producing calendars for each location, you can define these calendars for each product at a location. For example, you can specify that product A16oz at the Chicago location is not available for shipping on Saturdays. You can also define exceptions to the product calendars. The Supply Planning respects these calendars when it generates deployments and net requirements.

Some calendars override other calendars according to predefined rules. When you define calendars using views, the following rules apply:

Calendar Defined In	Overriding Calendar Defined In
Summary records in Location view	Summary records in Item Calendar view
Summary records in Item Calendar view	Detail records in Location view
Detail records in Location view	Detail records in Item Calendar view

When you define calendars using tables, the following rules apply:

Calendar Defined In	Overriding Calendar Defined In
Location	ItemFacility
ItemFacility	ExceptionCalendar
ExceptionCalendar	ItemExceptionCalendar

To define calendars for a location:

In the Location view, type the default work pattern for the location in each of the following fields in the summary area:

- Producing Calendar
- Receiving Calendar
- Shipping Calendar

The value consists of seven digits that represent the days Monday to Sunday, from left to right. Values are:

- 0: Not available for the activity
- 1: Available for the activity

For example, a location that is available for shipping during the week, but is not available for shipping on the weekend, has the following value in the Shipping Calendar field:

1111100

To define calendars for a location using tables

In the Location table, type the default work pattern for the location in each of the ship_calendar, receive_calendar, and production_calendar fields. The value consists of seven digits that represent the days Monday to Sunday, from left to right. The digits are as follows:

- 0: Not available for the activity
- 1: Available for the activity

For example, a location that is available for shipping during the week but is not available for shipping on the weekend has the following value in the ship_calendar field:

1111100

To define exceptions to a location's calendar using views:

1. In the Location view, in the summary area, select a location row for which you want to add an exception to the shipping, receiving, or producing calendar.

2. In the detail area, right-click and choose Insert Row from the menu.
3. In the Exception Date field, choose a date.
4. In the Shipping, Receiving, and Producing fields, select the status on the exception date for each type of calendar. Values are:
 - 0: Not available for the activity.
 - 1: Available for the activity.
5. From the File menu, choose Save.

To define exceptions to a location's calendar using tables:

1. In the ExceptionCalendar table, type the code for the location that has an exception to the shipping, receiving, or producing calendar in the location_code field.
2. In the exception_date field, type the date of the exception.
3. In each of ship_isopen, receive_isopen, and production_isopen fields, type the status on the exception date. Values are:
 - 0: Not available for the activity.
 - 1: Available for the activity.

To define calendars for a product at a location using views:

1. In the Item Calendar view, in the summary area, right-click and choose Insert Row from the menu.
2. In the Location field, select the location of the product.
3. In the Product field, select the product or material to which the calendar applies.
4. In the Add Summary window, in the Shipping Calendar, Receiving Calendar, and Producing Calendar fields, type the default calendar for the product at the location.

The value consists of seven 1s and 0s that represent the days Monday to Sunday, from left to right. For example, a product that is available for shipping during the week, but is not available for shipping on the weekend, would have the following value in the Shipping Calendar field:

```
1111100
```

Values are:

- 0: Not available for the activity.
 - 1: Available for the activity.
5. Click outside the row and then choose Save from the File menu.

To define calendars for a product at a location using tables:

1. In the ItemFacility table, type the code for the location of the product in the location_code field.
2. In the item_code field, type the code for the product or material to which the calendar applies.
3. In the ship_calendar, receive_calendar, and production_calendar fields, type the default calendar for the product at the location. The value consists of seven 1s and 0s that represent the days Monday to Sunday, from left to right. For example, a product that is available for shipping during the week, but is not available for shipping on the weekend, would have the following value in the Shipping Calendar field:

```
1111100
```

Values are:

- 0: Not available for the activity.
- 1: Available for the activity.

To define exceptions to a product's calendar using views:

1. In the Item Calendar view, in the summary area, select the location and product row for which you'd like to define exceptions.
2. In the Detail area, right-click and choose Insert Row.
3. In the Exception Date field, choose an exception date from the calendar.

Do not change the Location or Product values.

4. In the Shipping, Receiving, and Producing fields, choose the status on the exception date for each calendar. Values are:
 - 0: Not available for the activity.
 - 1: Available for the activity.
5. Click outside the row, and then choose Save from the File menu.

To define exceptions to a product's calendar using tables:

1. In the ItemExceptionCalendar table, type the code for the location that has an exception to the product calendar in the location_code field.
2. In the item_code field, type the code for the product that has a calendar exception.
3. In the exception_date field, type the date of the exception.
4. In the ship_isopen, receive_isopen, and production_isopen fields, type the status on the exception date. Values are:
 - 0: Not available for the activity.
 - 1: Available for the activity.

Inventory Management

Inventory management defines policies for the storage types, and desired inventory levels for products and materials at each location, and any item constraints in the planning horizon. The views or tables that define inventory management are part of the static data model.

When you create a new model, some enterprise-specific information is required. Other information is optional and can be completed to further customize your model. The table below lists the views or tables that you must complete and those that are optional.

View	Table	Required/Optional
Inventory Policy	InventoryPolicy	Required
Safety Network	SafetyNetLoc	Optional

View	Table	Required/Optional
Storage Capacities	StorageType StorageTypeCap	Optional
Code Age	CodeAge	Optional

Defining Item Constraints

Items must be either constrained or unconstrained for the entire horizon.

1. In the Inventory Policy Master view, in the Constrained Timefence field, do one of the following:
 - To define an item as always constrained, enter -1 or a number greater than the number of days in the horizon.
 - To define an item as always unconstrained, enter 0.
2. From the File menu, choose Save.

Defining Maximum Inventory Levels

You define inventory levels, including the desired maximum inventory levels, in the Inventory Policy view or InventoryPolicy table. When you specify the desired maximum inventory levels for a product or material at a location, you must also set the USE_INVENTORY_MAXIMUM system option in the System Plan view or System_Option table. Values are:

<i>Y</i>	If the desired maximum inventory level is greater than or equal to zero, the solvers respect maximum as a soft constraint. The fulfillment of orders, forecast, and shipment multiples has a higher priority than the maximum constraint. If the desired maximum inventory level is negative, the solvers do not respect the maximum level for the product, location, and period.
<i>N</i>	The solvers do not respect the maximum inventory level for all products, locations, and periods.

Defining Safety and Maximum Days of Cover Policies

You specify the desired safety and maximum inventory levels in the Inventory Policy view or the InventoryPolicy table. You can specify these levels as an absolute value, as a number of days of cover, or as the maximum of the two. Days of cover is the number of days that demand can be satisfied with projected inventory if no more inventory is produced or received.

If you define the safety or maximum inventory levels as days of cover or as the maximum of an absolute value and days of cover, you must set the DAYSCOVER_POLICY and DAYSCOVER_EXCLUDE_HOLIDAY system options in the System Plan view or the System_Option table.

Defining Safety Stock Networks

A safety stock network is a set of locations that shares its safety stock requirements to reduce the total inventory carried by each location while maintaining adequate inventory to protect against variations in demand. You can define safety stock networks to reduce overall inventory levels. The safety stock for the network is less than the sum of the safety stock for each location in the network. The Supply Planning solver uses safety stock networks to generate its solution.

If you are using product substitution with generic products, define the same safety stock network for a generic product and its substitutes.

To define safety stock networks:

1. In the Safety Network view, right-click the summary area and select Insert Row from the shortcut menu.
2. Complete the following fields:

Item	Select the product or material that is stored in the safety stock network.
Location	Select the location that is part of the safety stock network.
Safety Location	Select the location that is storing the portion of safety stock that is not stored by the primary location specified in the Location field.
Effective Date	Select a date on which the safety stock network policy becomes active.
Safety Contribution	Specify the portion of safety stock to be stored by the safety location specified in the Safety Location field.
3. From the File menu, choose Save.
4. In the Inventory Policy view, in the Safety Reduction field, specify the reduction of safety stock stored by the safety location for other locations, due to the sharing of inventory in the network. Set the value in this field to 1.0 for locations that are not storing common safety stock.
5. Click Save.

Note. If no record is defined for a location in the Safety Network view, the Supply Planning assumes that the location stores all of its own safety stock.

To define safety stock networks using tables

1. In the SafetyNetLoc table, type the code for the product or material that is stored in the safety stock network in the item_code field.
2. In the location field, type the code for the location that is part of the safety stock network.
3. In the safety_location field, type the code for the location that is storing the portion of safety stock that is not stored by the location and which is specified in the location field.
4. In the effective_date field, type the date when the safety stock network policies become active. The time must always be set to 00:00:00.
5. In the contribution_factor field, type the portion of safety stock to be stored by the safety location, which is specified in the safety_location field.
6. In the safety_reduction field of the InventoryPolicy table, type the reduction of safety stock that is stored by the safety location for other locations, due to the sharing of inventory in the network. Set the value in this field to 1.0 for locations that are not storing common safety stock.

If no record is defined for a location in the SafetyNetLoc table, the Supply Planning assumes that the location stores all of its own safety stock.

Defining Storage Types

You define storage types for each location in the Inventory Policy view or the StorageType table. You define the storage capacity of each storage type at a location in the Storage Capacities view or the StorageTypeCap table.

To define storage types:

1. In the Storage Capacities view, right-click the summary area and select Insert Row from the shortcut menu.
2. Complete the following fields:

Origin	Specify the location used to store inventory.
Storage Type	Select the type of storage in use at the location.
Capacity Unit	The unit of measure for the first dimension of storage capacity.

3. Open the Inventory Policy view.
4. Complete the Storage Type field for each record.
5. From the File menu, choose Save.

Note. A product or material can have only one storage type per location on any effective date.

To define storage types using tables

1. Complete the StorageType table to specify the storage types that are supported at each location. This table also stores the capacity units for each storage type at a location.
2. Complete the StorageTypeCap table to specify the capacities and costs for each storage type at a location.
3. Complete the storage_type field for each record in the InventoryPolicy table to specify the storage type that is used for each product or material at a location. A product or material can have only one storage type per location on any effective date.

Defining Storage Capacities

To define storage capacities:

1. In the Storage Capacities view, click the number to the left of a storage record in the summary area.
2. Right-click the detail area and select Insert Row from the shortcut menu.

A new record that corresponds with the summary record appears.

3. Complete the following fields:

Effective Date	Select a date when the storage capacity is available.
Standard Capacity	Specify the standard capacity for the type of storage. A value of –1 represents infinite capacity.
Premium Capacity	Specify the premium capacity for the type of storage (above Standard Capacity). A value of –1 represents infinite capacity.
Standard Storage Cost	The cost of storing one unit (based on Capacity Unit) in standard storage.

Premium Storage Cost The cost of storing one unit (based on Capacity Unit) in premium storage.

4. From the File menu, choose Save.

Defining Code Ages

Code ages are classifications that are assigned to a product or material to identify its remaining shelf life. Remaining shelf life is divided into ranges of days, and each range is identified by a unique code. A range of days and its associated code is called a code age.

To define code ages:

1. In the Code Age view, right-click and select Insert Row from the shortcut menu.
2. Complete the following fields:

Code	Specify a unique value that will be used to identify a classification of remaining shelf life.
Minimum Shelf Life	Specify the minimum number of days of remaining shelf life that a product or material must meet to qualify for the classification of remaining shelf life.

3. From the File menu, choose Save.

To define code age using tables

1. In the CodeAge table, type a unique value that can be used to identify a classification of remaining shelf life in the code field.

Optionally, in the description field, type an explanation of the code.

2. In the min_shelf_life field, type the minimum number of days of remaining shelf life that a product or material must meet to qualify for the classification of remaining shelf life.

Optionally, complete the Userfield_1 to Userfield_3 fields.

Triggering Expiration Alerts

Expiration alerts can be triggered to warn you and other users that the shelf life of a product or material is below a specified number of days. To trigger an expiration alert, the fields in the views or tables listed below must be completed. It is assumed that all other relevant fields in the Beginning Inventory and Item Master views (or their associated data model tables) have already been completed.

- The Lot Number and Mfg Date fields in the detail records of the Beginning Inventory view, or the lot_number and mfg_date fields in the LotStatus table
- The Shelf Life, Expiration Alert Level 1, and Expiration Alert Level 2 fields of the Item Master view or the shelf_life, expiration_alert_level_1, and expiration_alert_level_2 fields in the Item table.

An alert is triggered when a product or material's remaining shelf life is below the number of days specified in the Expiration Alert Level 1 or 2 fields in the Item Master view or in the expiration_alert_level_1 or expiration_alert_level_2 field in the Item table.

Demand Management

Demand policies define demand forecasting. The views that define demand management are part of the static data model.

When you create a new model, some enterprise-specific information is required. Other information is optional and can be completed to further customize your model. The table below lists the views or tables you must complete and those that are optional:

View	Table	Required/Optional
Demand Priority	DemandPriority	Optional
Inventory Balance	InventoryBalance	Optional
Forecast Profile	ForecastProfile	Optional
Product Substitution	ProductSubstitute	Optional

Defining Demand Priorities

If inventory or capacity is insufficient to meet demand, you want to be able to allocate the deployment of inventory according to predefined priorities. This allocation is especially challenging when you have several competing priorities. Production and Distribution Planning allows you to specify your priorities by location, by product, by component of demand, and by period. The Supply Planning respects these priorities when supply or capacity is insufficient to meet demand.

Demand priorities are defined according to four dimensions:

- Location
- Product or material
- Demand component
- Period

Each dimension is partitioned into classes. The location, product or material, and period dimensions are user-defined. The demand component class has four pre-defined options from which to choose. Some examples of classes are:

Dimension	Class
Location	LocationclassA
	LocationclassB
Product	Productclass1
	Productclass2

Dimension	Class
Component of demand	E = effective demand S = safety B = build M = maximum
Period	1-3 4-6 7-9

You create a demand priority using the following procedure:

- Define the different classes for each dimension.
- Create combinations of classes, choosing one class from each dimension.
- Prioritize each of these combinations of classes that were created in step 2.
- Each combination of classes (step 2) and its priority (step 3) is called a demand priority. Two or more class combinations with the same priority are defined as belonging to the same equivalence class. Using the examples in the previous table, the following combination of classes might exist:
- LocationclassA, Productclass1, S, 1-3
- LocationclassB, Productclass2, B, 4-6

If both combinations are assigned a priority of one, they belong to the same equivalence class.

Note. To reduce the complexity in the model and the amount of time needed for a solve, define a minimum number of demand priority classes. The exact number of classes depends on your model.

To define demand priorities:

1. In the Demand Priority view, right-click and select Insert Row from the shortcut menu.
2. Complete the following fields:

Location Priority Class	Select the location priority class.
Product Priority Class	Select the product priority class.
Demand Component	Select a demand component.
Effective Period	Select the starting period when the demand priority is effective. The starting period is defined as the number of days offset into the solve horizon.
Priority	Select the demand priority. A priority of 1 indicates the highest importance.

Note. The data in the table will be used as the defaults if information in the Demand Priority view is missing or erroneous. The * represents all.

Location Priority Class	Product Priority Class	Demand Component	Effective Period	Priority
*	*	E	0	1.0 or your choice
*	*	S	0	2.0 or your choice
*	*	B	0	3.0 or your choice
*	*	M	0	4.0 or your choice

- Determine the classes for each of the four dimensions: location, product, demand component, and period.

For example, you might create the following classes for each dimension:

- Location priority classes--Plants, Level 2 DCs, Level 1 DCs
- Product priority classes--* (represents all)
- Component of demand (not user-defined, but included with the system)--effective demand, safety, build, maximum
- Periods--1-5, 5-15, >15

Once you have created the classes for each dimension, combine them into demand priorities. Using the example above, your demand priorities would be as follows:

- In the Add Summary window, complete the fields with one of the demand priorities you created in step 4, and then click Apply & Close.
- Repeat steps 5 and 6 until all of your demand priorities are entered in the view.
- In the Demand Priority view, choose Save from the File menu.
- In the Location view, assign a priority class to each location in the Priority Class field.
- In the Item Master view, assign a priority class to each product or material in the Priority Class field.

The valid location priority classes are those that you defined in the Demand Priority view. In the previous example, the valid location priority classes are as follows: Plants, Level-2-DCs, and Level-1-DCs.

The valid product or material priority classes are those you defined in the Demand Priority view. In the previous example, only one product priority class is defined: * (represents all).

You can complete the Priority Class field in the Item Master and Location views before you complete the fields in the Demand Priority view. When you click the Priority Class field in the Item Master or Location views, the Selection window appears. Type a priority class name in the Selection field, and then click Apply & Close.

Only the Supply Planning uses demand prioritization. If inventory or capacity is insufficient to meet demand, the Supply Planning generates solutions to satisfy the predefined demand priorities. The higher priority classes are satisfied first at the expense of lower priority classes.

To define demand priorities using tables

- In the DemandPriority table, type the following demand priorities that will be used as defaults if information in the Demand_Priority table is missing or erroneous. The * represents all.

location_ priority_class	product_ priority_class	component_ code	effective_ period	priority
*	*	E	0	1.0 or your choice
*	*	S	0	2.0 or your choice
*	*	B	0	3.0 or your choice
*	*	M	0	4.0 or your choice

2. Determine the classes for each of the four dimensions:

- Location
- Product
- Component of demand
- Period

For example, you might create the following classes for each dimension:

- Location priority classes--Plants, Level 2 DCs, Level 1 DC
- Product priority classes--* (represents all)
- Component of demand (not user-defined but included with the system)--effective demand, safety, build, maximum
- Periods--1-5, 5-15, >15

Once you have created the classes for each dimension, combine them into demand priorities.

3. Enter the demand priorities in the DemandPriority table.

4. In the Location table, assign a priority class to each location in the priority_class field. The valid location priority classes are defined in the DemandPriority table. In the previous example, the valid location priority classes are:

- Plants
- Level-2-DCs
- Level-1-DCs

5. In the Item table, assign a priority class to each product or material in the priority_class field. The valid product priority classes are defined in the DemandPriority table. In the previous example, only one product priority class is defined. This class is * (represents all).

Only Optimal Supply Planning uses demand prioritization. If inventory or capacity is insufficient to meet demand, Optimal Supply Planning generates solutions to satisfy the predefined demand priorities. The higher priority classes are satisfied first at the expense of lower priority classes.

Defining Inventory Balancing Policies

Inventory shortages occur when inventory is insufficient in the distribution network to satisfy all of the demand. Inventory balancing allows you to define how you want the Supply Planning to distribute inventory across the network in situations of inventory shortage. For example, you can specify that in the case of an inventory shortage, you want a minimum of 75 percent of effective demand satisfied at each customer location and only 25 percent of effective demand satisfied at each distribution center.

When an inventory shortage exists, the Supply Planning satisfies demand as follows:

- Effective demand is satisfied to the user-defined level for locations in an inventory balancing class.
- Effective demand is satisfied at all locations, starting with the lowest-cost solution.
- Safety stock is satisfied to the user-defined level for locations in an inventory balancing class.
- Safety stock is satisfied at all locations, starting with the lowest-cost solution.
- Build levels at each location are satisfied.

In each stage, the Supply Planning selects the lowest-cost solution.

If inventory is insufficient to satisfy inventory balancing requirements, Production and Distribution Planning notifies you of the violation by generating one of the `SafetyStockBelowBalanceFactor` or `EffectiveDemandBelowBalanceFactor` system alerts.

To define inventory balancing policies:

1. In the Inventory Balance view, right-click and select Insert Row from the shortcut menu.
2. Complete the following fields:

Location Inv Balance Class	Specify a name for the location inventory balancing class. For example, you can create classes such as <code>AClassCustomers</code> and <code>BClassCustomers</code> .
Product Inv Balance Class	Specify a name for the product or material inventory balancing class. For example, you can create classes such as <code>HighDemandProducts</code> and <code>LowDemandProducts</code> .
Safety Percentage	Specify the minimum percentage of safety stock that must be met for the location class and product, or material class combination. You must define the percentage as an integer.
Effective Demand Percentage	Specify the minimum percentage of effective demand that must be met for the location class, and product or material class combination before meeting the next level of demand. You must define the percentage as an integer.
3. From the File menu, choose Save.
4. Close the view.
5. In the Location view, in the Inventory Balance Class Zone field, select a location inventory balancing class for each location. The valid classes are the ones that you created in the Inventory Balance view.
6. From the File menu, choose Save.
7. Close the view.
8. In the Item Master view, in the Inventory Balance Class field, select an inventory balancing class for each product and material . The valid classes are the ones that you created in the Inventory Balance view.
9. From the File menu, choose Save.
10. Close the view.
11. In the System Plan view, set the `INVENTORY_BALANCING_TIMEFENCE` system option to the number of periods from the horizon start date that the inventory balancing policies are in effect.

You can complete the Inventory Balance Class field in the Item Master and Location views before you complete the fields in the Inventory Balance view. When you click the Inventory Balance Class field in the Item Master or Location views, the Selection window appears. Type an inventory balance class name in the Selection field and click Apply & Close.

Note. To reduce the complexity in the model and the amount of time needed for a solve, define a minimum number of inventory balancing classes. The exact number of classes depends on your model.

To define inventory balancing policies using tables

1. In the InventoryBalance table, type a name for the location inventory balancing class in the location_inv_balance_class field. For example, you might create classes such as AClassCustomers and BClassCustomers.
2. In the item_inv_balance_class field, type a name for the product or material inventory balancing class. For example, you might create classes such as HighDemandProducts and LowDemandProducts.
3. In the safety_percentage field, type the minimum percentage of safety stock that must be met for the location class, and product or material class combination. You must define the percentage as an integer.
4. In the effective_demand_percentage field, type the minimum percentage of effective demand that must be met for the location class, and product or material class combination before meeting the next level of demand. You must define the percentage as an integer.
5. In the Location table, assign a location inventory balancing class to each location in the inv_balance_class field. The valid classes were created in step 1.
6. In the Item table, assign an item inventory balancing class to each product and material in the inv_balance_class field. The valid classes were created in step 2.
7. In the System_Option table, set the INVENTORY_BALANCING_TIMEFENCE system option to the number of periods from the horizon start date that the inventory balancing policies are in effect.

Defining Weekly Forecast Profiles

You can define weekly forecast profiles to adjust forecast quantities automatically for specific days of the week. This action ensures that your sales profile is more accurately represented. For example, you can specify that forecast at a location typically peaks early in the week and decreases at the end of the week. Production and Distribution Planning adjusts the forecast quantities so that they are larger at the start of the week and smaller at the end of the week.

The forecast profile feature is designed primarily for weekly forecast imports rather than daily forecasts. When forecasts are imported weekly, knowing how the quantity is divided over the days of the week is important. However, when forecasts are imported daily, the daily divisions are not necessary.

To define weekly forecast profiles using views

1. In the Forecast Profile view, right-click and select Insert Row from the shortcut menu.
2. Complete the following fields:

Location	Select the location to which this profile applies.
Product	Select the product or material to which the profile applies.
Effective Date	Specify a date for the forecast profile to take effect.
Monday - Sunday	Specify the factor by which the forecast quantity is to be multiplied in the Monday - Sunday fields. For example, if you enter 0.2 as the value in the

Monday field, the forecast quantity for the week is multiplied by 0.2 to get the forecast quantity for Monday.

3. From the File menu, choose Save.

Note. When you enter a forecast profile after the beginning of the horizon, the forecasts prior to the effective date of the forecast profile are not displayed. You must enter a record in the time-phased forecast profile at or before the beginning of the horizon that multiplies the records by 1.0.

To define weekly forecast profiles using tables:

1. In the ForecastProfile table, in the location_code field, type the code for the location to which the profile applies.
2. In the product_code field, type the code for the product or material to which the profile applies.
3. In each day-of-the-week field, type the factor by which the forecast quantity is to be multiplied. For example, if you type 0.2 as the value in the Monday field, the forecast quantity for the week is multiplied by 0.2 to get the forecast quantity for Monday.

Note. When you enter a forecast profile after the beginning of the horizon, the forecasts prior to the effective date of the forecast profile are not displayed. You must enter a record in the time-phased forecast profile at or before the beginning of the horizon that multiplies the records by 1.0.

Defining Product Substitutions

Product substitution is part of demand management. Product substitution occurs when the Supply Planning can satisfy demand for one product by substituting another product, according to user-defined specifications. You can model product substitution to satisfy a variety of different business policies. For example, you can model product substitution to meet the following policies:

- Product upgrade or straight substitutions. When a company produces products in multiple grades, automatic upgrades might be allowed if the requested grade is unavailable. Also, a company can directly substitute one product for another. For example, a company might give a customer either one 100-kilogram bag of flour or two fifty-kilogram bags of flour.
- New product rollout. When an enterprise rolls out or introduces a new product to replace an older one, there is usually a period of time when both the new and old products are available. Typically, the new product does not immediately replace the old product. Instead, the old product is gradually phased out.
- Product promotion. Companies often introduce promotional products, which are only available for a limited period of time. During the promotional period, the regular product can be substituted for the promotional product if inventory of the promotional product is insufficient.

The following procedures describe how to model product substitution.

In the following procedures, the word product refers to the value in the Product field in the Product Substitution view and in the product field in the ProductSubstitute table. The word substitute refers to the value in the Substitute field in the Product Substitution view and the substitute field in the ProductSubstitute table.

The Supply Planning does not satisfy the substitute's effective demand and safety stock levels that are defined by the inventory balancing policies and demand priorities.

To define product substitutions:

1. In the Product Substitution view details area, right-click and select Insert Row from the shortcut menu.
2. Complete the following fields:

Location	Select the location for which the product substitution applies.
Product	Select the product to which the substitution applies.
Substitute	Select the product or material that can be used as a substitute.
Effective Date	Specify the date when the product substitution policy begins in the Effective Date field.
Ratio	Specify the quantity of the substitute product to be substituted for the original product.
Preference	Specify the preference for the substitute.
Transfer Demand	Select Y to transfer demand for the substitute to the product. Choose N if you do not want to transfer demand for the substitute to the product or if you are not using a generic product.

3. From the File menu, choose Save.

To define product substitutions using tables

1. In the ProductSubstitute table, type the code for the location to which the product substitution applies in the location_code field.
2. In the product_code field, type the code for the product to which the substitution applies. The product can be a generic product.
3. In the substitute field, type the code for the product or material that can be used as a substitute.
4. In the effective_date field, type the date and time when the product substitution policy begins. The time must always be set to 00:00:00.
5. In the ratio field, type the quantity of the substitute that is to be substituted for the product. The product was specified in step 2. The substitute was specified in step 3.
6. In the preference field, type the preference for the substitute. In the transfer_demand field, type Y if demand for the substitute is transferred to demand for the product. Type N if demand for the substitute is not transferred to demand for the product or if you are not using a generic product.

Optionally, complete the userfield_1 to userfield_3 fields.

The Supply Planning does not satisfy the substitute's effective demand and safety stock levels that are defined by the inventory balancing policies and demand priorities.

Defining Generic Products

In some situations, such as when you model new product rollout or product promotion, you must define a generic product. A generic product is a phantom product that the Supply Planning uses to transfer demand to a variety of substitutes.

If you use a generic product, you must define it the Item Master view or the Item table and you must assign it an item type G. You must also create a record for the generic product in the Inventory Policy view or the InventoryPolicy table.

In the Inventory Policy view, the only fields that you must complete are:

- Location
- Product
- Effective Date

In the InventoryPolicy table, the only fields that you must complete are:

- location_code
- item_code
- effective_date

Do not complete the other fields because the Supply Planning ignores the inventory level values for the generic product and assigns them a value of 0. The Supply Planning uses the record in the Inventory Policy view or InventoryPolicy table to associate the generic product with one or more locations.

Completing the Preference Field

The Preference field is in the Product Substitution view and the ProductSubstitute table. The preference field determines which substitute the Supply Planning uses first, second, third, and so on. A preference of 1.0 indicates that the Supply Planning uses the substitute first. A preference of 2.0 indicates that the Supply Planning uses the substitute only after the substitute with a preference of 1.0 is no longer available.

The valid values are 1.0, 2.0, and so on. Invalid values are 1.5, 2.1, and so on. Setting a preference to 0.0 disables the substitution.

Setting the preference of a substitute to 1.0 has a special meaning if the product is a generic product. If you are using a generic product, you must define one substitute that has a preference of 1.0. The Supply Planning calculates the required safety stock of the generic product using the inventory policies of the substitute with a preference of 1.0. If you define the substitute's safety stock level as an absolute value, the Supply Planning attempts to satisfy this value.

If you define the substitute's safety stock level as a days-of-cover value, the Supply Planning attempts to satisfy demand for the number of days of cover. The Supply Planning calculates the demand for the days of cover by adding demand for the generic product to demand for the substitute. For example, suppose you define a generic product A16ozGeneric that can be substituted by A16ozRegular and A16ozSpecial. The preference for A16ozRegular is 1.0 and the preference for A16ozSpecial is 2.0. The transfer demand for both substitutes is Y. In this example, the demand for both substitutes is transferred to the product, so the total demand is the sum of the demand for A16ozGeneric, A16ozRegular, and A16ozSpecial. The Supply Planning calculates the safety stock by meeting the total demand for the number of days of cover specified in the inventory policy for A16ozRegular.

Completing the Preference Field Using Views

The preference field in the MaterialSubstitute table determines which substitute that the Supply Planning uses first, second, third, and so on. For example, a preference of 1.0 indicates that the Supply Planning uses that substitute first. A preference of 2.0 means that the Supply Planning uses that substitute only after the substitute with a preference of 1.0 is no longer available.

The valid values are 1.0, 2.0, and so on. Invalid values are 1.5, 2.1, and so on. Setting a preference to 0.0 disables the substitution.

Distribution Management

The distribution network defines the flow of products and materials over the network of supply and demand locations. The views that define distribution management are part of the static data model.

When you create a new model, some enterprise-specific information is required. Other information is optional and can be completed to further customize your model. The table below lists the views or tables you must complete and those that are optional:

View	Table	Required/Optional
Sourcing	Sourcing	Required
Item Shipping Process	LaneShipProc LaneShipItem	Required
Shipping Capacity	LaneShipCap	Required
Deployment Review Calendar	DeployReviewCalendar	Optional
	Lane	Required

Defining Lanes

When you add a lane to an existing model, you must complete certain required views to ensure the model's integrity. You can also complete optional views or tables to customize your data model further. The table below lists the views or tables that you must complete and those that are optional when you add a lane:

View	Table	Required/Optional
Sourcing	Sourcing Lane	Required
Item Shipping Process	LaneShipProc LaneShipItem	Required
Shipping Capacity	LaneShipCap	Required
Deployment Review Calendar	DeployReviewCalendar	Optional
Workgroup	WorkGroup	Optional

Defining Schedules for Deployment Reviews

You might want to ensure that deployments are reviewed according to a schedule. Production and Distribution Planning allows you to specify that deployment reviews for different lanes are to take place on different days of the week. You can also specify the frequency of reviews in weekly multiples. Reviewers can review and publish deployments on days other than those specified, but the scheduled days provide a structure and a reminder for users. You can view the deployments that are scheduled for review in the Review Deployment view. In addition, if you are using the deployment review schedule feature, use the Deployment Review Status view to display deployments. A DeployReviewLate alert is generated when deployment reviews are not completed by their scheduled review day.

To define schedules for deployment reviews using views:

1. In the Deployment Review Calendar view, select a lane in the summary area.

2. In the detail area, right-click and choose Insert Row from the menu.
3. In the Reference Date field, select a date that can be used as the reference date for scheduling deployment reviews.

The day for the reference date must be the same as the day on which deployment reviews are to take place. For example, if reviews are to take place on Mondays, ensure that the reference date is a Monday.

You must complete this field if reviews are scheduled in multiples of one week-- for example, one review every two weeks.

4. Complete one of the Monday-Sunday fields of the Add Details window for the day when the review is to take place.

The value in this field is an integer that represents the frequency in weeks of the reviews. For example, a value of 2 in the Monday field indicates that a review takes place once every second Monday.

5. From the File menu, choose Save.

To define a schedule for deployment reviews using tables:

1. In the DeployReviewCalendar table, type the code for the lane with deployments that are to be reviewed in the lane_code field.
2. In the reference_date field, type a date that can be used as the reference date for scheduling deployment reviews.

The day for the reference date must be the same as the day on which deployment reviews are to take place. For example, if reviews are to take place on Mondays, ensure that the reference date is a Monday.

You must complete this field if reviews are scheduled in multiples of one week--for example, one review every two weeks.

3. Complete one of the day-of-the-week fields, depending on when the review is to take place.

For example, if the reviews are to take place on Mondays, complete the Monday field. The value in this field is an integer that represents the frequency in weeks of the reviews. For example, a value of 2 in the Monday field indicates that a review takes place once every second Monday.

Production Management

This section provides an overview and discusses how to:

- Define manufacturing processes.
- Associate manufacturing processes with locations.
- Define resource capacities and costs at a location.

Understanding Production Management

The production environment defines the resources and materials that are required for manufacturing finished products, and defines the requirements for producing each product at different plant locations. The production environment also allows you to model detailed aspects of your manufacturing environment. The views or tables that define production management are part of the static data model.

The Manufacturing Process view is used to enumerate the operations and routings that combine to make up your manufacturing process. The ManufacturingProcess table corresponds to the Manufacturing Process view. This table is the master table for all operations and routings in your manufacturing model. Once operations and processes are specified in the Manufacturing Process view, you can define the details of each operation and routing in the Manufacturing Operation and Manufacturing Routing views.

When you create a new model, some enterprise-specific information is required. Other information is optional and can be completed to customize your model further. The table below lists the views or tables that you must complete and those that are optional.

View	Table	Required/Optional
Resource		Required
Location Manufacturing Process	LocMfgProc	Required
Resource Capacity	LocResCap	Required
	MfgProcess	Required

Each material or resource in a Bill of Materials and Resources (BOMR) is identified by a unique BOMR ID and is associated with a manufacturing process. Because each item has a unique ID, you can assign the same material or resource to the same manufacturing process multiple times. BOMRs are associated with the manufacturing processes that are defined in the Manufacturing Process BOMR view or the MfgProcess table. Before you define BOMRs, you must define manufacturing processes.

Component substitution allows you to substitute intermediate products within a Bill of Materials and Resources (BOMR) when the default part runs out. By allowing material substitution, the finished goods can be produced.

Component substitution is similar to product substitution. However, the requirements of component substitution are different. Product substitution is a part of demand management, whereas component substitution is a part of the manufacturing process specification. You do not need to create a different manufacturing process for component substitution.

When you use component substitution, the following criteria apply:

- You must try to transfer materials before substituting materials.
- You must substitute materials before finished goods.
- The substitution cost must be higher than the safety violation cost.
- The substitution applies only to meeting the direct and dependent demand.

In addition, the component can be substituted only if one of the following criteria applies:

- The standard component is not available.
- The standard component could not be shipped.

A primary BOMR still exists. Therefore, when you are changing Net Requirements manually, the change propagates the materials using the primary entries in the BOMR.

The following procedure describes how to model component substitution using views or tables. This procedure must be done before starting Production and Distribution Planning.

In all of the following scenarios, the word component refers to the values in the following fields:

- the Item Code field in the Material Substitution view and the Substituted Material view

- the `item_code` field in the `MaterialSubstitute` table and the `SubstitutedMaterial` table

The word `substitute` refers to the values in the following fields:

- the `Substitute Item Code` field in the `Material Substitution` view and the `Substituted Material` view
- the `substitute_item_code` field in the `MaterialSubstitute` table and the `SubstitutedMaterial` table

Once you have defined manufacturing processes, you must associate them with locations. You can assign multiple manufacturing processes that produce the same product to each location.

For each manufacturing resource at each location, you can define associated capacities and costs. You can specify three capacity levels and their associated costs. You can also specify the date when the capacities and costs are effective. Capacities are based on the standard planning unit in the `Item Master` view or the `Item` table.

If you want to indicate that a resource does not have manufacturing capacity, add a record for the resource in the `Resource Capacity` view or the `LocResCap` table. Type a value of 0.0 in the capacity fields. The Supply Planning assumes a resource has infinite capacity if you do not define a record.

When you define alternate materials and resources and allow substitutions, an alternate resource or material is used to satisfy demand for the original material or resource based on your specifications. In the event that the BOMR contains a constraining component (item, tool, crew, or machine), the availability of alternate resources and materials are verified in the preferred order that you define. Alternate resources and materials are verified against the same time period that the original resources and materials were allotted. An effective date can be applied to an alternate material or resource to indicate the date when it can be used in an operation or in a routing. Prior to substitution, the effective dates used for substitutions are checked to ensure validity.

Defining Manufacturing Processes

To reduce model maintenance, Production and Distribution Planning supports generic manufacturing processes that can be assigned to multiple locations. Each process, identified by a unique code, can manufacture only one product.

To define a manufacturing process:

1. In the `Manufacturing Process` view, right-click the summary area and choose `Insert Row` from the menu.
2. Complete the following fields:

Manufacturing Code Enter a manufacturing code. You must have previously defined this process in the `Manufacturing Process BOMR` view.

Manufacturing Type A value of R indicates a routing. A value of O indicates an operation.

3. From the `File` menu, choose `Save`.

Associating Manufacturing Processes to Locations

To define a location manufacturing process:

1. In the `Location Manufacturing Process` view summary area, click the number to the left of the record that contains the location for which you want to create a manufacturing routing.
2. In the detail area, right-click and choose `Insert Row` from the menu.
3. Complete the following fields:

Manufacturing Code Select a manufacturing code from the drop-down list. You must have previously defined this process in the `Manufacturing Process BOMR` view.

Effective Date	Specify the date when the manufacturing process becomes active at the location.
Available	Specify the availability of the manufacturing process. Y indicates that the process is available, and N indicates that the process is not available.
Overhead Cost	Optionally, specify the overhead cost per unit of the product when it is manufactured at this location using this process. The value in this field is multiplied by the quantity of the product that is defined in the Supply Planning solution to determine the actual cost of using the manufacturing process at this location. For example, if the value is 1.5 and the quantity of the product in the Supply Planning solution is 50, the actual cost of using the manufacturing process at this location is 75 or $1.5 * 50$.
Description	Optionally, specify a description for this manufacturing process.

4. From the File menu, choose Save.

To define manufacturing processes at locations using tables:

1. In the LocMfgProc table, in the location_code field, type the code for the location that runs the manufacturing process.
2. In the product_code field, type the code for the product that is manufactured by the process. This code must be for an individual product and cannot represent a product group.
3. In the effective_date field, type the date and time when the manufacturing process becomes active. The time must always be set to 00:00:00.
4. In the process_name field, type the code for the process that manufactures the product at the location.
You must have previously defined this process in the MfgProcess table. In addition, the product code that was specified for this process in the MfgProcess table must be the same as the product code that you specified in step 2.
5. In the is_available field, indicate whether the manufacturing process is available to be used. Values are:
 - Y: The manufacturing process is available to be used.
 - N: The manufacturing process is not available to be used.
6. (Optional) In the description field, type a description of the manufacturing process at the location.
7. (Optional) In the process_overhead field, type the overhead cost per unit of the product when it is manufactured at this location using this process.

The value in this field is multiplied by the quantity of the product that is defined in the Supply Planning solution to determine the actual cost of using the manufacturing process at this location. For example, if the value in the process_overhead field is 1.5 and the quantity of the product in the Supply Planning solution is 50, the actual cost of using the manufacturing process at this location is 75 or $1.5 * 50$.

8. (Optional) Complete the userfield_1 to userfield_3 fields.

To define resource capacities and costs at a location using tables:

1. In the LocResCap table, in the location_code field, type the code for the location.
2. In the item_code field, type the code for the manufacturing resource.
3. In the effective_date field, type the date and time at which the resource costs and capacities are effective. The time must always be set to 00:00:00.
4. In the max_premium2_capacity field, type the maximum amount of premium2 capacity that is available.

Premium2 capacity is the most expensive level of capacity that can be used. For example, suppose a resource can be run in three shifts. The first shift runs during regular working hours and incurs regular working costs. The second shift runs during overtime hours and incurs 1.5 times the regular working costs. The third shift is premium2 capacity and runs during double overtime hours, incurring 2 times the regular working costs.

5. In the max_premium_capacity field, type the maximum amount of premium capacity that is available. Using the example in step 4, the second shift is premium capacity.
6. In the max_standard_capacity field, type the maximum amount of standard capacity that is available. Using the example in step 4, the first shift is standard capacity.

Optionally, in the min_standard_capacity field, type the minimum amount of standard capacity that a manufacturing resource should use to produce a product.

Optionally, in the min_capacity_penalty field, type the penalty cost that is applied when the minimum level of standard capacity is violated.

7. In the premium2_production_cost, premium_production_cost, and standard_production_cost fields, type the cost associated with each level of capacity. The premium2 production cost must be higher than the premium production cost, which must be higher than the standard production cost.

Optionally, in the description field, type a description of the resource capacities and costs.

Optionally, complete the userfield_1 to userfield_3 fields.

8. In the System_Option table, define a value for the PRODUCTION_PREMIUM_CAPACITY system option.

Defining Resource Capacities and Costs at a Location

To define resource capacities and costs at a location using views:

1. In the Resource Capacity view summary area, select the record for the location for which you want to define resource capacities and costs.
2. Right-click the detail area and select Insert Row from the shortcut menu.

A new record that corresponds with the summary record appears.

3. Complete the following fields:

Resource	Select a manufacturing resource at this location.
Effective Date	Specify the date on which the resource costs and capacities are effective.
Minimum Capacity	Optionally, in the Minimum Capacity field, type the minimum amount of standard capacity that a manufacturing resource should use to produce a product.
Standard Capacity	Specify the maximum amount of standard capacity that is available.
Premium Capacity	Specify the maximum amount of premium capacity that is available.
Premium2 Capacity	Specify the maximum amount of premium capacity that is available Premium2 capacity is the most expensive level of capacity that can be used. For example, suppose a resource can be run in three shifts. The first shift runs during regular working hours and incurs regular working costs. The second shift runs during overtime hours and incurs 1.5 times the regular working costs. The third shift is premium2 capacity and runs during double overtime hours, incurring 2 times the regular working costs.

Minimum Capacity Penalty	Optionally, in the Minimum Capacity Penalty field, type the penalty cost that is applied when the minimum level of standard capacity is violated.
Standard Production Cost	Specify the cost that is associated with standard capacity.
Premium Production Cost	Specify the cost that is associated with premium capacity. This cost must be higher than the value specified for the Standard Production Cost.
Premium2 Production Cost	Specify the cost that is associated with premium2 capacity. This cost must be higher than the value specified for the Premium Production Cost.

4. From the File menu, choose Save.
5. In the System Plan view, define a value for the PRODUCTION_PREMIUM_CAPACITY system option.

Manufacturing Operations

This section provides an overview and discusses how to define manufacturing operations in your data model.

Understanding the Manufacturing Operations

Operations are used to model specific manufacturing events in your enterprise. Operations can run in sequence to form a routing that models the manufacturing cycle of an item. For example, board assembly and circuit testing are two operations that occur during the manufacturing of a computer motherboard. You can also model standalone operations that run independently of routings.

Operations can consume items and resources, or produce items for use in another manufacturing process. You can model typical manufacturing operations used to produce items. Manufacturing type operations typically consume resources and produce an output. You can also model operations that represent maintenance activities such as equipment replacement. Maintenance type operations consume resources required to complete the maintenance activity (for example, labor and machine capacity) and do not produce an output. The output of the final operation in a routing is considered a primary output of the routing. Operations can also produce co-products. You define an item as a primary output or a co-product through the Manufacturing Operations view.

Effective Dates for Operations

Effective dates are applied to operation inputs specified by MfgOperationBOMR table. Using an effective date enables you to respond to circumstances such as design changes and inventory adjustments—both of which are typical situations in a flexible manufacturing environment. Using effective dates for manufacturing operations enables you to change the content of the BOMR for a routing or stand-alone operation several times during the horizon.

Operations use effective dates to define the following:

- **Start Date:** The date that the operation BOMR definition becomes effective.
- **End Date:** The date that the operation BOMR definition is released and is no longer considered in the operational definition.

Note. Using an effective date changes the definition of an operation. For example, if a material is added at a later date, the operation can still run as it did prior to the material being included in the operational definition.

Minimum Operation Runs

Operations can have a minimum run value expressed in terms of quantity or time. A run time defines the minimum run length of an operation in terms of time. A run quantity defines the minimum run length for operations that have a primary output defined. You can enable minimum run times or run quantities by specifying values for the following fields in an operational definition:

- Use the Use Run Time field to specify whether the operation run is expressed in time or quantity. If set to Y, the operation run is expressed in time. If set to N, the operation run is expressed in quantity.
- Enter values for Minimum Run Time or Minimum Run Quantity.

The following data is used by the solver to calculate the number of instances required to satisfy minimum run constraints:

- The type of operation defined by the item_type value in the MfgOperationBOMR table.
- The yield factor corresponding to the primary output defined by the yield value in the MfgOperationBOMR table.
- The minimum quantity required per operation run as defined by the values for minimum_run_quantity in the MfgOperation table.
- The minimum duration required per operation run as defined by the values for minimum_run_time in the MfgOperation table.

Consumption Periods

Consumption periods are periods of time in which materials and resources can be consumed in an operation. You use consumption periods to model material and resource consumption as it occurs in your manufacturing environment.

For example, assume that, to ensure that a machine has a supply of material necessary for processing, a manufacturing process might require a certain period of material or resource consumption before an operation has begun. The same process might also require a period of no consumption before the end of an operation to allow for the completion of a batch of items.

Consumption periods for operations are defined using the following parameters:

- Consumption Start: The period before the operation start time when consumption of an item or use of a resource begins.
- Consumption End: The period of time before the consumption of an item ends or when the resource is released.
- Resource Consumption: The period for the entire duration of the operation.
- Material Consumption: The period at the beginning of the operation.

Scrap and Yield Factors

A scrap factor is used to determine the actual input needed for an operation in order to produce a required quantity of primary output or co-product. Scrap factors are applied on the inputs before an operation begins.

For example, for a particular operation, material A has a scrap factor of 10%. For every 100 units of material A input into the operation, 90 are used in the operation, and 10 are scrapped. To consume 100 units of material, the actual input must be 111 units to account for the scrap factor.

A yield factor is used to determine the percentage of the primary output or co-product of an operation that can be used as input for a subsequent operation or to satisfy a demand.

For example, for a particular operation, assume that material A has a yield factor of 98%. For every 100 units of primary output or co-product produced by the operation, 98 units can be used as input for the next operation to satisfy a demand.

A scrap factor applies to operation inputs and a yield factor applies to operations output. Both factors are optional.

Note. When integrated with an ERP system, scrap and yield factors are considered before information is sent to Production and Distribution Planning.

Batch Sizing

Manufactured items are often produced in a batch. The system calculates the number of instances of operations and routings that are necessary to fulfill the output specified when you define a batch run.

The batch size of a specific operation is defined in the Manufacturing Operations view and MfgOperationBOMR table.

The size of a batch run for a routing is derived from the size of a batch run for each manufacturing operation. The system determines the size of a batch run by respecting the minimum number of instances of a manufacturing routing that satisfy the minimum run constraints specified for the manufacturing process routing.

To enable batch sizing, set the Batch value to Y when you create an operation.

Demand Cover Period

The demand cover period enables you to specify a value, in days, of net requirements that can be pulled forward in order to effectively calculate run lengths for specific operations. The pull forward functionality can be used to calculate a maximum supply, in days, for a specific operation run.

Operation Lead Times

Lead times for manufacturing operations are calculated by combining separation times and the duration of the operation. The formula used for calculating the lead time of an operation is:

$$\text{Lead Time} = \text{Queue Duration} + \text{Setup Duration} + (\text{Operation Duration} * \text{Routing Instances}) + \text{Move Duration}$$

where:

- Queue Duration is the value for queue_time in the MfgRoutingDef table.
- Setup Duration is the value for setup_time in the MfgRoutingDef table.
- Move Duration is the value for move_time in the MfgRoutingDef table.
- Operation Duration is the value for the quantity parameter in a MfgOperationBOMR table entry that has the item_type parameter set to DURATION_RESOURCE (usually defined for one unit of PRIMARY_OUTPUT).
- Routing Instances is the number of instances of the manufacturing routing.

Queue, setup, and move durations must have the same unit of time defined in the MfgRoutingDef table. Operation lead times are used to calculate the lead time for the entire manufacturing process routing.

Standalone operations use the following formula for calculating operation lead times:

$$\text{Lead Time} = \text{Operation Duration} * \text{Operation Instances}$$

In this formula:

- Operation Duration is the value for the quantity parameter in a MfgOperationBOMR table entry that has the item_type parameter set to DURATION_RESOURCE (usually defined for one unit of PRIMARY_OUTPUT).
- Operation Instances is the number of instances of the manufacturing process (operations).

Defining Manufacturing Operations

To define a manufacturing operation:

1. In the Manufacturing Operation view summary area, right-click and select Insert Row from the shortcut menu.
2. Complete the following fields:

Operation Code	Specify the operation code that you defined in the manufacturing process.
Cost	Specify the manufacturing cost per unit of the primary output product. The default is 0.0. This field is optional.
Batch	Specify whether or not this is a batch operation. If you specify this operation as a batch operation, the batch quantity is the primary output quantity value defined in the Manufacturing Operation BOMR view
Use Run Time	Specify the length of the operation in terms of time or quantity. The value in this field expresses the operation's minimum value in terms of run time values or quantity values. If you select Y, the operation's minimum run value is determined in terms of time. If you select N, the operation's minimum run value is determined in terms of quantity.
Minimum Run Quantity	If you are defining the operation run in terms of quantity, specify the minimum run length of the operation as expressed in units of the primary output's standard planning multiple. If there is no primary output for this operation, leave this field is empty. This field is optional.
Minimum Run Time	The minimum run length of an operation in terms of time. This field is optional.
Time Unit	Specify the unit of measure for fields that contain a time value.

3. From the File menu, choose Save.
4. Click the number to the left of the record that you just added in the summary fields.
5. Right-click the detail area and select Insert Row from the shortcut menu.

A new record that corresponds with the summary record appears.

6. Complete the following fields:

BOMR ID	Enter the BOMR ID.
Item Type	Enter the item type.
Item Code	Enter the Item code.
Quantity	Use positive values to indicate production (Primary Output and Co-Product). Use negative values to indicate consumption (materials, subassemblies).
Quantity Unit	Enter the unit for the item quantity.

Yield	The yield factor applies to produced items only.
Scrap	The scrap factor applies to consumed items only.
Consumption Overhead Cost	This field is optional.
Start Date	Specify the date when this bill of resource or consumed item entry becomes effective. If you leave this field blank, the system uses the beginning of the horizon.
End Date	Specify the date when this resource or consumed item is no longer considered in the operation definition. If you leave this field blank, the system uses the end of the horizon.

7. From the File menu, choose Save.

Manufacturing Routings

This section provides an overview of manufacturing routings and discusses how to define manufacturing routings.

Understanding Manufacturing Routings

There are three components to manufacturing routings:

- Routing types
- Separation times
- Routing lead times

Routing Types

A manufacturing routing is a sequence of operations that need to run in a specific order to produce a primary output. Routings are necessary to show the relationship between various operations. Routings model the relationships between operations by introducing move, setup, and queue times.

Manufacturing routings can include a single operation or a series of operations and optional separation times in a sequence. In all routing types, the final operation produces a primary output. Three types of routings can be modeled:

Model	Description
Single operation routing	A single operation routing contains one operation and its appropriate separation times. This routing can produce primary output and co-products.

Model	Description
Multi-operation sequential routing	A multi-operation sequential routing combines a series of sequential operations and optional separation times. Each operation can have at most one preceding and one successive operation. This routing produces a primary output and is capable of producing co-products.
Multi-operation tree routing	A multi operation tree routing combines a series of operations and optional separation times. Unlike sequential routings, tree routings can have multiple successive operations.

Separation Times

Separation times combine with manufacturing operations to define a manufacturing routing. You can define the following separation times:

Separation Time	Description
Move times	<p>Move times represent the amount of time lost following an operation in the manufacturing process due to inventory that must be moved to a subsequent operation. Move times are optional parameters that you can use to effectively model manufacturing routings constrained by inventory that must be moved to the next operation. Move times can be combined with queue times and setup times, if necessary, to model the complete time window between operations in your manufacturing process.</p> <p>Consider the following scenario. During the manufacturing of a computer motherboard, 15 minutes is required to transport the motherboard from the final operation on the assembly line to the subsequent testing operation in the circuit testing facility. You enter a move time of 15 minutes to model the transportation time between facilities.</p>

Separation Time	Description
Queue times	<p>Queue times represent the amount of time lost prior to an operation in the manufacturing process to maintain inventory at a certain level, and ensure the subsequent operation continues uninterrupted. Queue times are an optional parameter that you can use to effectively model manufacturing routings constrained by time that must be allotted to ensure production of inventory to maintain production. Queue times can be combined with move times and setup times, if necessary, to model the complete time window between operations in your manufacturing process.</p> <p>Consider the following scenario. During the manufacturing of a bicycle, 5 minutes is required between operation A (frame assembly) and operation B (wheel attachment) to maintain a constant inventory of wheels necessary for operation B to run uninterrupted. You enter a queue time of 5 minutes to model the time needed between operations.</p>
Setup times	<p>Setup times represent the amount of time lost prior to an operation in the manufacturing process due to machine setup. Setup times are optional parameters that you can use to effectively model manufacturing routings constrained by time allowances required for machine setup tasks. Setup times can be combined with move times and queue times, if necessary, to model the complete time window between operations in your manufacturing process. Setup times do not consume resource capacity.</p> <p>Consider the following scenario. During the manufacturing of a chair, 20 seconds is required after operation A (frame assembly) and before operation B (upholstery) to load the fastener machine with fasteners needed to attach the upholstery. You enter a setup time of 20 seconds to model the time needed to load the fastener machine.</p>

Routing Lead Times

Specific calculations determine lead times for manufacturing routings, depending upon the type of routing used. Calculations exist for determining single operation routings, multi-operation sequential routings, and multi-operation tree routings. The following table describes how lead times are calculated for each routing type:

Routing Type	Description
Single operation	Lead times for single operation manufacturing routings combine the aggregate total of setup, queue, and move times for the operation and the total duration of the operation.

Routing Type	Description
Multi-operation sequential	<p>Lead times for multi-operation sequential routings combine the following steps:</p> <ul style="list-style-type: none"> • The aggregate total of setup, queue, and move times for each operation in the routing are combined with the aggregate total duration of each operation in the routing. The subsequent lead time is a decimal value. • The decimal value is converted to DAYS (for example, 60.0 hours is converted to 2.5 days) • The final routing lead time value is rounded down to the nearest integer (for example, 2.5 days is rounded to 2 days). <hr/> <p>Note. Use a consistent time unit when you specify separation times between operations (SECONDS, MINUTES, HOURS or DAYS).</p>
Multi-operation tree	<p>In this type of routing, each operation can have several preceding operations and only one successive operation. The final operation does not have any successive operation. In this manner, the routing consists of a number of partial routings. A partial routing is a linear sequence of operations that start with several preceding operations (leaves) and end with a final operation (root). The lead time for a multi-operation tree routing is the maximum of all of the partial routing lead time values rounded down to the nearest integer.</p>

Defining a Manufacturing Routing

To define manufacturing routings:

1. In the Manufacturing Routing view summary area, right-click and select Insert Row from the menu.
2. Complete the following fields:

Routing Code Select the manufacturing code that identifies this routing. This code is defined when you create a routing entry in the Manufacturing Process view.

Description Optionally, you can provide a description for this routing.

3. From the File menu, choose Save.
4. Click the number to the left of the record that you just added.
5. Right-click the detail area and select Insert Row from the shortcut menu.

A new record that corresponds with the summary record appears.

6. Complete the following fields:

Operation Sequence Specify a number that identifies the order of this operation in the routing sequence. An operation can appear more than once in a routing.

Operation Code Select an operation code. The value in this field is derived from the operations that you defined in the Manufacturing Operation view.

Successive Operation Sequence

Successive operations are used to define an operation sequence. Several operations can feed the same successive operation, and some routings only have a single operation.

Note. If this is the final operation in the routing, you must specify a value of 0 in this field.

Queue Time

The separation time (that can be used, for example, as a waiting time) before running the current manufacturing step specified by the Operation Code. The time that you enter is expressed in the unit of measure defined in the Queue Time Unit field. This field is optional.

Setup Time

The separation time that is used to model any setup activity that is required to run the manufacturing step specified by the Operation Code. The time that you enter is expressed in the unit of measure defined in the Setup Time Unit field. Setup times do not consume resource capacity. This field is optional.

Move Time

The separation time that is used to model the inventory moving activity that is required after the manufacturing step specified by Operation Code is finished. The inventory move, can occur, even if no successive operation is scheduled to be carried out, after the current manufacturing step. The time that you enter is expressed in the unit of measure that is defined in the Move Time Unit field. This field is optional.

7. From the File menu, choose Save.

Alternate Materials and Resources

This section provides an overview of alternate materials and resources and discusses how to:

- Define alternative materials.
- Define alternative resources.

Understanding Alternate Materials and Resources

When you define alternate materials and resources and allow substitutions, an alternate resource or material is used to satisfy demand for the original material or resource based on your specifications. In the event that the BOMR contains a constraining component (item, tool, crew, or machine), the availability of alternate resources and materials are verified in the preferred order that you define. Alternate resources and materials are verified against the same period that the original resources and materials were allotted. An effective date can be applied to an alternate material or resource to indicate the date when it can be used in an operation or in a routing. Prior to substitution, the effective dates used for substitutions are checked to ensure validity.

Alternate resources are defined in the Resource Substitution view. Alternate materials are defined in the Material Substitution view.

Defining Alternate Materials

To define alternate materials using views:

1. In the Material Substitution view detail area, right-click and select Insert Row from the shortcut menu.

2. Complete the following fields:

Operation	Select the operation that contains the material that you want to substitute.
BOMR ID	Select the BOMR entry for this operation.
Item Code	Specify the material that you want to substitute for.
Substitute Item Code	Select the material to use as a substitute.
Effective Date	Specify the date on which the product substitution takes effect.
Preference	Specify a value that represents the order that the system considers when substituting materials. The preference value determines which substitute the Supply Planning uses first, second, third, and so on. For example, a preference of 2 indicates that the substitute is used only after the substitute with a preference of 1 is no longer available. A preference of 0 indicates that the material is no longer a substitute. A preference of 1.0 indicates that the substitute is used first. Values are 1.0, 2.0, and so on. Invalid values are 1.5, 2.1, and so on.
Ratio	Specify the quantity of the product substituted for each unit of the original product.

3. From the File menu, choose Save.

To define alternate materials using tables:

1. In the MaterialSubstitute table, in the process_name field, type the manufacturing process for which the substitution applies.
2. In the BOMR_id field, type the code for the BOMR entry.
3. In the item_code field, type the code for the component that is being substituted. The component can be a generic component.
4. In the substitute_item_code field, type the code for the component that can be used as a substitute.
5. In the effective_date field, type the date and time when the component substitution policy begins. The time must always be set to 00:00:00.
6. In the ratio field, type the quantity of the substitute that is to be substituted for the component. The component is the one that is specified in step 3. The substitute is specified in step 4.
7. In the preference field, type the preference for the substitute.
8. Save the information that you have entered.

Defining Alternate Resources

To define alternate resources

1. In the Resource Substitution view, right-click the detail area and choose Insert Row from the menu.
2. Complete the following fields:

Operation	Select the operation that contains the resource that you want to substitute.
BOMR ID	Select the BOMR entry for this operation.
Item Code	Specify the resource that you want to substitute for.
Substitute Item Code	Select the resource to use as a substitute.

Effective Date	Specify the date on which the resource substitution takes effect.
Preference	Specify a value that represents the order that the system considers when substituting resources. The preference value determines which substitute the Supply Planning uses first, second, third, and so on. For example, a preference of 2 indicates that the substitute is used only after the substitute with a preference of 1 is no longer available. A preference of 0 indicates that the resource is no longer a substitute. A preference of 1.0 indicates that the substitute is used first. Valid values are 1.0, 2.0, and so on. Invalid values are 1.5, 2.1, and so on.

3. From the File menu, choose Save.

System Management

System-wide data applies to the entire system. The views or tables that define system management are part of the static data model.

When you create a new model, some enterprise-specific information is required. Other information is optional and can be completed to further customize your model. The table below lists the views or tables that you must complete and those that are optional:

View	Table	Required/Optional
Horizon	Horizon	Required
System Options	System_Option	Required
	Category	Optional
	PlanRegistry	Required

Defining Telescoped Horizons

Many enterprises conduct production and distribution planning over a long planning horizon. Early in the planning horizon, data is required at a detailed time resolution, such as daily; whereas later in the horizon, data is required at lower resolutions, such as weekly or monthly. To account for different planning needs, you can define different time resolutions for different groups of planning periods.

The ability to define different time resolutions for different groups of planning periods is called telescoping. Both the Supply Planning and HS solvers can solve for a telescoped horizon. Each of the planning periods in a group is called a time bucket or bucket. For example, seven planning periods of one day each is the same as seven buckets. If you have a 1-year planning horizon with daily information for the first 3 weeks, weekly for the next 5 weeks, and 4-weekly thereafter, the solvers will address 37 buckets (21 daily + 5 weekly + 11 4-weekly).

To define telescoped horizons using views:

1. In the Horizon view, right-click and choose Insert Row from the menu.
2. Complete the following fields:

Horizon Name	Type a horizon name.
---------------------	----------------------

Reference Date	Select a reference date for the horizon from the calendar. The reference date defines the start of the period for rolling. For example, if today is Wednesday and you want to set the period to start rolling every Monday, set the reference date to any Monday in the past.
Period 1 Count	Type the number of planning periods in the first part of the horizon. These planning periods have the same time resolution.
Period 1 Size	Type the size in number of days for the planning periods that are specified in the Period 1 Count field.
Period 2 Count	Type the number of planning periods in the second part of the horizon.
Period 2 Size	Type the size in number of days for the planning periods that are specified in the Period 2 Count field. The number of days specified in this field must be a multiple of the number of days that are specified in the Period 1 Size field. For example, if the value in the Period 1 Size field is 2 days, the value for the Period 2 Size field might be 4 days.
Period 3 Count	Type the number of planning periods in the third part of the horizon.
Period 3 Size	Type the size in number of days for the planning periods that are specified in the Period 3 Count field. The number of days that are specified in this field must be a multiple of the number of days that are specified in the Period 2 Size field. For example, if the value in the Period 2 Size field is 7 days, then the value for the Period 3 Size field might be 28 days.

- Click outside the row, and then choose Save from the File menu.

For example, to define a horizon with seven periods daily, four periods weekly, and two periods 4-weekly, you could enter the following values in the Horizon view:

Horizon Name	Reference Date	Period 1 Count	Period 1 Size	Period 2 Count	Period 2 Size	Period 3 Count	Period 3 Size
HORIZON 1	01-Jan-2005 00:00:00	7	1	4	7	2	28

To define telescoped horizons using tables:

- In the Horizon table, complete the horizon_name and advance_mode fields. PERODIC_ROLL is the only valid value for the advance_mode field.
- In the reference_date field, type the reference date for the horizon.
The reference date defines the start of the period for rolling. For example, if today is Wednesday and you want to set the period to start rolling every Monday, set the reference date to any Monday in the past.
- In the period1_count field, type the number of planning periods in the first part of the horizon. These planning periods have the same time resolution.
- In the period1_size field, type the size in number of days for the planning periods that are specified in the period1_count field.
- In the period2_count field, type the number of planning periods in the second part of the horizon.
- In the period2_size field, type the size in number of days for the planning periods that are specified in the period2_count field.

The number of days specified in this field must be a multiple of the number of days specified in the period1_size field. For example, if the value in the period1_size field is 2 days, then the value for the period2_size field might be 4 days.

7. In the period3_count field, type the number of planning periods in the third part of the horizon.
8. In the period3_size field, type the size in number of days for the planning periods that are specified in the period3_count field.

The number of days specified in this field must be a multiple of the number of days that are specified in the period2_size field. For example, if the value in the period2_size field is 7 days, then the value for the period3_size field might be 28 days.

For example, the bicycle manufacturer wants to define a horizon with seven periods daily, four periods weekly, and two periods 4-weekly. To model this horizon, the values in the Horizon table are defined as follows:

horizon_name	advance_mode	reference_date	period1_count	period1_size	period2_count	period2_size	period3_count	period3_size
HORIZON_1	PERIODIC_ROLL	01-Jan-2005 00:00:00	7	1	4	7	2	28

Aggregation Rules for Telescoping

When you define telescoped horizons, Production and Distribution Planning follows certain rules that define how daily level data is converted to each telescoped period, such as weekly. The following table outlines these rules:

Data	Rule
Customer orders	Production and Distribution Planning uses the sum of the order quantities for the period.
Demand priorities	Production and Distribution Planning uses the demand priority that is defined for the last day of the period. Not used by the HS solver.
Deployments	Production and Distribution Planning uses the sum of the deployment quantities for the period.
Forecast	Production and Distribution Planning uses the sum of the forecast quantities for the period.
Inventory policies	Production and Distribution Planning uses the inventory levels that are defined for the last day of the period.
Manufacturing capacities	Production and Distribution Planning uses the sum of the capacities for each day in the period. Not used by the HS solver.
Manufacturing costs at a location	Production and Distribution Planning uses the cost defined for the last day of the period. Not used by the HS solver.
Manufacturing resource costs at a location	Production and Distribution Planning uses the average cost for the period. Not used by the HS solver.

Data	Rule
Net requirements	Production and Distribution Planning uses the sum of the net requirement quantities for the period.
Production	Production and Distribution Planning uses the sum of the production quantities for the period.
Shipments	Production and Distribution Planning uses the sum of the shipment quantities for the period.
Shipping capacities	Production and Distribution Planning uses the sum of the capacities for each day in the period.
Shipping costs	Distribution Planning uses the cost that is defined for the last day of the period.
Sourcing	Production and Distribution Planning uses the first lane that is defined for the period.
Storage capacities	Production and Distribution Planning uses the sum of the capacities for each day in the period. Not used by the HS solver.
Storage costs	Production and Distribution Planning uses the average storage cost for the period. Not used by the HS solver.

Production and Distribution Planning calculates transportation capacities and costs as follows. The calculations respect the shipping calendars.

- Transportation capacity for the period = Number of units that an enterprise can ship in one day * Number of days in the period
- Transportation cost for the period = Number of units that are shipped during the period * Cost per unit of shipping

Production and Distribution Planning calculates manufacturing capacities and costs as follows. The calculations respect the producing calendars. The HS solver does not use manufacturing costs and capacities.

- Manufacturing capacity for the period = Number of units that an enterprise can manufacture in one day * Number of days in the period
- Manufacturing cost for the period = Number of units that are manufactured during the period * Cost per unit of manufacturing

Production and Distribution Planning calculates storage capacities and costs as follows. The HS solver does not use storage costs and capacities.

- Storage capacity = A fixed number of units can be stored each day; if the capacity changes during the period, Production and Distribution Planning uses an average of the capacities
- Storage cost for the period = Cost to store one unit for one day * Number of days in the period.

Defining System Plans

Production and Distribution Planning lets you create your own system plans to suit your business needs. Each system plan has a set of system option values, as specified in the System Plan views and the System_Option table, and a default horizon.

To define system plans using views:

1. In the summary area of the System Plan view, right-click and choose Insert Row from the menu.
2. Complete the following fields:

Plan Name Type a unique name for the plan.

Horizon Name Choose a default horizon from the drop-down list.

3. In the System Plan view detail area, add detail records for each system option that you want to define for the new plan.
4. From the File menu, choose Save.

To define system plans using tables

1. In the PlanRegistry table, type the unique name of the system plan in the name field.
Optionally, complete the owner and description fields.
2. In the horizon field, type the default horizon for the plan.
Optionally, complete the other fields.
3. In the System_Option table, define the system options for the system plan.

Comparing Solve Results Generated Using Different System Plans

With this feature, you can create multiple system plans for solving. You can also compare solve results that are generated using different system plans. You compare solve results in the net change views, which display the difference between solve results that are generated using a user-defined base plan and solve results that are generated using another user-defined system plan.

To compare solve results generated using different system plans using views

1. In the Workgroup view, create two different workgroups.
For the first workgroup, complete the Plan field with the name of a system plan.
For the second workgroup, complete the Base Plan field with the same system plan that you used in the Plan field for the first workgroup. Complete the Plan field using a different system plan.
See the field descriptions in the table that follows these steps.
2. Assign the Deployment Net Change and Net Requirements Net Change views to the second workgroup that you created in step 1.
3. Generate solve results for the first workgroup, using the system plan that you specified in the Plan Name field for the first workgroup.
4. Generate solve results for the second workgroup, using the system plan that you specified in the Plan Name field for the second workgroup.

5. Open the Deployment Net Change view in the second workgroup to view the differences between the deployment solve results that are generated using the system plan in the Plan Name field and the system plan in the Base Plan field.
6. Open the Net Requirements Net Change view in the second workgroup to view the differences between the net requirements solve results that are generated using the system plan in the Plan Name field and the system plan in the Base Plan field.

Field	Description
Plan	The system plan that is used to display solve data. Also, the system plan used by the Supply Planning, Rounding Engine, and Connect algorithm for this workgroup. This field must be completed to run the solver and view solve data. Each workgroup can only be assigned one system plan at a time.
Base Plan	The system plan used by the net change views as the base. Solve results using the Base Plan are subtracted from solve results using the Plan. This field must be completed if the workgroup includes the net change views.

To compare solve results generated using different system plans using tables

1. Create two different workgroups.
For the first workgroup, complete the par_plan field in the WorkGroup table with the name of a system plan.
For the second workgroup, complete the par_base_plan field in the WorkGroup table with the same system plan that you used in the par_plan field for the first workgroup. Complete the par_plan field using a different system plan.
2. Assign the Deployment Net Change and Net Requirements Net Change views to the second workgroup that you created in step 1.
3. Generate solve results for the first workgroup, using the system plan that you specified in the par_plan field for the first workgroup.
4. Generate solve results for the second workgroup, using the system plan that you specified in the par_plan field for the second workgroup.
5. Open the Deployment Net Change view in the second workgroup to view the differences between the deployment solve results that are generated using the system plan in the par_plan field and the system plan in the par_base_plan field.
6. Open the Net Requirements Net Change view in the second workgroup to view the differences between the net requirements solve results that are generated using the system plan in the par_plan field and the system plan in the par_base_plan field.

Field	Description
par_plan	The system plan that is used to display solves data. Also, the system plan that is used by the Supply Planning, Rounding Engine, and Connect algorithm for this workgroup. This field must be completed to run the solver and view solve data. Each workgroup can only be assigned one system plan at a time.
par_base_plan	The system plan that is used by the net change views as the base. Solve results using the Base Plan are subtracted from solve results using the Plan. This field must be completed if the workgroup includes the net change views.

Defining the Status of Lots

A lot represents a quantity of a single product or material that is manufactured on a specified date. The beginning inventory of the product is the sum of all the lot quantities for that product.

By entering a value in the Status field in the detail records in the Beginning Inventory view or in the lot_status field in the LotStatus table, you can specify lots that are available for use by the solvers, or if the lots are damaged or spoiled in some way and cannot be used. All inventory, regardless of its status, consumes storage space through the horizon until it is used to meet demand or deleted from the Beginning Inventory view or the LotStatus table. The valid values for the Status field and the corresponding lot_status field are:

Available	This lot is available for use by the solvers.
Expired	This lot has passed its expiry date and cannot be used by the solvers.
Onhold	<p>Currently, this lot cannot be used by the solvers. It might be available for use at a later date. If you use this status, you must also fill in the Hold Period field in the detail records of the Beginning Inventor view.</p> <p>The Hold Period field specifies the number of days from the Mfg Date that the lot must be held when its status is ONHOLD. When the current date equals the Mfg Date + Hold Period, the lot is available for the user. If the value is = 0.0, the lot is held indefinitely until you release it by manually changing the status to Available.</p>
Scrap	This lot is scrap and cannot be used by the solvers.

Defining Fixed Production Timefences

A fixed production timefence is the number of days from the horizon start date during which no new production can be scheduled by the solvers, and the existing production schedule is used. You can set a fixed production timefence in the System Plan view or in the System_Option table for system plans and for specific locations.

To define fixed production timefences using views:

1. In the System Plan view, select the summary record for the system plan for which you want to define a fixed production timefence.

2. In the detail area, right-click and choose Insert Row from the menu.
3. Complete the following fields:

Domain Type	Choose one of the following: <ul style="list-style-type: none"> • SYSTEM The system option applies to the application. • LOCATION The system option applies to a specific location. This option is only valid for the FIXED_PRODUCTION_TIMEFENCE system option. When you set the fixed production timefence for a specific location, it overrides the value set as a default when Domain Type is SYSTEM.
Domain Name	Do one of the following <ul style="list-style-type: none"> • If you chose SYSTEM in the Domain Type field, select 3D. • If you chose LOCATION in the Domain Type field, select a location.
Plan Name	Type the name of the system plan that is specified in the summary record that you selected in step 1.
Option Name	Select FIXED_PRODUCTION_TIMEFENCE.
Option Value	Type the number of days for which the production schedule is fixed.

4. Click outside the row and then choose Save from the File menu.

To define fixed production timefences using tables:

1. In the System_Option table, do one of the following in the domain_type field:
 - Type SYSTEM if you want the fixed production timefence to act as a default for all locations.
 - Type LOCATION if you want the fixed production timefence to apply to a specific location. When you set the fixed production timefence for a specific location, it overrides the value that is set as a default when domain_type is SYSTEM.
2. In the domain_name field, do one of the following:
 - If the domain_type is SYSTEM, type 3D
 - If the domain_type is LOCATION, type a location code.
3. In the plan_name field, type the name of the system plan.
4. In the system_option field, type FIXED_PRODUCTION_TIMEFENCE.
5. In the value field, type the number of days for which the production schedule is fixed.

Forecast Information

Forecast information is stored in the Forecast table, which is part of the dynamic data model. This table is optional, and specifies the forecast for each product and material at each location. When you enter forecast data in the Forecast view or Forecast table, ensure that the timestamp in the effective date is 00:00:00--for example, 10-Mar-2005 00:00:00.

ERP Data

ERP data defines shipping, customer order, and inventory status information. The views or tables that define ERP data are part of the dynamic data model.

When you create a new model, some enterprise-specific information is required. Other information is optional and can be completed to further customize your model. The table below lists the views you must complete and those that are optional:

View	Table	Required/Optional
Beginning Inventory		Optional
Customer Order	CustomerOrder CustomerOrderItem	Optional
Order Entry		Optional
In-Transit Inventory		Optional
Planned Inventory Transfers		Optional
	LotStatus	Optional
	Shipment	Optional
	ShipmentItem	Optional

Production Schedules

The production schedule is stored in the Work Order view or the WorkOrder table, which is part of the dynamic data model. This view is required and can be populated by using the output from the Production Scheduling system. When you enter production data, ensure that the timestamp in the production date is 00:00:00--for example, 10-Mar-2005 00:00:00.

Defining Event-Based Data or Effective Dates

Many of the views and tables use event-based data. Data is event-based when it takes effect on a specified date. For example, both the Forecast view and Forecast table have an Effective Date field that specifies the date on which the forecast demand starts.

Event-based data can reduce the amount of data input, and it allows for increased customization of data. For example, rather than defining daily forecast information, you can specify the date when you want a forecast to start. This forecast is effective until the date that you specify another forecast to start. In addition, forecasts can change as frequently or infrequently as you need, depending on the effective dates that you specify for each forecast.

The views that use event-based data are:

- Inventory Policy
- Location Manufacturing Process

- Storage Capacities
- Product Substitution
- Resource Capacity
- Safety Network
- Sourcing
- Shipping Capacity
- Item Shipping Process
- Forecast
- Substituted Demand

The tables that use event-based data are as follows:

- InventoryPolicy
- StorageTypeCap
- ProductSubstitute
- LocResCap
- LocMfgProc
- Sourcing
- LaneShipItem
- LaneShipCap
- Forecast
- SafetyNetLoc

To define event-based data or effective dates using views

Type the date and time on which you want the record to start in the Effective Date field of the appropriate view.

Always set the time to 00:00:00. Ensure that no two records have the same effective date. A record applies until the effective date that is specified for another record.

For example, the first record in the Forecast view might have an effective date of 10-Mar-2005 00:00:00, and the second record might have an effective date of 17-Mar-2005 00:00:00. On March 10, 2005, the first record is applied. On March 17, 2005, the second record is applied.

To define event-based data or effective dates using tables

Type the date and time on which you want the record to start in the effective_date field of the appropriate table. Always set the time to 00:00:00. Ensure that no two records have the same effective date. A record applies until the effective date that is specified for another record.

For example, the first record in the Forecast table might have an effective date of 10-Mar-2005 00:00:00, and the second record might have an effective date of 17-Mar-2005 00:00:00. On March 10, 2005, the first record will be applied. Starting on March 17, 2005, the second record will be applied.

Understanding Work Orders

Work orders represent manufacturing that is scheduled to occur. Typically, work orders include a parts list and a routing that specify the item and resource demands that must be met in order to manufacture a product. The information provided by the work order determines the consumption of materials, resources and inventory adjustments based on work order outputs. Information received in work orders is not validated against the standard production model, allowing the system to consider production, maintenance, and engineering change work orders that have been created after the normal manufacturing and production work orders.

Work orders are typically created in an ERP system and received in batch. When work orders are received, the updated information is stored in the work order tables in the data model. Processing work order information allows you to identify material and resource requirements for planned production. Work orders are also used by the system to update inventory. When considering fixed work orders, a process before a solve reduces available capacity by averaging the consumption of capacity from the work order start date to the requested date, while respecting the production calendar.

Work orders for manufacturing processes that are not modeled in the production model can be processed, provided that the materials and resources are modeled. If a work order header is received without a parts list and routing attached, and this work order has an associated manufacturing process in the PDP data model, the parts list and routing are implied based on information in the PDP manufacturing model.

A work order is considered inactive if it has been scheduled for a date in the past and not started. PDP adjusts inventory and resource capacity for these work orders as if they were transactional work orders.

You can create three types of work order in PDP, depending on the information that is received from an ERP system. PDP allows you to create production work orders, maintenance work orders, and engineering change work orders.

The process of creating a work order in PDP depends upon the level of production data that is imported from an ERP system. Creating a work order involves the following steps:

1. Create a work order.
2. Define work order operations.
3. Define materials and resources that are used in the work order.

The work order creation scenarios are:

Closed Work Orders

Work orders with a status of closed have an actual finish date that precedes the start date of the planning horizon. Closed work orders are not considered when determining the resource capacity available for future consumption. In this case, the full resource capacity is available for consumption by other dependent work orders and the static manufacturing model.

Active Work Orders

Active work orders start before the planning horizon and end within the planning horizon. These work orders have already started, but are not yet complete. The system considers resource consumption that occurs as a result of an operation that is in progress. Resource consumption is reflected in the Manufacturing Utilization report.

Open Work Orders

There are two types of open work orders. They are handled differently depending on when they occur in relation to the fixed production timefence. Open work orders that are completed prior to the fixed production timefence are considered fixed by the solver and the Manufacturing Utilization report.

Open work orders that occur beyond the fixed production timefence are not considered by the solver or the Manufacturing Utilization report.

Fixed Work Orders

Work orders that are marked fixed in the work order header are considered in the solver and the Manufacturing Utilization report, even if the requested date of the work order is beyond the fixed production timefence.

Note. You define the fixed production timefence by setting the `FIXED_PRODUCTION_TIMEFENCE` system option for each system plan or location.

Work Order Processes

Four scenarios are possible for receiving work order data. The table shows each type and how it is processed.

Work Order	Processing
A complete work order is received	Production and Distribution Planning receives complete information, including the manufacturing code, parts list, and routing information, from the ERP system. The material and resource requirements are processed using this information.
A work order is received without a parts list or routing	Production and Distribution Planning receives the work order with the manufacturing code but no parts list or routing information. The manufacturing code in the work order provides the parts list and the routing information as it is defined in the manufacturing model. Material and resource requirements are processed using data in the manufacturing model.
A work order is received without a manufacturing code, parts list, or routing	The work order is treated as an inventory injection. The item that is produced by the work order is added to inventory on the work order completion date.
A maintenance or engineering change work order is received	The resource is designated as unavailable for the duration of the work order. Production and Distribution Planning receives no manufacturing code, parts list, or routing information.

Creating Work Orders

This section discusses:

- Creating a Work Order

- Defining Work Order Operations
- Defining a Work Order Bill of Materials and Resources

Creating Work Orders

To create a work order:

1. In the Production and Distribution desktop navigation pane, expand Manufacturing.
2. Expand Data Views, and then double-click Work Order.
3. In the summary area of the view, right-click and choose Insert Row from the shortcut menu.

Work Order Code	Enter a unique code that identifies the work order. The code must be unique for each location.
Location	The location where the current work order is defined and, implicitly, the location of the manufacturing process. It is a foreign key reference to the Location.code field.
Type	Specify the type of work order that you want to create. Valid work order types are PRODUCTION, MAINTENANCE, and ENGINEERING CHANGE.
Manufacturing Code	Specify a manufacturing process assigned to this work order. The manufacturing process is either a routing (sequence of operations) or a single operation. You do not need to specify a manufacturing process if this work order is associated with a Work Order Operation and Work Order BOMR. If a Manufacturing Code is specified and the work order is associated with a Work Order Operation and Work Order BOMR, the Work Order Operation and BOMR data takes precedence.
Item Code	Specify the primary output of the assigned manufacturing process. This optional field is only used for PRODUCTION work orders.
Quantity	The quantity of primary output that is produced by the manufacturing process. This field is only used for PRODUCTION work orders.
Quantity Unit	The unit of measure for the value entered in the quantity field.
Status	Specify the life-cycle phase for the existing work order. Values are: <ul style="list-style-type: none"> • OPEN • ACTIVE • CLOSED
Creation Date	The date on which the work order was generated.
Requested Date	The date on which the work order must be completed
Start Date	The date on which the work order execution started. This field is optional.
Completed Date	The date on which the execution of the work order is completed.
Changes Allowed	Specify whether changes to the work order are allowed.
Fix	Specify whether the work order needs to be fixed for the next solve. This field applies only when work orders fall outside the fixed production timeframe. All work orders that fall inside the fixed production timeframe are treated as fixed.

Defining Work Order Operations

To define work order operations:

1. In the Production and Distribution desktop navigation pane, expand Manufacturing.
2. Expand Data Views, and then double-click Work Order Operations.
3. Click the number to the left of the work order in the summary area of the view.
4. In the details area of the view, right-click and choose Insert Row from the shortcut menu.
5. Complete the following fields:

Operation Sequence	Specify the code that identifies an operation instance within the work order. This field is used when the work order refers to a manufacturing routing. When the work order refers to an individual manufacturing operation, this field must still be completed, but the Work Order Code value is sufficient to uniquely define the work order composition. Only one operation is defined.
Operation Code	Select a code that uniquely identifies the operation. The code must be unique for each location.
Successive Operation Sequence	Specify the code that identifies the operation instance that immediately follows the current operation instance. This field is empty if the current operation instance is the last one in the manufacturing routing or if the work order relates to an individual manufacturing operation. This field is optional.
Queue Time	Specify a separation time that is used as a waiting time caused by specific business circumstances before running the current operation. The value in this field depends on the unit of measure that is specified in the Queue Time Unit field.
Queue Time Unit	Specify the unit of measure for the queue time value.
Setup Time	Specify a separation time that is used to model any setup activity required to run the operation. This value depends on the unit of measure that is specified in the Setup Time Unit field.
Setup Time Unit	Specify the unit of measure for the setup time value.
Move Time	Specify a separation time that is used to model any inventory moving activity after the operation is completed. The inventory move occurs regardless of whether an operation is executed after the current manufacturing step. This value depends on the unit of measure that is specified in the Move Time Unit field.
Move Time Unit	Specify the unit of measure for the move time value.
Overlap Percentage	Specify the degree to which this operation overlaps the previous operation. The default value is 0, meaning that no overlap exists between operations. This field is optional.
Status	Select an execution phase for the current work order operation. This field is optional.
Requested Date	Specify the date when the work order operation is required to be complete.

Planned Start Date	Specify the date when the work order operation is planned to start. This field is optional.
Planned Finish Date	Specify the date when the work order operation is planned to finish. This field is optional.
Actual Start Date	Specify the date when the work order operation actually started. This date takes precedence over the Planned Start Date. This field is optional.
Actual Finish Date	Specify the date when the work order operation actually finished. This date takes precedence over the Planned Finish Date. This field is optional.

- From the File menu, choose Save.

Defining Work Order Bill of Materials and Resources

To define work order bills of materials and resources:

- In the Production and Distribution desktop navigation pane, expand Manufacturing.
- Expand Data Views, and then double-click Work Order BOMR.
- Click the number to the left of the work order in the summary area of the view.
- In the details area of the view, right-click and choose Insert Row from the shortcut menu.
- Complete the following fields:

BOMR ID	Specify a unique code that helps identify the BOMR. The BOMR ID differentiates between several independent occurrences of an item for the duration of an operation. This code can match the occurrence number. For the simple case of a material that is consumed once, you can enter 1 in this field.
Item Code	Select the item code that identifies the item produced or consumed by this operation, or the required resource for running the operation.
Item Type	Select the type of item specified in the Item Code field.
Total Quantity	Specify the total quantity of the item that is produced or consumed upon completion of the work order.
Remaining Quantity	Specify the quantity of a produced item or consumed item that still must be factored in upon completion of the work order. This occurs when the current operation has started but has not finished yet.
Quantity Unit	Specify the unit of measure for the value entered in the Total Quantity and Remaining Quantity fields.
Yield	Specify the yield factor for produced items only. The default value is 1.0. This field is optional.
Scrap	Specify the scrap factor for consumed items only. The default value is 0. This field is optional.

- From the File menu, choose Save.

PART 3

Creating Plans

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Generating Optimized Plans

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CHAPTER 9

Generating Optimized Plans

This chapter provides an overview of plan generation and discusses how to:

- Generate deployments and net requirements.
- Run the solvers in batch mode.
- Fix solved deployments, net requirements, and allocations.
- Configure algorithms and solvers.

Understanding Plan Generation

Generating deployments and net requirements involves selecting products, choosing system plans, choosing a planning algorithm, and configuring additional solve specific options. Deployment and net requirement generation is powered by the solver system. The solver system stores static and dynamic data in memory. The solver updates dynamic data at regular intervals, but the solver system updates static data only when you instruct it to do so. Refreshing the data that is used by the solver system limits access to the solvers. Before you refresh data, ensure that the refresh action will not adversely affect other users.

When you run algorithms through the solver view, you and other users can read and write to the database while the solvers are running. You can also run the algorithms in batch mode. With the exception of the warm solve batch mode script, you usually run the algorithms in batch mode overnight when no one is using the database.

The solver view displays the products that are available for a solve. Before you can generate deployments and net requirements, you must select the system plan and horizon that you want to use. Once you select a system plan, the Solver Input pane displays the products for which you are the owner (or for which no owner is specified), the products that are assigned to any work groups that use the selected system plan, and the products to which you have access rights in the Items tab. The Items tab also lists all of the products that are included in each product group that is assigned to your work group. The Items tab displays both products and materials.

The Configuration view displays current and completed solves and solver status information.

Note. The Solver view pane contains icons that you can use when you run the solvers. With the exception of the Refresh button, you must select a record in the Solver Results pane before you click the buttons.

Resubmitting a solve is useful if you regularly run solves with the same product selections and solve configurations. You cannot resubmit solves that have a status that indicates the solve is pending, being sent, pending import, or in the process of solving.

When you attempt to run a command that the Solver view cannot process, a warning code appears in the Status field of the solver server record in the Solver Results pane. The warning code disappears from the Status field when the status of the solver server changes.

If you did not select the Auto Import option when you ran the solve, you can preview the solve results in the Preview windows to ensure that they are acceptable before you import them to the database.

For example, by previewing the results, you might see that deployments were not generated. The Preview windows do not display the deployments and net requirements that you fixed before you ran the solvers.

Auto Material Selection

If you select the Supply Planning algorithm or the Rounding Engine algorithm, you can solve automatically for all of the materials that are used to manufacture the products for which you are solving by selecting the Auto Material Selection option. When you select the Auto Material Selection option, the Supply Planning and the Rounding Engine automatically generate results for the materials that are used to manufacture the products that you selected for the solve. If you do not select the Auto Material Select option, the Supply Planning and the Rounding Engine do not change the current inventory levels for materials. If you choose the Auto Material Selection option, the solver server:

- Identifies all of the manufacturing processes that can manufacture the product within the solve horizon.
- Locates the bill of material for each of the manufacturing processes.
- Identifies, from each bill of material, the materials that are required by each manufacturing process.
- Adds the materials to a list of products to solve.
- Starts again at the beginning if the materials are manufactured by the enterprise and have their own bills of material.

You can choose to solve automatically for materials when you run Supply Planning, or the Rounding Engine from the Solver view, or in batch mode.

Planning Horizon

The planning horizon determines the time span of optimized plans using a start date and an end date. Early in the planning horizon, data is required at a detailed time resolution, such as daily; whereas later in the horizon, data is required at lower resolutions, such as weekly or monthly. Due to the significant length of planning horizons in many enterprises, you can define different time aggregates for different groups of planning periods. Planning horizons are defined in the data model during the preliminary stages of an implementation.

Product Selection

Before you select the products, consider these conditions:

- If you solve for only some of the products in your model, the solvers maintain the existing solution for the products that you do not select.
- If you solve for products that have substitutes, you must select the products and the substitutes if you want the Supply Planning to make new substitutions when necessary.
- If you run the Supply Planning and you do not select all of the products for the solve, the Supply Planning assumes that the transportation, manufacturing, and storage capacity that is consumed by the products that you did not select is unchanged for the solve.

The consumed capacity includes deployments, planned transfers, in-transits, net requirements, and work orders for the products that you did not select.

These conditions apply to fixed and unfixed deployments, net requirements, and work orders.

Planning Algorithms

If you run the HS solver, the solve results include either ideal net requirements and planned deployments for the horizon, or just the planned deployments.

If you are running the Connect algorithm independently, you must select a horizon, even though the Connect algorithm does not use horizons. You can select any horizon because the horizon does not affect the results of running the Connect algorithm.

If you run the Connect algorithm separately from the Supply Planning or the HS solver and you want to connect an order for a particular material or product, you must select the products and materials for the order.

System Plans

System plans are sets of business rules that determine how net requirements and deployments are generated. When you select a system plan for a solver, you can use a default system plan or a system plan that you defined during data model creation to suit your business needs.

System plans are used to define solver configurations that govern solver behavior with a specific data model. When you create a system plan, you can specify the following configuration parameters:

- Fixed production timefence
- Default horizon
- Planning algorithm
- Global cost factors

The Supply Planning, Rounding Engine, and Connect algorithms recognize user-defined plans and their associated horizon and system option values. When you solve with a user-defined system plan, the Supply Planning creates deployments for the number of periods that are equal to the fixed production timefence; and it creates deployments and net requirements for the periods after the timefence.

Every system plan is associated with a set of system option values, as specified in the System Plan view, and a default horizon. The system plan you use determines the type of solver output. When you run the Supply Planning with a user-defined system plan, the Supply Planning creates deployments for the number of periods that are equal to the fixed production timefence, and it creates deployments and net requirements for the periods after the timefence.

Solver Result Auto Import

If you want to automatically import solve results to the database, select the Auto Import option. The deployments and net requirements generated by the system will be automatically imported into the database after the solve process is complete.

Understanding Cold and Warm Solves

This section provides overview of:

- Cold solves.
- Warm solves.

Cold Solves

A cold solve is a batch solve process that automatically starts solver components. Except for the name server, the cold solve process shuts down these components when the solve is finished. You run a cold solve when no one is using the database. You cannot run a cold solve at the same time as other Production and Distribution Planning processes.

Cold solves are typically performed as a part of an overnight batch run in order to produce deployments and net requirements that planners can use on the following day. A cold solve does not require the model servers to be running before the solve is initiated. When you initiate a cold solve, the name server, model servers, and solver server components are started. The cold solve process does not start the name server if it is already running.

The cold solve process requires an input file and a cold solve script. The input file contains the items that are used to generate deployments and net requirements. As an alternative to creating this input file, you can create a script to define the product types for which you want to run a cold solve. The cold solve script initiates the batch solve process. When you run a cold solve, the Solver Results pane in the solver view displays a row for the solver run.

You can create your own scripts and Tcl files based on the following samples provided:

- AllProducts
- AllMaterials
- ReusableItems

In the Tcl file, you can use Boolean operators to specify the values of the fields in the Item table for which you want to solve.

For example, the AllProducts script calls the AllProducts.predicate.tcl file, which has the following contents to select all of the products (P) in the model that are single items (I):

```
set predicate {[fieldValue item_type] == P && \ [fieldValue composition] == I}
```

If you want to run a solve for all non-consumable single items, you could create the script NonConsumable that runs the Tcl file NonConsumable.predicate.tcl with the following contents:

```
set predicate {[fieldValue consumable] == N && \ [fieldValue composition] == I}
```

You can use any field in the Item table for the `fieldValue` option.

Warm Solves

A warm solve is a batch solve that you perform while the model servers are running. You can start a warm solve in batch mode with a script or a cron job or through the solver view in the desktop. You must start Production and Distribution Planning before you run a warm solve. Users can run the desktop and other processes while you run a warm solve in batch mode. The warm solve imports the results of the solve to the database after each separate solve is completed. The import procedure clears and overwrites deployments and net requirements that are unfixed or unpublished for products that meet all of the following criteria:

- The product is in the current solve.
- The product was solved for previously
- The product is part of the results that were previously imported

Understanding Solver Security

To run the EnterpriseOne Production and Distribution Planning solver using the Solver view, your user role must have solve access rights in at least one of the work groups to which it belongs. If your user role does not have solver access rights, you cannot open either the EnterpriseOne Production and Distribution Planning Solver view or the Vehicle Loading Solver view.

Your user role has solve access rights if it meets the following conditions:

- Your user role belongs to at least one work group that is assigned the SOLVE command.
- Your user role within your work group is assigned the SOLVE command.
- The Plan parameter is specified for your work group in the Workgroup view (WorkGroup table).

The Solver view belongs to the user role that was active when you opened the Solver view.

Before you can run the solvers, you must select the system plan that you want to use. You have access to the system plans assigned to all work groups to which your user role belongs and to which you have access rights.

Once you select a system plan, the Solver view displays the products for which you are the owner (or for which no owner is specified) and that are assigned to any work groups that use the selected system plan and to which you have access rights in the Items tab. These requirements mean that the Solver view uses both the Product and Product Owner parameters that are defined for the work group. The Item tab in the Solver view also lists all of the products that are included in each product group that is assigned to your work group.

You can preview and import all the solve results that you can view under the Preview Net Requirements or Preview Deployments tabs in the Solver view. The solve results that you can view are based on the commands that are assigned to your user role and work group.

To run the VL solver, the active work group must have access rights to the Solve view. If it does not have the appropriate access rights, you cannot open the Solver view. The Solver view belongs to the work group that was active when you opened it. If you have access to the Solver view, you are also authorized to preview solve results and import them to the database.

Defining Items as Constrained or Unconstrained

Items must be either constrained or unconstrained for the entire horizon.

1. In the Inventory Policy Master view, in the Constrained Timefence field, do one of the following:
 - To define an item as always constrained, enter -1 or a number greater than the number of days in the horizon.
 - To define an item as always unconstrained, enter 0.
2. From the File menu, choose Save.
 -
 -

Fixing Data for Solves

This section provides an overview of fixing data for solves, and discusses how to:

- Fix deployments
- Fix net requirements
- Fix work orders
- Fix allocations (pegging)

Understanding Fixing Data

You can fix deployments, net requirements, work orders, and allocations after a solve so the solver does not change the data in a subsequent solve. Importing solve results to the database does not overwrite fixed data. You can fix data so that the values are not changed or overwritten.

Fixing Deployments

To fix deployments:

In the Deployments view, click the Fix field and select Y. Alternatively, you can type Y in the Fix field of the Deployment table.

If the quantity of the deployments that you fix exceeds the available transportation capacity, the Supply Planning solver uses additional transportation capacity to avoid an incomplete solve.

Fixing Net Requirements

To fix net requirements:

In the PDP Solve view, click the Fix field and select Y. Alternatively, you can type Y in the fix field of the NetReq table.

If the quantity of the net requirements that you fix exceeds the available manufacturing capacity, the Supply Planning solver uses additional manufacturing capacity to avoid an incomplete solve.

Fixing Allocations

To fix allocations made by Connect algorithm:

In the Order Manufacturing Allocation view, click the Fix field in the detail records and select Y. Alternatively, you can type Y in the Fix field of the OrderProductionAlloc table or the OrderShipmentAlloc table.

Configuring Algorithms and Solvers

This section discusses how to:

- Set system options and constraints for the connect algorithm.
- Define a location manufacturing process.

Setting System Options and Constraints for the Connect Algorithm

To set system options and constraints for the Connect algorithm:

1. In the System Plan view, select a system plan in the summary area.
2. In the System Plan view detail area, right-click and choose Insert Row from the menu.
3. Click the Domain Type field and select System from the drop-down list.
4. Click the Domain Name field and select a domain name.
5. Click the Option Name field. and select a system option or constraint from the drop-down list.
6. From the File menu, choose Save.

Generating Deployments and Net Requirements

This section describes how to:

- Create product deployments and net requirements.
- Refresh solver data.
- Abort a solve.
- View solver error reports

Creating Product Deployments and Net Requirements

To create product deployments and net requirements:

1. From the Actions menu, choose PDP Solve.
2. In the PDP Solve view, select a system plan from the drop-down list.
3. Select a horizon from the drop-down list.
4. Select one of the following planning algorithms or algorithm combinations:
 - Supply Planning
 - Supply Planning and Rounding Engine.
 - Supply Planning , Rounding Engine, and Connect
 - HS Solver
 - HS Solver and Connect
 - Rounding Engine
 - Connect
5. Optionally, select one of the following configuration options:
 - Auto Import
 - Auto Material Selection
6. Click Solve.

7. Select the Preview Net Requirements or Preview Deployments tab to preview the solve results
8. Import the solve results to the database.
9. Review the inventory data in the inventory status views, and review any inventory status system alerts that have been generated.
10. View the deployments in the Deployments view.

If you used the Supply Planning, the Rounding Engine, or the Connect algorithm, you can also review the difference between deployments that is generated with a base system plan and another system plan in the Deployment Net Change view.

11. View the net requirements in the Net Requirements view.

If you used the Supply Planning, the Rounding Engine, or the Connect algorithm, you can also review the difference between net requirements that is generated with a base system plan and another system plan in the Net Requirements Net Change view.

12. View the results of running the Connect algorithm in the Order Manufacturing Allocation and Order Shipment Allocation views.

In the Allocation Exception view, you can also view the customer orders and forecasts that the Connect algorithm did not connect or only partially connected.

13. Approve and publish the deployments and net requirements.

Refreshing Solver Data

If you change the static data before running a solve, you must update the data that is used by the solver system.

To refresh solve data, in the PDP Solve view, select the Refresh icon.

The solver system reloads static and dynamic data.

Stopping Solves

To stop a solve:

1. In the PDP Solve view, on the Configuration tab, select the solve that you want to stop.
2. Click the Abort icon.

Note. Stopping a solve can take a few minutes.

Viewing Solver Error Reports

To view solver error reports:

1. In a text editor, open the Run_SSDM_Warnings file from the *repository*/Solver_Run directory, where *repository* is the directory for the repository.
2. Search for the warning code and read the details regarding the warning.

Running Solves in Batch Mode

This section discusses how to:

- Initiate a cold solve
- Initiate a warm solve

Understanding the Batch Solve Input Files

Batch solves require input files to generate deployments and net requirements. The coldsolve.res and warmsolve.res files specify the individual products that are included in a cold or warm solve. The coldsolve.res file is located in the directory specified by the COLDSOLVE_RES config variable in the coldsolve.cfg file. The warmsolve.res file is located in the directory specified by the WARMSOLVE_RES in the coldsolve.cfg file. You can modify the batch solve input files with a text editor.

The input file determines the system plan, algorithm, items, materials, and horizon for the solve. A combination of algorithms can be used in a solve. You can create multiple lines in the input file by using a hard return. You must specify a series of values in each line, and the values must be tab delimited. You must specify all of the values in each line.

You can also clear specific tables in the data model before a cold solve is run. The process of clearing data tables before a cold solve is necessary if you do not want to append the solve results to the tables. This table lists the data tables can be cleared before a cold solve:

Algorithm	Cleared Tables
Optimal Supply Planning	Deployment, NetReq, SubstitutedDemand, SubstitutedMR, NetReqMatConsumption, NetReqResUtilization, WorkOrderMatConsumption, WorkOrderResUtilization, NetReqCoProduct, WorkOrderCoProduct, SupplyOutput, MaterialAllocation.
Heuristic	Deployment, NetReq, SafetyCover.
Connect	DemandAlloc, DemandExceptionAlloc, SupplyAlloc

This table lists and describes the values that you specify in the batch solve input files:

Parameter	Description
<i>User</i>	The Production and Distribution Planning user ID for the person who is running the solvers. Values are specified in the User Setup view and the UserRegistry table.
<i>role</i>	The Production and Distribution Planning user role for the person who is running the solvers. Values are specified in the Role view and the UserRole table.
<i>plan</i>	The name of the system plan. Values are the system plans that are specified in the System Plan view and the PlanRegistry table.

Parameter	Description
<i>algorithms</i>	<p>The algorithms for the solve. When you specify multiple algorithm values separated by a comma, do not insert a space before or after the comma. Values are Supply Planning (SP), Rounding Engine (RE), Connect (CO), and Heuristic (HS).</p> <p>Algorithm combinations include HS,CO, SP,RE, SP,CO, SP,RE,CO, and RE,CO.</p>
<i>item</i>	<p>The products for which you want to solve.</p> <p>If you are solving for a small number of products that do not contain spaces in the product codes, you can specify multiple products that are separated by a comma, but do not enter a space before or after the comma.</p> <p>If you are solving for a large number of products or solving for products that contain spaces in the product codes, enter each product code on a separate line. You can enter as many product codes as you require.</p> <p>You can only specify individual products. You cannot specify product groups. Values are the product codes specified in the Item Master view and the Item table.</p>
<i>material_selection</i>	<p>A parameter that specifies whether automatic materials selection is enabled:</p> <p>Y: Enable automatic materials selection.</p> <p>N: Do not enable automatic materials selection.</p>
<i>horizon</i>	<p>The name of the horizon. Values are the horizon names specified in the Horizon view or the Horizon table.</p>

Parameter	Description
<i>import</i>	<p>A parameter that specifies whether solve results are imported to the database:</p> <p>Y: Import solve results to the database after a solve.</p> <p>N: Do not import solve results to the database after a solve. If you select this value, you can import solve results later using the Solver view.</p>
<i>Preclear</i>	<p>A parameter that specifies whether tables are cleared before the cold solve. Values are:</p> <p>Y — Clear the tables only at the beginning of the cold solve process. The system does not clear the tables before each individual solve that is specified in the coldsolve.res file. This value is the default.</p> <p>N — Append the solve results to the tables. If you import solve results, the import procedure clears and overwrites deployments and net requirements that are unfixed or unpublished for products that meet all of the following criteria:</p> <ul style="list-style-type: none"> • The product is in the current solve. • The product was solved for previously. • The product is part of the results that were previously imported.

Running Solves in Batch Mode

To run a solve in batch mode:

1. In the PDP Control Panel, choose Task Consoles on the Monitoring Tab.
2. In the command area, enter Production and Distribution Planning scripts and data.

Running Cold Solves

To initiate a cold solve:

1. In a text editor, complete the coldsolve.res input file.
2. Ensure that the model servers, solver dispatcher, solver server, and solver input module are shut down.
3. At a command line prompt, export the following environment variables:
 - NMX_CURTIME
 - NMX_RES
 - NMX_INIT
4. Navigate to the *path/scp/8.12/common/start* directory, where *path* is the directory where Production and Distribution Planning is installed.
5. Enter one of the following platform specific commands:

For Windows platforms:

```
run_pdp_control_panel.bat -b -l runScript RunColdSolve
```

For UNIX platforms:

```
run_pdp_control_panel.sh -b -l runScript RunColdSolve
```

Trace files are generated based on the system option and the environment variable settings.

Note. The `preclear` parameter in the `coldsolve.res` file overrides any `preclear` value that you specify when you initiate a cold solve. The default value for `preclear` is `N`.

Running Warm Solves

To run a warm solve:

1. In a text editor, complete the `warmsolve.res` file.
2. Ensure that the name server, model servers, solver dispatcher, solver server, and solver input module are running.
3. At a command line prompt, export the following environment variables:
 - `NMX_CURTIME`
 - `NMX_RES`
 - `NMX_INIT`
4. From a command prompt, navigate to the `/path/scp/8.12/common/start` directory, where *path* is the directory where Production and Distribution Planning is installed, and do one of the following:
 - In Windows, enter the following command:

```
run_pdp_control_panel.bat -b -l runScript RunWarmSolve
```

- In UNIX, enter the following command:

```
./run_pdp_control_panel.sh -b -l runScript RunWarmSolve
```

Trace files are generated according to the system option and environment variable settings.

Note. In the event that a second `nserver` starts up, export `NMX_NSERVER_NUMBER` to ensure that the warm solve is pointing to the correct `nserver` and repository.

CHAPTER 10

Understanding Solver Algorithms and Configuration

This chapter discusses:

- Optimal Supply Planning
- Supply Planning
- Run Changeover Batch
- Rounding engine
- The connect algorithm
- Heuristic Solver
- Vehicle Loading

Optimal Supply Planning

Optimal Supply Planning is a linear programming algorithm that generates deployments and net requirements for your model. Supply Planning satisfies inventory level constraints and inventory policies, and determines the optimal solution to satisfy inventory across the enterprise. The optimal solution has the lowest overall cost based on the manufacturing, storage, and transportation costs and constraints in the model.

To understand how linear programming can solve a manufacturing problem, consider the following scenario. A trophy company makes championship trophies for youth athletic leagues. They are planning production for two sports: football and soccer. The production planner must determine which trophies should be produced from the available supplies to maximize total profit. The trophy specifications are as follows:

Type of Trophy	Material Required for Each Trophy	Profit from One Trophy
Football	Base that requires four board-feet of lumber Engraved plaque Brass football	Twelve dollars
Soccer	Wood base that requires two board feet Engraved plaque Brass soccer ball	Nine dollars

The production planner has verified the available inventory and found the following quantities of items in stock:

- 1000 brass footballs
- 1500 brass soccer balls
- 1750 plaques
- 4800 board feet of wood

In order to determine the optimal solution to this problem, the following values are required:

- The quantity of football trophies to produce (x)
- The quantity of soccer trophies to produce (y)

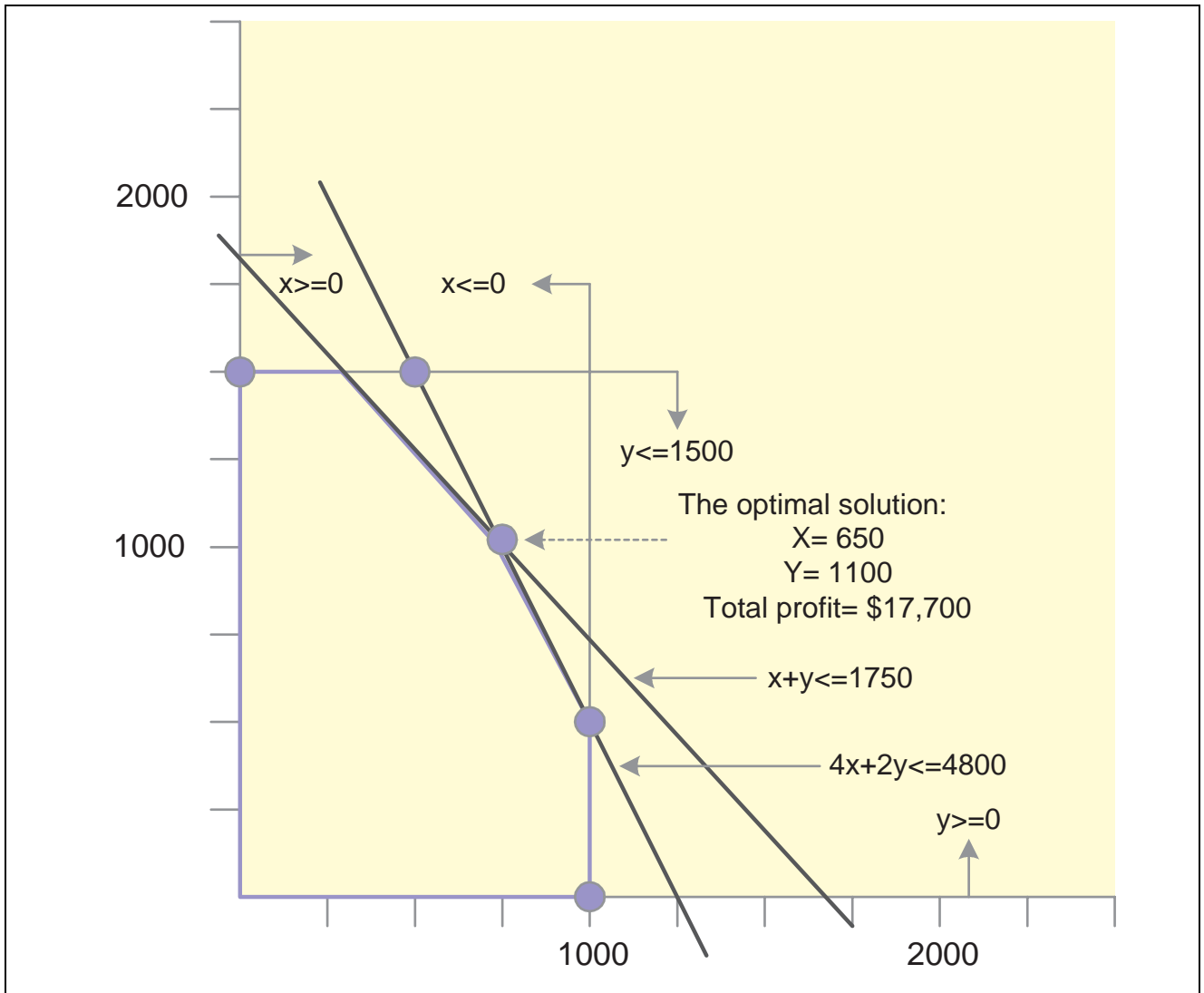
The objective function is to maximize profit. Profit can be defined as the following:

(profit per football trophy \times number of football trophies) + (profit per soccer trophy \times number of soccer trophies)

Expressed in variable terms, profit is defined $12x + 9y$. The constraints in the problem are as follows:

- Only 1000 brass footballs are in stock, so no more than 1000 football trophies can be produced. In variable terms, $x \leq 1000$ and $x \geq 0$.
- Only 1500 brass soccer balls are in stock, so no more than 1500 soccer trophies can be produced. In variable terms, $y \leq 1500$ and $y \geq 0$.
- Only 1750 plaques are in stock, so the total number of trophies produced cannot be more than 1750. In variable terms, $x + y \leq 1750$.
- Only 4800 board feet of wood are available, so the total number of trophies produced cannot consume more than 4800 board feet of wood. In variable terms, $4x + 2y \leq 4800$.

This example uses only two variables, so its graph can be drawn easily, as shown:



Linear program using two variables

One of the vertices must represent the best solution; the vertex $(650, 1100)$ is that point, which generates a total profit of \$17,700. Given the constraints of the available supplies, 650 football trophies and 1100 soccer trophies should be made to maximize profit.

Algorithm Configuration

Certain system parameters can be activated to enhance performance through optimization rules. For example, if you set `PRODUCTION_PREMIUM_CAPACITY` to `UNAVAILABLE`, you eliminate all of the variables and constraints that are associated with premium manufacturing.

Optimal Supply Planning supports multiple sourcing and bases its solution on the optimal source location for products, but does not account for shipment multiples. The value of the `LP_ALGORITHM` system option determines the algorithm that Optimal Supply Planning uses. All algorithms produce an optimal solution, however, the solve times of the various algorithms differ. The level of structure and complexity in your data model will help you determine the most appropriate algorithm to use.

On 32-bit operating systems, Optimal Supply Planning can run as an external process, which enables you to model and solve larger problems. You can also run Optimal Supply Planning as an external process in a 32-bit environment, enabling you to solve large models in an environment where processes have a lower memory allocation. This feature enables the 3dSolverSever process to run the RCB model generation process without adverse memory limitations.

Note. Use the NMXPDP_SPAWN_LP environment variable to launch an external solve process.

This table lists and describes the Optimal Supply Planning algorithms in more detail:

Algorithm	Description
PRIMAL	<p>The primal simplex algorithm optimizes the primal formulation of Optimal Supply Planning by iteratively moving from a feasible basis to an improved feasible basis. The algorithm ends when the system determines that no better basis exists.</p> <p>The primal simplex algorithm is an algorithm that solves in two phases:</p> <ul style="list-style-type: none"> • Find a primal feasible basis. • Keep improving the primal feasible basis until the lowest cost primal feasible basis has been found. <p>The primal simplex algorithm needs a primal feasible basis to begin. The process of finding the initial primal feasible basis is called phase one of the simplex method.</p> <p>Phase one introduces artificial slack variables to transform the original solution to a related solution that automatically has a feasible basis. The goal is then to change the basis until these artificial slack variables have been removed from the basis.</p> <p>The cost of a solution to the phase one problem is also called the infeasibility measure. When the infeasibility measure reaches zero, the solver has found a primal feasible basis without needing the artificial slack variables. With this basis, phase two starts where the basis for the original problem is improved.</p>
DUAL	<p>The dual simplex algorithm, like the primal simplex, improves the basis of a solve. However, it optimizes the dual formulation of Optimal Supply Planning. Similar to the primal algorithm, it too uses a two-phase approach:</p> <ul style="list-style-type: none"> • Find a feasible basis to the dual problem. • Improve this basis until an optimal basis to the dual problem is found.

Algorithm	Description
NETWORK_PRIMAL	<p>The network basis then primal algorithm tries to extract a network structure from the Optimal Supply Planning. After the extracted network problem has been solved, the basis is used as a starting point for the primal simplex algorithm.</p> <p>The network extraction process is not guaranteed to work even if the solve is feasible and has an optimal solution. If the network extraction fails, a primal solve is executed. After phase two is entered, the solution is primal feasible.</p>
NETWORK_DUAL	<p>The network basis dual algorithm uses the network structure of Optimal Supply Planning but uses dual objectives instead of primal objectives. The solution is not feasible until the end of the solve.</p>
BARRIER	<p>The barrier algorithm is used as an interior point, non-simplex algorithm for solving linear programs. It is more reliable than the network algorithms, which sometimes fail in the network extraction phase.</p> <p>The barrier algorithm uses fewer, but longer and more complex, iterations than the simplex and network algorithms. The algorithm begins the first iteration with an algebraic decomposition of the constraint matrix</p> <p>A barrier solve license is not available in the standard release. Contact your customer support representative for more information.</p>

Variable and Constraint Optimization

Optimal Supply Planning uses costs, constraints, and variables that are specific to Production and Distribution Planning. Some of the costs are stored in the data model and others are not. The costs that are not stored in the data model include inventory policy costs, which are calculated by Optimal Supply Planning.

Variable and constraint generation rules ensure that only model parameters that affect the solve results are converted to variables and constraints for the solver. The Optimal Supply Planning solver automatically and intelligently omits unneeded variables and constraints, based on the texture of the data model. This optimization enables you to achieve efficient solver performance through minimal modeling intervention. Logical relations between different components of the model, as well as configurable application parameters, determine which variables and constraints should be generated for the solver. For example, if a model does not contain product substitution data, optimization rules automatically omit all variables and constraints associated with the product substitution function.

Optimal Supply Planning always works on the cost objective function. When multiple solutions have the same cost, the solver chooses one of them.

This table details the variables, costs, and constraints used by Supply Planning.

Variable	Cost	Constraint
Ending Inventory	0	<p>Lower bound-0</p> <p>Upper bound-INFINITY</p>

Variable	Cost	Constraint
Negative Inventory	Negative inventory cost	Lower bound-0 Upper bound-INFINITY
Build inventory violation	Build inventory violation cost	Lower bound-0 Upper bound-INFINITY
Safety stock violation	Safety stock violation cost	Lower bound-0 Upper bound-INFINITY
Maximum inventory violation	Maximum inventory violation cost	Lower bound-0 Upper bound-INFINITY
Production	0	Lower bound-0 Upper bound-INFINITY
Deployment	0	Lower bound-0 Upper bound-INFINITY
Standard transportation utilization	Standard shipping cost	Lower bound-0 Upper bound-maximum standard shipping capacity
Premium transportation utilization	Premium shipping cost	Lower bound-0 Upper bound-maximum premium shipping capacity
Minimum standard transportation utilization	Minimum transportation utilization violation cost	Lower bound-0 Upper bound-INFINITY

Shipping, Arrival, and Production Windows

When you run Optimal Supply Planning for horizons that have a period size of more than one day, the deployments that are generated for that period can be shipped on a range of dates and can arrive on a range of dates. This range of shipping and arrival dates is called a window. Net requirements can be produced at any time during the range of dates.

You can use the windows to determine the latest date that a deployment can be shipped or can arrive, and the latest date that a net requirement can be produced. The dates are as follows:

- Latest production date = earliest production date + production window
- Latest shipping date = ship date + ship window
- Latest arrival date = arrive date + arrive window

The Supply Planning solver determines the shipping, arrival, and production windows; and generates them as part of the solve results in addition to the shipping, arrival, and earliest production dates. The shipping and arrival windows appear in the Deployment view and stored in the Deployment table. The production window appears in the Net Requirements view and stored in the NetReq table.

Material Substitution Calculation

Optimal Supply Planning generates the substitution of the materials that are used in the manufacturing processes. It uses a penalty cost calculation that is similar to the solution used for substitution of actual demand. That is, the substitution cost should:

- Be higher than safety penalty cost and ShipCostUpperBound
- Be lower than the negative inventory penalty cost
- Go up with preference

The substitution should happen as late as possible in the solve horizon. The difference between two periods should be greater than the safety violation penalty.

The Rounding Engine bases the calculation on Supply Planning results. Depending on the Supply Planning results, the Rounding Engine has the ability to change any material substitutions only when a material shortage exists. Material requirements depend on the demand of finished goods and are rounded accordingly.

Connect also considers substituted materials, allowing you to trace the connections for an order back to the manufacturing process.

The MaterialSubstitute and SubstitutedMaterial tables provide the necessary data for material substitution. MaterialSubstitute specifies which material at a process can be substituted by another. SubstitutedMaterial contains the solver output results of product substitution.

The data views use the BOMR table to do the basic consumption of materials based on the Net Requirements. When a material substitution takes place, the standard materials are put back to their original allocation, and the substitute material is consumed instead. If you manually change a Net Requirement quantity, a change of materials consumption results, based on the default bill of materials.

Supply Planning

Supply Planning is an unconstrained material planning heuristic, which runs automatically after Optimal Supply Planning. It does not alter the results of the Optimal Supply Planning run because only the constrained items affect the tactical plan. Supply Planning can be run as the final phase of a solve that uses a linear programming algorithm.

The Constrained Timefence field in the Inventory Policy Master defines an item as constrained or unconstrained. You can define an item as unconstrained for the entire horizon or constrained for the entire horizon.

Supply Planning calculates the requirements for materials based on the bill of materials, planning policies, demand, and Optimal Supply Planning results. Supply Planning uses a time-phased disaggregation of demand in the bill of materials to determine the required quantity of material and the required date for the materials to meet the demand.

Supply Planning produces action messages that suggest expediting, deferring, or canceling existing purchase orders, production orders, or deployment orders. These action messages also suggest alternatives such as new purchase orders, production orders, or deployment orders.

There are some important factors to consider before using Supply Planning:

- If all items are defined as unconstrained, only Supply Planning runs.
- If only some items are unconstrained, Optimal Supply Planning runs automatically, followed by Supply Planning.

Modelling Heuristic Data

To model the heuristic data for supply planning, you need to complete these tasks:

- Define the Bill of Material.
- Populate the Inventory Policies and Supply Policies views.
- Model multi-location relationships.

Before you define multi-location relationships, complete the Item Master, Inventory Policy, Material Planning Policy, and Manufacturing Operation views for all items. Complete the Location views for all locations.

Note. You only need to model multi-location relationships for parts that are shipped from one location to another. If an item is used only at one location, you do not need to model multi-location data.

You define multi-location information in the Sourcing and Item Shipping Process view. When you have multiple source locations for an item, the Supply Planning chooses the most feasible location. The Supply Planning also considers multiple transport modes.

The SP heuristic does not dynamically choose a location for sourcing. By default, it chooses the lane with the shortest lead time and then suggests the most feasible deployments based on order quantity and shipping lead time between the two locations.

The SP heuristic considers only one transport mode and the associated lead time.

Run Changeover Batch Algorithm

The Run Changeover Batch (RCB) algorithm is a type of run length and batch sizing algorithm. RCB aggregates the net requirements that are produced by Supply Planning into a larger time period called the batch base period. The Base Batch Period is defined in days and can be configured. The default Base Batch Period is one day.

RCB also aggregates resource capacity and solves for the minimum and batch size constraints, based on the lowest cost. After the resource is optimized according to these constraints, the aggregated values are decomposed from the batch base period to the original periods. The adjusted quantities are placed back into the original periods starting at the closest period, based on capacity.

RCB is an external process that follows a Supply Planning solve. The RCB matrix is comprised of a subset of the Supply Planning matrix (including some manufacturing and inventory constraints) as well as run length and batch sizing data. This algorithm is run automatically based on the data in the Manufacturing Resource Optimize view. RCB will not run if the table associated with this view does not contain data. To log RCB input data and the solution output, enable the NMXPDP_SSRCB_LOG_MODEL and NMXPDP_SSRCB_LOG_SOLUTION environment variables.

See Environment Variables

RCB is specifically designed to solve for run quantities and batch sizes. Consider these issues before you use the RCB algorithm:

Issue	Explanation
Solve Times	Run quantities or batch sizes increase the complexity of the solve. Several run optimize sequence levels result in many RCB solves, which lengthens the solve process and results in a longer solve window. Choose resources and operations carefully when you model run or batch constraints to avoid unnecessarily long solve windows. RCB can model batch quantities for multiple stages of manufacturing in a manner that isolates scheduling conflicts and optimizes solve times.
Potential Infeasibility	RCB does not consider all of the capacity and constraints when solving for run lengths and batch sizes. Infeasible solves can occur if materials or other non-manufacturing capacities are insufficient to satisfy excessively long run lengths or high batch requirements. For example, the RCB solve process does not consider capacities such as storage or transportation. These capacities and constraints go through a partial Optimal Supply Planning solve after the RCB solve process is complete.
Model Considerations	Determining run lengths and batch sizing is complex. The complexity is substantially lessened when daily buckets are aggregated into a larger bucket, and then solved on that level. This larger bucket is user-defined in the batch base period option in the System Options view. It must be defined carefully to ensure that run lengths and batch sizes occur within a single bucket. To avoid infeasible solves when a run or batch size exceeds the bucket size, you must expand the batch base period so that runs or batches do not cross base-period buckets.
Optimal Supply Planning Solves	On 32-bit operating systems, Optimal Supply Planning solves can run as external processes, which enables you to model and solve larger problems. Optimal Supply Planning corrective solves run after RCB. Optimal Supply Planning starts from an advanced basis to minimize the linear programming solve time.

RCB Process Stages

The RCB process consists of five sequential stages.

1. Generate the Optimal Supply Planning solution.

Optimal Supply Planning generates net requirements and deployments, based on constraints, costs, and variables. The results are the starting point for RCB.

2. Generate the RCB model.

The system generates the RCB model. Next, RCB generates a list of constraints, and variables for resources specified in the LocResOptimize table.

3. Satisfy the RCB constraints.

Based on the lowest cost solution, RCB attempts to satisfy the RCB constraints. Typically, this process is shorter than the Optimal Supply Planning solve due to a decreased problem matrix.

4. Disaggregate the RCB results.

Production and Distribution Planning receives the aggregated batch requirements in the form of fixed net requirements. These net requirements are included in the planning horizon, beginning with the earliest possible period and the resource capacity that starts with the earliest period.

5. Run a corrective Optimal Supply Planning solve.

An additional Optimal Supply Planning solve is run to ensure that the RCB adjustments are feasible. Optimal Supply Planning respects the fixed net requirements and calculates dependent demand and leadtimes.

Data Model Considerations for RCB

If you plan to use the RCB solution to calculate run lengths and batch sizes, certain elements in the data model must be considered to produce desired results. The following elements in the data relate directly to the use of RCB solution.

Manufacturing Operation View

This table describes the fields in the Manufacturing Operation view that relate directly to the use of the RCB solution:

Field	Data Type	Description
batch	Y or N	Enter a code to specify whether this is a batch operation. If you enter Y, the batch quantity must be specified by the primary output quantity defined in the Manufacturing Operation view details or the MfgOperationBOMR table. When a batch is enabled, the RCB respects batch sizes on the duration resource that is specified in the operation. The algorithm does not consider supporting resources that are contained in the operation. The default value is N.
minimum_run_quantity	Double	Enter the minimum run quantity of an operation. The amount is expressed in the standard planning unit of the primary output. Minimum run quantity is specified for primary output values only.

Field	Data Type	Description
maximum_run_quantity	Double	<p>Enter the maximum run quantity of an operation. The amount is expressed in the standard planning unit of the primary output. Maximum run quantity is specified for primary output values only.</p> <p>This field is not currently used.</p>
use_run_time	Y or N	<p>Enter a code to specify whether the minimum and maximum values for an operation are defined using run-time values or quantity values. If you enter Y, the minimum and maximum run values are defined in terms of time. Otherwise, the minimum and maximum run values are defined in terms of quantity. When run-time is used, the minimum and maximum run times are applied to the operation's duration resource. When run-quantity is used, the quantity specified in the minimum and maximum run quantity fields are applied to the primary output.</p> <p>The default value is Y.</p>
minimum_run_time	Double	<p>Enter the minimum run length of an operation in terms of time. The value in this field is applied to the duration resource specified in the operation.</p>
maximum_run_time	Double	<p>The maximum run length of an operation in terms of time. The value in this field is applied to the duration resource specified in the operation.</p> <p>This field is not currently used.</p>

Field	Data Type	Description
time_unit	String	<p>Enter a unit of measure for every field that has a time value. Values are:</p> <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS <p>The default value is HOURS.</p>
run_preference	Value >= 0	<p>Enter the relative sequence of running this operation on the duration resource specified in the operation. When several operations are run on the same duration resource and are being considered by the RCB, the system applies the value that you assign in this field. A value of 1 correlates to the highest priority in the sequence. A null or zero value correlates to the lowest priority in the sequence.</p>

LocResOptimize Table

RCB requires a list of resources to optimize. Generally, only highly constrained resources are modeled with batch sizes or run length constraints. The list of resources that RCB considers for run and batch size optimization is specified in the Manufacturing Resource Optimize view or the LocResOptimize table.

It is important to limit the number of RCB solves since each RCB solve is followed by a corrective Optimal Supply Planning solve. A high number of RCB solves will require a longer solve window.

If a value for Run Preference is not specified in the Manufacturing Operations view, the system assumes that all operations have the same preference and assigns a sequence based on a first come, first serve basis.

This table describes the fields in the LocResOptimize table that relate directly to the RCB solution:

Field	Description
Location	<p>Enter a unique code identifying the location. This field is a foreign key reference to the Location.code field.</p> <p>This field is mandatory.</p>
Resource	<p>Enter a unique code to identify the resource that the RCB algorithm considers. This field is a foreign key reference to the Item.code field. The corresponding Item.item_type attribute value has to be set to R.</p> <p>This field is mandatory</p>

Field	Description
Effective Date	Enter the date and time when the RCB algorithm will consider the resource.
Run Optimize Sequence	<p>Specify the order in which the resource from the location is considered for an RCB solve. Values are greater than or equal to 0.</p> <p>If Run Optimize Sequence = 0, the resource will not be selected for an RCB solve.</p> <p>If Run Optimize Sequence = 1, the resource will be selected for the first RCB solve.</p> <p>If Run Optimize Sequence = 2, the resource is selected for the second RCB solve, and so on.</p> <p>Default value is 0.</p> <p>The values in this field are relative to each other, so it is not necessary to have an exact sequence such as 1, 2, 3, and so on. A sequence such as 1, 5, 11, and so on, provides the same solution. The number of values represent the number of RCB solves that will take place.</p> <p>This field is mandatory.</p>

Note. To run RCB, the information in the mandatory fields in the Manufacturing Resource Optimize view must be consistent with the corresponding fields in the LocResOptimize table. If the LocResOptimize table is empty or the sequence is set to zero for all resources, the RCB process will not run.

Changeover Table

RCB minimizes the costs of changing from one operation to another operation on the same resource within the batch base period that is used to optimize resources for run lengths and batch sizes. RCB minimizes any change over the cost that is specified in the Changeover table. The default value for the batch base period is 1. The value must be a multiple of 7.

This table describes the fields in the Changeover table that relate directly to the RCB solution:

Field	Description
resource_code	Enter the resource to which the change over cost and time are applied. This field is a foreign key reference to the Item.code field. The corresponding Item.item_type attribute value must be set to R. This resource has to be the duration resource for both from_operation_code and to_operation_code.
from_operation_code	Enter the operation preceding the changeover action. This field is a foreign key reference to the MfgOperation.code field.
to_operation_code	Enter the operation starting after changeover completion. This field is a foreign key reference to the MfgOperation.code field.

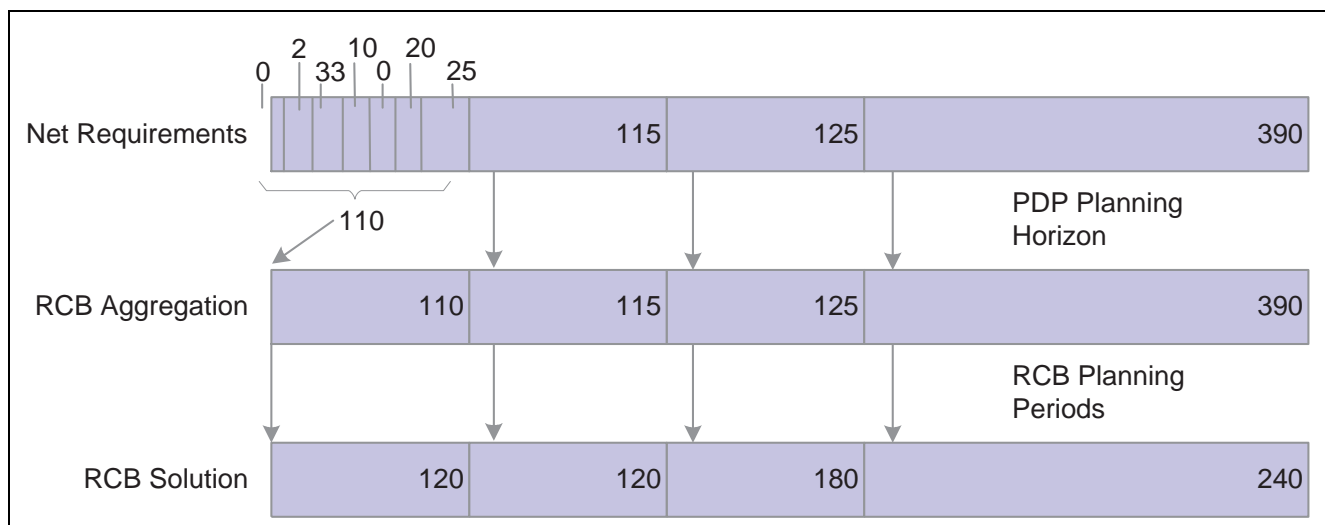
Field	Description
duration	Enter the duration required between from_operation_code and to_operation_code runs. This changeover duration applies to the current resource_code.
duration_unit	Enter a unit of measure for the duration field. Values are: <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS If there is no value defined in this field then the default value of HOURS is applied.
Cost	The changeover cost. The default is 0.0.

Run Length and Batch Sizing Logic

RCB aggregates net requirements into RCB planning periods called planning horizons. Each planning horizon contains multiple horizon types, also referred to as buckets. A typical planning horizon can be comprised of daily buckets, followed by weekly and monthly buckets.

In order to consider each net requirement, daily buckets are used in Supply Planning and are considered when RCB runs. RCB does not aggregate the net requirements because the same type of bucket type is used in each planning horizon. When the RCB planning horizon is set to daily, one week, or multiples of weekly buckets, net requirements are aggregated from the Optimal Supply Planning solver to fit into the planning horizon type only if the planning periods are smaller than RCB periods. You define the RCB planning period through the batch base period option in the System Plan view.

In the following example, the RCB planning period is set to one week. The daily Optimal Supply Planning buckets are aggregated to fit into the RCB weekly periods. The weekly periods match the RCB planning period; thus no aggregation is necessary. The final monthly bucket is larger than the RCB planning period. In this instance the final RCB planning period will not run for this period.



RCB planning period for weekly buckets

In addition to aggregating net requirements, RCB aggregates resource capacities for each batch base period as well as item and manufacturing constraints. If there is not enough resource capacity for a particular resource, RCB uses alternative resources from the data model.

This table describes the information generated from the Optimal Supply Planning solve:

Category	Data	Information
HORIZON	Horizon Start Horizon End Horizon Duration	This data is calculated prior to RCB aggregations.
PERIODS	Number of Periods Period Start Period Duration	During this phase, the planning horizon is matched with RCB periods.
ITEMS	Starting Inventory Storage Costs BackOrder Penalty Safety Stock Penalty Max Level Penalty Carrying Costs	The PRIMARY_OUTPUT items that are produced by the resource to be optimized are selected.
RESOURCES	Operating Cost Period Capacity	<p>The list of resources is defined in the LocResOptimize table. If there is not enough capacity for one resource, then an alternative resource is used.</p> <p>The operation cost is derived from the consumption overhead cost associated with the duration resource in the operation BOMR.</p> <p>Capacity is aggregated for each period, and the production calendar is considered.</p> <p>Only duration resources are considered resources of DURATION_RESOURCE.</p>
OPERATIONS	Resources Item Batch Size Minimum Run Quality Run Preference Ideal Sequence	<p>Any operation, using a selected duration resource, within a routing can be selected.</p> <p>Run and batch constraints, as well as run preference are selected for operations that have a resource to be optimized for runs or batch sizes or both.</p>

Category	Data	Information
CHANGEOVERS	Cost Duration From Resource To Resource	Changeover information is selected for resources that are to be optimized. The run preference is always respected, but the changeover costs are minimized.
DEMANDS	Item Net Requirement Requested Date	Net requirements of the selected items are aggregated into RCB periods.

Routings with Multiple Operations

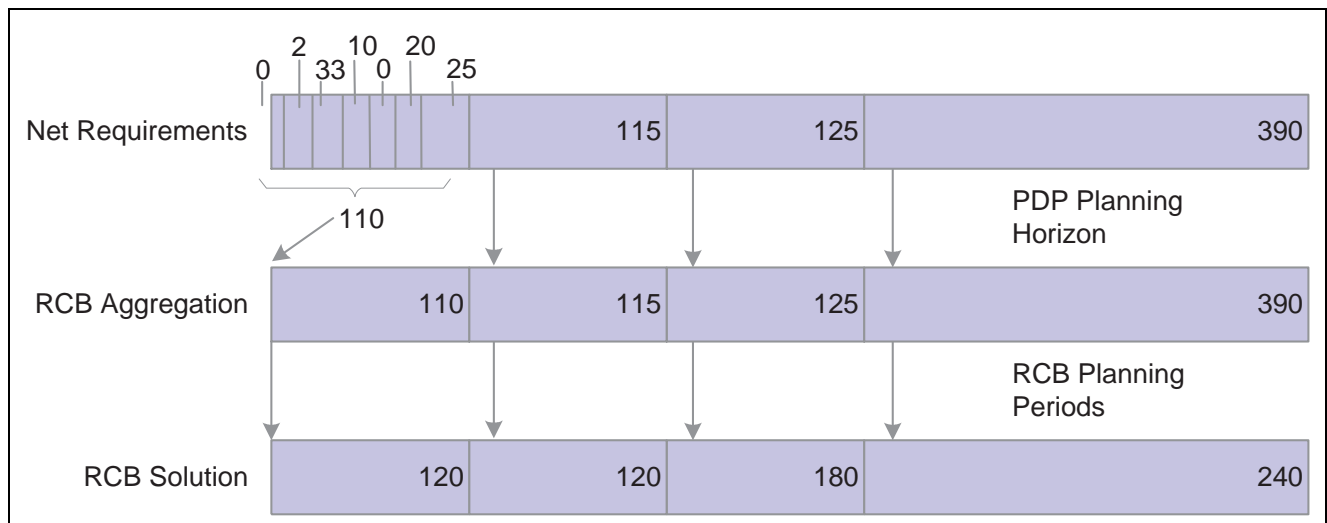
Manufacturing routings can contain multiple operations that have run or batch constraints. In these cases, RCB accounts for the constraints on all operations within the routing.

This table displays an example of the routing and the optimization of resources:

Constraint	Operation A	Operation B	Routing
Min Run Quantity	10	12	Max of 10,12 = 12
Batch	6	5	The least common multiple of 6,5 = 30

The objective of RCB is to minimize cost and respect constraints. RCB enables, disables, or moves operations within the horizon and respects demand, ideal sequence, and resource capacities. RCB considers any duration resource in an operation within a routing. In addition, RCB respects the minimum and batch constraints to determine the lowest cost solution.

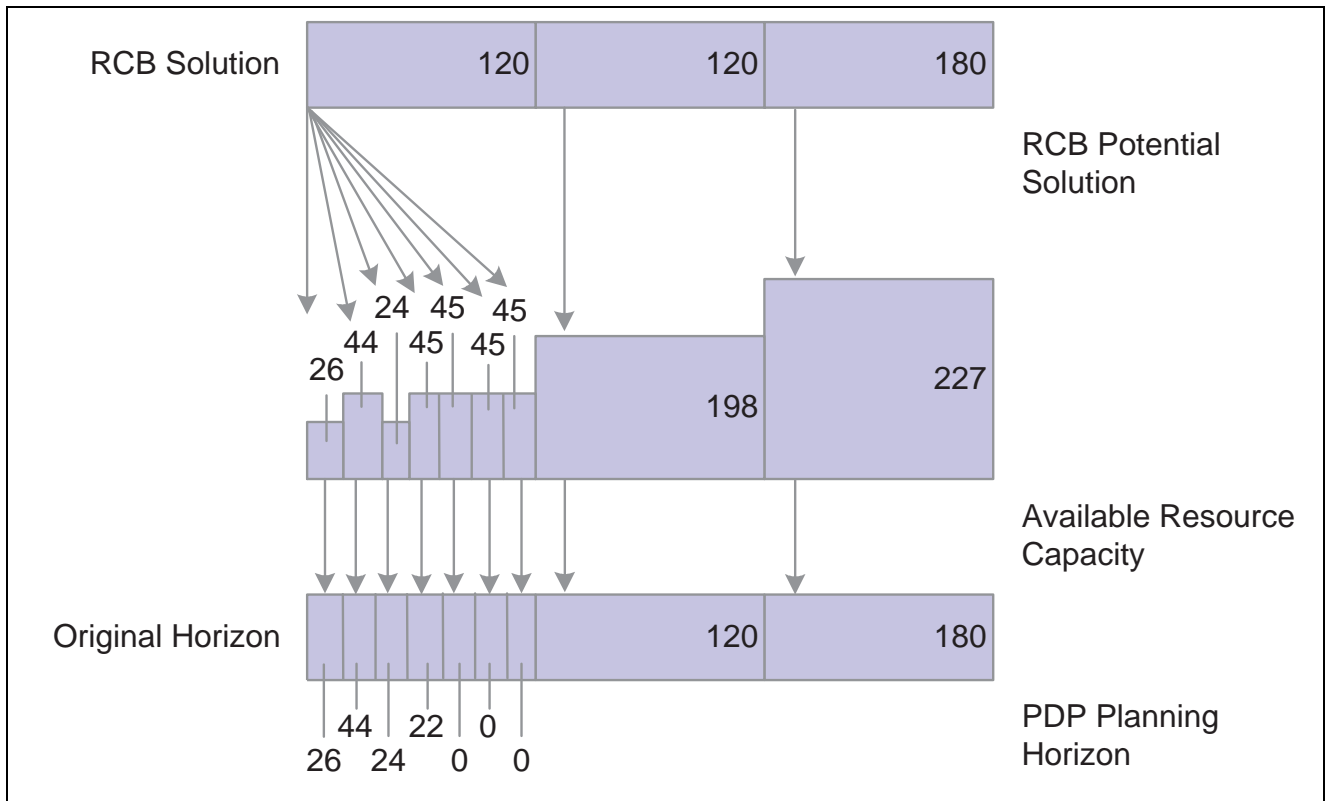
This example illustrates the process of aggregating net requirements for an RCB solution:



In the first period, a batch constraint of 30 units exists. To satisfy demand of 110 units, the solver returns a value that is an increment of 30 units, which, in this case, is 120 units. The minimum run quantities are also respected with this solution. The same logic applies to the second period. However, in the last period, the solver might suggest producing extra product because the demand is higher than the maximum run quantity. The batch quantity is still respected in all cases.

After the RCB solution is found, the results are returned to the original horizon, starting with the earliest available period, and utilizing as much capacity as is available.

This example illustrates a batch quantity of 120 units in the first RCB period being returned to the Production and Distribution Planning horizon:



Results of Supply Planning second solve

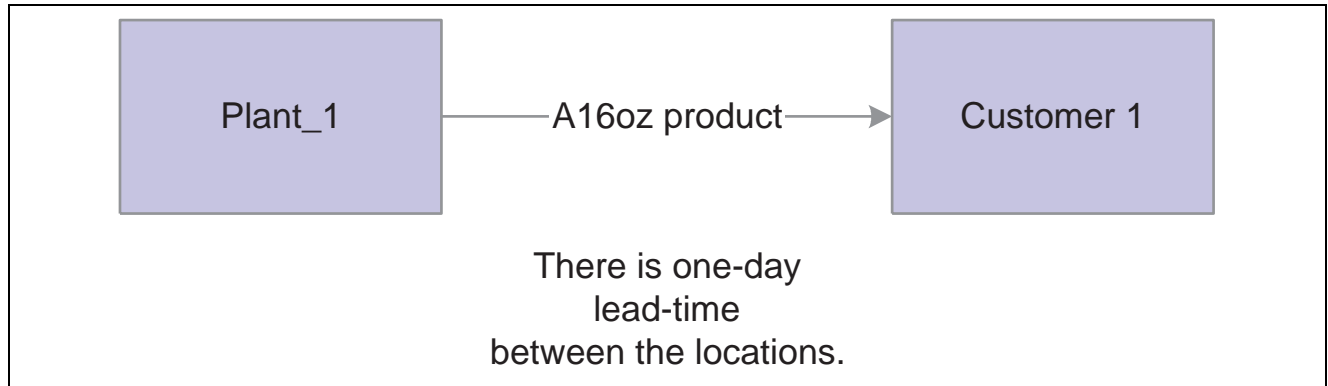
The first part of the horizon consists of daily buckets and the resource capacity is known. Production and Distribution Planning consumes as much resource capacity as available when returning the modified net requirements. After the run and batch requirements are returned to the original planning horizon, the Supply Planning solve runs again. In this second Supply Planning solve, the returned results are treated as fixed net requirements.

Rounding Engine

The Rounding Engine rounds deployment quantities to fit into user-defined shipment multiples. If the Rounding Engine increases deployment quantities, it also increases the net requirement quantities to satisfy the additional deployment quantities. The Rounding Engine rounds to shipment multiples and respects the minimum shipping quantity for a combination of product, lane, and transport mode. The Rounding Engine is intended for use after an Optimal Supply Planning solve.

Distribution policies can require products to be shipped in multiples, and respecting this policy is important for the generation of distribution plans. You can also define a minimum shipment quantity to ensure that an order is made up of a specific, cost-effective number of units.

This example illustrates a simple distribution network:



Distribution network

No effective demand is placed directly on Plant_1. Plant_1 produces the amount of inventory required by Customer_1. Neither Plant_1 nor Customer_1 have safety stock inventory policies.

When the distribution planner runs the Optimal Supply Planning solver for the network, the system returns the following results for Plant_1:

Horizon	Period 0	Period 1	Period 2
Effective Demand	0	0	0
Deployment Quantities (Outbound)	30	20	20
Net Requirement Quantities	30	20	20

When the distribution planner runs the Optimal Supply Planning solver for the network, the system returns the following results for Customer_1:

Horizon	Period 0	Period 1	Period 2	Period 3
Effective Demand	40	30	20	20
Deployment Quantities (Inbound)	0	30	20	20
Beginning Inventory Level	40	0	0	0
Ending Inventory Level	0	0	0	0

In period 0, Plant_1 produces enough inventory to meet the effective demand at Customer_1 in periods 0 and 1. In period 1, Plant_1 produces the amount of inventory required by Customer_1 in period 2. In period 2, Plant_1 produces the amount of inventory required by Customer_1 in period 3.

This enterprise has a shipment multiple policy that states that the product A16oz must be shipped in multiples of 80. To round deployment quantities to meet the shipment multiple policy, the distribution planner runs the Rounding Engine.

This table displays the new results, which account for shipment multiples, for Plant_1:

Horizon	Period 0	Period 1	Period 2
Effective Demand	0	0	0
Deployment Quantities (Outbound)	80	0	0
Net Requirement Quantities	80	0	0

This table displays the new results, which account for shipment multiples, for Customer_1:

Horizon	Period 0	Period 1	Period 2	Period 3
Effective Demand	40	30	20	20
Deployment Quantities (Inbound)	0	80	0	0
Beginning Inventory Level	40	0	50	30
Ending Inventory Level	0	50	30	10

The Rounding Engine rounds the deployment quantities between Plant_1 and Customer_1 to multiples of 80. The Rounding Engine also adjusts the net requirement quantities at Plant_1 to satisfy the deployment quantities. In periods 2 and 3, Customer_1 does not require additional inventory to meet effective demand because inventory remains from period 1. As a result, the Rounding Engine does not deploy any additional inventory.

Rounding Engine Process Stages

The Rounding Engine process consists of three stages:

1. Rounding deployments to shipment multiples.

The Rounding Engine adjusts deployments to accommodate shipment multiples while respecting lane capacity and safety stock levels. Deviation from the Optimal Supply Planning solution is minimized. The process is carried out in a bottom-up fashion:

- If rounding up incoming deployment violates the lane capacity, the Rounding Engine rounds down.
- Premium transportation capacity is used if the Optimal Supply Planning solver used it.
- The Rounding Engine assumes there are infinite materials and rounds the net requirements based on the resource capacity.
- If enough remaining manufacturing capacity remains to satisfy the rounded deployment quantities, the Rounding Engine increases the net requirement quantities to satisfy the deployment quantities. If the PRODUCTION_PREMIUM_CAPACITY system option is set to AVAILABLE, INFINITE, or PREMIUM2INFINITE, the Rounding Engine uses premium manufacturing capacity, if necessary.

- The Rounding Engine ensures that the decision to round deployment quantities up or down is as close as possible to the ending inventory level generated by Optimal Supply Planning. The system will round the deployment to the multiple, which will cause a minimum deviation from the Optimal Supply Planning ending inventory.

2. Adjusting net requirements.

When adjusting net requirements, the Rounding Engine takes into consideration the upstream stock or materials inventory. The Rounding Engine attempts to increase the net requirement quantities to respect the rounded deployment quantities. It performs a final adjustment of the deployment in order to meet the desired inventory at the upstream locations. For each location per item, the Rounding Engine compares the actual inventory with the desired inventory. If the desired inventory level is not met, the Rounding Engine performs the following adjustments.

When rounding outgoing deployments, the Rounding Engine obeys a set of rules. These rules are based on the following criteria:

- The actual inventory level is equal to or greater than the desired one, in combination with the setting of the system option `USE_INVENTORY_MAXIMUM`. If `USE_INVENTORY_MAXIMUM` is set to Y, both Optimal Supply Planning and the Rounding Engine respect the maximum inventory levels. This is a soft constraint for Optimal Supply Planning and a hard constraint for the Rounding Engine.
- If the maximum inventory level is exceeded, the Rounding Engine attempts to correct this situation. At plant locations, the Rounding Engine tries to lower the inventory level by reducing production. If this action is unsuccessful, the Rounding Engine increases the outgoing deployments. At non-manufacturing locations, the Rounding Engine increases the outgoing deployment quantities.
- If `USE_INVENTORY_MAXIMUM` is set to N, the Rounding Engine marks all outgoing deployments as rounded.
- If the actual inventory level is below the desired level, the Rounding Engine tries to compensate the shortfall by increasing local production of the stock based on availability of materials and resources. If this can not be accomplished, the Rounding Engine decreases the outgoing deployments. If unsuccessful, it will lower the consumption of stock in other manufacturing processes.

3. Identifying excess deployments.

In some cases, the Rounding Engine has rounded up deployments that were not required for multilevel networks with large shipment multiples between the plant and intermediate distribution center and relative low demand with small shipment multiples to the end distribution center. Phase 3 of the Rounding Engine detects these excess deployments and rounds them down.

The target is to get the ending inventory to stay as close to safety levels or build levels as possible. Starting from the bottom of the network and from the end of the horizon, the Rounding Engine computes the excess stocks and reduces the ending inventory by rounding down the incoming deployments.

Minimum Shipment Quantity

The Rounding Engine bases its logic on the Optimal Supply Planning solve results. As a result, if shipment multiples require a manufacturing change, the Rounding Engine does not respect the net requirements since this is part of the Optimal Supply Planning process. This issue can be circumvented by using a minimum shipment quantity.

For unconstrained supply planning, run quantities and batch constraints are not considered, but supply planning has order quantities for manufacturing as well as minimum manufacturing quantities.

Connect Algorithm

The Connect algorithm allocates supply components to demand components. Supply components include production (scheduled production or net requirements), beginning inventories, and shipments (in-transits, planned transfers, or deployments). Demand components include customer orders and forecasts. The Connect Algorithm enables you to peg supply to orders and forecasts. You can run Connect after you run the Optimal Supply Planning, the Supply Planning and the Rounding Engine, or the Heuristic solver. Connect does not allocate the results from Supply Planning, as Supply Planning has its own built-in allocation.

Multistage material pegging gives you visibility into the allocation of finished goods, inventory, in-transit shipments, deployment orders, production orders, net requirements, planned transfers, and materials to customer orders and forecasts. It helps you gain an understanding of how the availability of material affects orders and, specifically, which order. It demonstrates how the existing customer orders might be impacted by material shortages or substitutions. By pegging materials, you can see which materials are in short supply and, consequently, might jeopardize your ability to fill the order. Multistage material pegging shows you which materials you might want to reallocate.

Connect provides the ability to show the connections to the production and material records for all levels of the bill of material or manufacturing process. This visibility into the bill of material allows you to gain an understanding of how the material and subcomponent allocations occur. Connect also provides information about how each item that is supplied is consumed so that you can see the relationship between items and how the items are pegged together for a single order throughout the network. A solver run number tells you if the results are up-to-date.

System options allow inventory allocation according to preferences. Connect creates a feasible solution for the allocation of materials while respecting the your preferences. Connect attempts to connect all of the demand components (customer orders and forecast) and supply components (beginning inventory, production, and shipments) for a system plan. The parameters and constraints determine the information that Connect considers when calculating order and forecast results. During system plan configuration, you can set up as many different plans as you require, with each plan containing different Connect parameters and constraints. When you run a solve, you can select the system plan that has preset parameters and constraints for that particular solve. It is not necessary to set these criteria for every solve that you run. All system option configuration is done in the System Plan view or the System_Option Plans table.

The Connect parameters that you can set for the Connect algorithm are a set of values that control two factors:

- The type of demand that Connect considers when a Connect model is built.
- The amount of information that Connect generates, based on the final set of connections.

The valid values for each parameter are Y or N. The default value for each parameter is N. By setting all of the parameter values to N, you restrict the amount of information that is associated with each demand allocation to a minimum.

Customer Order and Forecast Priorities

You assign priorities to a customer order or forecast. Those priorities determine the sequence in which the Connect algorithm processes customer orders and forecasts. The required date of a customer order always has the highest priority.

You set the priority of customer orders in the Priority field of the Order Entry view or CustomerOrder table. You set the priority of a forecast in the Priority field of the Forecast view or Forecast table. The highest priority is one.

The sequence in which the Connect algorithm connects to supply components is also determined by the system option flag settings.

Manufacturing and Material Modes

You can set system parameters that configure Connect to run in manufacturing mode or material mode, or both. These system parameters govern the order of connection between supply components and demand components in your data model.

This table shows the order in which Connect pegs supply components to demand depending on how the system parameters CONNECT_MFG_MODE, and CONNECT_MATERIAL_MODE are set:

System Parameter Values	Order of Connection
CONNECT_MFG_MODE=N CONNECT_MATERIAL_MODE=N	<ol style="list-style-type: none"> 1. Local beginning inventory. 2. Local production orders or net requirements. 3. Shipments from direct upstream locations.
CONNECT_MFG_MODE=Y CONNECT_MATERIAL_MODE=N	<ol style="list-style-type: none"> 1. Local beginning inventory. 2. Local production orders or net requirements. 3. Shipments from direct upstream locations. 4. Beginning inventory at direct and remote upstream locations. 5. Production orders or net requirements at direct and remote upstream locations. 6. Shipments from remote upstream locations.
CONNECT_MFG_MODE=N CONNECT_MATERIAL_MODE=Y	<ol style="list-style-type: none"> 1. Local beginning inventory. 2. Local production orders or net requirements. 3. Shipments from direct upstream locations. 4. Materials used for local production.
CONNECT_MFG_MODE=Y CONNECT_MATERIAL_MODE=Y	<ol style="list-style-type: none"> 1. Local beginning inventory. 2. Local production orders or net requirements. 3. Beginning inventory at direct and remote upstream locations. 4. Production orders or net requirements at direct and remote upstream locations. 5. Shipments from direct and upstream locations. 6. Materials used for local and upstream production.

Note. The CONNECT_FORECAST_MODE system parameter is not included in this table because it does not affect the priority with which a demand is filled. It determines if your results include customer orders only, or customer orders and forecasts.

Connect Algorithm Constraints

Connect constraints have a direct impact on the available supply search logic. The valid values for each system option are Y or N. The default value for each constraint is Y. By setting all of the constraint values to Y, you have the most relaxed set of constraints when searching to satisfy a demand.

The goal of customer orders and forecasts is to fully meet the demand on time. Connect attempts to fill demand by looking at the various constraint options in the following sequence:

- Connect attempts to allocate supply as much as possible following the multisourcing rules defined in the `CONNECT_ALLOW_MULTI_SOURCE` section. If enough allocations are not made, the Connect Algorithm attempts to backorder supply.
- If `CONNECT_ALLOW_BACK_ORDER` is set to N, the demand cannot be met on time. If it is set to Y, the algorithm tries to fill demand from a single source first, and if that is not possible, it tries to back order supply, following the same multisource rules as in step 1.
- If demand still cannot be met, the Connect algorithm tries to substitute a product if `CONNECT_ALLOW_PROD_SUBST` is set to Y. The Connect algorithm goes through the same sequence of events on the substituted product as it did with the original product.
- If demand still cannot be entirely met by using either the original supply or the substituted product, Connect keeps the partially allocated order if `CONNECT_ALLOW_PARTIAL_FILL` is enabled. If partial allocation is not enabled, all allocations are discarded. If partial allocations are enabled, allocations are retained and the demand is filled as much as possible with the available allocations.

Effective Dates in Product Substitution

The start date, end date, and the date the demand is required for product substitution are important and must be considered even if your supply is available in advance of the need for it. For example, when you have an interval during which product substitution is in effect, the interval is defined by the product substitution start date and the product substitution end date. Various scenarios can affect the availability of the substituted product, depending on the demand required date.

This table outlines the possible scenarios for effective Dates in product substitutions:

1. The product substitution start date precedes the product substitution end date, which precedes the demand required date. In this scenario, there is no substitution available for the original product.
2. The product substitution start date precedes the demand required date, which precedes the product substitution end date. For in-time product substitution allocations, the valid supply is the supply that is available between the beginning of the horizon and the demand required date, inclusive. For back order product substitution allocations, the valid supply is the supply that is available on the first day following the demand required date up to, but not including, the product substitution end date.
3. The demand required date precedes the product substitution start date, which precedes the product substitution end date. For in-time product substitution allocations, there is no supply that can be considered. For back order product substitution allocations, the valid supply is only the supply that is available on the product substitution start date and up to, but not including, the product substitution end date.

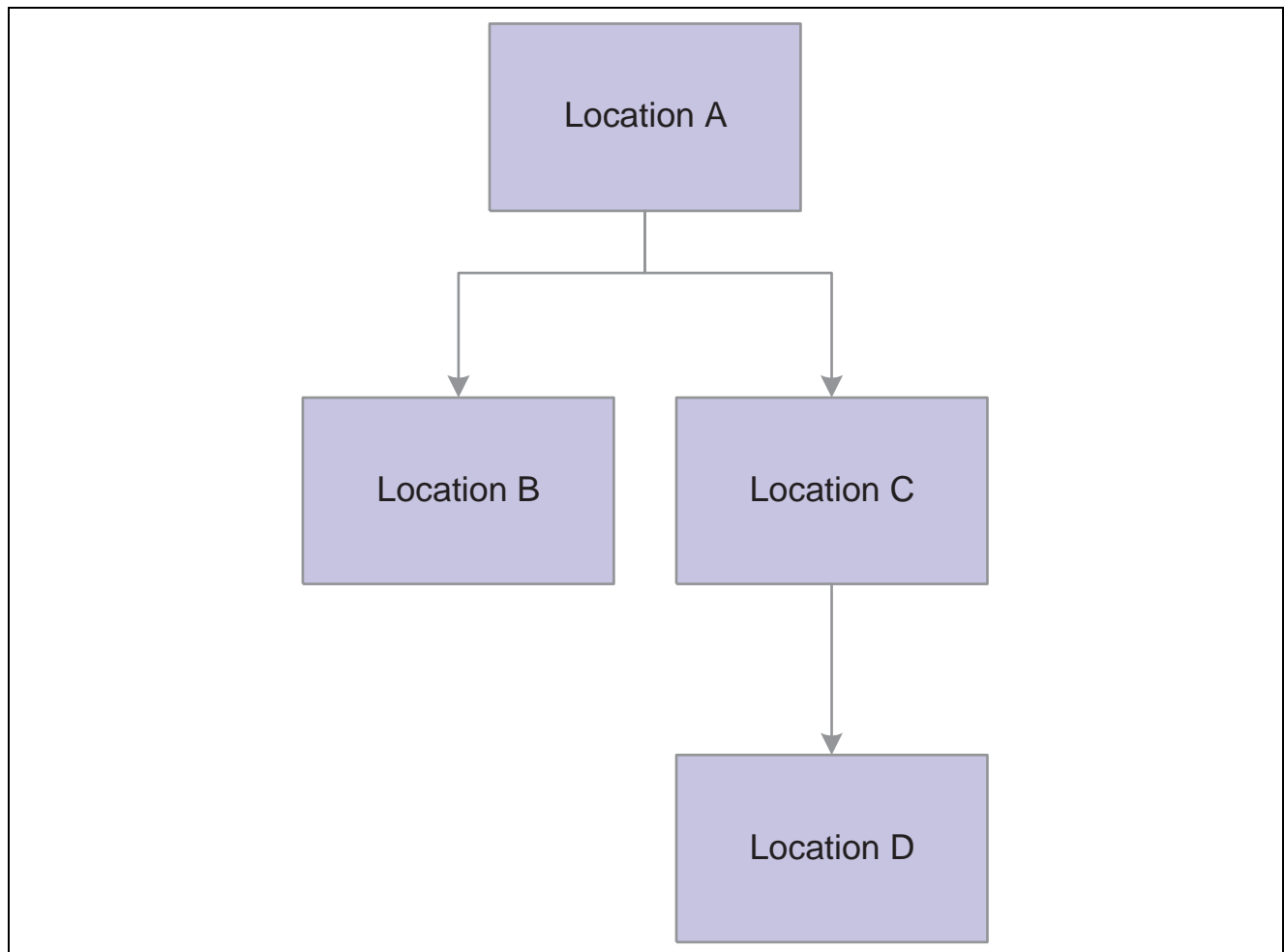
Note. The product substitution start date is the effective date on which a product substitution begins. Its preference must be greater than zero. For more information on setting preferences, see the section on filling in the Preference Field of the Product Substitution. The product substitution end date is the date on which all the product substitutions that are currently in effect are disabled. Its preference must be less than or equal to zero.

Connect Process Stages

Connect uses only customer orders, net requirements, and deployments that have a status of **Approved** or **Published**. It uses only forecasts that have a status of **Planned**, **Approved**, or **Published**; and it uses only beginning inventory lots that have a status of **Available**.

Connect works with complex distribution networks, which are networks in which origin and destination locations are separated by multiple lanes. A location can source customer orders and forecast locally, which means sourcing customer orders and forecast from the location itself. A location can also have upstream locations that source customer orders and forecast. The two types of upstream locations are direct upstream locations, which are separated from a location by one lane, and remote upstream locations, which are separated from a location by multiple lanes.

This diagram illustrates a distribution network.



Connect distribution network

For location D, location C is a direct upstream location, and location A is a remote upstream location. Location A directly sources locations B and C while location C directly sources location D.

Connect can peg customer orders and forecasts at a particular location to the following supply components, depending on Connect parameter settings:

- Local beginning inventory.
- Local production or net requirements.

- Inventory from direct and remote upstream locations, including in-transits, planned transfers, and deployments.
- Beginning inventory from a direct or remote upstream location.
- Production or net requirements from a direct or remote upstream location.

If the source location of a particular customer order is not fixed and the `CONNECT_ALLOW_MULTI_SOURCE` system option is set to Y, the customer order can be sourced from multiple locations.

Connect pegs customer orders and forecast to supply components in the following sequence:

1. The customer order or forecast that is required on the earliest date.
2. The customer order or forecast with the highest priority at the same required date as the bullet above.
3. If a customer order and forecast are required on the same date and have the same priority, the customer order is connected first.
4. The customer orders with a fixed source location.
5. The customer order or forecast with the largest quantity.

Connect makes connections for a user-specified system plan across all horizons so that all of the demand components (customer orders and forecast) and supply components (beginning inventory, production, and shipments) for the user-specified system plan are used for connection.

Phases of the Connect Algorithm

Connect runs in four distinct phases:

1. For each location, Connect creates a collection of available supply, and connects all outbound shipments with a source of inventory, such as production, inbound shipments, or beginning inventory. This phase should always be successful because the Optimal Supply Planning solver or the Heuristic solver has already determined production.
2. Connect restores the existing fixed demand allocations.
3. Connect connects the demand with the existing local supply at the specified (demand) location. If it cannot fully satisfy demand at a location, Connect identifies the source location of the customer order and tries to connect the customer order to inbound shipments from the source location. If the source location of a customer order is fixed and the customer order is not fully satisfied, the customer order is not filled.

If the source location of a customer order is not fixed and the customer order is not fully satisfied or if a forecast is not fully satisfied, Connect takes one of these actions:

- If the customer order or forecast can be sourced from multiple locations, Connect maintains the connections from the source location and tries to make more connections from other direct upstream locations.
- If the customer order or forecast cannot be sourced from multiple locations, Connect discards the previous connections from the source location and tries to make full connections from other direct upstream locations.

If the customer order or forecast is still not fully satisfied, Connect makes late connections. Connect does not use the date on which the customer order or forecast is required. Connect starts again at the beginning of phase two.

When a customer order or forecast is fully connected, Connect stops attempts to connect it.

4. If the `CONNECT_MFG_MODE` is set to `Y`, and customer orders and forecast are fully satisfied, or partial allocation is allowed, Connect translates shipments into upstream manufacturing. Connect connects each customer order or forecast at a location with the following supply components at a direct upstream location:

- Beginning Inventory
- Production
- Inbound shipments

If Connect connects a customer order or forecast with an inbound shipment at a direct upstream location, it makes a further connection between the customer order or forecast and the production or beginning inventory of the source location of the inbound shipment. Connect continues connecting customer orders and forecast until they are completely connected to beginning inventory or production at an upstream location, or until no inbound shipments are arriving at the most remote upstream location.

Heuristic Solver

The Heuristic (HS) solver is an algorithm that generates net requirements and deployments that are based on local optimization and transportation capacity. The HS solver works with single source networks. The HS solver fairshares inventory among locations when not enough inventory exists to meet demand. Fairsharing occurs when the HS solver tries to distribute inventory proportionally across the remaining requirements. The HS solver also accounts for shipment multiples. You can run the Heuristic solver on its own or in conjunction with the Connect algorithm.

The HS solver goes through two main phases, each phase divided into steps, when it performs a solve. In phase one, the HS solver is unconstrained by the projected inventory that is available at the producing location. In this phase, the HS solver generates a set of ideal replenishment requirements (deployments) and a set of net requirements for the producing location. The HS solver determines what each DC needs to meet demand. The HS solver also considers the demand across the entire horizon for each DC.

In phase two, the HS solver processes locations beginning with the plant and working downstream. The HS solver is constrained during the fixed production horizon by the projected inventory that is available at the shipping location.

The HS solver supports the following features:

- Fairshares inventory (distributes inventory proportionally across the remaining requirements) among locations when not enough inventory exists to meet demand.
- DDS and DDP system plans.
- Single-sourced networks only.
- Shipment multiples.
- Evaluation of the optimal distribution requirements across the distribution network on a per product or material per period basis.

Shared global constraints among products or materials are not considered.

Heuristic Solver Phases

The HS solver goes through two distinct phases when performing a solve. Each phase consists of a series of steps.

Heuristic Solver Phase One

The following events are observed during the first phase of a heuristic solve:

1. Determine the network.

In this step, the HS solver is unconstrained by the projected inventory that is available at the producing location. The HS solver generates a set of ideal replenishment requirements (deployments) and a set of net requirements for the producing location. The HS solver determines what each DC needs to meet demand. The HS solver also considers the demand across the entire horizon for each DC. Based on information from the sourcing table and the ability to produce, the HS solver constructs a network for every location-product combination in each period. The HS solver discards any locations that cannot produce and do not supply downstream locations.

2. Populate the network with information.

From the input files, the HS solver extracts the information that it requires to solve the product for the network. The HS solver created the network in the previous step.

3. Generate ideal requirements.

Starting with the downstream locations, the HS solver generates ideal requirements for each demand component beginning with the first period through the entire horizon. The HS solver assumes that any in-transits and planned transfers that are due are available at the beginning of the horizon. In this phase, the HS solver takes into account shipment multiples, which means that the HS solver generates ideal requirements in multiples of the shipment quantity. The HS solver must consider the following rules:

- $\text{Effective demand} = \text{Forecast Consumption} + \text{Dependent Demand} + \text{Substituted Demand}$.

Net requirements and deployments are based on effective demand. Applying the forecast consumption rule to forecast and customer order information determines effective demand values.

- The forecast consumption rule is GREATER, which means that effective demand is the greater of forecast and customer orders.
- Both in-transits and planned transfers are counted as inventory at DC3.

4. Move ideal requirements upstream.

The HS solver moves the ideal requirements upstream to where they become the location's downstream requirements. During this step, the HS solver takes into account the leadtime, and both the source and destination calendar information. In the previous example, the ideal requirements for DC3 become part of the ideal requirements at DC2 (the downstream requirements). At this stage, the HS solver turns the ideal requirements into ideal deployments.

5. Generate ideal requirements for upstream locations.

If the upstream location is an intermediate location, the HS solver repeats the previous steps. The only difference in this step is that when the HS solver generates ideal requirements, the HS solver must satisfy both the direct requirements on the location and the downstream requirements. If the location is a plant with no source, the HS solver generates a set of net requirements that match its ideal requirements.

6. End first phase.

For unconstrained DDP solves with no fixed production, the HS solver ends and all of the downstream requirements are met. The downstream requirements are the deployments, and the plant's ideal requirements are the net requirements. For DDP solves with fixed production, or a DDS solve, the HS solver proceeds to the second phase.

Heuristic Solver Phase Two

The following events are observed during the second phase of a heuristic solve:

1. Determine inventory distribution.

In this step, the HS solver processes locations beginning with the plant and working downstream. The HS solver is constrained during the fixed production horizon by the projected inventory that is available at the shipping location.

The HS solver determines how much and when to distribute the inventory based on priorities. The HS solver computes a quantity of inventory to dispatch that is equal to beginning inventory + planned transfers + in-transits + production (and computed deployments, if the location is an intermediate DC). The HS solver then generates a dispatch list of all requirements that must be met in the period, including direct requirements and downstream requirements. The HS solver divides the requirements into groups and sorts them as follows:

- Past due customer orders at downstream locations.
- Past due customer orders at the source location.
- Current customer orders at downstream locations.
- Current customer orders at the source location.
- Past-due remaining effective demand at downstream locations.
- Past-due remaining effective demand at the source location.
- Current forecast at downstream locations.
- Current forecast at the source location.
- Current safety stock at downstream locations.
- Current safety stock at the source location.
- Current build at the source location.
- Current build at downstream locations.

2. Dispatch inventory.

The HS solver dispatches the inventory, beginning at the top of the dispatch list and working downward. The HS solver compares the inventory that is left to dispatch to the total of each group's requirements. If the remaining inventory is less than the total requirements, the HS solver fairshares the available inventory across the group, which means that it distributes the available inventory proportionally across the remaining requirements.

3. Adjust downstream requirements.

After the HS solver has dispatched the entire available inventory at the source or has successfully met all requirements in the period, it does a simulation to recalculate and adjust the downstream requirements, based on the actual deployments that were generated at the initial source. This simulation is required because the amount of inventory that is shipped into a location affects the amount of inventory that it can dispatch and changes the profile of that location's requirements.

4. Dispatch inventory for the secondary source.

Once the simulation is complete, the HS solver goes through the same steps of computing a dispatch quantity, creating a dispatch list, and dispatching inventory for the secondary source. The HS solver repeats the process down the network until it has processed all of the source locations and created deployments.

5. Update inventory positions and regenerate requirements.

The HS solver does another simulation that updates inventory positions, based on the deployments in the first period and the information about the previous period's unmet customer orders and forecast. The HS solver generates requirements again, beginning with the destinations and moving upwards through the network. The HS solver again considers shipment multiples, sourcing, leadtimes, and source and destination calendars. From the initial source, the HS solver then repeats the dispatching process that it went through for the first period.

The HS solver repeats the simulation, moving from period to period through to the end of the solver horizon. An exception to this procedure occurs when the fixed production horizon is less than the solve horizon. At the point where the production is no longer fixed, the HS solver becomes unconstrained and meets all requirements at the source. This procedure is normally not applicable in a DDS solve because the solve horizon is usually equal to the fixed production horizon. However, it is applicable to a DDP solve in which a portion of the horizon is fixed—for example, if you fix only the first week and leave the rest of the horizon unconstrained.

The solve results from phase two differ, depending on whether the solve is a DDS or DDP solve. For a DDS solve, the solve results are deployments. For a DDP solve, the solve results are net requirements and deployments. The net requirements equal the fixed production inside the fixed production horizon and are the solver-generated net requirements outside the fixed horizon.

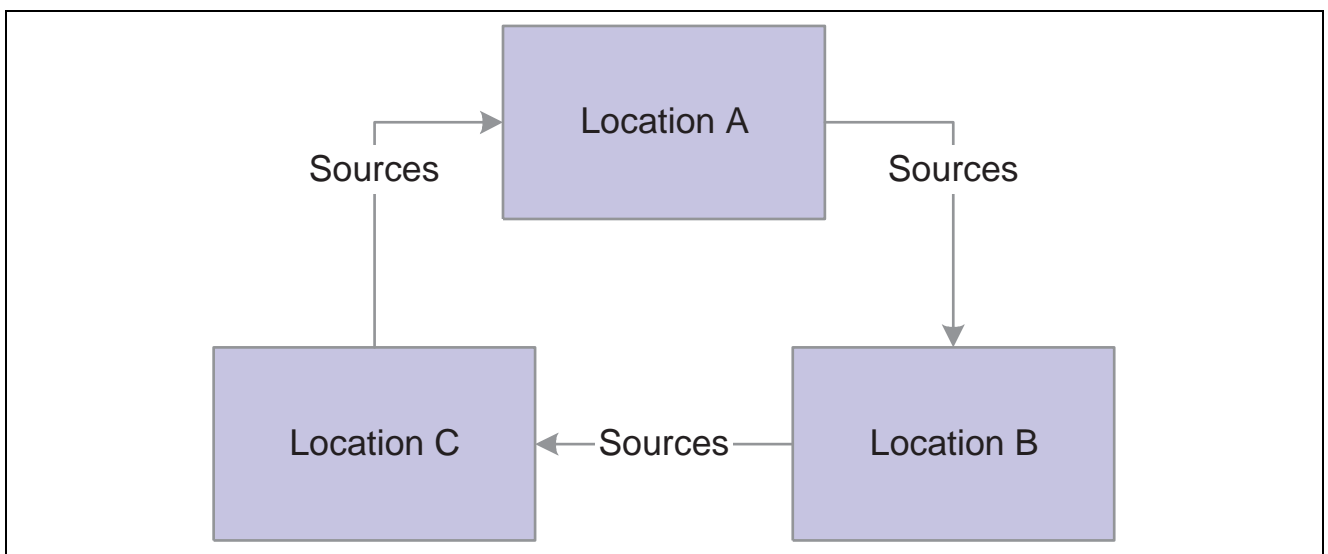
Forecast Demand Prioritization

You can set the prioritization of forecast demand higher for upstream locations than for downstream locations. The forecast demand priority is governed by the value of the `NMXPDP_HS_PRIORITY_UPSTREAM` variable before system startup.

Circular Dependencies

A circular dependency exists if the HS solver does not generate deployments for a product and the trace files indicate a circular dependency error. If your network has circular dependencies, run the Supply Planning solver for the affected products. Circular dependencies can also occur if the effective date for the sourcing plan changes while a product is in-transit between the source and destination locations, and the original sourcing plan is no longer valid. The HS solver does not support circular dependencies.

This example illustrates circular dependencies within a network.



Circular dependencies

Heuristic Solver Assumptions

The HS solver makes certain assumptions and takes subsequent action in cases where it detects inconsistent data. The HS solver assumptions can change in subsequent versions of the solver and should not be depended upon as constants in a model. This table shows the assumptions or actions that the HS solver makes when it encounters inconsistent data:

Field	Problem	Assumption or Action Taken by the HS Solver
Build inventory	Negative or missing Less than or equal to safety stock	Build inventory = 0 Build = safety
Customer orders	Negative or missing Due before start of horizon	Customer orders = 0 Due in first period.
Forecast	Negative or missing Past	Forecast = 0 Ignore the forecast.
In-transit	Negative Due before start of horizon	In-transit = 0 Due on day 0
Leadtime	Negative Missing	Leadtime = 0 Do not solve.
Planned transfer	Past due Arrive date prior to ship date	Due in first period. Arrive date is changed to the ship date.
Production	Negative or missing	Production = 0
Safety stock	Negative or missing	Safety stock = 0
Sourcing	Missing	Do not solve.
Beginning inventory	Missing	Beginning inventory = 0

Data Restrictions

The data in some tables and views must be modified to be usable by the HS solver. The following tables and views are not used by the HS solver:

- Code Age view and CodeAge table.
- Demand Priority view and DemandPriority table.
- Inventory Balance view and InventoryBalance table.
- ItemFacility table.
- Item Calendar view and ItemExceptionCalendar table.
- Resource Capacity view and LocResCap table.
- Product Substitution view and ProductSubstitute table.
- StorageType
- StorageTypeCap
- Substituted Demand view and SubstitutedDemand table.
- Report_INVENTORY_STATUS_PRODUCT_SUBSTITUTE

- Any fields in the Report views that relate to features that are supported by the Supply Planning solver but not the HS solver.

Modeling the Manufacturing Processes

In Production and Distribution Planning, the LocMfg table is event-based. Data is event-based when it takes effect on a specified date. The system displays the LocMfg table in the detail records of the Location Manufacturing Routing view. The primary key is changed from location_code and item_code to location_code, item_code, process_name, and effective_date.

Event-based data makes it possible to have multiple entries in the LocMfgProc table for a single location, and product or material combination. However, the HS solver supports only one manufacturing process at a location for each product or material. If the LocMfgProc table contains multiple records with the same location and product or material combination, the HS solver selects the first record that is sorted by effective date and then by process name. Because the HS solver can support only one manufacturing process at a time and must prioritize the process, the HS is forced to use a particular process by giving it an entry with a very early effective date.

The report views do not match the materials usage assumed by the HS solver if more than one entry in the LocMfgProc table exists for a location and product or material combination, or if the entry has an effective date that is not on or before the start of the solve horizon.

You cannot run the HS solver with either the Supply Planning or the Rounding Engine. However, you can run it with the Connect algorithm, if you run the Connect algorithm after the HS solver.

The HS solver does support the Solve Abort feature.

CHAPTER 11

Configuring Solvers Using System Options

This section discusses:

- The function of system options.
- EnterpriseOne Production and Distribution Planning system options.
- EnterpriseOne Vehicle Loading system options.
- Default CPLEX system options.

Understanding System Options

System options affect the behavior of the solvers. System options can be changed at any time during a PDP session and applied to a specific solve. That is, each solve run can use its own system option configuration values. Alone or in combination with the Production and Distribution Planning environment variables, system options determine how Production and Distribution Planning views your data and what criteria are to be considered, or not to be considered, when performing a solve.

System options function in a very similar manner to environment variables. The difference is that system options are set before a solve and can be changed before the next solve if you want to change the solve criteria. You can change system options as many time as you need to during a Production and Distribution Planning session. Environment variables are set one time before starting Production and Distribution Planning. The value that you set remains valid as long as the application is running. That is, the value you set applies to all of the solves that you run during that session.

Unlike environment variables, system options can be changed at any time during a Production and Distribution Planning session and applied to a specific solve. That is, each solve run can use its own system option configuration values.

Defining System Options

System options are user-configurable settings that define the way Production and Distribution Planning works with different types of data. System options are associated with system plans.

To define system options using views:

1. In the System Plan view, click the summary record for the system plan for which you want to define system options.
2. In the detail area, right-click and choose Insert Row from the menu.
3. In the Domain Type field, choose one of the following:

- SYSTEM

The system option applies to the application.

- LOCATION

The system option applies to a specific location. This option is only valid for the `FIXED_PRODUCTION_TIMEFENCE` system option. When you set the fixed production timefence for a specific location, it overrides the value set as a default when Domain Type is SYSTEM.

- In the Domain Name field, do one of the following:
 - If you chose SYSTEM in the Domain Type field, select 3D.
 - If you chose LOCATION in the Domain Type field, select a location.
- In the Plan Name field, type the name of the system plan that is specified in the summary record that you selected in step 1.
- In the Option Name field, do one of the following:
 - If you chose SYSTEM in the Domain Type field, select the system option that you want to define.
 - If you chose LOCATION in the Domain Type field, select `FIXED_PRODUCTION_TIMEFENCE`. This is the only system option available from the system option list.
- In the Option Value field, type the value for the system option.
- (Optional) In the Description field, type a description of the system option.
- Click outside of the row, and choose Save from the File menu.

To define system options using tables:

- In the System_Option table, type one of the following options in the domain_type field:

SYSTEM	The system option applies to the application.
LOCATION	The system option applies to a specific location. This option is only valid for the <code>FIXED_PRODUCTION_TIMEFENCE</code> system option. When you set the fixed production timefence for a specific location, it overrides the value set as a default when Domain Type is SYSTEM.

- In the domain_name field, do one of the following:
 - If you used SYSTEM in step 1, type 3D.
 - If you used LOCATION in step 1, type a location code.
- In the plan_name field, type the name of the system plan.
- In the domain_type field, do one of the following:
 - If you used SYSTEM in step 1, type the system option that you want to define.
 - If you used LOCATION in step 1, the only system option that is available is `FIXED_PRODUCTION_TIMEFENCE`. Type `FIXED_PRODUCTION_TIMEFENCE`.
- In the value field, type the value for the system option.

CHAPTER 12

Interpreting Solver Error Messages

This chapter discusses:

- Solver error message syntax.
- Standard output trace files for the HS solver.
- Working with trace, error, and warning files.
- Problems encountered while performing vehicle loading solves.

Solver Error Message Syntax

If you are interpreting error messages from the solver, knowing their syntax is useful. Error messages are written to the `Run_id.userid_Errors.html` in the `repository/Solver_Run/` directory, where `id` is the number of the run, `userid` is the user name used to run the solve, and `repository` is the name of the repository of data used in the solve.

The syntax of an error message code is as follows:

type_algorithm_number

where:

- *type* is the kind of error message
- *algorithm* is the kind of algorithm to which the error applies
- *number* is the number of the error message

If you want to write a script to collect error messages from the trace files, knowing that each line of an error message contains the error message code in the HTML markup is useful. For example, you might receive the following error message in your HTML browser:

i_hs_001 09-Mar-05 10: 10: 10: Planned production for Montreal 03-Jan-05 item A16oz per.2: 157.53

The HTML markup for this example is:

```
<BR><A HREF=/path/Solver_Run/ErrorExpl8.10.0.html#i_hs_001>i_hs_001</A> 09-Mar-05 10: 10: 10:  
<BR><i_hs_001>Planned production for Montreal 03-Jan-05 item <BR><i_hs_001> A16oz per. 2: 157.53
```

You can see that the second line of the error message contains the error message code inside angle brackets.

Standard Output Trace Files for the HS Solver

Trace files that contain standard output are always created when you run the HS solver using the Solver view or the `warmsolve` command. These files are separate from the HTML solver trace files. They are created in the `repository/Solver_Run/` directory, where *repository* is the name of the repository that was used in the solve.

Trace file	Description
<code>runid.userid_Trace1</code>	Contains information about the solver type and version number
<code>runid.userid_Trace2</code>	Contains standard error messages from the operating system level

In addition, you can view a file that shows the APAg flows that are needed to move the data from the PDP object model to the HS solver, and if the flows ran successfully.

The file is: `/path/scp/8.12/repositories/repository/HS_Input/hsExportmsg` where:

- *path* is the location where pdp is installed.
- *repository* is the name of the repository

Working with Trace, Error, and Warning Files

This provides an overview of trace, error and warning files for the solver server data model, and discusses how to:

- Generating Heuristic (HS) solver trace files.
- Viewing HS solver plain text trace files.

Understanding Trace, Error, and Warning Files for the Solver Server Data Model

The solver server can generate trace, error, and warning files for the solver server data model when you run the Supply Planning solver or the Rounding Engine.

The solver server can generate trace, error, and warning files when you run the Supply Planning solver. These files contain information about the steps taken by the Supply Planning solver during a solve. You can use them to verify CPLEX system options and analyze the results of running the Supply Planning solver.

All trace files contain details about the data that are used by the solver server. The error and warning files contain messages about inconsistencies in the data that is used by the solver server.

The solver server loads data from the database at three different times:

- When the solver server is started or you click Refresh in the Solver view.
- At regular intervals.
- When you start a solve.

The solver server loads data one table at a time. When the solver server loads a table, it verifies the validity of the data and cross-references data between tables to ensure that the data is consistent. If the solver server finds an inconsistency, it generates warning and error messages. One inconsistency in the database can generate many errors and warnings. For example, a record for the product A16oz is in the Item table and there is an error in this record. The solver server generates errors and warnings for the A16oz record in the Item table, and for every record in every table that cross-references the A16oz record.

HS Solver Error Files

After you run the HS solver using the Solver view or in batch mode, you can examine the HS solver trace files to learn more about the solve. You can view the trace files as text and as HTML. Hyperlinks that connect relevant pieces of information make it easy to read the HTML trace files and locate specific information.

In addition, Production and Distribution Planning always generates standard output trace files after you run the HS solver using the Solver view or using the `warmsolve` command. Standard output trace files are text files that contain standard error messages from the operating system level.

HS Solver HTML Trace Files

Production and Distribution Planning generates many different HTML trace files. However, the main trace file is `Trace.html`, and it contains links to the other trace files. Open the `Trace.html` file when you are looking for information about a solve.

Production and Distribution Planning does not overwrite the records in this file, but it appends new records. You might want to delete this file manually when it becomes too large.

The following form is an illustration of the structure of `Trace.html`, when you open it in an HTML browser window.

When you open the `Trace.html` file in a browser window, the following fields appear:

FieldHeadingCell - Run ID	The identification number of the solve. The number in this field is a hyperlink to an HTML page with information about the distribution network and a link to the trace text files. See The Run ID page for more information about the HTML page that the Run ID link opens.
FieldHeadingCell - Algorithm	The type of solve that was run.
FieldHeadingCell - Solve Mode	The solver mode that was used-DDS or DDP.
FieldHeadingCell - Guideposts	This field is not used.
FieldHeadingCell - Global Constraints	A value that indicates whether global constraints were used during the solve.
FieldHeadingCell - Start At	The time when the solve was initiated.

FieldHeadingCell - Duration	The length of time for completing the solve.
FieldHeadingCell - Success	A value that indicates whether the solve was successful. You can link from this field to an HTML page that contains error messages generated by the solve. Each error message begins with a code such as i_hs_002. Each error message code is a hyperlink to an HTML page entitled Error Explanation, which contains a list of all the error message codes and their explanations.

The Run ID Page

The Run ID HTML page also contains a frame with the following links:

Link Name	Link Destination
Network	The HTML page entitled Distribution Network, which has information about the distribution network and a link to the trace text files.
Lane-Item	The HTML page entitled Items on Lanes, which has information about the items on each lane and a link to the trace text files.
Location-Item	The HTML page entitled Items on Locations, which has information about the items at each location and a link to the trace text files.
Error Messages	The HTML page with error messages generated by the solve.
Error Explanations	The HTML page with an explanation of all possible error messages.
Files	The HTML page entitled Solver Files, which has a list of the files that are used by the solver, and tables that indicate their structure and content.
Details	The text version of the solver trace files.
Search	The HTML page with a search engine that searches by location by item. The search engine locates the relevant table in the Items on Locations and Items on Lane HTML pages.
All Traces	The main trace file Trace.html.
Keep this	A new window with a copy of the information in the current window. This feature is useful when you are comparing information in a deployment (Items on Lane page) with the inventory status of its source or destination (Items on Locations page).

Generating HS Solver Trace Files

You can define the level of information that Production and Distribution Planning writes to the HS solver trace files. Production and Distribution Planning creates trace files in the *repository*/Solver_Run/ directory, where *repository* is the directory of the repository used in the solve..

Before you run the HS solver, at the command line prompt, enter the following command:

```
export NMX_HS_TRACE_WARM= x
```

In this command *x* has one of the following values:

- Write an intermediate level of information about the solve to the trace files.
- Write all information about the solve to the trace files. The information includes the values of the CPLEX parameters, which are written to the *runid.userid_Details.txt* file.

Note. If you do not export the *NMX_HS_TRACE_WARM* environment variable, Production and Distribution Planning creates trace files, but they are empty.

Viewing HS Solver Plain Text Trace Files

You can view text versions of the trace files in a text editor. The trace information is stored in the *filerunid.userid_Details.txt*. Data for the solver configurations is stored in the *filerunid.userid_Config*.

CHAPTER 13

Running Vehicle Loading Solves

Production and Distribution Planning works directly with the Vehicle Loading system, which automates and optimizes the process of building loads and selecting vehicles. Vehicle Loading is a heuristic algorithm that calculates a cost-effect set of feasible loads to satisfy the order requirements. Vehicle Loading determines which orders are loaded on which vehicles, taking into account cost and constraints, such as weight and cube capacity, while minimizing the total number of vehicles needed to satisfy all of the required deployments.

This section discusses how to:

- Import deployments into Vehicle Loading.
- Fix loads in Vehicle Loading.
- Export loads from Vehicle Loading.
- Export order alerts from Vehicle Loading.
- Import order alerts to Production and Distribution Planning.
- Problems encountered while performing Vehicle loading solves.

Importing Deployments into Vehicle Loading

After you publish deployments from PDP you can import the information into Vehicle Loading (VL) views. The VL solver can then build loads for the deployments. If you publish additional deployments before the published deployments are imported into VL, the newly published deployments are appended to the output file. Any published deployments that you do not want to import into VL can be deleted.

Note. When you import deployments into VL, you must specify the name of the system plan that was used to generate the deployments.

When you import deployments into VL, you must specify the name of the system plan that was used to generate the deployments. The information is stored in the following file:

```
workgroup.planname_DEPLOYMENT.export
```

where *workgroup* is the name of the work group, and *planname* is the name of the system plan. The files are stored in the directory specified by the NMX_3D_EXPORT_PATH environment variable.

The data in these files updates the VL_Order and VL_OrderItem tables.

Fixing Loads in Vehicle Loading

The Load Approval view contains a Fix field that allows you to fix a load for the next (Vehicle Loading) VL solve. This ensures that the load is included in the solution.

When the Fix field is set to Y, the load does not change when you run a solve. The VL solver uses the load information so that the corresponding resources and orders are accounted for. When the Fix field is set to N, the load is not fixed and changes when you resolve. The load is discarded, and new loads are generated.

Exporting Loads from Vehicle Loading

You can export loads built by the Vehicle Loading (VL) solver and use the data in another system. There are two methods of exporting the loads:

- You can publish or export loads from the Load Approval view if you want to generate an export file that contains data about each load and specifies the aggregate amounts of each product in each load.

When you publish loads, the Status field of the selected records is set to Published (if the previous status was Approved), the records are saved to the database, and the records with a status that has changed to Published are appended to the export file workgroup.LOAD_APPROVAL.export in the directory specified by the NMX_VL_EXPORT_PATH environment variable.

When you export loads, all records are appended to the same file that is used when you publish loads. The value in the Status field is not changed, and no changes are saved to the database.

- You can publish or export loads from the Load Detail view if you want to generate an export file that contains data about each load and the orders filled by each load.

When you publish loads, the Status field of the selected records is set to Published (if the previous status was Approved), the records are saved to the database, and the records with a status that has changed to Published are appended to the export file workgroup.LOAD_DETAIL.export in the directory specified by the NMX_VL_EXPORT_PATH environment variable.

When you export loads, all records are appended to the same file that is used when you publish loads. The value in the Status field is not changed, and no changes are saved to the database.

Exporting Order Alerts from Vehicle Loading

You can export order alerts (exception deployments) from Vehicle Loading (VL). Order alerts display data about orders that were not fully loaded or not published within the alert horizon.

To export order alerts from VL, the active VL work group must be assigned the IMPORT_DeploymentAlert command. When you export order alerts, the data is written to the file ORDER_ALERT.export in the directory specified by the NMX_3D_EXPORT_PATH environment variable.

Importing Order Alerts to Production and Distribution Planning

When order alerts have been exported, the Vehicle Loading (VL) desktop triggers an automatic import to the Production and Distribution Planning model servers, which populate the DeploymentOrderAlert table. The alerts are displayed in the Deploy Order Alert view.

Problems Encountered While Performing Vehicle Loading Solves

Sometimes the solve results might not be ideal for your requirements. This section describes some of the problems that you might encounter and the possible solutions.

Problem	Solution
Too many loads created	A possible solution is to increase the value of the product_per_vehicle_min system option. You can change system option values using the VL_OPTION view.
Too Many Different Items in Individual Loads	One possible solution is to use the algorithm for load mix minimization by setting the minimize_load_mix system option to Y. Another possible solution is to decrease the value of the product_per_vehicle_max system option. You can change system option values using the VL Option view.
Wrong Mix of Vehicle Types	A possible solution is to alter the lane and vehicle type cost. The VL solver selects vehicles by cost criteria; so in order to change the vehicles that the VL solver selects, you must alter the costs. You can alter the cost for the appropriate lane and vehicle type using the VL Shipping Cost view.

Problem	Solution
Problem: Only One or Two Shipping Units on a Load	A possible solution is to decrease the minimum grab size. You can decrease the minimum grab size using the VL Product view.
Problem: Number of Vehicles Used Exceeds Number of Vehicles Required	<p>Possible solutions are:</p> <ul style="list-style-type: none"> • Decrease the minimum grab size using the VL Product view. • Verify that the minimum grab size that you defined is the actual minimum grab size (and not just the desired grab size). • Verify that product_per_vehicle_max system option in the VL Option view or the Max Products/Vehicle field in the VL Vehicle Type view is really a hard constraint. If not, increase the value. The value specified in the VL Vehicle Type view overrides the value in the VL Option view. • Verify that vehicle_capacity_max system option in the VL Option view or the values in the VL Vehicle Type view is set appropriately. The values that are specified in the VL Vehicle Type view override the value in the VL Option view.

PART 4

Exporting Production and Distribution Planning Data

Chapter 14

Exporting Data from Production and Distribution Planning

Chapter 15

Pre-Loading and Auto-Exporting Views

CHAPTER 14

Exporting Data from Production and Distribution Planning

This chapter provides an overview of exporting Production and Distribution Planning data and discusses how to:

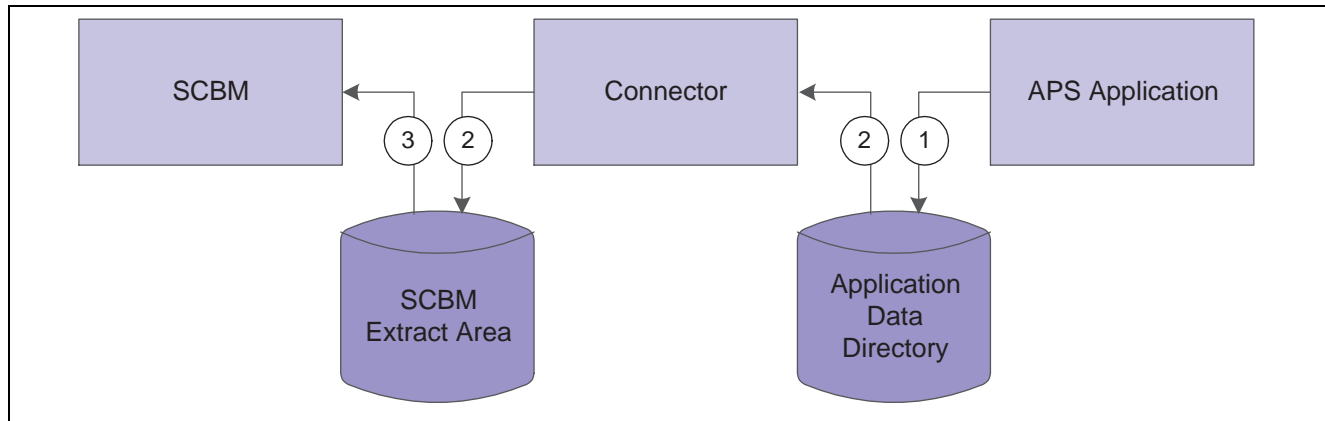
- Exporting data from Oracle repositories to flat file repositories.
- Exporting data in Supply Chain Planning XML format from flat files.
- Publish optimized plans.
- Export data and run pre- and post- scripts.

Understanding Exporting Production and Distribution Planning Data

To prepare Production and Distribution Planning data for importing into Supply Chain Business Modeler, you must perform the following tasks:

1. Ensure that the Production and Distribution Planning is in a flat file repository.
2. Use the Connector publish command to transform the data into XML format and copy the data to an Supply Chain Business Modeler extract area. Production and Distribution Planning creates the following data packages for Supply Chain Business Modeler:
 - NetDeploymentRequirements
 - NetProductionRequirements
 - PurchaseOrderRecommendations

You can then import the data into the Supply Chain Business Modeler Tactical model.



Data transfer from Production and Distribution Planning to Supply Chain Business Modeler

Exporting Data from Oracle Repositories to Flat File Repositories

You can export Production and Distribution Planning data from Oracle repositories to flat file repositories.

When Production and Distribution Planning data is in a flat file repository, you can transform the data into Supply Chain Planning XML format for integrating Production and Distribution Planning with Supply Chain Management and Planning applications using EnterpriseOne Supply Chain Business Modeler.

To export data from an Oracle repository to a flat file repository:

1. In the Control Panel, click the PDP tab.
2. In the PDP tab, click the Utilities button.
3. Double-click the Export Data button.
4. In the Export Data window, complete the following fields:

Export data from repository	Select the Oracle repository from which you want to export data.
Export into directory	Enter the destination directory for the exported flat files, or click Browse and select the destination directory.
Database user	Enter the user name for the Oracle database.
User password	Enter the password for the user name entered in the Database user field.

5. Click Export Data.

Exporting Data in Supply Chain Planning XML Format From Flat Files

Using flat file repository data, and a connector that is provided with Production and Distribution Planning, you can create data files in Supply Chain Planning XML format. These data files contain the net production and distribution requirements and purchase order recommendations created by Production and Distribution Planning for transferring to other supply chain management and planning systems.

Supply Chain Planning XML format is a data format for integrating Supply Chain Management and Planning applications using EnterpriseOne Supply Chain Business Modeler. Supply Chain Business Modeler is a configurable data warehouse that converts supply chain data to the representation required by supply chain systems. After transforming the net requirements, deployments, and purchase order recommendations from Production and Distribution Planning solves into Supply Chain Planning XML format, you can import the data into Supply Chain Business Modeler and convert it to the representation required by other supply chain systems.

When you use the PDP Connector, you can create the following Supply Chain Planning XML files that contain the results of Production and Distribution Planning solves:

- NetDeploymentsRequirements.xml
- NetProductionRequirements.xml
- PurchaseOrderRecommendations.xml

To export data in Supply Chain Planning XML format from flat files:

1. Do one of the following:
 - In Windows, from the Start menu, choose Programs, EnterpriseOne Supply Chain Planning 8.12, Production and Distribution Planning, and then choose PDP Connector.
 - In Windows, from a command prompt, navigate to the *path*/scp/8.12/common/start directory, where *path* is the directory where Production and Distribution Planning is installed, and enter the following command:


```
run_pdp_connector.bat
```
 - In UNIX, from a command prompt, navigate to the *path*/scp/8.12/common/start directory, where *path* is the directory where Production and Distribution Planning is installed, and enter the following command:


```
./run_pdp_connector.sh
```
2. In the command shell, specify the Production and Distribution Planning package by entering the following command:


```
package require Pdp
```
3. In the command shell, issue the publish command:

```
pdp::model publish [-gzip] SCBMDataFolder PDPDataFolder
```

Note. In Tcl, the backward slash (\) is an escape character. When typing a path, either use a double backward slash (\\) or the forward slash (/).

4. where:
 - -gzip is an optional parameter that allows Production and Distribution Planning to create export compressed XML files to Supply Chain Business Modeler.

- *SCBMDataFolder* is the location of the destination Supply Chain Business Modeler data directory. If the directory name includes a space, it must be enclosed in quotation marks.
- *PDPDataFolder* is the location of the source Production and Distribution Planning flat file data directory. If the directory name includes a space, it must be enclosed in quotation marks.

Publishing Optimized Plans

Using Production and Distribution Planning, you can publish optimized plans and initiate integration processes with external systems. Plans can be published from the desktop within a view or by using a publishing profile. When you publish optimized plans, the system saves the published data—net requirements, deployments and purchase orders—in the view. The view changes the status of the selected records to Published and they are written to a the location specified by the `NMX_3D_EXPORT_PATH` variable.

The following optimized plans can be published for use in external systems:

- Net requirements.

When you publish net requirements from the Production and Distribution Planning desktop, the Status field of the records that you choose is set to Published (if the previous status was Approved) and the records are saved to the database. Published records are appended to the workgroup. `NET_REQUIREMENTS.export` file stored in the directory that is specified by the `NMX_3D_EXPORT_PATH` variable. If you publish an additional set of net requirements, the new net requirements are appended to the output file. You must delete the file whenever you need to start with an empty file.

After publish and export processes are complete, net requirements can be imported into an MPS system that determines the master production schedule for your manufacturing facilities.

- Deployments.

When you publish, the system saves all of the data in the view. The view changes the status of the selected records to Published and they are written to a file.

You can publish deployment plans from the Deployments view or by using a publishing profile. After the deployments are published, the status of the selected records changes to Published. These published records are then saved to the database and appended to the following output file:

`workgroup.planname_DEPLOYMENT.export`

where *workgroup* is the name of the work group, and *planname* is the name of the system plan. This file is stored in the directory that is specified by the `NMX_3D_EXPORT_PATH` environment variable.

- New purchase orders.

In the Production and Distribution Planning desktop, you can create publishing profiles that allow you to publish a set of optimized plans without opening the corresponding views. Profiles determine which optimized plans to publish. You can refine your publishing preferences by editing an existing profile or creating a new profile for a specific business need.

You can then send the plans produced by the solver from Production and Distribution Planning back to Supply Chain Business Modeler and then back to the ERP system or to other supply chain planning applications.

This section describes how to:

- Create publishing profiles.
- Publish plans using profiles.

- Edit publishing profiles.
- Delete publishing profiles.

Creating Publishing Profiles

To create a publishing profile:

1. From the File menu, choose Publish.
2. In the Publish window, click New
3. In the New Profile window, complete the following fields:

Profile Name	Specify a unique name for the publishing profile.
Description	Optionally, specify a description for the publishing profile.
Format	Select the format that will be used for published plans: Tab-delimited text file.
Output Directory	Specify the directory where the system will save the published plans. You can explicitly specify the location of the directory or click Browse to browse for a directory.

4. (Optional) Specify a Tcl script that will be initiated after the optimized plans are published.
You can explicitly specify the location of the script or click Browse to browse for a script.
5. Select the Data Selection tab.
6. Complete the following fields:

Workgroup Name	Select a workgroup from the drop-down list.
Plan Type	Select the optimized plan that you want to publish. You can publish more than one plan in a single publishing profile. Available plans depend on the workgroup and role permissions granted to you.
Publish	Select <i>Approved Only</i> if you want to publish plans that are approved by the planner, or select <i>All</i> to publish all plans including those that have not been previously approved.

7. Click OK.

Publishing Plans Using Profiles

After you solve the Production and Distribution Planning model, you can publish net requirements, deployments, and purchase orders from Production and Distribution Planning for use in your ERP and other supply chain planning systems. You can then convert the data into Supply Chain Planning XML format and import the data into Supply Chain Business Modeler for use in other Supply Chain Planning and ERP systems.

To publish plans using a profile:

1. From the File menu, choose Publish.
2. In the Publish window, select a publishing profile.
3. Click Publish.

Editing Existing Publishing Profiles

To edit an existing publishing profile:

1. From the File menu, choose Publish.
2. In the Publish window, select a publishing profile and click Edit.
3. In the Edit Profile window, edit the fields in the General and Data Selection tabs in the profile as applicable.
4. Click OK.

Deleting Existing Publishing Profiles

To delete an existing publishing profile:

1. From the File menu, choose Publish.
2. In the Publish window, select a publishing profile and click Delete.
3. In the confirmation window, click Yes.

Exporting Data and Running Pre- and Post- Scripts

You can export data records from Production and Distribution Planning in tab-delimited flat file format. When you export data records, the system writes them to a text file in the directory specified by the `NMX_3D_EXPORT_PATH` environment variable.

Export files are named *workgroupName.viewName.export*. Each view in a work group has one file, except for review files: Review views, such as Review Deployments, writes to the same file as the Deployments view. If you do not remove an existing exported file, the system appends data records to it the next time you export data.

You can run custom scripts automatically before and after exporting data from Production and Distribution Planning. For example, you can create a script that copies data to a specific directory and file after you export the data from Production and Distribution Planning.

When you create a script to run before an export, you must use the name of the view with the prefix "EXPORT_" and the suffix ".pre.bat". Similarly, scripts that run after an export must be named using the name of the view with the prefix "EXPORT_" and the suffix ".post.bat". If the view contains a details area, it calls scripts with the prefix "EXPORT_" and the suffix "_Detail.pre.bat" and "_Detail post.bat" for the view.

You must save pre- and post- scripts in the directory specified by the `NMX_3D_SCRIPTS` environment variable.

The following are possible names for pre- and post- export scripts:

- `EXPORT_DEPLOYMENT.post.bat`
- `EXPORT_FORECAST.post.bat`
- `EXPORT_INVENTORY_LOCATION_CATEGORY.pre.bat`
- `EXPORT_INVENTORY_POLICY.pre.bat`
- `EXPORT_INVENTORY_PRODUCT_CATEGORY.pre.bat`
- `EXPORT_INVENTORY_STATUS.post.bat`
- `EXPORT_NET_REQUIREMENTS.post.bat`

- EXPORT_ORDER_ALERT.post.bat
- EXPORT_ORDER_MANUFACTURING_ALLOCATION.pre.bat
- EXPORT_ORDER_SHIPMENT_ALLOCATION.pre.bat
- EXPORT_WORK_ORDER.post.bat
- EXPORT_SHIPMENT.post.bat

CHAPTER 15

Pre-Loading and Auto-Exporting Views

For each workgroup in Production and Distribution Planning, you can specify views to pre-load and auto-export.

Pre-loaded views open automatically when users from specific workgroups open the Production and Distribution Planning desktop. Pre-loading views can save users' time, especially for opening large views that require data calculations.

Production and Distribution Planning automatically exports view data from auto-exported views to flat files at specified time intervals. You can specify where and how often to export the data. Views must be pre-loaded before they can be auto-exported. You can also pre-load and auto-export views without launching the PDP Desktop GUI.

This chapter provides an overview of pre-loading and auto-exporting data and discusses how to:

- Specify file locations and timing for auto-exporting view data.
- Specify views to pre-load and auto-export.
- Start pre-loading and auto-exporting data.

Specifying File Locations and Timing for Auto-Exporting View Data

You can specify file locations and timing for auto-exporting view data using the following environment variables:

PDP_AUTOEXPORT_PATH	Specifies the directory to which view data files are automatically exported.
PDP_AUTOEXPORT_SCRIPTS	Specifies the directory that stores scripts for running before and after views are exported.
PDP_AUTOEXPORT_INITIAL_INTERVAL	Specifies the time in minutes from when the PDP Desktop is launched to the point in time when the views are exported for the first time.

Note. You can specify subsequent intervals for automatically exporting view data when you specify which views to export.

You can specify values for these environment variables in the configuration file, or use the following method to specify file locations and timing for auto-exporting data.

To specify file locations and timing for auto-exporting data:

1. In the Control Panel, click the PDP tab.
2. In the navigation panel, click the Servers button.

3. In the Servers workspace, click the Advanced tab.
4. Complete the following fields:

Script path	Specify the directory that stores scripts that run before and after views are exported.
AutoExport path	Specify the directory that stores the exported view data.
AutoExport date format	Select a date format for the exported views.
AutoExport initial interval	Specify the time in minutes that elapses between the desktop startup and the start of the export process.

Note. You can specify subsequent intervals for automatically exporting view data when you specify which views to export.

5. Click the Save button.

Specifying Views to Pre-Load and Auto-Export

Using the WorkGroup view, you can specify which views to pre-load and auto-export for each workgroup. The WorkGroup view is initially available only to the SystemAdmin role, but access can be granted to other users.

Note. Do not set the following views to pre-load: PDP_Solve, VL_Solve, Alert.

To specify views to pre-load and auto-export:

1. In the PDP Desktop navigation area, click System, click System Administration, and then double-click Workgroup.
2. In the Workgroup view summary area, click the workgroup for which you want to specify views to pre-load or auto-export.
3. (Optional) If the view that you want to pre-load or auto-export does not appear in the Workgroup view detail area, right-click and choose Insert Row from the menu. In the View Name field, select the view that you want to pre-load or auto-export.
4. Do one of the following:
 - To pre-load a view for the workgroup, click the Pre Load field for the view and select Y from the menu.
 - To auto-export a view for the workgroup, click the Pre Load field for the view and select Y from the menu. Select the Auto Export field for the view and select Y from the menu.
5. From the File menu, choose Save.

Starting Pre-Loading and Auto-Exporting Data

After specifying file locations and timing for auto-exporting data, and specifying views to pre-load and auto-export, you can begin pre-loading and auto-exporting views for specific workgroups. You can do this by creating a Control Panel button for launching the batch workgroup, or by using a command to start the workgroup.

Creating a Control Panel Button for Starting Pre-Loading and Auto-Exporting Data

You can create a button in the Control Panel for starting pre-loading and auto-exporting data for specific workgroups.

To create a Control Panel button for starting pre-loading and auto-exporting data:

1. In the Control Panel, click the PDP tab.
2. In the navigation panel, click the Desktop button.
3. In the Desktop workspace, double-click the Add Batch Workgroup button.
4. In the Add Batch Workgroup window, complete the following fields:

Icon label	Enter a label for the auto-launch button that will be created.
Autolaunch workgroup	<p>Enter the names of the workgroup or workgroups for which you want to pre-load or auto-export view data.</p> <p>If you specify more than one workgroup name, you must include the <code>-wg</code> flag before the second and subsequent workgroup names. For example, to specify workgroups called StrategicPlanner, ProductionPlanner, and PlantScheduler, enter the following:</p> <pre>StrategicPlanner -wg ProductionPlanner -wg PlantScheduler</pre> <hr/> <p>Note. Do not include the <code>-wg</code> flag before the first workgroup name in the list.</p> <hr/>
Autoexport command	Enter any command that you want to run after exporting view data for the specified workgroup or workgroups.
Autolaunch views	Select this option to pre-load views for the workgroup or workgroups.
Batch mode	Select this option if you do not want to start the Production and Distribution Planning desktop GUI when auto-exporting data.

5. Click OK.

An auto-launch button is created in the Desktop workspace of the Control Panel. You can double-click this button to begin pre-loading and auto-exporting data.

Starting Pre-Loading and Auto-Exporting Data Using Commands

To start pre-load and auto-export data using a command, do one of the following at a command prompt:

- In Windows, from the `path\scp\8.12\common\start` directory, where *path* is the location where Production and Distribution Planning is installed, enter the following command:

```
run_pdp_control_panel.bat -c path\scp\8.12\pdp\config -b -l runAction StartPdpDesktop
-batch -autoLaunch -wg Default [-command command]
```

- In UNIX, from the *path/scp/8.12/common/start* directory, where *path* is the location where Production and Distribution Planning is installed, enter the following command:

```
./run_pdp_control_panel.sh -c path/scp/8.12/pdp/config -b -l runAction StartPdpDesktop
-batch -autoLaunch -wg Default [-command command]
```

Where:

Parameter	Parameter Function
-c <i>path\scp\8.12\pdp\config</i> in Windows or -c <i>path/scp/8.12/pdp/config</i> in UNIX	The location of the Production and Distribution Planning configuration files, where <i>path</i> is the location where Production and Distribution Planning is installed.
-b	Specifies that the control panel GUI should not start.
-l runAction StartPdpDesktop	Start the PDP Desktop.
-batch	Specifies that the Production and Distribution Planning desktop GUI does not automatically appear on the user's terminal.
-autoLaunch	Specifies that the views open when users start the Production and Distribution Planning desktop.
-wg	Specifies which workgroups to pre-load and auto-export. If you do not specify a -wg parameter, the system automatically pre-loads and auto-exports specified views for all workgroups. Multiple workgroups can be specified with multiple -wg parameters. For example, to pre-load and auto-export data for workgroups called Default, Customer, and ProductionPlanner, include the following parameters: -wg Default -wg Customer -wg ProductionPlanner).
-command <i>command</i>	(Optional) Specifies a command that will be run after each export for each workgroup.

APPENDIX A

Environment Variables

This section describes:

- EnterpriseOne Production and Distribution Planning environment variables.
- Changing environment variables.
- The function of the environment variables.

Production and Distribution Planning Environment Variables

Environment variables specify how Production and Distribution Planning runs in your business environment by stipulating what criteria the solvers will follow when you run a solve. They also determine what features you want to activate. For example you set auto-launch and auto-export using environment variables. Environment variables function in a very similar manner to system options. The difference is that environment variables are set one time before starting Production and Distribution Planning. The value that you set remains valid as long as the application is running. That is, the value you set applies to all of the solves that you run during that session. System options are set before a solve and can be changed before the next solve if you want to change the solve criteria.

Many of the views in Production and Distribution Planning are large and take a long time to open. By setting your environment variables to enable the auto-launch and auto-export feature, which automatically launch views and automatically export data, you can cut back considerably on the time required to open views. This feature allows you to pre-open views in batch mode and export the view information without having to interact with the system. This feature is particularly useful when you need to open a view that contains calculated information that is not stored in the database. The system automatically prepares the information and exports it when the view is ready and the calculations are complete.

You can set system options before each individual solve, which allows you to set different configurations for each solve. You can change system options as many time as you need to during a Production and Distribution Planning session.

Environment variables are usually set in the 3d_env file, which is located in your repository area; but they can be set individually by using an operating system command.

You can change most of the environment variables. Some environment variables should not be changed after installation.

Changing Environment Variables

Environment variables govern the operation of Production and Distribution Planning in your business environment. You can change the value of an environment variable by modifying the configuration file directly or through the Control Panel. The configuration file is named `env.cfg` and is located in the configuration file directory.

To change the value of an environment variable:

1. In the PDP Control Panel, click the System menu.
2. In the Navigation Panel, click the Configuration icon.
3. In the left panel of the Configuration workspace, expand the Configurations folder.
4. Select the Environment folder.
5. Double click an environment variable.
6. In the top pane of the Edit Config Item window, specify a value for the environment variable in the Variable Value field.
7. To save this setting for future sessions, select Save for future sessions.
8. Click OK.

The Function of The Environment Variables

This appendix lists all the EnterpriseOne Production and Distribution Planning environment variables in alphabetical order and explains the function of each variable.

Important! You can change most of the environment variables, however there are some that should not be changed after installation. Refer to the variable descriptions to determine if it is safe to change an environment variable after installation.

LIBPATH

This environment variable specifies the path of the shared library directories on AIX. The `SHLIB_PATH` environment variable is used on HP-UX.

Warning! Do not change this environment variable.

NMXPDP_SSLP_DEPLOY_EARLIEST_PERIOD

When the Supply Planning generates deployments with buckets that are greater than one day, the deployments can arrive in two different, consecutive buckets with no preference as to which bucket arrives first. Use this environment variable to specify the order in which you want the deployments to arrive.

Values are:

- Y — Supply Planning considers higher priority for the deployments arriving in the earliest bucket by assigning a cost to the deployment that is arriving in the later bucket.

- N — Supply Planning considers higher priority for the deployments arriving in the latest bucket by assigning a cost to the deployment that is arriving in the earliest bucket.

The default assigned cost has a low value of 1.

You can change the cost value in the NMXPDP_SSLP_DEPLOY_PENALTY environment variable.

NMXPDP_SSLP_DEPLOY_PENALTY

Use this environment variable to change the cost value when you use the NMXPDP_SSLP_DEPLOY_EARLIEST_PERIOD environment variable.

NMX_3D_EXPORT_PATH

Use this environment variable to specify the path of the /3D_Export/ directory, which contains the information that can be exported to another system or VL.

NMXPDP_IMPORT_PATH

Use this environment variable to specify the path of the /3D_Import/ directory, which contains the information that can be imported into PDP.

NMX_3D_SCRIPTS

This environment variable specifies the path of the /scripts/ directory of the version that is being run.

Warning! Do not change this environment variable.

NMXPDP_TEMP

This environment variable specifies the path of the directory that contains temporary files that are produced when the application is started or shut down.

Warning! Do not change this environment variable.

NMX_ALERT_EXPORT

Use this environment variable to specify the path of the /alert/export/ directory.

NMX_ALERT_LOG

Use this environment variable to specify the path of the /alert/log/ directory.

NMX_ALERT_TMP

Use this environment variable to specify the path of the /alert/tmp/ directory.

NMX_GLOBAL_NSERVER

In a WAN environment, the global name server manages the super name servers, similar to the way that the super name server manages the name servers in a LAN.

If you are using model server proxies, use the name of the machine running the super name server and the model server proxies. If you are not using model server proxies, use the name of the machine running the super name server and the model servers. To set up the host that runs each global name server, set this to the hostname of the machine at the primary site.

NMX_HS_TRACE_WARM

Use this environment variable to specify the level of information that PDP writes to the HS solver trace. Values are:

- 1 — PDP writes an intermediate level of information about the solve to the trace files.
- 2 — PDP writes all of the information about the solve to the trace files. The information includes the values of the CPLEX parameters, which are written to the *runid . userid _Details.txt* file.

NMX_INIT

This environment variable specifies the name of the repository.

Warning! Do not change this environment variable.

NMX_LICENCE_ROOTDIR

This environment variable specifies the path of the license root directory.

Warning! Do not change this environment variable.

NMX_MSG_LOG

This environment variable specifies the path of the log messages.

Warning! Do not change this environment variable.

NMX_MVC_DONOTEXITWITHPARENT

Use the environmental variable to specify the parent text.

NMX_NEED_WINDOW

Use this environment variable to specify whether the windows for the model servers, the MVC network, the solver system, and the visualization tools appear.

NMX_NO_VT_WINDOW

Use this environment variable to specify whether windows for the visualization tools appear.

NMX_NULL_STRING_REPRESENTATION

Use this environment variable to specify how you want null values to display in cells in the view. The default is a blank cell, which displays if you do not define this environment variable.

If you want to specify a text string, such as <null>, define this environment variable as follows:

```
NMX_NULL_STRING_REPRESENTATION= value
```

where value is the text that indicates a null value.

NMXPDP_HS_PRIORITY_UPSTREAM

Use this environment variable to specify the prioritization of forecast demand for the PDP HS solver. Values are:

- Y — The prioritization of forecast demand is higher for upstream (source) locations than for downstream (destination) locations.
- N — The prioritization of forecast demand is higher for downstream locations than for upstream locations.

NMX_PDP_SOLVER_MEMMGR

Use this environment variable to enable or disable the memory manager. Memory manager increases the speed of the system by improving the allocation of memory in SolverServer. Memory manager is enabled when starting SolverServer.

Values are:

- Undefined — The memory manager is enabled by default.
- Y — The memory manager is enabled.
- N — The memory manager is disabled.

NMX_RES

This environment variable specifies the path of the configuration directory that is created when you install PDP and VL. When you start the systems or install a new version, the NMX_RES environment variable is automatically set to the /cfg/ directory of the version that has been run.

Warning! Do not change this environment variable.

NMX_NSERVER_NUMBER

Use this environment variable to specify the number of the name server that PDP and VL are using. You use this environment variable to run multiple name servers on one machine. You can assign a different number to each name server that is started on a machine.

Specify the following value for Windows NT:

0 **xnn** 00

Specify the following value for HP-UX and AIX:

0x2 **xnn** 0000

n is a value between 0 and 9. You must enter one value for each *n* represented. For example, on HP-UX and AIX, you might specify this environment variable as follows:

NMX_NSERVER_NUMBER=0x22570000

NMXPDP_SOLVER_RUN

Use this environment variable to specify the path of the directory where the PDP solvers create output files such as trace, error, warning files, and solve results.

NMX_STAMP_EPATH

This environment variable specifies the path of the system license executable.

Warning! Do not change this environment variable.

NMX_SUPER_NSERVER

The super name server and global name server can run on any host in the network. In addition, the same host can run all three levels of name server. All of the appropriate name servers have to be started before you start any of the model servers.

Some objects might be on different machines. In this case, a name server is on each machine, and a super name server is on a designated machine on the network. Each name server registers itself with the super name server so that the super name server can manage the addresses of all the name servers. In turn, the name servers manage the addresses of their objects. In this way, any object can find any other object.

If you are using model server proxies, the super name server must be running on the same machine as the model server proxies. If you are not using model server proxies, the super name server must be running on the same machine as the model servers.

If you are using model server proxies, use the name of the machine running the super name server and the model server proxies. If you are not using model server proxies, use the name of the machine running the super name server and the model servers.

NMX_VL_EXPORT_PATH

Use this environment variable to specify the path of the directory that contains the VL data that can be exported to PDP.

NMXPDP_FILE_SIZE_LIMIT

Use this environment variable to specify the maximum number of lines that each solver error and warning file can contain. The error and warning files are generated by the solver server. You can set the value of this environment variable to any integer. The default value is 10,000.

NMXPDP_ERRORS_LIMIT

Use this environment variable to specify the maximum number of error and warning messages that the solver server can generate for each error and warning code. You can set the value of this environment variable to any integer. The default is 50.

NMXDRP_SD_ERROR_LEVEL

Use this environment variable to determine if the solver dispatcher writes errors to the error file.

Values are:

- 0 — No information is written to the error file.
- 1 — Errors are written to the error file.

The default value is 1.

NMXPDP_SD_TRACE_LEVEL

Use this environment variable to determine the level of detail contained in the solver dispatcher trace messages written to the Run_SD_Trace file. A larger value captures more detailed information. Values are 0, 1, 2, and 3. The default value is 0.

NMXDRP_SD_WARNING_LEVEL

Use this environment variable to determine if the solver dispatcher writes warning messages to the Run_SD_Warnings file. Values are:

- 0 — No information is written to the file.
- 1 — Warning messages are written to the file.

The default value is 1.

NMXDRP_SS_ERROR_LEVEL

Use this environment variable to specify whether the solver system writes errors to the error file about the DOMA communication between the solver server and other system processes. The error file also contains errors that are related to data transfer from the solver input server to the solver server.

All errors are written to the file `Run_SS_Errors`, in the `/path/Solver_Run/` directory. `Run_SS_Errors` is a text file with fields separated by tabs. The fields are:

- Row number
- Error code
- Error level field (reserved for future use)
- Record ID code (empty)
- Error message

Values are:

- 0 — No information is written to the error file.
- 1 — Errors are written to the error file.

The default is 1.

NMXPDP_SS_PERFORMANCE_LEVEL

Use this environment variable to capture the memory usage and timing of the solver system in the `Run_SS_Performance` file. Values are:

- 0 — No information is captured.
- 1 — The memory usage of the solver system is written to the file.

NMXPDP_SS_TRACE_LEVEL

Use this environment variable to specify the level of information that the solver system writes to the trace file about DOMA communication between the solver server and other system processes. The trace file also contains information about data transfer from the solver input server to the solver server.

All information is written to the trace file `Run_SS_Trace`, in the `/path/Solver_Run/` directory. Values are:

- 0 — No information is written to the trace file.
- 1 — Information about the main messages communicated by and to the solver server is written to the trace file.

The default value is 0.

NMXDRP_SS_WARNING_LEVEL

Use this environment variable to specify whether the solver system writes warnings to the warning file about DOMA communication between the solver server and other system processes. The warning file also contains warnings that are related to data transfer from the solver input server to the solver server.

All warnings are written to the file `Run_SS_Errors`, in the `/path/Solver_Run/` directory. `Run_SS_Errors` is a text file with fields separated by tabs. The fields are:

- Row number
- Warning code
- Warning level field (reserved for future use)
- Record ID code (empty)
- Warning message

Values are:

- 0 — No information is written to the warning file.
- 1 — Warnings are written to the warning file. This is the default.

The default is 1.

NMXPDP_SSCO_TRACE_LEVEL

Use this environment variable to set the trace function within the CONNECT module. These messages are strictly related to the activation of the CO algorithm. The trace file name is `Run_SSCO_run_id>` and is stored in the directory `/path/Solver_Run/`. Values are:

- 0 — No input exists. This is the default.
- 1 — Trace of all the execution steps performed by CONNECT logic. Some log messages indicate only the execution phase while others contain the action and the data processed at that moment.

The default is 0.

NMXPDP_SSDM_TRACE_LEVEL

Use this environment variable to specify the level of information that is written to the trace files regarding the data, which is loaded by the solver server. The trace files are stored in the `/path/Solver_Run/` directory. The valid values for this environment variable are the same as those for the `SOLVER_DATAMODEL_TRACE` system option. The default is 1.

Note. The value of the `SOLVER_DATAMODEL_TRACE` system option overrides the value of the `NMXPDP_SSDM_TRACE_LEVEL` environment variable.

NMXDRP_SSDM_WARNING_LEVEL

Use this environment variable to specify whether warnings are written to the warning file regarding inconsistencies in the data that is loaded by the solver server.

All warnings are written to the file `Run_SSDM_Warnings`, which is in the `/path/Solver_Run/` directory. `Run_SSDM_Warnings` is a text file with fields separated by tabs. The fields are:

- Row number
- Warning code
- Warning level field (reserved for future use)
- Record ID code (contains the key field values of the record for which the warning was generated)
- Warning message

Values are:

- 0 — No information is written to the warning file.
- 1 — Warnings are written to the warning file. This is the default.

The default is 1.

NMXDRP_SSLP_ERROR_LEVEL

Use this environment variable to specify whether errors are written to the error file regarding CPLEX or aborted solves. This environment variable is associated with the Supply Planning.

All errors are written to the file `Run_SSLP_Errors`, in the `/path/Solver_Run/` directory. `Run_SSLP_Errors` is a text file with fields separated by tabs. The fields are:

- Row number
- Error code
- Error level field (reserved for future use)
- Record ID code (empty)
- Error message

Values are:

- 0 — No information is written to the error file.
- 1 — Errors are written to the error file. This is the default.

The default is 1.

NMXPDP_SSLP_TRACE_LEVEL

Use this environment variable to specify the level of information that is written to the trace files about the steps that were taken by the Supply Planning during a solve. The trace files are stored in the `/path/Solver_Run/` directory. The valid values for this environment variable are the same as those for the `SOLVER_LP_TRACE` system option. The default is 1.

Note. The value of the `SOLVER_LP_TRACE` system option overrides the value of the `NMXPDP_SSLP_TRACE_LEVEL` environment variable.

NMXDRP_SSLP_WARNING_LEVEL

Use this environment variable to specify whether warnings are written to the warning file regarding CPLEX or aborted solves. This environment variable is associated with the Supply Planning.

All warnings are written to the file `Run_SSLP_Warnings`, in the `/path/Solver_Run/` directory. `Run_SSLP_Warnings` is a text file with fields separated by tabs. The fields are:

- Row number
- Warning code
- Warning level field (reserved for future use)
- Record ID code (empty)
- Warning message

Values are:

- 0 — No information is written to the warning file.

- 1 — Warnings are written to the warning file. This is the default.

The default is 1.

NMXPDP_SSRE_TRACE_LEVEL

Use this environment variable to log the main steps of the Rounding Engine and all variations of the deployment amounts for each step and sub-step of the algorithm per RE step/location/item/period. Values are:

- 0 — No input exists.
- 1 — Log of the main steps of the Rounding Engine and of all variations of the deployment amounts for each step and sub-step of the algorithm, per RE step/location/item/period.
- 2 — All results from the value 1 plus the log of all variations of the production amounts performed during the second step of the Rounding Engine.
- 3 — All details from value 2, plus details on the reasoning done with rounding reach deployment. More information related with increasing the production in the second step or RE, for example, reasons for failure.
- 4 — All results from value 3, plus the log of all variations of stock deltas caused by the deployment rounding.

The default is 0.

NMNVE

This environment variable specifies the path of the nmnv executable, which is used to find the location of directories for the PDP and VL environment.

Warning! Do not change this environment variable.

NMXPDP_CONSUME_FOR_CLOSED_MFG

This environment variable specifies if the Supply Planning solver will consume materials or resources for an unavailable manufacturing process. If this variable is not set, PDP assumes a value of N.

Values are:

- Y — Supply Planning creates the variable for the mfgProc even when it is unavailable to consume materials and resources for fixed productions and net requirements.
- N — Supply Planning preserves the current behavior and considers fixed PR or NR as inject and does not consume any materials or resources.

The default is N.

NMXPDP_SSRCB_PULL_FWD_DEMAND

Use this environment variable to set the number of days that the RCB demand is pulled forward (moved to earlier RCP periods. If the corresponding system option, RCB_PULL_FWD_DEMAND, is also set, then the System Option value overrides the environment variable value. The default is 0.

NMXPDP_SS_CPXSavFile

Use this environment variable to specify a filename for a solver error file. The solver system will create a binary file of the problem with a .SAV extension.

NMXPDP_SSELP_ON

Use this environment variable to run an LP solve as an external process (64 bit in UNIX platforms). If this variable is set to N, the LP solve will run within the 3dSolverServer process. Values are Y or N. The default value is N.

NMX_NO_VT_WINDOWS

Use this environment variable to enable or disable the visualization tools.

PDP_AUTOEXPORT_INITIAL_INTERVAL

This variable sets the time in minutes that elapses between the startup of the PDP desktop and the auto export of the views that you set up for auto export in the Workgroup view or the Workgroup table. Views set up for auto export continue to be auto exported at the intervals that you set in the Interval field of the Workgroup view or the Workgroup table.

Note. The value for this variable should always be set greater than the time it takes to load the view.

PDP_AUTOEXPORT_PATH

Use this environment variable to specify the directory where the auto export data will be sent.

PDP_AUTOEXPORT_SCRIPTS

Use this environment variable to specify the directory where pre- and postscripts are located for auto export views.

RE_KEEP_LP_NET_REQ

This environment variable allows the Rounding Engine to adjust the value of Net Requirements so that the values are below the Supply Planning results. This avoids negative ending inventories.

Values are:

- Y — Net Requirements values are adjusted so that the values are below the Supply Planning results.
- N — Net Requirements values are not adjusted so that they are below the Supply Planning results.

The default is N.

SHLIB_PATH

This environment variable specifies the path of the shared library directories on HP-UX. The LIBPATH environment variable is used on AIX.

Warning! Do not change this environment variable.

TCL_LIBRARY

This environment variable specifies the path of the directory that stores the Tcl scripts.

Warning! Do not change this environment variable.

TCLLIBPATH

This environment variable specifies the path of the /tcl/ directory of the version that is running.

Warning! Do not change this environment variable.

XAPPLRESDIR

This environment variable specifies the path of the X application resource directory. This environment variable is set on Windows NT only.

Warning! Do not change this environment variable.

XKEYSYMDB

This environment variable specifies the path of the X Key Symbol database. This environment variable is set on Windows NT only.

Warning! Do not change this environment variable.

APPENDIX B

License System Error Messages

This section describes error messages that are generated by the license system.

Log Files

The system generates two security log files: *username*nmxSTAMP.log and *mserver_username*security.log, where *username* is the user who started the model servers. The files are created on the machine where model servers are running, and are generated when someone logs in through the PDP desktop. You can use these files to determine the cause of license errors.

These files are stored in the path specified by the TMPDIR, TMP, TEMP, or HOME environment variables. The system checks these environment variables in this order, and if none of them have been set, the security log files are stored in the current directory.

The nmxSTAMP process, which creates the *username*nmxSTAMP.log file, starts as soon as security license is acquired. You can use the Windows Task Manager to verify that the nmxSTAMP process is running. The nmxSTAMP.log file contains information about updating tokens, date-time stamps, and directory paths. The *pdp_username*security.log file contains information about security processes and licenses. When you receive a security error message, you should review these log files for information about the cause of the error. For example, the cause of the error could be as simple as a misspelled directory path or incorrect directory permissions.

The solver also acquires a licence and creates a log file named *pdp_solver_username*security.log. This log is in the same location as the other licence system logs.

The application also periodically checks that security licenses are valid. The system generates three types of error messages, as follows:

- General error messages, which are the most common error messages generated by the license system.
- Internal error messages, which are usually caused by a problem within the application or the license system.
- Informational error messages, which do not limit the user, but should be investigated nevertheless.

You might get an error message when you do the following:

- Install a new security license.
- Update a security license.
- Start the application.

Error Message	Type	Description/Resolution
NMXSEC001 – Security Failure – Unable to set the license route	General	<p>In most cases, this error message indicates that the .nmxLicenseRoot file cannot be opened or read. The location of this file is specified in the NMX_LICENCE_ROOTDIR environment variable.</p> <p>The installer creates a batch file where NMX_LICENCE_ROOTDIR is set. You might get the NMXSEC001 error message if you launch the application directly, rather than through the batch file.</p> <p>This error message might also indicate that the message log file could not be opened. In this case, a message is sent to the console indicating that there is a directory permission problem.</p> <p>One possible solution is to ensure that the parent directory that contains NMX_LICENCE_ROOTDIR has write permissions.</p>
NMXSEC002 – Security Failure – Unable to set the product name	Internal	<p>This error message indicates that the application is trying to initialize the license system using an unrecognized name.</p> <p>If you receive this error message, contact support.</p>
NMXSEC003 – Security Failure – Unable to get the license information for this product	General	<p>This error message indicates that the license file could not be opened, or its contents could not be decrypted. This is usually caused by one of the following:</p> <ul style="list-style-type: none"> • A license was not installed. • The license was installed, but is corrupted. <p>Reinstalling the license often resolves this problem.</p>

Error Message	Type	Description/Resolution
NMXSEC004 – Security Failure – License information check failed	General	<p>This error message indicates that the license has expired, or that it is invalid because it was moved or edited.</p> <p>Use the License Manager to check the license's expiry date. If the license has expired, contact support to obtain new licenses.</p> <p>If the license has not expired, it has most likely been moved or edited. Reinstalling the license often resolves this problem.</p>
NMXSEC005 – Security Failure – Unable to get another token.	General	<p>This error message indicates that the application has attempted to acquire a new license, but a new token file could not be created. It is likely caused by a file or directory permission problem.</p> <p>Check the security log file for more details, and then ensure that the appropriate directories are valid and have the appropriate write permissions.</p>
NMXSEC007 – Security Failure – Unable to fork nmXSTAMP	General	<p>This error message indicates that the application attempted to obtain a new license, but the nmXSTAMP process could not be started.</p> <p>The installer creates a startup script where NMX_LICENCE_ROOTDIR and NMXSTAMP_EXEPATH are set. If you receive this error message, review this startup script and ensure that these environment variables have been set to valid directories with appropriate write permissions.</p> <p>Also, you might receive the NMXSEC007 error message if you launch the application directly, rather than through the batch file.</p>
NMXSEC008 – Security Failure – Product is already active	Internal	<p>This error message indicates that one license was obtained, but the application attempted to obtain a second one.</p>

Error Message	Type	Description/Resolution
NMXSEC010 – Security Failure – Kill failed	Informational	<p>This error message indicates that the license was released, but the nmXSTAMP process could not be terminated.</p> <p>This error message usually disappears after a few seconds and does not affect the operation of the application.</p>
NMXSEC011 – Security Failure – Can't end – product does not exist	Internal, Informational	<p>This error message indicates that the application attempted to release a license but an unrecognized product name was used.</p>
NMXSEC012 – Security Failure – Can't end – product is invalid	Informational	<p>This error message indicates that a failure occurred when the license was released.</p> <p>This error message usually disappears after a few seconds and does not affect the operation of the application.</p>
NMXSEC013 – Security Failure – Unknown license instance id	Internal	<p>This error message indicates that the application attempted to release a license, but an unrecognized product name was used.</p>
NMXSEC100 – Security Failure – All licenses are in use	Internal	<p>This error message indicates that no licenses are available for the session—that is—the number of users exceeds the number of available licenses.</p> <p>It could also indicate that the application attempted to verify the validity of an outstanding license, but an unrecognized product name was used.</p> <p>To obtain more licenses, contact support.</p>

Error Message	Type	Description/Resolution
NMXSEC101 – Security Failure – File status call failed	General	<p>This error message indicates that the license system could not obtain information on a token file. This is most likely to occur when the license system attempts to verify the validity of a license, but the token file has been deleted.</p> <p>The security system deletes valid token files when an operating system's clock differs from the license system's clock by more than 120 seconds.</p> <p>To resolve this error, synchronize the operating system's clock with the license system's clock.</p>
NMXSEC102 – Security Failure – Update interval exceeded	General	<p>This error message indicates that a token file has expired and the license is no longer valid.</p> <p>If this error message appears repeatedly, contact support.</p>
NMXSEC103 – Security Failure – Token value mismatch	General	<p>This error message indicates that a token file has been invalidated and the license is no longer valid. Token files can become invalid when they are moved or edited.</p> <p>Restarting the application often resolves this problem.</p>
NMXSEC104 – Security Failure – File open failed	General	<p>This error message indicates that an outstanding license is valid, and a token file exists, but could not be opened. It is likely caused by a file or directory permission problem. Review the license system log file for more details, and then ensure that the parent directory which contains the .timing file is valid and editable. (The .timing file is a temporary file that determines the difference between the operating system's clock and the license system's clock).</p>

APPENDIX C

Data Integrity Error Codes

This appendix discusses:

- Viewing integrity error codes.
- Data integrity error code definitions.
- EnterpriseOne Vehicle Loading Integrity Error Codes.

Viewing Integrity Error Codes

When you finish running a data integrity check from the desktop or in batch mode, you can view the reported errors by opening the Integrity Error view. The Integrity Error view lists the tables and fields in which the data integrity checks found an error, the error, and an error code.

Data Integrity Error Code Definitions

The PDP error codes begin with a two-digit prefix with the following definitions:

Error Code Prefix	Definition
CO	Customer order interface
DA	Model data
DN	Distribution network management
FI	Forecast interface
FM	Facility management
IM	Item management
IV	Inventory management
MA	Manufacturing management
PM	Production management
SH	Shipping interface

Error Code Prefix	Definition
SM	System management
WM	Work group management
WO	Work order management

The error codes and their meanings are:

Error Code	Description
CO-111	The shipping location specified in the CustomerOrderItem table is not in the Location table.
CO-114	The item code specified in the CustomerOrderItem table is not in the Item table.
CO-115	The order number specified in the CustomerOrderItem table is not in the CustomerOrder table.
DA-001	At least one of the following is true for the Horizon table: <ul style="list-style-type: none"> • advance_mode is not PERIODIC_ROLL • reserved is not NULL • period1_size to period3_size is NULL
DA-002	At least one of the following is true for the System_Option table: <ul style="list-style-type: none"> • domain_type is not SYSTEM or LOCATION • domain_name is not PDP when domain_type is SYSTEM • domain_name is not a location code when domain_type is LOCATION • system_option is not valid for domain_type PDP • plan_name is not in the PlanRegistry table • value is not valid for option • datatype is NULL
DA-003	The object field specified in the Category table is not PRODUCT or LOCATION.
DA-004	At least one of the following is true for the PlanRegistry table: <ul style="list-style-type: none"> • status is not NULL • status_date is not NULL • author is not NULL • author_comment is not NULL

Error Code	Description
DA-005	At least one of the following is true for the Item table: <ul style="list-style-type: none"> • item_type is not P, G, R, or M or item_type is NULL • composition is not I or G or composition is NULL • consumable is not Y, N, or R • shelf_life_unit is not NULL
DA-006	At least one of the following is true for the Location table: <ul style="list-style-type: none"> • location_type is not DC, PLANT, PLANT_DC, CUSTOMER, SUPPLIER, or NULL • ship_calendar, receive_calendar, or production_calendar is not composed of seven digits of 0 or 1
DA-007	The ship_isopen, receive_isopen, or production_isopen fields in the ExceptionCalendar table do not have a seven-digit value composed of 0s and 1s.
DA-009	At least one of the following is true for the DemandPriority table: <ul style="list-style-type: none"> • component_code is not E, S, B, or M • effective_period < 0 or NULL
DA-010	At least one of the following is true for the LocResCap table: <ul style="list-style-type: none"> • standard_production_cost < 0.0 • min_standard_capacity < 0.0 • max_standard_capacity < min_standard_capacity • min_capacity_penalty < 0.0 • max_premium_capacity < 0.0 • max_premium2_capacity < 0.0 • premium_production_cost < 0.0 • premium2_production_cost is not 0.0.
DA-014	The status field in the Lane table is not 0 or 1.
DA-015	At least one of the following is true for the Sourcing table: <ul style="list-style-type: none"> • percent is not 0 • preference is not 1 • status is not 0 or 1 • policy is not Dynamic
DA-016	In the LaneShipProc table, lead_time < 0 or is NULL.
DA-017	The is_available field in the LaneShipItem table is not Y.

Error Code	Description
DA-018	<p>At least one of the following is true for the LaneShipCap table:</p> <ul style="list-style-type: none"> • min_standard_capacity1 < 0.0 • max_standard_capacity1 < min_standard_capacity1 • min_capacity1_penalty < 0.0 • standard_shipping_cost < 0.0 • premium_shipping_cost < standard_shipping_cost • min_standard_capacity2 < 0.0 • max_standard_capacity2 < min_standard_capacity2 • min_capacity2_penalty < 0.0 • max_premium_capacity1 < 0.0 • max_premium_capacity2 < 0.0
DA-019	<p>At least one of the following is true for the RoleACL table:</p> <ul style="list-style-type: none"> • target_type is not Command, View, or Alert • target_name is not a valid value • role_access is not X or N and target_type is Command • role_access is not R, M, W, or N and target_type is View • role_access is not Y or N and target_type is Alert • configure is not Y or N • system is not PDP
DA-020	The status field in the UserRole is not Y or N.
DA-021	<p>At least one of the following is not true for the Command table:</p> <ul style="list-style-type: none"> • system is not PDP • command is not valid • type is not Solve, Approve, Import, Clear, Check, or Connect
DA-022	The system field in the WorkGroup table is not PDP.
DA-023	The is_active field in the AlertStatus table is not Y or N.
DA-024	The fields reserved1 to reserved3 in the AlertSource table are not NULL.
DA-025	The type field in the SCV_View table is not Admin, System, Model, Data, Report, Group, vl, VL, Scenario Generation, Scenario Management, ProxSearch, Graphical, BUSINESS, Solver, OPSolver, or 3d.

Error Code	Description
DA-026	At least one of the following is true for the HyperLinkMap table: <ul style="list-style-type: none"> • swap_mode is not Y, N, or NULL • match_mode is not EQ, LE, GE, IR, or NULL • reserved is not NULL
DA-027	The idl_type field in the ViewIdl table is not VL, MT, or MS.
DA-028	The review_status field in the Forecast table is NULL or is not Planned, Approved, Rejected, Published.
DA-029	At least one of the following is true for the Shipment table: <ul style="list-style-type: none"> • type is not PLANXFER, INTRANSIT, or NULL • status is not Planned, Approved, Published, or Rejected and type is PLANXFER • review_status is NULL or is not Planned, Approved, Rejected, or Published.
DA-031	The status field in the CustomerOrderItem table is NULL or is not Planned, Approved, Rejected, or Published.
DA-032	The lot_status field in the LotStatus table is NULL or is not Available, Scrap, Onhold, or Expired.
DA-034	At least one of the following is true for the NetReq table: <ul style="list-style-type: none"> • process_name is NULL • fix is not Y or N • status is not Planned, Approved, Rejected, or Published • review_status is not Planned, Approved, Rejected, or Published
DA-035	At least one of the following is true for the Deployment table: <ul style="list-style-type: none"> • ship_window is < 0 or NULL • arrive_window is < 0 or NULL • fix is not Y, N, or NULL • status is not Planned, Approved, Rejected, Published, or NULL • review_status is not Planned, Approved, Rejected, Published, or NULL
DA-036	The alert_status field in the DeployOrderAlert table is not ACTIVE, INACTIVE, CHECKED, or NULL.

Error Code	Description
DA-037	<p>At least one of the following is true for the SolveStatus table:</p> <ul style="list-style-type: none"> • import is not Y, N, or NULL • purge is not all, plan, item, none, or NULL.
DA-038	<p>At least one of the following is true for the ItemFacility table:</p> <ul style="list-style-type: none"> • location_code is not in the Location table • item_code is not in the item_table • ship_calendar, receive_calendar, or production_calendar is not composed of seven 1s and 0s
DA-039	<p>At least one of the following is true for the ItemExceptionCalendar table:</p> <ul style="list-style-type: none"> • location_code is not in the Location table • item_code is not in the Item table • ship_isopen, receive_isopen, or production_isopen is not 0 or 1
DA-040	<p>At least one of the following is true for the ProductSubstitute table:</p> <p>location_code is not in the Location table</p> <ul style="list-style-type: none"> • product_code or substitute is not in the Item table • ratio is < 0 or NULL • preference is NULL • transfer_demand is not Y or N • reserved is not NULL
DA-047	<p>At least one of the following is true for the InventoryBalance table:</p> <ul style="list-style-type: none"> • safety_percentage is not between 0.0 and 100 • effective_demand_percentage is not between 0.0 and 100
DA-048	<p>At least one of the following is true for the SafetyCover table:</p> <ul style="list-style-type: none"> • plan_name is not in the PlanRegistry table • location_code is not in the Location table • item_code is not in the Item table • effective_date, safety_qty, or downstream_qty is NULL
DA-049	The min_shelf_life field in the CodeAge table is NULL.

Error Code	Description
DA-050	The item_type field in the SupplyPolicyType table is not P, M, or D.
DA-051	The mfg_lead_time_type field in the SupplyPolicyType table is not F, V, or C.
DA-052	The order_policy field in the SupplyPolicyNewOrder table is not L, F, or D.
DA-053	The firm field in the PurchaseOrder table is not Y or N.
DA-054	The status field in the PurchaseOrder table is not Planned or Approved.
DA-055	The type field in the SupplyOutput table is not SI, PDO, PNR, DEP, CO, FO, (CO), (FO), EFF, PO, PX, PR, IT, NPO, NPR, NDO, SAF, or BLD.
DA-056	The action code specified in the SupplyOutput table is not Order, Defer, Expedite, Cancel, Firm, or left blank.
DA-057	In the InventoryPolicyMaximum table, the value for maximum_policy is not Y, N or M.
DA-058	In the InventoryPolicyMaximum table, the value for maximum_level < 0.0 and the value for maximum_policy = N.
DA-059	In the InventoryPolicyMaximum table, the value for maximum_coverage < 0.0 and the value for maximum_policy = Y.
DA-060	In the InventoryPolicyMaximum table, the value for maximum_level < 0.0 or maximum_coverage < 0.0 and the value for maximum_policy = M.
DA-061	In the InventoryPolicyBuild table, the value for build_level < 0.0.
DA-062	In the InventoryPolicySafety table, the value for safety_policy is not Y, N, or M.
DA-063	In the InventoryPolicySafety table, the value for safety_level < 0.0 and the value for safety_policy = N.
DA-064	In the InventoryPolicySafety table, the value for safety_coverage < 0.0 and the value for safety_policy = Y.
DA-065	In the InventoryPolicySafety table, the value for safety_level and safety_coverage should be positive if safety_policy=M.
DA-066	If the value of the fix field in the Shipment table is not either Y or N, you receive this error code.

Error Code	Description
DA-100	In the SupplyPolicyType table, item_type is not P, M., or D
DN-060	The origin_loc_code specified in the Lane table is not in the Location table.
DN-061	In the LaneShipProc table, DAY_status is not O or C, where DAY can take the following values: <ul style="list-style-type: none"> • monday • tuesday • wednesday • thursday • friday • saturday • sunday
DN-063	The lane_code specified in the Sourcing table is not in the Lane table.
DN-064	The item_code specified in the Sourcing table is not in the Item table.
DN-065	The destination_loc_code specified in the Lane table is not in the Location table.
DN-066	The lead_time specified in the LaneShipProc table is empty.
DN-067	The lane_code specified in the LaneShipProc table is not in the Lane table.
DN-068	The item_code specified in the LaneShipItem table is not in the Item table.
DN-069	The lane_code specified in the LaneShipItem table is not in the Lane table.
DN-070	The item_code and lane_code specified in the LaneShipItem table are not in the Sourcing table.
DN-071	The transport_mode and lane_code specified in the LaneShipItem table are not in the LaneShipProc table.
DN-072	The lane_code specified in the LaneShipCap table is not in the Lane table.
DN-073	The lane_code and transport_mode specified in the LaneShipCap table are not in the LaneShipProc table.
DN-076	max_standard_capacity1 < min_standard_capacity1 in the LaneShipCap table.

Error Code	Description
DN-077	The lane_code specified in the DeployReviewCalendar table is not in the Lane table.
DN-078	The location_code specified in the LocationCategory table is not in the Location table.
DN-079	The lane_code and transport_mode specified in the LaneShipExceptionCalendar table are not in the LaneShipProc table.
DN-080	The exception_status field in the LaneShipExceptionCalendar table is not O or C.
FI-101	The location_code specified in the Forecast table is not in the Location table.
FI-102	The item_code specified in the Forecast table is not in the Item table.
FI-103	The product_code specified in the ForecastProfile table is not in the Item table.
FI-104	The location_code specified in the ForecastProfile table is not in the Location table.
FM-001	The location_code specified in the ExceptionCalendar table is not in the Location table.
FM-002	The origin_loc_code specified in the Lane table is not in the Location table.
FM-003	The destination_loc_code specified in the Lane table is not in the Location table.
FM-010	The origin_loc_code specified in the Lane table is the same as the destination_loc_code specified in the Lane table. This situation might not be an error because it is not item-specific. For example, the error might be triggered incorrectly if you have Item1 going from LocationA to LocationB, and Item2 going from LocationB to LocationA. Review the situation to determine if it is an error.
FM-012	The location_type specified in the Location table is not one of DC, PLANT, PLANT_DC, CUSTOMER, or SUPPLIER.
IM-020	Circular reference check for the ItemGroup table. Group A cannot be part of Group B, and Group B cannot be part of Group A.
IM-021	The parent_code specified in the ItemGroup table is not in the Item table.

Error Code	Description
IM-022	The child_code specified in the ItemGroup table is not in the Item table.
IM-023	The product specified in the UnitConversion table is not in the Item table and does not have a value of STANDARD.
IM-024	The composition specified in the Item table does not have a value of G and is used in the ItemGroup table as a parent.
IM-025	The item_type specified in the Item table is not one of P, R, M, or G.
IM-026	The value for the consumable field specified in the Item table is not one of Y, N, or R.
IM-027	At least one of the following is true for the InventoryPolicyMaster table: <ul style="list-style-type: none"> FC_rule is not ORDER, FORECAST, SUM, or GREATER or a supported combination of two separated by a hyphen FC_rule_timefence is NULL
IM-031	The category specified in the ItemCategory table is not in the Category table.
IM-032	The item_code specified in the ItemCategory table is not in the Item table.
IM-033	The category_name specified in the LocationCategory table is not in the Category table.
IV-041	The location_code in the LotStatus table is not in the Location table.
IV-042	The item_code in the LotStatus table is not in the Item table.
IV-045	The location_code specified in the InventoryPolicy table is not in the Location table.
IV-050	The location_code specified in the StorageTypeCap table is not in the Location table.
IV-053	The minimum standard capacity exceeds the maximum standard capacity in the StorageTypeCap table.
IV-054	The standard storage cost exceeds the premium storage cost in the StorageTypeCap table.
IV-060	The location_code specified in the StorageType table is not in the Location table.

Error Code	Description
IV-061	The location_code and item_code specified in the StorageTypeCap table is not in the StorageType table.
IV-062	The item_code specified in the SafetyNetLoc table is not in the Item table.
IV-063	The location_code specified in the SafetyNetLoc table is not in the location table.
IV-064	The safety_location specified in the SafetyNetLoc table is not in the Location table.
IV-070	The mfg_date specified in the LotStatus table is earlier than the earliest effective_date in the InventoryPolicyMaximum table for the location and product combination.
IV-071	The mfg_date specified in the LotStatus table is earlier than the earliest effective_date in the InventoryPolicyBuild table for the location and product combination.
IV-072	The mfg_date specified in the LotStatus table is earlier than the earliest effective_date in the InventoryPolicySafety table for the location and product combination.
IV-073	The mfg_date specified in the LotStatus table is earlier than the earliest effective_date in the InventoryPolicyStorage table for the location and product combination.
IV-076	The location_code specified in the InventoryPolicyMaster table is not in the Location table.
IV-077	The location_code specified in the InventoryPolicyMaximum table is not in the Location table.
IV-078	The location_code specified in the InventoryPolicyBuild table is not in the Location table.
IV-079	The location_code specified in the InventorPolicySafety table is not in the Location table.
IV-080	The location_code specified in the InventoryPolicyStorage table is not in the Location table.
IV-083	The item_code specified in the InventoryPolicyMaster table is not in the Item table.
IV-084	The item_code specified in the InventoryPolicyMaximum table is not in the Item table.
IV-085	The item_code specified in the InventoryPolicyBuild table is not in the Item table.

Error Code	Description
IV-086	The item_code specified in the InventoryPolicySafety table is not in the Item table.
IV-087	The item_code specified in the InventoryPolicyStorage table is not in the Item table.
IV-090	The location_code specified in InventoryPolicyMaximum table is not in the InventoryPolicyMaster table.
IV-091	The location_code specified in InventoryPolicyBuild table is not in the InventoryPolicyMaster table.
IV-092	The location_code specified in InventoryPolicySafety table is not in the InventoryPolicyMaster table.
IV-093	The location_code specified in InventoryPolicyStorage table is not in the InventoryPolicyMaster table.
IV-094	The location_code specified in InventoryPolicyPurchase table is not in the InventoryPolicyMaster table.
IV-095	The location_code specified in InventoryPolicyPick table is not in the InventoryPolicyMaster table.
IV-096	The item_code specified in InventoryPolicyMaximum table is not in the InventoryPolicyMaster table.
IV-097	The item_code specified in InventoryPolicyBuild table is not in the InventoryPolicyMaster table.
IV-098	The item_code specified in InventoryPolicySafety table is not in the InventoryPolicyMaster table.
IV-099	The item_code specified in InventoryPolicyStorage table is not in the InventoryPolicyMaster table.
IV-100	The item_code specified in InventoryPolicyPurchase table is not in the InventoryPolicyMaster table.
IV-101	The item_code specified in InventoryPolicyPick table is not in the InventoryPolicyMaster table.
MA-001	There is a mfg_operation_code, which is associated with more than one item type=DURATION_RESOURCE. This applies to the MfgOperationBOMR table.
MA-002	A code from MfgOperation is associated with an mfg_operation_code from the MrgOperationsBOMR table, which has item_types ITEM or PRIMARY_OUTPUT, but does not have an item_type DURATION_RESOURCE.

Error Code	Description
MA-003	A code from the MfgOperation table is associated with an mfg_operation_code from the MfgOperationBOMR table which has more than one item_type with the value PRIMARY_OUTPUT.
MA-004	In the MfgOperationBOMR table, quantity <= 0 for item_type PRIMARY_OUTPUT or CO-PRODUCT.
MA-005	At least one of the following is true for MfgOperationBOMR table: start_date is after (>) end_date yield is not in [0.0, 1.0] interval scrap is not in [0.0, 1.0] interval
MA-006	At least one of the following is true for MfgOperation table: <ul style="list-style-type: none"> • minimum_run_quantity > maximum_run_quantity • minimum_run_time > maximum_run_time • minimum_run_quantity < 0.0 • maximum_run_quantity < 0.0 • minimum_run_time < 0.0 • maximum_run_time < 0.0
MA-007	At least one of the following is true for LocMfgTimeshift table: timeshift_hours < 0.0 timeshift_hours > 24.0
MP-001	The location code specified in the SupplyPolicyMaster table is not in the Location table.
MP-002	The location code specified in the SupplyPolicyType table is not in the Location table.
MP-003	The location code specified in the SupplyPolicyNewOrder table is not in the Location table.
MP-004	The location code specified in the PurchaseOrder table is not in the Location table.
MP-005	The location code specified in the SupplyOutput table is not in the Location table.
MP-006	The item code specified in the SupplyPolicyMaster table is not in the Item table.
MP-007	The item code specified in the SupplyPolicyType table is not in the Item table.

Error Code	Description
MP-008	The item code specified in the SupplyPolicyNewOrder table is not in the Item table.
MP-009	The item code specified in the PurchaseOrder table is not in the Item table.
MP-010	The item code specified in the SupplyOutput table is not in the Item table.
PM-083	The item_code specified in the LocResCap table is not in the Item table.
PM-084	The location_code specified in the LocResCap table is not in the Location table.
PM-085	The capacity1_unit specified in the LocResCap table is not in the UnitConversion table.
PM-087	max_standard_capacity1 < min_standard_capacity1 in the LocResCap table.
PM-088	max_premium_capacity < max_standard_capacity in the LocResCap table OR max_premium_capacity < min_standard_capacity in the LocResCap table.
PM-089	The item_code specified in the BOMR table is not in the Item table.
PM-090	The product_code specified in the BOMR table is not in the Item table.
PM-091	The product_code specified in the BOMR table is the same as the item_code specified in the BOMR table.
PM-093	The location_code specified in the BOMR table is not in the Location table.
SH-123	The transport_mode specified in the Shipment table is inconsistent with the transport_mode in LaneShipCap for a shipment that has the same origin and destination location as the corresponding record in the Lane table.
SH-124	The type specified in the Shipment table is not PLANXFER or INTRASIT.
SH-128	The shipment_number specified in the ShipmentItem table is not in the Shipment table.
SH-129	The item_code specified in the ShipmentItem table is not in the Item table.
SM-002	The source_view specified in the HyperLink table is not in the SCV_View table.

Error Code	Description
SM-003	The target_view specified in the HyperLink table is not in the SCV_View table.
SM-004	The source_view specified in the HyperLinkMap view is not in the SCV_View table.
SM-005	The name specified in the AlertSourceView table is not in the SCV_View table.
SM-006	The name specified in the AlertSource table is not in the AlertSourceView table.
WM-001	The name specified in the WorkGroupView table is not in the WorkGroup table.
WM-002	The view_name specified in the WorkGroupView table is not in the SCV_View table.
WM-003	The user in the UserRegistry table has a workgroup /role/system that does not match with any entry in the WorkGroupRole table.
WM-004	The user_id specified in the UserRole table is not in the UserRegistry table.
WM-005	The system and alert_type combination specified in the WorkGroupAlert table is not in the SystemAlert table.
WM-006	The system and workgroup specified in the WorkGroupAlert table is not in the WorkGroup table.
WO-001	At least one of the following is true for WorkOrder table: quantity != 0.0 for type MAINTENANCE quantity != 0.0 for type ENGINEERING_CHANGE
WO-002	At least one of the following is true for WorkOrder table: creation_date: hours or minutes or seconds are not 00 requested_date: hours or minutes or seconds are not 00 start_date: hours or minutes or seconds are not 00 completioid_date: hours or minutes or seconds are not 00 That is, the date fields should have the time set to 00: 00: 00
WO-003	The following is true for WorkOrder and WorkOrderOperations tables. A work order has the status "Open" or "Active", but the corresponding last operation in WorkOrderOperations has the status "Closed". Note: This error type serves as a warning.

Error Code	Description
WO-004	<p>The following is true for WorkOrder and WorkOrderOperations tables.</p> <p>Completion date from WorkOrder is different from request date of the corresponding last operation in WorkOrderOperations.</p> <p>Request date from the last operation of WorkOrderOperations is determined in one of the following ways:</p> <ul style="list-style-type: none"> • If Actual Finish Date is set, it will be the request date • If Planned Finish Date is set, it will be the request date • Use the value of the Request Date (in WorkOperationOrders)
WO-005	In the WorkOrder table, the item_code is empty or doesn't match any record in Item table.

EnterpriseOne Vehicle Loading Integrity Error Codes

The VL error codes begin with a two-digit prefix with the following meanings:

Error Code Prefix	Meaning
VLDA	Data type and content of fields in the VL data model. They are generated if errors are found after running the All or Model data integrity checks.
VLED	Vehicle Loading external data. They are generated if errors are found after running the All or External Interface data integrity checks.
VLDM	Vehicle Loading data model. They are generated if errors are found after running the All or Network data integrity checks.

The VL error codes and their meanings are as follows:

VL Error Code	Description
VLDA-001	<p>At least one of the following is true for the specified item_code in the VL_Item table:</p> <ul style="list-style-type: none"> VL_grab_size < 0 VL_grab_size_min > VL_grab_size spots_used < 1 stackable is not 0 or 1 foot_print < 1
VLDA-002	<p>In the VL_Horizon table for the location, the VL_horizon_start value is less than 0 or the VL_horizon value is less than 1.</p>
VLDA-003	<p>At least one of the following is true for the specified vehicle type code in the VehicleType table:</p> <ul style="list-style-type: none"> products_per_vehicle_min < 1 or products_per_vehicle_max < products_per_vehicle_min spots_capacity < 0 or spots_capacity_floor < 0 spots_usage_max < spots_usage_min or spots_usage_min < 0 volume_usage_max < volume_usage_min or volume_usage_min < 0 weight_usage_max < weight_usage_min or weight_usage_min < 0
VLDA-005	<p>For the specified carrier_code and location_code in the Carrier_Location table, the as_destination or as_origin field does not contain a value of Y or N.</p>
VLDA-006	<p>For the specified carrier_code, lane_code, and vehicleType_code in the ShippingCost table, the cost is less than 1 or the time is less than 0.</p>
VLDA-007	<p>For the specified carrier_code, lane_code, vehicleType_code, and travelling_date in the VehicleCommitment table, the number of vehicles is less than 0.</p>
VLDA-008	<p>At least one of the following is true for the specified order number in the VL_Order table:</p> <ul style="list-style-type: none"> ship_window is not 0 arrive_window is not 0 highest_priority is not 0 pull_forward < 0

VL Error Code	Description
VLDA-009	At least one of the following is true for the specified order number and item code in the VL_OrderItem table: <ul style="list-style-type: none"> • quantity_max < quantity_min or quantity_min < 0 • over_cost < 0 or under_cost < 0
VLDA-010	For the specified load number in the VehicleLoad table, the fixed or reserved_vehicle field does not contain Y or N as the value.
VLDA-011	At least one of the following is true for the specified option_name in the System_Option table: <ul style="list-style-type: none"> • domain_type is not SYSTEM or LOCATION • plan_name VL • datatype is not NULL
VLDA-012	At least one of the following is true for the specified command in the Command table: <ul style="list-style-type: none"> • system is not 3D or VL • type is not Solve, Approve, Import, Clear, Check, or Connect • invalid combination of system and command
VLDM-001	The code specified in the VL_Horizon table is not in the Location table.
VLDM-002	The item code specified in the VL_Item table is not in the Item table.
VLDM-003	The volume capacity unit specified in the VehicleType table is not in the UnitConversion table.
VLDM-004	The weight capacity unit specified in the VehicleType table is not in the UnitConversion table.
VLDM-005	The vehicle type code specified in the Carrier_VehicleType table is not in the VehicleType table.
VLDM-006	The carrier code specified in the Carrier_VehicleType table is not in the Carrier table.
VLDM-007	The carrier code specified in the Carrier_Location table is not in the Carrier table.
VLDM-009	The carrier code specified in the ShippingCost table is not in the Carrier table.
VLDM-010	The vehicle type code specified in the ShippingCost table is not in the VehicleType table.

VL Error Code	Description
VLDM-011	The lane code specified in the ShippingCost table is not in the Lane table.
VLDM-012	The carrier code specified in the VehicleCommitment table is not in the Carrier table.
VLDM-013	The vehicle type code specified in the VehicleCommitment table is not in the VehicleType table.
VLDM-014	The lane code specified in the VehicleCommitment table is not in the Lane table.
VLDM-015	The location code specified in the Location_VehicleType table.
VLDM-016	The vehicle type code specified in the Location_VehicleType table is not in the VehicleType table.
VLDM-017	The item code specified in the Item_VehicleType table is not in the Item table.
VLDM-018	The vehicle type code specified in the Item_VehicleType table is not in the VehicleType table.
VLDM-019	The source item code specified in the Item_Item table is not in the Item table.
VLDM-020	The target item code specified in the Item_Item table is not in the Item table.
VLED-001	The destination location code specified in the VL_Order table is not in the Location table.
VLED-002	The origin location code specified in the VL_Order table is not in the Location table.
VLED-003	The order number specified in the VL_OrderItem table is not in the VL_Order table.
VLED-004	The item code specified in the VL_OrderItem table is not in the Item table.
VLED-005	The destination location code specified in the VehicleLoad table is not in the Location table.
VLED-006	The origin location code specified in the VehicleLoad table is not in the Location table.
VLED-007	The vehicle type code specified in the VehicleLoad table is not in the VehicleType table.
VLED-008	The load number specified in the VehicleLoadItem table is not in the VehicleLoad table.

VL Error Code	Description
VLED-009	The quantity unit specified in the VL_OrderItem table is not in the UnitConversion table.
VLED-010	The item code specified in the VehicleLoadItem table is not in the Item table.
VLED-011	The order number specified in the VehicleLoadItem table is not in the VL_Order table.
VLED-012	The quantity unit specified in the VehicleLoadItem table is not in the UnitConversion table.
VLED-013	The lane code specified in the VehicleLoadItem table is not in the Lane table.
VLED-014	The lane code specified in the VehicleLoad table is not in the Lane table.

APPENDIX D

System Alerts

This appendix provides an overview of system alerts and discusses the following alerts:

- Inventory Status
- External Interface
- Solve Results
- Utilization
- Vehicle Alerts and Order Alerts Used in Vehicle Loading
- Below Balance Factor

Understanding System Alerts

A system alert is a message that Production and Distribution Planning generates in real-time to warn the appropriate users of relevant changes to Production and Distribution Planning data. For example, if inventory levels fall below the desired safety stock level, Production and Distribution Planning immediately generates a system alert. If the VL solver uses premium transportation capacity, which is typically more expensive than standard transportation capacity, Production and Distribution Planning immediately generates a VL system alert to warn you.

System alerts appear in the Alert view that uses a special tool to display system alerts. When you view a system alert, you can quickly display the data that triggered the system alert, determine the source of the problem, and take the appropriate action to rectify the situation. You can move from system alerts to views, and between views using drill-downs.

All system alerts are shipped with the Production and Distribution Planning system. They are divided into different categories, based on their function. Alerts are generated for both products and materials.

Inventory Status System Alerts

This section discusses inventory status system alerts. System alerts are calculated as shown in the formula:

Projected inventory = Beginning inventory + Future Inventory + Production ± In-transits ± Planned transfers ± Deployments - Effective demand.

An inventory status view and its related category view produce the same system alerts if either or both are open. For example, the Inventory Status Chart, Inventory Status, and Inventory Status Product Category reports all produce the same system alerts whether one or all of them are open. If you open an inventory status view and its related category view, and close only one of them, the associated system alerts are still displayed, and the source view for the system alerts is listed as the view that you opened first.

InvAboveMax System Alert

Production and Distribution Planning generates the InvAboveMax system alert when the inventory quantity is above the maximum quantity. It is a priority 4 system alert with the following definition:

Projected Inventory > Maximum

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Chart	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Product Category	Inventory Status
Inventory Status Product Substitute	Inventory Status
Storage Utilization	Inventory Status

InvBelowBuild System Alert

Production and Distribution Planning generates the InvBelowBuild system alert when the inventory quantity is below the build quantity. It is a priority 3 system alert with the following definition:

Projected Inventory = Safety AND Projected Inventory < Build

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Chart	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Product Category	Inventory Status

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Substitute	Inventory Status
Storage Utilization	Inventory Status

InvBelowSafety System Alert

Production and Distribution Planning generates the InvBelowSafety system alert when the inventory quantity is below the safety stock quantity. It is a priority 2 system alert with the following definition:

Projected Inventory = 0.0 AND Projected Inventory < Safety

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Chart	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Product Category	Inventory Status
Inventory Status Product Substitute	Inventory Status
Storage Utilization	Inventory Status

InvBelowZero System Alert

Production and Distribution Planning generates the InvBelowZero system alert when the inventory quantity is below zero. It is a priority 1 system alert with the following definition:

Projected Inventory < 0.0

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Chart	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Product Category	Inventory Status

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Substitute	Inventory Status
Storage Utilization	Inventory Status

LocationCategoryInvAboveMaxDetail System Alert

Production and Distribution Planning generates the LocationCategoryInvAboveMaxDetail system alert when the inventory quantity is above the maximum quantity. It is a priority 4 system alert with the following definition:

Projected Inventory > Maximum

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Location Category	Inventory Status Location Category (detail records)

LocationCategoryInvAboveMaxSummary System Alert

Production and Distribution Planning generates the LocationCategoryInvAboveMaxSummary system alert when the total inventory quantity for the category is above the maximum quantity. It is a priority 4 system alert with the following definition:

Projected Inventory for the Category > Maximum

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Location Category	Inventory Status Location Category (summary records)

LocationCategoryInvBelowBuildDetail System Alert

Production and Distribution Planning generates the LocationCategoryInvBelowBuildDetail system alert when the inventory quantity is below the build quantity. It is a priority 3 system alert with the following definition:

Projected Inventory = Safety AND Projected Inventory < Build

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Location Category	Inventory Status Location Category (detail records)

LocationCategoryInvBelowBuildSummary System Alert

Production and Distribution Planning generates the LocationCategoryInvBelowBuildSummary system alert when the total inventory quantity for the category is below the build quantity. It is a priority 3 system alert with the following definition:

Projected Inventory for the Category = 0.0 AND Projected Inventory < Build

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Location Category	Inventory Status Location Category (summary records)

LocationCategoryInvBelowSafetyDetail System Alert

Production and Distribution Planning generates the LocationCategoryInvBelowSafetyDetail system alert when the inventory quantity is below the safety stock quantity. It is a priority 2 system alert with the following definition:

Projected Inventory = 0.0 AND Projected Inventory < Safety

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Location Category	Inventory Status Location Category (detail records)

LocationCategoryInvBelowSafetySummary System Alert

Production and Distribution Planning generates the LocationCategoryInvBelowSafetySummary system alert when the total inventory quantity for the category is below the safety stock quantity. It is a priority 2 system alert with the following definition:

Projected Inventory for the Category = 0.0 AND Projected Inventory for the Category < Safety

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Location Category	Inventory Status Location Category (summary records)

LocationCategoryInvBelowZeroDetail Safety Alert

Production and Distribution Planning generates the LocationCategoryInvBelowZeroDetail system alert when the inventory quantity is below zero. It is a priority 1 system alert with the following definition:

Projected Inventory < 0.0

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Location Category	Inventory Status Location Category (detail records)

LocationCategoryInvBelowZeroSummary System Alert

Production and Distribution Planning generates the LocationCategoryInvBelowZeroSummary system alert when the total inventory quantity for the category is below zero. It is a priority 1 system alert with the following definition:

Projected Inventory for the Category < 0.0

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Location Category	Inventory Status Location Category (summary records)

ProductCategoryInvAboveMaxDetail System Alert

Production and Distribution Planning generates the ProductCategoryInvAboveMaxDetail system alert when the inventory quantity is above the maximum quantity. It is a priority 4 system alert with the following definition:

Projected Inventory > Maximum

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Category	Inventory Status Product Category (detail records)

ProductCategoryInvAboveMaxSummary System Alert

Production and Distribution Planning generates the ProductCategoryInvAboveMaxSummary system alert when the total inventory quantity for the category is above the maximum quantity. It is a priority 4 system alert with the following definition:

Projected Inventory for the Category > Maximum

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Category	Inventory Status Product Category (summary records)

ProductCategoryInvBelowBuildDetail System Alert

Production and Distribution Planning generates the ProductCategoryInvBelowBuildDetail system alert when the inventory quantity is below the build quantity. It is a priority 3 system alert with the following definition:

Projected Inventory = Safety AND Projected Inventory < Build

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Category	Inventory Status Product Category (detail records)

ProductCategoryInvBelowBuildSummary System Alert

Production and Distribution Planning generates the ProductCategoryInvBelowBuildSummary system alert when the total inventory quantity for the category is below the build quantity. It is a priority 3 system alert with the following definition:

Projected Inventory for the Category = 0.0 AND Projected Inventory < Build

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Category	Inventory Status Product Category (summary records)

ProductCategoryInvBelowSafetyDetail System Alert

Production and Distribution Planning generates the ProductCategoryInvBelowSafetyDetail system alert when the inventory quantity is below the safety stock quantity. It is a priority 2 system alert with the following definition:

Projected Inventory = 0.0 AND Projected Inventory < Safety

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Category	Inventory Status Product Category (detail records)

ProductCategoryInvBelowSafetySummary System Alert

Production and Distribution Planning generates the ProductCategoryInvBelowSafetySummary system alert when the total inventory quantity for the category is below the safety stock quantity. It is a priority 2 system alert with the following definition:

Projected Inventory for the Category = 0.0 AND Projected Inventory for the Category < Safety

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Category	Inventory Status Product Category (summary records)

ProductCategoryInvBelowZeroDetail System Alert

Production and Distribution Planning generates the ProductCategoryInvBelowZeroDetail system alert when the inventory quantity is below zero. It is a priority 1 system alert with the following definition:

Projected Inventory < 0.0

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Category	Inventory Status Product Category (detail records)

ProductCategoryInvBelowZeroSummary System Alert

Production and Distribution Planning generates the ProductCategoryInvBelowZeroSummary system alert when the total inventory quantity for the category is below zero. It is a priority 1 system alert with the following definition:

Projected Inventory for the Category < 0.0

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Category	Inventory Status Product Category (summary records)

ProductExpiration1 System Alert

Production and Distribution Planning generates the ProductExpiration1 system alert when the remaining shelf life is less than the number of days that is specified in the Expiration Alert Level 1 field in the Item Master view. It is a priority 1 system alert with the following definition:

Days to Expire < Expiration Alert Level 1

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Beginning Inventory	Beginning Inventory
Product Shelf Life Chart	Beginning Inventory

ProductExpiration2 System Alert

Production and Distribution Planning generates the ProductExpiration2 system alert when the remaining shelf life is less than the number of days that is specified in the Expiration Alert Level 2 field in the Item Master view. It is a priority 2 system alert with the following definition:

Days to Expire < Expiration Alert Level 2 AND Days to Expire = ExpirationAlert Level 1

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to which You Navigate from the Alert View
Beginning Inventory	Beginning Inventory
Product Age Chart	Beginning Inventory

External Interface System Alerts

External interface system alerts generated by data contained in PDP views. The following alerts are available:

Alert Family	Alerts
Forecast Alerts	UnderForecast, OverForecast, MissedForecast
Customer Order Alerts	ArriveDateEarlierThanShipDate_CO
In-Transit Alerts	LateInTransit
Planned Transfer Alerts	LatePlanXfer

Alert Family	Alerts
Connect Alerts	ManuSourceLocationChanged, ShipSourceLocationChanged
VL Order Alerts	VehicleLoadOrderNotLoaded, VehicleLoadBelowOrderQty, VehicleLoadAboveOrderQty

UnderForecast System Alert

PDP generates the UnderForecast system alert when the customer order quantities are greater than forecast by 20 percent or higher. It is a priority 5 system alert with the following definition:

Customer Order > Forecast × 1.20

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Product Category	Inventory Status Product Category
Inventory Status Location Category	Inventory Status Location Category
Inventory Status Chart	Inventory Status
Storage Utilization	Inventory Status
Inventory Status Product Substitute	Inventory Status
Transportation Utilization	Inventory Status

OverForecast System Alert

PDP generates the OverForecast system alert when the customer order quantities are less than forecast by 20 percent. It is a priority 5 system alert with the following definition:

Customer Order < Forecast × 0.80

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Chart	Inventory Status
Inventory Status Location Category	Inventory Status

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status Product Category	Inventory Status
Inventory Status Product Substitute	Inventory Status
Storage Utilization	Inventory Status
Transportation Utilization	Inventory Status

MissedForecast System Alert

PDP generates the MissedForecast system alert when no forecast has been entered for an item that has orders. It is a priority 5 system alert with the following definition:

(Customer Orders > 0) AND (Forecast ≤ 0)

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Product Category	Inventory Status Product Category
Inventory Status Location Category	Inventory Status Location Category
Inventory Status Chart	Inventory Status
Storage Utilization	Inventory Status
Inventory Status Product Substitute	Inventory Status

ArriveDateEarlierThanShipDate_CO

PDP generates the ArriveDateEarlierThanShipDate_CO system alert when the arrive date of a customer order is earlier than the ship date. It is a priority 3 system alert with the following definition:

Ship Date > Arrive Date

The Order Entry and Customer Order views contain the data that triggers the system alert.

LateInTransit System Alert

PDP generates the LateInTransit system alert when the current date is later than the planned arrival date of an in transit shipment. It is a priority 2 system alert with the following definition:

Planned Arrive Date < Current Date

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Chart	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Product Category	Inventory Status
Inventory Status Product Substitute	Inventory Status
Storage Utilization	Inventory Status
Transportation Utilization	Inventory Status

LatePlanXfer System Alert

PDP generates the LatePlanXfer system alert when the current date is later than the planned arrival date or planned ship date of a planned transfer. It is a priority 3 system alert with the following definition:

Planned Arrival Date < Current Date OR Planned Ship Date < Current Date

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Chart	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Product Category	Inventory Status
Inventory Status Product Substitute	Inventory Status
Storage Utilization	Inventory Status
Transportation Utilization	Inventory Status

ManuSourceLocationChanged System Alert

PDP generates the ManuSourceLocationChanged system alert when the Connect algorithm connects a customer order with a different source location from the location to which it was originally set. It is a priority 2 system alert with the following definition:

Source Location = New Source Location

The following view contains the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Order Manufacturing Allocation	Order Manufacturing Allocation

ShipSourceLocationChanged System Alert

PDP generates the ShipSourceLocationChanged system alert when the Connect algorithm connects a customer order with a different source location from the location to which it was originally set. It is a priority 2 system alert with the following definition:

Source Location = New Source Location

The following view contains the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Order Shipment Allocation	Order Shipment Allocation

VehicleLoadOrderNotLoaded

PDP's VL function generates the VehicleLoadOrderNotLoaded system alert when an order has not been loaded on to a vehicle. It is a priority 1 system alert with the following definition:

Quantity Loaded \leq 0.0 AND Quantity Requested $>$ 0.0

The following view contains the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Deployment Order Alert	Deployment Order Alert

VehicleLoadBelowOrderQty

PDP's VL function generates the VehicleLoadBelowOrderQty system alert when the product quantity that is loaded on the vehicle is less than the order quantity. It is a priority 2 system alert with the following definition:

Quantity Loaded $>$ 0.0 AND Quantity Loaded $<$ Quantity Requested

The following view contains the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Deployment Order Alert	Deployment Order Alert

VehicleLoadAboveOrderQty

PDP generates the VehicleLoadAboveOrderQty system alert when the product quantity loaded on the vehicle is more than the order quantity. It is a priority 3 system alert with the following definition:

Quantity Loaded > 0.0 AND Quantity Loaded > Quantity Requested

The following view contains the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Deployment Order Alert	Deployment Order Alert

Solve Results Alerts

This section discusses:

- Deployment Alerts
- Fixed Deployment Exist
- Deployment Review

Deployment Alerts

Deployment alerts are solver results alerts. The deployment alerts are:

- RushDeployOrder1
- RushDeployOrder2

Details of each alert are provided in their respective sections.

Note. Do not confuse these two solve results deployment alerts with the VL order system alerts, RushDeployments 1 and RushDeployments 2.

RushDeployOrder1

Production and Distribution Planning generates the RushDeployOrder1 system alert when a deployment is not published and it has a ship date of the first day of the horizon. It is a priority 1 system alert with the following definition:

Deployment Status Is Not Published AND Ship Date - Current Date < Duration of the Current Day (can be 23, 24, or 25 hours for daylight savings time)

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Chart	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Product Category	Inventory Status
Inventory Status Product Substitute	Inventory Status
Storage Utilization	Inventory Status
Transportation Utilization	Inventory Status

RushDeployOrder2

Production and Distribution Planning generates the RushDeployOrder2 system alert when a deployment is not published, and it has a ship date of the second or third day of the horizon. It is a priority 2 system alert with the following definition:

Deployment Status Is Not Published AND Ship Date - Current Date = Duration of the Current Day (can be 23, 24, or 25 hours for daylight savings time)

Ship Date - Current Date < Duration of Three Days

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Chart	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Product Category	Inventory Status
Inventory Status Product Substitute	Inventory Status
Storage Utilization	Inventory Status
Transportation Utilization	Inventory Status

Fixed Deployment Exist Alert

The fixed deployment exist solver result alert is FixedDeploymentExist.

Details of the alert are provided in its respective section.

FixedDeploymentExist System Alert

Production and Distribution Planning generates the FixedDeploymentExist system alert when one or more of the deployments is fixed. It is a priority 3 system alert with the following definition:

Fix = Y

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Deployment	Deployment
Review Deployment	Review Deployment

Deployment Review Alerts

The deployment review solver result alert is DeployReviewLate.

Details of the alert are provided in its respective section.

DeployReviewLate

Production and Distribution Planning generates the DeployReviewLate system alert when a deployment review is late or a deployment was generated after its scheduled review date. It is a priority 1 system alert with the following definition:

Deployment Review Status = LATE

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Deployment	Deployment
Review Deployment	Review Deployment

Utilization System Alerts

This section discusses utilization system alerts. Details of each alert are provided in their respective sections.

Storage Utilization Alerts

Storage Utilization alerts are utilization system alerts. The storage utilization system alerts are:

- StorBelowMin
- StorAboveMax

- PremStorUtil

Details of each alert are provided in their respective sections.

StorBelowMin System Alert

Production and Distribution Planning generates the StorBelowMin system alert when storage utilization is below the minimum storage capacity. It is a priority 1 system alert with the following definition:

Total Storage Capacity Used < Minimum Storage Capacity

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Storage Utilization	Storage Utilization

StorAboveMax System Alert

Production and Distribution Planning generates the StorAboveMax system alert when storage utilization is above the maximum storage capacity. It is a priority 1 system alert with the following definition:

Total Storage Capacity Used > Maximum Storage Capacity

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Storage Utilization	Storage Utilization

PremStorUtil System Alert

Production and Distribution Planning generates the PremStorUtil system alert when premium storage capacity is being used. It is a priority 2 system alert with the following definition:

Total Storage Capacity used <= Total Storage Capacity AND Total Storage Capacity used > Standard Storage Capacity

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Storage Utilization	Storage Utilization

Transportation Utilization Alerts

Transportation Utilization alerts are utilization system alerts. The transportation utilization system alerts are:

- TranBelowMin

- TranAboveMax
- PremTranUtil

Details of each alert are provided in their respective sections.

TranBelowMin System Alert

Production and Distribution Planning generates the TranBelowMin system alert when transportation utilization is below the minimum standard transportation capacity. It is a priority 1 system alert with the following definition:

Total Transportation Capacity Used < Minimum Transportation Capacity

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Transportation Utilization	Transportation Utilization

TranAboveMax System Alert

Production and Distribution Planning generates the TranAboveMax system alert when transportation utilization is above the maximum transportation capacity. It is a priority 1 system alert with the following definition:

Total Transportation Capacity Used > Maximum Transportation Capacity

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Transportation Utilization	Transportation Utilization

PremTranUtil System Alert

Production and Distribution Planning generates the PremTranUtil system alert when premium transportation capacity is being used. It is a priority 2 system alert with the following definition:

Total Transportation Capacity Used <= Total Transportation Capacity AND Total Transportation Capacity Used > Standard Transportation Capacity

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Transportation Utilization	Transportation Utilization

Manufacturing Utilization Alerts

Manufacturing Utilization alerts are utilization system alerts. The manufacturing utilization system alerts are:

- ManuBelowMin
- ManuAboveMax
- PremManuUtil

Details of each alert are provided in their respective sections.

ManuBelowMin System Alert

Production and Distribution Planning generates the ManuBelowMin system alert when a manufacturing utilization is below the minimum standard manufacturing capacity. It is a priority 1 system alert with the following definition:

Total Manufacturing Capacity Used < Maximum Manufacturing Capacity

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Manufacturing Utilization	Manufacturing Utilization

ManuAboveMax System Alert

Production and Distribution Planning generates the ManuAboveMax system alert when a manufacturing utilization is above the maximum manufacturing capacity. It is a priority 1 system alert with the following definition:

Total Manufacturing Capacity Used > Maximum Manufacturing Capacity

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Manufacturing Utilization	Manufacturing Utilization

PremManuUtil System Alert

Production and Distribution Planning generates the PremManuUtil system alert when premium manufacturing capacity is being used. It is a priority 2 system alert with the following definition:

Total Manufacturing Capacity Used <= Total manufacturing Capacity AND Total Manufacturing Capacity Used > Standard Manufacturing Capacity

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Manufacturing Utilization	Manufacturing Utilization

Vehicle Loading System Alerts

This section discusses the Vehicle Loading (VL) System Alerts.

Vehicle Alert

The Vehicle VL system alert is VehicleUnderUtilized.

Details of the alert are provided in its respective section.

VehicleUnderUtilized

Production and Distribution Planning's Vehicle Loading function generates the VehicleUnderUtilized system alert when both weight and spots dimensions of a vehicle load are less than the user-defined weight and spot minimum usage for the vehicle. It is a priority 1 system alert with the following definition:

Total Weight Used < Minimum Weight Usage * Weight Capacity/100 AND Total Spots Used < Minimum Spots Usage * Spots Capacity/100

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Load Approval	Load Approval
Load Report	Load Report
Load Details	Load Details

Order Alerts

These order alerts are VL system alerts. The VL order system alerts are:

- RushDeployments1
- RushDeployments2

Details of each alert are provided in their respective sections.

Note. Do not confuse these two VL system alerts with the solve results deployment alerts, RushDeployOrder1 and RushDeployOrder2.

RushDeployments1

Production and Distribution Planning's Vehicle Loading function generates the RushDeployments1 system alert when the deployment quantity that is loaded is less than the minimum requested quantity, and when the deployment is scheduled to ship today or earlier. It is a priority 1 system alert with the following definition:

Quantity Loaded < Minimum Quantity Requested AND Earliest Ship Date = Current Date

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Order Alert	Order Alert

RushDeployments2

Production and Distribution Planning's Vehicle Loading function generates the RushDeployments2 system alert when the deployment quantity that is loaded is less than the minimum requested quantity, and when the deployment is scheduled to ship within the next two days. It is a priority 2 system alert with the following definition:

Quantity Loaded < Minimum Quantity Requested AND Earliest Ship Date > Current Date AND Earliest Ship Date = Current Date + Duration of Two Days (can be 23, 24, or 25 hours for daylight savings time)

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Order Alert	Order Alert

Below Balance Factor System Alerts

This section discusses the Below Balance Factor System Alerts.

SafetyStockBelowBalanceFactor

Production and Distribution Planning generates the SafetyStockBelowBalanceFactor system alert when inventory is insufficient to satisfy the safety stock requirements of the inventory balancing policies. It is a priority 1 system alert with the following definition:

Safety Stock Satisfied Number < Safety Stock Balance Number

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Product Category	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Chart	Inventory Status
Storage Utilization	Inventory Status
Inventory Status Product Substitute	Inventory Status

EffectiveDemandBelowBalanceFactor System Alert

Production and Distribution Planning generates the EffectiveDemandBelowBalanceFactor system alert when inventory is insufficient to satisfy the effective demand requirements of the inventory balancing policies. It is a priority 1 system alert with the following definition:

Effective Demand Satisfied Number < Effective Demand Balance Number

The following views contain the data that triggers the system alert. You can also navigate from the Alert view to the following views:

View Containing the Data that Triggers the System Alert	View to Which You Navigate from the Alert View
Inventory Status	Inventory Status
Inventory Status Product Category	Inventory Status
Inventory Status Location Category	Inventory Status
Inventory Status Chart	Inventory Status
Storage Utilization	Inventory Status
Inventory Status Product Substitute	Inventory Status

APPENDIX E

System Options

This section lists system options for configuring solves.

PDP System Options

This section lists all the EnterpriseOne Production and Distribution Planning system options in alphabetical order and describes their functions.

ALLOW_OUTBOUND_WHEN_NEGINV

Use this system option when you want the Supply Planning to deploy or produce when there is no inventory available. Values are:

- Y — Supply Planning deploys or produces when there is no inventory available.
- N — Supply Planning does not deploy or produce when there is no inventory available.

The default is Y.

BATCH_BASE_PERIOD

Use this system option to define the RCB algorithm base period length in number of weeks. The value must be a multiple of 7, for example, 7, 14, 21. If an invalid value is entered, then the RCB algorithm assumes the value of 1. The default value is 1.

CONNECT_ALLOW_BACK_ORDER

Use this constraint to specify if you want to allow late supply connects if in-time supply is no longer available. Values are:

- Y — The Connect algorithm includes late supply connects in its calculations.
- N — The Connect algorithm does not include late supply connects in its calculations.

The default is Y.

CONNECT_ALLOW_MULTI_SOURCE

Use this system option to specify whether the Connect algorithm can source a customer order or forecast from multiple locations. Values are:

- Y — A customer order that does not have a fixed source location or a forecast can be sourced from multiple locations. A customer order that has a fixed source location is not sourced from multiple locations even when this system option is set to Y.
- N — A customer order or forecast must be sourced from a single location. This is the default.

The default is Y.

CONNECT_ALLOW_PARTIAL_FILL

Use this option to specify the allocations to keep for demands that cannot be fully satisfied. Values are:

- Y — The Connect algorithm includes allocations to keep for demands in its calculations.
- N — The Connect algorithm does not include allocations to keep for demands in its calculations.

The default is Y.

CONNECT_ALLOW_PROD_SUBST

Use this option to specify if product (finished goods) substitution is allowed. By default, the Connect algorithm always considers material (consumable item) substitutions. Values are:

- Y — The Connect algorithm includes product (finished goods) substitution in its calculations.
- N — The Connect algorithm does not include product (finished goods) substitution in its calculations.

The default is Y.

CONNECT_FORECAST_MODE

Use this system option to specify which components of demand the Connect algorithm connects to components of supply. Values are:

- Y — The Connect algorithm connects forecast and customer orders to components of supply.
- N — The Connect algorithm connects only customer orders to components of supply. This is the default.

The data type is STRING and the default is N.

CONNECT_MATERIAL_MODE

Use this system option to specify what information is generated with each demand allocation. Values are:

- Y — The Connect algorithm connects the following components of supply to components of demand: local beginning inventory, local production orders or net requirements, shipments from direct upstream locations, and materials used for production.
- N — The Connect algorithm connects the following components of supply to components of demand: local beginning inventory, local production orders or net requirements, beginning inventory at direct and remote upstream locations, production orders or net requirements at direct and remote upstream locations, and shipments from direct and remote upstream locations.

The default is N.

CONNECT_MFG_MODE

Use this system option to specify which components of supply the Connect algorithm connects to components of demand. Values are:

- Y — The Connect algorithm connects the following components of supply to components of demand: local and remote upstream locations beginning inventory, local and remote upstream locations production orders or net requirements, beginning inventory at direct and remote upstream locations, production orders or net requirements at direct and remote upstream locations, and in-transits from direct and remote upstream locations.

- N — The Connect algorithm connects the following components of supply to components of demand: local beginning inventory, local production orders or net requirements, and shipments from direct upstream locations.

The data type is STRING and the default is N.

DAYSCOVER_EXCLUDE_HOLIDAY

Use this system option to specify how PDP accounts for holidays for the days of cover calculations. Values are:

- Y — Days of cover (safety and maximum) exclude days when the calendar specifies that the location is closed for shipping.
- N — Days of cover (safety and maximum) include days when the calendar specifies that the location is closed for shipping.

The data type is STRING and the default is N.

For example, suppose PDP calculates the days of cover for three days. The calculation starts on a Friday, and the location is closed for shipping on the weekend.

If the DAYSCOVER_EXCLUDE_HOLIDAY option is set to N, PDP calculates the days of cover quantity by adding the quantities for Saturday, Sunday, and Monday.

If the DAYSCOVER_EXCLUDE_HOLIDAY option is set to Y, PDP calculates the days of cover quantity by adding the quantities for Saturday, Sunday, Monday, Tuesday, and Wednesday. Orders for Saturday and Sunday are unlikely because the location is closed. But if such orders exist, they are counted.

DAYSCOVER_POLICY

Use this system option to specify the days of cover policy. Only the HS solver supports this system option. The HS solver respects the setting for both maximum days cover and safety days cover. Values are:

- IMMEDIATE — Days of cover is calculated as a function of the local level of effective demand. This value does not include outbound shipments.
- IMMEDIATE+SOLVER_DOWNSTREAM — Days of cover is calculated as a function of the sum of the local level of effective demand and downstream ideal requirements as computed by the solver. When this option value is used, the solver exports the safety days cover value to the views so that the correct value is displayed. One table, SafetyCover, supports IMMEDIATE+SOLVER_DOWNSTREAM. This table is an internal table and has no associated views. In the inventory status views, PDP uses internal values to calculate safety policies in days of cover.

The data type is STRING and the default is IMMEDIATE.

DEFAULT_INVENTORY_COST

Use this system option to specify the value that the Supply Planning uses as the default storage cost. The data type is DOUBLE and the default is 0.0.

DEFAULT_PRODUCTION_COST

Use this system option to specify the value that the Supply Planning uses as the default production cost. The data type is DOUBLE and the default is 0.0.

FIXED_PRODUCTION_TIMEFENCE

Use this system option to specify the number of days that you want for fixed production in a solve. You can set this system option for a particular location or for the entire application. When you set this system option for a specific location, the setting overrides the setting for the entire application. The data type is INTEGER and the default is 0.

HORIZON

Use this system option as a default value for your horizon when running a solve. The Heuristic solver checks this system option value. If you set a different horizon value in the Solver window, the Solver window value overrides the value that you set in the Horizon system option.

INVENTORY_BALANCING_TIMEFENCE

Use this system option to specify the number of periods from the horizon start date when the inventory balancing policies are in effect. The data type is INTEGER and the default is 0.

LP_ALGORITHM

Use this system option to specify the name of CPLEX algorithm that you want to use with the Supply Planning. If you do not specify the name of the CPLEX algorithm or the name does not match any of the available algorithms, then AUTO is used.

Solve times vary according to the algorithm that is used. The structure and complexity of each model differs and drives the choice of algorithm.

Values are:

- AUTO — Allows CPLEX to select the algorithm. Currently, DUAL is the algorithm selected.
- PRIMAL — Primal simplex algorithm.
- DUAL — Dual simplex algorithm.
- NETWORK_PRIMAL — Network algorithm followed by a primal simplex solve.
- NETWORK_DUAL — Network algorithm followed by a dual solve.
- BARRIER — Barrier interior point algorithm. For more information, contact your support representative.

The data type is STRING and the default is PRIMAL.

Note. In the majority of the performance tests involving typical data models, the DUAL algorithm proved to be the most efficient algorithm.

LP_SOLVER_UPDATE

Use this system option to specify the length of time in seconds that the Supply Planning writes the current objective function value to the log. The data type is DOUBLE and the default is 1.0.

NMXPDP_SPAWN_PDP

On 32-bit operating systems, use this system option to specify if you want Supply Planning to run as an external 32-bit process. Values are:

- Y — Starts the Supply Planning as an external solve process.
- N — Supply Planning does not run as an external process.

PRIORITY_FACTOR

Use this system option to specify a value that indicates how costs increase exponentially using the Supply Planning. When the Supply Planning compares two priority classes, one must be more expensive to violate. For example, it might be more expensive to not fill a customer order than to not fill safety stock requirements.

Typically, this value is between 1.5 and 3. If your Supply Planning solve results do not meet customer orders while inventory is still available, the `PRIORITY_FACTOR` might be too low. The data type is `DOUBLE` and the default is 2.

PRODUCTION_PREMIUM_CAPACITY

Use this system option to specify the type of premium production capacity that the Supply Planning is allowed to use. Values are:

- `PREMIUM2INFINITE` — The Supply Planning can use premium production capacity and respects the premium production capacity limits. The Supply Planning can also use premium2 production capacity, and the amount that it can use is unconstrained.
- `INFINITE` — The Supply Planning can use premium production capacity and the amount that it can use is unconstrained. Because the amount of premium production capacity that the Supply Planning can use is unconstrained, the Supply Planning does not need to use premium2 production capacity.
- `FINITE` — The Supply Planning can use premium production capacity and premium2 production capacity. The Supply Planning respects premium and premium2 production capacity limits. This is the default.
- `UNAVAILABLE` — The Supply Planning cannot use premium or premium2 production capacity. Standard capacity is a hard constraint.

The data type is `STRING` and the default is `FINITE`.

RCB_PULL_FWD_DEMAND

Use this system option to set the number of days that the RCB demand is pulled forward (moved to earlier RCB periods). If the corresponding environment variable, `NMXPDP_SSRCB_PULL_FWD_DEMAND`, is also set, the value of this system option overrides it. The data type is `INTEGER` and the default is 0.

RUN_UNCONSTRAINED_SP

Use this system option to specify whether only the Supply Planning heuristic runs in a solve or whether both the Optimal Supply Planning and Supply Planning heuristics run.

Values are:

- `Y` — Only the Supply Planning heuristic runs in the solve.
- `N` — Both the Optimal Supply Planning heuristic and the Supply Planning heuristic run in the solve.

The default value is `N`.

SHIP_COST_UPPERBOUND

Use this system option to specify a penalty cost for the Supply Planning for shipping orders. You usually set this system option at implementation. It should be slightly more than the maximum cost of transporting any item to any location. By setting this value above the maximum cost of transporting an item, you ensure that orders are delivered, regardless of the cost of shipping them. The data type is `DOUBLE` and the default is 1000.

SOLVER_CO_TRACE

Use this system option to set the trace functions within the CONNECT module. These messages are strictly related with the activation of the CO algorithm. The trace file name is `Run_SSCO<run_id>` and is stored in the directory `/path/Solver_Run/`. Values are:

- 0 — No functions exist.
- 1 — Trace of all the execution steps performed by CONNECT logic. Some log messages indicate only the execution phase. Others contain the action together with data processed at that moment.

The default value is 0.

Note. The `SOLVER_CO_TRACE` system option is equivalent to the `NMXPDP_SSCO_TRACE_LEVEL` environment variable. If you set both the `SOLVER_CO_TRACE` system option and the `NMXPDP_SSCO_TRACE_LEVEL` environment variable, the `SOLVER_CO_TRACE` system option overrides the `NMXPDP_SSCO_TRACE_LEVEL` environment variable. If you do not set the `SOLVER_CO_TRACE` system option, the setting for the `NMXPDP_SSCO_TRACE_LEVEL` environment variable prevails.

SOLVER_DATAMODEL_TRACE

Use this system option to specify the level of information that is written to the trace files regarding the data that was loaded by the solver server. The trace files are stored in the directory `/path/Solver_Run/`. Values are:

- 0 — No information is written to the trace files.
- 1 — Information about priority classes and penalty costs is written to the trace file `Run_SSDM_Trace`. This is the default. We recommend this value for production environments.
- 2 — Information about priority classes and penalty costs is written to the trace file `Run_SSDM_Trace`. In addition, information about the data loaded by the solver server is written to the trace file `Run_runid_Stock_Trace.txt`.
- 3 — The same information as level 2. However, several HTML files with the filename format `Run_runid_Stock_number.html` replace the trace file `Run_runid_Stock_Trace.txt`. An index file named `Run_runid_StockIndex.html` is also created. Open this file first because it provides links to all of the related HTML trace files.
- 4 — The same information as level 2. Trace files are generated in text format, as specified in level 2, and in HTML format, as specified in level 3.
- 5 — Information about priority classes and penalty costs is written to the trace file `Run_SSDM_Trace`. Information about the data that is loaded by the solver server is written to the trace file `Run_runid_Stock_Trace.txt`. Information about deployments is written to the trace file `Run_runid_Deployment_Trace.txt`. You must set this variable to 5 to access the `Run_<id>_RIS_Trace.txt` file.
- 6 — The same information as level 5. However, several HTML files with the filename format `Run_runid_Stock_number.html` replace the trace file `Run_runid_Stock_Trace.txt`. An index file named `Run_runid_StockIndex.html` is also created, which provides links to all of the related HTML trace files. Several HTML files with the filename format `Run_runid_Deployment_number.html` replace the trace file `Run_runid_Deployment_Trace.txt`. An index file named `Run_runid_DeploymentIndex.html` is also created, which provides links to all of the related HTML trace files.

When you are reading these trace files, open the file `Run_runid_Search.html` first because it provides links to specific information in both index files, which then provide links to the appropriate solver server data or deployment data.

- 7 — The same information as level 5. Trace files are generated in text format, as specified in level 5, and in HTML format, as specified in level 6.

The data type is INTEGER and the default is 1.

Note. If the NMXPDP_SSDM_TRACE_LEVEL environment variable is set, its value overrides the value of this system option.

SOLVER_LP_TRACE

Use this system option to specify the level of information that is written to the trace files about the steps taken by the Supply Planning during a solve. The trace files are stored in the directory */path/Solver_Run/*. Values are:

- 0 — No information is written to the trace files.
- 1 — Information about the main steps taken by the Supply Planning is written to the trace file *Run_runid_LP_Trace*. This information includes the size of the data model used by the Supply Planning, the system options used by the Supply Planning, the result status from CPLEX, and the value of the objective function.

The data type is INTEGER and the default is 1.

Note. If the NMXPDP_SSLP_TRACE_LEVEL environment variable is set, the value is overridden by the value of this system option.

SOLVER_RE_TRACE

Use this system option to log the main steps of the Rounding Engine and all of the variations of the deployment amounts for each step and substep of the algorithm per RE step/location/item/period.

The SOLVER_RE_TRACE system option is equivalent to the NMXPDP_SSRE_TRACE_LEVEL environment variable. If you set both the SOLVER_RE_TRACE system option and the NMXPDP_SSRE_TRACE_LEVEL environment variable, the SOLVER_RE_TRACE system option overrides the NMXPDP_SSRE_TRACE_LEVEL environment variable.

If you do not set the SOLVER_RE_TRACE system option, the setting for the NMXPDP_SSRE_TRACE_LEVEL environment variable prevails.

Values are:

- 0 — No output exists. This is the default value.
- 1 — Log of the main steps of the Rounding Engine and of all variations of the deployment amounts for each step and substep of the algorithm, per RE step/location/item/period.
- 2 — All results from value 1 above, plus the log of all variations of the production amounts performed during the second step of the Rounding Engine.
- 3 — All results from value 2 above, plus details on the reasoning done when rounding each deployment. More information related to increasing the production in the second step of RE-- for example, reasons for failure.
- 4 — All results from value 3, plus the log of all variations of stock deltas caused by the deployment rounding.

SSLP_IIS_FINDER

Use this system option to generate Irreducibly Inconsistent Set (IIS) data and extract the information related to an infeasible problem. When set to Y, the data is logged into the existing SSLP trace file. The system logs infeasibility constraints in the SSLP trace file only if an LP solution does not exist and if the SSLP trace level has been set to minimum 1 and the primal optimizer returns an infeasible status.

SSLP_IIS_FINDER_TILIM

Use this system option to set the maximum time limit for SSLP_IIS_FINDER. The value represents the number of seconds and can be any non-negative number.

Note. This time limit applies only to the IIS Finder algorithm.

TELESCOPING_SPLIT_DEPLOYMENT

Use this system option to evenly split deployments when you transitioning telescoped periods or aggregated buckets. This system option assigns a different cost to the deployment depending on if the deployment is in the same aggregated bucket (the same start date) or the next aggregated bucket. Values are:

- Y — Deployments are evenly split when dealing with telescoping periods of aggregated buckets.
- N — Deployments are not split when dealing with telescoping periods or aggregated buckets.

The default is N.

TRANSPORT_COST_FACTOR

Use this system option to specify the timing of deployments that are created by the Supply Planning.

By setting a value less than 1, a factor is applied to the transportation costs, gradually decreasing the cost over time. The effect is that the Supply Planning distributes shipments more evenly over the horizon. By setting a small value, you can artificially skew the Supply Planning calculations so that the deployments tend more toward JIT (just in time).

By setting a value greater than 1, you encourage the Supply Planning to generate earlier shipments.

The value that you choose depends on the model data. The most appropriate value for your needs is best found with experimentation.

The data type is DOUBLE and the default is 1.

TRANSPORT_PREMIUM_CAPACITY

Use this system option to specify the type of premium transport capacity that the solvers are allowed to use. Values are:

- INFINITE — The solvers can use premium transportation capacity, and the amount that the solvers can use is unconstrained. The Supply Planning considers premium transportation cost.
- FINITE — The solvers can use premium transportation capacity. The Supply Planning considers both premium transportation cost and global capacity. The HS solver considers capacity for each product but not for all of the products together.
- UNAVAILABLE — The solvers cannot use premium transportation capacity. Standard capacity is a hard constraint.

The data type is STRING and the default value is FINITE.

USE_INVENTORY_MAXIMUM

Use this system option to specify if and how the solvers respect the maximum inventory values that are specified in the Inventory Policy view. Values are:

- Y — If the desired maximum inventory level is greater than or equal to zero, the solvers respect maximum as a soft constraint. The fulfillment of orders, forecast, and shipment multiples has a higher priority than the

maximum constraint. If the desired maximum inventory level is negative, the solvers do not respect the maximum level for the product, location, and period.

- N — The solvers do not respect the maximum inventory level for all products, locations, and periods.

For example, you can use this system option to force surplus production from a plant to its DCs, even though the demand at the DCs is in the future. The data type is STRING and the default value is N.

USE_MANUFACTURING_OVERFLOW

Use this environment variable to specify whether the solver can use overflow capacity. Values are:

- Y — A manufacturing run can exceed the standard and/or premium resource capacity for fixed Work Orders and fixed Net Requirements. This prevents the solver from aborting with infeasibilities when fixed production (i.e. fixed Work Orders and fixed Net Requirements) exceeds available capacity.

Overflow capacity cannot be used for planned net requirements that are triggered by demand from customer orders, forecasts, and safety requirements.

- N — A manufacturing run cannot exceed the values for standard and premium resource capacity that are defined in the Resource Capacity view. When the USE_MANUFACTURING_OVERFLOW flag is set to N, and fixed production exceeds available capacity, the solver aborts by design.

The default value is Y.

Production and Distribution Planning does not generate optimal schedules for fixed production. Instead, Production and Distribution Planning averages capacity consumption for fixed work orders evenly from the work order start date to the requested date, while respecting the production calendar.

If the capacity consumed in a bucket is less than the available capacity for the resource and the USE_MANUFACTURING_OVERFLOW flag is set to Y, the solver might generate a planned net requirement during a bucket even though adjacent buckets use overflow capacity. For example, in the table below, Work Order 1 requires 120 units of capacity, starting in Bucket 1 and ending in Bucket 6. Work Order 2 requires 30 units of capacity, starting in Bucket 3 and ending in Bucket 5. Since Production and Distribution Planning divides capacity consumption for the work orders evenly across these buckets, production capacity is available in Buckets 1, 2, and 6, and the solver might generate planned net requirements for these buckets.

In this case, the USE_MANUFACTURING_OVERFLOW flag is set to Y, so that overflow capacity can be used for fixed production.

	Bucket 1	Bucket 2	Bucket 3	Bucket 4	Bucket 5	Bucket 6
Work Order 1	20	20	20	20	20	20
Work Order 2			10	10	10	
Capacity	24	0	8	0	32	24
Remaining Capacity	4	0	0	0	2	4
Overflow Capacity Used	0	20	22	30	0	0

One possible way to overcome this situation is to divide the work order into several bucketized work orders that represent the sum of the work order. This method would also allow the customer to control when overflow capacity is to be used.

VL System Options

This section lists all the VL system options and describes their functions.

allow_pull_forward

Use this system option to specify if orders whose ship dates are outside the solution horizon can be considered for inclusion in loads built for the solution horizon. Values are:

- Y — Orders outside the solution horizon can be considered for inclusion. By allowing inclusion (pull-forwards), you can build more efficient loads.
- N — No orders are considered for inclusion.

The data type is STRING and the default value is Y.

deploy_ord_alert_horizon

Use this system option to the offset, in number of days, from the current start date of the solve horizon. Any orders that meet the following criteria are considered exceptions and can generate order alerts:

Orders that are not completely put on loads

Orders that have a ship date earlier than the solve horizon start date plus the offset.

The data type is INTEGER and the default value is 7.

full_vehicle_orders

Use this system option to enable to PreLoad algorithm. The PreLoad algorithm tries to keep an order together on one vehicle if a variety of constraints are met. Values are:

- Y — Enables the PreLoad algorithm.
- N — Disables the PreLoad algorithm.

The datatype is STRING and the default value is N. For each single product order in a solve, the PreLoad algorithm tries to find one available and empty vehicle on which to load the order. The PreLoad algorithm considers the order for pre-loading if the following conditions are met:

- The order is not a pull-forward order
- The order is for a single product
- The order is complete; no part of the order has been loaded previously

If the order meets these conditions, the PreLoad algorithm goes through the list of previously selected vehicles and tries to find one that satisfies the following conditions:

- The maximum spots usage capacity is equal to the spots capacity that is required by the order
- If the product is not stackable, the floor spots capacity must be equal to the spots capacity that is required by the order
- The maximum weight usage capacity is equal to the weight capacity required by the order
- The vehicle is currently empty

If the PreLoad algorithm finds a vehicle for the order, it loads the order and moves to the next order.

include_reserved

Use this system option to specify if your regular fleet of vehicles will include reserved vehicles. Values are:

- Y — The regular fleet includes reserved vehicles.
- N — The regular fleet does not includes reserved vehicles.

The datatype is STRING and the default value is N.

max_order_cut

Use this system option to specify the percentage that an order quantity can be decreased to optimize loads.

For example, if the order quantity is 50 pallets and max_order_cut is set to 90.0, as few as 45 pallets (90% of 50) are shipped.

The VL solver tries to load the desired order quantity, but it can alter the quantity, which incurs some penalties.

Values are 0 to 100. The data type is FLOAT and the default value is 90.0.

max_order_round_up

This system option specifies the percentage an order quantity can be increased to optimize load. For example, if the order quantity is 50 pallets and max_order_round_up is set to 110.0, as up to 55 pallets (110% of 50) are shipped. The VL solver tries to load the desired order quantity, but it can alter the quantity, which incurs some penalties. Values are 100 or greater. The data type is FLOAT and the default value is 110.0.

minimize_load_mix

This system option enables the algorithm for product mix minimization. Values are:

- Y — The algorithm for product mix minimization is enabled.
- N — The algorithm for product mix minimization is not enabled. If you specify N, the original VL algorithm is used, which does not attempt to minimize product mix in vehicle loads.

The data type is STRING and the default value is N.

Note. If you set minimize_load_mix to Y, you must also set the pull_forward_rule system option

The minimize_load_mix system option applies as a default for VL. You can also specify the algorithm for product mix minimization for individual lanes by completing the Minimize Load Mix field in the VLL_LANE view. The specifications for individual lanes override the default settings specified by the minimize_load_mix system option.

product_per_vehicle_max

This system option specifies the maximum number of products in a vehicle load. This system option is a hard constraint; every vehicle loaded must contain no more than the specified number of different products in the load.

You can override the setting of this system option for individual vehicle types in the VL_VEHICLE_TYPE view.

The value must be greater than or equal to 1 and greater than product_per_vehicle_min. The data type is INTEGER and the default value is 100.

product_per_vehicle_min

This system option specifies the minimum number of products in a vehicle load. This system option is a hard constraint; every vehicle loaded must contain a minimum of the specified number of different products in the load.

You can override the setting of this system option for individual vehicle types in the VL_VEHICLE_TYPE view. The value must be greater than or equal to 1. The data type is INTEGER and the default value is 1.

pull_forward_exclude_holiday

This system option specifies whether orders can be pulled forward more than the user-defined number of days when the following conditions are met:

- The system option allow_pull_forward is set to Y.
- The value in the Pull Forward field in the VL_ORDER view or the pull_forward field in the VL_Order table is > 0.

If the order is pulled forward and the user-defined number of days and the lead time is accounted for, the order is schedule to leave on a day that is closed for shipping. Values are:

- Y — The order is pulled forward to the first day available for shipping when the conditions listed above are met.
- N — The order is not pulled forward when the conditions listed above are met.

For example, suppose there is an order with a ship day of Monday and a pull forward value of one day. In addition, the ship location is closed for shipping Saturday and Sunday. When this option is set to N, the order can be pulled forward to Sunday. Because Sunday is closed for shipping, there is no pull forward and the order ships on Monday. When this option is set to Y, the order can be pulled forward to the first day available for shipping, which, in this case, is Friday. The data type is STRING and the default value is Y.

pull_forward_rule

This system option specifies whether the pull forward orders are sorted by shipping date or by product when you enable the algorithm for product mix minimization (set the minimize_load_mix system option to Y). Values are:

- SORT_BY_DATE — Pull forward orders are sorted by shipping date.
- SORT_BY_PRODUCT — Pull forward orders are sorted by product.

The pull_forward_rule system option applies as a default for VL. You can also define how pull forward orders are sorted for individual lanes by completing the Pull Forward Rule field in the VL_LANE view. The specifications for individual lanes override the default settings specified by the pull_forward_rule system option. The data type is STRING and the default value is SORT_BY_DATE.

vehicle_capacity_max

This system option specifies the maximum vehicle capacity usage, expressed as a percentage. This is a soft constraint that ensures a vehicle is loaded to a minimum level. For a given load, the vehicle utilization is the greater of the following:

- weight utilization (100 times the loaded weight divided by the weight capacity)
- spot utilization (volume utilization)

You can override this system option value for individual vehicle types in the VL_VEHICLE_TYPE view.

The value must be greater than or equal to 0 and greater than vehicle_capacity_min. The data type is FLOAT and the default value is 100.

vehicle_capacity_min

This system option specifies the minimum vehicle capacity, expressed as a percentage. This is a soft constraint that ensures a vehicle is loaded to a minimum level. For a given load, the vehicle utilization is the greater of the following:

- weight utilization (100 times the loaded weight divided by the weight capacity)
- spot utilization (volume utilization)

You can override this system option value for individual vehicle types in the VL_VEHICLE_TYPE view.

The value must be greater than or equal to 0. The data type is FLOAT and the default value is 0.0.

vehicle_selection_algorithm

This system option specifies the type of vehicle selection algorithm will be used by the VL solver. Values are:

- GREEDY
- GRASP
- BANDB

The data type is STRING and the default value is GREEDY.

vehicle_selection_max_time

This system option specifies the maximum amount of time in seconds that the vehicle selection algorithm can run.

The data type is INTEGER and the default value is 300.

Default CPLEX System Options

This section lists the data type and default settings for CPLEX system options. CPLEX system option affect the way the Supply Planning solver runs. For details on each system option, refer to your CPLEX documentation.

System Option	Data Type and Default Value
CPX_PARAM_ADVIND	The data type is INTEGER and the default is 1 (on).
CPX_PARAM_AGGFILL	The data type is INTEGER and the default is 10.
CPX_PARAM_AGGIND	The data type is INTEGER and the default is -1 (automatic).
CPX_PARAM_BARALG	The data type is INTEGER and the default is 0 (default primal-dual log barrier).
CPX_PARAM_BARCOLNZ	The data type is INTEGER and the default 0 (calculated dynamically).

System Option	Data Type and Default Value
CPX_PARAM_BARDISPLAY	The data type is INTEGER and the default is 1 (regular setup and iteration information).
CPX_PARAM_BAREPCOMP	The data type is DOUBLE and the default is 1e-8.
CPX_PARAM_BARGROWTH	The data type is DOUBLE and the default is 1e6.
CPX_PARAM_BARITLIM	The data type is INTEGER and the default is 200.
CPX_PARAM_BARMAXCOR	The data type is INTEGER and the default is -1 (determined automatically).
CPX_PARAM_BAROBJRNG	The data type is DOUBLE and the default is 1e20.
CPX_PARAM_BAROOC	The data type is INTEGER, values 0 (the barrier can use internal memory only), 1 (the barrier can use disk space), and the default is 0.
CPX_PARAM_BARORDER	The data type is INTEGER and the default is 4 (approximately minimum degree).
CPX_PARAM_BARSTARTALG	The data type is INTEGER and the default is 1 (dual is 0).
CPX_PARAM_BARVARUP	The data type is DOUBLE and the default is 1e20.
CPX_PARAM_BASINTERVAL	The data type is INTEGER and the default is variable.
CPX_PARAM_BNDSTRENIND	The data type is INTEGER and the default is 1 (on).
CPX_PARAM_CLOCKTYPE	The data type is INTEGER and the default is 1 (CPU time).
CPX_PARAM_COEREDIND	The data type is INTEGER and the default is 2 (reduce all potential coefficients).
CPX_PARAM_CRAIND	The data type is INTEGER and the default is 1 (Primal-Alternate way of using obj. coeff.; Dual-Default starting basis).
CPX_PARAM_DEPIND	The data type is INTEGER and the default is 0 (off).
CPX_PARAM_DRIIND	The data type is INTEGER and the default is 0 (automatically determined).
CPX_PARAM_EPMRK	The data type is DOUBLE and the default is 0.01.
CPX_PARAM_EPOPT	The data type is DOUBLE and the default is 1e-06.
CPX_PARAM_EPPER	The data type is DOUBLE and the default is 0.0001.
CPX_PARAM_EPRHS	The data type is DOUBLE and the default is 1e-06.
CPX_PARAM_IISIND	The data type is INTEGER and the default is 0 (minimum time).

System Option	Data Type and Default Value
CPX_PARAM_ITLIM	The data type is INTEGER and the default is variable.
CPX_PARAM_NETFIND	The data type is INTEGER and the default is 1 (extract only pure network).
CPX_PARAM_OBLLIM	The data type is DOUBLE and the default is -1e+75.
CPX_PARAM_OBJULIM	The data type is DOUBLE and the default is 1e+75.
CPX_PARAM_PERIND	The data type is INTEGER and the default is 0 (off).
CPX_PARAM_PERLIM	The data type is INTEGER and the default is 0 (automatically determined).
CPX_PARAM_PPRIIND	The data type is INTEGER and the default is 0 (hybrid reduced cost and devex pricing).
CPX_PARAM_PREDUAL	The data type is INTEGER and the default is 0 (off).
CPX_PARAM_PREIND	The data type is INTEGER and the default is 1 (on).
CPX_PARAM_PRICELIM	The data type is INTEGER and the 0 (automatically determined).
CPX_PARAM_REINV	The data type is INTEGER and the default is 0 (automatically determined).
CPX_PARAM_RELAXPREIND	The data type is INTEGER and the default is 0 (off).
CPX_PARAM_SCRIND	The data type is INTEGER and the default is 0 (off).
CPX_PARAM_SIMDISPLAY	The data type is INTEGER and the default is 1 (iteration message is generated after each refactorization).
CPX_PARAM_SINGLIM	The data type is INTEGER and the default is 10.
CPX_PARAM_TILIM	The data type is DOUBLE and the default is 1e+75.
CPX_PARAM_WORKDIR	The data type is STRING and the default is ' '.
CPX_PARAM_WORKMEM	The data type is DOUBLE, values greater than 0 expressing megabytes and the default is 128.0.
CPX_PARAM_XXXIND	The data type is INTEGER and the default is 0 (off).

APPENDIX F

Alert Management Views

This appendix provides an overview of Production and Distribution Planning Alert Management views.

Understanding Alert Management Views

This section discusses:

- Alert view
- Alert Status view
- Alert Type view
- Deployment Order Alert view
- External Alert view
- External Alert Type view
- Integrity Error view
- PDP Alert Type view

Alert Management views are not subdivided into secondary groups.

Alert Management views and their reference names are listed below. Reference names are used to refer to the views from within Production and Distribution Planning, such as from the Workgroup view detail area.

View Name	Reference Name
Alert	Group_ALERT_PDP
Alert Status	Model_ALERT_STATUS
Alert Type	Model_3D_ALERT_TYPE
Deployment Order Alert	Data_DEPLOYMENT_ORDER_ALERT
External Alert	Data_EXTERNAL_ALERT
External Alert Type	Model_EXTERNAL_ALERT_TYPE
Integrity Error	Report_INTEGRITY_ERROR
PDP Alert Type	Model_ALERT_TYPE

Alert View

The Alert view is shared by all of the user roles that are assigned to an individual user in one workgroup. You can see system alerts for all of your user roles in one workgroup. From each system alert, you can access the view that contains data related to the system alert.

Alert Status View

The Alert Status view displays the user-defined life cycle of externally generated alerts. This view has no access points to other views.

Field	Description
Alert Status	A code that indicates the status of the alert.
Description	A description of the alert status.
Is Active	<p>A code that indicates whether the alert is active. An active alert means that an external alert of this status generates a system alert. Values are:</p> <ul style="list-style-type: none"> • Y: The alert is active. • N: The alert is not active.

Alert Type View

The Alert Type view displays the alert types associated with the views and fields. The summary records display the views and fields. The detail records display the alert types. This view has no access points to other views. Do not add, change, or delete data in this view.

Summary Field	Description
Alert Source	The name of the alert source.
Top Object	The name of the top object in the MVC network from which the alert is triggered.
Identity Field	The name of the field that stores the identification of the alert.
Product Field	The name of the field that stores the product code.
Location Field	The name of the field that stores the location code.
Lane Field	The name of the field that stores the lane code.
Origin Field	The name of the field that stores the origin location code.
Destination Field	The name of the field that stores the destination location code.
Start Date Field	The name of the field that stores the start date.

Summary Field	Description
Ship Date Field	The name of the field that stores the ship date.
Arrive Date Field	The name of the field that stores the arrive date.

Detail Field	Description
System	The name of the system to which the alert belongs.
Alert Source	The name of the alert source.
Alert Type	A code that identifies the type of system alert.
Description	A description of the alert type.
Priority	The priority of the alert type. The highest priority is 1.
Predicate	The definition for the alert type.
Aggregate By	The aggregation that is performed on the alerts.
Aggregate Operation	<p>The operation applied to the field specified by Aggregate On. Values are:</p> <ul style="list-style-type: none"> • FIRST: When multiple alerts of the same type exist, the first alert appears (for example, the alert with the earliest date). • LAST: When multiple alerts of the same type exist, the last alert appears (for example, the alert with the most recent date).
Aggregate On	The field on which the aggregation is applied.

Deployment Order Alert View

The Deployment Order Alert view displays alerts for the deployment orders in Vehicle Loading. When deployment alerts are exported from Vehicle Loading, the Vehicle Loading desktop triggers an automatic import to the Production Distribution Planning model servers, which populate the Deployment Order Alert view.

From this view, you can access the Deployments and Item Master views. You can also access the origin and destination locations in the Location view.

Summary Field	Description
Plan Name	The name of the system plan that is used to generate this alert.
Order Number	The unique number assigned to the deployment.
Origin	A code that identifies the location from which the deployment is to be shipped.

Summary Field	Description
Destination	A code that identifies the location to which the deployment is to be shipped.
Transport Mode	The mode of transportation.
Product	A code that identifies the product or material.
Ship Date	The date when the deployment is scheduled for shipping.
Arrive Date	The date when the deployment is scheduled to arrive at the destination location.
Maximum	The maximum quantity of the product requested to be shipped.
Minimum	The minimum quantity of the product requested to be shipped.
Requested	The quantity of the product requested to be shipped.
Loaded	The quantity of the product that is loaded.
Plan Unit	The planning unit.
Ship Unit	The shipping unit of measure.
Pull-Forward	The number of days that the deployment can be pulled forward.
User Field 1 - User Field 3	User-defined fields.

External Alert View

The External Alert view displays user-defined alerts from external systems. You can access the following views from this view:

- PDP Alert Type
- Vehicle Loading Alert Type
- Alert Status
- Role (both source and target user roles)
- Workgroup
- User Setup
- Location
- Item Master
- Shipping Capacity

Field	Description
Source Role	A primary key that specifies the user role of the person who sent the alert.
Alert Number	The code for the alert.
Alert Type	The type of alert.
Alert Type Description	A description of the alert type.
Alert Priority	The priority of the alert type. The highest priority is 1.
Alert Status	The status of the alert.
Alert Status Description	A description of the alert status.
System Alert	<p>A code that specifies whether the alert is active. An active status means that an external alert of this status can generate a system alert. Values are:</p> <ul style="list-style-type: none"> • Y: The alert is active. • N: The alert is not active.
Target WorkGroup	The target workgroup that can receive the alert.
Target Role	The target user role that can receive the alert.
Location Code	A code that identifies the location associated with the alert.
Lane Code	A code that identifies the lane associated with the alert.
Item Code	A code that identifies the product or material that is associated with the alert.
Generated By	The user ID of the person who sent the alert.
Resolved By	The user ID of the person who resolved the alert.
Resolution	A comment about how the alert was resolved.
Resolution Date	The date when the alert was resolved.
User Field 1 to User Field 3	User-defined fields.

External Alert Type View

The External Alert Type view displays the types for externally generated alerts and the attributes for each type. This view has no access points to other views.

Field	Description
System	The name of the system to which the alert belongs. For PDP alerts, the value is PDP.
Type	A code that indicates the type of system alert. This value is user-defined.
Description	A description of the alert type.
Priority	The priority of the alert type. The highest priority is 1.
Alert Source	The name of the alert source. The name must always be set to AlertSourceID002.
Predicate	This is the definition for the alert type. The values in this field must be set as follows: (alert_type= X) AND (is_active=Y) where X is the value in the Type field of this view.
Aggregated By	The aggregation that is performed on the alerts. For example, alerts can be aggregated by type.
Aggregate Operation	The operation applied to the field specified by Aggregate On. Values are: <ul style="list-style-type: none"> FIRST: When multiple alerts of the same type exist, the first alert appears (for example, the alert with the earliest date). LAST: When multiple alerts of the same type exist, the last alert appears (for example, the alert with the most recent date).
Aggregate On	The field on which the aggregation is applied. Typically, this field is a date field.

Integrity Error View

The Integrity Error view displays the data integrity check errors that Production and Distribution Planning detects when a data integrity check is run. This view has no access points to other views.

PDP Alert Type View

The PDP Alert Type view displays the Production and Distribution Planning system alert types and their attributes. This view has no access points to other views.

Field	Description
System	The name of the system to which the alert belongs. For Vehicle Loading, the value is VL.
Type	A code that identifies the system alert type.

Field	Description
Description	A description of the alert type.
Priority	The priority of the alert type. The highest priority is 1.
Alert Source	The name of the alert source.
Predicate	The definition for the alert type.
Aggregated By	The aggregation that is performed on the alerts.
Aggregate Operation	<p>The operation applied to the field specified by Aggregate On. Values are:</p> <ul style="list-style-type: none"> • FIRST: When multiple alerts of the same type exist, the first alert appears (for example, the alert with the earliest date). • LAST: When multiple alerts of the same type exist, the last alert appears (for example, the alert with the most recent date).
Aggregate On	The field to which the aggregation is applied.

APPENDIX G

Demand Management Views

This appendix provides an overview of Production and Distribution Planning Demand Management views.

Understanding Demand Management Views

This section discusses:

- Customer Order view
- Forecast view
- Order entry view
- Review forecast view
- Substituted demand view
- Substituted material view
- Product substitution view
- Demand priority view
- Forecast profile view
- Order Allocation view
- Order Allocation Exception view
- Order Manufacturing Allocation view
- Location Category view
- Order Shipment Allocation view

Demand Management Views

Demand Management views display the demand policies for products and locations. Demand Management views include data views, model views, and reports. The table below lists where each view is located in the navigation tree, the view name and the reference name. Reference names are used to refer to the views from within Production and Distribution Planning, such as from the Workgroup view detail area.

Sub-Folder	View Name	Reference Name
Data Views	Customer Order	Data_CUSTOMER_ORDER
	Forecast	Data_FORECAST

Sub-Folder	View Name	Reference Name
	Order Entry	Data_ORDER_ENTRY
	Review Forecast	Data_REVIEW_FORECAST
	Substituted Demand	Data_SUBSTITUTED_DEMAND
	Substituted Material	Data_SUBSTITUTED_MATERIAL
	Product Substitution	Data_PRODUCT_SUBSTITUTION
Model Views	Demand Priority	Model_DEMAND_PRIORITY
	Forecast Profile	Model_FORECAST_PROFILE
Reports	Order Allocation	Data_ORDER_ALLOCATION
	Order Allocation Exception	Data_EXCEPTION_ALLOCATION
	Order Manufacturing Allocation	Order Manufacturing Allocation
	Order Shipment Allocation	Order Shipment Allocation

Customer Order View

The Customer Order view displays customer order information that is imported from an external customer order management system. The summary records display the customer order numbers and customer information. The detail records display the requested quantities of a product or material. From this view, you can access the Inventory Status view.

Summary Field	Description
Order Number	The number of the customer order.
Customer	The code for the customer.
Customer Name	The name of the customer.
Customer Group	The code for the customer group.
Customer Desc	A description of the customer.
Created By	The user who created the customer order.
Comment	A user comment field.
Priority	This is the priority of the order. This field is reserved for future use.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Order Number	The number of the customer order.
Item Number	The number for the customer order item.
Product	The code for the product or material in the customer order. From this field, you can access the Item Master view.
Product Desc	A description of the product in the customer order.
Quantity	The amount of the product that the customer ordered.
Arrive Date	The date on which the shipment is scheduled to arrive at the customer location.
Status	<p>The status of the customer order item. Values are:</p> <ul style="list-style-type: none"> • Approved: The customer order item has passed one level of approval and is used by Production and Distribution Planning in its calculations. • Published: The customer order item is used by Production and Distribution Planning in its calculations and is written to an export file. • Rejected: The customer order item is not used by Production and Distribution Planning in its calculations and has been rejected for future use. <p>The status of the customer order item overrides the status of the customer order.</p>
Ship Date	The date when the customer order item is scheduled for shipping. The ship date of the customer order item overrides the ship date of the customer order.
Pick Date	Specifies a pick date within Order Promising. If this field is populated, Production and Distribution Planning uses this date as the Demand Date. Otherwise, it uses the Ship Date.
Comment	A user comment field.
Shipping Location	The code for the request shipping location for Order Promising. From this field, you can access the Location view.
User Field 1 to User Field 3	User-defined fields.

Forecast View

The Forecast view displays forecast information. The summary records display the forecast for a product or a material at a location. The detail records display the adjusted forecast based on the data in the Forecast Profile view. You cannot add detail records in this view.

Before you save changes to the Forecast view, you must close the inventory status views. If the inventory status views are open, changes to the Forecast and inventory status views are propagated slowly.

Summary Field	Description
Product	The code for the product or material.
Product Desc	A description of the product.
Location	The code for the location associated with the forecast.
Location Desc	A description of the location.
Effective Date	The effective date of the forecast demand. Ensure that the timestamp in the effective date is 00: 00: 00.
Forecast Number	The code for the forecast.
Quantity	The forecast amount per day. The quantity is effective on the date that is specified in the Effective Date field until a subsequent record overrides it.
Priority	The priority of the forecast. 1 is the highest priority. The Connect algorithm connects the forecast with the highest priority first.
Status	<p>The status of the forecast. Values are:</p> <ul style="list-style-type: none"> Planned: Production and Distribution Planning uses the forecast in its calculations. Approved: The forecast has passed one level of approval and is used by Production and Distribution Planning in its calculations. Rejected: The forecast is not used by Production and Distribution Planning in its calculations and has been rejected for future use. Published: The forecast is used by Production and Distribution Planning in its calculations and is written to an export file.
Status Date	The date when the status was most recently changed.
Planner	The name of the planner who most recently changed the status of this record.
Planner Comment	A comment from the planner.
Review Status	The review status of the forecast.
Review Date	The date when the review status was most recently changed.
Reviewed By	The name of the reviewer who most recently changed the review status.

Summary Field	Description
Reviewer Comment	A comment from the reviewer.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Product	The code for the product or material.
Product Desc	A description of the product.
Location	The code for the location.
Location Desc	A description of the location.
Effective Date	The effective date of the forecast demand.
Period Start Date	The date when the period starts.
Period End Date	The date when the period ends.
Forecast Number	The code for the forecast.
Quantity	The forecast amount per day.
Day of Week	The day of the week of the period start date.

Order Entry View

The Order Entry view is used to enter and approve new customer orders. The summary records display the customer order numbers and customer information. The detail records display the requested quantities of a product.

From this view, you can access the following views:

- Order Manufacturing Allocation view
- Order Shipment Allocation view

Summary Field	Description
Order Number	The number of the customer order.
Customer	The code for the customer.
Customer Name	The name of the customer.
Customer Group	The customer group to which this customer belongs.
Customer Desc	A description of the customer.
Address 1	Line 1 of the customer address. This field is optional.
Address 2	Line 2 of the customer address. This field is optional.

Summary Field	Description
Address 3	Line 3 of the customer address. This field is optional.
County	The county in the customer address.
City	The city in the customer address.
State/Province	The state or province in the customer address.
Country	The country in the customer address.
Postal Code	The postal code in the customer address.
Created By	The user who created the customer order.
Comment	A user comment field.
Priority	A code that specifies the priority of this order. This field is reserved for future use.
Allow Multisource	A code that specifies whether to allow multisourcing. Values are: <ul style="list-style-type: none"> • Y: Allow multisourcing. • N: Do not allow multisourcing.
Penalty Cost Adjustment	Penalty cost adjustment.
Allow Partial Ship	A code that specifies whether to allow partial shipments. Values are: <ul style="list-style-type: none"> • Y: Allow partial shipments. • N: Do not allow partial shipments.
Allow Backorders	A code that specifies whether to allow backorders. Values are: <ul style="list-style-type: none"> • Y: Allow backorders. • N: Do not allow backorders.
Allow Substitution	A code that specifies whether to allow product substitution. Values are: <ul style="list-style-type: none"> • Y: Allow product substitution. • N: Do not allow product substitution.
Allow Partial Line Ship	A code that specifies whether to allow partial shipments. Values are: <ul style="list-style-type: none"> • Y: Allow partial shipments. • N: Do not allow partial shipments.
Message Id	The message ID received from an external system.

Summary Field	Description
Reply To Id	The reply to ID received from an external system.
Request Id	The request ID received from an external system.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Order Number	The number of the customer order.
Item Number	The number for the customer order item.
Product	The code for the product or material in the order. From this field, you can access the Item Master view.
Quantity	The amount of the product ordered.
Unit	The unit of measure for the quantity.
Arrive Date	The date when the customer requires the order to arrive.
Ship Date	The date when the customer order item is scheduled for shipping. The ship date of the customer order item overrides the ship date of the customer order.
Pick Date	The pick date within Order Promising. If this field is contains a date, Production and Distribution Planning uses this date as the demand date. Otherwise, Production and Distribution Planning uses the ship date.
Status	<p>The status of the customer order item. Values are:</p> <ul style="list-style-type: none"> • Approved: The customer order item has passed one level of approval and is used by Production and Distribution Planning in its calculations. • Published: The customer order item is used by Production and Distribution Planning in its calculations and is written to an export file. • Rejected: The customer order item is not used by Production and Distribution Planning in its calculations and has been rejected for future use. <p>The status of the customer order item overrides the status of the customer order.</p>
Quality Code	A code used to identify specific characteristics of the product. A quality code can be used to identify the grade, color, version, or other characteristics of the product. This field is provided for visibility only.
Comment	A user comment field.

Detail Field	Description
Shipping Location	The location from which the customer order is shipped. From this field, you can access the Location view.
Fix Source Location	This field indicates whether the source location for the customer order is fixed. The Connect algorithm attempts to connect the customer order to the source location defined in the Original Source field. Values are: <ul style="list-style-type: none"> • Y: The source location is fixed. • N: The source location is not fixed.
Source Location	The location that sources the order.
County	The county in the customer address.
City	The city in the customer address.
State/Province	The state or province in the customer address.
Country	The country in the customer address.
Postal Code	The postal code in the customer address.
Allow Partial Line Ship	A code that specifies whether to allow partial shipments. Values are: <ul style="list-style-type: none"> • Y: Allow partial shipments. • N: Do not allow partial shipments.
Allow Backorders	A code that specifies whether to allow backorders. Values are: <ul style="list-style-type: none"> • Y: Allow backorders. • N: Do not allow backorders.
Allow Substitution	A code that specifies whether to allow product substitution. Values are: <ul style="list-style-type: none"> • Y: Allow product substitution. • N: Do not allow product substitution.
Expiry Date	The expiry date of the order line item.
User Field 1 to User Field 3	User-defined fields.
Description	A description of the product in the customer order.

Review Forecast View

The Review Forecast view has the same fields as the Forecast view. The Review Forecast view displays planned forecast information. You use this view to display and approve the review of forecasts. You cannot add detail records in this view.

You can navigate from this view to the following views:

- Location View
- Item Master View

Substituted Demand View

The Substituted Demand view displays data about the product substitutions made by the Supply Planning algorithm. The summary records display the location at which the substitution was made and the product for which the substitution was made. The detail records display data about the substitution and the substitute product. This view has no access points to other views.

Summary Field	Description
Location	A code that identifies the location.
Location Description	A description of the location.
Product	A code that identifies the product or material.
Product Description	A description of the product.

Detail Field	Description
Location	A code that identifies the location where a substitute product was used.
Product	A code that identifies the product or material for which the substitution was made.
Substitute Product	A code that identifies the substitute product.
Substitution Number	An identification number generated by the Supply Planning.
Substitute Description	A description of the substitute product.
Substitution Date	The date when the product substitution policy becomes effective.
Product Quantity	The quantity of the product that is specified in the Product field, which is substituted by the product specified in the Substitute Product field.
Substitute Product Quantity	The amount of the substitute product that is used to substitute for the product.
Substitution Rate	The quantity of the substitute product that is needed to replace each unit of the original product.

Substituted Material View

The Substituted Material view displays data about the material substitutions. You cannot add, change, or delete records in this view

Summary Field	Description
Location	The name of the location for which demand was substituted.
Location Description	A description of the location

Detail Field	Description
Substitution Number	A value that specifies the system plan used to generate the solve results.
Location	The name of the location for which demand was substituted.
Manufacturing Code	<p>This field specifies the manufacturing process, routing or operation to which the current material or resource substitution applies.</p> <p>This field is a foreign key reference to the ManufacturingProcess.mfg_code. This is a required field.</p>
Operation Sequence	<p>This field identifies the specific operation to which the manufacturing routing (current material or resource) substitution applies.</p> <p>This field is a foreign key reference to the MfgRoutingDef.operation_sequence. This is a required field.</p>
BOMR ID	This field specifies the operation BOMR entry for which the substitution takes place; it's a foreign key reference to the MfgOperationBOMR.BOMR_id field. This field is required.
Product	The name of the product for which demand was substituted.
Substitute Product	<p>A value that specifies the preference for this substitute item with respect to the original as well as to other alternates if specified. The higher this value is, the less preferable the item is as a substitution. Setting a preference to <=0 will turn off the substitution.</p> <p>The original item always has an implicit preference that is most preferred. Setting the preference of the substitute to 1.0 means that the product is a phantom product and for SCV reports, its demand is to be assigned to the substitute with preference of 1.0. This field is required.</p>

Product Substitution View

The Product Substitution view displays data about product substitutions. You can define product substitutions using the detail fields in this view. Products for which you can establish substitutions appear in the summary area of this view.

Summary Field	Description
Location	The code for the location.
Location Description	A description of the location.
Product	The code for the product.
Product Description	A description of the product.

Detail Field	Description
Location	The code for the location.
Product	The code for the product that is being substituted.
Substitute	The code for the substitute product.
Effective Date	The date on which the product substitution takes effect.
Ratio	The quantity of alternate product to be used for each unit of the original product. This field is required.
Preference	<p>The preference for this substitute item with respect to the original as well as to other alternates if specified. The higher this value is, the less preferable the item is as a substitution. Setting a preference to ≤ 0 disables the substitution.</p> <p>The original item always has an implicit preference that is most preferred. Setting the preference of the substitute to 1.0 means that the product is a phantom product and its demand is assigned to the substitute with a preference of 1.0. This field is required.</p>
Transfer Demand	<p>This field specifies whether or not the demand for the substitute product is to be transferred to that for the original product. The effect of transferring the demand of the substitute product to the original product is that demand for the original product can be fulfilled by any of the substitution products. Values are:</p> <ul style="list-style-type: none"> • Y: Demand is transferred. • N: Demand is not transferred.
User Field 1 to User Field 3	User defined fields.

Demand Priority View

The Demand Priority view displays demand priorities, which the Supply Planning solver uses to satisfy demand when there is insufficient inventory or capacity to meet demand. This view has no drill-downs.

Field	Description
Location Priority Class	A unique code identifying a location demand priority class.
Product Priority Class	A unique code identifying a product demand priority class.
Demand Component	A unique code identifying a demand component.
Effective Period	The starting period when the demand priority is effective. The starting period is defined as the number of days offset into the solve horizon.
Priority	The demand priority. A priority of 1 indicates the highest importance.

Forecast Profile View

Use the Forecast Profile view to define weekly forecast profiles to automatically adjust forecast quantities for specific days of the week. This process ensures that your sales profile is more accurately represented. For example, you can specify that forecast at a location typically peaks early in the week and decreases at the end of the week. Production and Distribution Planning adjusts the forecast quantities so that they are larger at the start of the week and smaller at the end of the week.

The forecast profile feature is designed primarily for weekly forecast imports rather than daily. When forecasts are imported weekly, knowing how the quantity is divided over the days of the week is important. However, when forecasts are imported daily, the daily divisions are not necessary. The default is not adjusted if no forecast profile is created for the location and product combination.

You can navigate from this view to the following views:

- Location View
- Item Master View

Field	Description
Location	The code for the location associated with the forecast profile.
Location Description	A description of the location.
Product	The code for the product or material. This code can represent an individual product or a product group. Enter each product only once as either an individual product or part of a product group. For example, do not enter the product code WRTB (women's red touring bike) and then enter the product group code SIDECAR that includes the product WRTB.
Product Description	A description of the product.

Field	Description
Effective Date	A primary key field specifying the date-time when this forecast quantity is in effect.
Monday - Sunday	The factor that the system uses to adjust a weekly forecast so the forecast quantity is divided over the week. For example, to get the forecast quantity for Monday, enter 0.2 as the value in the Monday field. The forecast quantity for the week is multiplied by 0.2.

Order Allocation View

The Order Allocation view displays the results of running the Connect algorithm. You cannot add, change, or delete records in this view.

Summary Field	Description
Order Number	The number that identifies the customer order or forecast.
Priority	The priority of this order.
Line Number	The item within the customer order. This number can represent the sequence of the item within the order.
Item	The unique identification code of the product in the order
Quantity	The quantity of the product requested for this order. This field is mandatory.
Quantity Satisfied	The quantity of the requested product that is allocated for this order.
Percent Line Fill	The percentage by which an order is considered to be satisfied. The percent is calculated as (total available qty)/requested quantity * 100. 100% means that the order has been fully satisfied.
Shipping Location	The unique identification of the requested shipping location. You can navigate to the Location view. This field is mandatory.
Shipping Date	The date time when the order is requested for shipping. This field is mandatory.
Available Date	The date when orders are satisfied by the allocation algorithm. If back orders are allowed and orders can be allocated on a late basis, the available date indicates the date when the quantity is fully allocated.
Back-Order Quantity	The amount of the back order.

Detail Field	Description
Order Number	The number that identifies the customer order or forecast.
Line Number	The item number within the customer order. It can also represent the calculated forecast date.
Item	The code for the item.
Depth	<p>A value that indicates the depth level of the allocated supply relative to the demand.</p> <p>For example, supply that is connected directly to demand would have a depth value of 1.</p>
Supplied By ID1	<p>An ID that describes the supply event.</p> <p>If Supply Type is equal to SI, then the value in this field is the lot number.</p> <p>If Supply Type is equal to WO, then the value in this field is the work order number.</p> <p>If Supply Type is equal to NR, then the value in this field is the net requirement number.</p> <p>If Supply Type is equal to IT or PX, then the value in this field is the shipment number.</p> <p>If Supply Type is equal to DO, then the value in this field is the deployment number.</p>
Supplied By ID2	<p>An ID that provides a secondary description of the supply event.</p> <p>If Supply Type is equal to SI, then the value in this field is the lot location.</p> <p>If Supply Type is equal to IT or PX, then the value in this field is the shipment line number.</p> <p>If Supply Type is equal to PR, NR, or DO, then there is no value in this field.</p>
Supply Type	<p>A code that indicates the type of supply. Values are:</p> <ul style="list-style-type: none"> • SI: Starting inventory • WO: Work Orders • NR: Net requirement • IT: In-transit shipment • PX: Planned Transfer • DO: Deployment

Detail Field	Description
Consumed By ID1	<p>The ID that describes the consumption event.</p> <p>If Type is equal to SI, then the value in this field is the lot number.</p> <p>If Type is equal to WO, then the value in this field is the work order number.</p> <p>If Type is equal to NR, then the value in this field is the net requirement number.</p> <p>If Type is equal to IT or PX, then the value in this field is the shipment number.</p> <p>If Type is equal to DO or OD, then the value in this field is the deployment number.</p> <p>If Type is equal to CO, then the value in this field is the customer order number.</p> <p>If Type is equal to FO, then the value in this field is the forecast number.</p>
Consumed By ID2	<p>A ID that provides a secondary description of the consumption event.</p> <p>If Supply Type is equal to SI, then the value in this field is the lot location.</p> <p>If Supply Type is equal to IT or PX, then the value in this field is the shipment line number.</p> <p>If Supply Type is equal to PR, NR, or DO, then there is no value in this field.</p>
Available	<p>The date when the orders are satisfied by the allocation algorithm. If back orders are allowed and orders can be allocated on a late basis, the available date is the date when the quantity is fully allocated.</p>
Location	<p>The code for the location where the manufacturing process runs. This field is empty if the source item is not a material relative to this connection.</p>
Quantity	<p>The quantity of the source component used into this allocation.</p>

Order Allocation Exception View

The Order Allocation Exception view displays customer orders and forecasts that the Connect algorithm did not connect or only partially connected. You cannot add, change, or delete data in this view. You can navigate from this view to the following views:

- Customer Order View
- Forecast View
- Order Entry View

- *Order Shipment Allocation View*
- Order Manufacturing Allocation View

Summary Field	Description
Plan Name	The name of the system plan used to generate results. Values are: <ul style="list-style-type: none"> • NR: Net Requirement • WO: Work Order • SI: Starting Inventory
Order Number	The number identifying the customer order or forecast.
Order Item Number	The number identifying the item within the customer order. If the DemandType=FO, the value in this field is 1.
Demand Type	The component of demand. Values are: <ul style="list-style-type: none"> • CO: Customer order • FO: Forecast
Quantity	The quantity of the customer order or forecast.
Quantity Satisfied	The quantity of the customer order or forecast that the Connect algorithm did connect.
Quantity Not Satisfied	The quantity of the customer order or forecast that the Connect algorithm did not connect.
Connection Status	The value in this field indicates if the Connect algorithm connected the customer order or forecast. Values are: <ul style="list-style-type: none"> • UNCONNECTED: The Connect algorithm did not connect the customer order or forecast. • PARTIALLY CONNECTED: The Connect algorithm connected part of the customer order or forecast.
Shipping Location	If DemandType=CO, this field is the location that ships the order. If DemandType=FO, this field is the location of the forecast.
Product	The code for the product.
Demand Date	If DemandType=CO, this is the ship date for the customer order. If DemandType=FO, this is the date of the forecast.
Customer Location	The location to which the order is shipped. This field is empty if DemandType=FO.
Customer Code	The code for the customer. This field is empty if DemandType=FO.

Summary Field	Description
Customer Desc	A description of the customer. This field is empty if DemandType=FO.
Source Location	The location that sources the customer order. This field is empty if DemandType=FO.

Order Manufacturing Allocation View

The Order Manufacturing Allocation view displays the results of running the Connect algorithm when the CONNECT_MFG_MODE system option is set to Y. You cannot add, change, or delete summary records. You can add, change, and delete detail records. You can navigate from this view to the following views:

- Net Requirements View
- Beginning Inventory View
- Customer Order View
- Forecast View
- Order Entry View

Summary Field	Description
Supply Type	The code identifying the type of production. Values are: <ul style="list-style-type: none"> • NR: Net requirement • WO: Work Order • SI: Starting inventory
Number	The number identifying the lot or net requirement.
Product	The code for the product.
Location	The code for the producing location.
Date	The status date of the lot or date when production is scheduled.
Quantity	The amount of the lot or net requirement.

Detail Field	Description
Supply Type	The code identifying the type of production. Values are: <ul style="list-style-type: none"> • NR: Net requirement • WO: Work Order • SI: Starting inventory
Demand Type	The component of demand. Values are: <ul style="list-style-type: none"> • CO: Customer order • FO: Forecast

Detail Field	Description
Production Number	The number identifying the lot or net requirement.
Order Number	The number identifying the customer order or forecast.
Order Item Number	The number identifying the item within the customer order. If the DemandType=FO, the value in this field is the period start date.
Customer Code	The code for the customer. This field is empty if the DemandType=FO.
Product	The code for the product.
Demand Date	If the DemandType=CO, this field is the ship date for the customer order. If the DemandType=FO, this date is the date of the forecast.
Demand Quantity	The amount of the product that is ordered for the customer order or forecast.
Quantity Satisfied	The amount allocated to this customer order item.
Fix	<p>This field fixes the allocation to a depth level of 1. The Connect algorithm does not change fixed allocations. Values are:</p> <ul style="list-style-type: none"> • Y: The allocation is fixed. • N: The allocation is not fixed. <p>The default is N.</p>
Shipping Location	If DemandType=CO, this is the location that ships the customer order. If DemandType=FO, this is the location of the forecast.
Original Source	The location that sources the customer order. This field is empty if the DemandType=FO.
Fix Source Location	<p>This field fixes the source location supplying this customer order. The Connect algorithm tries to connect the customer order to the source location defined in the Original Source field. Values are:</p> <ul style="list-style-type: none"> • Y: The source location is fixed • N: The source location is not fixed <p>The default is N. This field is empty if the DemandType=FO.</p>
Plan Name	The name of the system plan.

Detail Field	Description
Created By	The user who created the customer order. This field is empty if the DemandType=FO.
Comment	A user comment field. This field is empty if the DemandType=FO.

Order Shipment Allocation View

The Order Shipment Allocation view displays the results of running the Connect algorithm. You cannot add, change, or delete summary records. You can add, change, and delete detail records. You can navigate from this view to the following views:

- Deployments
- In-Transit Inventory Planned Inventory Transfer
- Customer Order
- Order Entry
- Location
- Item Master

Summary Field	Description
Shipment Type	The code identifying the type of shipment. Values are: DO: Deployment IT: In-transit shipment PX: Planned transfer
Ship Number	The number identifying the shipment or deployment.
Item Number	The number identifying the item within the shipment.
Product	The code for the product.
Origin	The code for the shipping location.
Destination	The code for the receiving location.
Ship Date	The date when the shipment is scheduled to be shipped.
Arrive Date	The date when the shipment is scheduled to arrive.
Quantity	The Quantity of the product to be shipped.
Transport Mode	The mode of transportation used for the shipment.
Status	The status of the shipment.

Detail Field	Description
Shipment Type	The code identifying the type of shipment. Values are: DO: Deployment IT: In-transit shipment PX: Planned transfer
Shipment Number	The number identifying the shipment or deployment.
Item Number	The number identifying the item within the shipment.
Order Number	The number identifying the customer order or forecast.
Order Item Number	The number identifying the item within the customer order. If the Demand Type is FO, the value in this field is the period start date.
Customer Code	The code for the customer. This field is empty if the Demand Type field is FP.
Product	The code for the product.
Demand Type	The component of demand. Valid Values are: CO: Customer order FO: Forecast
Demand Date	If Demand Type is CO, this field is the ship date for the customer order. If Demand Type is CO, this field is the date of the forecast.
Demand Quantity	The amount of the product ordered for the customer order or forecast.
Quantity Satisfied	The amount allocated to this customer order item.
Fix	Fixes the allocation to a depth level of 1. The Connect algorithm does not change fixed allocations. Values are: Y: The allocation is fixed. N: The allocation is not fixed. This value is set by Production and Distribution Planning when the connection is between a demand component and an intermediate deployment or planned transfer. For example, suppose the Connect algorithm makes a connection between a demand component and a deployment. Suppose also that the final connection is between the demand component and the starting inventory that supplied the deployment. Using these two suppositions, Production and Distribution Planning sets the Fix field to + for the deployment record. The default value is N.

Detail Field	Description
Shipping Location	If Demand Type is CO, this field is the location that ships the customer order. If Demand Type is FO, this field is the location of the forecast.
Original Source	The location that sources the customer order. This field is empty if Demand Type is FO.
Fix Source Location	<p>Fixes the source location supplying this customer order. When the source location is fixed, the Connect algorithm tries to connect the order to the source location defined in the Original Source field. Values are:</p> <p>Y: The source location is fixed</p> <p>N: The source location is not fixed.</p> <p>The default value is N. This field is empty if Demand Type is FO.</p>
Plan Name	The name of the system plan.
Created By	The user who created the customer order. This field is empty if Demand Type is FO.
Customer Desc	A description of the customer. This field is empty if the Demand Type field is FO.
Comment	A user comment field. This field is empty if Demand Type is FO.

APPENDIX H

Distribution Views

This appendix provides an overview of distribution views.

Understanding Distribution Views

Distribution views allow you to manage the flow of inventory across a diverse network that includes multiple locations and transport modes that are used to move products throughout your supply chain. Distribution views include data views, model views, and reports, as shown in the following table. Reference names are used to refer to the views from within Production and Distribution Planning, such as from the Workgroup view detail area.

Sub-Folder	View Name
Data Views	Deployment Review Status Reference name: Data_Deployment_REVIEW_STATUS
Deployments	Data_DEPLOYMENT
In-transit Inventory	Data_INTRANSIT
Planned Inventory Transfers	Data_PLANNED_TRANSFER
Review Deployment	Data_REVIEW_DEPLOYMENT
Model Views	Deploy Review Calendar Reference name: Model_DEPLOY_REVIEW_CALENDAR
Item Shipping Process	Model_SHIPPING_PRODUCT
Location	Model_LOCATION
Location Category	Model_LOCATION_CATEGORY
Shipping Capacity	Model_SHIPPING_CAPACITY
Sourcing	Model_SOURCING

Sub-Folder	View Name
Report Views	Deployment Net Change Reference name: Report_DEPLOYMENT_NET_CHANGE
Order Shipment Allocation	Data_ORDER_SHIPMENT_ALLOCATION
Transportation Utilization	Report_TRANSPORTATION_UTILIZATION
Transportation Utilization Chart	Report_TRANSPORTATION_UTILIZATION_CHART

Deployment Review Status View

If you are using the deployment review schedule feature, use the Deployment Review Status view to display deployments. Otherwise, use the Deployments view. The Deployment Review Status view has the same functionality as the Deployments view.

In addition to the fields described in the following table, the Deployment Review Status view has the same fields as the Deployments view, except for the user-defined fields User Field 1 to User Field 3.

Summary Field	Description
Review Due	A code that indicates whether a deployment review is scheduled. Values are: <ul style="list-style-type: none"> • Yes: A deployment review is scheduled for the current date. • No: A deployment review is not scheduled. • Late: The deployment review is late.
Plan Unit	The standard unit of measure for the planning of this product. The system uses this field for unit conversion when calculating capacity utilization, as well as conversion between planning and shipping quantities. This field must be filled when composition != "G".

Deployments View

The Deployments view displays the deployments that are created by the solvers. You use this view to display, modify, approve, and publish deployments. If you are using the deployment review schedule feature, use the Deployment Review Status view to display deployments.

From the Deployments view, you can access the following views:

- Inventory Status View
- Item Master View

You can also access the origin and destination locations from the Location view.

Summary Field	Description
Plan Name	The name of the system plan that is used to generate the solve results.
Order Number	The reference number for the order.
Origin	The code for the location from which the deployment is to be shipped.
Destination	The code for the location where the deployment is to be shipped.
Transport Mode	The mode of transportation.
Product	The code for the product or material.
Description	A description of the product.
Ship Date	The date when the deployment is shipped.
Ship Window	The number of days after the ship date when the product can be shipped without being late.
Arrive Date	The date when the deployment is to arrive.
Arrive Window	The number of days after the Arrive Date when the product can arrive without being late.
Plan Quantity	The quantity that is planned for shipping.
Plan Unit	The standard planning unit.
Fix	<p>A code that indicates whether the deployment is to be fixed for the next solve. The solvers do not change fixed deployments when you re-solve. Values are:</p> <ul style="list-style-type: none"> • Y: The deployment is fixed. • N: The deployment is not fixed. <p>If the quantity of the deployments that you fix exceeds the available transportation capacity, the Supply Planning solver uses additional transportation capacity to avoid an incomplete solve.</p>
Ship Quantity	The plan quantity expressed in shipping units.
Ship Unit	The standard shipping unit.
Pull-Forward	The number of days that the deployment can be pulled forward. This number determines the earliest allowable shipping date for the deployment. You can only change this value before you publish the deployment. When you publish, the system calculates the earliest ship date, and the VL solver uses this calculated value to determine loads. The solver gets this value from the LaneShipItem table.

Summary Field	Description
Status	The status of the deployment. Values are: <ul style="list-style-type: none"> Planned: Initial status of the deployment when it is generated. Approved: Deployment has passed one level of approval. Published: Deployment is written to an export file. Rejected: Deployment has been rejected for future use.
Status Date	The date when the deployment status was most recently changed.
Planned By	The name of the planner who most recently changed the status of this record.
Planner Comment	A comment from the planner.
Review Status	The review status of the deployment.
Review Date	The date when the review status was most recently changed.
Reviewed By	The name of the reviewer who most recently changed the review status.
Reviewer Comment	A comment from the reviewer.
User Field 1 to User Field 3	User-defined fields.

In-Transit Inventory View

The In-Transit Inventory view displays in-transit inventory shipped from the originating location. The summary records display the shipment numbers, locations, and carriers. The detail records display the products and materials that are included in each shipment. Drill-down functions for each field are specified in the field description.

Summary Field	Description
Shipment Number	The primary key field that specifies the unique identification of the shipment entry.
Origin	The code for the source location. You can navigate to the origin location in the Location view.
Origin Desc	A description of the origin location.
Destination	The code for the receiving location. You can navigate to the destination location in the Location view.
Destination Desc	A description of the destination location.
Planned Ship Date	The date when the shipment is scheduled for shipping.

Summary Field	Description
Actual Ship Date	The date when the shipment was shipped.
Arrive Date	The date when the shipment is scheduled to arrive.
Transport Mode	The mode of transportation.
Carrier Name	The name of the carrier.
Vehicle Id	The identification number of the vehicle making the shipment.
Transfer Order Number	The identification number of the transfer.
Type	The type of shipment. The valid value is INTRANSIT.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Shipment Number	The identification number of the in-transit.
Item Number	The number of the item within the in-transit.
Product	The code for the product or material. You can navigate to the Item Master view.
Quantity	The amount of the product in the in-transit.
Unit	The unit of measure for the quantity.
Quality Code	The code identifying the quality of the product. Quality code might be for grade, color, version, or other characteristics. For visibility only.
User Field 1 to User Field 3	User-defined fields.

Planned Inventory Transfers View

The Planned Inventory Transfers view displays planned transfers of products. The summary records display the shipment numbers, locations, and carriers. The detail records display the products included in each shipment. Drill-downs functions for each field are specified in the field description.

Summary Field	Description
Shipment Number	The identification number of the planned transfer.
Origin	The code for the source location. You can navigate to the origin location in the Location view.
Origin Desc	A description of the source location.

Summary Field	Description
Destination	The code identifying the receiving location. You can navigate to the destination location in the Location view.
Destination Desc	A description of the receiving location.
Ship Date	The date when the shipment is scheduled for shipping.
Arrival Date	The date when the shipment is scheduled to arrive.
Transport Mode	The mode of transportation.
Carrier Name	The name of the carrier.
Vehicle Id	The identification number of the vehicle making the shipment.
Transfer Order Number	The identification number of the transfer.
Type	The type of shipment. The valid value is PLANXFER.
Status	<p>The status of the shipment. Values are:</p> <ul style="list-style-type: none"> Planned: Status of the planned transfer when it is initially entered. The planned transfer is used in calculations. Approved: The planned transfer has passed one level of approval and is used in calculations. Published: The planned transfer is used in calculations and is written to an export file. Rejected: The planned transfer is not used in calculations and has been rejected for future use.
Status Date	The date when the status was most recently changed.
Planner	The name of the planner who most recently changed the status of this record.
Planner Comment	A comment from the planner.
Fix	<p>Determines if the shipment is to be fixed for the next solve. Values are:</p> <p>Y: the shipment is fixed for the next solve.</p> <p>N: the shipment is not fixed for the next solve.</p> <p>The default value is N.</p>
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Shipment Number	The identification number of the planned transfer.
Item Number	The number of the item within the planned transfer.
Product	The code for the product or material. You can navigate to the Item Master view.
Quantity	The amount of the product in the planned transfer.
Unit	The unit of measure for the quantity.
Quality Code	The code identifying the quality of the product. Quality code might be for grade, color, version, or other characteristics. For visibility only.
Fix	Determines if the shipment is to be fixed for the next solve. Values are: Y: the shipment is fixed for the next solve. N: the shipment is not fixed for the next solve. The default value is N.
Description	A description of the product.
User Field 1 to User Field 3	User-defined fields.

Review Deployment View

The Review Deployment view has the same fields as the Deployments view. It displays only deployments that are scheduled for review, based on the deployment review calendar. You use it to display deployments and approve the review of deployments. The Review Status field and the Reviewer Comment field are the only fields in which you can change data.

You cannot add or delete records in this view. From this view, you navigate to the following views:

- Inventory Status
- Item Master
- Location View (origin and destination locations)

Deployment Review Calendar View

The Deployment Review Calendar view displays the deployment review calendar based on the days of the week. It indicates which deployment reviews are to take place on which days of the week, and it also displays the frequency of the reviews in weekly multiples. The system generates an alert when deployment reviews are late. The summary records display the lane data; the detail records display the review calendar.

From this view, you can access the Shipping Capacity view.

Summary Field	Description
Lane	A code that specifies the lane.
Origin	A code that specifies the originating location. From this field, you can access the origin location in the Location view.
Destination	The code for the destination location. You can navigate to the destination location in the Location view.
Status	A code that indicates the availability of the lane. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed
Minimize Load Mix	A code that specifies whether the algorithm for product mix minimization is enabled in Vehicle Loading. Values are: <ul style="list-style-type: none"> • Y: The algorithm is enabled. • N: The algorithm is not enabled. If this field is set to N, Vehicle Loading uses the original algorithm, which does not attempt to minimize product mix in loads.
Pull Forward Rule	A code that specifies whether the pull forward orders are sorted by date or by product. Values are: <ul style="list-style-type: none"> • SORT_BY_DATE: Pull forward orders are sorted by date. • SORT_BY_PRODUCT: Pull forward orders are sorted by product. This field is only completed if you enable the algorithm for product mix minimization in Vehicle Loading.
Lane Description	A description of the lane.

Detail Field	Description
Lane	A code that specifies the lane.
Reference Date	The date used for scheduling deployment reviews. If reviews are scheduled in multiples of one week, this date is used as the starting point for counting weekly multiples.
Monday - Sunday	A code that specifies whether the deployments for this lane are to be reviewed and published on this day. Values are: <ul style="list-style-type: none"> • 0: The deployments are not reviewed and published on this day. • 1: The deployments are reviewed and published on this day.

Item Shipping Process View

The Item Shipping Process view displays the shipping processes, and the set of products and materials that can be moved during each process. The summary records display the lanes and their modes of transportation. The detail records display the products that are shipped on each lane.

You can navigate from this view to the Shipping Capacity view. Drill-down functions for each field are specified in the field description.

Summary Field	Description
Lane	The code identifying the lane.
Transport Mode	The mode of transportation used to ship the item.
Description	A description of the transportation mode for the lane.
Lead Time	<p>The lead-time, in days, that is required for transporting items from the origin to the destination location using this mode of transportation.</p> <p>If you are using the Production and Distribution Planning Vehicle Loading component, ensure that the value in this field is equal to the time that is associated with each combination of vehicle type, carrier code, and lane combination in the Lead Time field in the detail records of the Shipping Cost view.</p>
Capacity Unit	<p>The unit of measure for the shipping capacity. Values are:</p> <ul style="list-style-type: none"> • EA • PL • SE • KG • CM • ML • LT • HR
Monday Status - Sunday Status	<p>This field specifies the availability of this shipping process (lane and transport mode combination) for each day within the horizon.</p> <p>Values are:</p> <ul style="list-style-type: none"> • C: Closed • O: Open
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Lane	The code identifying the lane.
Transport Mode	The mode of transportation used to ship the item.
Product	<p>The code for the product or material that can be shipped using this mode of transportation and this lane.</p> <p>This code can represent an individual product or a product group. Enter each product only once as either an individual product or part of a product group. For example, do not enter the product code A16oz and then enter the product group code APPLES that includes the product A16oz.</p> <p>You can navigate to the Item Master view.</p>
Effective Date	The date on which the lane and product combination become effective.
Available Date	<p>Specifies whether the lane is available for shipping this product. Values are:</p> <ul style="list-style-type: none"> • Y: The lane is available to ship this product. • N: The lane is not available to ship this product.
Shipment Multiple	The shipment quantities must be in multiples of this quantity.
Minimum Shipment	<p>The minimum shipment quantity that is to be shipped.</p> <p>This field is optional. The default value is 1.0.</p>
Pull Forward	The number of days that the deployment can be pulled forward.
Description	A description of the process.
User Field 1 to User Field 3	User-defined fields.

Location View

The Location view displays the plants, distribution centers, customers, and suppliers for the enterprise. The summary records display the locations; and the default shipping, producing, and receiving calendars for each location. The detail records display the exceptions to the calendars. This view has no drill-down functions.

Summary Field	Description
Location	The code identifying the location.

Summary Field	Description
Type	The type of location. Values are: <ul style="list-style-type: none"> • DC: Distribution center • PLANT: Plant • PLANT_DC: Plant and distribution center • CUSTOMER: Customer • SUPPLIER: Supplier
Description	A description of the location.
Time Zone	The time zone for this location. This field is reserved for future use.
Shipping Calendar	The shipping status for each day of the week. The values are in the same format as Producing Calendar.
Receiving Calendar	The receiving status for the day of the week. The values are in the same format as Producing Calendar.
Producing Calendar	The producing status for the day of the week. This value is composed of a combination of seven 1s and 0s. The first number represents Monday's producing status. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed For example, a location that produces during the week but is closed on weekends has a value of 1111100.
Priority Class Role	The code identifying the locations belonging to the same demand priority class.
Inventory Balance Class Zone	The code identifying the inventory balancing class at the specified location. For example, AClassCustomers and BClassCustomers.
Latitude	Specifies the latitude of the location group in decimal format. Note that latitudes north of the Equator are positive and latitudes south of the Equator are negative.
Longitude	Specifies the longitude of the location group in decimal format. Note that longitudes west of Greenwich are negative and longitudes east of Greenwich are positive.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Location	The code identifying the location.
Exception Date	The date and time when the exception applies.

Detail Field	Description
Shipping	The exception to the shipping calendar. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed
Receiving	The exception to the receiving calendar. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed
Producing	The exception to the producing calendar. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed

Location Category View

The Location Category view allows you to create location categories so that the Inventory Status Location Category view can display data aggregated by those categories. The display of aggregated data is for reporting purposes, and is useful when you want to know aggregate or subtotal amounts across the entire network for certain location categories.

To achieve the best performance, create location categories only when all the location category views are closed.

The summary records display the location categories. The detail records display the locations that are included in each category.

Summary Field	Description
Category Type	The type of location category (for example, Eastern or Western).
Category Name	The name of the location category.
Description	A description of the location category.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Category Name	The name of the location category.
Location	The code for the location that belongs to the category. From this field, you can access the Locations view.
User Field 1 to User Field 3	User-defined fields.

Shipping Capacity View

The Shipping Capacity view maintains transportation capacities and costs for each lane and transport mode. The summary records display the lanes and their modes of transportation. The detail records display the capacities and costs for each lane.

Summary Field	Description
Lane	A code that specifies the lane.
Transport Mode	The transportation mode used to transport orders across the specified lane.
Description	A description of the transportation mode for the lane.
Lead Time	The lead-time that is required by the shipping process. If you are using Vehicle Loading, ensure that the value in this field is equal to the time that is associated with each combination of vehicle type, carrier code, and lane combination in the Lead Time field in the detail records of the Shipping Cost view.
Capacity Unit	The unit of measure for the first dimension of shipping capacity.
Monday Status-Sunday Status	A code that indicates the availability of this shipping process (lane-transport mode combination) for every Monday within the horizon. Exceptions to this definition can be set on a daily basis in LaneShipExceptionCalendar table. This field is required. Values are: <ul style="list-style-type: none"> • C: Closed • O: Open
User Field 1 to User Field 3	User-defined fields.
Origin Location Code	The unique identification code for the originating shipping location.
Destination Location Code	The unique identification code for the destination shipping location.

Detail Field	Description
Lane	A code that identifies the lane.
Transport Mode	The transportation mode used to transport orders across the specified lane.
Effective Date	The date when the capacities and costs are valid, with respect to the origin location.

Detail Field	Description
Premium Capacity	The premium capacity for the shipping process above Standard Capacity. A negative value in this field (for example, -1) represents infinite capacity.
Standard Capacity	The standard capacity for the shipping process. A negative value in this field (for example, -1) represents infinite capacity.
Minimum Capacity	The minimum standard shipping capacity required for the shipping process. This value must be greater than 0.0 to be taken into consideration by the solver. A penalty cost is applied if the minimum standard shipping capacity is not met.
Minimum Capacity Penalty	The penalty cost for violating minimum capacity.
Premium Shipping Cost	The cost of shipping when premium capacity is used.
Standard Shipping Cost	The standard cost of shipping an item.
Description	A description of the transportation mode for the lane.
User Field 1 to User Field 3	User-defined fields.

Sourcing View

The Sourcing view displays the transportation lanes that can be used for shipping products and materials. The summary records display the lanes and their attributes. The detail records display the products that are shipped on each lane.

You can navigate from this view to the Shipping Capacity view. Drill-down functions for each field are specified in the field description.

Summary Field	Description
Lane	The code identifying the lane.
Origin	The code identifying the originating location. You can navigate to the origin location in the Location view.
Destination	The code identifying the destination location. You can navigate to the destination location in the Location view.
Status	The availability of the lane. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed

Summary Field	Description
Minimize Load Mix	<p>This field specifies whether the algorithm for product mix minimization is enabled in Production and Distribution Planning. Values are:</p> <ul style="list-style-type: none"> • Y: The algorithm is enabled. • N: The algorithm is not enabled. If this field is set to N, Production and Distribution Planning uses the original algorithm, which does not attempt to minimize product mix in loads. <p>This field is specific to the Production and Distribution Planning Vehicle Loading component.</p>
Pull Forward Rule	<p>This field specifies whether the pull forward orders are sorted by date or by product. Values are:</p> <ul style="list-style-type: none"> • SORT_BY_DATE: Pull forward orders are sorted by date. • SORT_BY_PRODUCT: Pull forward orders are sorted by product. <p>This field is only completed if you enable the algorithm for product mix minimization in Production and Distribution Planning.</p> <p>This field is specific to the Production and Distribution Planning Vehicle Loading component.</p>
Lane Description	A description of the shipping lane.

Detail Field	Description
Product	<p>The code for the product or material. This code can represent an individual product or a product group. Enter each product only once as either an individual product or as part of a product group.</p> <p>You can navigate to the Item Master view.</p>
Lane	The code identifying the lane.
Effective Date	The date when the Status is in effect. The effective date applies to the receiving location, which means that the receiving location can receive the product from the specified origin up to the day before the effective date specified.
Percent	Specifies the percentage split of sourcing for this item. This field is reserved for future use.
Preference	This field is reserved for future use.

Detail Field	Description
Status	The availability of the lane for this Product. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed
Policy	This field specifies the sourcing policy to use. Values are: <ul style="list-style-type: none"> • Dynamic: Dynamic sourcing is used. • Split: Split sourcing is used. This field is reserved for future use.
User Field 1 to User Field 3	User-defined fields.
Product Desc	A description of the product.

Transportation Calendar Exception View

The Transportation Calendar exception view specifies the shipping processes by lane. The view defines the attributes for each lane and transport mode combination.

Summary Field	Description
Transport Mode	The mode of transportation for the shipping process.
Description	The description of the transportation mode for the lane. This field is optional.
Lead Time	The shipping lead-time (in days) required for transporting material from originating location to destination via this shipping process. This field is mandatory.
Monday Status - Sunday Status	This field specifies the availability of this shipping process (lane and transport mode combination) for each day within the horizon. Values are: C: Closed. O: Open.
User Field 1 to User Field 3	Optional user-defined fields.

Detail Field	Description
Lane	The unique code for the lane. This field is a foreign key reference to Lane.code field.

Detail Field	Description
Transport Mode	The mode of transportation for the shipping process. This field is a foreign key reference to LaneShipProc.transport_mode field.
Exception Date	The date (day/month/year) for which the exception applies.
Exception Status	<p>This field defines the transportation exception for the specified date.</p> <p>Values are:</p> <ul style="list-style-type: none"> • C: Closed. • O: Open.

Deployment Net Change View

The Deployment Net Change view displays the difference between deployment solve results that are generated using a base plan and solve results that are generated using another system plan. The quantity of the base plan results is subtracted from the quantity of the other system plan results. Data in this view is for reporting and cannot be changed.

The summary records display the net change results. The detail records display the deployment quantities generated by the solver using the base plan and using the other system plan. This view has no drill-downs.

Summary Field	Description
Product	The code for the product or material.
Product Description	A description of the product.
Origin	The code for the origin location.
Origin Description	A description of the origin location.
Destination	The code for the destination location.
Destination Description	A description of the destination location.
Total Net Change	The total difference between the quantity of the base plan solve results and the other plan solve results. This field displays the total difference for all deployments that have the same Earliest Arrive Date, Destination, Origin, and Product.
Arrive Date	The earliest date when the deployment can arrive at the destination location.

Detail Field	Description
Product	The code for the product.
Product Description	A description of the product.

Detail Field	Description
Origin	The code for the origin location.
Origin Description	A description of the origin location.
Destination	The code for the destination location.
Destination Description	A description of the destination location.
Arrive Date	The earliest date when the deployment can arrive at the destination location.
Ship Date	The earliest date when the deployment can be shipped from the origin location.
Base Quantity	The deployment quantity generated by the solver using the base plan.
New Quantity	The deployment quantity that is generated by the solver using the other system plan.
Net Change	The difference between the quantity of the other system plan solve results and the quantity of the base plan solve results. The base plan quantity is subtracted from the other system plan quantity.

Transportation Utilization View

The Transportation Utilization view displays the capacity and utilization of transportation modes for each lane in each period. Data in this view is for reporting and cannot be changed.

You can navigate from this view to the following views:

- Location View
- Deployments View
- In-Transit Inventory View
- Planned Inventory Transfers View

Drill-downs for each field are specified in the field description.

Summary Field	Description
Origin	The code for the origin location. You can navigate to the origin location in the Location view.
Transport Mode	The mode of transportation.
Ship Period Start Date	The starting date of the shipping period.
Ship Period End Date	The ending date of the shipping period.
Standard Capacity	The total amount of standard shipping capacity.

Summary Field	Description
Premium Capacity	The total amount of premium shipping capacity.
Total Capacity	The total amount of shipping capacity, which is as follows: Standard Capacity and Premium Capacity
Standard Capacity Used	The total amount of standard shipping capacity used.
Premium Capacity Used	The total amount of premium shipping capacity used.
Total Capacity Used	The total amount of shipping capacity used, which is as follows: Standard Capacity Used and Premium Capacity Used

Detail Field	Description
Origin	The code for the origin location. You can navigate to the origin location in the Location view.
Destination	The code for the destination location. You can navigate to the destination location in the Location view.
Transport Mode	The mode of transportation.
Ship Period Start Date	The starting date of the shipping period.
Ship Period End Date	The ending date of the shipping period.
Standard Capacity	The amount of standard capacity for the lane and transport mode during the period.
Premium Capacity	The amount of premium capacity for the lane and transport mode during the period.
Total Capacity	The total available shipping capacity.
Total Capacity Used	The total amount of standard and premium capacity used.
Standard Capacity Utilization	The amount and percentage of standard capacity used for the lane and transport mode during the period.
Premium Capacity Utilization	The amount and percentage of premium capacity used for the lane and transport mode during the period.
Total Capacity Utilization	The amount and percentage of total capacity used for the lane and transport mode during the period.
Total Standard Shipping Cost	The total cost for using standard shipping capacity.
Total Premium Shipping Cost	The total cost for using premium shipping capacity.

Detail Field	Description
Total Shipping Cost	The total shipping cost, which is as follows: Premium Shipping Cost and Total Standard Shipping Cost
Minimum Standard Capacity	The minimum amount of capacity that should be used.

Transportation Utilization Chart

You can also view a graphical representation of the data in the Transportation Utilization view. The Transportation Utilization chart displays the transportation capacity being used at different locations in your enterprise. You can select a location from the list that appears below the chart.

APPENDIX I

Inventory Management Views

This appendix discusses EnterpriseOne Production and Distribution Planning Manufacturing views.

Understanding Inventory Management Views

This section discusses:

- Beginning Inventory view
- In-Transit Inventory view
- Planned Inventory Transfers view
- Code Age view
- Inventory Balance view
- Inventory Policy Build View
- Inventory Policy Master view
- Inventory Policy Maximum view
- Inventory Policy Safety view
- Inventory Policy Storage view
- Item Calendar view
- Item Category view
- Item Group view
- Item Master view
- Material Substitution view
- Product Substitution view
- Safety Network view
- Storage Capacities view
- Unit Conversion view
- Inventory Status view
- Inventory Status Chart view
- Inventory Status Location Category view
- Inventory Status Product Category report
- Inventory Status Product Substitute view

- Product Age Chart view
- Product Shelf Life Chart view
- Storage Utilization view
- Storage Utilization Chart view

Inventory Management views display the inventory policies and storage facilities for the enterprise. Inventory Management views include data views, model views, and reports, as shown in the following table. Reference names are used to refer to the views from within Production and Distribution Planning, such as from the Workgroup view detail area.

Sub-Folder	View Name	Reference Name
Data Views	Beginning Inventory	Data_BEGINNING_INVENTORY
	In-Transit Inventory	Data_INTRANSIT
	Planned Inventory Transfers	Data_PLANNED_TRANSFER
Model Views	Code Age	Model_CODE_AGE
	Inventory Balance	Model_INVENTORY_BALANCE
	Item Calendar	Model_PRODUCT_CALENDAR
	Item Master	Model_PRODUCT
	Material Substitution	Model_MATERIAL_STUSTITUTION
	Product Substitution	Model_PRODUCT_SUBSTITUTION
	Safety Network	Model_SAFETY_NETWORK
	Storage Capacities	Model_STORAGE_CAPACITY
	Unit Conversion	Model_UNIT_CONVERSION
Reports	Inventory Status	Report_INVENTORY_STATUS
	Inventory Status Chart	Report_INVENTORY_STATUS_CHART
	Inventory Status Location Category	Report_INVENTORY_STATUS_LOCATION_CATEGORY
	Inventory Status Product Category	Report_INVENTORY_STATUS_PRODUCT_CATEGORY
	Inventory Status Product Substitute	Report_INVENTORY_STATUS_PRODUCT_SUBSTITUTE
	Product Age Chart	Report_PRODUCT_AGE_CHART

Sub-Folder	View Name	Reference Name
	Product Shelf Life Chart	Report_PRODUCT_SHELF_LIFE_CHART
	Storage Utilization	Report_STORAGE_UTILIZATION
	Storage Utilization Chart	Report_STORAGE_UTILIZATION_CHART

Beginning Inventory View

The Beginning Inventory view displays beginning inventory information that is imported from an external system. This transaction-based information provides a consolidated summary of your inventory at a particular time. The summary records display the beginning inventory records, which are calculated by using the sum of the lots for one product at a location. You cannot add summary records in this view. The detail records display the lots and their attributes. From this view, you can access the following views:

- Location View
- Item Master View

Summary Field	Description
Location	A code that specifies the location at which the inventory is stored.
Product	The code for the product or material.
Status	<p>The current status of the lot. Values are:</p> <p>Available: This lot is available for use.</p> <p>Expired: This lot has passed its expiry date and cannot be used.</p> <p>Onhold: This lot is not currently available inventory. It might be available for use at a later date as specified in the Hold Period field in the detail fields.</p> <p>Scrap: This lot is scrap and cannot be used.</p> <p>All inventory regardless of its status, consumes storage space through the horizon until it is used to meet demand or is deleted from the Beginning Inventory view.</p>
Total Quantity	The total quantity of this product in inventory.
Avg. Remaining Shelf Life	The average number of remaining shelf-life days for the products in this lot.
Product Description	A description of the product.
Location Description	A description of the location.

Detail Field	Description
Lot Number	A number that identifies the lot that contains the product.
Location	A code that identifies the location at which the inventory is stored.
Storage Type	A code that specifies the type of storage for the lot. This field is optional. If you do not specify a storage type for a lot, Production and Distribution Planning assumes that the lot does not consume storage capacity.
Product	The code for the product or material.
Quantity	The quantity of product in the lot.
Unit	The unit of measure defined by the Quantity field.
Status	<p>The current status of the lot. Values are:</p> <p>Available: This lot is available for use.</p> <p>Expired: This lot has passed its expiry date and cannot be used.</p> <p>Onhold: This lot is not currently available inventory. It might be available for use at a later date as specified in the Hold Period field in the detail fields.</p> <p>Scrap: This lot is scrap and cannot be used.</p> <p>All inventory, regardless of its status, consumes storage space through the horizon until it is used to meet demand or is deleted from the Beginning Inventory view.</p>
Status Date	The effective date of the lot status. This field is mandatory.
Mfg Date	The date when the lot was manufactured and begins to consume storage capacity. This field is mandatory.
Quality Code	A code used to identify specific characteristics of the product. A quality code can be used to identify the grade, color, version, or other characteristics of the product. This field is provided for visibility only.
Hold Period	The number of days from the manufacturing date when the lot must be held when its status is ONHOLD. When the current date equals the Mfg Date plus the Hold Period, the lot is available for use. If the value is less than or equal to 0.0, the lot is held indefinitely until it has been released by changing the status.
Comment	A user comment field.
User Field 1 to User Field 3	User-defined fields.
Product Description	A description of the product.

Detail Field	Description
Location Description	A description of the location.
Shelf Life	The shelf life of this product in days.
Expire Alert Level 1	A priority one alert that is generated when the remaining shelf life is below the specified number of days. This field is used by Production and Distribution Planning only.
Expire Alert Level 2	A priority two alert is generated when the remaining shelf life is below the specified number of days. A priority two alert is not generated if a priority one alert has been triggered for the same lot. This field is used by Production and Distribution Planning only.
Expires In	The remaining shelf life of the product, expressed in number of days.
Expires On	The date when the product is at the end of its shelf life.

In-Transit Inventory View

The In-Transit Inventory view displays in-transit inventory shipped from the originating location. The summary records display the shipment numbers, locations, and carriers. The detail records display the products and materials that are included in each shipment. Drill-down functions for each field are specified in the field description.

Summary Field	Description
Shipment Number	The primary key field that specifies the unique identification of the shipment entry.
Origin	The code for the source location. You can navigate to the origin location in the Location view.
Origin Desc	A description of the origin location.
Destination	The code for the receiving location. You can navigate to the destination location in the Location view.
Destination Desc	A description of the destination location.
Planned Ship Date	The date when the shipment is scheduled to be shipped.
Actual Ship Date	The date when the shipment was shipped.
Arrive Date	The date when the shipment is scheduled to arrive.
Transport Mode	The mode of transportation.
Carrier Name	The name of the carrier.

Summary Field	Description
Vehicle Id	The identification number of the vehicle making the shipment.
Transfer Order Number	The identification number of the transfer.
Type	The type of shipment. The valid value is INTRANSIT.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Shipment Number	The identification number of the in-transit.
Item Number	The number of the item within the in-transit.
Product	The code for the product or material. You can navigate to the Item Master view.
Quantity	The amount of the product in the in-transit.
Unit	The unit of measure for the quantity.
Quality Code	The code identifying the quality of the product. Quality code might be for grade, color, version, or other characteristics. For visibility only.
User Field 1 to User Field 3	User-defined fields.

Planned Inventory Transfers View

The Planned Inventory Transfers view displays planned transfers of products. The summary records display the shipment numbers, locations, and carriers. The detail records display the products included in each shipment. Drill-downs functions for each field are specified in the field description.

Summary Field	Description
Shipment Number	The identification number of the planned transfer.
Origin	The code for the source location. You can navigate to the origin location in the Location view.
Origin Desc	A description of the source location.
Destination	The code identifying the receiving location. You can drill down to the destination location in the Location view.
Destination Desc	A description of the receiving location.
Ship Date	The date when the shipment is scheduled to be shipped.
Arrival Date	The date when the shipment is scheduled to arrive.

Summary Field	Description
Transport Mode	The mode of transportation.
Carrier Name	The name of the carrier.
Vehicle Id	The identification number of the vehicle making the shipment.
Transfer Order Number	The identification number of the transfer.
Type	The type of shipment. The valid value is PLANXFER.
Status	<p>The status of the shipment. Values are:</p> <ul style="list-style-type: none"> Planned: Status of the planned transfer when it is initially entered. The planned transfer is used in calculations. Approved: The planned transfer has passed one level of approval and is used in calculations. Published: The planned transfer is used in calculations and is written to an export file. Rejected: The planned transfer is not used in calculations and has been rejected for future use.
Status Date	The date when the status was most recently changed.
Planner	The name of the planner who most recently changed the status of this record.
Planner Comment	A comment from the planner.
Fix	<p>Determines if the shipment is to be fixed for the next solve. Values are:</p> <p>Y: the shipment is fixed for the next solve.</p> <p>N: the shipment is not fixed for the next solve.</p> <p>The default value is N.</p>
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Shipment Number	The identification number of the planned transfer.
Item Number	The number of the item within the planned transfer.
Product	The code for the product or material. You can navigate to the Item Master view.
Quantity	The amount of the product in the planned transfer.
Unit	The unit of measure for the quantity.

Detail Field	Description
Quality Code	The code identifying the quality of the product. Quality code might be for grade, color, version, or other characteristics. For visibility only.
User Field 1 to User Field 3	User-defined fields.
Description	A description of the product.

Code Age View

The Code Age view displays remaining shelf-life classifications. Remaining shelf life of items can be divided into ranges of days. Each range is identified by a unique code. A range of days and its associated code is called a code age. Code age classifications support age reporting in the views. The remaining shelf-life views classify products by their code age. This view has no drill-downs.

Field	Description
Code	The code for the remaining shelf-life classification.
Description	A description of the remaining shelf-life classification.
Minimum Shelf Life	The minimum number of days of remaining shelf life that a product must meet to qualify for this classification.

Inventory Balance

The Inventory Balance view displays the inventory balancing classes that the Supply Planning solver uses to determine the distribution of inventory when an inventory shortage exists.

Field	Description
Location Inv Balance Class	The code for the location inventory balancing class--for example, AClassCustomers and BClassCustomers.
Product Inv Balance Class	The code for the product or material inventory balancing class: for example, HighDemandProducts and LowDemandProducts.
Safety Percentage	The minimum percentage of safety stock that must be met to satisfy the inventory-balancing requirement.
Effective Demand Percentage	The minimum percentage of effective demand that must be met to satisfy the inventory-balancing requirement.

Inventory Policy Build View

This view specifies the build inventory policy for the item at the location. Each definition is effective-dated.

Note. The summary records of this view pick up the summary records from the Inventory Policy Master view. Only the detail records are shown below.

Field	Description
Location	The code for the location.
Product	The code for the product.
Effective Date	The date and time combination when the policy attributes become effective.
Build Level	The target build level for the item. This field is mandatory.

Inventory Policy Master View

This view specifies the inventory policy for the item at the location. It allows you to add, change, and delete inventory policies. All the location-item combination attributes that are not effective-dated are defined in this table. This view manages the InventoryMaster table.

Summary Field	Description
Product	The code for the product.
Location	The code for the location.
Constrained Timefence	A value that indicates whether an item is constrained at the location specified in the Location field. A value of -1 indicates that the item is constrained for the entire horizon. A value of 0 indicates that the item is unconstrained for the entire horizon. This field is required.
Consumption Rule	<p>The forecast consumption rule for this item. The consumption rule can be two-phased. The first phase follows one rule and the second phase follows a different rule. The Consumption Rule attribute determines the switching from first to second phase.</p> <p>Values are:</p> <ul style="list-style-type: none"> • ORDER • FORECAST • SUM • GREATER <p>Any binary combination of the above, separated by a hyphen can be used for a two-phased consumption rule. For example ORDER-GREATER, applies ORDER to the first phase and GREATER to the second phase.</p> <p>This field is required.</p>

Summary Field	Description
Consumption Timefence	The number of days from the horizon start before the forecast consumption switches. The field is applicable to two-phased consumption rules as defined in the Consumption Rule field. The default of 0 means the second rule becomes effective on the first day of the horizon.
User Field 1 to User Field 3	User-defined fields.

Inventory Policy Maximum View

The Inventory Policy Maximum view specifies the maximum inventory policy for the item at the location. Each definition is effective-dated. This view manages the InventoryPolicyMaster and InventoryPolicyMaximum tables.

Note. The summary records of this view pick up the summary records from the Inventory Policy Master view. Only the detail records are shown below.

Summary Field	Description
Location	A code that specifies the location.
Product	A code that specifies the product.
Constrained Timefence	A value that indicates whether an item is constrained at the location specified in the Location field. A value of -1 indicates that the item is constrained for the entire horizon. A value of 0 indicates that the item is unconstrained for the entire horizon. This field is required.

Summary Field	Description
Consumption Rule	<p>A code that specifies the forecast consumption rule for this item. The consumption rule can be two-phased. That is, the first phase follows a specific consumption rule and the second phase follows a separate rule. Alternating between phases is defined by the Consumption Timefence field.</p> <p>For single-phased consumption, valid values are:</p> <ul style="list-style-type: none"> • ORDER • FORECAST • SUM • GREATER <p>For two-phased consumption, valid values are:</p> <ul style="list-style-type: none"> • ORDER-FORECAST • ORDER-SUM • ORDER-GREATER • FORECAST-ORDER • FORECAST-SUM • FORECAST-GREATER • GREATER-ORDER • GREATER-FORECAST • GREATER-SUM • SUM-ORDER • SUM-FORECAST • SUM-GREATER <p>This field is required.</p>
Consumption Timefence	<p>The number of days after the horizon start date before the forecast consumption switches to the second rule. A default value of 0 specifies that the second rule becomes effective on the first day of the horizon. This field is only applicable if you specified a two-phased consumption rule in the Consumption Rule field.</p>
User Field 1 to User Field 3	User defined fields.

Detail Field	Description
Location	A code that specifies the location.
Product	A code that specifies the product.
Effective Date	The date and time combination when the policy attributes become effective.

Detail Field	Description
Maximum Policy	The days cover policy for the maximum inventory level. This field is required.
Maximum Level	<p>The number of days from the horizon start before a two-phased forecast consumption rule switches from one phase to another. This applies to the two-phased consumption rules in the Inventory Policy Master view.</p> <p>The default is 0, meaning that the second rule becomes effective on the first day of the horizon. A value of -1 represents infinite capacities.</p> <p>This field is optional.</p>
Maximum Coverage	<p>The maximum inventory level in number of days cover. This field must be completed unless the Maximum Policy field is set to N.</p> <p>The values set in this field must be identical to those set in the Inventory Policy view.</p>

Inventory Policy Safety View

The Inventory Policy Safety view specifies the safety inventory policy for the item at the location. Each definition is effective-dated. This view manages the InventoryPolicyMaster and InventoryPolicySafety tables.

Note. The summary records of this view pick up the summary records from the Inventory Policy Master view. Only the detail records are shown below.

Detail Field	Description
Location	The code for the location.
Product	The code for the product.
Effective Date	The date and time combination when the policy attributes become effective.
Safety Policy	<p>The days cover policy, which will be used for safety inventory level.</p> <p>Valid Values are:</p> <ul style="list-style-type: none"> • Y: Days cover is used for safety inventory level. • N: Absolute quantity is used for safety inventory level. • M: Maximum days cover and absolute quantity are used for safety inventory level. <p>This field is mandatory.</p>
Safety Level	<p>The safety inventory level in absolute quantity.</p> <p>This field must be filled unless the safety policy is set to Y.</p>

Detail Field	Description
Safety Coverage	The safety inventory level in number of days cover. This field must be filled unless safety policy is set to N.
Safety Reduction	The reduction of the safety stock due to the pooling of safety from other locations. This field is optional.

Inventory Policy Storage View

The Inventory Policy Storage view specifies the storage type for the item at the location. Each definition is effective-dated. This view manages the InventoryPolicyMaster and InventoryPolicyStorage tables.

Note. The summary records of this view pick up the summary records from the Inventory Policy Master view. Only the detail records are shown below.

Detail Field	Description
Location	The code for the location.
Product	The code for the product.
Effective Date	The date and time combination when the policy attributes become effective.
Storage Type	The storage type that is used by the product. This field is optional. If you do not define a storage type, then it is assumed that the product consumes no storage.

Item Calendar View

The Item Calendar view displays the shipping, receiving, and producing calendars for a product at a location. The summary records display the locations and products; and the default shipping, receiving, and producing calendars. The detail records display the exceptions to the calendars. This view has no drill-down function.

Summary Field	Description
Location	The code for the location.
Product	The code for the product.
Ship Calendar	The shipping status for each day of the week. The values are in the same format as Producing Calendar.

Summary Field	Description
Receive Calendar	The receiving status for the day of the week. The values are in the same format as Producing Calendar.
Producing Calendar	<p>The producing status for the day of the week. The value is composed of a combination of seven 1s and 0s. The first number represents Monday's producing status. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed <p>For example, an item that is produced during the week, but is not produced on the weekends has the value 1111100.</p>

Detail Field	Description
Location	The code for the location.
Product	The code for the product.
Exception Date	The date of the exception.
Shipping	<p>The exception to the shipping calendar. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed
Receiving	<p>The exception to the receiving calendar. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed
Producing	<p>The exception to the producing calendar. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed

Item Category View

The Item Category view is used to define the item categories for each item category type. Categorizing items allows you to generate reports for specific item categories.

Summary Field	Description
Category Name	The category name for an item. For example, for a bike manufacturer, this field could have values such as 10SPEED, BMX, OFFROAD, and so on.
Category Type	The type of item category.

Summary Field	Description
Description	A brief description of the item category. This field is optional.
User Field 1 - User Field 3	User defined fields.

Detail Field	Description
Category Name	The category name for an item. For example, for a bike manufacturer, this field could have values such as 10SPEED, BMX, OFFROAD, and so on.
Product	An item that is associated with the specified category.
User Field 1 - User Field 3	User defined fields.

Item Group View

The Item Group view displays product and material groups. Product groups are groups of related products that have similar characteristics. The summary records display the product groups and their attributes. The detail records display the products that are included in each group. Drill-down functions for each field are specified in the field description.

Summary Field	Description
Group Name	The name of the product group.
Owner	The name of the planner who entered the information about this product group.
User Field1 to User Field3	User-defined fields.
Description	A description of the product group.
Item Type	A code that specifies the type of items in the group. Values are: <ul style="list-style-type: none"> • P: Product • M: Material
Composition	A code that indicates whether an item is a single item or is a part of an item group. Values are: <p>I: The item is a single item.</p> <p>G: The item is a part of an item group.</p> <p>Item groups cannot be nested within other item groups.</p>

Detail Field	Description
Group Name	The name of the product group.

Detail Field	Description
Sub Product Name	The code for the product. From this field, you can access the Item Master view.
Sub Product Desc	A description of the product.

Item Master View

The Item Master view displays products, and materials and their attributes. You can navigate from this view to the Unit Conversion view.

Summary Field	Description
Product	A unique name identifying the product.
Description	A description of the product.
Owner	The name identifying the planner.
User Field 1 to User Field 3	User-defined fields.
Item Type	<p>The type of item. Values are:</p> <ul style="list-style-type: none"> • P: Product. • M: Material. • G: Generic product. Use this value when you define generic products for product substitution. This option only applies to Production and Distribution Planning. • C: Configured Item. This item may be a configured finished good or a subassembly consumed during the manufacturing process. Different configurations are identified by a unique dynamic parts list and routing.
Composition	<p>This field is used to indicate an item as a single item or as a part of an item group. Values are:</p> <ul style="list-style-type: none"> • I: The item is a single item. • G: The item is a part of an item group. <p>Item groups cannot be nested within other item groups.</p>
Consumable	<p>This field indicates whether the product is consumable. Values are:</p> <ul style="list-style-type: none"> • Y: Consumable. • N: Not consumable. • R: Reusable and consumable. This value is used for capacity reporting and reusable container planning. <p>Typically, products are set to N, input materials are set to Y, resources are set to N, reusable containers are set to R, and any items included in a manufacturing bill of resources are set to Y.</p>

Summary Field	Description
Saleable	<p>This field indicates whether the product can be sold. Values are:</p> <ul style="list-style-type: none"> • Y: Saleable. • N: Not saleable. If this value is selected, the item does not appear in the Sales Order Inquiry view.
Plan Unit	The base unit of measurement for product and material planning.
Ship Unit	The unit of measurement for product shipping. This value is used for unit conversion between planning and shipping quantities.
Shelf Life	The number of days from the manufacturing date of the product to its expiry date.
Shelf Life Unit	This field specifies the unit of measure for the Shelf Life field. This field is reserved for future use.
Carrying Cost	This field specifies the carrying cost for the product as a percentage of the value in the Unit Cost field. This field is reserved for future use.
Unit Cost	The per unit standard cost for the product. This value is used for inventory valuation reporting.
Priority Class	A code for the product demand priority class. This field is Production and Distribution Planning-specific.
Expiration Alert Level 1	The conditions for which priority 1 expiration alerts are generated. This value is expressed in the number of days of remaining shelf life.
Expiration Alert Level 2	The conditions for which priority 2 expiration alerts are generated. This value is expressed in the number of days of remaining shelf life.
Quality Code	<p>This field stores a code that classifies the item by a specific defined quality, for example, grade, color, potency, revisions, etc. This field is not used by the distribution/deployment solver but may, in the future, be used by the order allocation heuristics.</p> <p>This field is optional.</p>
Deploy Publish Horizon	<p>This field specifies the number of days of deployments to be published to VL. Data migration will place a default value of 0 in this field that indicates that all deployments should be published to vehicle loading.</p> <p>This field is optional.</p>

Summary Field	Description
Inventory Balance Class	A code for the product inventory balancing class - for example, HighDemandProducts and LowDemandProducts. This field is Production and Distribution Planning-specific.
Ship Late Cost	The penalty cost for shipping an order late. This value is multiplied by the number of days that the item is backordered.

Material Substitution View

The Material Substitution view displays the materials that the solver can substitute for another material when a sufficient quantity of the original material used in a manufacturing process is unavailable. The summary records display available products and provide basic information about the material being substituted. The detail records display process and manufacturing information and material substitution policies. You cannot add, change, or delete summary records. You can add, change, or delete detail records in this view.

Summary Field	Description
Item Code	The code identifying the item.
Product Description	A description of the product.

Detail Field	Description
Operation	The code for the manufacturing operation.
BOMR Id	The code for the BOMR entry for this process.
Item Code	The code for the item.
Substitute Item Code	The code for the material that can be used as a substitute.
Effective Date	The date when the material substitution policies take effect.
Preference	This field determines which substitute the Supply Planning uses first, second, third, and so on. A preference of 1.0 indicates that the substitute is used first. A preference of 2.0 indicates that the substitute is used only after the substitute with a preference of 1.0 is no longer available. Setting a preference = 0 turns off the substitution. Values are 1.0, 2.0, and so on. Invalid values are 1.5, 2.1, and so on.
Ratio	The quantity of the substitute product substituted for each unit of the original product.

Product Substitution View

The Product Substitution view displays data about product substitutions. You can define product substitutions using the detail fields in this view. Products for which you can establish substitutions appear in the summary area of this view.

Summary Field	Description
Location	The code for the location.
Location Description	A description of the location.
Product	The code for the product.
Product Description	A description of the product.

Detail Field	Description
Location	The code for the location.
Product	The code for the product that is being substituted.
Substitute	The code for the substitute product.
Effective Date	The date on which the product substitution takes effect.
Ratio	The quantity of alternate product to be used for each unit of the original product. This field is required.
Preference	<p>The preference for this substitute item with respect to the original as well as to other alternates if specified. The higher this value is, the less preferable the item is as a substitution. Setting a preference to ≤ 0 disables the substitution.</p> <p>The original item always has an implicit preference that is most preferred. Setting the preference of the substitute to 1.0 means that the product is a phantom product and its demand is assigned to the substitute with a preference of 1.0. This field is required.</p>
Transfer Demand	<p>This field specifies whether or not the demand for the substitute product is to be transferred to that for the original product. The effect of transferring the demand of the substitute product to the original product is that demand for the original product can be fulfilled by any of the substitution products. Values are:</p> <ul style="list-style-type: none"> • Y: Demand is transferred. • N: Demand is not transferred.
User Field 1 to User Field 3	User defined fields.

Safety Network View

The Safety Network view displays the networks of locations that share common safety stock inventory. A safety stock network is a set of locations that share their safety stock requirements to reduce the total inventory carried by each location while maintaining adequate inventory to protect against variations in demand. Safety stock that is shared among the locations is called common safety stock. This view has no drill-downs.

Field	Description
Item	The code for the product or material.
Item Description	A description of the product.
Location	The code for the location that belongs to the safety stock network.
Location Description	A description of the location that belongs to the safety stock network.
Safety Location	The code for the location at which a percentage of the safety stock is being stored as common safety stock.
Safety Location Desc	A description of the location at which a percentage of the safety stock is being stored.
Effective Date	The date when the safety stock network policies take effect.
Safety Contribution	The portion of safety stock to be stored by the Safety Location.
User Field 1 to User Field 3	User-defined fields.

Storage Capacities View

The Storage Capacities view displays the storage capacity, by storage type, at the location. You can assign a storage type in the inventory policy for each item. Based on the storage type and the standard planning unit, the quantity of an item is converted into the storage capacity units; and the capacities are consumed accordingly. The appropriate unit conversion formula must be provided in the UnitConversion table for the capacity calculation to be performed correctly.

Note. If you use Production and Distribution Planning with Order Promising, you can complete the fields in this view. Order Promising alone does not use this view because the application does not consider storage capacities. If this view is not completed in Order Promising, Production and Distribution Planning will not consider storage capacities.

Summary Field	Description
Location	The location where the storage definition applies.
Storage Type	The code identifying the type of storage in use at the location.
Capacity Unit	The unit of measure for the first dimension of storage capacity.

Summary Field	Description
User Field 1 to User Field 3	User-defined fields.
Description	A description of the location.

Detail Field	Description
Location	The code identifying the location.
Storage Type Desc	The code identifying the type of storage in use at the location.
Effective Date	The date when the storage capacity information is in effect.
Maximum Standard Capacity	The standard capacity for the type of storage. A value of –1 represents infinite capacities.
Maximum Premium Capacity	The premium capacity for the type of storage (above Standard Capacity). A value of –1 represents infinite capacities.
Minimum Standard Capacity	The minimum standard storage capacity required. This value must be greater than 0.0 to be taken into consideration by the solver. If this value is not met, a penalty is applied.
Minimum Capacity Penalty	The penalty cost that applies per unit that exceeds the minimum standard.
Standard Storage Cost	The cost of storing one unit (based on Capacity Unit) in standard storage.
Premium Storage Cost	The cost of storing one unit (based on Capacity Unit) in premium storage.
User Field 1 to User Field 3	User-defined fields.

Unit Conversion View

The Unit Conversion view supports standard unit conversions and product-specific conversions. You define unit conversions to map quantities between items that are measured in different units. You can convert units within the same dimension and system, such as grams to kilograms; and you can convert between different systems, such as pounds to kilograms, or between different dimensions, such as cases to kilograms. You must complete the Unit Conversion view after installation. All input quantities must be in standard planning units.

For example, consider a product-specific conversion using cases as the base unit. Twenty kilograms are in each case, and each pallet holds 10 cases. The unit conversion values are as follows:

Product	Dimension	Unit	Factor	Offset
A16oz	WEIGHT	KG	0.05	0.0

Product	Dimension	Unit	Factor	Offset
A16oz	COUNT	CASE	1.0	0.0
A16oz	COUNT	PALLET	10.0	0.0

The summary records display the products and materials. The detail records display the unit conversions for each product. You cannot add summary records in this view. You can navigate from this view to the Item Master view.

Summary Field	Description
Product	The code for the product or material that is substituted for the original. For standard unit conversions, enter STANDARD.
Description	A description of the product.

Detail Field	Description
Product	The code for the product.
Dimension	The dimension for the unit of measure for the product. For example, WEIGHT, VOLUME, or COUNT for containers.
Unit	The name of the unit of measure, such as CASE or PALLET.
Factor	The multiplication factor in the unit conversion equation. Specify 1 for the base planning unit.
Offset	The constant used in the unit conversion equation. This field is reserved for future use.

Inventory Status View

The Inventory Status view provides a comprehensive display of various key figures that you need to monitor and report on inventory levels. It displays data by product or material, location, and date. Data in this view is for reporting and cannot be changed.

When you view data for a period that has fixed and unfixed production that is separated by a fixed production timefence, the Inventory Status view displays all of the production quantities in the Production field for the duration of the timefence and only fixed production quantities after the timefence. The Inventory Status view displays fixed net requirement quantities in the Net Requirement field for the duration of the timefence and all net requirement quantities after the timefence.

Data for planned customer orders, rejected deployments, rejected shipments, and rejected net requirements does not appear in the Inventory Status view. In addition, data for inventory with the following statuses in the Beginning Inventory view also does not appear in this view:

- Expired
- Onhold (where the on-hold period is still effective)

- Scrap

If you use the Supply Planning solver, the Inventory Status view uses the safety stock network to calculate safety stock values. If you use the HS solver, the view uses the DAYS COVER_POLICY system option to calculate days of cover for safety stock. The view only uses this system option if the safety stock policies are defined as days of cover.

Note. Changes made to key fields in the views or tables are not reflected automatically in the Inventory Status view. To refresh the data, you need to close and reopen the Inventory Status view.

Field	Description
Period Start Date	The period start date.
Period Name	A code that identifies the inventory period.
Location	The location for which inventory status information is provided.
Product	The product for which inventory status information is provided.
Period End Date	The period end date.
Product Description	The code that describes the product or material.
Beginning Inventory	The inventory level at the start of each period. Beginning inventory is also referred to as starting or opening inventory. In any period after the first, this view is the Projected Inventory from the previous period. In the first period, the inventory level is based on input data for beginning inventory. From this field, you can access the Beginning Inventory view.
Net Requirements	The ideal amount of production that is needed to satisfy the network requirements for inventory. From this field, you can access the Net Requirements view.
In Transit	The amount of inventory currently in transit between two locations. In transit is also referred to as enroute. From this field, you can access the In-Transit Inventory view.
Deployments In	The recommended shipments from the solver to be received by the shipping location. From this field, you can access the Deployment view.
Deployments Out	The recommended shipments from the solver to be deployed from the shipping location. From this field, you can access the Deployment view.
Customer Orders	The quantity of each product that is required to satisfy customer orders. From this field, you can access the Customer Order and Order Entry views.
Forecast	The forecasted demand for the period. From this field, you can access the Forecast and Forecast Profile views.

Field	Description
Planned Transfers In	The inventory that is planned to transfer in to the receiving location. Planned transfer is also referred to as on-order.
Planned Transfers Out	The inventory that is planned to transfer out (demand). Planned transfer is also referred to as on-order.
Work Order Quantity	The quantity of item specified by the work order.
Forecast Consumption	The forecast demand.
Dependent Demand	<p>The demand based on the scheduled production of finished products. The value in this field is calculated by the system. For net requirements, this value is calculated based on the bill of material requirements.</p> <p>Dependent demand = Dependent demand from solver tables + Substituting quantity - Substituted quantity</p>
Co Product	The quantity of byproduct that is produced by the manufacturing process.
Substituted Demand	The quantity of demand satisfied by substituted products and materials. The quantity is negative for substitutes and positive for products and materials (non-substitutes).
Effective Demand	<p>The sum of the demand that is based on the scheduled production of finished products and the demand that is based on the forecast consumption rule for the product.</p> <p>Effective Demand = Forecast Consumption + Dependent Demand + Substituted Demand</p>
Effective Demand Subst	Effective demand substitution.
Projected Inventory	<p>The projected ending inventory, which is as follows:</p> <p>Beginning Inventory + Work Order Quantity + Future Inventory + Net Requirements + In-Transit + Deployments In + Planned Transfer In + Co Product - Effective Demand - Deployments Out - Planned Transfer Out</p> <p>Projected inventory is also referred to as ending inventory.</p>
Safety	The safety stock level of inventory that should be stored against forecast error.
Safety Reduction	The quantity of safety stock stored by this location, after accounting for common safety stock stored at other locations.

Field	Description
Build	The inventory build level. This inventory is used to satisfy future demand and is generally the result of the need to produce inventory ahead of time because of manufacturing or distribution constraints in the period of actual demand. The build level is accumulated over time. From this field, you can access the Inventory Policy Build view.
Maximum	The maximum amount of inventory that should be stored. From this field, you can access the Inventory Policy Maximum view.
Safety Coverage	The safety days of cover. If specified, the sum of the effective demand for the specified number of days determines the level of safety stock. From this field, you can access the Inventory Policy Safety view.
Maximum Coverage	The maximum days of cover. If specified, the sum of the effective demand for the specified number of days determines the maximum inventory level. From this field, you can access the Inventory Policy Maximum view.
Ship Status	A code that specifies the shipping status for the day of the week. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed From this field, you can access the Location view.
Receive Status	A code that specifies the receiving status for the day of the week. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed From this field, you can access the Location view.
Production Status	A code that specifies the producing status for the day of the week. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed From this field, you can access the Location view.
Projected Days Cover	The number of days that demand can be satisfied with the Projected Inventory if no more inventory is produced.
Days Cover Demand	The days of demand cover.
Plan Unit	The plan unit.
Safety Level	The safety level.

Field	Description
Safety Policy	The safety policy.
Storage Type	The type of storage for the product. From this field, you can access the Inventory Policy view.
Location Balance Class	The location balance class.
Product Balance Class	The product balance class.
Actual Safety	The actual safety.
Safety Stock Balance Number	The safety stock balance number.
Safety Stock Satisfied Number	The actual percentage of safety stock that was satisfied for the location.
Effective Demand Balance Number	The effective demand balance number.
Effective Demand Satisfied Number	The effective demand satisfied number.
FC Rule	The FC rule.
Dayscover Policy	The days of cover policy.
Inventory Balance Timefence	The inventory balance timefence.
Safety Qty	The safety quantity.
Maximum Policy	The maximum policy.
Maximum Level	The maximum level.
Future Inventory	The future inventory.
Inventory Value	The period inventory value that is calculated as Unit Cost (from the Item Master view) multiplied by Projected Inventory. If the projected inventory is less than zero, the inventory value is zero.

Example: Days of Cover Calculation

In this example of fields in the Inventory Status view, the display has been configured to show only the relevant fields:

	31-Dec-03	01-Jan-04	02-Jan-04	03-Jan-04	04-Jan-04	05-Jan-04	06-Jan-04
Beginning Inventory	160.00	320.00	438.70	477.40	394.80	332.85	270.90
Effective Demand	0.00	41.30	41.30	82.60	61.95	61.95	61.95

	31-Dec-03	01-Jan-04	02-Jan-04	03-Jan-04	04-Jan-04	05-Jan-04	06-Jan-04
Projected Inventory	320.00	438.70	477.40	394.80	332.85	270.90	260.00
Ship Status	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Projected Days Cover	4.50	6.57	6.74	5.74	5.74	4.74	4.74

In the first period, December 31, the Projected Days Cover is 4.50. The Projected Inventory of 320 on that date can cover the five days of demand (the 5.00) from January 1 through January 5, which totals 289.1; the demand on January 6, which is 61.95; and 30.9 units of demand on January 6, which is 30.9 (the additional 0.5). The value of the Effective Demand for January 4 is considered, but January 4 is not considered as a day of cover because the location is closed for shipping and the DAYS COVER_EXCLUDE_HOLIDAY system option is set to Y.

If the location is open for shipping on January 4, days of cover is calculated differently.

	31-Dec-03	01-Jan-04	02-Jan-04	03-Jan-04	04-Jan-04	05-Jan-04	06-Jan-04
Beginning Inventory	160.00	320.00	438.70	477.40	394.80	332.85	270.90
Effective Demand	0.00	41.30	41.30	82.60	61.95	61.95	61.95
Projected Inventory	320.00	438.70	477.40	394.80	332.85	270.90	208.95
Ship Status	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Projected Days Cover	5.50	7.57	7.74	6.74	5.74	4.74	3.74

In the first period, the Projected Days Cover is 5.50. The Projected Inventory of 320 on that date can cover five days of demand (the 5.00) from January 1 through January 5, which totals 289.1, and 30.9 units of the demand on January 6 (the additional 0.50).

For days of coverage beyond the horizon, an average demand value is calculated for the last five days of the horizon.

Inventory Status Chart View

The Inventory Status Chart view uses the Chart Tool to display a graph of inventory levels for a product at a location.

Inventory Status Location Category View

The Inventory Status Location Category view displays inventory status data by location category. The aggregation of data by location category is useful for reporting purposes, and when you want to know aggregate or subtotal amounts across the entire network for location categories. You define the categories in the Location Category view. Data in the Inventory Status Location Category view is for reporting and cannot be changed.

The summary records in the view display data by location category by product by period start date. The detail records display information about the locations in each category. Each set of detail records has the same values in the Location Category, Product, and Period Start Date fields. If more than one category includes the same location, only the first category displayed shows data for that location. The other categories do not display data for the location.

When you view data for a period that has fixed and unfixed production separated by a fixed production timefence, the Inventory Status Location Category view displays all production quantities in the Production field for the duration of the timefence and only fixed production quantities after the timefence. The Inventory Status Location Category view displays fixed net requirement quantities in the Net Requirement field for the duration of the timefence and all net requirement quantities after the timefence.

Data for planned customer orders, rejected deployments, rejected shipments, and rejected net requirements is not displayed in the Inventory Status Location Category view. Data for inventory with a status of Expired, Onhold (where the onhold period is still effective), or Scrap in the Beginning Inventory view is also not displayed in the Inventory Status Location Category view.

If you use the Supply Planning solver, the Inventory Status Location Category view uses the safety stock network to calculate safety stock values. If you use the HS solver, the view uses the `DAYSCOVER_POLICY` system option to calculate days of cover for safety stock. The view only uses this system option if the safety stock policies are defined as days of cover.

If you are using the product substitution function and generic products, the Inventory Status Location Category view does not display data for the substitutes that have a transfer demand value of Y. In this situation, the view only displays the data for the generic product.

Drill-downs for each field are specified in the field description.

Summary Field	Description
Location Category	The name of the location category.
Product	The code for the product or material at the location.
Period Start Date	The start date of the period.
Period End Date	The ending date of the period.
Beginning Inventory	The sum of the Beginning Inventory quantities of the detail records.
Net Requirements	The sum of the Net Requirement quantities of the detail records.
In Transit	The shipments that are currently in transit (en route).
Planned Transfer Out	The amount of outgoing inventory that is currently planned to be shipped from one location to another.
Planned Transfer In	The amount of incoming inventory that is currently planned to be shipped from one location to another.
Deployment Out	The recommended shipments determined by the solve to deploy from the shipping location.

Summary Field	Description
Deployment In	The recommended shipments determined by the solve received at the receiving location.
Customer Orders	The sum of the Customer Order quantities of the detail records.
Forecast Orders	The sum of the Forecast quantities of the detail records.
Work Order Qty	The work order quantity.
Dependent Demand	The sum of the Dependent Demand quantities of the detail records. Dependent demand = Dependent demand from solver tables + Substituting quantity - Substituted quantity
Co Product	The quantity of byproduct that is produced by the manufacturing process.
Effective Demand	The sum of the Effective Demand quantities of the detail records.
Projected Inventory	The sum of the Projected Inventory quantities of the detail records.
Safety	The sum of the Safety quantities of the detail records.
Build	The sum of the Build quantities of the detail records.
Maximum	The sum of the Maximum quantities of the detail records.

Detail Field	Description
Location Category	The code for the location category.
Product	The code for the product or material. You can navigate to the Item Master view.
Period Start Date	The starting date of the period.
Location	The code for the location that is storing the inventory. You can navigate to the Location view.
Beginning Inventory	The inventory level at the start of each period. Beginning inventory is also referred to as starting or opening inventory. In any period after the first, this value is the Projected Inventory from the previous period. In the first period, the inventory level is based on input data for beginning inventory. You can navigate to the Beginning Inventory view.
Net Requirements	The net requirement quantity. You can navigate to the Net Requirements view.

Detail Field	Description
In Transit	The shipments that are currently in transit (en route).
Planned Transfer Out	The amount of outgoing inventory that is currently planned to be shipped from one location to another.
Planned Transfer In	The amount of incoming inventory that is currently planned to be shipped from one location to another.
Deployment Orders Out	The recommended shipments determined by the solve to deploy from the shipping location.
Deployment Orders In	The recommended shipments determined by the solve received at the receiving location.
Customer Orders	The quantity of the product that is required to satisfy the customer orders. You can navigate to the Customer Order and Order Entry views.
Forecast Orders	The forecasted demand for the period. You can navigate to the Forecast and Forecast Profile views.
Work Order Qty	The work order quantity.
Dependent Demand	<p>The demand that is based on the production schedule of finished products. The value in this field is calculated by the system.</p> <p>Dependent demand = Dependent demand from solver tables + Substituting quantity - Substituted quantity</p>
Co Product	The quantity of byproduct that is produced by the manufacturing process.
Effective Demand	<p>The sum of the demand that is based on the production schedule of finished products and the demand based on the forecast consumption rule for the product.</p> <p>Effective Demand = Forecast Consumption + Dependent Demand + Substituted Demand</p>
Substituted Demand	The quantity of demand satisfied by substituted products. The quantity is negative for substitutes and positive for products and materials (non-substitutes). You can navigate to the Substituted Demand view.
Projected Inventory	<p>This is the projected ending inventory, which is as follows:</p> <p>Beginning Inventory + Work Order Quantity + Future Inventory + Net Requirements + In-Transit + Deployments In + Planned Transfer In + Co Product - Effective Demand - Deployments Out - Planned Transfer Out</p> <p>Projected inventory is also referred to as ending inventory.</p> <p>See the Future Inventory field in Inventory Status for more information about future inventory</p>

Detail Field	Description
Safety	The amount of safety stock inventory. This value is calculated by the system. You can navigate to the Inventory Policy view.
Safety Reduction	The quantity of safety stock stored by this location, after accounting for common safety stock stored at other locations.
Build	The build inventory quantity level. This inventory is used to satisfy future demand and is, generally, the result of the need to produce inventory ahead of time because of manufacturing or distribution constraints in the period with actual demand. The build level is accumulated over time. You can navigate to the Inventory Policy Build view.
Maximum	The maximum amount of inventory. This value is calculated by the system. You can navigate to the Inventory Policy Maximum view.
Projected Days Cover	The number of days that demand can be satisfied with the Projected Inventory if no more inventory is produced.
Inventory Value	<p>This value is the period inventory value which is calculated as:</p> <p>Unit Cost (from the Item Master view) * Projected Inventory</p> <p>If projected inventory is less than zero, inventory value is zero.</p>
Safety Policy	<p>The inventory policy for the safety stock inventory quantity. Values are:</p> <ul style="list-style-type: none"> • Y: Days of cover (Safety Coverage) determines the safety stock level. • N: The regular safety level (Safety) determines the safety stock level. • M: The greater of Safety Coverage and Safety determines the safety inventory level.
Safety Coverage	The safety days of cover. If specified, the sum of the effective demand for the specified number of days determines the level of safety stock. You can navigate to the Inventory Policy Safety view.

Detail Field	Description
Maximum Policy	<p>The inventory policy for maximum inventory quantity. Values are:</p> <ul style="list-style-type: none"> • Y: Days of cover (Maximum Coverage) determines the maximum inventory level. • N: The regular maximum inventory level (Maximum) determines the maximum inventory level. • M: The greater of Maximum Coverage and Maximum determines the maximum inventory level. <p>The solvers respect maximum inventory levels only if the USE_INVENTORY_MAXIMUM system option is set to Y.</p>
Maximum Coverage	<p>The maximum days of cover. If specified, the sum of the effective demand for the specified number of days determines the maximum inventory level. You can navigate to the Inventory Policy Maximum view.</p>
Ship Status	<p>The shipping status for the day of the week. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed
Receive Status	<p>The receiving status for the day of the week. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed
Production Status	<p>The producing status for the day of the week. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed

Inventory Status Product Category Report

The Inventory Status Product Category report displays inventory status data by product category. The aggregation of data by product category is useful for reporting purposes, and when you want to know aggregate or subtotal amounts across the entire network for product categories. You define the categories in the Item Category view. Data in the Inventory Status Product Category report is for reporting and cannot be changed.

The summary records display data by product category by location by period start date. The detail records display information about the products in each category. Each set of detail records has the same values in the Product Category, Location, and Period Start Date fields. If more than one category includes the same location, only the first category that is displayed shows data for that location. The other categories do not display data for the location.

When you view data for a period that has fixed and unfixed production separated by a fixed production timefence, the Inventory Status Product Category report displays all production quantities in the Production field for the duration of the timefence and only fixed production quantities after the timefence. The Inventory Status Product Category report displays fixed net requirement quantities in the Net Requirement field for the duration of the timefence and all net requirement quantities after the timefence.

Data for planned customer orders, rejected deployments, rejected shipments, and rejected net requirements is not displayed in the Inventory Status Product Category report. Data for inventory with a status of Expired, Onhold (where the onhold period is still effective), or Scrap in the Beginning Inventory view is also not displayed in the Inventory Status Product Category report.

If you use the Supply Planning solver, the Inventory Status Product Category report uses the safety stock network to calculate safety stock values. If you use the HS solver, the view uses the DAYS COVER_POLICY system option to calculate days of cover for safety stock. The view only uses this system option if the safety stock policies are defined as days of cover.

If you are using the product substitution function and generic products, the Inventory Status Product Category report does not display data for the substitutes that have a transfer demand value of Y. In this situation, the report only displays the data for the generic product.

Drill-downs for fields are specified in the field descriptions.

Summary Field	Description
Product Category	The name of the product category.
Location	The code for the location of the inventory. You can navigate to the Location view.
Period Start Date	The starting date of the period.
Period End Date	The ending date of the period.
Beginning Inventory	The sum of the Beginning Inventory quantities of the detail records.
Net Requirements	The sum of the Net Requirement quantities of the detail records.
In Transit	The shipments that are currently in transit (en route).
Planned Transfer Out	The amount of outgoing inventory that is currently planned to be shipped from one location to another.
Deployment Out	The recommended shipments determined by the solve to deploy from the shipping location.
Planned Transfer In	The amount of incoming inventory that is currently planned to be shipped from one location to another
Deployment In	The recommended shipments determined by the solve received at the receiving location.
Customer Orders	The sum of the Customer Order quantities of the detail records.
Forecast Orders	The sum of the Forecast quantities of the detail records.
Work Order Qty	The sum of the Work Order quantities of the detail records.

Summary Field	Description
Dependent Demand	The sum of the Dependent Demand quantities of the detail records. Dependent demand = Dependent demand from solver tables + Substituting quantity - Substituted quantity
Co Product	The quantity of byproduct that is produced by the manufacturing process.
Effective Demand	The sum of the Effective Demand quantities of the detail records. Effective Demand = Forecast Consumption + Dependent Demand + Substituted Demand
Projected Inventory	The sum of the Projected Inventory quantities of the detail records.
Safety	The sum of the Safety quantities of the detail records.
Build	The sum of the Build quantities of the detail records.
Maximum	The maximum amount of inventory. This value is calculated by the system. You can navigate to the Inventory Policy view.

Detail Field	Description
Product Category	Name of the product category.
Location	The code for the location storing the inventory. You can navigate to the Location view.
Period Start Date	The starting date of the period.
Product	The code for the product or material. You can navigate to the Item Master view.
Beginning Inventory	The inventory level at the start of each period. Beginning inventory is also referred to as starting or opening inventory. In any period after the first, this level is the Projected Inventory from the previous period. In the first period, the inventory level is based on input data for beginning inventory. You can navigate to the Beginning Inventory view.
Net Requirements	The net requirement quantity. You can navigate to the Net Requirements view.
In Transit	The shipments that are currently in transit (en route). You can navigate to the In Transit view.
Planned Transfer In	The amount of incoming inventory that is currently planned to be shipped from one location to another

Detail Field	Description
Deployment Orders In	The recommended shipments determined by the solve received at the receiving location.
Planned Transfer Out	The amount of outgoing inventory that is currently planned to be shipped from one location to another.
Deployment Orders Out	<p>The recommended shipments determined by the solve to deploy from the shipping location.</p> <p>The number is negative in the shipping location and period, and positive in the receiving location and period. You can navigate to the Deployments view.</p>
Customer Orders	The quantity of the product that is required to satisfy customer orders. You can navigate to the Customer Order and Order Entry views.
Forecast Orders	The forecasted demand for the period. You can navigate to the Forecast and Forecast Profile views.
Work Order Qty	The quantity of the product that is required to fulfill work orders.
Dependent Demand	<p>The demand that is based on the schedule of production of finished products. The value in this field is computed by the system.</p> <p>Dependent demand = Dependent demand from solver tables + Substituting quantity - Substituted quantity</p>
Co Product	The quantity of byproduct that is produced by the manufacturing process.
Effective Demand	<p>The sum of the demand that is based on the production of finished products and the demand that is based on the forecast consumption rule for the product.</p> <p>Effective Demand = Forecast Consumption + Dependent Demand + Substituted Demand</p>
Substituted Demand	The quantity of demand satisfied by substituted products. The quantity is negative for substitutes and positive for products and materials (non-substitutes). You can navigate to the Substituted Demand view.

Detail Field	Description
Projected Inventory	<p>This value is the projected ending inventory, which is as follows:</p> $\text{Beginning Inventory} + \text{Work Order Quantity} + \text{Future Inventory} + \text{Net Requirements} + \text{In-Transit} + \text{Deployments In} + \text{Planned Transfer In} + \text{Co Product} - \text{Effective Demand} - \text{Deployments Out} - \text{Planned Transfer Out}$ <p>Projected inventory is also referred to as ending inventory.</p> <p>See the description of the Future Inventory field in Inventory Status for more information about future inventory.</p>
Safety	The amount of safety stock inventory. This value is calculated by the system. You can navigate to the Inventory Policy Safety view.
Safety Reduction	The quantity of safety stock stored by this location, after accounting for common safety stock that is stored at other locations.
Build	The build inventory quantity level. This inventory is used to satisfy future demand and is, generally, the result of the need to produce inventory ahead of time because of manufacturing or distribution constraints in the period with actual demand. The build level is accumulated over time. You can navigate to the Inventory Policy Build view.
Maximum	The maximum amount of inventory. This value is calculated by the system. You can navigate to the Inventory Policy Maximum view.
Projected Days Cover	The number of days that demand can be satisfied with the Projected Inventory if no more inventory is produced.
Inventory Value	<p>This is the period inventory value that is calculated as:</p> $\text{Unit Cost (from the Item Master view)} * \text{Projected Inventory}$ <p>If projected inventory is less than zero, inventory value is zero.</p>
Safety Policy	<p>The inventory policy for safety inventory quantity. Values are:</p> <ul style="list-style-type: none"> Y: Days of cover (Safety Coverage) determines the safety stock level. N: The regular safety level (Safety) determines the safety stock level. M: The greater of Safety Coverage and Safety determines the safety inventory level.

Detail Field	Description
Safety Coverage	The safety days of cover. If specified, the sum of the effective demand for the specified number of days determines the level of safety stock. You can navigate to the Inventory Policy Safety view.
Maximum Policy	<p>The inventory policy for the maximum inventory quantity. Values are:</p> <ul style="list-style-type: none"> • Y: Days of cover (Maximum Coverage) determines the maximum inventory level. • N: The regular maximum inventory level (Maximum) determines the maximum inventory level. • M: The greater of Maximum Coverage and Maximum determines the maximum inventory level. <p>The solvers respect maximum inventory levels only if the USE_INVENTORY_MAXIMUM system option is set to Y.</p>
Maximum Coverage	The maximum days of cover. If specified, the sum of the effective demand for the specified number of days determines the maximum inventory level. You can navigate to the Inventory Policy Maximum view.
Ship Status	<p>Shipping status for the day of the week. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed
Receive Status	<p>The receiving status for the day of the week. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed
Production Status	<p>The producing status for the day of the week. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed

Inventory Status Product Substitute View

The Inventory Status Product Substitute view displays inventory status data for product substitutes. This view displays the details of how demand for generic products was satisfied by substitutes. Data in this view is for reporting and cannot be changed.

The summary records of this view display data by product, by location, by period start date. The detail records display information about the substitute products. Each set of detail records has the same values in the Location and Period Start Date fields.

When you use the Supply Planning solver, the Inventory Status Product Substitute view uses the safety stock network to calculate safety stock values.

When you view data for a period that has fixed and unfixed production separated by a fixed production timefence, the Inventory Status Product Substitute view displays all production quantities in the Production field for the duration of the timefence and only fixed production quantities after the timefence. The Inventory Status Product Substitute view displays fixed net requirement quantities in the Net Requirement field for the duration of the timefence and all net requirement quantities after the timefence.

Data for planned customer orders, rejected deployments, rejected shipments, and rejected net requirements is not displayed in the Inventory Status Product Substitute view. Data for inventory with a status of Expired, Onhold (where the onhold period is still effective), or Scrap in the Beginning Inventory view is also not displayed in the Inventory Status Product Category report.

Summary Field	Description
Product	The code for the product or material.
Description	A description of the product.
Location	The code for the location storing the product.
Period Start Date	The starting date of the period.
Beginning Inventory	The inventory level for the product at the start of each period. Beginning inventory is also referred to as starting or opening inventory. In any period after the first, this is the Projected Inventory from the previous period. In the first period, the inventory level is based on input data for beginning inventory.
Net Requirements	The quantity of the net requirements for the product.
In Transit	The amount of the product currently in-transit between two locations. In-transit is also referred to as enroute. The quantity, which comes from your transaction system, is positive for the receiving location and period.
Customer Order	The quantity of the product required to satisfy customer orders.
Forecast	The forecasted demand for the period.
Work Order Qty	The work order quantity.
Dependent Demand	The demand based on planned production of finished products. The value in this field is calculated by the system. Dependent demand = Dependent demand from solver tables + Substituting quantity - Substituted quantity
Co Product	The quantity of byproduct that is produced by the manufacturing process.
Substituted Demand	The quantity of demand satisfied by a substituted product. The quantity is negative for substitutes and positive for products (non-substitutes).

Summary Field	Description
Effective Demand	<p>The sum of the demand that is based on the up-coming production of finished products and the demand that is based on the forecast consumption rule for the product.</p> <p>Effective Demand = Forecast Consumption + Dependent Demand + Substituted Demand</p>
Projected Inventory	<p>This value is the projected ending inventory, which is calculated as:</p> <p>Beginning Inventory + Work Order Quantity + Future Inventory + Net Requirements + In-Transit + Deployments In + Planned Transfer In + Co Product - Effective Demand - Deployments Out - Planned Transfer Out</p> <p>Projected inventory is also referred to as ending inventory.</p>
Build	The build inventory level for the product. This inventory is used to satisfy future demand and is generally the result of the need to produce inventory ahead of time because of manufacturing or distribution constraints in the period with actual demand. The build level is accumulated over time.
Maximum	The maximum amount of inventory of the product.
Days Cover	The number of days that demand can be satisfied with the Projected Inventory if no more inventory is produced.
Safety	The amount of safety stock inventory.

Detail Field	Description
Substitute Product	The code for the substitute product or material.
Description	A description of the substitute product.
Beginning Inventory	The inventory level for the substitute at the start of each period. Beginning inventory is also referred to as starting or opening inventory. In any period after the first, this level is the Projected Inventory from the previous period. In the first period, the inventory level is based on input data for beginning inventory.
Net Requirements	The quantity of the net requirements for the substitute product.
In Transit	The amount of the substitute that is currently in-transit between two locations. In-transit is also referred to as enroute. The quantity, which comes from the transaction system, is positive for the receiving location and period.

Detail Field	Description
Planned Transfer In	The amount of the substitute currently planned to be shipped from one location to another. The quantity, which comes from the transaction system, is negative for the shipping location and period, and positive for the receiving location and period. Planned transfer is also referred to as on-order.value
Planned Transfer Out	The amount of the substitute currently planned to be shipped from one location to another. The quantity, which comes from the transaction system, is negative for the shipping location and period, and positive for the receiving location and period. Planned transfer is also referred to as on-order.value
Deployments In	The recommended incoming shipments from the solve.
Deployments Out	The recommended outgoing shipments from the solve.
Customer Order	The quantity of the substitute required to satisfy customer orders.
Forecast	The forecasted demand for the period.
Work Order Qty	
Dependent Demand	<p>The demand based on planned production of finished products. The value in this field is calculated by the system.</p> <p>Dependent demand = Dependent demand from solver tables + Substituting quantity - Substituted quantity</p>
Substituted Demand	The quantity of demand satisfied by a substituted product. The quantity is negative for substitutes and positive for products (non-substitutes).
Effective Demand	<p>The sum of the demand based on scheduled manufacturing and demand based on the forecast consumption rule for the product.</p> <p>Effective Demand = Forecast Consumption + Dependent Demand + Substituted Demand</p>
Projected Inventory	<p>This value is the projected ending inventory of the substitute, which is calculated as:</p> <p>Beginning Inventory + Work Order Quantity + Future Inventory + Net Requirements + In-Transit + Deployments In + Planned Transfer In + Co Product - Effective Demand - Deployments Out - Planned Transfer Out</p> <p>Projected inventory is also referred to as ending inventory.</p>

Detail Field	Description
Build	The build inventory level for the substitute. This inventory is used to satisfy future demand and is, generally, the result of the need to produce inventory ahead of time because of manufacturing or distribution constraints in the period with actual demand. The build level is accumulated over time.
Maximum	The maximum amount of inventory of the substitute.
Days Cover	The number of days that demand can be satisfied with the Projected Inventory if no more inventory is produced.
Safety	The amount of safety stock inventory.

Product Age Chart View

The Product Age Chart view uses the Chart Tool to display a graph of the quantity of a product at a location that has reached a specified age.

Product Shelf Life Chart View

The Product Shelf Life Chart view uses the Chart Tool to display a graph of product quantity information at each location by range of days to expire or code age. The graph displays the quantity of each product at a location that is in the code age category.

Storage Utilization View

The Storage Utilization view displays the capacity and utilization of each storage type within each location. All inventory, regardless of its status in the Beginning Inventory view, consumes storage space through the horizon until it is used to meet demand or deleted. The Storage Utilization view only displays the storage capacity that is used by the products and materials in the current workgroup. Data in this view is for reporting and cannot be changed.

You can navigate from this view to the following views:

- Inventory Status View
- Location View
- Storage Capacities Views

Drill-downs for each field are specified in the field description.

Summary Field	Description
Location	The code for the location.
Storage Type	The code for the type of storage.
Period Start Date	The starting date of the period.
Period End Date	The ending date of the period.

Summary Field	Description
Standard Storage Cost	The cost of storing one unit (based on Capacity Unit in the Storage Capacities view) in standard storage.
Premium Storage Cost	The cost of storing one unit (based on Capacity Unit in the Storage Capacities view) in premium storage.
Premium Capacity	The amount of premium capacity.
Standard Capacity	The amount of standard capacity.
Total Capacity	The total storage capacity available for the storage type at the location during the period. Total Capacity=Standard Capacity + Premium Capacity
Total Capacity Used	The total amount of storage capacity used for the storage type at the location during the period. Total Capacity Used=Standard Capacity Used + Premium Capacity Used
Standard Capacity Used	The total amount of standard capacity used for the storage type at the location during the period.
Premium Capacity Used	The total amount of premium capacity used for the storage type at the location during the period.
Total Capacity Utilization	The total amount and percent of capacity used for the storage type at the location during the period.
Standard Capacity Utilization	The amount and percent of standard capacity used for the storage type at the location during the period.
Premium Capacity Utilization	The amount and percent of premium capacity that is used for the storage type at the location during the period.

Detail Field	Description
Item Code	The code for the product or material. You can navigate to the Item Master view.
Location	The code for the location.
Storage Type	The code for the type of storage.
Period Start Date	The starting date of the period.
Period End Date	The ending date of the period.
Standard Storage Cost	The cost of storing one unit (based on Capacity Unit in the Storage Capacities view) in standard storage.
Premium Storage Cost	The cost of storing one unit (based on Capacity Unit in the Storage Capacities view) in premium storage.

Detail Field	Description
Premium Capacity	The amount of premium capacity available.
Standard Capacity	The amount of standard capacity available.
Total Capacity	The total amount of capacity, which is as follows: Standard Capacity + Premium Capacity
Total Capacity Used	The total amount of storage capacity used by the product at the location during the period, which is as follows: Standard Capacity Used + Premium Capacity Used
Total Capacity Utilization	The total amount and percent of capacity that is used by the product at the location during the period.

Storage Utilization Chart View

The Storage Utilization Chart allows you to view a graphical representation of the data in the Storage Utilization view. Storage information for a particular storage location is available using the list menu that appears below the chart.

APPENDIX J

Manufacturing Views

This appendix provides an overview of EnterpriseOne Production and Distribution Planning Manufacturing views.

Understanding Manufacturing Views

This section discusses:

- Net Requirements view
- Review Net Requirements view
- Work Order view
- Work Order BOMR view
- Work Order Operations view
- Changeovers view
- Location view
- Location Category view
- Location Manufacturing Process view
- Manufacturing Operation view
- Manufacturing Process view
- Manufacturing Routing view
- Manufacturing Time view
- Resources view
- Resource Capacity view
- Resource Group view
- Resource Substitution view
- Manufacturing Utilization view
- Manufacturing Utilization Chart view
- Net Requirements Net Change view
- Order Allocation Exception view
- Order Manufacturing Allocation view
- Substituted Resource view

Manufacturing Views

Manufacturing views display manufacturing information for products, materials, and resources in the enterprise. Manufacturing views include data views, model views, and reports, as shown in the following table. Reference names are used to refer to the views from within Production and Distribution Planning, such as from the Workgroup view detail area.

Sub-Folder	View Name	Reference Name
Data Views	Net Requirements	Data_NET_REQUIREMENTS
	Review Net Requirements	Data_REVIEW_NET_REQUIREMENTS
Model Views	Location	Model_LOCATION
	Location Category	Model_LOCATION_CATEGORY
	Resource	Model_RESOURCE
	Resource Capacity	Model_RESOURCE_CAPACITY
	Resource Group	Model_RESOURCE_GROUP
Reports	Manufacturing Utilization	Report_MANUFACTURING_UTILIZATION
	Manufacturing Utilization Chart	Report_MANUFACTURING_UTILIZATION_CHART
	Net Requirements Net Change	Report_NET_REQUIREMENTS_NET_CHANGE
	Order Manufacturing Allocation	Data_ORDER_MANUFACTURING_ALLOCATION

Net Requirements View

The Net Requirements view displays the net required production amounts that are generated by the solvers. You use this view to display, modify, approve, and publish net requirements. The net requirements can be published to a work order model at a production facility. From this view, you can access the following views:

- Inventory Status View
- Item Master View
- Location View

Summary Field	Description
Plan Name	The name of the system plan that is used to generate the solve results.
Net Req Number	A number that identifies the net requirement.

Summary Field	Description
Location	A code that identifies the location that produces the requirements.
Location Desc	A description of the location.
Manufacturing Code	The manufacturing code.
Product	The code for the product or material.
Product Desc	A description of the product.
Plan Unit	The plan unit used for this product or material.
Earliest Production Date	The earliest date when the net requirements can be produced.
Production Window	The number of days after the earliest production date when the product can be produced without being late.
Net Quantity	The quantity of usable net requirements. The net quantity is the quantity of the net requirements, not accounting for the yield factor.
Yield	The percentage of usable product that is manufactured.
Gross Quantity	The quantity of net requirements that you must produce to obtain the desired usable quantity. The gross quantity is the total quantity of net requirements, taking into account the yield factor. The equation for this field is the quantity of the net requirements divided by the yield.
Fix	<p>A code that specifies whether the net requirements are to be fixed for the next solve. Fixed net requirements are not changed by the solver when you re-solve. Values are:</p> <ul style="list-style-type: none"> • Y-Net requirements are fixed. • N-Net requirements are not fixed. <p>If the quantity of the net requirements that you fix exceeds the available manufacturing capacity, the Supply Planning uses additional manufacturing capacity to avoid an incomplete solve.</p>
Status	<p>A code that specifies the status of the net requirement. Values are:</p> <ul style="list-style-type: none"> • Planned: Initial status of the net requirement when it is generated. • Approved: Net requirement has passed one level of approval. • Published: Net requirement is written to an export file. • Rejected: Net requirement has been rejected for future use.

Summary Field	Description
Status Date	The date when the status was most recently changed.
Planned By	The name of the planner who most recently changed the status of this record.
Planner Comment	A comment from the planner.
Review Status	The review status of the net requirement.
Review Date	The date when the review status was most recently changed.
Reviewed By	The name of the reviewer who most recently changed the review status.
Reviewer Comment	A comment from the reviewer.

Review Net Requirements View

The Review Net Requirements view has the same fields as the Net Requirements view. You use it to display and approve the review of net requirements. Review Status and Reviewer Comment are the only fields in which you can change data. You cannot add or delete records in this view. This view has no drill-downs.

Work Order View

This view specifies the existing work orders. It manages the WorkOrder table.

Field	Description
Work Order Code	The unique code that identifies the work order. The code must be unique for each location.
Location	The location where the current work order is defined and, implicitly, the location of the manufacturing process. It is a foreign key reference to the Location.code field.
Description	The description of the work order. This field is optional.
Type	<p>The kind of work order.</p> <p>Values are:</p> <ul style="list-style-type: none"> • PRODUCTION: work order contains production support activities that are directly producing inventory. • MAINTENANCE: work order contains production support activities but they are not directly producing inventory. • ENGINEERING_CHANGE: work order contains production support activities but they are not directly producing inventory.

Field	Description
Manufacturing Code	The manufacturing process assigned to this Work Order. The manufacturing process is either a routing (sequence of operations) or a single operation. It can be a foreign key reference to ManufacturingProcess.mfg_code field. This field is optional.
Item Code	The primary output of the assigned manufacturing process. If the type field in this table is MAINTENANCE or ENGINEERING_CHANGE, this field must be empty. If the type field is PRODUCTION, this field is required..
Quantity	The primary output quantity that is produced by running the corresponding manufacturing process. If the type field in this table is MAINTENANCE or ENGINEERING_CHANGE, this quantity must be 0.0. Note. This value should match the calculated quantity of the primary output for the last operation in the manufacturing process sequence, if it is defined. If there is a discrepancy between the values, the value in this field overwrites the calculated value from the operation level.
Quantity Unit	The unit of measure for the value entered in the quantity field.
Status	The life-cycle phase of an existing work order.
Creation Date	The date when the work order was generated.
Requested Date	The date that the work order must be completed.
Start Date	The date when the work order execution started. This field is optional.
Completion Date	The date when the execution of the work order is completed.

Field	Description
Changes Allowed	<p>Specifies if updates to the work order are allowed.</p> <p>Values are:</p> <ul style="list-style-type: none"> • Y: updates for this work order are accepted. • N: updates for this work order are not accepted. <p>The default is Y.</p>
Fix	<p>Flags whether or not the work order needs to be fixed for the next solve. This field applies only when work orders fall outside the fixed production timefence. All work orders that fall inside the fixed production timefence are treated as fixed.</p> <p>Values are:</p> <ul style="list-style-type: none"> • Y: the work order needs to be fixed for the next solve. • N: the work order does not need to be fixed for the next solve.

Work Order BOMR View

The Work Order BOMR view defines the manufacturing process and the operations sequence for each work order. It manages the WorkOrderOperations and WorkOrderBOMR tables.

Summary Field	Description
Work Order Code	A unique code that identifies the Work order. This field is a foreign key reference to the WorkOrder.code field.
Location	The location of the definition of the current work order. This field is a foreign key reference to Location.code field.
Operation Sequence	<p>The unique code that identifies an operation instance within the Work order. This operation instance might or might not match the operation instance from manufacturing routing. When the work order refers to an individual manufacturing operation, this field must still be completed, but the Work Order Code value is sufficient to uniquely define the work order composition; only one operation is defined.</p>
Operation Code	<p>The operation code of the operation run (instance) that is indicated by the Operation Sequence. This field is a foreign key reference to the MfgOperation.code field.</p> <p>This operation code might or might not match the operation code that corresponds to the same operation instance from the manufacturing routing definition.</p>

Summary Field	Description
Successive Operation Sequence	The operation instance that immediately follows the current operation instance. This field is empty if the current operation instance is the last one in the manufacturing routing operations sequence or if the work order relates to an individual manufacturing operation. This field is optional.
Queue Time	<p>The separation time that is used as a waiting time caused by specific business circumstances before running the current manufacturing step that is specified by Operation. The value depends on the unit of measure that is defined by Queue Time Unit.</p> <p>Values are:</p> <ul style="list-style-type: none"> • number of days • hours • minutes • seconds <p>The default value is hours. This field is optional.</p>
Queue Time Unit	<p>The unit of measure for the Queue Time value.</p> <p>Values are:</p> <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS <p>The default is HOURS. This field is optional.</p>
Setup Time	An optional separation time used to model any setup activity that is required to run the manufacturing step specified by an operation. The value depends on the unit of measure that is defined by Setup Time Unit. Setup times do not consume resource capacity.
Setup Time Unit	The unit of measure for the Setup Time value. The default is HOURS.
Move Time	An optional separation time used to model inventory movement that can be required after an operation is completed. The inventory move occurs even if no operation occurs after the current manufacturing step. The value depends on the unit of measure that is defined by Move Time Unit. The default value is hours.

Summary Field	Description
Move Time Unit	<p>The unit of measure for the Move Time value.</p> <p>Values are:</p> <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS <p>The default is HOURS. This field is optional.</p>
Overlap Percentage	<p>The degree to which this operation overlaps the previous operation. The default value of 0 means that there is no overlap. This field is optional.</p>
Status	<p>The execution phase of the current work order operation. This field is optional.</p>
Requested Date	<p>The date when the work order operation completion is required.</p>
Planned Start Date	<p>The date when the work order operation execution is planned to start. This field is optional.</p>
Planned Finish Date	<p>The date when the work order operation execution is planned to finish. This field is optional.</p>
Actual Start Date	<p>The real date when the work order operation execution started. This field is optional.</p>
Actual Finish Date	<p>The real date when the work order operation execution finished. This field is optional.</p>
Location Description	<p>A description of the location that has produced the work order.</p>

Detail Field	Description
Work Order Code	<p>The unique code that identifies the Work order. This field is a foreign key reference to the WorkOrder.code field.</p>
Location	<p>The location of the definition of the current work order. This field is a foreign key reference to Location.code field.</p>

Detail Field	Description
Operation Sequence	The unique code that identifies an operation instance within the Work order. This operation instance might or might not match the operation instance from manufacturing routing definition (defined in MfgRoutingDef.operation_sequence). This primary key is used only when the work order refers to a manufacturing routing. When the work order refers to an individual manufacturing operation, this field must still be completed, but the work_order_code value is sufficient to uniquely define the work order composition; only one operation is defined.
BOMR ID	The unique code that helps differentiate between several independent occurrences of an item for the duration of an operation. This field must be a primary key in order to allow the definition of separate sets of attributes, such as quantity, consumption start, and consumption end, for each item occurrence. For example, this code can match the occurrence number. For the simple case of an item (material) that is consumed just once, this field can have the value 1. Another option for this field is to match the BOMR_id from MfgOperationBOMR table.
Item Code	The code that identifies the item produced or consumed by this operation, or the required resource for running the operation.
Item Description	The description of this item. This field is optional.
Item Type	<p>The code that identifies the type of item from the item_code field.</p> <p>Values are:</p> <ul style="list-style-type: none"> • PRIMARY_OUTPUT: produced items • PRIMARY_OUTPUT: produced items • CO-PRODUCT: resources • DURATION_RESOURCE: resources • SUPPORTING_RESOURCE: resources • CREW: resources • TOOL: resources • ITEM: consumed items
Total Quantity	The total amount of the item that is produced or consumed upon completion of the work order.
Remaining Quantity	The amount of a produced item or consumed item that still must be factored in upon completion of the work order. This happens when the current operation has started but hasn't finished yet.

Detail Field	Description
Quantity Unit	The unit of measure for the value entered in the quantity field.
Yield	The yield factor for produced items only. The default value is 1.0. This field is optional.
Scrap	The scrap factor for consumed items only. The default value is 1.0. This field is optional.

Work Order Operations View

The Work Order Operations view allows you to add, change, and delete work orders. It manages the WorkOrder and WorkOrderOperations tables. This view has summary fields and detail fields.

Summary Field	Description
Work Order Code	A code that uniquely identifies the work order. The code must be unique for each location.
Location	The location where the current work order is defined and, implicitly, the location of the manufacturing process. This field is a foreign key reference to the Location.code field.
Description	The work order description. This field is optional.
Type	A code that identifies the type of work order. Values are: <ul style="list-style-type: none"> • PRODUCTION: A work order that contains production support activities that directly produce inventory. • MAINTENANCE: A work order that contains production support activities, but that does not directly produce inventory. • ENGINEERING CHANGE: A work order that contains production support activities, but that does not directly produce inventory.
Manufacturing Code	The manufacturing process that is assigned to this Work Order. The manufacturing process is either a routing (sequence of operations) or a single operation. It can be a foreign key reference to ManufacturingProcess.mfg_code field, but it is not mandatory.
Item Code	The primary output of the assigned manufacturing process. If the type field in this table is MAINTENANCE or ENGINEERING_CHANGE, this field must be empty. If the type field is PRODUCTION, this field is optional.

Summary Field	Description
Quantity	<p>The primary output quantity that is produced by running the corresponding manufacturing process. If the type field in this table is MAINTENANCE or ENGINEERING_CHANGE, this quantity must be 0.0.</p> <p>Note. primary output for the last operation in the manufacturing process sequence, if it is defined. If there is a discrepancy between the values, the value in this field overwrites the calculated value from the operation level.</p>
Quantity Unit	The unit of measure for the value entered in the quantity field.
Status	The life-cycle phase of an existing work order.
Creation Date	The date that the work order was generated.
Requested Date	The date by which the work order must be completed.
Start Date	The date when the work order execution started. This field is optional.
Completion Date	The date when the execution of the work order is completed.
Changes Allowed	<p>A code that specifies if updates to the work order are allowed. Values are:</p> <ul style="list-style-type: none"> • Y: Updates for this work order are accepted. • N: Updates for this work order are not accepted. <p>The default value is Y.</p>
Fix	<p>A code that indicates whether the work order needs to be fixed for the next solve. This code applies only when work orders that occur outside of the fixed production timefence. All work orders that occur inside of the fixed production timefence are treated as fixed.</p> <p>Values are:</p> <ul style="list-style-type: none"> • Y: The work order needs to be fixed for the next solve. • N: The work order does not need to be fixed for the next solve.

Detail Field	Description
Work Order Code	A code that uniquely identifies the work order. The code must be unique for each location.
Location	The location where the current work order is defined and, implicitly, the location of the manufacturing process. This field is a foreign key reference to the Location.code field.

Detail Field	Description
Operation Sequence	The unique code that identifies an operation instance within the Work order. This operation instance might or might not match the operation instance from manufacturing routing definition (defined in MfgRoutingDef.operation_sequence). This primary key is used only when the work order refers to a manufacturing routing. When the work order refers to an individual manufacturing operation, this field must still be completed, but the Work Order Code value is sufficient to uniquely define the work order composition. Only one operation is defined.
Operation	<p>The operation code of the operation run (instance) that is indicated by the Operation Sequence. This field is a foreign key reference to the MfgOperation.code field.</p> <p>This operation code might or might not match the operation code that corresponds to the same operation instance from the manufacturing routing definition (defined in MfgRoutingDef.operation_code).</p>
Successive Operation Sequence	The operation instance that immediately follows the current operation instance. This field is empty if the current operation instance is the last one in the manufacturing routing operations sequence or if the work order relates to an individual manufacturing operation. This field is optional.
Queue Time	<p>A separation time that is used as a waiting time caused by specific business circumstances before running the current manufacturing step that is specified by Operation Code. The value in this field depends on the unit of measure that is specified in the queue_time_unit field. Values are:</p> <ul style="list-style-type: none"> • Number of days • Hours • Minutes • Seconds <p>The default value is hours. This field is optional.</p>
Queue Time Unit	<p>The unit of measure for the queue_time value. Values are:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default is HOURS. This field is optional.</p>

Detail Field	Description
Setup Time	<p>A separation time that is used to model any setup activity that is required to run the manufacturing step specified by Operation. The value depends on the unit of measure that is defined by Setup Time Unit. Values are:</p> <ul style="list-style-type: none"> • Number of days • Hours • Minutes • Seconds <p>The default value is hours. This field is optional.</p>
Setup Time Unit	<p>The unit of measure for the Setup Time value. Values are:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default is Hours. This field is optional.</p>
Move Time	<p>A separation time. It is used to model the inventory moving activity that can be required after the manufacturing step specified by Operation is completed. The inventory move occurs regardless of whether no operation is executed after the current manufacturing step. The value depends on the unit of measure that is defined by Move Time Unit. Values are:</p> <ul style="list-style-type: none"> • Number of days • Hours • Minutes • Seconds <p>The default value is Hours. This field is optional.</p>
Move Time Unit	<p>The unit of measure for the Move Time value. Values are:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default is Hours. This field is optional.</p>
Overlap Percentage	<p>The degree to which this operation overlaps the previous operation. The default value is 0, which means that no overlap exists between operations. This field is optional.</p>
Status	<p>The execution phase of the current work order operation. This field is optional.</p>

Detail Field	Description
Requested Date	The date when the work order operation is required to be complete.
Planned Start Date	The date when the Work order operation execution is planned to start. This field is optional.
Planned Finish Date	The date when the Work order operation execution is planned to finish. This field is optional.
Actual Start Date	The date when the Work order operation actually started. This field is optional.
Actual Finish Date	The date when the Work order operation actually finished. This field is optional.

Changeovers View

The Changeovers view allows you to define resource specific changeovers between manufacturing operations. Data in this view is used by the run length and batch sizing (RCB) algorithm only.

Summary Field	Description
Resource Code	A code that specifies the resource that the changeover is defined for.
From Operation	The operation that precedes the changeover action. Together with the To Operation, this field specifies the scope of the changeover action.
To Operation	The operation that succeeds the changeover action. Together with the From Operation, this field specifies the scope of the changeover operation.
Duration	The amount of time between the From Operation and the To Operation. The duration applies to the resource specified in the Resource Code field. This field is required.
Duration Unit	The unit of measure for the duration specified in the Duration field. Values are: <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS The default value is HOURS.
Cost	The cost associated with the changeover. The default value is 0.0. This field is optional.

Location View

The Location view displays the plants, distribution centers, customers, and suppliers for the enterprise. The summary records display the locations; and the default shipping, producing, and receiving calendars for each location. The detail records display the exceptions to the calendars. This view has no drill-down functions.

Summary Field	Description
Location	The code identifying the location.
Type	The type of location. Values are: <ul style="list-style-type: none"> • DC: Distribution center • PLANT: Plant • PLANT_DC: Plant and distribution center • CUSTOMER: Customer • SUPPLIER: Supplier
Description	A description of the location.
Time Zone	The time zone for this location. This field is reserved for future use.
Shipping Calendar	The shipping status for each day of the week. The values are in the same format as Producing Calendar.
Receiving Calendar	The receiving status for the day of the week. The values are in the same format as Producing Calendar.
Producing Calendar	The producing status for the day of the week. This value is composed of a combination of seven 1s and 0s. The first number represents Monday's producing status. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed For example, a location that produces during the week but is closed on weekends has a value of 1111100.
Priority Class Role	The code identifying the locations belonging to the same demand priority class.
Inventory Balance Class Zone	The code identifying the inventory balancing class at the specified location. For example, AClassCustomers and BClassCustomers.
Latitude	Specifies the latitude of the location group in decimal format. Note that latitudes north of the Equator are positive and latitudes south of the Equator are negative.

Summary Field	Description
Longitude	Specifies the longitude of the location group in decimal format. Note that longitudes west of Greenwich are negative and longitudes east of Greenwich are positive.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Location	The code identifying the location.
Exception Date	The date and time when the exception applies.
Shipping	The exception to the shipping calendar. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed
Receiving	The exception to the receiving calendar. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed
Producing	The exception to the producing calendar. Values are: <ul style="list-style-type: none"> • 1: Open • 0: Closed

Location Category View

The Location Category view allows you to create location categories so that the Inventory Status Location Category view can display data aggregated by those categories. The display of aggregated data is for reporting purposes, and is useful when you want to know aggregate or subtotal amounts across the entire network for certain location categories.

To achieve the best performance, create location categories only when all the location category views are closed.

The summary records display the location categories. The detail records display the locations that are included in each category.

Summary Field	Description
Category Type	The type of location category (for example, Eastern or Western).
Category Name	The name of the location category.
Description	A description of the location category.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Category Name	The name of the location category.
Location	The code for the location that belongs to the category. From this field, you can access the Locations view.
User Field 1 to User Field 3	User-defined fields.

Location Manufacturing Process View

The Location Manufacturing Process view displays information about the manufacturing processes used at a location for producing a product. The summary fields display the locations where manufacturing occurs. The detail fields display the manufacturing processes at each location and the products being produced.

The summary fields in this view are updated when you add summary fields to the Location view. You cannot add summary fields directly into the Location Manufacturing Process view.

Summary Field	Description
Location	A code that identifies the manufacturing location.
Description	A description of the location.

Detail Field	Description
Location	A code that identifies the manufacturing location.
Manufacturing Code	A code for the process used to manufacture a specific product or material.
Effective Date	The date when the manufacturing process (specified by the Manufacturing Code) at the location becomes effective.
Available	A value that specifies whether the manufacturing process is available at the location. Values are: <ul style="list-style-type: none"> • Y: The manufacturing process is available. • N: The manufacturing process is not available.
Overhead Cost	The processing overhead cost per unit of the product when it is manufactured at this location using the specified process.
Description	A description of the manufacturing process at the location. This field is optional.
User Field 1 to User Field 3	User-defined fields.

Manufacturing Operation View

This view defines the manufacturing operations that make up the manufacturing process. This view considers both materials and resources. The Item Master, Unit Conversion, and Inventory Policy views must be completed to define the end item, materials, and resources before you complete this view.

Summary Field	Description
Operation Code	The unique name that identifies the manufacturing routing or manufacturing operation.
Description	The operation description. This field is optional.
Cost	The manufacturing cost per unit of the primary output product. The default is 0.0. This field is optional.
Batch	Specifies whether or not this is a batch operation. Values are: <ul style="list-style-type: none"> • Y: This is a batch operation. The batch quantity is specified by the primary output quantity value defined in Manufacturing Operation BOMR view. • N: This is not a batch operation.
Use Run Time	The operation's minimum and maximum values are defined using run time values or quantity values. If the field's value is Y the minimum and maximum run values are defined in terms of time. If the field's value is N the minimum and maximum run values are defined in terms of quantity. The default value is Y. This field is optional.
Minimum Run Quantity	The minimum run length of an operation in terms of quantity. The amount is expressed in the standard planning unit of the primary output. If there is no primary output for this operation, the field is empty. This field is optional.
Maximum Run Quantity	The maximum run length of an operation in terms of quantity. The amount is expressed in the standard planning unit of the primary output. If there is no primary output for this operation, the field is empty. This field is optional.
Minimum Run Time	The minimum run length of an operation in terms of time. This field is optional.
Maximum Run Time	The maximum run length of an operation in terms of time. This field is optional.

Summary Field	Description
Time Unit	<p>The unit of measure for every field that has a time value. Values are:</p> <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS <p>If there is no value defined in this field then the default value is HOURS. This field is optional. This field is used in Production and Distribution Planning only.</p>
Run Preference	<p>This field is used to establish the ideal sequence of running this operation on the corresponding DURATION_RESOURCE. This field applies when there are several operations planned on the same DURATION_RESOURCE. A value of 1 indicates that this operation is the most preferred.</p> <p>The default value of 0 indicates that there is no preference associated with this operation.</p> <p>This field is optional.</p>
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Manufacturing Operation Code	The unique name to identify the operation.
BOMR ID	The unique code for the BOMR entry corresponding to this operation. This field enables the same item to be consumed multiple times or the same resource to be used multiple times for the same operation.
Item Type	<p>The code that identifies the type of item that was entered in the item field. Values are:</p> <ul style="list-style-type: none"> • PRIMARY_OUTPUT or CO-PRODUCT for produced items • DURATION_RESOURCE, SUPPORTING_RESOURCE, CREW, or TOOL for resources • ITEM for consumed items <p>This field is required.</p>
Item Code	The code that identifies the item consumed or produced by this operation or the required resource for running the operation. This field is required.

Detail Field	Description
Quantity	<p>The amount of each item input or output for this particular operation.</p> <p>Values must be:</p> <ul style="list-style-type: none"> • Positive for produced items and resources • Negative for consumed items <p>If the item type is DURATION_RESOURCE, then the value of this field has the additional meaning of the operation lead-time, which is used to calculate the manufacturing routing lead-time. This field is required.</p>
Quantity Unit	<p>The unit of measure for the value entered in the quantity field. If the quantity field contains a time duration value, valid values for this field are:</p> <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS <p>If there is no value in the quantity field, the value is taken from the unit field of the Unit Conversion view. This field is required.</p>
Yield	<p>The yield factor. This field applies to produce items only.</p> <p>The default value is 1.0. This field is optional.</p>
Scrap	<p>The scrap factor This field applies to consume items only.</p> <p>Default value is 0.0. This field is optional.</p>
Consumption Overhead Cost	<p>The overhead cost of consuming a unit of this item or utilizing this resource.</p> <p>The default value is 0.0. This field is optional.</p>
Start Date	<p>The date when this bill of resource or consumed item entry comes into effect. If this field has no value, by default, the start date is the beginning of the horizon. This field is optional.</p>
End Date	<p>The date when this resource or consumed item is no longer considered in the operation definition. If this field has no value, by default, the end date is the end of the horizon. This field is optional.</p>

Manufacturing Process View

This view is the manufacturing master view that enumerates the available manufacturing processes. A manufacturing process can be defined in terms of a manufacturing routing or as an individual operation. Each manufacturing process can be shared by multiple locations.

Summary Field	Description
Manufacturing Code	A code that identifies a manufacturing process, that is, a manufacturing routing, or a manufacturing operation.
Manufacturing Type	<p>A code that specifies the type of manufacturing process. Values are:</p> <ul style="list-style-type: none"> • R: manufacturing [JE1]process is a manufacturing routing that is defined in the MfgRouting and MfgRoutingDef tables. • O: The manufacturing process is a manufacturing operation that is defined in the MfgOperation table. <p>This field is mandatory.</p>

Manufacturing Routing View

This view determines the specifics of a manufacturing routing that is used to manufacture a product. A manufacturing routing includes a sequence of operations and separation time.

Summary Field	Description
Routing Code	A code that identifies a specific manufacturing routing.
Description	The manufacturing routing description.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Manufacturing Code	A code that identifies a specific manufacturing routing.
Operation Sequence	A unique number within a manufacturing routing that identifies an operation instance. Because a specific operation can occur several times within a routing, this field is required to uniquely identify the position of each occurrence.
Operation Code	A unique name that identifies the operation.
Operation Depth	An integer that specifies the depth of the operation whose occurrence in the routing is specified in the Operation Sequence field. The last operation in a routing has a value of 0.
Successive Operation Sequence	A number that identifies an operation instance that follows, in sequence, the current operation instance. This information defines the precedence relationship of operations sequence within a manufacturing routing.

Detail Field	Description
Queue Time	<p>The separation time (that can be used, for example, as a waiting time) before running the current manufacturing step specified by the Operation Code. This field is optional.</p> <p>The time that you enter is expressed in whichever unit corresponds to the unit of measure that is defined in the Queue Time Unit field. Those units are as follows:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default value is 0.0.</p>
Queue Time Unit	<p>The unit of measure for the Queue Time value.</p> <p>Values are:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default value is Hours. This field is optional.</p>
Setup Time	<p>The separation time that is used to model any setup activity that is required to run the manufacturing step specified by the Operation Code. This field is optional.</p> <p>The time that you enter is expressed in whichever unit corresponds to the unit of measure that is defined in the Setup Time Unit field. Those units are as follows:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default value is 0.0.</p>
Setup Time Unit	<p>The unit of measure for the Setup Time value.</p> <p>Values are:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default value is Hours. This field is optional.</p>

Detail Field	Description
Move Time	<p>The separation time that is used to model the inventory moving activity that is required after the manufacturing step specified by Operation Code is finished. The inventory move, can occur, even if no successive operation is scheduled to be carried out, after the current manufacturing step. This field is optional.</p> <p>The time that you enter is expressed in whichever unit corresponds to the unit of measure that is defined in the Move Time Unit field. Those units are as follows:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default value is 0.0.</p>
Move Time Unit	<p>The unit of measure for the Move Time value. Values are:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default value is Hours. This field is optional.</p>
Precedence Type	<p>A code that specifies the type of precedence relationship between the current operation, defined by the Operation Sequence and Operation Code fields, and the next operation defined by the Successive Operation Sequence field. Each manufacturing operation has a start and an end. Values are:</p> <ul style="list-style-type: none"> • SEQUENCE: The current operation and the next operation are carried out in chronological order by respecting their separation times. No offset value is required in the Precedence Offset field. • START_TO_START: The defined offset applies from the start of the current operation to the start of the next operation. • START_TO_END: The defined offset applies from the start of the current operation to the end of the next operation. • END_TO_START: The defined offset applies from the end of the current operation to the start of the next operation. • END_TO_END: The defined offset applies from the end of the current operation to the end of the next operation. <p>The default value is SEQUENCE.</p>

Detail Field	Description
Precedence Offset	The time offset between the start and end of the current operation and the start and end of the next operation. The meaning depends on the value in the Precedence Type field. Values are optional; the default value is 0.0.
Precedence Offset Time Unit	The unit of measure for the Precedence Offset value. This value is optional. Values are: <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds The default value is Hours.

Manufacturing Time View

The Manufacturing Time view allows you to define non effective-dated time shift attributes for manufacturing processes at specific locations.

Summary Field	Description
Location Code	The unique code identifying a location.
Manufacturing Code	The unique code identifying a manufacturing process (routing or operation).
Time	The number of hours out of a day (24 hours) that the specified manufacturing routing or operation can run at the specified location. Values must be greater than 0.0 and less than 24.

Resource View

The Resource view displays resources and their attributes. This view has no drill-down functions.

Field	Description
Resource	The code for the resource.
Owner	The name of the planner who entered the information about the resource.
User Field 1 to User Field 3	User-defined fields.
Description	A description of the resource.
Item Type	This field specifies the type of resource.

Field	Description
Composition	This field indicates either a single item or an item group. Values are: <ul style="list-style-type: none"> • I: Single Item • G: Item Group
Consumable	This field indicates whether the resource can be consumed. Values are: <ul style="list-style-type: none"> • Y: Consumable • N: Not consumable Resources are typically set to Y.
Plan Unit	The base unit of measurement for resource planning. The plan unit is used in unit conversion to calculate capacity utilization and to convert between planning and shipping quantities.

Resource Capacity View

The Resource Capacity view displays the resource capacities and costs at each location.

The summary records display the locations; and their shipping, receiving, and producing calendars. The detail records display the resources at each location; and their capacities and costs. The summary records in this view are updated when you add summary records to the Location view. You cannot add summary records directly in the Resource Capacity view.

You can navigate from this view to the Location view. Drill-down functions for each field are specified in the field description.

Summary Field	Description
Location	The code identifying the location.
Type	The type of location. Values are: <ul style="list-style-type: none"> • DC: Distribution center • PLANT: Plant • PLANT_DC: Plant and distribution center • SUPPLIER: Supplier • CUSTOMER: Customer
Description	A short description of the location that stores the resources used in a manufacturing process.
Time Zone	This field is reserved for future use.
Shipping Calendar	The shipping calendar for the location. The value has the same format as Producing Calendar.

Summary Field	Description
Receiving Calendar	The receiving calendar for the location. The value has the same format as Producing Calendar.
Producing Calendar	<p>The producing calendar for the location. The value is composed of a combination of seven 1s and 0s. The first number represents Monday's producing status. Values are:</p> <ul style="list-style-type: none"> • 1: Open • 0: Closed <p>For example, a location that produces during the week, but is closed on weekends has a value of 1111100.</p>
Priority Class	<p>The code for the location class.</p> <p>A code identifying the locations belonging to the same demand priority class.</p>
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Location	The code for the location.
Resource	The code of the manufacturing resource. You can navigate to the Resource view.
Effective Date	The date when the manufacturing capacity is in effect.
Premium2 Capacity	The premium2 capacity of the production process (above Premium Capacity). A value of -1 indicates infinite capacity.
Premium Capacity	The premium capacity of the production process (above Standard Capacity). A value of -1 indicates infinite capacity.
Standard Capacity	The standard capacity of the production process. A value of -1 indicates infinite capacity.
Minimum Capacity	The minimum capacity of the production process.
Minimum Capacity Penalty	The penalty cost for violating the minimum capacity.
Premium2 Production Cost	The cost charged per unit of premium2 resource capacity.
Premium Production Cost	The cost of producing one unit at premium capacity.
Standard Production Cost	The cost of producing one unit at standard capacity.
Capacity Description	A description of the resource capacity.

Detail Field	Description
User Field 1 to User Field 3	User-defined fields.
Resource Description	A description of the manufacturing resource.

Resource Group View

The Resource Group view displays resource groups. Resource groups are groups of related resources that share similar characteristics. The summary records display the resource groups and their attributes. The detail records display the resources that are included in each group. Drill-downs for each field are specified in the field description.

Summary Field	Description
Group Name	The name of the resource group.
Description	A description of the resource group.
Owner	The name of the planner.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Group Name	The name of the resource group.
Sub Resource Name	The code for the resource. You can navigate to the Resource view.
Sub Resource Desc	A description of the resource.

Resource Substitution View

This view provides information about valid substitutions when a substitution is necessary. For example, you would require a substitution for an operation's bill of materials if the original materials or resources become unavailable.

Summary Field	Description
Resource Code	The unique code that identifies the resource that can be substituted when a substitution occurs.
Resource Description	The unique code for the resource.

Detail Field	Description
Operation	The unique code that identifies an operation.
BOMR id	The BOMR entry for this operation.

Detail Field	Description
Resource Code	The unique code that identifies the resource that can be substituted when a substitution occurs.
Substitute Resource Code	The unique code identifying the resource that could substitute for the Resource Code if a substitution occurs.
Effective Date	Specifies the date when the resource substitution occurs.
Preference	The preference for this substitute resource with respect to the original resource as well as to any other substitute resources that are specified. A value of ≤ 0 will deactivate the substitution.
Ratio	The ratio that determines the quantity of substituted resource to be used per unit of the original resource.

Manufacturing Utilization View

The Manufacturing Utilization view displays the capacity and utilization of each manufacturing resource at each location. The summary records display the amount and percentage of manufacturing capacity utilization. The detail records display the capacities available, the amount of capacity used, the percentage of capacity utilization, and the production costs. Data in this view is for reporting and cannot be changed.

You can navigate from this view to the following views:

- Location View
- Resource View
- Net Requirements View
- Resource Capacity View

Summary Field	Description
Location Code	The code for the location.
Item Code	The code for the product or material.
Period Start Date	The starting date of the period.
Period End Date	The ending date of the period.
Total Production Cost	Total cost of production, which is as follows: Total Standard Production Cost + Total Premium Production Cost
Total Capacity Utilization	The amount and percent of total capacity that is used.
Standard Capacity Utilization	The amount and percent of standard capacity that is used.
Premium Capacity Utilization	The amount and percent of premium capacity that is used

Summary Field	Description
Premium2 Capacity Utilization	The amount and percent of premium2 capacity that is used.
Standard Capacity Used	The standard production capacity.

Detail Field	Description
Location Code	The code for the location.
Item Code	The code for the product.
Period Start Date	The starting date of the period.
Period End Date	The ending date of the period.
Manufacturing Code	This field specifies a unique name to identify the manufacturing process (manufacturing routing or manufacturing operation).
Standard Capacity	The standard production capacity.
Premium Capacity	The premium production capacity.
Premium2 Capacity	The premium2 production capacity.
Min Standard Capacity	The minimum standard capacity requested based on the standard planning unit.
Min Capacity Penalty	The penalty cost that applies per unit of the Min Standard Capacity capacity violation.
Standard Production Cost	The cost charged per unit of standard resource capacity that is used.
Premium Production Cost	The cost charged per unit of premium resource capacity that is used.
Premium2 Production Cost	The cost charged per unit of premium2 resource capacity that is used.
Consumption Quantity	The amount of the resource that is consumed.
Total Capacity	The total capacity available, which is as follows: Standard Capacity + Premium Capacity
Total Capacity Used	The amount of the total capacity used, which is as follows: Standard Capacity Used + Premium Capacity Used
Total Standard Production Cost	The total cost of standard resource capacity used, which is as follows: Standard Capacity Used * Standard Production Cost

Detail Field	Description
Total Premium Production Cost	The total cost of premium resource capacity used, which is as follows: Premium Capacity Used * Premium Production Cost
Total Production Cost	The total cost of production, which is as follows: Total Standard Production Cost + Total Premium Production Cost
Total Capacity Utilization	The amount and percent of total capacity that is used

Manufacturing Utilization Chart View

You can view a graphical representation of the data in the Manufacturing Utilization view. The Manufacturing Utilization chart displays the manufacturing capacity being used at different locations in your enterprise. You can select a location from the list that appears below the chart.

Net Requirements Net Change View

The Net Requirements Net Change view displays the difference between net requirements solve results that are generated using a base plan and solve results that are generated using another system plan. The quantity of the base plan results is subtracted from the quantity of the other system plan results. Data in this view is for reporting and cannot be changed.

The summary records display the net change results. The detail records display the net requirements quantities generated by the solver using the base plan and using the other system plan. This view has no drill-downs.

Summary Field	Description
Product	The code for the product.
Product Desc	A description of the product.
Location	The code for the location.
Location Desc	A description of the location.
Earliest Production Date	The earliest date when the production is required.
Total Net Change	The total difference between the quantity of the base plan solve results, and the other system plan solve results. This field displays the total difference for all net requirements that have the same Earliest Production Date, Location, and Product.

Detail Field	Description
Product	The code for the product.
Product Desc	A description of the product.
Location	The code for the location.

Detail Field	Description
Location Desc	A description of the location.
Earliest Production Date	The earliest date when the production is required.
Process Name	The code for the manufacturing process that is used to produce the product.
Base Quantity	The net requirements quantity that is generated by the solver using the base plan.
New Quantity	The net requirements quantity that is generated by the solver using the other system plan.
Net Change	The difference between, the quantity of the base plan solve results, and the other system plan solve results.

Order Allocation Exception View

The Order Allocation Exception view displays customer orders and forecasts that the Connect algorithm did not connect or only partially connected. You cannot add, change, or delete data in this view. You can navigate from this view to the following views:

- Customer Order View
- Forecast View
- Order Entry View
- Order Manufacturing Allocation View

Summary Field	Description
Plan Name	The name of the system plan used to generate results. Values are: <ul style="list-style-type: none"> • NR: Net Requirement • PR: Scheduled Production • SI: Starting Inventory
Order Number	The number identifying the customer order or forecast.
Order Item Number	The number identifying the item within the customer order. If the DemandType=FO, the value in this field is 1.
Demand Type	The component of demand. Values are: <ul style="list-style-type: none"> • CO: Customer order • FO: Forecast
Quantity	The quantity of the customer order or forecast.
Quantity Satisfied	The quantity of the customer order or forecast that the Connect algorithm did connect.

Summary Field	Description
Quantity Not Satisfied	The quantity of the customer order or forecast that the Connect algorithm did not connect.
Connection Status	The value in this field indicates if the Connect algorithm connected the customer order or forecast. Values are: <ul style="list-style-type: none"> • UNCONNECTED: The Connect algorithm did not connect the customer order or forecast. • PARTIALLY CONNECTED: The Connect algorithm connected part of the customer order or forecast.
Shipping Location	If DemandType=CO, this field is the location that ships the order. If DemandType=FO, this field is the location of the forecast.
Product	The code for the product.
Demand Date	If DemandType=CO, this is the ship date for the customer order. If DemandType=FO, this is the date of the forecast.
Customer Location	The location to which the order is shipped. This field is empty if DemandType=FO.
Customer Code	The code for the customer. This field is empty if DemandType=FO.
Customer Desc	A description of the customer. This field is empty if DemandType=FO.
Source Location	The location that sources the customer order. This field is empty if DemandType=FO.

Order Manufacturing Allocation View

The Order Manufacturing Allocation view displays the results of running the Connect algorithm when the CONNECT_MFG_MODE system option is set to Y. You cannot add, change, or delete summary records. You can add, change, and delete detail records. You can navigate from this view to the following views:

- Net Requirements View
- Beginning Inventory View
- Customer Order View
- Forecast View
- Order Entry View

Summary Field	Description
Type	The code identifying the type of production. Values are: <ul style="list-style-type: none"> • NR: Net requirement • WO: Work Order • SI: Starting inventory
Number	The number identifying the lot or net requirement.
Product	The code for the product.
Location	The code for the producing location.
Date	The status date of the lot or date when production is scheduled.
Quantity	The amount of the lot or net requirement.

Detail Field	Description
Demand Type	The component of demand. Values are: <ul style="list-style-type: none"> • CO: Customer order • FO: Forecast
Type	The code identifying the type of production. Values are: <ul style="list-style-type: none"> • NR: Net requirement • WO: Work Order • SI: Starting inventory
Production Number	The number identifying the lot or net requirement.
Order Number	The number identifying the customer order or forecast.
Order Item Number	The number identifying the item within the customer order. If the DemandType=FO, the value in this field is the period start date.
Product	The code for the product.
Demand Quantity	The amount of the product that is ordered for the customer order or forecast.
Quantity	The amount allocated to this customer order item.
Customer Location	The location where the customer order is shipped. This field is empty if the DemandType=FO.
Customer Code	The code for the customer. This field is empty if the DemandType=FO.

Detail Field	Description
Customer Desc	A description of the customer. This field is empty if the DemandType=FO.
Shipping Location	If DemandType=CO, this is the location that ships the customer order. If DemandType=FO, this is the location of the forecast.
Arrive Date	The date when the customer requires the order to arrive. This field is empty if the DemandType=FO.
Demand Date	If the DemandType=CO, this field is the ship date for the customer order. If the DemandType=FO, this date is the date of the forecast.
Plant Location	This field is used to support CTP. This field is empty if the DemandType=FO.
Original Source	The location that sources the customer order. This field is empty if the DemandType=FO.
Fix Source Location	<p>This field fixes the source location supplying this customer order. The Connect algorithm tries to connect the customer order to the source location defined in the Original Source field. Values are:</p> <ul style="list-style-type: none"> • Y: The source location is fixed • N: The source location is not fixed <p>The default is N. This field is empty if the DemandType=FO.</p>
Created By	The user who created the customer order. This field is empty if the DemandType=FO.
Comment	A user comment field. This field is empty if the DemandType=FO.
Fix	<p>This field fixes the allocation to a depth level of 1. The Connect algorithm does not change fixed allocations. Values are:</p> <ul style="list-style-type: none"> • Y: The allocation is fixed. • N: The allocation is not fixed. <p>The default is N.</p>
Plan Name	The name of the system plan.

Substituted Resource View

The Substituted Resource view lists the location/resource combinations. This view manages the SubstitutedMR table in the data model.

Summary Field	Description
Location	The location of the current resource substitution applies. This field is required
Location Description	A description of the location.
Resource	The unique code that identifies the resource that is being substituted. This field is required.
Resource Substitution	The resource that is being substituted for a different resource.

Detail Field	Description
Substitution Number	The unique identification code for this substitution. The Production and Distribution Planning solver generates the code.
Location	The location of the current material per resource substitution. This field is required.
Manufacturing Code	The unique name that identifies the manufacturing process. The process is either a manufacturing routing or a manufacturing operation.
Operation Sequence	The unique number within the manufacturing routing that identifies the current operation instance. This field is a foreign key reference to the MfgRoutingDef.operation_sequence field.
BOMR ID	The operation BOMR entry for which the substitution takes place. This field is required
Resource	The unique code that identifies the resource or the consumed item that was being substituted. This field is a foreign key reference to the Item.code field. This field is required.
Substituted Resource	The unique code that identifies the resource that will substitute for the resource. This field is required.
Substitute Description	The resource that is being substituted.
Substitution Date	The date and time when the resource is substituted. This field is required.
Resource Quantity	The resource quantity that is being substituted.
Substituted Resource Quantity	The quantity of the substituted resource. This field is required.
Substitution Rate	The quantity of the substituted resource needed to replace each unit of the original resource. This field is required.

APPENDIX K

Supply Management Views

This section discusses the supply management views and their fields.

Production and Distribution Management Supply Management Views

Supply Management views and reports display supply planning information for products, materials, and resources in the enterprise. Supply planning information is used by the SP solver to produce optimal supply plans for your enterprise.

Work Order View

This view lists all your existing work orders and lets you make any necessary changes to those work orders.

Summary Field	Description
Order Number	The unique identification of the work order entry.
Line Number	The unique identification of the work order line entry.
Location	The unique code identifying the location.
Item	The unique code identifying the product.
Description	The description of the work order. This field is optional.
Work Order Date	The date when the work order is expected to arrive at the receiving location. This field is mandatory.
Quantity Ordered	The original amount that was ordered. This field is mandatory.
Quantity Received	Specifies any partial receipts against the order. This field is mandatory.

Summary Field	Description
Firm	Specifies whether or not the work order is firmed. Values are: <ul style="list-style-type: none"> • N-not firmed. • Y-firmed order. The default is N.
Status	The status of the work order. Values are: <ul style="list-style-type: none"> • Planned-set the first time it is generated by the solver. • Approved-approved by planner.

Supply Policy Master View

This view defines all the location/item attributes that are required by the SP algorithm that are not effective-dated.

Summary Field	Description
Location	The unique code identifying the location.
Item	The unique code that identifies the product.
Vendor Name	The full text name and description of the vendor.
Vendor Code	The unique code that identifies the vendor.
User Field 1 to User Field 3	User-defined fields.

Supply Policy New Order View

The Supply Policy New Order view provides information on the location per item attributes. In this view you can add, change, or delete policies for new orders.

This view manages the SupplyPolicyMaster and SupplyPolicyNewOrder tables.

Summary Field	Description
Location	The unique code that identifies the location. This is a foreign key reference to the Location.code field.
Item	The unique code that identifies the product. This is a foreign key reference to the Item.code field.
Vendor Name	The full text name and description of the vendor.

Summary Field	Description
Vendor Code	The unique identification code for the vendor.
User Fields 1 to 3	Optional user-defined fields.

Detail Field	Description
Location	The unique code that identifies the location. This is a foreign key reference to the Location.code field.
Item	The unique code that identifies the product. This is a foreign key reference to the Item.code field.
Effective Date	The date when this record comes into effect.
Order Policy	The order policy that is suggested by the solver in cases where there is a need for an order. Values are: <ul style="list-style-type: none"> • L-Lot-for-Lot • F-Fixed • D-Days of supply
Order Quantity	The value you enter in this field depends on the value in the Order Policy field. Values are: <ul style="list-style-type: none"> • If Order Policy=L, then the value in this field is not considered by the solver. • If Order Policy=F, then the value in this field specifies the quantity of a new order in this fixed amount. • If Order Policy=D, then the value in this field specifies the number of days that the solver looks ahead to cover demand.
Order Minimum	The minimum quantity of a new planned order. The value in this field is considered only if it is greater than zero.
Order Maximum	The maximum quantity of a new planned order. If the quantity is greater than this maximum, then another order must be placed to cover the remaining amount. The value in this field must be greater than zero and greater than Order Minimum.
Order Multiple	A quantity field that acts as an order modifier. The order quantity must be rounded up to multiples of the value set in this field. The value in this field is considered only if it is greater than zero.
Fixed Time Fence	The time fence is the number of days from the start date. Within that period, the solver does not suggest new orders.

Supply Policy Type View

This view lists the attributes of the location of the item that are required by the SP algorithm. It also allows you to specify the policy type and the lead-time.

Summary Field	Description
Location	The unique code that identifies the location.
Item	The unique code that identifies the product.
Vendor Name	The full text name and description of the vendor.
Vendor Code	The unique code that identifies the vendor.
User Fields 1 to User Field 3	User-defined fields.

Detail Field	Description
Location	The unique code that identifies the location.
Item	The unique code that identifies the product.
Effective Date	The date when this record comes into effect.
Item Type	<p>The type of an item.</p> <p>Values are:</p> <ul style="list-style-type: none"> • P-Purchased • M-Manufactured • D-Dual
Mfg Lead Time Type	<p>The type of lead-time for a manufactured item. This field applies only to those items that are defined as manufactured (M) in the Item Type field. Values are:</p> <ul style="list-style-type: none"> • F-Fixed lead-time. The lead-time is the fixed value from the Fixed Lead-time field. • V-Variable lead-time. The lead-time calculation is based on the required quantity. It is determined by the information in Manufacturing Operations and Routings. <p>Variable lead-time = setup + (required quantity x duration time) + move + queue.</p>
Fix Mfg Lead Time	The fixed manufactured lead-time. This field applies only to those items that are defined as manufactured (M) in the Item Type field with a fixed lead-time (F) defined in the Mfg Lead Time Type field.
Purchase Lead Time	The purchase lead-time. This field applies only to those items that are defined as purchased (P) or Dual (D) in the Item Type field.

Example: How Fixed Leadtime is Calculated When Using Dual Type Items

Item X is a Dual item with a purchase leadtime of 7 days. Item X can be purchased more economically overall than it takes to produce Item X in house. If there is a need to produce Item X temporary personnel can be brought in to make it. The manufacturing leadtime in this case is 4 days.

The material planning heuristic runs and determines that there is demand for a new order of Item X on day 5. There is not enough leadtime (7 days) to purchase Item X but the 4 days it take to produce it will satisfy the demand. The material planning policy will treat item X as a manufactured item and generate a new work order suggestion accordingly.

Supply Action Report

The Supply Action report provides the results of the Supply Planning solve. These results help you examine such things as the action messages suggested by the material plan. This view manages the SupplyOutput table.

Field	Description
Order Number	<p>A number, the meaning of which depends on the value in the type field.</p> <p>If the value in the type field is Work Order, then Order Number is a foreign key reference to the PurchaseOrder.order_number.</p> <p>If the value in the type field is Work Order, then Order Number is a foreign key reference to the WorkOrder.code.</p> <p>If the value in the type field is Planned Transfer In, then Order Number is a foreign key reference to the ShipmentItem.shipment_number.</p>
Line Number	Stores line number reference for records to explicitly reference the original record.
Item	This field specifies the code identifying the item produced or consumed by this operation or the required resource for running the operation. Required field.
Item Description	The description of the item.
Location	The code that identifies the location.
Location Description	The description of the location.
Type	<p>A code that indicates the type of supply or demand.</p> <p>Values are:</p> <ul style="list-style-type: none"> • Work Order • Planned Work Order • Planned Transfer In (Supply)
Quantity	A number that indicates the supply quantity.

Supply Critical Work Orders Report

The Supply Critical Work Order report focuses only on the new work orders that require immediate attention and recommends immediate actions. These actions are managed through direct communication with the supplier so the supplier should also group the report information. This view manages the SupplyOutput table.

Field	Description
Order Number	A number, the meaning of which depends on the value in the type field.
Line Number	<p>The line number key reference for records that require an explicit reference to the original record.</p> <p>If the value in the type field is New Work Order, then Order Line Number is a unique identifying number for the record. The PDP solver generates the number.</p>
Item	The code that identifies the product. This is a foreign key reference to the Item.code field.

Field	Description
Item Description	The description of the item.
Location	The code that identifies the location. This is a foreign key reference to the Location.code field.
Location Description	The description of the location.
Quantity	A number that indicates the order quantity.
Due Date	A date that indicates when supply and demand is due.
Original Date	The date that the order should be placed. The Order Date is a due date that is offset by lead time.
Vendor Name	The code that identifies the full text name and description of the vendor.

Supply Inventory Status Report

The Supply Inventory Status report provides detailed time-phased supply and demand data for items in specific locations. In addition to viewing this information in the report, you can view it in a graphical format in the Inventory Status Chart. This view manages the SupplyOutput table.

Summary Field	Description
Period	The code for the period.
Starting Inventory	A number representing the starting inventory. This is the projected inventory - supplies + demand.
Customer Order	The code for the customer order.
Forecast	The forecast demand.
Dependant Demand	The dependent demand. Dependent demand = Dependent demand from solver tables + Substituting quantity - Substituted quantity
Effective Demand	The sum of the demand that is based on the scheduled production of finished products and the demand that is based on the forecast consumption rule for the product. Effective Demand = Forecast Consumption + Dependent Demand
Work Order	The code for the work order.
Work Order	The work order number.
In Transit	The supply that is in transit inbound.
Planned Transfer In	The supply that is a planned transfer in.
Planned Transfer Out	The demand that is a planned transfer out.

Summary Field	Description
Forecast Consumption	The demand based on the forecast consumption rule.
Deployment In	The supply deployment in.
Deployment Out	The demand deployment out.
Safety	The safety demand.
Build	The build demand.
Projected Inventory	The projected available quantity of inventory.

Supply New Orders Report

The Supply New Orders report outlines the suggested orders as calculated by the solver. The SP solver creates new orders in order to meet your material demands. This report helps you to determine any supply shortages and enables you to plan for additional material to be bought, produced, or transferred from another location in your enterprise.

Summary Field	Description
Action	The code that specifies a suggested action message for this order. Values are: <ul style="list-style-type: none"> Order-Create a new order. OrderX-New order within a lead time.
Order Number	The code that is assigned to that order.
Item	The code that identifies the product. This is a foreign key reference to the Item.code field.
Item Description	The description of the item.
Location	The code that identifies the location. This is a foreign key reference to the Location.code field.
Location Description	The description of the location.
Quantity	A number that indicates the supply quantity.
Due Date	The date that indicates when supply and demand is due.
Order Date	The date that the order should be placed. The Order Date is a due date that is offset by lead time.

Summary Field	Description
Vendor Name	A code that identifies the full text name and description of the vendor.
Type	<p>The code that indicates the type of supply or demand.</p> <p>Values are:</p> <ul style="list-style-type: none"> • New Work Order • New Work Order • New Deployment In (Supply) generated by SP

Supply Planning Output Report

The Supply Planning Output report stores the output of the supply planning process. This is the vertical, event-based view that lists supplies and demands as they occur. A vertical report is a standard supply planning format for displaying results. You can use this view as the basis for other reports. This view manages the SupplyOutput table.

Summary Field	Description
Plan Name	The name of the plan for this data. The plan name is specified by the horizon used in the solve.
Index	The unique identification of the entries in this view. The 3D solver generates the number.
Item	The unique code identifying the product. This is a foreign key reference to the Item.code field.
Item Description	A description of the item. This field is optional.
Location	The unique code identifying the location. This is a foreign key reference to the Location.code field.
Location Description	A description of the location. This field is optional.
Due Date	The due date for the supply or demand.

Summary Field	Description
Type	<p>The type of supply or demand.</p> <p>Values are:</p> <ul style="list-style-type: none"> Starting Inventory Supply Planning Deployment In (Supply) Supply Planning Deployment Out (Demand) Supply Planning Net Requirement Dependent demand Customer Order Forecast Order Consumed Customer Order Customer Forecast Order Effective Demand Work Order Planned Work Order Planned Transfer In (Supply) Planned Transfer Out (Demand) In-transit New Work Order New Work Order New Deployment In (Supply) New Deployment Out (Demand) Safety Stock Build
Reference Location Code	<p>If the type value is Supply Planning Deployment In (Supply), Planned Transfer In (Supply), In-transit, or New Deployment In (Supply), then Reference Location Code specifies the unique code identifying the origin location.</p> <p>If the type value is Supply Planning Deployment Out (Demand), Planned Transfer Out (Demand), or New Deployment Out (Demand), then Reference Location Code specifies the unique code identifying the destination location.</p> <p>In both case above, this is a foreign key reference to the Location.code field.</p> <p>If the type value is not one of those specified above, then Reference Location Code is not used and should be empty.</p>
Period	The period in which the due date falls.
Supply	The supply quantity.
Demand	The demand quantity.
Available	The projected available quantity.

Summary Field	Description
Action	<p>Stores the suggested action message for this order.</p> <p>Values are:</p> <ul style="list-style-type: none"> • Blank-No action • Past Due-Past due • Order-Create a new order • OrderX-New order within a lead time • Defer-Defer the order to a later date • Expedite-Attempt to move the order to an earlier date. • Cancel-Cancel the order • Firm-A firmed scheduled receipt
Order Date	The date that the order should be placed. It is a Due Date offset by lead-time.
Order Number	<p>If type value is Starting Inventory, then order_number is a foreign key reference to the LotStatus.lot_number.</p> <p>If type value is Customer Order, then order_number is a foreign key reference to the CustomerOrderItem.order_number.</p> <p>If type value is Forecast Order, then order_number is a foreign key reference to the Forecast.forecast_number.</p> <p>If type value is Work Order, then order_number is a foreign key reference to the PurchaseOrder.order_number.</p> <p>If type value is Planned Work Order, then order_number is a foreign key reference to the WorkOrder.code.</p> <p>If type value is Planned Transfer In (Supply), Planned Transfer Out (Demand), or In-transit, then order_number is a foreign key reference to the ShipmentItem.shipment_number.</p> <p>If type value is Safety Stock, Build, Supply Planning Deployment In (Supply), Supply Planning Deployment Out (Demand), Supply Planning Net Requirement, New Work Order, New Work Order, New Deployment In (Supply), New Deployment Out (Demand), or Dependent Demand, then order_number is not used and should be empty.</p>

Summary Field	Description
Order Line Number	<p>The line number key reference for records that require an explicit reference to the original record.</p> <p>If type value is Customer Order, then order_line_number is a foreign key reference to the CustomerOrderItem.order_item_number.</p> <p>If type value is Work Order, then order_line_number is a foreign key reference to the PurchaseOrder.line_number.</p> <p>If type value is Planned Work Order, then order_line_number is a foreign key reference to the WorkOrder.location.</p> <p>If type value is Planned Transfer In (Supply), Planned Transfer Out (Demand), or In-transit, then order_line_number is a foreign key reference to the ShipmentItem.shipment_item_number.</p> <p>If type value is Supply Planning Deployment In (Supply), or Supply Planning Deployment Out (Demand), then order_line_number is a foreign key reference to the Deployment.deploy_number.</p> <p>If type value is Supply Planning Net Requirement, then order_line_number is a foreign key reference to the NetReq.netreq_number.</p> <p>If type value is New Work Order, New Work Order, or New Deployment In (Supply), then order_line_number is a unique identifying number for the record. The 3D solver generates the number.</p> <p>If type value is Dependent Demand, then order_line_number is a reference to the order_line_number of an Supply Planning Net Requirement or New Work Order record in this table.</p> <p>If type value is New Deployment Out (Demand), then order_line_number is a reference to the order_line_number of a New Deployment In (Supply) record in this table.</p> <p>If type value is Starting Inventory, Forecast Order, Planned Work Order, Safety Stock, or Build, then order_line_number is not used, should be empty.</p>
Vendor Code	The unique identification code for the vendor.
Vendor Name	The full text name and description of the vendor.

Supply Where Used Report

The Where Used report focuses on how the material plan affects demand. This report helps you to decide whether to follow the recommended actions from the SP solver. An important part of this decision is to determine what parent items used a particular part and for what type of demands the part is used. This view manages the SupplyOutput and MaterialAllocation tables.

Summary Field	Description
Order Number	<p>A number, the meaning of which depends on the value in the type field.</p> <p>If the value in the type field is Customer Order, then Order Number is a foreign key reference to the CustomerOrderItem.order_number.</p> <p>If the value in the type field is Forecast, then Order Number is a foreign key reference to the Forecast.forecast_number.</p> <p>If the value in the type field is Planned Transfer Out, then Order Number is a foreign key reference to the ShipmentItem.shipment_number.</p> <p>If the value in the type field is Safety, or Build, then Order Number is not used and the field should be blank.</p>
Line Number	<p>The line number key reference for records in which the system requires an explicit reference to the original record.</p> <p>If the value in the type field is Customer Order, then Order Line Number is a foreign key reference to the CustomerOrderItem.order_item_number.</p> <p>If the value in the type field is Planned Transfer Out, then Order Line Number is a foreign key reference to the ShipmentItem.shipment_item_number.</p> <p>If the value in the type field is Supply Planning Deployment Out, then Order Line Number is a foreign key reference to the Deployment.deploy_number.</p> <p>If the value in the type field is Forecast, Safety, or Build, then Order Line Number is not used and the field should be blank.</p>
Item	A code that identifies the product. This is a foreign key reference to the Item.code field.
Item Description	A description of the item.
Location	A code that identifies the location. This is a foreign key reference to the Location.code field.
Location Description	A description of the location.
Demand Type	<p>A code that indicates the type of supply or demand.</p> <p>Values are:</p> <ul style="list-style-type: none"> • Supply Planning Deployment Out (Demand) • Customer Order • Forecast Order • Planned Transfer Out (Demand) • Safety Stock • Build
Order Date	The date that the order should be placed. The Order Date is a due date that is offset by lead time.
Quantity	A number that indicates the demand quantity.

Detail Field	Description
Order Number	<p>A number, the meaning of which depends on the value in the type field.</p> <p>If the value in the type field is Starting Inventory, then Order Number is a foreign key reference to the LotStatus.lot_number.</p> <p>If the value in the type field is Work Order, then Order Number is a foreign key reference to the PurchaseOrder.order_number.</p> <p>If the value in the type field is Work Order, then Order Number is a foreign key reference to the WorkOrder.code.</p> <p>If the value in the type field is Planned Transfer In, or In-Transit, then Order Number is a foreign key reference to the ShipmentItem.shipment_number.</p> <p>If the value in the type field is Planned Deployment Supply, Supply Planning Net Requirement, New Work Order, New Work Order, or New Deployment Supply, then Order Number is not used and the field should be blank.</p>
Line Number	<p>The line number key reference for records in which the system requires an explicit reference to the original record.</p> <p>If the value in the type field is Work Order, then Order Line Number is a foreign key reference to the PurchaseOrder.line_number.</p> <p>If the value in the type field is Planned Transfer In or In-Transit, then Order Line Number is a foreign key reference to the ShipmentItem.shipment_item_number.</p> <p>If the value in the type field is Planned Deployment Supply, then Order Line Number is a foreign key reference to the Deployment.deploy_number.</p> <p>If the value in the type field is Supply Planning Net Requirements, then Order Line Number is a foreign key reference to the NetReq.netreq_number.</p> <p>If the value in the type field is Work Order, then Order Number is a foreign key reference to the WorkOrder.location.code.</p> <p>If the value in the type field is New Work Order, New Work Order, or New Deployment Supply, then Order Line Number is a unique identifying number for the record. The PDP solver generates the number.</p> <p>If the value in the type field is Starting Inventory, then Order Line Number is not used and the field should be blank.</p>
Item	A code that identifies the product. This is a foreign key reference to the Item.code field.
Item Description	A description of the item.
Location	A code that identifies the location. This is a foreign key reference to the Location.code field.
Location Description	A description of the location.
Due Date	A date that indicates when supply and demand is due.

Detail Field	Description
Supply Type	<p>A code that indicates the type of supply or demand.</p> <p>Values are:</p> <ul style="list-style-type: none">• Starting Inventory• Supply Planning Deployment In (Supply)• Supply Planning Net Requirement• Work Order• Planned Work Order• Planned Transfer In (Supply)• In-transit• New Work Order• New Work Order• New Deployment In (Supply)
Order Date	<p>The date when the order should be placed. The Order Date is a due date that is offset by lead time.</p>
Quantity	<p>A number that indicates the supply quantity.</p>
Allocated Quantity	<p>The allocated quantity of the source component used for this demand.</p>
Sequence	<p>The supply type unique identification.</p>

APPENDIX L

Vehicle Loading Views

This appendix contains descriptions of all the Vehicle Loading views and their fields.

Vehicle Loading Views

Carrier View

The Carrier view displays the carriers that transport loads, and the number and types of vehicles that are used. The summary records display the carriers. The detail records display the vehicle types and their penalty costs. Drill-downs for each field are specified in the field description.

Summary Field	Description
Carrier Code	The code for the carrier.
Carrier Description	The name of the carrier.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Carrier Code	The code for the carrier.
Vehicle Type	The code for the vehicle type. You can navigate to the Vehicle Type view.
Description	A description of the vehicle type.
Number Of Vehicles	<p>The number of vehicles of the vehicle type that the carrier has available per period.</p> <p>If the number is unlimited, provide a number that allows a small buffer above the maximum number that would likely ever be used. For example, if you are unlikely to use more than 100 vehicles on a given day, you could specify 120. Specifying higher numbers consumes extra memory and can affect performance.</p>
Under Weight Cost	The penalty cost per unit for going under the minimum weight usage.

Detail Field	Description
Over Weight Cost	The penalty cost per unit for going over the maximum weight usage.
Under Spot Cost	The penalty cost for using fewer than the available number of spots.
Over Spot Cost	The penalty cost for using more than the available number of spots.
User Field 1 to User Field 3	User-defined fields.

Carrier Location View

The Carrier Location view displays the carriers that service each location. The summary records display the locations. The detail records display the carriers that service each location, and indicate whether the carriers can service the location as an origin or destination location, or both. When location and lane data is changed in PDP, it is propagated to this view.

You can navigate from this view to the Vehicle Location view. Drill-downs for each field are specified in the field description.

Summary Field	Description
Location	The code for the location.
Description	The name of the location.
Type	The type of location. Values are: <ul style="list-style-type: none"> • CUSTOMER • DC • PLANT • PLANT_DC • SUPPLIER
Priority Class	The code for the location class.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Location	The code for the location.
Carrier	The code for the carrier. You can navigate to the VL Carrier view.
Carrier Description	The name of the carrier.

Detail Field	Description
As Origin	This field indicates whether the carrier can service the location as origin. Values are: <ul style="list-style-type: none"> • Y-The carrier can service the location as origin. • N-The carrier cannot service the location as origin.
As Destination	This field indicates whether the carrier can service the location as destination. Values are: <ul style="list-style-type: none"> • Y-The carrier can service the location as destination. • N-The carrier cannot service the location as destination.
User Field 1 to User Field 3	User-defined fields.

Item View

The Item view displays the characteristics of the products to be loaded on your vehicles, such as spots used and weight per unit. The summary records display the products. The detail records display the characteristics of each product.

You can change product data in this view, but you cannot add or delete summary records; this must be done in PDP. You can add, edit, and delete detail records in this view. When product data is changed in the summary records, it is propagated to PDP. When product data is changed in PDP, it is propagated to this view.

This view has no drill-downs.

Summary Field	Description
Description	The name of the product.
Owner	The planner who is responsible for the product.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
Product	The code for the product.
Ship Unit	The code that identifies the standard unit of measure for shipping the product, for example, pallets, kegs, or cases.
UserField 1 to User Field 3	User-defined fields.

Detail Field	Description
Foot Print	The number of floor spots required to store a shipping unit of the product in the vehicle if the product is placed on the floor.

Detail Field	Description
Grab Size	<p>The multiple of the standard shipping unit used as the desired grab size.</p> <p>This value specifies how many standard units that the VL solver tries to load at each iteration. For example, if the value is 2 and the standard shipping unit is pallets, the VL solver tries to load this product two pallets at a time.</p> <p>The value should be determined by material handling issues. For example, it might be easier to load the product two pallets at a time using a clamp truck.</p> <p>If when you solve, the product tends to appear in loads in unacceptably small quantities, you can try increasing this value. For example, increasing it to 8 causes the VL solver to try to load the product 8 pallets at a time.</p>
Grab Size Min	<p>The multiple of the standard shipping unit used as the minimum grab size.</p> <p>This value specifies the minimum number of standard shipping units that can be loaded. For example, it is usually possible to load one pallet at a time.</p> <p>When necessary, the VL solver iteratively decreases the grab size until it reaches this minimum value to create feasible loads.</p>
Product	The code for the product.
Pull Forward Cost	The penalty cost applied per day that the order is pulled forward.
Spots	<p>The number of spots required per shipping unit of the product.</p> <p>For non-standard pallet sizes, you can increase the number of spots needed by the product. For example, you can create a grid that reflects how the product is actually loaded. You can then increase the spots consumed by the product to reflect this new grid.</p>

Detail Field	Description
Stackable	<p>This field indicates whether the product can be stacked. Values are:</p> <ul style="list-style-type: none"> • 1-Product is stackable • 0-Product is not stackable <p>Shipping units, frequently pallets, are often called low cube or high cube. The height of a truck trailer can typically accommodate one high cube pallet or two stacked low cube pallets. Some products, however, weigh too much to be stacked on top of other products, and must be placed on the floor of the trailer.</p> <p>The VL solver recognizes two layers in a trailer. If a product is stackable (1) it can be placed on the bottom or top layer. If a product is not stackable (0) it must be placed on the bottom layer (the floor).</p>
User Field 1 to User Field 3	User-defined fields.
Volume	The volume required per shipping unit of the product. This field is for information only. The VL solver does not currently use it.
Volume Unit	The unit of measure for the volume field. Information only; not currently used by the VL solver.
Weight	The weight of the product per shipping unit, including the weight of the pallet or container used for shipping.
Weight Unit	The unit of measure for the weight field.

Item Item View

The Item Item view identifies products and product groups that cannot be loaded together on the same vehicle. You can specify any of the following combinations of products and product groups:

- Pairs of products
- Pairs of product groups
- Sets of product groups and individual products

For example, a pancake company wants to define a pair of product groups that cannot be included in the same load. The company begins by defining two product groups. The first is called Liquid; it contains all varieties of liquid pancake mix. The second is called Frozen; it contains all varieties of frozen pancake mix. The pancake company defines a product-product constraint for the Liquid and Frozen product groups. When the pancake company runs a solve, the VL solver respects the constraint and does not include any products from the Liquid group in loads that contain products from the Frozen group. The ability to specify product group-product group and product group-product constraints reduces the number of individual product-product constraints that you enter.

These constraints can also be used to model material handling issues. For example, it can be very difficult or inefficient to load a pair of products on the same load because of their locations in a warehouse.

When product data is changed in PDP, it is propagated to this view. You can navigate from this view to the Item Item view. Drill-downs for each field are specified in the field description.

Field Name	Description
Source Product	The code for the product. You can navigate from this field to the Product Group and Item Item views.
Source Description	A description of the Source Product.
Target Product	The code for the product that cannot be included with the Source Product. You can navigate from this field to the Product Group and Item Item views.
Target Description	A description of the Target Product.
User Field 1 to User Field 3	User-defined fields.

Lane View

The Lane view displays the available lanes in the distribution network. Each lane has an origin location and a destination location. The VL solver builds loads for selected lanes in the distribution network. The summary records display the lanes and their availability. The detail records display the modes of transportation that are used on each lane.

You can change the values in the Minimize Load Mix and Pull Forward Rule fields. You cannot add, change, or delete any other data in this view. Lane data must be changed in PDP. When lane data is changed in PDP, it is propagated to this view.

Drill-downs for each field are specified in the field description.

Summary Field	Description
Lane	The code for the lane.
Lane Description	The name of the lane.
Origin	The code for the origin location. You can navigate to the origin location in the Vehicle Location view.
Origin Description	The name of the origin location.
Destination	The code for the destination location. You can navigate to the destination location in the Vehicle Location view.
Destination Description	The name of the destination location.
Status	<p>This field indicates whether the lane is available for shipping. Values are:</p> <ul style="list-style-type: none"> • 1-The lane is available for shipping. • 0-The lane is not available for shipping.

Summary Field	Description
Minimize Load Mix	<p>You can change the value in this field.</p> <p>This field specifies whether the algorithm for product mix minimization is enabled for this lane. Values are:</p> <ul style="list-style-type: none"> • Y-The algorithm is enabled. • N-The algorithm is not enabled. If you specify N, the original VL algorithm is used, which does not attempt to minimize product mix in vehicle loads. <p>The default is N. The setting in this field overrides the setting for the minimize_load_mix system option.</p>
Pull Forward Rule	<p>You can change the value in this field.</p> <p>Complete this field only if the algorithm for product mix minimization is enabled. This field specifies whether the pull forward orders are sorted by date or by product for this lane. Values are:</p> <ul style="list-style-type: none"> • SORT_BY_DATE-Pull forward orders are sorted by date. • SORT_BY_PRODUCT-Pull forward orders are sorted by product. <p>The default is N. The setting in this field overrides the setting for the pull_forward_rule system option.</p>

Detail Field	Description
Lane	The code for the lane.
Transport Mode	The code that identifies the mode of transportation used on this lane.
Description	A description of the mode of transportation used on this lane.
Lead Time	The lead-time in days.
Capacity Unit	The unit of measure for the shipping capacity.
User Field	A user-defined field.

Load Approval View

The Load Approval view displays solve results. The data is visible after you have imported solve results. The summary records display the loads and their characteristics. The detail records display the products that are included in each load. You cannot add or delete records in this view.

You use this view to approve loads and publish them to an external system. You can also export loads from this view. When you publish or export loads, the system writes them to the `workgroup.LOAD_APPROVAL.export` file. The export file contains data about each load and specifies the aggregate amounts of each product in each load. The export file contains one record for each product in each load. Publishing and exporting files write to this same file. If you do not remove the file before you publish or export again, the system appends data to the file.

This view displays the same data as the Load Report view, but in a different format. It also displays data that is similar to the Load Detail view; but you can add and delete records in the Load Detail view.

You can navigate from this view to the Load Report and Load Detail views. Drill-downs for each field are specified in the field description.

Summary Field	Description
Load Number	The code for the load, in the form <code>lane.code.number</code> .
Origin	The code for the origin location. You can navigate to the origin location in the Vehicle Location view.
Origin Description	The name of the origin location.
Destination	The code for the destination location. You can navigate to the destination location in the Vehicle Location view.
Destination Description	The name of the destination location.
Ship Date	The date and time when the shipment is expected to leave the origin location.
Arrive Date	The date and time when the shipment is expected to be received at the destination location.
Fix	<p>This field indicates whether a load is fixed for the next solve. Values are:</p> <ul style="list-style-type: none"> • <i>Y</i>: The load is fixed for the next solve. Fixing a load ensures it is included in the solution. • <i>N</i>: The load is not fixed for the next solve.
Under Use	<p>This code is a three-character code in the form <i>SWV</i> that shows whether there is unused capacity on a vehicle. Values are:</p> <ul style="list-style-type: none"> • <i>S</i>: Spot • <i>W</i>: Weight • <i>V</i>: Volume <p>If a letter is displayed, unused capacity of that type exists. If a dash is displayed, all the capacity of that type is used.</p> <p>For example, <i>S-V</i> means there are unused spots and unused volume, but the weight limit has been reached.</p>

Summary Field	Description
Status	<p>The status of the load. Values are:</p> <ul style="list-style-type: none"> • <i>Planned</i>: The status when first generated by the VL solver. • <i>Approved</i>: The load is approved by the planner. • <i>Published</i>: The load is approved by the planner and is written to an output file. • <i>Rejected</i>: The load has been rejected for future use.
Status Date	The date when the status was most recently changed.
Planner	The name of the planner who most recently changed the status of this entry.
Comment	A user comment field.
Transport Mode	The code that identifies the mode of transportation to be used.
Reserved	<p>This field indicates whether the vehicle is reserved. Values are:</p> <ul style="list-style-type: none"> • <i>Y</i>: The vehicle is reserved. • <i>N</i>: The vehicle is not reserved.
Minimize Load Mix	<p>This field specifies whether the algorithm for product mix minimization is enabled. Values are:</p> <ul style="list-style-type: none"> • <i>Y</i>-The algorithm for product mix minimization is enabled. • <i>N</i>-The algorithm for product mix minimization is not enabled. If you specify N, the original VL algorithm is used, which does not attempt to minimize product mix in vehicle loads.
Carrier	The code for the carrier. You can navigate to the Carrier view.
Carrier Description	The name of the carrier.
Spots Used	The number of spots on the vehicle that are used.
Spots Capacity	The number of spots on the vehicle.
Spots Usage	The ratio of spots used to spots available.
Min Spots	The minimum number of spots capacity that can be used.
Max Spots	The maximum number of spots capacity that can be used.
Volume Used	The volume on the vehicle that is used.

Summary Field	Description
Volume Capacity	The volume capacity of the vehicle.
Volume Usage	The ratio of volume used to volume capacity on the vehicle.
Min Volume	The minimum volume capacity that can be used.
Max Volume	The maximum volume capacity that can be used.
Weight Used	The weight of the loads on the vehicle.
Weight Capacity	The weight capacity of the vehicle.
Weight Usage	The ratio of load weight-to-weight capacity on the vehicle.
Min Weight	The minimum weight capacity that can be used.
Max Weight	The maximum weight capacity that can be used.
Lane	The code for the lane.
User Field 1 to User Field 10	User-defined fields.

Detail Field	Description
Load Number	The code for the load, in the form lanecode.number.
Product	The code for the product. You can navigate to the Item view.
Product Description	A description of the product.
Ship Quantity	The quantity of the product to be shipped, expressed in standard shipping units.
Ship Unit	The code that identifies the standard unit of measure for shipping the product. For example, pallets, kegs, or cases.
Plan Quantity	The quantity of the product to be shipped, expressed in standard planning units.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
Spots Used	The number of spots used on the vehicle.
Volume Used	The volume used by the order.
Weight Used	The weight used by the order.
Order Count	The number of orders that contain the product.

Load Detail View

The Load Detail view displays solve results. The data is visible after you import solve results. The summary records display the loads and their characteristics. The detail records display the products included in each load and their order numbers.

You use this view to add, change, and delete records. You can also publish and export loads from this view. When you publish or export loads, the system writes them to the `workgroup.LOAD_DETAIL.export` file. The export file contains data about each load and the orders filled by each load. The export file contains one record for each order in each load. Publishing and exporting files write to the same file. If you do not remove the file before you publish or export again, the system appends data to the file.

You can navigate to several views from this view. You can navigate to several different views from the different fields in this view.

Summary Field	Description
Load Number	The code for the load, in the form <code>lanecode.number</code> .
Origin	The code for the origin location.
Origin Description	The name of the origin location.
Destination	The code for the destination location.
Destination Description	The name of the Destination location.
Ship Date	The date and time when the shipment is expected to leave the origin location.
Arrive Date	The date and time when the shipment is expected to be received at the destination location.
Fix	<p>This field indicates whether a load is fixed for the next solve. Values are:</p> <ul style="list-style-type: none"> • Y-The load is fixed for the next solve. Fixing a load ensures it is included in the solution. • N-The load is not fixed for the next solve.
Under Use	<p>A three-character code in the form <code>SWV</code> that shows whether there is unused capacity on a vehicle. Values are:</p> <ul style="list-style-type: none"> • S-Spot • W-Weight • V-Volume <p>If a letter is displayed, unused capacity of that type exists. If a dash is displayed, all the capacity of that type is used.</p> <p>For example, <code>S-V</code> means there are unused spots and unused volume, but the weight limit has been reached.</p>

Summary Field	Description
Status	The status of the load. Values are: <ul style="list-style-type: none"> Planned-Status when first generated by the VL solver. Approved-The load is approved by planner. Published-The load is approved and is written to an output file. Rejected-The load has been rejected for future use.
Status Date	The date when the status was most recently changed.
Planner	The name of the planner who most recently changed the status of this entry.
Comment	The planner comment field.
Transport Mode	The code that identifies the mode of transportation to be used.
Vehicle Type	The code for the type of vehicle. You can navigate to the Vehicle Type view.
Reserved	This field indicates whether the vehicle is reserved. Values are: <ul style="list-style-type: none"> Y-The vehicle is reserved. N-The vehicle is not reserved.
Minimize Load Mix	This field specifies whether the algorithm for product mix minimization is enabled. Values are: <ul style="list-style-type: none"> Y-The algorithm for product mix minimization is enabled. N-The algorithm for product mix minimization is not enabled. If you specify N, the original VL algorithm is used, which does not attempt to minimize product mix in vehicle loads.
Carrier	The code for the carrier.
Carrier Description	The name of the carrier.
Spots Used	The number of spots on the vehicle that are used.
Spots Capacity	The number of spots on the vehicle.
Spots Usage	The ratio of spots used to spots available.
Min Spots	The minimum number of spots that can be used.
Max Spots	The maximum number of spots capacity that can be used.
Volume Used	The volume of the vehicle that is used.

Summary Field	Description
Volume Capacity	The volume capacity of the vehicle.
Volume Usage	The ratio of volume used to volume capacity on the vehicle.
Min Volume	The minimum volume capacity that can be used.
Max Volume	The maximum volume capacity that can be used.
Weight Used	The weight of the loads on the vehicle.
Weight Capacity	The weight capacity of the vehicle.
Weight Usage	The ratio of load weight-to-weight capacity on the vehicle.
Min Weight	The minimum weight capacity that can be used.
Max Weight	The maximum weight capacity that can be used.
User Field 1 to User Field 10	User-defined fields.

Detail Field	Description
Load Number	The code for the load, in the form <code>planecode.number</code> .
Product	The code for the product.
Product Description	A description of the product.
Plan	The name of the system plan.
Order Number	The code for the order.
Ship Quantity	The quantity of the product to be shipped, expressed in standard shipping units.
Ship Unit	The code that identifies the standard unit of measure for shipping the product. For example, pallets, kegs, or cases.
Plan Quantity	The quantity of the product to be shipped, expressed in standard planning units.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
Spots Used	The number of spots used on the vehicle.
Volume Used	The volume used by the order.
Weight Used	The weight used by the order.

Detail Field	Description
Order Comment	A user comment field.
User Field 1 to User Field 3	User-defined fields.

Load Report View

The Load Report view contains the same data as the Load Approval view. However, you can use this view to further customize the printout of the data or to configure the display to suit your needs. Data in this view is used for reporting only and cannot be changed. You can navigate from this view to the following views:

- Order View
- Order Alert View
- Order Balance View
- Load Detail View
- Load Approval View

Field	Description
Author	The name of the planner who most recently changed the status of this entry.
Author Comment	A user comment field.
Carrier Code	The code for the carrier.
Carrier Description	The name of the carrier.
Destination Description	The name of the destination location.
Destination Location	The code for the destination location.
Fixed	<p>This field indicates whether a load is fixed for the next solve. Values are:</p> <ul style="list-style-type: none"> • Y-The load is fixed for the next solve. Fixing a load ensures it is included in the solution. • N-The load is not fixed for the next solve.
Load Number	The code for the load, in the form <code>lanecode.number</code> .
Minimize Load Mix	<p>This field specifies whether the algorithm for product mix minimization is enabled. Values are:</p> <ul style="list-style-type: none"> • Y-The algorithm for product mix minimization is enabled. • N-The algorithm for product mix minimization is not enabled. If you specify N, the original VL algorithm is used, which does not attempt to minimize product mix in vehicle loads.
Order Number	The code for the deployment entry.

Field	Description
Order Planner Comment	A user comment field.
Origin Description	The name of the origin location.
Origin Location	The code for the origin location.
Plan Name	The name of the system plan.
Plan Quantity	The quantity of the product to be shipped, expressed in standard planning units.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
Product	The code for the product.
Product Description	The name of the product.
Receiving Date	The date and time the shipment is expected to be received at the destination location.
Reserved Vehicle	This field indicates whether the vehicle is reserved. Values are: <ul style="list-style-type: none"> • Y-The vehicle is reserved. • N-The vehicle is not reserved.
Ship Quantity	The quantity of the product to be shipped, expressed in standard shipping units.
Ship Unit	The code that identifies the standard unit of measure for shipping the product: for example, pallets, kegs, or cases.
Shipping Date	The date and time when the shipment is expected to leave the origin location.
Spots Usage	The ratio of spots used to spots available.
Spots Usage Max	The maximum percentage of spots capacity that can be used.
Spots Usage Min	The minimum percentage of spots capacity that can be used.
Spots Used	The number of spots on the vehicle that are used.

Field	Description
Status	<p>The status of the load. Values are:</p> <ul style="list-style-type: none"> Planned-Status when first generated by the VL solver. Approved-The load is approved by planner. Published-The load is approved and is written to an output file. Rejected-The load has been rejected for future use.
Status Date	The date the status was most recently changed.
Transport Mode	The code that identifies the mode of transportation.
Under Use	<p>A three-character code in the form SWV that shows whether there is unused capacity on a vehicle. Values are:</p> <ul style="list-style-type: none"> S-Spots W-Weight V-Volume <p>If a letter is displayed, unused capacity of that type exists. If a dash is displayed, all the capacity of that type is used.</p> <p>For example, S-V means there are unused spots and unused volume, but the weight limit has been reached.</p>
User Field 1 -to User Field10	User-defined fields.
Vehicle Type Code	The code for the type of vehicle.
Vehicle Type Description	A description of the type of vehicle.
Volume Usage	The ratio of volume used to volume capacity on the vehicle.
Volume Usage Max	The maximum percentage of volume capacity that can be used.
Volume Usage Min	The minimum percentage of volume capacity that can be used.
Volume Used	The volume capacity on the vehicle that is used.
Weight Usage	The ratio of load weight-to-weight capacity on the vehicle.
Weight Usage Max	The maximum percentage of weight capacity that can be used.
Weight Usage Min	The minimum percentage of weight capacity that can be used.
Weight Used	The weight capacity on the vehicle that is used.

Location Vehicle Type View

The Location Vehicle Type view displays the locations and the types of vehicles that cannot service them. The summary records display the locations. The detail records display the vehicle types that cannot service each location. When location data is changed in PDP, it is propagated to this view. Drill-downs for each field are specified in the field description.

Summary Field	Description
Location	The code for the location. You can navigate to the Vehicle Location view.
Location Description	The name of the location.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Location	The code for the location. You can navigate to the Vehicle Location view.
Vehicle Type	The code for the vehicle type. You can navigate to the Vehicle Type view.
Vehicle Type Description	The name of the vehicle type.
User Field 1 to User Field 3	User-defined fields.

Option View

You use the Option view to specify the values of configurable system options that define how VL works in your particular business environment.

Field	Description
Description	A description of the system option.
Domain Name	The name of the domain within the domain type. PDP is the only valid value for the SYSTEM domain type.
Domain Type	The type of domain for this system option. SYSTEM is the only valid value.
Option Name	The name of the system option. See Vehicle Loading System Options for the valid system options.
Option Value	The value for the system option.
Plan Name	The name of the system plan within the domain type. PDP is the only valid value.

Order View

The Order view displays the orders (deployments) that were published from PDP and imported into VL. You can also add and delete orders individually in VL. The summary records display the orders. The detail records display the products in each order.

You can navigate from this view to the following views:

- Order Alert View
- Order Balance View
- Load Detail View
- Load Report View

Drill-downs for each field are specified in the field description.

Summary Field	Description
Plan Name	The name of the system plan used to generate this order.
Order Number	The code that identifies the original order for the product.
Origin	The code for the origin location. You can navigate to the origin location in the Vehicle Location view.
Origin Description	The name of the origin location.
Destination	The code for the destination location. You can navigate to the destination location in the Vehicle Location view.
Destination Description	The name of the destination location.
Transport Mode	The code that identifies the mode of transportation to be used.
Ship Date	The date and time when the shipment is expected to leave the origin location.
Ship Window	The number of days after the earliest arrive date when the product can arrive without being late.
Arrive Date	The date and time the shipment is expected to be received at the destination location, based on the deployment from PDP.
Arrive Window	The number of days after the earliest shipping date when the product can be shipped without being late.
Alert Horizon	The date beyond which order alerts are not generated. Based on the deploy_ord_alert_horizon option in the Option view.
Plan Horizon	The planning horizon in number of days at the origin location.

Summary Field	Description
Pull Forward	The number of days that the order can be pulled forward. Must be an integer. Initially, the PDP solver sets this field.
Planner	The name of the planner or horizon that created this entry. If the entry was created manually, this field is the name of the planner. If the PDP solver generated the entry, this field is the name of the horizon.
Comment	A user comment field. Comments are included with deployments published from PDP and imported into VL. You can create and edit comments in this field.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Plan Name	The name of the system plan used to generate this order.
Order Number	The code that identifies the original order for the product.
Product	The code for the product. You can navigate to the Item view.
Product Description	The name of the product.
Product Owner	The user who is responsible for the product.
Quantity	The desired quantity of product to be shipped, expressed in standard shipping units.
Ship Unit	The code that identifies the standard unit of measure for shipping the product, for example, pallets, kegs, or cases.
Minimum	The minimum acceptable quantity of product that can be shipped.
Maximum	The maximum acceptable quantity of product that can be shipped.
Plan Quantity	The quantity of the product to be shipped, expressed in standard planning units.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
Over Cost	The cost per day for shipping one unit more than desired.
Under Cost	The cost per day for shipping one unit less than desired.
Comment	A user comment field.
User Field 1 to User Field 3	User-defined fields.

Order Alert View

The Order Alert view displays the orders (deployments) that were not fully loaded or not published within the alert horizon. An alert is displayed in real time when the loaded quantity does not equal the desired order quantity. You cannot add, edit, or delete data in this view.

If the active workgroup is assigned the IMPORT_DeploymentAlert command, you can export the alerts. The alerts are immediately displayed in the Deployment Order Alert view in PDP. To export order alerts, in the VL Desktop, choose Export from the File menu, and then choose Order Alerts.

You can navigate from this view to the following views:

- Order Balance View
- Load Approval View
- Load Report View
- Order View

Drill-downs for each field are specified in the field description.

Summary Field	Description
Ship Date	The date and time when the shipment is expected to leave the origin location.
Ship Window	The number of days after the earliest arrive date when the product can arrive without being late.
Plan Name	The name of the system plan that is used to generate the order.
Order Number	The code that identifies the original order for the product.
Load Number	The code for the load, in the form <code>planecode.number</code> .
Product	The code for the product. You can navigate to the Item view.
Product Desc	A description for the product.
Order Quantity	The desired quantity of product to be shipped, expressed in standard shipping units.
Quantity Loaded	The quantity of the order that was loaded, expressed in standard shipping units.
Ship Unit	The code that identifies the standard unit of measure for shipping the product, for example, pallets, kegs, or cases.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
Origin	The code for the origin location. You can navigate to the origin location in the Vehicle Location view.
Origin Desc	The name of the origin location.

Summary Field	Description
Destination	The code for the destination location. You can navigate to the destination location in the Vehicle Location view.
Destination Desc	The name of the destination location.
Transport Mode	The code that identifies the mode of transportation to be used for the load.
Arrive Date	The date and time when the shipment is expected to be received at the destination location.
Arrive Window	The number of days after the earliest shipping date when the product can be shipped without being late.
Item Owner	The user who is responsible for the product.
Plan Quantity	The quantity of the product to be shipped, expressed in standard planning units.
Plan Quantity Loaded	The quantity of the product to be loaded, expressed in standard planning units.
Minimum	The minimum acceptable quantity of product to be shipped.
Maximum	The maximum acceptable quantity of product to be shipped.
Over Cost	The cost per day for shipping one unit more than desired.
Under Cost	The cost per day for shipping one unit less than desired.
Order Item Comment	A user comment field for the order item.
Pull Forward	The number of days that the order can be pulled forward. This value must be an integer. Initially, the PDP solver sets this field.
Order Comment	A user comment field. Comments are included with orders published from PDP and imported into VL. You can create and edit comments in this field.
User Field 1 to User Field 3	User-defined fields.

Order Balance View

The Order Balance view displays information about the quantity of each order that has been loaded. The summary records display the products in each order, their characteristics, the order quantity, and the quantity loaded. The detail records display the load number for each product and the spots, weight, and volume used by each product in a load. You cannot add or change data in this view.

You can navigate from this view to the following views:

- Order Alert View

- Load Detail View
- Load Report View
- Order View

Summary Field	Description
Ship Date	The date and time when the shipment is expected to leave the origin location.
Ship Window	The number of days after the earliest arrive date when the product can arrive without being late.
Plan Name	The name of the system plan that is used to generate this order.
Order Number	The code that identifies the original order for the product.
Product	The code for the product. You can navigate to the Item view.
Product Desc	The name of the product.
Order Quantity	The desired quantity of product to be shipped, expressed in standard shipping units.
Minimum	The minimum quantity of product to be shipped, expressed in standard shipping units.
Maximum	The maximum quantity of product to be shipped, expressed in standard shipping units.
Ship Quantity Loaded	The quantity of the product loaded by the VL solver, expressed in standard shipping units.
Ship Unit	The code that identifies the standard unit of measure for shipping the product, for example, pallets, kegs, or cases.
Origin	The code for the origin location. You can navigate to the origin location in the Vehicle Location view.
Origin Desc	The name of the origin location.
Destination	The code for the destination location. You can navigate to the destination location in the Vehicle Location view.
Destination Desc	The name of the destination location.
Transport Mode	The code that identifies the mode of transportation to be used.
Arrive Date	The date and time when the shipment is expected to be received at the destination location.
Arrive Window	The number of days after the earliest shipping date when the product can be shipped without being late.

Summary Field	Description
Over Cost	The cost per day for shipping one unit more than desired.
Under Cost	The cost per day for shipping one unit less than desired.
Product Owner	The user who is responsible for the product.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
Order Comment	A user comment field for the order.
Order Item Comment	A user comment field for the order item.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Plan Name	The name of the system plan that is used to generate this order.
Order Number	The code that identifies the original order for the product.
Product	The code for the product. You can navigate to the Item view.
Load Number	The code for the load, in the form <code>planecode.number</code> .
Quantity	The quantity loaded, expressed in standard shipping units.
Ship Unit	The code that identifies the standard unit of measure for shipping the product, for example, pallets, kegs, or cases.
Spots Used	The number of spots used on the vehicle.
Volume Used	The volume used by the order.
Weight Used	The weight used by the order.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
User Field 1 to User Field 3	User-defined fields.

Product Calendar View

The Product Calendar view displays the shipping, receiving, and producing calendars for a product at a location. For example, you can specify that product A16oz at the Chicago location is not available for shipping on Saturdays. You can also define exceptions to the product calendars. The VL solver respects these calendars when it generates vehicle loads. The summary records display the locations and products and the default shipping, receiving, and producing calendars. The detail records display the exceptions to the calendars. You can define product calendars in PDP or VL.

Summary Field	Description
Location	The code for the location.
Product	The code for the product.
Shipping Calendar	The shipping status for each day of the week. The values are in the same format as Producing Calendar.
Receiving Calendar	The receiving status for the day of the week. The values are in the same format as Producing Calendar.
Producing Calendar	<p>The producing status for the day of the week. The value is composed of a combination of seven 1s and 0s. The first number represents Monday's producing status. Values are:</p> <ul style="list-style-type: none"> • 1-Open • 0-Closed <p>For example, a product that is produced during the week, but is not produced on the weekend has the value 1111100.</p>

Detail Field	Description
Location	The code for the location.
Product	The code for the product.
Exception Date	The date of the exception.
Shipping	<p>The exception to the shipping calendar. Values are:</p> <ul style="list-style-type: none"> • 1-Open • 0-Closed
Receiving	<p>The exception to the receiving calendar. Values are:</p> <ul style="list-style-type: none"> • 1-Open • 0-Closed
Producing	<p>The exception to the producing calendar. Values are:</p> <ul style="list-style-type: none"> • 1-Open • 0-Closed

Product Group View

The Product Group view displays product group definitions. The summary records display the product groups. The detail records display the products in each group. When you make changes in this view, the data is propagated to PDP. When product group data is changed in PDP, it is propagated to this view.

Drill-downs for each field are specified in the field description.

Summary Field	Description
Description	A description of the product group.
Group Name	The code for the product group.
Owner	The name to identify the planner.
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Group Name	The code for the product group.
Owner	The name to identify the planner.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
Ship Unit	The code that identifies the standard unit of measure for shipping the product, for example, pallets, kegs, or cases.
Sub Product Desc	A description of the product.
Sub Product Name	The code for the product in the product group. You can navigate to the Item view.
User Field 1 to User Field 3	User-defined fields.

Product Vehicle Type View

The Product Vehicle Type view displays the products that cannot be loaded onto a particular type of vehicle. When product data is changed in PDP, it is propagated to this view. You can navigate from this view to the following views:

- Item View
- Vehicle Type View

Field	Description
Product	The code for the product.
Product Description	The name of the product.
Vehicle Type	The code for the vehicle type.
Vehicle Type Description	The name of the vehicle type.
User Field 1 to User Field 3	User-defined fields.

Shipping Cost View

The Shipping Cost view displays the cost of using a lane as charged by the carrier for each type of vehicle. The summary records display the lanes. The detail records display the cost and time required for each combination of carrier and vehicle type on a lane. Shipping costs must be defined for each lane or the VL solver ignores the lane when it is building loads. When location and lane data is changed in PDP, it is propagated to this view.

You can drill-down from this view to the Lane view. Drill-downs for each field are specified in the field description.

Summary Field	Description
Lane	The code for the lane.
Origin	The code for the origin location. You can navigate to the origin location in the Vehicle Location view.
Origin Description	The name of the origin location.
Destination	The code for the destination location. You can navigate to the destination location in the Vehicle Location view.
Destination Description	The name of the destination location.

Detail Field	Description
Lane	The code for the lane.
Carrier	The code for the carrier. You can navigate from this field to the Carrier view.
Carrier Description	The name of the carrier.
Vehicle Type	The code for the type of vehicle. You can navigate from this view to the Vehicle Type view.
Vehicle Type Description	The name of the type of vehicle.
Cost	The cost of using this lane as charged by the carrier for this vehicle type.
Lead Time	<p>The expected time, in days, to travel this lane for this vehicle type. For example, values from 0.00 to 0.99 mean ship today and arrive today. Values from 1.00 to 1.99 mean ship today and arrive tomorrow.</p> <p>Ensure that the value in this field is equal to the leadtime that is associated with the transport mode in the Item Shipping Process and Shipping Capacities views in PDP.</p>
User Field 1 to User Field 3	User-defined fields.

Vehicle Commitment View

The Vehicle Commitment view displays the committed number of vehicles for each lane on a specified date. The summary records display the lanes. The detail records display the number of committed vehicles for each combination of carrier, vehicle type, and date. When location and lane data is changed in PDP, it is propagated to this view.

You can navigate from this view to the Lane view. Drill-downs for each field are specified in the field description.

Summary Field	Description
Lane	The code for the lane.
Origin	The code for the origin location. You can navigate to the origin location in the Vehicle Location view.
Origin Description	The name of the origin location.
Destination	The code for the destination location. You can navigate to the destination location in the Vehicle Location view.
Destination Description	The name of the destination location.

Detail Field	Description
Lane	The code for the lane.
Carrier	The code for the carrier. You can navigate to the Carrier view.
Carrier Description	The name of the carrier.
Vehicle Type	The code for the type of vehicle. You can navigate to the Vehicle Type view.
Vehicle Type Description	The name of the type of vehicle.
Travel Date	The traveling date.
Number of Vehicles	The number of vehicles of the vehicle type that are committed for use on the traveling date specified.

Vehicle Horizon View

The Vehicle Horizon view displays the horizon dates and duration for each location. The VL solver uses this data when it builds loads for specific horizons. This view displays the horizons when both the VL_Horizon and Lane tables contain a record with the same origin location. When location and lane data is changed in PDP, it is propagated to this view.

You can navigate from this view to the Vehicle Location view.

Field	Description
Description	The name of the location.
Duration	The number of days for which the VL solver builds vehicle loads.
End Date	The end of VL solver horizon. This is calculated based on Duration, Offset, and the current date.
Location	The code for the location.
Offset	The number of days from the current date at which the VL solver can start building loads.
Start Date	The start of VL solver horizon.
Type	<p>The type of the location. Values are:</p> <ul style="list-style-type: none"> • CUSTOMER-Customer • DC-Distribution center • PLANT-Plant • PLANT_DC-Plant and distribution center • SUPPLIER-Supplier

Vehicle Location View

The Vehicle Location view displays the locations in the distribution network and their facility calendar. The summary records display the regular calendar for producing, receiving, and shipping at each location. The producing calendar is displayed in blue, the receiving calendar in green, and the shipping calendar in red. The detail records display the exceptions to the regular calendar.

You can change location data in this view, but you cannot add or delete summary records; you must do this in PDP. You can add, change, and delete detail records. When you make changes in this view, the data is propagated to PDP. When location data is changed in PDP, it is propagated to this view. This view has no drill-downs.

Summary Field	Description
Location	The code for the location.
Description	The name of the location.
Type	<p>The type of location. Values are:</p> <ul style="list-style-type: none"> • CUSTOMER-Customer • DC-Distribution center • PLANT-Plant • PLANT_DC-Plant and distribution center • SUPPLIER-Supplier

Summary Field	Description
Priority Class	The code for the location class.
Mon - Sun Produce	The producing status for the day of the week. Values are: <ul style="list-style-type: none"> • 1-Open • 0-Closed
Mon - Sun Receive	The receiving status for the day of the week. Values are: <ul style="list-style-type: none"> • 1-Open • 0-Closed
Mon - Sun Ship	The shipping status for the day of the week. Values are: <ul style="list-style-type: none"> • 1-Open • 0-Closed
User Field 1 to User Field 3	User-defined fields.

Detail Field	Description
Location	The code for the location.
Exception Date	The date of the exception.
Shipping	The exception to the shipping calendar for the location. Values are: <ul style="list-style-type: none"> • 1-Open • 0-Closed
Receiving	The exception to the receiving calendar for the location. Values are: <ul style="list-style-type: none"> • 1-Open • 0-Closed
Producing	The exception to the producing calendar for the location. Values are: <ul style="list-style-type: none"> • 1-Open • 0-Closed

Vehicle Type View

The Vehicle Type view displays the characteristics of each type of vehicle, such as its minimum and maximum capacities in spots, weight, and volume. This view has no drill-downs.

Field	Description
Vehicle Type	The code for the type of vehicle.
Description	The name of the type of vehicle.
Transport Mode	The code that identifies the mode of transportation for this type of vehicle.
Min Products/Vehicle	Minimum number of products that can be loaded on this type of vehicle.
Max Products/Vehicle	The maximum number of products that can be loaded on this type of vehicle.
Floor Spots Capacity	The number of floor spots available in this type of vehicle.
Spots Capacity	<p>The total number of spots available on this type of vehicle. In general, the spots capacity of a vehicle refers to the number of pallets or other shipping units that it can accommodate.</p> <p>A spot is the term for a space on a trailer to place pallets. For example, a typical trailer can accommodate 24 standard pallets on the floor, so the trailer would have 24 floor spots. A second layer of pallets can be placed on top of the floor spots layer. Therefore, if low cube pallets are being shipped, the trailer can accommodate 48 total pallets and has a total spots capacity of 48.</p>
Min Spots Usage	The minimum percentage of spots capacity that can be used.
Max Spots Usage	The maximum percentage of spots capacity that can be used.
Weight Capacity	The maximum weight capacity for this type of vehicle.
Weight Capacity Unit	The unit of measure of the weight.
Min Weight Usage	The minimum percentage of weight capacity that can be used.
Max Weight Usage	The maximum percentage of weight capacity that can be used.
Volume Capacity	<p>The maximum volume capacity for this type of vehicle.</p> <p>The VL solver does not consider the Volume Capacity. Instead, it uses the Spots Capacity, which is a better measure of effective volume.</p>
Volume Capacity Unit	The unit of measure of the volume.
Min Volume Usage	The minimum percentage of volume capacity that can be used.

Field	Description
Max Volume Usage	The maximum percentage of volume capacity that can be used.
User Field 1 to User Field 3	User-defined fields.

Example: Spot Usage

In this example, a trailer has 12 floor spots. A low cube pallet takes up each spot. The trailer can accommodate a total of 24 low cube pallets in two layers. This load consumes 23 of 24 spots: 8 standard (high cube) pallets and 7 low cube pallets. One spot is unused.

Vehicle Unit Conversion View

The Vehicle Unit Conversion view supports standard unit conversions and product-specific conversions. You define unit conversions to map quantities between items that are measured in different units. You can convert units within the same dimension and system, such as grams to kilograms, and you can convert between different systems, such as pounds to kilograms or cases to kilograms.

You must complete the unit conversion values after you install VL. All input quantities to VL should be in standard planning units.

When you make changes in this view, the data is propagated to PDP. When unit conversion data is changed in PDP, it is propagated to this view.

Drill-downs for each field are specified in the field description.

Field	Description
Description	The name of the product.
Dimension	The type of dimension for the unit, for example, WEIGHT, VOLUME, or COUNT for containers.
Factor	The factor in the conversion. Use 1 for the base unit.
Offset	A constant used in a linear equation.
Owner	The user responsible for the product.
Plan Unit	The code that identifies the unit of measure for all planning quantities for the product.
Product	The code for the product. For standard unit conversions, use STANDARD. You can navigate to the Item view.
Ship Unit	The code that identifies the standard unit of measure for shipping the product, for example, pallets, kegs, or cases.
Unit	The name for the unit of measure, such as CASE or PALLET.

When the distribution planner runs the Supply Planning, the inventory levels are satisfied in the following order. No safety stock level or effective demand exists at Plant1.

- 50 percent of effective demand at the customer locations and distribution centers
- Remaining effective demand at the customer locations and distribution centers
- 50 percent of safety stock levels at the customer locations, and 25% of safety stock levels at the distribution centers
- Remaining safety stock at the customer locations and distribution centers
- Build levels at all locations

The Supply Planning generates the lowest cost solution that respects the inventory balancing policies.

Using Inventory Balancing Policies with Demand Priorities

You can use demand priorities in combination with inventory balancing policies to determine how you want the Supply Planning to satisfy effective demand and safety stock policies.

If inventory is insufficient to satisfy all of the inventory balancing policies, the Supply Planning can choose between two or more solutions. The following situation is an example:

- Shipping costs to DC1 and Customer1 are 0.2.
- Shipping costs to all other locations are 0.3.
- The desired safety stock levels at each location are:

Plant1	DC1	DC2	Customer1	Customer2
0	100	100	50	75

- The Supply Planning has satisfied all of the effective demand requirements, and the remaining inventory is 25 units of A16oz.

In this example, the Supply Planning chooses to allocate the remaining 25 units of A16oz to DC1. This decision respects the inventory balancing policies as much as possible and achieves the lowest cost solution.

However, the distribution planner wants to allocate remaining inventory to customers, rather than to the distribution centers. The distribution planner uses demand priorities to ensure that customer requirements are satisfied first, even though shipping to Customer1 is more expensive than shipping to DC1.

By completing the Demand Priority view as follows, the safety stock for Customer1 can be satisfied before the safety stock for DC1. The values in the view specify that the safety stock for all customer locations must be satisfied before the safety stock at distribution centers.

Demand priorities must be defined as integers in the Demand Priority view.

Location Priority Class	Product Priority Class	Demand Component	Effective Period	Priority
Customer	*	E	0	1.0
DC	*	E	0	2.0
Customer	*	S	0	3.0
DC	*	S	0	4.0
*	*	B	0	5.0

In addition, the following values are specified in the Location view:

Location	Priority Class
Customer1	Customer
Customer2	Customer
DC1	DC
DC2	DC

APPENDIX M

Alert Management Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Alert Management tables and their fields.

Understanding Alert Management Tables

Alert Management tables contain system alert specifications and specifications for importing external alerts. Alert management is part of the static data model.

The following tables contain the data necessary for alert management functionality:

- AlertStatus
- AlertSource
- AlertSourceView
- SystemAlert
- WorkGroupAlert

AlertStatus Table

The AlertStatus table specifies the life cycle of externally generated alerts. The status of an external alert determines whether it generates a system alert. The AlertStatus table is optional.

Field	Data Type	Description
status_code	NameString	A primary key field. A unique code that identifies an alert status. This status code is used to customize the alert life cycle.
description	TextString	A description of the alert status. This field is optional.
is_active	Char Y or N	A code that identifies if the alert is active. Active means that an external alert of this status generates a system alert. Values are: Y: Active N: Not active, which means that a system alert is not generated

AlertSource Table

The AlertSource table specifies the source for each system alert. The source is the top object in the MVC network. The AlertSource table also specifies the field names of the commonly-used data in the top object. This table is shared by Production & Distribution Planning and Vehicle Loading.

The data in the AlertSource table is included in installation. Do not modify the AlertSource table or its data.

Field	Data Type	Description
name	NameString	This is a primary key field. The name of the alert source.
top_object	NameString	The name of the top object in the MVC network from which the alert is triggered.
id_field	NameString	The name of the field that stores the identification of the alert tuple. This field is optional.
product_field	NameString	The name of the field that stores the product code. This field is optional.
location_field	NameString	The name of the field that stores the location code. This field is optional.
lane_field	NameString	The name of the field that stores the lane code. This field is optional.
origin_field	NameString	The name of the field that stores the origin location code. This field is optional.
destination_field	NameString	The name of the field that stores the destination location code. This field is optional.
start_date_field	NameString	The name of the field that stores the start date. This field is optional.
ship_date_field	NameString	The name of the field that stores the ship date. This field is optional.
arrive_date_field	NameString	The name of the field that stores the arrive date. This field is optional.
reserved1 to reserved3	NameString	These fields are reserved for future use. The default is NULL.

AlertSourceView Table

The AlertSourceView table specifies the alert sources that are included in the views. This table is shared by Production & Distribution Planning and Vehicle Loading.

The data in the AlertSourceView table is included in installation. Do not modify the AlertSourceView table or its data.

Field	Data Type	Description
system	NameString	This is a primary key field. The name of the system associated with the view. Values are: PDP: Production and Distribution Planning VL: Vehicle Loading
view_name	NameString	This is a primary key field. The name of the view.
alert_source	NameString	This is a primary key field. This is a foreign key to the AlertSource table. The name of the alert source.

SystemAlert Table

The SystemAlert table specifies the system alert types supported by Production and Distribution Planning. The alert types can include external alerts that generate system alerts. The SystemAlert table is installed with the pre-defined system alerts.

Field	Data Type	Description
system	NameString	This is a primary key field. The name of the system to which the alert belongs. Values are: PDP: Production and Distribution Planning VL: Vehicle Loading
type	NameString	This is a primary key field. A unique code identifying the system alert type.
description	TextString	A description of the alert type. This field is optional.
priority	Integer	The priority for the alert type. 1 is the highest priority.

alert_source	NameString	<p>This is a foreign key to the AlertSource table.</p> <p>The name of the alert source. For external alerts, this is always set to AlertSourceID002.</p>
predicate	TextString	<p>The predicate applied to the alert source top object so that alerts of this type are triggered.</p> <p>For external alerts, the values in this field are in the following format:</p> <p><i>(alert_type=type) AND (is_active=Y)</i></p> <p>Where <i>type</i> is the value in the type field of this table.</p>
aggr_by	TextString	<p>The aggregation performed on the selected alerts. For example, alerts may be aggregated by type. The contents of this field must specify the aggregate by fields separated by commas. This field is optional.</p>
aggr_oper	TextString	<p>The operation applied on the field specified by aggr_on. Values are:</p> <p>FIRST: When there are multiple alerts of the same type, the first alert appears. For example, the alert with the earliest date.</p> <p>LAST: When there are multiple alerts of the same type, the last alert appears. For example, the alert with the most recent date.</p> <p>This field is required if aggr_by field is completed.</p>
aggr_on	TextString	<p>The field operated on when aggregation is performed. Typically, this is a date field. This field is required if the aggr_by field is completed.</p>

WorkGroupAlert

This table specifies the alert types supported by the work groups.

Field	Data Type	Description
system	NameString	A primary key field. Specifies the name of the system owning with this workgroup.
workgroup	NameString	A primary key field. Stores the name of the work group.
alert_type	NameString	A primary key field. The alert type supported by the work group.

APPENDIX N

Dynamic Alert Tables

This appendix provides an overview of Dynamic Alert Tables and Their Fields.

EnterpriseOne Production and Distribution Planning Dynamic Alert Tables

Production and Distribution Planning imports alerts that are generated from external systems into the dynamic alert management system. Production and Distribution Planning also imports alerts from VL.

Field Descriptions for the Dynamic Alert Tables

This section describes each field in the dynamic alert tables and its function. The dynamic alert tables are:

- DeployOrderAlert
- ExternalAlert
- SolveStatus

DeployOrderAlert Table

The DeployOrderAlert table specifies exception deployments from Vehicle Loading. Exception deployments are deployments that have loaded quantities that differ from the requested quantities. The DeployOrderAlert table contains one entry per exception deployment from Vehicle Loading.

When deployment alerts are exported from Vehicle Loading, the Vehicle Loading Desktop triggers an automatic import to the EnterpriseOne Production and Distribution Planning model servers, which populate the DeployOrderAlert table.

Field	Data Type	Description
plan_name	NameString	This is a primary key field. The name of the system plan used to generate this data. The system plan name is specified by the horizon used in the solve.

Field	Data Type	Description
deploy_number	NameString	This is a primary key field. A unique number identifying the deployment. Initially, this is generated by the Supply Planning or the HS solver.
origin_location	LocationCode	This is a foreign key to the Location table. A unique code identifying the origin of the shipment.
destination_location	LocationCode	This is a foreign key to the Location table. A unique code identifying the destination location.
transport_mode	NameString	This is a foreign key to the LaneShipProc table. A unique code identifying the mode of transportation. This field is needed to determine transport utilization.
item_code	ItemCode	This is a primary key field. This is a foreign key to the Item table. A unique code identifying the product or material.
ship_date	Date/Time	The date-time when product is scheduled to be shipped from the originating location.
arrive_date	Date/Time	The date-time when product is scheduled to arrive at destination location.
quantity_requested	Quantity	The quantity of the product requested to be deployed.
quantity_minimum	Quantity	The minimum quantity of the product required to be deployed. This field is optional. The default is 0.0.
quantity_maximum	Quantity	The maximum quantity of the product required to be deployed. This field is optional. The default is no maximum.
quantity_loaded	Quantity	The quantity of the product loaded by Vehicle Loading. This value is generated by the Vehicle Loading solver.

Field	Data Type	Description
ship_unit	UOM	The shipping unit of measure for the quantity.
pull_forward	Double	The number of days that the deployment can be pulled forward. This field is optional.
alert_status	NameString	This field is reserved for future use.
user_comment	TextString	Optional user comment field.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

ExternalAlert Table

The ExternalAlert table stores externally generated alerts that have been imported into EnterpriseOne Production and Distribution Planning. There is one entry per alert in this table.

Field	Data Type	Description
from_role	NameString	This is a primary key field. This is a foreign key to the Role table. The user role of the sender.
alert_number	NameString	This is a primary key field. A unique number identifying the alert. You may want to design a numbering convention to ensure the uniqueness of this field as well as to identify the originating system.
alert_type	NameString	This is a foreign key to the SystemAlert table. The type of alert. This field must be completed with a valid type for Production and Distribution Planning system alerts to be generated.
alert_status	NameString	This is a foreign key to the AlertStatus table. The status of the alert. This field must be completed with an active status for Production and Distribution Planning system alerts to be generated.
alert_description	TextString	A description or instructions about the alert. This field is optional.
alert_date	Date/Time	The date-time associated with the alert. This field is optional.

Field	Data Type	Description
from_user_id	NameString	The ID of the user who sent the alert.
to_role	NameString	The target user role to receive the alert. This field is optional. If undefined, all user roles can receive the alert.
workgroup	NameString	The target work group who can receive the alert. This field is optional. If undefined, all work groups can receive the alert.
location_code	LocationCode	This is a foreign key to the Location table. The code of the location associated with the alert. This field is optional.
lane_code	LaneCode	This is a foreign key to the Lane table. The code of the lane associated with the alert. This field is optional.
item_code	ItemCode	This is a foreign key to the Item table. The code of the item associated with the alert. This field is optional.
resolved_by	NameString	The user who resolved the alert. This field is optional.
resolution	TextString	A comment about the resolution of the alert. This field is optional.
resolution_date	Date/Time	The date-time when the alert was resolved. This field is optional.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

SolveStatus Table

The SolveStatus table specifies the solve status of the jobs in the queue for the solver server. There is one entry per job in the solver server queue. The solver dispatcher regularly updates the SolveStatus table.

Field	Data Type	Description
run_id	NameString	This is a primary key field. A unique code identifying the solver run.
status	NameString	The current status of the solver run.
status_date	Date/Time	The date-time when the status was set.

Field	Data Type	Description
user_id	NameString	The ID of the user who submitted the solver run.
workgroup	NameString	The name of the work group to which the user belongs.
role	NameString	The user role of the user who submitted the solver run.
plan_name	NameString	The name of the system plan used for this solve.
horizon	NameString	The name of the horizon used for this solve.
algorithm	NameString	The type of algorithm used for this solve.
import	Char Y or N	A code indicating if the auto-import option is used. Values are: Y: Auto-import after solve N: No auto-import after solve
purge	NameString	A code indicating which purge mode is used for auto-import. This field is required if import is set to Y. Values are: All: Purge all data in the table Plan: Purge only data matching the system plan name Item: Purge only data matching both the system plan name and the items in the item list None: No purging, duplicate records are replaced
submit_date	Date/Time	The date-time when the solve was started.
run_sequence	Integer	The sequence number for this solver run. This number is used to sort solver run requests from the solver dispatcher.
starting_date	Date/Time	The starting date and time of the solve.
reported_errors	Count	The number of errors found by the solver server during its start up.

Field	Data Type	Description
reported_warnings	Count	The number of warnings found by the solver server during its start up.
itemlist	LongString	A list of products and materials for the solve. This field is optional. If this field is not completed, all products and materials are included in the solve.

APPENDIX O

Demand Management Tables

This appendix discusses Demand Management tables and their fields.

Understanding Demand Management Tables

The Demand Management tables are part of the static data model. Demand Management tables contain data that is related to demand policies that define demand forecasting and customer orders. The Demand Management tables are:

- DemandPriority
- ForecastProfile
- InventoryBalance
- ProductSubstitute

DemandPriority Table

This table specifies priorities for the various demand components as a function of location, product, and time period into the solve horizon. The Supply Planning uses these priorities to satisfy demand when inventory or capacity is insufficient to meet demand. The DemandPriority table is optional.

Field	Data Type	Description
location_priority_class	NameString	A primary key field. The code identifying a location demand priority class. You can assign a priority class to a location in the Location table. The value * represents all locations.
product_priority_class	NameString	A primary key field. A code identifying a product demand priority class. You can assign a priority class to an product or material in the Item table. The value * represents all.

Field	Data Type	Description
component_code	CharString	<p>A primary key field.</p> <p>A code identifying the demand component. Values are:</p> <ul style="list-style-type: none"> • E: Effective demand • S: Safety • B: Build • M: Maximum
effective_period	Count	<p>A primary key field.</p> <p>The starting period when the priority is effective. The starting period is defined as the number of days offset into the solve horizon.</p> <p>You must partition periods in consecutive ranges with the last range in the form “all periods later than”. For example, the values 1, 6, 11, and 21 represent:</p> <p>Period group 1 = days 1-5 inclusive</p> <p>Period group 2 = days 6-10 inclusive</p> <p>Period group 3 = days 11-20 inclusive</p> <p>Period group 4 = days 21+</p>
priority	Double	The demand priority. A priority of 1.0 indicates the highest importance.

ForecastProfile Table

This table specifies the relative variations in the forecast for each day of the week. The relative variations in forecast are called forecast profiles. The ForecastProfile table is optional.

Field	Data Type	Description
location_code	LocationCode	<p>A primary key field. This field is a foreign key to the Location table.</p> <p>A unique code that identifies the location.</p>

Field	Data Type	Description
product_code	ItemCode	<p>A primary key field. This field is a foreign key to the Item table.</p> <p>A unique code that identifies the product or material.</p> <p>This code can represent an individual product or a product group. Enter each product only once as either an individual product or as part of a product group. For example, do not enter the product code A16oz, and then enter the product group code APPLES that includes the product A16oz.</p>
effective_date	Date/Time	A primary key field that specifies the date and time when this forecast quantity is in effect. This field must be completed.
monday-sunday	Double	The factor by which the forecast quantity is multiplied. The default 1.0 means no adjustment.

InventoryBalance Table

This table specifies the inventory balancing levels for each product or material at a location. The InventoryBalance table is optional.

Field	Data Type	Description
location_inv_balance_class	NameString	<p>A primary key field.</p> <p>A code that identifies a location inventory balancing class. You can assign this class to a location in the Location table.</p>
item_inv_balance_class	NameString	<p>A primary key field.</p> <p>A code that identifies a product or material inventory balancing class. You can assign this class to a product or material in the Item table.</p>

Field	Data Type	Description
safety_percentage	Double	The minimum percentage of safety stock level that must be met to satisfy the inventory balancing requirement. The valid values are any number between 0.0 and 100.
effective_demand_percentage	Double	The minimum percentage of effective demand level that must be met to satisfy the inventory balancing requirement. The valid values are any number between 0.0 and 100.

ProductSubstitute Table

The ProductSubstitute table specifies the products and materials at a location that the Supply PlanningP solver can substitute in place of another product or material. The ProductSubstitute table is optional.

Field	Data Type	Description
location_code	LocationCode	A primary key field. This field is a foreign key reference to the Location table. A unique code that identifies the location where the substitution applies.
product_code	ItemCode	A primary key field. This field is a foreign key to the Item table. A unique code that identifies the product or material for which the substitution applies.
substitute	ItemCode	A primary key field. This field is a foreign key reference to the Item table. A unique code that identifies the product or material that can be used as a substitute.
effective_date	Date/Time	A primary key field. The date and time when the product substitution policy begins. Always set the time to 00: 00: 00.
ratio	Rate	The quantity of substitute product used for each unit of the original product. The default is 1.0.

Field	Data Type	Description
preference	Double	<p>This field determines which substitute the Supply Planning solver uses first, second, third, and so on. A preference of 1.0 indicates that the substitute is used first. A preference of 2.0 indicates that the substitute is used only after the substitute with a preference of 1.0 is no longer available. Setting a preference = 0 turns off the substitution.</p> <p>The valid values are 1.0, 2.0, and so on. Invalid values are 1.5, 2.1, and so on. The default is 0.0.</p>
transfer_demand	Char Y or N	<p>This field indicates if the demand for the substitute is transferred to the demand for the product. Values are:</p> <p>Y: Yes</p> <p>N: No</p> <p>The default is Y.</p>
reserved	Double	Reserved for future use.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

APPENDIX P

Distribution Management Tables

Distribution Management tables

This appendix discusses EnterpriseOne Production and Distribution Planning Distribution Management tables and their fields

Understanding Production and Distribution Planning Demand Management Tables

This section describes each field and its function for the Distribution Management tables:

- DeployReviewCalendar
- Lane
- LaneShipCap
- LaneShipExceptionCalendar
- LaneShipItem
- LaneShipProc
- Sourcing

Distribution Management tables contain data that is related to the distribution network, which defines the flow of products and materials over the network of supply and demand locations.

The EnterpriseOne Product and Distribution Planning Distribution Management tables are part of the static data model.

DeployReviewCalendar Table

This table specifies the deployment review calendar that is based on the days of the week. You can specify that deployment reviews for different lanes take place on different days of the week. You can also specify the frequency of reviews in weekly multiples. Users can review and publish deployments on days other than those specified, but the scheduled days provide a structure and a reminder for users. The DeployReviewCalendar table is optional. Deployments are classified into three review reminders by this table:

- Yes: those are has review scheduled for today and falls within the review horizon according to the day-of-week value in this table.
- Late: deployments that have past scheduled review. These deployments will trigger a LateDeploymentReview system alert.
- No: review not required, deployment is outside of review horizon.

Field	Data Type	Description
lane_code	LaneCode	A primary key field. This field is a foreign key to the Lane table. A unique code that identifies the lane.
reference_date	Date/Time	The reference date and time that are used for scheduling deployment reviews. This field must be completed if reviews are scheduled in multiples of one week, such as one review every two weeks.
monday-sunday	Integer	The deployments for this lane are to be reviewed and published on this day. The value indicates the frequency in weeks of the reviews. For example, 1 means once each week, 2 means once every two weeks, and so on. The default is 1. This field is optional.

Lane Table

This table specifies the lanes that connect the source and destination locations for product and material movement. You define one entry for each lane that connects two locations.

Field	Data Type	Description
code	LaneCode	A primary key field. A unique code that identifies the lane. Typically, this code is constructed by combining the source and destination location codes separated by a hyphen. For example, Chicago-Montreal.
origin_loc_code	LocationCode	This field is a foreign key to the Location table. A unique code that identifies the originating location.
destination_loc_code	LocationCode	This field is a foreign key to the Location table. A unique code that identifies the destination location.
status	Boolean	A code that indicates if the lane is available. Values are: 1: Open 0: Closed The default is 1.

Field	Data Type	Description
minimize_load_mix	Char Y or N	Specifies if the algorithm for product mix minimization in Vehicle Loading is enabled. Values are: Y: The algorithm is enabled. N The algorithm is not enabled. The original Vehicle Loading algorithm is used, which does not attempt to minimize product mix in loads. The default is N.
pull_forward_rule	NameString	Complete this field only if you enable the product mix minimization algorithm. This field indicates if the pull forward orders in Vehicle Loading are sorted by date or by product. Values are: SORT_BY_DATE: Pull forward orders are sorted by shipping date. SORT_BY_PRODUCT: Pull forward orders are sorted by product. The default is SORT_BY_DATE.
description	TextString	A description of the lane. This field is optional.

LaneShipCap Table

The LaneShipCap table specifies the shipping capacities and costs for each combination of lane, mode of transportation, and effective date.

You assign each lane a mode of transportation. Based on the mode of transportation and the standard planning unit, PDP converts the quantity of a product or material into the shipping capacity units, and consumes the capacities accordingly. You must define the appropriate unit conversion formula in the UnitConversion table. The capacity unit definitions are stored in the LaneShipProc table.

The following table describes the fields in the LandShipCap table:

Field	Data Type	Description
lane_code	LaneCode	A primary key field. This field is a foreign key to the LaneShipProc table. A unique code that identifies the lane.
transport_mode	NameString	A primary key field. This field is a foreign key to the LaneShipProc table. A unique code that identifies the mode of transportation.

Field	Data Type	Description
effective_date	Date/Time	A primary key field. The date and time when the shipping capacities are in effect. The effective date is with respect to the originating location.
max_premium_capacity	Quantity	The maximum premium capacity that is allowed, based on capacity_unit. Maximum premium capacity must be greater than or equal to 0. Any negative value indicates indefinite premium capacity.
max_standard_capacity	Quantity	The maximum standard capacity that is allowed, based on capacity_unit. This value must be greater than or equal to min_standard_capacity. Any negative value indicates infinite premium capacity.
min_standard_capacity	Quantity	The minimum standard capacity that is requested, based on capacity_unit. This value must be greater than or equal to 0 to be considered by the solver. A penalty is applied if this value isn't met.
min_capacity_penalty	Cost	The penalty cost when min_standard_capacity based on capacity_unit is violated. This value must be greater than or equal to 0.
premium_shipping_cost	Cost	The cost that is charged per unit of premium resource capacity used. The cost is based on capacity_unit. This value must be greater than or equal to standard_shipping_cost.
standard_shipping_cost	Cost	The cost that is charged per unit of standard resource capacity used. The cost is based on capacity_unit in LaneShipProc table. This value must be greater than or equal to 0.
description	TextString	An optional user-defined description.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

LaneShipExceptionCalendar Table

This table defines the daily exceptions to the weekly transportation calendar. The transportation calendar is defined in the LaneShipProc table.

Field	Data Type	Description
lane_code	LaneCode	A code that identifies the specific lane. This primary key is a foreign key to the Lane table.
transport_mode	NameString	A code that identifies the mode of transportation. This primary key is a foreign key to the LaneShipProc table.
exception_date	Date/Time	The date for which the exception applies. The entry format is dd/mm/yyyy. This is a primary key.
exception_status	CharString	Contains one character, which defines the transportation exception for the specified date. This code is required. Values are: C: Closed O: Open

LaneShipItem Table

The LaneShipItem table specifies the set of products and materials that can be transported on each lane and transportation mode. The LaneShipItem table also specifies the shipment multiples of each product for each shipping process.

Field	Data Type	Description
lane_code	LaneCode	A primary key field. This field is a foreign key to the Lane table. A unique code that identifies the lane.
transport_mode	NameString	A primary key field. This field is a foreign key to the LaneShipProc table. A unique code that identifies the mode of transportation.

Field	Data Type	Description
item_code	ItemCode	<p>A primary key field. This field is a foreign key to the Item table.</p> <p>A unique code that identifies the product or material that can be shipped using this lane and mode of transportation.</p> <p>This code can represent an individual product or a product group. Enter each product only once as either an individual product or as part of a product group. For example, do not enter the product code A16oz, and then enter the product group code APPLES that includes the product A16oz.</p>
effective_date	Date/Time	<p>A primary key field.</p> <p>The date and time when the shipping process is in effect. The time must always be set to 00: 00: 00.</p>
is_available	Char Y or N	<p>Specifies if the lane is available to ship the item. Values are:</p> <p>Y: Available</p> <p>N: Not available</p> <p>The default is Y.</p>
shipment_multiple	Quantity	<p>Shipment quantities must be in multiples of this quantity in std_plan_unit in the Unit Conversion table. This field is optional. The default is 0.0.</p>
min_shipment	Quantity	<p>Defines minimum shipment values. The deployment quantity adjustment respects both the shipment multiple and the minimum shipment values. The deployment adjustments are handled within the Rounding Engine. The default is 1.0.</p>
deployment_pull_forward	Quantity	<p>The number of days that deployments can be pulled forward for load building. This field is optional. The default is 0.0.</p>
description	TextString	Optional user-defined description.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

LaneShipProc Table

The LaneShipProc table specifies the mode of transportation and shipping lead time per lane. The following table describes the fields in this table:

Field	Data Type	Description
lane_code	LaneCode	A primary key field and a foreign key to the Lane table. A unique code that identifies the lane.
transport_mode	NameString	A primary key field. A unique code that identifies the mode of transportation.
description	TextString	A description of the mode of transportation for the specified lane. This field is optional.
lead_time	Quantity	The leadtime in days that is required for transporting products from the origin to the destination location using this mode of transportation. This value must be an integer greater than or equal to 0. If you are using VL, ensure that the value in this field is equal to the time that is associated with each combination of vehicle type, carrier code, and lane combination in the ShippingCost table.
capacity_unit	UOM	This field is a foreign key to the UnitConversion table. The unit of measure for the first dimension of shipping capacity.
monday_status to sunday_status	Char	Specifies the availability of this shipping process (lane-transport mode combination) for every Monday within the horizon. Values are: C: Closed O: Open Exceptions to this definition can be set on a daily basis in the LaneShipExceptionCalendar table.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

Sourcing Table

The Sourcing table specifies the locations that source each product or material, and the lanes that ship them. If you are using the Supply Planning, you can define more than one source for any product or material at any location. The HS solver supports single sourcing only.

Field	Data Type	Description
item_code	ItemCode	<p>A primary key field. This field is a foreign key to the Item table.</p> <p>A unique code that identifies the product or material that can be transported by the lane.</p> <p>This code can represent an individual product or a product group. Enter each product only once as either an individual product or as part of a product group. For example, do not enter the product code A16oz, and then enter the product group code APPLES that includes the product A16oz.</p>
lane_code	LaneCode	<p>A primary key field. This field is a foreign key to the Lane table.</p> <p>A unique code that identifies the lane that can transport the product. The source location in the lane is the source location for the product.</p>
effective_date	Date/Time	<p>A primary key field.</p> <p>The date and time when this sourcing plan is in effect. The effective date applies to the receiving location, which means that the receiving location can receive the product up to the day before the effective date specified.</p>
percent	Quantity	Reserved for future use. Percentage split of sourcing for this item. The default is 0.
preference	Integer	Reserved for future use. Rank or preference of this lane for this item. The default is 1.
status	Boolean	<p>A code that indicates if the lane is available to ship the product. Values are:</p> <p>1: Open</p> <p>0: Closed</p> <p>The default is 1.</p>

Field	Data Type	Description
policy	NameString	Reserved for future use. Sourcing policy that is used. The valid values are: Dynamic: dynamic sourcing. Split: split sourcing. The default is Dynamic.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

APPENDIX Q

ERP Tables

This appendix discusses Production and Distribution Planning Plan tables.

Understanding Production and Distribution Planning Plan Tables

The EnterpriseOne Product and Distribution Planning ERP tables contain data from ERP, such as shipping, customer orders, and inventory status information.

This section describes each field its function for the ERP tables:

- CustomerOrder
- CustomerOrderItem
- LotStatus
- Shipping
- ShipmentItem

CustomerOrder Table

The CustomerOrder table specifies customer orders. You must assign each customer order a unique customer order number, which is used in the CustomerOrderItem table to determine the contents of the customer order. You must assign each customer order a specific shipping location and planned ship date.

The data in the CustomerOrder table is imported from the file CUSTOMER_ORDER.import, located in the directory specified by the NMXPDP_IMPORT_PATH variable.

Field	Data Type	Description
order_number	NameString	A primary key field. A unique number identifying the customer order. This may be generated by Integration and Data Flows during the import process or by the order entry system.
customer_code	NameString	A unique code identifying the customer. This field is optional.
customer_name	NameString	Stores the name of the customer.

Field	Data Type	Description
created_by	NameString	The name of user or system that created the customer order. This field is optional.
user_comment	TextString	Optional comment related to the customer order.
priority	Integer	The CTP feature uses this field to assess the importance of customer orders. See <i>Step 6: Check Available Manufacturing Capacity After Checking Available Inventory</i> . The Connect algorithm also uses this field to assess the importance of customer orders.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

CustomerOrderItem Table

The CustomerOrderItem table specifies the products and materials in each customer order. You must create one record for each item requested in the customer order. The CustomerOrderItem table is required if the CustomerOrder table is completed.

The data in the CustomerOrderItem table is imported from the file CUSTOMER_ORDER_ITEM.import, located in the directory specified by the NMXPDP_IMPORT_PATH variable.

Field	Data Type	Description
order_number	NameString	This is a primary key field. This is a foreign key to the CustomerOrder table. A unique number identifying the customer order. This may be generated by Integration and Data Flows during the import process or by the order entry system.
order_item_number	NameString	This is a primary key field. A number identifying the item within the customer order. This may represent the sequence of the item within the customer order.
item_code	ItemCode	This is a foreign key to the Item table. A unique code identifying the product or material.
quantity	Quantity	The quantity of the product requested for this customer order.

Field	Data Type	Description
ship_date	Date/Time	The date-time requested for this customer order item to be shipped. The ship date of the customer order item overrides the ship date of the customer order. This field is optional. The default is the customer order ship date.
pick_date	Date	The pick date within Order Promising. If this field is populated, PDP uses this date as the demand date, otherwise it will use the ship_date.
status	NameString	<p>The status of the customer order item. Values are:</p> <p>Planned: ATP/CTP uses planned customer order items in its calculations. The solvers do not use planned customer order items.</p> <p>Approved: The customer order item has passed one level of approval and is used by Production and Distribution Planning in its calculations.</p> <p>Published: The customer order item is used by Production and Distribution Planning in its calculations and is written to an export file.</p> <p>Rejected: The customer order item is not used by Production and Distribution Planning in its calculations and it has been rejected for future use.</p> <p>The default in Data_ORDER_ENTRY view is Planned. The default in Data_CUSTOMER_ORDER view is Approved. The status of the customer order item overrides the status of the customer order.</p>
user_comment	TextString	A user comment or instructions relating to this customer order item. This field is optional.
fix_source_location	Char Y or N	<p>A code that indicates whether the supply source for the order is fixed. Values are:</p> <p>Y: Supply source for this order is fixed</p> <p>N: Supply source for this order is not fixed</p> <p>The default value is N.</p>

Field	Data Type	Description
source_location	NameString	The source location for this order.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

LotStatus Table

The LotStatus table contains data related to lots and their characteristics. The LotStatus table supports inventory lot level reporting. You must create one record for each product or material, storage type, and location combination. The lot is for one product or material only.

The data in the LotStatus table is imported from the file LOT_STATUS.import, located in the directory specified by the NMXPDP_IMPORT_PATH variable.

Field	Data Type	Description
lot_number	NameString	This is a primary key field. A unique number identifying the lot. This may be generated by Integration and Data Flows during the import process or by the ERP system.
location_code	LocationCode	This is a primary key field. This is a foreign key to the Location table. A unique code identifying the location of the inventory.
storage_type	NameString	The storage type for the lot. This field is optional. If you do not specify a storage type for a lot, Production and Distribution Planning assumes that the lot does not consume storage capacity.
item_code	ItemCode	This is a foreign key to the Item table. A unique code identifying the product or material in the lot.
quantity	Quantity	The quantity of the product in this lot.
qty_unit	UOM	This field is reserved for future use. Unit of measure for the quantity. Currently, the quantity is always in the standard planning unit for the product as specified in the Item table.

Field	Data Type	Description
lot_status	NameString	<p>The current status of the lot. All inventory, regardless of its status, consumes storage space through the horizon until it is used to meet demand or it is deleted from the LotStatus table. Values are:</p> <p>Available: This lot is available for use by Production and Distribution Planning</p> <p>Scrap: This lot is scrap and cannot be used by Production and Distribution Planning</p> <p>Onhold: This lot is not used by PDP as currently available inventory; the lot may be available for use at a later date as specified in the hold_period field</p> <p>Expired: This lot has passed its expiry date and cannot be used by Production and Distribution Planning</p>
status_date	Date/Time	The effective date-time of the lot status. Typically, this information is updated daily and this field contains today's date. This field is optional.
mfg_date	Date/Time	The manufacturing date-time of the lot. This is the date that the lot begins to consume storage capacity. The values in this field and the shelf_life field in the Item table determine the remaining shelf-life of the lot. This field is optional if age reporting is not required.
quality_code	TextString	A code identifying the quality of the product. Quality code might be for grade, color, version, or other characteristics. Currently, this is not used by the solvers. This field is optional.
hold_period	Quantity	The number of days from the mfg_date that the lot must be held when its status is Onhold. When the current date equals the mfg_date + hold_period, the lot is available for use. If the value is = 0.0, the lot is held indefinitely until it has been released by changing the status. This field is optional. The default is 0.0.

Field	Data Type	Description
user_comment	TextString	Optional user comment field.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

Shipment Table

The Shipment table specifies shipments, both planned and intransit. You create one record for each vehicle shipment. You must assign each shipment a unique shipment number, which is used in the ShipmentItem table to determine the contents of the shipment. The Shipment table is optional.

The data in the Shipment table is imported from the file SHIPMENT.import, located in the directory specified by the NMXPDP_IMPORT_PATH variable.

Field	Data Type	Description
shipment_number	NameString	This is a primary key field. A unique code identifying the shipment. This may be generated by Integration and Data Flows during the import process or by the ERP system.
origin_location	LocationCode	This is a foreign key to the Location table. A unique code identifying the shipping location.
destination_location	LocationCode	This is a foreign key to the Location table. A unique code identifying the destination location.
planned_ship_date	Date/Time	The scheduled date-time when the product is to be shipped from the originating location. This field must be completed when type is PLANXFER.
actual_ship_date	Date/Time	The actual date-time when the product was shipped from the originating location. This field is optional.
planned_arrival_date	Date/Time	The scheduled date-time when the product is to arrive at the destination.
type	NameString	The type of shipment. Values are: <ul style="list-style-type: none"> PLANXFER: Planned transfer INTRANSIT: Intransit shipment
transfer_order_number	NameString	The transfer order number for this shipment. This field is optional.

Field	Data Type	Description
transport_mode	NameString	This is a foreign key to the LaneShipProc table. A unique code identifying the mode of transportation. This field is needed to determine the transportation utilization.
carrier_name	NameString	The code or name of the carrier. This field is optional.
vehicle_id	NameString	A unique code identifying the vehicle deployed. This field is optional.
status	NameString	The status of the planned transfer. Values are: Planned: Status when the planned transfer is first entered; the planned transfer is used by Production and Distribution Planning in its calculations Approved: The planned transfer has passed one level of approval and is used by Production and Distribution Planning in its calculations Published: The planned transfer is used by Production and Distribution Planning in its calculations and is written to an export file Rejected: The planned transfer is not used by Production and Distribution Planning in its calculations and has been rejected for future use
status_date	Date/Time	The date-time when status was most recently changed. This field is optional. The default is the current date.
author	NameString	The name of the planner who most recently changed the status of this entry. This field is optional.
author_comment	TextString	A comment from the planner. This field is optional.

Field	Data Type	Description
review_status	NameString	A code identifying the review status of the shipment. Values are: <ul style="list-style-type: none"> • Planned • Approved • Published • Rejected This field is optional.
review_status_date	Date/Time	The date-time when the review status most recently changed. This is set by the system. This field is optional.
reviewer	NameString	The name of the reviewer who most recently changed the review status. This field is optional.
reviewer_comment	TextString	A comment added by the reviewer using the views. Optional.
fix	Char Y or N	Determines if the shipment is to be fixed for the next solve. Values are: <p>Y: the shipment if fixed for the next solve</p> <p>N: the shipment is not fixed for the next solve</p> <p>The default value is N.</p>
userfield_1 to userfield_5	TextString	Optional user-defined fields.

ShipmentItem Table

The ShipmentItem table specifies the products and materials in each shipment. You must create one entry for each item in each shipment. The ShipmentItem table is required if the Shipment table is completed.

The data in the ShipmentItem table is imported from the file SHIPMENT_ITEM.import, located in the directory specified by the NMXPDP_IMPORT_PATH variable.

Field	Data Type	Description
shipment_number	NameString	This is a primary key field. This is a foreign key to the Shipment table. <p>A unique code identifying the shipment.</p>

Field	Data Type	Description
shipment_item_number	NameString	This is a primary key field. A number identifying the item within the shipment. This may represent the sequence of the item within the shipment. This may be generated by Integration and Data Flows during the import process or by the ERP system.
item_code	ItemCode	This is a foreign key to the Item table. A unique code identifying the product or material being shipped.
quantity	Quantity	The quantity of the product being shipped.
qty_unit	UOM	This field is reserved for future use. Unit of measure for the quantity. Currently, the quantity is assumed to be in the standard planning unit for the product as specified in the Item table.
quality_code	TextString	A code identifying the quality of the product. Quality code might be for grade, color, version, or other characteristics. Currently, this is not used by the solvers. This field is optional.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

APPENDIX R

Facility Management Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Facility Management tables and their fields.

Understanding Production and Distribution Planning Facility Management Tables

Facility Management tables contain data that is related to the locations in a model, their type, and their shipping, receiving, and producing calendars.

The Product and Distribution Planning Facility Management tables are part of the static data model.

Facility Management Tables

This section describes each field and its function for the Facility Management tables:

- ExceptionCalendar
- ItemExceptionCalendar
- ItemFacility
- Location
- LocationCategory

ExceptionCalendar Table

This table overrides the values in the shipping, receiving, and producing calendars of a location. The ExceptionCalendar table contains one entry per exception date per location. When EnterpriseOne Production and Distribution Planning or Vehicle Loading does not find an entry in the ExceptionCalendar table, it assumes that the default is the calendar in the Location table.

Field	Data Type	Description
location_code	LocationCode	A primary key field. This field is a foreign key to the Location table. A unique code that identifies the location.

Field	Data Type	Description
exception_date	Date/Time	A primary key field. The date and time when the exception applies.
ship_isopen	Boolean	The exception to the shipping calendar for the location. Values are: 0: Closed 1: Open The default is 1.
receive_isopen	Boolean	The exception to the receiving calendar for the location. Values are: 0: Closed 1: Open The default is 1.
production_isopen	Boolean	The exception to the production calendar for the location. Values are: 0: Closed 1: Open The default is 1.

ItemExceptionCalendar Table

This table specifies exceptions to the shipping, receiving, and producing calendars for a product or material at a location. The ItemExceptionCalendar table contains one entry for a combination of exception date, location, and product or material. The ItemExceptionCalendar table is optional.

Field	Data Type	Description
location_code	LocationCode	A primary key field. This field is a foreign key to the Location table. A unique code that identifies the location.
item_code	ItemCode	A primary key field. This field is a foreign key to the Item table. A unique code that identifies the product or material to which the calendar applies.
exception_date	Date/Time	A primary key field. The date and time for which the exception applies.

Field	Data Type	Description
ship_isopen	Boolean	The exception to the shipping calendar for the item at the location. Values are: 0: Closed 1: Open The default is 1.
receive_isopen	Boolean	The exception to the receiving calendar for the item at the location. Values are: 0: Closed 1: Open The default is 1.
production_isopen	Boolean	The exception to the production calendar for the item at the location. Values are: 0: Closed 1: Open The default is 1.

ItemFacility Table

The ItemFacility table specifies the shipping, receiving, and producing calendars for a product or material at a location. The ItemFacility table is optional.

Field	Data Type	Description
location_code	LocationCode	A primary key field. This field is a foreign key to the Location table. A unique code that identifies the location.
item_code	ItemCode	A primary key field. This field is a foreign key to the Item table. A unique code that identifies the product or material to which the calendar applies.

Field	Data Type	Description
ship_calendar	NameString	<p>A code that specifies the shipping calendar for the item at the location. This code is composed of a combination of seven 1s and 0s. The first number represents Monday's shipping status. Values are:</p> <p>0: Closed</p> <p>1: Open</p> <p>For example, an item that ships from this location during the week but does not ship on weekends has the value 1111100.</p> <p>This field is optional. The default assumes that the item ships all of the days in the week.</p> <p>To override this work pattern, entries may be created in the ItemExceptionCalendar table.</p>
receive_calendar	NameString	<p>A code that specifies the receiving calendar for the item at the location. Same format as ship_calendar.</p>
production_calendar	NameString	<p>A code that specifies the production calendar for the item at the location. Same format as ship_calendar.</p>

Location Table

This table specifies the locations in an enterprise and their shipping, receiving, and producing calendars. The Location table contains one entry for each location that you model.

Field	Data Type	Description
code	LocationCode	<p>A primary key field.</p> <p>A unique code that identifies the location.</p>

Field	Data Type	Description
location_type	NameString	<p>A code that identifies each type of location. Values are:</p> <p>DC: Distribution center</p> <p>PLANT: Plant</p> <p>PLANT_DC: Plant and distribution center</p> <p>SUPPLIER: Supplier</p> <p>CUSTOMER: Customer</p> <p>The default is DC.</p>
description	TextString	A description of the location. This field is optional.
ship_calendar	NameString	<p>A code that specifies the default work pattern for the location. This code is composed of a combination of seven 1s and 0s. The first number represents Monday's shipping status. Values are:</p> <p>0: Closed</p> <p>1: Open</p> <p>For example, a location that ships during the week but is closed on weekends has the value 1111100.</p> <p>To override this default work pattern, entries may be created in the ExceptionCalendar table.</p> <p>The default assumes that all days in the week are open.</p>
receive_calendar	NameString	<p>A code that specifies the default receiving calendar for the location. Same format as ship_calendar.</p> <p>To override this default work pattern, entries may be created in the ExceptionCalendar table.</p>
production_calendar	NameString	A code that specifies the default manufacturing calendar for the location. Same format as ship_calendar.
priority_class	NameString	<p>A code that identifies locations belonging to the same demand priority class.</p> <p>This is used by the DemandPriority table. This field is optional.</p>

Field	Data Type	Description
inv_balance_class	NameString	A code that identifies the inventory balancing class to which the location belongs. This is used by the Inventory Balance table to calculate levels in the Inventory Balancing algorithm
composition	NameString	Specifies if the location is composed of single location or a location group. Values are: L: single location G: location group Note. Only one level of grouping is supported, for example, groups cannot be nested within groups.
userfield_1 to userfield_3	TextString	Optional user-defined fields. Not visible in v3.0 views.

LocationCategory Table

The LocationCategory table specifies the locations in each category. The LocationCategory table works with the Category table to support reporting by location category. The LocationCategory table is optional.

Field	Data Type	Description
category_name	NameString	A primary key field. This field is a foreign key to the Category table. The category name.
location_code	LocationCode	A primary key field. This field is a foreign key to the Location table. A unique code that identifies the location that is included in the category.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

APPENDIX S

Forecast Data Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Forecast Data table and their fields.

Understanding Production and Distribution Planning Forecast Data Table

This section describes each field its function for the Forecast Data table:

The Forecast table specifies the forecast for each product or material at each location.

EnterpriseOne Production and Distribution Management imports production forecast information from an external forecast management system into the Forecast table. There is one entry for each combination of product, location, and effective date.

The data in the Forecast table is imported from the file FORECAST.import, located in the directory specified by the NMXPDP_IMPORT_PATH variable.

The Forecast table is optional.

Forecast Data Table

The Forecast table specifies the forecast for each product and material at each location.

Field	Data Type	Description
forecast_number	NameString	This is a primary key field. The unique identification of the entry. This may be generated by Integration and Data Flows during the import process or by the forecasting system.
location_code	LocationCode	This is a foreign key to the Location table. A unique code identifying the forecast location.
item_code	ItemCode	This is a foreign key to the Item table. A unique code identifying the product or material. This code must represent a single product, not a product group.

Field	Data Type	Description
priority	Integer	The priority of the forecast. 1.0 is the highest priority. The default is NULL.
effective_date	Date/Time	The date-time when the forecast quantity is in effect. Make sure that the timestamp in the effective date is 00: 00: 00.
quantity	Quantity	The forecast amount of the product per day.
qty_unit	UOM	This field is reserved for future use. Unit of measure for the quantity. Currently, the quantity is assumed to be in the standard planning unit for the product as specified in the Item table.
userfield_1 to userfield_3	TextString	Optional user-defined fields.
status	NameString	<p>The status of the forecast. Values are:</p> <p>Planned: Value when forecast is first imported; data is used by Production and Distribution Planning in its calculations</p> <p>Approved: The forecast has passed one level of approval and is used by Production and Distribution Planning in its calculations</p> <p>Published: The forecast is used by Production and Distribution Planning in its calculations and is written to an export file</p> <p>Rejected: The forecast is not used by Production and Distribution Planning in its calculations and has been rejected for future use</p>
status_date	Date/Time	The date-time when the status is changed. This value is set by the system. This field is optional.
author	NameString	The name of the planner who most recently changed the status of this entry. This field is optional.
author_comment	TextString	A comment from the planner added through the views. This field is optional.

Field	Data Type	Description
review_status	NameString	The review status of the forecast. Values are: <ul style="list-style-type: none">• Planned• Approved• <i>Published</i>• Rejected This field is optional.
review_status_date	Date/Time	The date-time when the review status was most recently changed. This value is set by the system. This field is optional.
reviewer	NameString	The name of the reviewer who most recently changed the review status. This field is optional.
reviewer_comment	TextString	A comment from the reviewer added through the views. This field is optional.

APPENDIX T

Inventory Management Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Inventory Management tables and their fields.

Understanding Production and Distribution Planning Inventory Management Tables

Inventory Management tables contain data that is related to the inventory policies which define the storage types and desired inventory levels for products and materials at each location.

The Inventory Management tables are:

- CodeAge
- InventoryPolicyBuild
- InventoryPolicyMaster
- InventoryPolicyMaximum
- InventoryPolicySafety
- InventoryPolicyStorage
- SafetyNetLoc
- StorageType
- StorageTypeCap

CodeAge Table

CodeAge table;;

Shelf-life: CodeAge table

"tables: CodeAge

This table specifies the age classifications that are assigned to a product or material, depending on its remaining shelf life. The CodeAge table is optional.

Field	Data Type	Description
code	NameString	A primary key field. A unique code that identifies a classification of remaining shelf life.
description	TextString	A description of the code. This field is optional.
min_shelf_life	Quantity	The minimum number of days of remaining shelf life that a product or material must meet to qualify for this classification. This field must be completed to view the remaining shelf life reports. For example, if the user would like the code age report to show remaining shelf life (in days) grouped by the following ranges: (0, 1-7, 8-14, 15-21, 22-28, 29-56, 57 or more) then seven records should be created with the following values for min_shelf_life: (0, 1, 8, 15, 22, 29, 57). This field must be filled.

InventoryPolicyBuild Table

The InventoryPolicyBuild table specifies the build inventory policy for the item at the location. Each definition is effective-dated.

Field	Data Type	Description
location_code	LocationCode	A code that identifies a location. This primary key is a foreign key reference to the Location.code field.
item_code	ItemCode	A code that identifies a product. This primary key is a foreign key reference to the "Item.code" field.
effective_date	Date/Time	The date and time when the policy attributes become effective. This is a primary key.

InventoryPolicyMaster Table

The InventoryPolicyMaster table specifies the inventory policy for the item at the location. All of the location per item attributes that are not effective-dated are defined in this table.

Field	Data Type	Description
location_code	LocationCode	A code that identifies a location. This primary key is a foreign key reference to the Location.code field.
item_code	ItemCode	This primary key field specifies a unique code for a product. This primary key is a foreign key reference to the Item.code field.
constrained_timefence	Integer	A value that indicates whether an item is constrained at the location specified in the Location field. A value of -1 indicates that the item is constrained for the entire horizon. A value of 0 indicates that the item is unconstrained for the entire horizon. This field is required.
FC_rule	NameString	<p>A code that specifies the forecast consumption rule for this item. The consumption rule can be two-phased, that is, the first phase can be subject to one rule and the second phase can be subject to a different rule. The switch from the first phase to the second phase is specified by the FC_rule_timefence attribute. This code is required.</p> <p>Values are:</p> <ul style="list-style-type: none"> • ORDER • FORECAST • SUM • GREATER <p>Any binary combination of the values above can be used for a two-phased consumption rule; the combination must be separated by a hyphen. For example consider ORDER-GREATER, in which ORDER applies to the first phase, and GREATER applies to the second phase.</p>
FC_rule_timefence	Integer	The number of days from the horizon start before a two-phased forecast consumption rule switches from one phase to another. This value applies to two-phased consumption rules that you specify in the FC-rule data item. The default value is 0, meaning that the second rule becomes effective on the first day of the horizon.

Field	Data Type	Description
Userfield 1 to 3	NameString	This field stores user definable information.
userfield_1 to userfield_3	TextString	User-defined fields.

InventoryPolicyMaximum Table

The InventoryPolicyMaximum table specifies the maximum inventory policy for the item at the location. Each definition is effective-dated.

Field	Data Type	Description
location_code	LocationCode	A code that identifies a location. This primary key is a foreign key reference to Location.code field.
item_code	ItemCode	A code that identifies a product. This primary key is a foreign key reference to Item.code field.
effective_date	Date/Time	The date and time when the policy attributes become effective. This is a primary key.
maximum_policy	CharString	Specifies the days cover policy to be used for maximum inventory level. This field is set to Y if days cover is to be used for maximum inventory level, when using the following field maximum_coverage. The field is set to N if absolute quantity is to be used when using the maximum_level; and set to M if the maximum of days cover and absolute quantity is to be used.
maximum_level	Quantity	Specifies the maximum inventory level in absolute quantity. This field must be filled unless maximum_policy is set to Y.
maximum_coverage	Quantity	The maximum inventory level in number of days cover. This number is required unless the value in the maximum_policy field is set to N.

InventoryPolicySafety Table

The InventoryPolicySafety table specifies the safety inventory policy for the item at the location. Each definition is effective-dated.

Field	Data Type	Description
location_code	LocationCode	A code that identifies a location. This primary key is a foreign key reference to the Location.code field.
item_code	ItemCode	A code that identifies a product. This primary key is a foreign key reference to the Item.code field.
effective_date	Date/Time	The date and time when the policy attributes become effective. This is a primary key.
safety_policy	CharString	The days cover policy for the safety inventory level. Values are: Y: Safety_coverage is used for safety inventory level. N: Safety_level is used for safety inventory level. M: The greater of safety_coverage and safety_level is used to determine the safety inventory level.
safety_level	Quantity	The inventory safety stock level in absolute quantity. This value is required unless safety_policy is set to Y.
safety_coverage	Quantity	The inventory safety stock level in days cover. This value is required unless safety_policy is set to N.
safety_reduction	Double	The reduction of safety stock stored by the safety location for other locations, due to the sharing of inventory in the network. Set this value to 1.0 for locations that do not store common safety stock. For example, suppose Ottawa stores safety stock for Chicago and decides to keep only a portion of that safety stock. If Ottawa keeps 90 percent of Chicago's safety stock, the value for safety_reduction for Ottawa would be 0.9. This field is optional. The default is 1.0.

InventoryPolicyStorage Table

The InventoryPolicyStorage table specifies the storage type for the item at the location. Each definition is effective-dated.

Field	Data Type	Description
location_code	LocationCode	A code that identifies a location. This primary key is a foreign key reference to the Location.code field.
item_code	ItemCode	A code that identifies a product. This primary key is a foreign key reference to the Item.code field.
effective_date	Date/Time	The date and time when the policy attributes become effective. This is a primary key.
storage_type	NameString	A code that identifies the storage type used by the product. If this code is undefined, assume that the product does not consume storage. This optional code is a foreign key to the StorageTypeCap table.

SafetyNetLoc Table

This table specifies the safety contribution rules for each location in a user-defined safety stock network. One location can belong to multiple safety stock networks. The SafetyNetLoc table is optional.

Field	Data Type	Description
item_code	ItemCode	A primary key field. This field is a foreign key to the Item table. A unique code that identifies the product or material.
location	LocationCode	A primary key field. This field is a foreign key to the Location table. A unique code that identifies the location that belongs to the safety stock network.
safety_location	LocationCode	A primary key field. This field is a foreign key to the Location table. A unique code that identifies the location at which the safety stock inventory is being stored.
effective_date	Date/Time	A primary key field. The date and time when the record takes effect. Always set the time to 00: 00: 00. The default is the current date.

Field	Data Type	Description
contribution_factor	Double	The portion of the location's safety stock to be stored by the location specified in safety_location. The default is 1.0.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

APPENDIX U

Item Management Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Item Management tables and their tables.

Understanding Production and Distribution Planning Item Management Tables

Item Management tables contain data related to the materials, resources, and products for all locations.

The Item Management tables are:

- Item
- ItemCategory
- ItemGroup
- UnitConversion

Item Table

The Item table contains information about products, resources, raw materials, and item groups. The type of each item is identified in the item_type field. The Item table contains one entry per item. Item groups are identified in the composition field.

Field	Data Type	Description
code	ItemCode	A primary key field. A unique code identifying the item. This code is supplied by the user.
owner	NameString	The name that identifies the planner who is responsible for this item. This field is used for workgroup customization to allow filtering by item owner. This field is optional.
userfield_1 to userfield_3	TextString	Optional user-defined fields.
description	TextString	A description of the item. This field is optional.

Field	Data Type	Description
item_type	CharString	<p>A unique code identifying the type of item or, if it is an item group, the type of items that are contained in the group. Values are:</p> <p>P: Product or part where both direct and dependent demands can be generated.</p> <p>R: Resource item.</p> <p>M: Input material.</p> <p>G: Generic or phantom product. Use this code when you define generic products for product substitution.</p> <p>C: Configured. Reserved for future use. This value applies to Order Promising only.</p>
composition	CharString	<p>This field indicates if the item is a single item or group of items. Values are:</p> <p>I. : Single item</p> <p>G. : Item group</p>
consumable	CharString	<p>A code that indicates whether the item is consumable. Values are:</p> <p>Y. : The item is a normal consumable.</p> <p>N. : The item is a non-consumable.</p> <p>R. : Reusable and consumable, used for capacity reporting and reusable container planning.</p> <p>Typically, products are N, input materials are Y, resources are Y, reusable containers are R, and any item included in a BOMR is Y. This code must be specified when the composition field is set to G.</p>
saleable	CharString	<p>A code that indicates whether the product can be sold. Values are:</p> <p>Y: Saleable</p> <p>N: Not saleable. If this value is specified, the item does not appear in the Sales Order Inquiry view.</p> <p>This code must be specified when the composition field is set to G.</p>

Field	Data Type	Description
std_plan_unit	UOM	A foreign key to the UnitConversion table. The standard unit of measure for item planning that is used for unit conversion when computing capacity utilization and for converting between planning and shipping quantities. This field must be completed when composition is G.
std_ship_unit	UOM	A foreign key to the UnitConversion table. The standard unit of measure for item shipping used for unit conversion between planning and shipping quantities. This field must be completed if vehicle loading is required. This field must be completed when composition is G.
shelf_life	Double	The number of days from an item's manufacturing date to its expiry date. This field is optional if shelf life and age reporting are not used.
shelf_life_unit	UOM	Reserved for future use. The unit of measure for the shelf_life field. The shelf life unit is typically days. The default is NULL.
std_unit_cost	Cost	Specifies the per unit standard cost for the product. This field is optional.
priority_class	NameString	This used by the DemandPriority table to assign a demand priority based on the priority_class. This field is optional.
expiration_alert_level_1	Double	A priority-one alert, which the system generates when the remaining shelf-life drops below this level, expressed in number of days. This field is optional. If undefined, no alert is generated.

Field	Data Type	Description
expiration_alert_level_2	Double	A priority-two alert, which the system generates when the remaining shelf-life drops below this level, expressed in number of days. This field is optional. If undefined, no alert is generated. The system does not generate a priority two alert if a priority one alert has been triggered for the same lot.
deploy_publish_horizon	Count	The number of days of deployments published to Vehicle Loading. This field is optional. Integration and Data Flows assign a default value of 0, which indicates that all deployments are published to Vehicle Loading.
inv_balance_class	NameString	A code that identifies the inventory balancing class to which the product or material belongs.

ItemCategory Table

The ItemCategory table specifies the products or materials in each category. The ItemCategory table works with the Category table to support reporting by product category. The ItemCategory table is optional.

Field	Data Type	Description
category_name	NameString	A primary key field. This field is a foreign key to the Category table. Specifies the name of the category. For example, 16oz, 32oz, apple_juice, orange_juice, Sales_Central, Sales_Eastern.
item_code	ItemCode	A primary key field. This field is a foreign key to the Item table. A unique code identifying the product or material included in the category.
userfield_1 to userfield_3	TextString	Optional user-defined fields. Available in 3.0 at data model level only

ItemGroup Table

The ItemGroup table specifies groups of items that share similar characteristics. The name of the group is the parent_code. The item contained in the group is the child_code. The child_code must be a single item. You can define item groups for products and materials, and for resources. The ItemGroup table contains one entry for each item in a group.

Field	Data Type	Description
parent_code	ItemCode	A primary key field. This field is a foreign key to the Item table. A code identifying the container group.
child_code	ItemCode	A primary key field. This field is a foreign key to the Item table. A unique code identifying the item contained in the group.

UnitConversion Table

The UnitConversion table specifies the conversions between different units of measure, which might be item-specific. This table specifies the conversions between different units of measure which may be product dependant.

This table supports both standard unit conversions and product specific conversions. Standard conversions requires specifying a base unit for each dimension that requires unit conversions. For example, using litre, kilogram, and day as the base units for the volume, weight, and time dimensions respectively.

Field	Data Type	Description
product	ItemCode	A primary key field. This field is a foreign key to the Item table (except when the value is set to STANDARD). A unique code identifying the item for item-specific unit conversion. Set to STANDARD if the conversion is not item-specific.
dimension	NameString	A primary key field. The dimension of the unit of measure--for example, COUNT, WEIGHT, VOLUME, and so on. The COUNT dimension is used as the reference dimension for cross dimension conversions.
unit	UOM	A primary key field. The name of the unit of measure. For example, kg, case, or pallet.
factor	Double	The factor used in the conversion. The multiplication factor a in the unit conversion equation $Y = aX + b$. The default is 1.0.
offset	Double	Reserved for future use. The default is 0.0.

APPENDIX V

Order Allocation Plan Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Order Allocation Plan tables and their fields.

Understanding Production and Distribution Planning Order Allocation Plan Tables

This section describes each field and its function for the Order Allocation tables:

- DemandAlloc
- DemandExceptionAlloc
- SupplyAlloc

The Order Allocation Plan tables are completed by the Connect algorithm after it is run. The Order Allocation Plan tables contain information about:

- the quantity of each in-transit, planned transfer, or deployment that is allocated to a customer order item
- the quantity of scheduled production, net requirements, or beginning inventory that is allocated to a customer order item.
- the customer orders that the Connect algorithm did not connect or only partially connected.
- where resources and materials are used.

DemandAlloc Table

The DemandAlloc table specifies the quantity of each in-transit, planned transfer, or deployment that is allocated to a customer order item. It also specifies the quantity of scheduled production, net requirements, or beginning inventory that is allocated to a customer order item.

Field	Data Type	Description
plan_name	NameString	The unique name of the system plan. This is a primary key field.
demand_key1		A primary key field. This field is a foreign reference key to the CustomerOrder.order_number field or Forecast.forecast_number field.

Field	Data Type	Description
demand_key2	String	A primary key field. This field is a foreign reference key to the CustomerOrderItem.order_item_number field or it represents the calculated forecast date.
supply_key1	String	<p>A primary key field. Values are:</p> <p>SI: Starting Inventory</p> <p>WO: Work Order</p> <p>PR: Production</p> <p>NR: Net Requirements</p> <p>IT: In-Transit</p> <p>PX: Planned Transfer</p> <p>DO: Deployment Order</p> <p>If supply_type value is SI then supply_key1 is a foreign key reference to the LotStatus.lot_number field.</p> <p>If supply_type value is WO then supply_key1 is a foreign key reference to the WorkOrder.code field.</p> <p>If supply_type value is PR then supply_key1 is a foreign key reference to the Production.production_number field.</p> <p>If supply_type value is NR then supply_key1 is a foreign key reference to the NetReq.netreq_number field.</p> <p>If supply_type value is one of IT, PX then supply_key1 is a foreign key reference to the Shipment.shipment_number field.</p> <p>If supply_type value is DO then supply_key1 is a foreign key reference to Deployment.deploy_number field.</p>

Field	Data Type	Description
supply_key2	String	<p>A primary key field. Values are:</p> <p>SI: Starting Inventory</p> <p>WO: Work Order</p> <p>PR: Production</p> <p>NR: Net Requirements</p> <p>IT: In-Transit</p> <p>PX: Planned Transfer</p> <p>DO: Deployment Order</p> <p>If supply_type value is SI then supply_key2 is a foreign key reference to LotStatus.location_code field.</p> <p>If supply_type value is WO then supply_key2 is a foreign key reference to WorkOrder.location_code field.</p> <p>If supply_type value is one of PR, NR, DO then supply_key2 is an empty string ("").</p> <p>If supply_type value is one of IT, PX then supply_key2 is a foreign key reference to the ShipmentItem.shipment_item_number field.</p>
supply_sequence	String	The supply component unique code for the specified supply type. This is a primary key field.
supply_type	String	<p>The code for the kind of supply. This field is a primary key field. Values are:</p> <p>A primary key field. Values are:</p> <p>SI: Starting Inventory</p> <p>WO: Work Order</p> <p>PR: Production</p> <p>NR: Net Requirements</p> <p>IT: In-Transit</p> <p>PX: Planned Transfer</p> <p>DO: Deployment Order</p>
supply_date	Date/Time	The date and time when the supply that is identified by supply_key1 and supply_key2, is available and can be pegged to the corresponding demand.

Field	Data Type	Description
mfg_process_name	String	The manufacturing process that uses this materials material (supply). A foreign key reference to the MfgProcess.name or WorkOrder.mfg_code field
mfg_process_location_code	String	This is a foreign key reference to the Location.code field and represents the location where the manufacturing process runs.
bomr_code	String	A foreign key reference to the BOMR.BOMR_id or WorkOrderBOMR.BOMR_id field.
material_code	String	This is a foreign key reference to the Item.code field and represents the primary/substituted material (supply) used by this manufacturing process
quantity	Double	Supply quantity allocated to this order or forecast.
fix	Character	Values are: Y: Connection is fixed N: Connect is not fixed and the supply is part of the last connection in the pegging path. +: Connect is not fixed and the supply is part of an intermediate connection in the pegging path.

DemandExceptionAlloc Table

The DemandExceptionAlloc table specifies the customer orders that the Connect algorithm did not connect or only partially connected.

Field	Data Type	Description
Plan_name	String	A primary key reference field.
demand_key1	String	A primary key reference field.
demand_key2	String	A primary key reference field. This is a foreign reference key to the CustomerOrderItem.order_item_number field or it represents the calculated forecast date.

Field	Data Type	Description
reason_code	String	A primary key reference field with pre-defined values.
reason_description	String	Description of reason.
demand_quantity	Double	This field represents the order or forecast total requested quantity.
exception_quantity	Double	The order or forecast quantity related to the reason_code.

SupplyAlloc Table

The SupplyAlloc table provides information about where resources and materials are used. Each entry contains a "from source to destination" connection data. The source can be a piece of any supply type and the destination can be another supply or the final demand (order/forecast).

Field	Data Type	Description
plan_name	String	The name of the plan. This is a primary key reference field.
demand_key1	String	<p>This is a primary key field.</p> <p>If to_type value is one of CO, FO, OP, or OD then demand_key1 is identical with to_key1 field.</p> <p>If to_type value is one of SI, PR, NR, WO, IT, PX, or DO then demand_key1 is a foreign reference to the CustomerOrder.order_number or Forecast.forecast_number field.</p>
demand_key2	String	<p>This is a primary key field.</p> <p>If to_type value is one of CO, FO, OP, or OD then demand_key2 is identical with to_key2 field.</p> <p>If to_type value is one of SI, PR, NR, WO, IT, PX, or DO then demand_key2 is a foreign reference to the CustomerOrderItem.order_item_number field or it represents the calculated forecast date.</p>

Field	Data Type	Description
from_key1	String	<p>This is a primary key field.</p> <p>If from_type value is SI then from_key1 is a foreign key reference to the LotStatus.lot_number field.</p> <p>If from_type value is WO then from_key1 is a foreign key reference to the WorkOrder.code field.</p> <p>If from_type value is PR then from_key1 is a foreign key reference to the Production.production_number field.</p> <p>If from_type value is NR then from_key1 is a foreign key reference to the NetReq.netreq_number field.</p> <p>If from_type value is IT or PX then from_key1 is a foreign key reference to the Shipment.shipment_number field.</p> <p>If from_type value is DO then from_key1 is a foreign key reference to Deployment.deploy_number field.</p>
from_key2	String	<p>This is a primary key field.</p> <p>If from_type value is SI then from_key2 is a foreign key reference to LotStatus.location_code field.</p> <p>If from_type value is WO then from_key2 is a foreign key reference to WorkOrder.location_code field.</p> <p>If from_type value is one of PR, NR, DO then from_key2 is an empty string ("").</p> <p>If from_type value is one of IT, PX then from_key2 is a foreign key reference to the ShipmentItem.shipment_item_number field.</p>
from_sequence	String	<p>The supply (source) component unique identification for the specified from_type.</p> <p>This is a primary key field.</p>

Field	Data Type	Description
from_type	String	The supply source type: Values are: SI: Starting Inventory PR: Production NR: Net Requirements WO: Work Order IT: In-Transit PX: Planned Transfer DO: Deployment Order
from_quantity	Double	The quantity of the source component used into this allocation.
from_mfg_process_name	String	The manufacturing process that uses this primary/substituted material (supply). It is empty if the source item is not a material relative to this connection. A foreign key reference to the MfgProcess.name or WorkOrder.mfg_code field
from_mfg_process_location_code	String	The location where the manufacturing takes place. A foreign key reference to the Location.code field It is empty if the source item is not a material relative to this connection.
from_bomr_code	String	A foreign key reference to the BOMR.BOMR_id or WorkOrderBOMR.BOMR_id field. It is empty if the source item is not a material relative to this connection.
from_material_code	String	The primary or substituted material (supply) used by this manufacturing process. It is empty if the source item is not a material relative to this connection. This is a foreign key reference to the Item.code field

Field	Data Type	Description
to_key1	String	<p>If to_type value is SI then to_key1 is a foreign key reference to the LotStatus.lot_number field.</p> <p>If to_type value is WO then to_key1 is a foreign key reference to the WorkOrder.code field.</p> <p>If to_type value is PR then to_key1 is a foreign key reference to the Production.production_number field.</p> <p>If to_type value is NR then to_key1 is a foreign key reference to the NetReq.netreq_number field.</p> <p>If to_type value is one of IT, PX, or OP then to_key1 is a foreign key reference to the Shipment.shipment_number field.</p> <p>If to_type value is one of DO or OD then to_key1 is a foreign key reference to Deployment.deploy_number field.</p> <p>If to_type value is CO then to_key1 is a foreign key reference to CustomerOrder.order_number field.</p> <p>If to_type value is FO then to_key1 is a foreign key reference to Forecast.forecast_number field.</p>
to_key2	String	<p>If to_type value is SI then to_key2 is a foreign key reference to LotStatus.location_code field.</p> <p>If to_type value is WO then to_key2 is a foreign key reference to WorkOrder.location_code field.</p> <p>If to_type value is one of PR, NR, DO, OD then to_key2 is an empty string ("").</p> <p>If to_type value is one of IT, PX, OP then to_key2 is a foreign key reference to the ShipmentItem.shipment_item_number field.</p> <p>If to_type value is CO then to_key2 is a foreign key reference to the CustomerOrderItem.order_item_number field.</p> <p>If to_type value is FO then to_key2 contains the calculated forecast date.</p>

Field	Data Type	Description
to_sequence	String	The destination component unique identification for the specified to_type. If to_type value is one of CO, FO, OP, or OD, then to_sequence is an empty string ("").
to_type	String	Valid Values are: SI: Starting Inventory PR: Production NR: Net Requirements WO: Work Order IT: In-Transit PX: Planned Transfer DO: Deployment Order OP: Output Planned Transfer OD: Output Deployment CO: Customer Order FO: Forecast
to_item_code	String	The item code of the destination component. This is a foreign key reference to the Item.code field
alloc_depth	Integer value >=1	The depth level of the allocated ("from_") supply relative to the demand. If to_key1 equals demand_key1 and to_key2 equals demand_key2 then alloc_depth value is 1 ("from_" supply is connected directly with the demand).

Note. Even if for the to_key1, to_key2 and to_type fields there is a description for the SI and IT type, it is very unlikely to get this type of supplies in the destination part of a connection.

The OP and OD types have been introduced to explicitly supply components used to load the shipments/deployments leaving the location.

APPENDIX W

Plan Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Plan tables and their fields.

Understanding EnterpriseOne Production and Distribution Planning Plan Tables

The EnterpriseOne Product and Distribution Planning Plan Tables are part of the dynamic data model.

This section describes each field its function for the Production and Distribution Planning Plan tables:

- Deployment
- SupplyOutput
- SupplyPolicyMaster
- SupplyPolicyNewOrder
- SupplyPolicyType
- MaterialAllocation
- NetReq
- NetReqMatConsumption
- NetReqResUtilization
- NetReqCoProduct
- PurchaseOrder
- SafetyCover
- SubstitutedDemand
- SubstitutedMR
- Changeovers
- LocResOptimize

Deployment Table

The Deployment table specifies planned deployments, which are the planned movements of products and materials through the distribution network. You can approve and publish deployments using the views.

Field	Data Type	Description
plan_name	NameString	This is a primary key field. The name of the system plan used to generate this data. The system plan name is specified by the horizon used in the solve.
deploy_number	NameString	This is a primary key field. A unique number identifying the deployment entry. Initially generated by the solver.
origin_location	LocationCode	This is a foreign key to the Location table. A unique code identifying the origin of the shipment.
destination_location	LocationCode	This is a foreign key to the Location table. A unique code identifying the destination location.
transport_mode	NameString	This is a foreign key to the LaneShipProc table. A unique code identifying the mode of transportation used for this deployment. This is needed to determine transport utilization.
item_code	ItemCode	This is a foreign key to the Item table. A unique code identifying the product or material in the deployment.
earliest_ship_date	Date/Time	The earliest date-time when the product is to be shipped from the origin_location.
ship_window	Integer	The time window, in days, during which the item can be shipped without being late. Latest shipping date = Earliest ship date + Ship window. The default is 0.
earliest_arrive_date	Date/Time	The earliest date-time when the product is to arrive at the destination_location.
arrive_window	Integer	The time window, in days, during which the deployment can arrive without being late. Latest arrive date = Earliest arrive date + Arrive window. The default is 0.
quantity	Quantity	The quantity of the product in the deployment.
qty_unit	UOM	This field is reserved for future use. Unit of measure for the quantity. Currently, the quantity is always in the standard planning unit for the product as specified in the Item table.

Field	Data Type	Description
pull_forward	Double	The number of days that the deployment can be pulled forward. This field is initially set by the solver based on the default value in the System_OptionValues table. This field is optional.
fix	Char Y or N	A code indicating if the deployment is to be fixed for the next solve. Values are: Y: Yes N: No If the quantity of the deployments that you fix exceeds the available transportation capacity, the Supply Planning uses additional transportation capacity to avoid an incomplete solve.
status	NameString	The status of the deployment. Values are: Planned: Status when first generated by solver Approved: Deployment has passed one level of approval Published: Deployment has final approval and is written to an export file Rejected: Deployment has been rejected for future use
status_date	Date/Time	The date-time when the status was most recently changed. This is set by the system. This field is optional.
author	NameString	The name of the planner who most recently changed the status of this deployment. This field is optional.
author_comment	TextString	A comment that can be added by the planner using the views. This field is optional.
review_status	NameString	The review status of the deployment. Values are: • Planned • Approved • Published • Rejected This field is optional.
review_status_date	Date/Time	The date-time when the review status was most recently changed. The date-time is set by the system. This field is optional.
reviewer	NameString	The name of the reviewer who most recently changed the review status. This field is optional.

Field	Data Type	Description
reviewer_comment	TextString	A comment that can be added by the reviewer using the views. This field is optional.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

SupplyOutput

This table contains the outputs of the MRP process. It is the vertical, event-based table that lists supplies and demands as they occur.

A vertical report is a standard material planning format for displaying results.

Field	Data Type	Description
plan_name	NameString	A primary key field. Specifies the name of the plan that uses this data. The plan name is specified by the horizon used in the solve.
sp_index	Integer	A primary key field. Stores the unique identification of the entries in this table. The number is generated by the Production and Distribution Planning solver.
item_code	ItemCode	Specifies the unique code identifying the product. This is a foreign key reference to the Item.code field.
location_code	LocationCode	Specifies the unique code identifying the location. This is a foreign key reference to the Location.code field.
due_date	Date	Stores the due date for the supply or demand.

Field	Data Type	Description
type	CharString	Stores type of supply or demand. Values are: SI: Starting Inventory PDS: LP Deployment In (Supply) PDD: LP Deployment Out (Demand) PNR: LP Net Requirement DEP: Dependent demand CO: Customer Order FO: Forecast Order (CO): Consumed Customer Order (FO): Customer Forecast Order EFF: Effective Demand PO: Purchase Order PR: Planned Work Order PXS: Planned Transfer In (Supply) PXD: Planned Transfer Out (Demand) IT: In transit NPO: New Purchase Order NPR: New Work Order NDS: New Deployment In (Supply) SAF: Safety Stock BLD: Build
reference_location_code	LocationCode	If the type value is PDS, PXS, IT and NDS, than reference_location_code specifies the unique code identifying the origin location. If the type value is PDD, PXD and NDD, than reference_location_code specifies the unique code identifying the destination location. In both case above, this is a foreign key reference to the Location.code field. If the type value is none of the specified above than reference_location_code is not used and should be empty.
period	Count	Stores the period that the due date falls in.
supply	Quantity	Stores supply quantity.
demand	Quantity	Stores demand quantity.

Field	Data Type	Description
available	Quantity	Stores projected available quantity.
action	CharString	Stores suggested action message for this order. Values are: "Blank" means no action message Order means create a new order Defer means defer the order to a later date Expedite means move the order to an earlier date. Cancel means cancel the order Firm means a firmed scheduled receipt
order_date	Date	Stores the date that an email should be sent. This is Due Date offset by lead-time.

Field	Data Type	Description
order_number	NameString	<p>If type value is SI, then order_number is a foreign key reference to the LotStatus.lot_number.</p> <p>If type value is CO, then order_number is a foreign key reference to the CustomerOrderItem.order_number.</p> <p>If type value is FO, then order_number is a foreign key reference to the Forecast.forecast_number.</p> <p>If type value is PO, then order_number is a foreign key reference to the PurchaseOrder.order_number.</p> <p>If type value is PR, then order_number is a foreign key reference to the Production.production_number.</p> <p>If type value is PXS, PXD, IT, then order_number is a foreign key reference to the ShipmentItem.shipment_number.</p> <p>If type value is SAF, BLD, PDS, PDD, PNR, NPO, NPR, NDS, NDD, DEP, then order_number is not used and should be empty.</p>
order_line_number	NameString	<p>Stores line number key reference for records where it is required to explicitly reference to the original record.</p> <p>If type value is CO, then order_line_number is a foreign key reference to the CustomerOrderItem.order_item_number.</p> <p>If type value is PO, then order_line_number is a foreign key reference to the PurchaseOrder.line_number.</p> <p>If type value is PXS, PXD, IT, then order_line_number is a foreign key reference to the ShipmentItem.shipment_item_number.</p> <p>If type value is PDS, PDD, then order_line_number is a foreign key reference to the Deployment.deploy_number.</p> <p>If type value is PNR, then order_line_number is a foreign key reference to the NetReq.netreq_number.</p> <p>If type value is NPO, NPR, NDS, then order_line_number is a unique identifying number for the record. The number is generated by the 3D solver.</p> <p>If type value is DEP, then order_line_number is a reference to the order_line_number of a PNR or NPR record in this table.</p> <p>If type value is NDD, then order_line_number is a reference to the order_line_number of a NDS record in this table.</p> <p>If type value is SI, FO, PR, SAF, BLD, then order_line_number is not used, should be empty.</p>

SupplyPolicyMaster

All the location and item attributes required by MRP algorithm that are not effective-dated are defined in this table. There is one entry per item.

Field	Data Type	Description
location_code	LocationCode	A primary key field. Specifies the unique code identifying the location. This is a foreign key reference to the Location.code field.
item_code	ItemCode	A primary key field. Specifies the unique code identifying the product. This is a foreign key reference to the Item.code field.
vendor_name	NameString	Specifies the full text name and description of the vendor.
vendor_code	NameString	Specifies the unique identification code for the vendor.
userfield_1 to userfield_3	TextString	Stores user definable content. This field is optional.

SupplyPolicyNewOrder

This table provides information about the policy for new orders for the item at the location, which may be planned by MRP. Each definition is effective-dated. There is one entry per item.

Field	Data Type	Description
location_code	Location	A primary key field Specifies the unique code identifying the location. This is a foreign key reference to the Location.code field.
item_code	ItemCode	A primary key field Specifies the unique code identifying the product. This is a foreign key reference to the Item.code field.
effective_date	Date	A primary key field Specifies the date when this record becomes effective.
order_policy	CharString	Specifies the order policy that will be suggested by the solver where there is need for supply. Values are: L: Lot for Lot F: Fixed D: Days of Supply The default value is L.

Field	Data Type	Description
order_quantity	Quantity	<p>The value of this field depends on the value form order_policy</p> <p>If order_policy = L, then the value in this field is not considered by the solver.</p> <p>If order_policy = F, then the value in this field specifies the quantity of a new order in this fixed amount.</p> <p>If order_policy = D, then the value in this field specifies number of days that solver looks ahead to cover demand(s).</p>
order_minimum	Quantity	Specifies the minimum quantity of a new planned order.
order_maximum	Quantity	<p>Specifies the maximum quantity of a new planned order.</p> <p>If the quantity is greater another order has to be placed to cover the remaining amount.</p>
order_multiple	Quantity	Specifies the order quantity that should be rounded up to multiples of this amount.
fixed_time_fence	Count	Specifies number of periods from the start date. Within that period, new orders should not be suggested or an action against existing orders. The default value is 0.

SupplyPolicyType

This table contains information about the type policy and lead-time for the item at the location. Each definition is effective-dated. There is one entry per item.

Field	Data Type	Description
location_code :	LocationCode	<p>A primary key field.</p> <p>Specifies the unique code identifying the location. This is a foreign key reference to the Location.code field.</p>
item_code	ItemCode	<p>A primary key field.</p> <p>Specifies the unique code identifying the product. This is a foreign key reference to the Item.code field.</p>
effective_date	Date	<p>A primary key field.</p> <p>Specifies the date when this record becomes effective.</p>
item_type	CharString	<p>Specifies the kind of item.</p> <p>Values are:</p> <p>P: Purchased</p> <p>M: Manufactured</p> <p>D: Dual</p> <p>The default value is P.</p>

Field	Data Type	Description
mfg_lead_time_type	Count	<p>The value from this field applies only if the item type is specified as M in the item_type field. If an item is manufactured, this field specifies fixed, variable, capacitated or lead-time.</p> <p>Values are:</p> <p>F: fixed</p> <p>V: variable</p> <p>C: capacitated</p> <p>The default value is F.</p>
fix_mfg_lead_time	Quantity	<p>The value from this field applies only if the item type is specified as F in the item_type field, with a fixed lead-time defined in the fix_mfg_lead_time field as F.</p> <p>The default is 0.0</p>
purchase_lead_time	Quantity	<p>The value from this field applies only if the item type is specified as P or D in the item_type field. This field stores purchase lead-time</p> <p>The default value is 0.0</p>

MaterialAllocation

This table stores the material allocation results from the MRP process. This is the vertical table that lists the independent demands and supplies that are allocated. There is one entry per independent demand and allocated supply.

Field	Data Type	Description
plan_name	NameString	<p>A primary key field.</p> <p>Specifies the name of the plan that applies to this data. The plan name is specified by the horizon used in the solve.</p>
demand_key	Integer	<p>A primary key field.</p> <p>This field is a foreign key reference to the SupplyOutput.index</p>
supply_key	Integer	<p>A primary key field.</p> <p>This field is a foreign key reference to the SupplyOutput.index.</p>
sequence	Integer	<p>A primary key field.</p> <p>Contains the supply type unique identification.</p>
allocated_quantity	Quantity	<p>Stores allocated quantity of the source component used for this demand.</p>

NetReq Table

The NetReq table specifies the net requirements generated by the solvers. The net requirements are the net required production amounts from the solvers. You can approve and publish net requirements using the views.

Field	Data Type	Description
plan_name	NameString	This is a primary key field. The name of the system plan used to generate this data. The system plan name is specified by the horizon used in the solve.
netreq_number	NameString	This is a primary key field. A unique number identifying entries in this table. This number is generated by the solver and has no other meaning.
location_code	LocationCode	This is a foreign key to the Location table. A unique code identifying the producing location.
process_name	NameString	A unique code that identifies the manufacturing process that is used to produce the item.
item_code	ItemCode	This is a foreign key to the Item table. A unique code identifying the product.
earliest_production_date	Date/Time	The earliest date-time when the production is required.
production_window	Integer	The time window, in days, in which production may occur without being late. Latest production date = Earliest production date + Production window The default is 0.
quantity	Quantity	The quantity of the product to be produced.
qty_unit	UOM	This field is reserved for future use. Unit of measure for the production quantity. Currently, the quantity is always in the standard planning unit for the product as specified in the Item table.
fix	Char Y or N	Specifies if the net requirement is to be fixed for the next solve. Values are: Y: Fixed N: Not fixed If the quantity of the net requirements that you fix exceeds the available manufacturing capacity, the Supply Planning uses additional manufacturing capacity to avoid an incomplete solve.

Field	Data Type	Description
status	NameString	A code identifying the status of the net requirement. Values are: Planned: Status when first generated by solver Approved: Net requirement has passed one level of approval Published: Net requirement has final approval and is written to an export file Rejected: Net requirement has been rejected for future use
status_date	Date/Time	The date-time when status was most recently changed. This is set by the system. This field is optional.
author	NameString	The name of the planner who most recently changed the status of this entry. This field is optional.
author_comment	TextString	A comment added by the planner using the views. This field is optional.
review_status	NameString	A code identifying the review status of the net requirement. Values are: <ul style="list-style-type: none"> • Planned • Approved • Published • Rejected This field is optional.
review_status_date	Date/Time	The date-time when the review status most recently changed. This is set by the system. This field is optional.
reviewer	NameString	The name of the reviewer who most recently changed the review status. This field is optional.
reviewer_comment	TextString	A comment added by the reviewer using the views. This field is optional.
userfield_1 to userfield_3	TextString	Optional user-defined fields. These fields are not visible in the views.

NetReqMatConsumption

This table provides input to the report views. If you make changes the net requirement table, corresponding changes will not be reflected for the dependent demand in the report views until you run another solve.

Field	Data Type	Description
plan_name	NameString	A primary key field. This value indicates the name of the plan, the net requirement, and the corresponding material consumption data belongs to.
netreq_number	NameString	A primary key field. Specifies the net requirement (production) corresponding to the current material consumption entry; it's a foreign key reference to the "NetReq.netreq_number" field.
operation_sequence	Integer	A primary key field. Specifies a unique number within the manufacturing routing that identifies the current operation instance. This field is a foreign key reference to the MfgRoutingDef.operation_sequence field.
BOMR_id	NameString	A primary key field. Specifies the unique code for BOMR entry (resource) that corresponds to the current operation. This field is a foreign key reference to the MfgOperationBOMR.BOMR_id field.
item_code	NameString	A primary key field. Specifies the code of material that is consumed at the beginning of the current operation. This code can either be the same value that is defined in the corresponding MfgOperationBOMR.item_code field (primary material), or be the code of a substituted material, that is, the foreign key reference to the MfgOperationAlternateMR.substitute_item_code field. The field must be defined as primary key since there may be more than one substituted material for each primary material.
earliest_consumption_date	Date	Represents the beginning of the period in which the material is consumed.
Quantity	Double	Total material (sub-assembly) quantity consumed for producing the net requirement defined by netreq_number. By default, the unit of measure for this quantity is the standard planning unit for the material as defined by the Item.std_plan_unit field.

NetReqResUtilization

This table provides input to the report views. If a user changes the net requirement table, corresponding changes will not be reflected for the dependent demand in the report views without running an additional solve.

Field	Data Type	Description
plan_name	NameString	A primary key field. Indicates the name of the plan that the net requirement, netreq_number, and the corresponding resource utilization data belongs to.
netreq_number	NameString	A primary key field. Specifies the net requirement (production) corresponding to the current resource utilization entry. This field is a foreign key reference to the NetReq.netreq_number field.
operation_sequence	Integer	A primary key field. Specifies a unique number within the manufacturing routing that identifies the current operation instance. This field is a foreign key reference to the MfgRoutingDef.operation_sequence field.
BOMR_id	NameString	A primary key field. Specifies the unique code for BOMR entry (resource) corresponding to the current operation; it's a foreign key reference to MfgOperationBOMR.BOMR_id.
res_code	NameString	A primary key fields. Specifies the code of the resource that is utilized during the current operation run. This code can either match the value defined in the corresponding MfgOperationBOMR.item_code field (primary resource), or be the code of a substituted resource (foreign key reference to the MfgOperationAlternateMR.substitute_item_code field). The field must be defined as primary key because there may be more than one substituted resource for each primary resource we may have more than one substituted resource.
earliest_utilization_date	Date	A primary key field. Represents the beginning of the period in which the resource capacity is used.
Quantity	Double	The total resource capacity required (utilized) for producing the net requirement defined by "netreq_number". The unit of measure for this quantity is by default the standard planning unit for the resource (defined by the "Item.std_plan_unit" field).

NetReqCoProduct

This table contains the Co-Product solve results.

Field	Data Type	Description
plan_name	NameString	A primary key field. Indicates the name of the plan the net requirement belongs to.
netreq_number	NameString	A primary key field. Specifies the net requirement generated for the production of the primary output. This field is a foreign key reference to the NetReq.netreq_number field.
operation_sequence	Integer	A primary key field. Specifies a unique number within the manufacturing routing that identifies the current operation instance that produces the co-product; This field is a foreign key reference to the MfgRoutingDef.operation_sequence field.
BOMR_id	NameString	A primary key field. Specifies the unique code for the BOMR entry that corresponds to a defined co-product. This field is a foreign key reference to the MfgOperationBOMR.BOMR_id field.
earliest_production_date	Date	Represents the beginning of the period in which the co-product becomes available.
Quantity	Double	The co-product quantity produced. By default, the unit of measure for this quantity is the standard planning unit for the item as defined by the "Item.std_plan_unit" field.

PurchaseOrder Table

The PurchaseOrder table specifies information about existing purchase orders. The order must be against a specifying receiving location and an assigned receiving date. There is one entry per purchase order.

Field	Data Type	Description
order_number	NameString	A primary key field. This field stores the unique identification of the purchase order entry. This may be generated by SCI during the import process or by the order entry system.
line_number	NameString	A primary key field. This field stores the unique identification of the purchase order line entry.
location_code	LocationCode	The unique code identifying the location. This is a foreign key reference to the Location.code field.
item_code	ItemCode	The unique code identifying the product. This is a foreign key reference to the Item.code field.
description	TextString	The description of the purchase order. This field is optional.

Field	Data Type	Description
po_date	Date	The date when the purchase order is expected to arrive at the receiving location. This field is mandatory.
quantity_ordered :	Quantity	The original amount that was ordered. This field is mandatory.
quantity_received :	Quantity	Any partial receipts against the order. This field is mandatory.
firm	CharString	Specifies if the purchase order is firmed or not. Values are: N: not firmed order Y: firmed order The default is N.
status	CharString	The status of the purchase order. Values are: Planned: set the first time it is generated by the solver Approved: approved by vendor

SafetyCover Table

The SafetyCover table is used only by the HS solver. The SafetyCover table contains data used by the views to calculate safety days coverage when the DAYSCOVER_POLICY system option is set to IMMEDIATE+SOLVER_DOWNSTREAM.

The data in the SafetyCover table is generated by the HS solver.

Field	Data Type	Description
plan_name	NameString	This is a primary key field. The system plan used to generate data.
location_code	LocationCode	This is a primary key field. This is a foreign key to the Location table. The code for the location.
item_code	ItemCode	This is a primary key field. This is a foreign key to the Item table. The code for the product or material.
effective_date	Date/Time	The date-time when quantity is in effect.
safety_qty	Double	The safety quantity used by the HS solver including both the local demand and the downstream demand.
downstream_qty	Double	The downstream component of the safety quantity.

SubstitutedDemand Table

The SubstitutedDemand table specifies the product substitutions made by the Supply Planning solver. The SubstitutedDemand table is completed when you run the Supply Planning solver.

Field	Data Type	Description
plan_name	NameString	This is a primary key field. The unique name of the system plan.
substitution_number	NameString	This is a primary key field. A unique number that identifies the substitution. This number is generated by the Supply Planning.
location_code	NameString	This is a foreign key to the Location table. A unique code that identifies the location at which a substitute product was used.
item_code	NameString	This is a foreign key to the Item table. A unique code that identifies the product or material for which the substitution was made.
substitute_code	NameString	This is a foreign key to the Item table. A unique code that identifies the substitute product or material.
effective_date	Date/Time	The date-time when the substitution is in effect.
quantity	Double	The quantity of the product specified in item_code being substituted by the product in substitute_code.
substitution_rate	Double	The quantity of substitute product used for each unit of the original product.

SubstitutedMR

This table stores the material and resource substitutions that are generated by the Production and Distribution Planning solver.

Field	Data Type	Description
plan_name	NameString	A primary key field. Specifies the system plan used to generate the solve results.
substitution_number	NameString	A primary key field. Specifies a unique substitution identifier generated by the solver.

Field	Data Type	Description
location_code	NameString	Specifies the location where the current material/resource substitution applies. This field is a foreign key reference to the Location.code field. This field is required.
mfg_code	NameString	Specifies the manufacturing process (routing or operation) that the current material/resource substitution applies to. This field is a foreign key reference to the ManufacturingProcess.mfg_code field. This field is required.
operation_sequence	Integer	<p>This field identifies the specific operation within the manufacturing routing the current material or resource substitution applies to. This field is a foreign key reference to the MfgRoutingDef.operation_sequence field.</p> <p>If mfg_code value refers to a manufacturing operation, then the operation_sequence value is 0. In this case the mfg_code is the operation code.</p> <p>If mfg_code value refers to a manufacturing routing, then the operation_sequence value is different (usually greater) than 0. In this case the mfg_code (routing code) and the operation_sequence can be used to obtain the operation_code from the MfgRoutingDef table. This field is required</p>
BOMR_id	NameString	Specifies the operation BOMR entry for which the substitution takes place. This field is a foreign key reference to the MfgOperationBOMR.BOMR_id field. This field is required
item_code	NameString	Specifies the unique code identifying the resource or the consumed item that was being substituted. This field is a foreign key reference to the Item.code field. This field is required.
substitute_item_code	NameString	Specifies the unique code identifying the item used as substitute for item_code. This field is a foreign key reference to the Item.code field. This field is required.
substitution_date	Date	Specifies the date/time when the item_code material or resource is substituted by substitute_item_code. This field is required.
quantity	Double	Defines the quantity of the item_code material or resource that is substituted by substitute_item_code. This field is required.
substitution_rate	Double	Specifies the quantity of the substitute_item_code material or resource needed to replace each unit of the original item_code material or resource. This field is required.

Changeovers

This table defines the resource specific changeovers between operations. It is used by the run-changeover-batch (RCB) algorithm only.

Field	Data Type	Description
resource_code	NameString	<p>A primary key field.</p> <p>Specifies the resource for which the changeover is defined. This field is a foreign key reference to the Item.code field. The corresponding item_type attribute value must be R.</p> <p>This resource must be the DURATION_RESOURCE for both from_operation_code and to_operation_code.</p>
from_operation_code	NameString	<p>A primary key field.</p> <p>Specifies the operation preceding the changeover action. It's a foreign key reference to the "MfgOperation.code" field.</p>
to_operation_code	NameString	<p>A primary key field.</p> <p>Specifies the operation preceding the changeover action. It's a foreign key reference to the "MfgOperation.code" field.</p>
Duration	Double	<p>Specifies the duration required to switch between from_operation_code and to_operation_code runs; this changeover duration applies to the current "resource_code". Required field.</p>
duration_unit	NameString	<p>Specifies the unit of measure for the "duration" field value. Values are:</p> <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS <p>If there is no value defined in this field, the default value is HOURS. This field is optional.</p>
Cost	Double	<p>Specifies the changeover cost. Default is 0.0. This field is optional.</p>

LocResOptimize

This table defines the order in which the RCB algorithm will consider the (bottleneck) resources for consecutive solves. The sequencing is defined per location-resource combination.

Field	Data Type	Description
location_code	NameString	<p>A primary key field.</p> <p>Specifies a unique code identifying the location. This field is a foreign key reference to the Location.code field.</p>

Field	Data Type	Description
resource_code	NameString	<p>A primary key field.</p> <p>Specifies the resource that the optimization sequence applies to. This field is a foreign key reference to the Item.code field. The corresponding item_type attribute value must be R.</p>
run_optimize_sequence	Integer	<p>Specifies the order in which this resource_code from location_code has to be considered for an RCB solve. Values are:</p> <p>Greater or equal to 0. If run_optimize_sequence=0, it means the resource doesn't get selected for an RCB solve.</p> <p>If run_optimize_sequence=1, it means the resource is selected for the first RCB solve.</p> <p>If run_optimize_sequence=2, it means the resource is selected for the second RCB solve, and so on.</p> <p>The default value is 0. This is a required field.</p>
Description	NameString	<p>This field contains a related description entered by the user.</p> <p>Optional field.</p>

APPENDIX X

Production Management Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Production Management tables

Understanding Production and Distribution Planning Production Management Tables

Production Management tables contain data that is related to the resources and materials which are required to manufacture products. These tables also define the requirements for producing each product at different plant locations.

This section describes each field and its function for the Production and Distribution Planning Plan tables:

- Changeovers
- LocMfg
- LocMfgTimeshift
- LocResCap
- ManufacturingProcess
- MfgOperation
- MfgOperationAlternateMR
- MfgOperationBOMR
- MfgRouting
- MfgRoutingDef
- WorkOrder
- WorkOrderBOMR
- WorkOrderCustomerOrder
- WorkOrderOperations
- WorkOrderMatConsumption
- WorkOrderResUtilization
- WorkOrderCoProduct

Changeovers

This table defines the resource specific changeovers between operations. This table is used only by the RCB algorithm.

Field	Data Type	Description
resource_code	NameString	A primary key Field. Specifies the resource for which the changeover is defined. This field is a foreign key reference to the Item.code field. The corresponding Item.item_type attribute value must be R. This resource must be the DURATION_RESOURCE for both from_operation_code and to_operation_code.
from_operation_code	NameString	A primary key field. Specifies the operation proceedings of the changeover action. This field is a foreign key reference to the MfgOperation.code field.
to_operation_code	NameString	A primary key field. Specifies the operation proceedings of the changeover action. This field is a foreign key reference to the MfgOperation.code field.
Duration	Double	Specifies the duration required to switch between from_operation_code and to_operation_code runs. This changeover duration applies to the current resource_code. This is a required field.
duration_unit	NameString	Specifies the unit of measure for the duration field value. Values are: <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS The default value is HOURS. If no value defined in this field, the default value is assumed. This field is optional.
Cost	Double	Specifies the changeover cost. The default value is 0. This field is optional.

LocMfg Table

The LocMfg table replaces the LocMfgProc table. It defines the manufacturing routings or operations available to each particular location. The LocMfg table corresponds with the Location Manufacturing Routing view.

Field	Data Type	Description
location_code	LocationCode	Specifies the unique code identifying a location. This is a foreign key reference to the Location.code field.
mfg_code	ItemCode	A code that identifies a manufacturing process. This primary key is a foreign key reference to the ManufacturingProcess.mfg.code field.
effective_date	Date/Time	The date and time when the specified manufacturing process per location policy and the available and overhead_cost become effective.
available	Char Y or N	A code that specifies whether the manufacturing process per location is available for a specific time frame. This value is optional. Values are: Y: Yes N: No The default value is Y.
overhead_cost	Cost	The location-specific processing overhead cost assigned to the corresponding manufacturing process for a specific time frame. This value is optional. The default is 0.0.
description	TextString	An optional description of the entry.
userfield_1 to userfield_3	TextString	User-defined fields.

LocMfgTimeshift Table

This table defines the non-effective-dated time-shift attributes for the specified location/manufacturing process combinations. The LocMfgTimeshift table data has to be loaded by the solver (in SSCM) after the LocMfg table is loaded. The timeshift value is used in calculating the manufacturing process lead-time.

Field	Data Type	Description
location_code	LocationCode	A code that identifies the specific location. This primary key is a foreign key reference to the Location.code field.

Field	Data Type	Description
mfg_code	ItemCode	A code that identifies a manufacturing process. This primary key is a foreign key reference to the ManufacturingProcess.mfg.code field.
timeshift_hours	Double	The number of hours out of a 24-hour day that the specified manufacturing process can run at the specified location. This value is required. Values are positive numbers less than or equal to 24.

LocResCap Table

This table specifies the resource capacity of each resource at a location and the costs for each resource capacity level at each location.

Based on the quantity of the resource required and the standard planning unit, Production and Distribution Planning converts the quantity of the resource that is required into resource capacity units and consumes the capacities accordingly at the location. You must define the appropriate unit conversion formula in the UnitConversion table.

Field	Data Type	Description
location_code	LocationCode	A primary key field. This field is a foreign key to the Location table. A unique code that identifies the location that supplies the resource.
item_code	ItemCode	A primary key field. This field is a foreign key to the Item table. A unique code that identifies the resource item.
effective_date	Date/Time	A primary key field. The date and time when the capacities are in effect.
max_premium2_capacity	Quantity	The maximum premium2 capacity that is allowed, based on std_plan_unit in the Item table. Premium2 capacity is the third capacity level after premium and standard capacity. This quantity must be = 0.0. This field is optional. The default is 0.0.

Field	Data Type	Description
max_premium_capacity	Quantity	<p>The maximum premium capacity that is allowed, based on std_plan_unit in the Item table. Premium capacity is the second capacity level after standard capacity.</p> <p>This quantity must be = 0.0. This field is optional. The default is 0.0.</p>
max_standard_capacity	Quantity	<p>The maximum standard capacity that is allowed, based on std_plan_unit in the Item table. Standard capacity is the first capacity level.</p> <p>This quantity must be = min_standard_capacity. This field is optional. The default is 0.0.</p>
min_standard_capacity	Quantity	<p>The minimum standard capacity that is requested, based on std_plan_unit in the Item table. Standard capacity is the first capacity level.</p> <p>This quantity must be = 0.0. This field is optional. The default is 0.0.</p>
min_capacity_penalty	Cost	<p>The penalty cost when minimum standard capacity is violated, based on std_plan_unit in the Item table.</p> <p>This cost must be = 0.0. This field is optional. The default is 0.0.</p>
premium2_production_cost	Cost	<p>The cost charged per unit of premium2 resource capacity. Cost based on std_plan_unit in the Item table.</p> <p>This quantity must be = 0.0 and is typically = premium_production_cost. This field is optional. The default is 0.0.</p>
premium_production_cost	Cost	<p>The cost charged per unit of premium resource capacity that is used. The cost is based on std_plan_unit in the Item table.</p> <p>This quantity must be = 0.0 and is typically = standard_production_cost. This field is optional. The default is 0.0.</p>
standard_production_cost	Cost	<p>The cost charged per unit of standard resource capacity that is used. The cost is based on std_plan_unit in the Item table.</p>

Field	Data Type	Description
description	TextString	A description of the resource capacity. This field is optional.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

LocResOptimize

This table defines the order in which the RCB algorithm considers the (bottleneck) resources for consecutive solves. The sequencing is defined per location/resource combination.

Field	Data Type	Description
location_code	NameString	A primary key field. A unique code identifying the location. This field is a foreign key reference to the Location.code field.
resource_code	NameString	A primary key field. Specifies the resource to which the optimization sequence applies. This field is a foreign key reference to the Item.code field. The corresponding Item.item_type attribute value must be R.
run_optimize_sequence	Integer	Specifies the order in which this resource_code from location_code has to be considered for an RCB solve. Values are greater or equal to 0. If run_optimize_sequence=0, the resource is not selected for an RCB solve. If run_optimize_sequence=1, the resource is selected for the first RCB solve. If run_optimize_sequence=2, the resource is selected for the second RCB solve, and so on. The default value is 0. This is a required field..
Description	NameString	This field contains a related description entered by the user. Optional field.

ManufacturingProcess

This table is the manufacturing master table and enumerates the available manufacturing processes. A manufacturing process can be defined in terms of a manufacturing routing, which is a sequence of operations defined in MfgRoutingDef table, or as an individual operation. Each manufacturing process may be shared by multiple locations.

Field	Data Type	Description
mfg_code	NameString	A primary key field. Specifies a unique name to identify if the manufacturing process is a manufacturing routing or a manufacturing operation.
mfg_type	NameString	Specifies the type of manufacturing process and where it is defined. Values are: R: if the value is R, then mfg_code indicates a manufacturing routing that has the complete definition in the MfgRouting and MfgRoutingDef tables O: if the value is O, then mfg_code indicates a manufacturing operation is defined in the MfgOperation table. This field is required.

MfgOperation Table

The MfgOperation table enumerates the existing operations. An operation is a single manufacturing step, which is defined in the MfgOperationBOMR table. An operation can be either a standalone manufacturing process or used to define multiple manufacturing routings. The MfgOperation table corresponds with the summary area of the Manufacturing Operation view.

Field	Data Type	Description
code	NameString	This is a primary key field. Specifies a unique name to identify the operation.
description	NameString	This field stores the operation description. This field is optional.
cost	Cost	Specifies the manufacturing cost per unit of the primary output product. Default is 0.0. This field is optional.

Field	Data Type	Description
batch	Character Y or N	<p>A code that specifies whether the operation is a batch type. Values are:</p> <p>Y: batch quantity is specified by the primary output quantity value as defined in the MfgOperationsBOMR table.</p> <p>N: The batch quantity is not specified by the primary output quantity value as defined in the MfgOperationsBOMR table.</p> <p>The default value is N.</p>
use_run_time	Character Y or N	<p>A code that determines whether the operation's minimum or maximum values are defined using run time values or quantity values. Values are:</p> <p>Y: The minimum or maximum run values are defined in terms of time.</p> <p>N: The minimum or maximum run values are defined in terms of quantity.</p> <p>The default value is Y.</p>
minimum_run_quantity	Double	<p>The minimum run length of an operation in terms of quantity. The amount is expressed in the standard planning unit of the primary output.</p> <p>This value is optional. If no primary output exists for this operation, the value is blank. This field is used by Production and Distribution Planning only.</p>
maximum_run_quantity:	Double	<p>The maximum run length, in quantity, of an operation. The amount is expressed in primary output's standard planning unit of the primary input.</p> <p>This value is optional. If no primary output exists for this operation, the value is blank. This field is used by Production and Distribution Planning only.</p>
minimum_run_time:	Double	<p>The minimum run length, in time, of an operation. This value is optional. This field is used by Production and Distribution Planning only.</p> <p>See Note at the end of this table for additional information.</p>

Field	Data Type	Description
maximum_run_time	Double	The maximum run length, in time, of an operation. This value is optional. This field is used by Production and Distribution Planning only. See Note at the end of this table for additional information.
time_unit	NameString	A code that specifies the unit of measure for every field that has a time value. Values are: <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds The default is Hours.
run_preference	Integer (Value = 0)	A number that determines the ideal sequence of running this operation on the corresponding DURATION_RESOURCE. It applies when several operations are to be planned on the same DURATION_RESOURCE. Values are: <p>1: Most preferred</p> <p>0: No preference associated with this operation</p> <p>The default value is 0.</p> <p>Only the RCB (run-changeover-batch) algorithm uses this value.</p>
userfield_1 to userfield_3	TextString	User-defined fields.

Note. If no primary output exists for a specific operation then the corresponding minimum_run_quantity and maximum_run_quantity fields are invalid, that is, they cannot hold a value.

If a primary output exists for a specific operation then the minimum_run_quantity and maximum_run_quantity fields are valid. Their values are either manually entered or calculated by the system as follows:

If the minimum_run_quantity/maximum_run_quantity value is entered first, then the minimum_run_time/maximum_run_time value is calculated.

If the minimum_run_time/maximum_run_time value is entered first, then the minimum_run_quantity/maximum_run_quantity value is calculated.

MfgOperationAlternateMR Table

The MfgOperationAlternateMR table replaces the MaterialSubstitute table. This table provides information about valid material and resource substitutions that occur for the BOMR for an operation when the original materials or resources are no longer available. The MfgOperationAlternateMR table corresponds with the Material Substitution and Resource Substitution views.

Field	Data Type	Description
operation_code	NameString	A code that identifies an operation. This primary key is a foreign key reference to the MfgOperation.code field.
BOMR_id	NameString	A code that identifies the BOMR entry for this operation. This primary key is a foreign key reference to the MfgOperationBOMR.BOMR_id field.
item_code	ItemCode	This is a primary key field. A code that identifies the resource or the consumed item that can be substituted when a substitution occurs. This primary key is a foreign key reference to the Item.code field.
substitute_item_code	ItemCode	A code that identifies the item that can be substituted for item_code when a substitution occurs. This primary key is a foreign key reference to the Item.code field.
effective_date	Date/Time	The date and time when this substitution becomes effective. The substitution policy remains in effect until effective_date is changed, at which time another substitution policy takes over. This is a primary key.
preference	Integer	A number that specifies the order in which the substitutions are used, with the highest preference being used first. This number is required. Values are any number = 0. A value of 1 is the highest preference. A value of 0 means that this substitution is no longer an option. The default value is 0.
ratio	Double	The quantity of the substitute item, identified by the substitute_item_code that is used for each unit of original item, itself identified by the item_code. This value is required. The default is 1.0.

MfgOperationBOMR Table

The MfgOperationBOMR table defines each operation from the MfgOperation table. It provides information about the bill of materials and resources that correspond to each operation. The MfgOperationBOMR table corresponds with the details area of the Manufacturing Operation view.

Field	Data Type	Description
mfg_operation_code	NameString	A code that identifies an operation. This primary key is a foreign key reference to the MfgOperation.code field.
BOMR_id	NameString	The unique code for the bill of material that corresponds to this operation. This is a primary key field that allows for the following operations: <ul style="list-style-type: none"> • The same item to be confirmed multiple times • The same resource to be used multiple times
item_type	NameString	A code that identifies the type of item entered in the item field. This code is required. Values for produced items are: <ul style="list-style-type: none"> • PRIMARY_OUTPUT • CO-PRODUCT Values for resources are: <ul style="list-style-type: none"> • DURATION_RESOURCE • SUPPORTING_RESOURCE • CREW • TOOL The valid value for consumed items is: <ul style="list-style-type: none"> • ITEM •
item_code	NameString	A code that either identifies the item consumed or produced by this operation or the required resource for running the operation. This code is required.

Field	Data Type	Description
quantity	Double	<p>The amount of each item that is input or output for this particular operation. This value is required. For produced items and resources, this value may be positive; for consumed items, this value may be negative. This value is the duration of the operation for producing the PRIMARY_OUTPUT quantity. Normally, the value is set to 1, but it can be any value.</p> <p>If no PRIMARY_OUTPUT is defined, then the duration is a constant for the entire operation.</p> <p>If item_type is DURATION_RESOURCE then the value of this field has the special meaning of operation lead-time (which is used to calculate the manufacturing routing lead-time). This field is required.</p>
quantity_unit	NameString	<p>The unit of measure for the value entered in the quantity field. This value is required. If the quantity field contains a time duration value, this field can have the following values:</p> <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS <p>If the quantity field does not contain a time duration, then this field is a foreign key reference to the UnitConversion.unit field.</p> <p>Note. This field should be left empty if the item_code refers to a WIP item that is not defined in Item table. Even if there is a unit defined in this case, the solver ignores the value and the absolute quantity value is used in calculations.</p>
yield	Double	A number that specifies the yield factor only for produced items. This value is optional. The default value is 1.0.
scrap	Double	A number that specifies the scrap factor only for consumed items. The default value is 0.0.

Field	Data Type	Description
consumption_overhead_cost	Double	This optional field specifies the overhead cost for consuming a unit of this item or utilizing this resource. This value is optional. The default value is 0.0.
start_date	Date/Time	The date on which this resource or the consumed item entry becomes effective. If you leave this optional field blank, by default, the start_date is the beginning of the horizon.
end_date	Date/Time	The date on which this resource or consumed item is no longer considered in the operation definition. If you leave this optional field blank, by default, the end_date is the end of the horizon.

MfgRouting Table

The MfgRouting table holds the manufacturing routing specific attributes. The MfgRouting table corresponds with the Manufacturing Routing view.

Field	Data Type	Description
code	NameString	A code that identifies the manufacturing routing. This is a primary key.
description	TextString	The description of the manufacturing routing. The description is optional.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

MfgRoutingDef Table

The MfgRoutingDef table defines each manufacturing routing from the MfgRouting table as a sequence of operations. This table provides you with information about the sequence of manufacturing operations and their separation times. The MfgRoutingDef table corresponds with the Manufacturing Routing view.

Field	Data Type	Description
mfg_routing_code	NameString	A code that identifies the manufacturing routing. This primary key is a foreign key reference to the MfgRouting.code field.

Field	Data Type	Description
operation_sequence	Integer	A unique number within a manufacturing routing that identifies an operation instance. Since a specific operation can occur several times within a routing, this field is required to uniquely identify the position of each occurrence. This is a primary key. Values are any integer value with the exception of 0.
operation_code	NameString	This is a primary key field which identifies an operation. This is a foreign key reference to the MfgOperation.code field. This operation is part of the specified manufacturing routing.
operation_depth	Integer	Specifies the depth of the operation whose occurrence in the routing is indicated by operation_sequence field.
successive_operation_sequence	Integer	A number that specifies an operation instance that follows in sequence after the current operation instance. If the current operation is the last operation in the sequence and has no successive operation, then the value is 0. This number is optional.
queue_time	Double	The separation time that is used as a waiting time due to specific business reasons, before the system runs the current manufacturing step specified by operation_code. Queue_time is defined before setup_time. This number is optional. The value represents one of the following: <ul style="list-style-type: none"> • Number of days • Number of hours • Number of minutes • Number of seconds The value depends on the unit of measure that is defined by queue_time_unit. The default value is 0.

Field	Data Type	Description
queue_time_unit	Name String	<p>The unit of measure for the queue_time value. This value is optional. Values are:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default value is Hours.</p>
setup_time	Double	<p>The separation time used to model any setup activity that might be required to run the manufacturing step specified in the operation_code field. The value is optional.</p> <p>The value represents one of the following:</p> <ul style="list-style-type: none"> • Number of days • Number of hours • Number of minutes • Number of seconds <p>The value depends on the unit of measure defined by setup_time_unit. The default value is 0.</p>
setup_time_unit	Name String	<p>The unit of measure for the setup_time value. This value is optional. Values are:</p> <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds <p>The default value is Hours.</p>

Field	Data Type	Description
move_time	Double	<p>The separation time used to model the inventory moving activity that might be required after the manufacturing step specified in the operation_code field is completed. The inventory move occurs even if there is no successive_operation_code that needs to be executed after the current manufacturing step. This value is optional. Values are:</p> <ul style="list-style-type: none">• Number of days• Number of hours• Number of minutes• Number of seconds <p>The value depends on the unit of measure defined by move_time_unit. The default value is 0.</p>
move_time_unit	NameString	<p>The unit of measure for the move_time value. This value is optional. Values are:</p> <ul style="list-style-type: none">• Days• Hours• Minutes• Seconds <p>The default value is Hours.</p>

Field	Data Type	Description
precedence_type	NameString	<p>The type of the precedence relationship between the current operation that is defined by operation_code and the next operation that is defined by successive_operation_code.</p> <p>Typically, each operation has a start and an end. The complete definition of a precedence relationship contains the type of precedence that is defined in this field and the corresponding offset precedence that is defined in the precedence_offset field, between start and end of the current operation and the start and end of the next operation.</p> <p>Values are:</p> <p>SEQUENCE: The current operation and the next operation are executed in chronological order by respecting their separation times. No offset value is required in the precedence_offset field.</p> <p>START_TO_START: The defined offset applies from the start of the current operation to the start of the next operation.</p>

Field	Data Type	Description
precedence_type (continued)		<p>START_TO_END: The defined offset applies from the start of the current operation to the end of the next operation.</p> <p>END_TO_START: The defined offset applies from the end of the current operation to the start of the next operation.</p> <p>END_TO_END: The defined offset applies from the end of the current operation to the end of the next operation.</p> <p>The default value is SEQUENCE.</p> <p>Note. The mapping between the PS-D precedence relationship types (Starts After End, Starts At End, Starts After Start, Starts At Start, Ends At End) and the Production and Distribution Planning definition is as follows:</p> <p>Starts After End is equivalent to precedence_type = SEQUENCE or precedence_type = END_TO_START and precedence_offset > 0.0.</p> <p>Starts At End is equivalent to the particular case precedence_type = END_TO_START and precedence_offset = 0.0.</p> <p>Starts After Start is equivalent to precedence_type = START_TO_START and precedence_offset > 0.0.</p> <p>Starts At Start is equivalent to the particular case precedence_type = START_TO_START and precedence_offset > 0.0. precedence_offset = 0.0.</p> <p>Ends At End is equivalent to the particular case precedence_type = END_TO_END and precedence_offset = 0.0.</p> <p>precedence_offset > 0.0. precedence_offset = 0.0.</p> <p>Ends At End is equivalent to the particular case precedence_type = END_TO_END and precedence_offset = 0.0.</p>

Field	Data Type	Description
precedence_offset	Double	The time offset between the start and end of the current operation (operation_code) and the start and end of the next operation (successive_operation_code). The meaning depends on the precedence_type field value. Values are optional; the default value is 0.0.
precedence_offset_time_unit	NameString	The unit of measure for the precedence_offset value. This value is optional. Values are: <ul style="list-style-type: none"> • Days • Hours • Minutes • Seconds The default value is Hours.

WorkOrder Table

This table stores all of the existing work orders. The WorkOrder table corresponds with the Work Order view.

Field	Data Type	Description
work_order_code	NameString	A code that identifies the work order. The code must be unique for each location. This is a primary key.
location_code	LocationCode	A code that identifies the location where the current work order is defined and, implicitly, the location of the manufacturing process. This primary key is a foreign key reference to the Location.code field.
description	NameString	Optional text that describes the work order.

Field	Data Type	Description
type	NameString	<p>A code that specifies the type of work order. This code is required. Values are:</p> <p>PRODUCTION: A work order that contains production support activities that directly produce inventory.</p> <p>MAINTENANCE: A work order that contains production support activities that do not directly produce inventory.</p> <p>ENGINEERING_CHANGE: A work order that contains production support activities that do not directly produce inventory.</p> <p>CONFIGURED: Reserved for future use. A work order that runs on a configured routing that is not part of the Production and Distribution Planning model and produces a configured item.</p>
mfg_code	NameString	<p>A code that identifies the manufacturing process assigned to this Work Order. The manufacturing process is either a routing, sequence of operations, or a single operation. It can be a foreign key reference to ManufacturingProcess.mfg_code field, but it is not mandatory.</p>
item_code	NameString	<p>A code that identifies the primary output of the assigned manufacturing process. If the type field in this table is MAINTENANCE or ENGINEERING_CHANGE, this value must be empty. If the type field is PRODUCTION, this value is required.</p>

Field	Data Type	Description
quantity	Double	<p>The primary output quantity that is produced by running the corresponding manufacturing process. If the type field in this table is MAINTENANCE or ENGINEERING_CHANGE, this quantity must be 0.0. This value is required.</p> <p>Note. This value should match the calculated quantity of the primary output for the last operation in the manufacturing process sequence, if that is defined. If a discrepancy exists between the values, this value overwrites the calculated value from the operation level.</p>
quantity_unit	NameString	The unit of measure for the value entered in the quantity field. This value is required.
status	NameString	<p>A code that specifies the life-cycle phase of an existing work order. Valid codes are:</p> <ul style="list-style-type: none"> • Active • Open • Closed <p>This value is required.</p>
creation_date	Date	The date on which the work order was generated. This is a required date.
requested_date	Date	The date on which the work order must be completed. This is a required date.
start_date	Date	The date on which the work to satisfy the work order started. This date is optional.

Field	Data Type	Description
completion_date	Date	The date on which the work to satisfy the work order was completed.
fix	Char Y or N	<p>A code that indicates whether the work order needs to be fixed for the next solve. This code applies only when work orders are outside of the fixed production timefence. All work orders that are inside of the fixed production timefence are treated as fixed. Values are:</p> <p>Y: The work order needs to be fixed for the next solve.</p> <p>N: The work order does not need to be fixed for the next solve.</p> <p>The default value is N.</p>

WorkOrderBOMR Table

This table specifies work order details about production (primary output and co-products) and consumption (materials and resources that are consumed or used) that corresponds to each work order operation. The WorkOrderBOMR table corresponds with the Work Order BOMR view.

Field	Data Type	Description
work_order_code	NameString	A code that identifies the work order. The code must be unique for each location. This is a primary key. It's a foreign key reference to WorkOrder.code field.
location_code	Location	A code that identifies the location where the current work order is defined and, implicitly, the location of the manufacturing process. This primary key is a foreign key reference to the Location.code field.
operation_sequence	Integer	A code that identifies an operation instance within the work order. This primary key is a foreign key reference to WorkOrderOperations.operation_sequence field.

Field	Data Type	Description
BOMR_id	NameString	A code that helps differentiate between several independent occurrences of an item for the duration of an operation. This code must be a primary key to allow the definition of separate sets of attributes, such as quantity, consumption start, and consumption end for each item occurrence. For example, this code can match the occurrence number. In a simple example of an item (material) that is consumed just once, this code can have the value 1. You can also optionally match the BOMR_id to the value of the MfgOperationBOMR table.
item_code	Item	A code that identifies the item produced or consumed by this operation, or the required resource for running the operation. This code is required.
item_description	NameString	Optional text that describes the item.
item_type	NameString	A code that identifies the type of item from the item_code field. Values are: PRIMARY_OUTPUT: Produced items CO-PRODUCT: Produced items DURATION_RESOURCE: Resources SUPPORTING_RESOURCE: Resources CREW: Resources TOOL: Resources ITEM: Consumed items This code is required.
total_quantity	Double	The total amount of the item code that is produced or consumed upon completion of the work order. This value is required.

Field	Data Type	Description
remaining_quantity	Double	<p>The amount of the item represented by either the produced item code or the consumed item code that must still be factored in upon completion of the work order. This must occur when the current operation has begun, but has not been completed.</p> <p>This value is required.</p>
quantity_per	Double	<p>Reserved for future use.</p> <p>Specifies the amount of BOMR component required to make one unit of work order output (the item referred by WorkOrder.item_code). The scrap and yield factors are inferred.</p> <p>This field is used only on Configured Work Orders.</p>
quantity_unit	NameString	<p>The unit of measure for the value entered in the quantity field. This value is required.</p>
yield	Double	<p>The yield factor for produced items only. The default value is 0.0. This value is optional.</p>
scrap	Double	<p>The scrap factor for consumed items only. The default value is 1.0. This value is optional.</p>
CSA_work_order	NameString	<p>Reserved for future use.</p> <p>If the BOMR component is a configured sub-assembly, this field specifies the WorkOrder.code of the Work Order that makes the configured sub-assembly.</p> <p>This field is optional and only used on Configured Work Orders.</p>
CSA_location	Location	<p>Reserved for future use.</p> <p>This field is used in sync with CSA_work_order. If the BOMR component is a configured sub-assembly this field specifies the plant location where the sub-assembly is made. This field is optional and only used on Configured Work Orders.</p>

WorkOrderOperations Table

This table defines the manufacturing process and the operations sequence for each work order. The WorkOrderOperations table corresponds with the Work Order Operations view.

Field	Data Type	Description
work_order_code	NameString	A code that identifies the work order. The code must be unique for each location. This is a primary key. This code is a foreign key reference to the WorkOrder.code field.
location_code	Location	A code that identifies the location where the current work order is defined and, implicitly, the location of the manufacturing process. This primary key is a foreign key reference to the Location.code field.
operation_sequence	Integer	A code that identifies an operation instance within the work order. This operation instance might or might not match the operation instance from manufacturing routing definition (defined in MfgRoutingDef.operation_sequence). This primary key is used only when the work order refers to a manufacturing routing. When the work order refers to an individual manufacturing operation, you must enter a value, but the work_order_code value is sufficient to uniquely define the work order composition; only one operation is defined.
operation_code	NameString	<p>A code that identifies the operation run (instance) that is indicated by the operation_sequence. This code is a foreign key reference to the MfgOperation.code field.</p> <p>This operation code might or might not match the operation code that corresponds to the same operation instance from the manufacturing routing definition (defined in MfgRoutingDef.operation_code).</p> <p>This code is required.</p>

Field	Data Type	Description
successive_operation_sequence	Integer	A number that identifies the operation instance that immediately follows the current operation instance. This value is blank if the current operation instance is the last one in the manufacturing routing operations sequence or if the work order relates to an individual manufacturing operation. This code is optional.
queue_time	Double	Specifies a separation time that is used as a waiting time caused by specific business circumstances before running the current manufacturing step that is specified by operation_code. The value depends on the unit of measure that is defined by queue_time_unit. Values are: <ul style="list-style-type: none"> • Number of days • Number of hours • Number of minutes • Number of seconds The default value is hours. This field is optional.
queue_time_unit	NameString	Specifies the unit of measure for the queue_time value. Values are: <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS The default is HOURS. This field is optional.

Field	Data Type	Description
setup_time	Double	<p>Specifies a separation time. It is used to model any setup activity that is required to run the manufacturing step specified by operation_code.</p> <p>The value depends on the unit of measure that is defined by setup_time_unit. Values are:</p> <ul style="list-style-type: none"> • Number of days • Number of hours • Number of minutes • Number of seconds <p>The default value is hours. This field is optional.</p>
setup_time_unit	NameString	<p>Specifies the unit of measure for the setup_time value. Values are:</p> <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS <p>The default is HOURS. This field is optional.</p>
move_time	Double	<p>Specifies a separation time. It is used to model the inventory moving activity that can be required after the manufacturing step specified by operation_code is completed. The inventory move occurs even if there is no operation that is executed after the current manufacturing step. The value depends on the unit of measure that is defined by move_time_unit. Values are:</p> <ul style="list-style-type: none"> • Number of days • Number of hours • Number of minutes • Number of seconds <p>The default value is hours. This field is optional.</p>

Field	Data Type	Description
move_time_unit	NameString	<p>Specifies the unit of measure for the move_time value. Values are:</p> <ul style="list-style-type: none"> • DAYS • HOURS • MINUTES • SECONDS <p>The default is HOURS. This field is optional.</p>
precedence_type	NameString	<p>Reserved for future use.</p> <p>Specifies the type of the precedence relationship between the current operation defined by operation_sequence and operation_code and the next operation defined by successive_operation_sequence. The field takes the same set of values as the MfgRoutingDef.precedence_type field.</p> <p>This field is optional. If there is no value defined in this field, by default the precedence_type is SEQUENCE</p>
precedence_offset	Double	<p>Reserved for future use.</p> <p>Specifies the time offset between the start and end of the current operation operation_sequence and the start and end of the next operation successive_operation_sequence. The exact meaning depends on the precedence_type field value.</p> <p>Default value is 0.0.</p>
status	NameString	<p>Specifies the execution phase of the current work order operation. This field is optional.</p>
requested_date	Date	<p>Specifies the date when the work order operation completion is required.</p> <p>This field is required.</p>
planned_start_date	Date	<p>Specifies the date when the work order operation execution is planned to start. This field is optional.</p>

Field	Data Type	Description
planned_finish_date	Date	Specifies the date when the work order operation execution is planned to finish. This field is optional.
actual_start_date	Date	Specifies the real date when the work order operation execution started. This field is optional.
actual_finish_date	Date	Specifies the real date when the work order operation execution finished. This field is optional.

WorkOrderMatConsumption

Dependent demand from work orders will simply be inputs to the report views. If a user changes the work order table, corresponding changes will not be reflected for dependent demand in the report views without running an additional solve.

Field	Data Type	Description
work_order_code	NameString	primary key field Specifies the work order corresponding to the current material consumption entry. This field is a foreign key reference to the WorkOrder: code field.
location_code	Location	A primary key field Specifies the location. This field is a foreign key reference to the Location: code field
operation_sequence	Integer	A primary key field. Specifies a unique number within the manufacturing routing that identifies the current operation instance. This field is a foreign key reference to the MfgRoutingDef.operation_sequence field.
BOMR_id	NameString	A primary key field. Specifies the unique code for BOMR entry (resource) corresponding to the current operation. This field is a foreign key reference to the MfgOperationBOMR.BOMR_id field.

Field	Data Type	Description
item_code NameString	.	A primary key field Specifies the code of the consumed material at the beginning of the current operation. This code represents either the primary material or the substituted material. This field must be defined because there may be more than one substituted material for each primary material.
earliest_consumption_date	Date	Represents the beginning of the period in which the material is consumed.
Quantity	Double	The total material (sub-assembly) quantity required (consumed) for executing the work order defined by the work_order_code. By default, the unit of measure for this quantity is the standard planning unit for the material as defined by the Item.std_plan_unit field.

WorkOrderResUtilization

Dependent demand from work orders will simply be inputs to the report views. If a user changes the work order table, corresponding changes will not be reflected for dependent demand in the report views without running an additional solve.

Field	Data Type	Description
work_order_code	NameString	A primary key field Specifies the work order corresponding to the current resource utilization entry. This field is a foreign key reference to the WorkOrder.code field.
location_code	Location	A primary key field Specifies the location. This field is a foreign key reference to the Location: code field.
operation_sequence	Integer	A primary key field Specifies a unique number within the manufacturing routing that identifies the current operation instance. This field is a foreign key reference to MfgRoutingDef.operation_sequence field.

Field	Data Type	Description
BOMR_id	NameString	A primary key field Specifies the unique code for BOMR entry (resource) corresponding to the current operation. This field is a foreign key reference to MfgOperationBOMR.BOMR_id.
res_code	NameString	A primary key field. Specifies the code of the resource utilized during the current operation run. This code represents either the primary resource or the substituted resource. This field must defined as primary key because there may be more than one substituted resource for each primary resource.
earliest_utilization_date	Date	A primary key field Represents the beginning of the period in which the resource capacity is used.
Quantity	Double	The total resource capacity required (utilized) for ecuting the work order defined by work_order_code. The unit of measure for this quantity is by default the standard planning unit for the resource as defined by the Item.std_plan_unit field.

WorkOrderCoProduct

This table contains Co-Product solve results.

Field	Data Type	Description
work_order_code	NameString	A primary key field Specifies the work order that produces a co-product. This field is a foreign key reference to the WorkOrder.code field.
location_code	NameString	A primary key field Specifies the location where the work order is executed. This field is a foreign key reference to the Location.code field.

Field	Data Type	Description
operation_sequence	Integer	A primary key field Specifies a unique number within the manufacturing routing that identifies the current operation instance that produces the co-product. This field is a foreign key reference to the MfgRoutingDef.operation_sequence field.
BOMR_id	NameString	A primary key field Specifies the unique code for BOMR entry corresponding to a defined co-product. This field is a foreign key reference to the MfgOperationBOMR.BOMR_id field.
earliest_production_date	Double	Represents the beginning of the period in which the co-product becomes available.
Quantity	Double	The co-product quantity produced. The unit of measure for this quantity is by default the standard planning unit for the item as defined by the Item.std_plan_unit field.

APPENDIX Y

Security Management Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Security Management tables and their fields.

Understanding Production and Distribution Planning Security Management Tables

This section describes each field and its function for the Security Management tables:

- Command
- RoleACL
- UserRegistry
- UserRole
- WorkGroupCommand

Command Table

The Command table specifies the valid user commands for Production and Distribution Planning and Vehicle Loading.

Field	Data Type	Description
system	NameString	The name of the system for which the command is valid. Values are: PDP: Production and Distribution Planning VL: Vehicle Loading
command	NameString	The name of the command.

Field	Data Type	Description
type	NameString	A description of the type of action performed by the command. Values are: <ul style="list-style-type: none"> • Solve • Approve • Check • Clear • Connect
description	NameString	A description of the command.

RoleACL Table

The RoleACL table specifies the access control list (ACL) for each user role or user type.

Field	Data Type	Description
system	NameString	A primary key field. A name identifying the owning system. Values are: PDP: Production and Distribution Planning VL: Vehicle Loading
workgroup	NameString	A primary key field. This is a foreign key to the WorkGroup table. A unique name identifying the work group.
role	NameString	A primary key field. A unique name identifying the user role.
target_type	NameString	A primary key field. The type of target object. Values are: <ul style="list-style-type: none"> • Command • View • Alert

Field	Data Type	Description
target_name	NameString	<p>This is a primary key field.</p> <p>The name or ID of the target object.</p> <p>If target_type is Command and system is 3D, it specifies the function. You define access control for commands that you run using the Production and Distribution Planning Desktop.</p> <p>If target_type is Command and system is VL, it specifies the function.</p> <p>If target_type is View, it specifies the name of the view.</p> <p>If target_type is Alert, it specifies the name of the system alert type.</p>
role_access	CharString	<p>Code identifying access rights to the object.</p> <p>If target_type is Command, valid values are:</p> <ul style="list-style-type: none"> • X: Execute • N: No access <p>If target_type is View, valid values are:</p> <ul style="list-style-type: none"> • R: Read • M: Modify or change • W: Write or add, delete, and change • N: No access <p>If target_type is Alert, valid values are:</p> <ul style="list-style-type: none"> • Y: Read • N: No access
configure	CharString	This is a read-only, hidden field.

UserRegistry Table

The UserRegistry table specifies the users that are registered to Production and Distribution Planning.

Field	Data Type	Description
user_id	NameString	<p>This is a primary key field.</p> <p>A unique code identifying the user.</p>
password	NameString	The encrypted password of the user.

Field	Data Type	Description
fullname	NameString	The full name of the user. This field is optional.
department	NameString	The group or department to which the user belongs. This field is optional.
location	NameString	The location with which the user is typically associated. This field is optional.
system	NameString	The name of the default system for the user. Values are: PDP: Production and Distribution Planning VL: Vehicle Loading
workgroup	NameString	Specifies the name of the default work group for the user. This field is optional. If not supplied, then all workgroups that the user has been granted access to will be available during a session. This field is reserved for future use.
role	NameString	The name of the default user role for the user. This field is optional. If not specified, then all roles that the user has been assigned to will be available during a desktop session.
userfield_1 to userfield_3	NameString	Optional user-defined fields that store data about the user.

UserRole Table

The UserRole table specifies the user roles assigned to each user in the system.

Field	Data Type	Description
system	NameString	This is a primary key field. A name identifying the owning system. Values are: PDP: Production and Distribution Planning VL: Vehicle Loading

Field	Data Type	Description
workgroup	NameString	This is a primary key field. This is a foreign key to the WorkGroup table. A unique name identifying the work group.
role	NameString	This is a primary key field. This is a foreign key to the Role table. A unique name identifying the user role to which the user belongs. Do not include spaces or special characters in the user role name.
user_id	NameString	This is a primary key field. This is a foreign key to the UserRegistry table. A unique code identifying the user.
status	Char Y or N	The status of the user role. Values are: Y: User role is active N: User role is inactive The default is Y.

WorkGroupCommand Table

The WorkGroupCommand table specifies the commands supported by each work group.

Field	Data Type	Description
system	NameString	The name of the system for which the command is valid. Values are: PDP: Production and Distribution Planning VL: Vehicle Loading
workgroup	NameString	The unique name of the work group.
command	NameString	This is a foreign key to the Command table. The name of the command.

APPENDIX Z

System Management Tables

This appendix discusses EnterpriseOne Production and Distribution Planning System Management tables and their fields.

Understand Production and Distribution Planning Demand Management Tables

System Management tables contain system-wide data, which is used by all of the components of Production and Distribution Planning.

The System Management tables are:

- Category
- DeleteObject
- Horizon
- IntegrityCheck
- PlanRegistry
- System_Option
- System_OptionValues

Category Table

The Category table specifies different product and location categories and supports reporting by category. You must complete the Category table if you complete the ItemCategory or LocationCategory tables.

Field	Data Type	Description
object	NameString	A primary key field. The type of object to which the categorization applies. Values are: PRODUCT: Product categories LOCATION: Location categories When data is migrated from previous versions of PDP, the value is set to PRODUCT.

Field	Data Type	Description
name	NameString	A primary key field. The name of the category. For example, 16oz_products or EASTERN_locations.
type	NameString	The type of category. This field is used for workgroup customization so that category report views can be filtered by category type. For example, SIZE for product categories or REGION for location categories.
description	TextString	A description of the category. This field is optional.
userfield_1 to userfield_3	TextString	Optional user-defined fields.

DeleteObject Table

This table specifies the object to be deleted from the database by the CascadeDelete APAG flow. The data in the DeleteObject table is completed by Production and Distribution Planning and Vehicle Loading. For every table from which you want to delete information, the DeleteObject table requires one record.

Note. You must enter a carriage return at the end of the last line for the deletescascade script to work.

Field	Data Type	Description
TargetTable	NameString	A primary key field. The name of the table where the object is deleted.
IdFieldName	NameString	A primary key field. The field name in the TargetTable to identify the object being deleted.
IdFieldValue	NameString	A primary key field. The value of the named field in the table to identify the object being deleted.

Horizon Table

The Horizon table specifies the horizons that are used by the solvers and the views. The Horizon table contains one entry per horizon. Production and Distribution Planning supports a maximum of three stages of telescoping for each horizon. For each stage, one needs to specify the number of periods as well as the size of each period in number of days. When telescoping horizon is used, to preserve the stability of the period boundaries as periodic rolling is in effect, the period size for each stage has to be a multiple of the period size for the previous stage.

Field	Data Type	Description
horizon_name	NameString	This is a primary key field. The unique name of the horizon.
description	TextString	User defined description of this horizon.
advance_mode	NameString	The mode for horizon advancement. Valid value is: PERIODIC_ROLL.
reference_date	Date/Time	The reference date and time for the horizon. For periodic rolling, it defines the start of the period for rolling. For example, if today is Wednesday and you want to set the period to start rolling every Monday on a seven-day cycle, set the reference date to any Monday in the past. The default value is the current date.
reserved	NameString	Reserved for future use. The default is NULL.
period1_count	Count	The number of periods in the first part of the telescoping horizon.
period1_size	NameString	The period size in number of days for the first part of the telescoping horizon. The value must be an integer value.
period2_count	Count	The number of periods in the second part of the telescoping horizon. This field is optional. If it is not completed, there is no second or third part of the telescoping horizon.
period2_size	NameString	The period size in number of days for the second part of the telescoping horizon. The number of days specified in this field must be a multiple of the number of days specified in the period1_size field. This field must be completed if the period2_count field is completed. The value must be an integer.

Field	Data Type	Description
period3_count	Count	The number of periods in the third part of the telescoping horizon. This field is optional. If it is not completed, there is no third part of the telescoping horizon.
period3_size	NameString	The period size in number of days for the third part of the telescoping horizon. The number of days specified in this field must be a multiple of the number of days specified in the period2_size field. This field must be completed if the period3_count field is completed. The value must be an integer.

IntegrityCheck Table

This table stores the results of running the data integrity checks. The IntegrityCheck table is completed automatically during execution of the data integrity check APAG flows.

Field	Data Type	Description
TargetTable	NameString	A primary key field. The name of the table that is checked.
TargetKeyFields	TextString	A primary key field. The name of the table fields being used to identify the row in the table.
TargetKeyValues	TextString	A primary key field. The value of the table fields identifying the row in the table.
CheckCode	NameString	A primary key field. The message code for the data integrity check.
ReferenceTable	NameString	The name of the table being used as the reference for the data integrity check.
CheckFieldName	NameString	The name of the table field being validated.
CheckFieldValue	NameString	The value of the table field being validated.

Field	Data Type	Description
CheckDate	Date/Time	The date-time when the data integrity check was run.
CheckType	CharString	The type of message. Values are: E: Error W: Warning

PlanRegistry Table

This table specifies the system plans that the solvers use to generate results and that the views use to display data.

Field	Data Type	Description
name	NameString	A primary key field. The unique name of the system plan.
owner	NameString	The owner of the system plan.
description	TextString	A description of the system plan. This field is optional.
status	NameString	Reserved for future use. The default is NULL.
status_date	Date/Time	Reserved for future use. Date-time when the status of the system plan is changed. This field is set by the system. The default is NULL.
author	NameString	Reserved for future use. User ID of the planner who changed the system plan status. This field is set by the system. The default is NULL.
author_comment	TextString	Reserved for future use. User comment field. This field is optional. The default is NULL.
horizon	NameString	The name of the default horizon used for the system plan. You can override this horizon with a different one when you run a solve. This field is optional. This field is completed during data migration and defaults to the first horizon that has a solve mode equal to the system plan name.

System Option Table

The System Option table specifies user-configurable system options associated with each system plan. You must complete the System_Option table during installation or initial set up of Production and Distribution Planning.

Field	Data Type	Description
domain_type	NameString	The type of domain for this system option. Values are: SYSTEM: System-wide system option LOCATION: Location-specific system option; valid only for the system option FIXED_PRODUCTION_TIMEFENCE
domain_name	NameString	The name of the domain within the domain type. A valid value for domain type SYSTEM is PDP. Valid value for domain_type LOCATION is a location code.
plan_name	NameString	A primary key field. This field is a foreign key to the PlanRegistry table. The name of the system plan within the domain type.
system_option	NameString	A primary key field. The name of the system option. When domain_type is SYSTEM and domain_name is PDP, use the PDP or CPLEX system options. When domain_type is SYSTEM and domain_name is VL, use the Vehicle Loading system options. When domain_type is LOCATION and domain_name is a location code, FIXED_PRODUCTION_TIMEFENCE is the only valid system option.
value	NameString	The value of the system option.
datatype	NameString	The data type of the system option.
description	TextString	A description of the system option.

System_OptionValues Table

The System_OptionValues table defines all of the valid system options and system option values for Production and Distribution Planning and Vehicle Loading. Do not modify the System_OptionValues table.

Field	Data Type	Description
domain_type	NameString	<p>A primary key field.</p> <p>The type of domain for this system option. Values are:</p> <p>SYSTEM: Application-wide system option</p> <p>LOCATION: Location-specific system option.</p>
domain_name	NameString	<p>A primary key field.</p> <p>The name of the domain within the domain type. Values for domain_type SYSTEM is PDP</p> <p>Valid value for domain_type LOCATION is NULL</p>
system_option	NameString	<p>A primary key field.</p> <p>The name of the system option.</p> <p>When domain_type is SYSTEM and domain_name is PDP, use the PDP or CPLEX system options.</p> <p>When domain_type is SYSTEM and domain_name is VL, use the Vehicle Loading system options.</p> <p>When domain_type is LOCATION and domain_name is a location code, FIXED_PRODUCTION_TIMEFENCE is the only valid system option.</p>

Field	Data Type	Description
description	TextString	<p>A description of the system option value.</p> <p>Each description is prefaced with a tag to indicate the component associated with the system option. The tags are as follows:</p> <p>3D: Affects all of the PDP components</p> <p>3D_HS: Affects the PDP HS solver</p> <p>3D_LP: Affects the PDP Supply Planning</p> <p>VL: Affects all of the Vehicle Loading components</p> <p>VL_SOLVE: Affects the Vehicle Loading solver</p>
valid_values	TextString	See options_value field description for a reference to the data type values.
default_value	TextString	The default value for the system option.
datatype	NameString	The data type of the system option. See the default_value field description for a reference to the data type values.

APPENDIX AA

Workgroup Management Tables

This appendix discusses EnterpriseOne Production and Distribution Planning Workgroup Management tables and their fields. You can edit data in these tables using System Administration views.

Workgroup Management tables are:

- Role
- RoleViewIdl
- WorkGroup
- WorkGroupRole
- WorkGroupView
- WorkgroupCommand

Role Table

This table specifies the user roles supported by Production and Distribution Planning.

Field	Data Type	Description
name	NameString	A primary key field. The unique name of the user role. This table is installed with the SystemAdmin user role.
description	TextString	Describes the user role. This field is optional.

RoleViewIdl Table

This table stores the IDL related to the SCV view that has been configured specially for the workgroup and/or role.

Field	Data Type	Description
system	NameString	A primary key field. Specifies the name of the owning system.
location	NameString	A primary key field Identifies the location of the view IDL configuration.
workgroup	NameString	A primary key field Stores the name of the work group for the IDL view.
role	NameString	A primary key field Specifies the role that this view IDL is configured for. * for all roles within the workgroup.
view_name	NameString	This is primary key field. Stores the name of the SCV view. This field is a foreign key reference to the SCV_View.name field.
idl_type	NameString	A primary key field. Stores the type of the IDL that is being stored. Valid types are: <ul style="list-style-type: none"> • VT • MT • MS
status	NameString	Stores the status of the IDL configuration. This field is reserved for future use.
update_data	Date	Stores the last update date of the view IDL. This field must be filled.
idl_string	LongString	Stores the IDL string. If this field is undefined, then the actual IDL string is stored at the location's local resource directory.

WorkGroup Table

This table specifies the available work groups. The WorkGroup table also specifies the data that is visible in each work group. Data can be filtered on parameters such as product, location, BOMR, category types for reporting, and more. Work group parameters also define the horizon for solves and bucketed reports.

Field	Data Type	Description
system	NameString	A primary key field. The name of the system that owns this work group. Values are: PDP: EnterpriseOne Production and Distribution Planning VL: EnterpriseOne Vehicle Loading
name	NameString	A primary key field. The unique name of the work group.
owner	NameString	The owner of the work group. This does not have to be a user id. It can be a classification code. This field is optional.
description	TextString	Describes the work group. This field is optional.
par_workgroup	TextString	Stores the parameter value for work group selection. This field is optional. This field is reserved for future use.
par_workgroup_owner	TextString	Stores the parameter value for work group owner selection. This field is optional. This field is reserved for future use.

Field	Data Type	Description
par_horizon	TextString	<p>Displays data by time period in the views.</p> <p>This horizon should be the same as the default horizon that is specified for the system plan used by the work group. The par_plan field of this table specifies the system plan used by the work group. The horizon field of the PlanRegistry table specifies the default horizon for the system plan.</p> <p>You must complete this field if the work group includes views that display data by time period.</p>
par_plan	TextString	<p>The system plan that the views use to display solve data and the default system plan used by the solver. You must complete this field to run the solvers and view solve data. You can assign each work group only one system plan at a time.</p>
par_base_plan	TextString	<p>The system plan that EnterpriseOne Production and Distribution Planning uses as the base plan when solve results are compared in the Report_DEPLOYMENT_NET_CHANGE and Report_NET_REQUIREMENTS_NET_CHANGE views. You must complete this field if the work group includes the Report_DEPLOYMENT_NET_CHANGE view or the Report_NET_REQUIREMENTS_NET_CHANGE view.</p> <p>Reserved for future use.</p>
par_location	TextString	<p>The views display data for these locations only. You can add multiple location codes in this field. If you do not complete this field, the views display data for all locations. This field is optional.</p>

Field	Data Type	Description
par_location_category	TextString	<p>The Report_INVENTORY_STATUS_LOCATION_CATEGORY view displays data for all locations in the specified location category.</p> <p>You should complete this field if the Report_INVENTORY_STATUS_LOCATION_CATEGORY view is included in the work group.</p> <p>If you do not complete this field, the Report_INVENTORY_STATUS_LOCATION_CATEGORY view displays all categories that contain locations assigned to the work group. In each category, you can see only the locations specified in the par_location parameter for the work group. If two categories contain the same location, only the first category record displayed in the view shows information for the location.</p>
par_product	TextString	Displays these products and product groups only. You can add multiple product and product group codes in this field. If you do not complete this field, the views display data for all products and product groups. This field is optional.
par_product_owner	TextString	Displays product data for these planners only. You can add multiple planners in this field. If you do not complete this field, the views display product data for all planners. This field is optional.

Field	Data Type	Description
par_product_category	TextString	<p>The Report_INVENTORY_STATUS_PRODUCT_CATEGORY view displays data for all products in the product category.</p> <p>You should complete this field if the Report_INVENTORY_STATUS_PRODUCT_CATEGORY is included in the work group.</p> <p>If you do not complete this field, the Report_INVENTORY_STATUS_PRODUCT_CATEGORY view displays all categories that contain products assigned to the work group. In each category, you can only see the products specified in the par_product parameter for the work group. If two categories contain the same product, only the first category record displayed in the view shows information for the product.</p>
par_BOMR	TextString	Displays data for these BOMR items only. You can add multiple BOMR items in this field. If you do not complete this field, the views display data for all BOMR items. This field is optional.
par_BOMR_owner	TextString	Displays data for these BOMR item owners only. You can add multiple BOMR item owners in this field. If you do not complete this field, the views display item data for all BOMR item owners. This field is optional.
par_lane	TextString	Displays data for these lanes only. Only EnterpriseOne Vehicle Loading uses this parameter. This field is optional.
par_reserved_1	TextString	This field is reserved for future use.
par_reserved_2	TextString	This field is reserved for future use.
export_format	NameString	Chooses one of the following formats for export: tab delimited, HTML, XML.
export_interval	Integer	Displays the auto export frequency in minutes

WorkGroupRole Table

This table specifies the user role and work group associations.

Field	Data Type	Description
system	NameString	<p>A primary key field.</p> <p>The name of the owning system.</p> <p>Values are:</p> <ul style="list-style-type: none"> • PDP: EnterpriseOne Production and Distribution Planning • VL: EnterpriseOne Vehicle Loading
workgroup	NameString	<p>A primary key field.</p> <p>This field is a foreign key to the WorkGroup table.</p> <p>The unique name of the work group.</p>
role	NameString	<p>A primary key field.</p> <p>This field is a foreign key to the Role table.</p> <p>The unique name of the user role associated with the work group.</p>

WorkGroupView Table

This table specifies the views that are included in each work group. The WorkGroupView table is installed with the Admin views assigned to the System work group and all of the views assigned to the Default work group.

Field	Data Type	Description
system	NameString	<p>A primary key field.</p> <p>The name of the system that owns the work group. Values are:</p> <ul style="list-style-type: none"> • PDP: EnterpriseOne Production and Distribution Planning • VL: EnterpriseOne Vehicle Loading
workgroup	NameString	<p>A primary key field.</p> <p>The unique name of the work group.</p>

Field	Data Type	Description
view_name	NameString	A primary key field. The name of the view included in the work group.
pre_load	Char Y or N	A yes or No field, which determines if the user wants to pre-load the view. Pre-loaded views are required to do auto export
auto_export	Char Y or N	A yes or No field, which determines if the user wants to run auto export on the view

APPENDIX AB

Vehicle Loading Tables

This appendix discusses:

- Understanding the Vehicle Loading data model
- Field descriptions for Vehicle Loading tables
- Tables in common with Production and Distribution Planning

Understanding the Vehicle Loading Data Model

- Data model basics
- Data and storage types

Data Model Basics

The descriptions of the tables in the Vehicle Loading data model include the field names, key fields, and data types. For every table:

- Primary key fields must not contain NULL values
- Character data fields, referred to as strings, are stored as variable length fields. There is no blank padding, resulting in efficient storage. The string lengths for each storage type are the maximum field sizes, in characters.
- Tables and fields must be completed unless otherwise indicated.

Data and Storage Types

The data types for the Vehicle Loading fields in the tables are listed in the following table:

Data Type	Storage Type	Description
NameString	string 80	Character string class to hold readable names and codes
TextString	string 255	Character string class to hold free text descriptions.
LocationCode	string 80	String to hold location codes.
ItemCode	string 80	String to hold location codes.

Data Type	Storage Type	Description
LaneCode	string 80	String to hold lane codes
CharString	string 1	Character string to hold single character options.
YorN	string 1	Indicates yes or no. Values are: Y: Yes N: No
UOM	string 80	Unit of measure.
Double	NMX_double	Double precision floating point.
Quantity	NMX_double	Stores quantities. Usually associated with a unit of measure.
Cost	NMX_double	Stores usage or penalty costs.
Integer	NMX_integer	All integers
Count	NMX_integer	Holds non-negative integers
Boolean	string 1	Indicates true or false. Values are: 0: False 1: True
Date	NMX_date	Integration and Data Flows (IDF) date-time in format %d-%b-%Y %H: %M: %S. Date-time fields are mapped to the database's date-time format.
Rate	NMX_double	Holds conversion rates, factors, or ratios.
LongString	LONG	Character string class to hold long strings.

Field Descriptions for Vehicle Loading Tables

This section describes each field and its function for the Vehicle Loading tables:

- Facility Management tables
- VL_Item
- VL_Horizon
- VehicleType table

- Carrier
- Carrier_VehicleType
- Carrier_Location
- ShippingCost
- VehicleCommitment
- Load Constraint Management tables
- Item_Item
- Item_VehicleType
- Location_VehicleType
- Dynamic Data tables
- VL_Order
- VL_OrderItem
- VehicleLoad
- VehicleLocationItem

Note. All Vehicle Loading Facility Management and Load Constraint Management tables are part of the static data mode.

Facility Management Tables

Facility management tables contain data about vehicles, carriers, and products in the distribution network. The facility management tables are:

- VL_Item
- VL_Horizon
- VehicleType table
- Carrier
- Carrier_VehicleType
- Carrier_Location
- ShippingCost
- VehicleCommitment

Vehicle Loading Facility Management tables are part of the static data model.

VL_Item Table

The VL_Item table defines product information specific to Vehicle Loading. This table contains one entry for each product in the distribution network.

Field	Data Type	Description
item-code	NameString	A primary key field. The unique code identifying the product. This is a foreign key to the Item table.
VL_grabZ_size	Integer	Multiples of the standard shipping unit to be used as the desired grab size for vehicle loading. The default value is 1. This field is optional.
VL-grab_size_min	Integer	Multiples of the standard shipping unit to be used as a minimum grab size for vehicle loading. If this value is >VL_grab_size, then both values are defaulted to 1 by the Vehicle Loader solver. The default value is 1. This field is optional
weight	Double	The weight of this product per shipping unit for vehicle loading. This weight should include weight of pallet or container used for shipping. The unit of measure for this weight is specified by the weight_unit field. The default is 1.0. This field is optional
weight_unit	UOM	The unit of measure for the weight field.
volume	Double	The volume needed per shipping unit of this product in the vehicle. This volume is expressed in the unit specified by the volume_unit field. This field is for information only; the data is not used by the Vehicle Loading solver. The default is 1.0. This field is optional.
volume_unit	UOM	The unit of measure for the volume field. This field is for information only;; the data is not used by the Vehicle Loading solver
pull_fwd_cost	Double	The penalty cost applied per day that the order is pulled forward. The default is 0.0.

Field	Data Type	Description
spots_used	Integer	The number of spots needed per shipping unit of this product for vehicle loading. The default is 1.
stackable	Integer	Number of levels the product can be stacked for vehicle loading. A value of 0 (zero) means the product is not stackable. The default is 1.
foot_print	Integer	The number of floor spots needed to store a shipping unit of this product in the vehicle if the product is to be placed on the floor. The default is 1. This field is optional.
userfield_1 to userfield_3	TextString	User-defined fields.

VL_Horizon Table

The VL_Horizon table specifies the vehicle loading horizon for each origin location. The VL_Horizon table contains one entry for each source location.

Field	Data Type	Description
code	LocationCode	A primary key field. A unique code identifying the origin location. This field is a foreign key to the Location table
VL_horizon	Integer	The planning horizon for Vehicle Loading. It is expressed in number of days at this source location. The default is 1.
VL_horizon_start	Integer	The planning horizon offset for Vehicle Loading. It is expressed in number of days from the current date at this source location. The default is 1.

VehicleTypeTable

The VehicleType table specifies the vehicle types available for building loads.

Field	Data Type	Description
code	NameString	A primary key field. A unique code identifying the vehicle type.
description	TextString	A description of the vehicle type. This field is optional

Field	Data Type	Description
products_per_vehicle_max	Integer	The maximum number of products per vehicle of this vehicle type. This field is optional The default is specified in the SystemOption table by products_per_vehicle_max. If this system option is not specified, the default is 1.
products_per_vehicle_min	Integer	The minimum number of products per vehicle of this vehicle type. This field is optional The default is specified in the SystemOption table by products_per_vehicle_min. If this system option is not specified, the default is 1.
spots_capacity	Integer	The number of total spots available in a vehicle of this type. If this value is less than 0, the Vehicle Loading solver ignores this record
spots_capacity_floor	Integer	The number of floor spots available in a vehicle of this type.
spots_usage_max	Double	The maximum percentage of total spots usage allowed. This field is optional. The default is specified in the System_Option table by vehicle_capacity_max.
spots_usage_min	Double	The minimum percentage of total spots usage allowed. This field is optional. The default is specified in the System_Option table by vehicle_capacity_min.
transport_mode	NameString	A unique code identifying the mode of transportation for this vehicle type. This value is used as a basis to select vehicle types that can be used for a deployment by matching this field with the transport_mode field in the VL_Order table.
volume_capacity	Double	The maximum amount of volume capacity the vehicle can support, in units specified by volume_capacity_unit.
volume_capacity_unit	OUM	A unique code identifying the unit of measure associated with the volume_capacity field. This field is a foreign key to the UnitConversion table.

Field	Data Type	Description
volume_usage_max	Double	The maximum percentage of volume usage allowed. The default is specified in the System_Option table by vehicle_capacity_max.
volume_usage_min	Double	The minimum percentage of volume usage allowed. The default is specified in the System_Option table by vehicle_capacity_min.
weight-capacity	Double	The maximum amount of weight capacity supported by vehicles of this type, in unites specified by weight_capacity_unit.
weight_capacity_unit	UOM	A unique code identifying the unit of measure associated with weight_capacity. This is a foreign key to the UnitConversion table.
weight_usage_max	Double	The maximum percentage of weight usage allowed. The default is specified in the System_Option table by vehicle_capacity_max. This field is optional
weight_usage_min	Double	The minimum percentage of weight usage allowed. The default is specified in the System_Option table by vehicle_capacity_min. This field is optional.
userfied_1 to userfield_3	TextString	User-defined fields.

Carrier Table

The Carrier table specifies the carriers used by the enterprise.

Field	Data Type	Description
code	NameString	A primary key field. A unique code identifying the carrier.
description	TextString	A description of the carrier.
userfied_1 to userfield_3	TextString	User-defined fields.

Carrier_VehicleType Table

The Carrier_VehicleType table specifies the vehicle types supplied by the carrier and the number of available vehicles.

Field	Data Type	Description
carrier_code	NameString	A primary key field. A unique code identifying the carrier. This is a foreign key to the Carrier table.
vehicle_type_code	NameString	A primary key field. A unique code identifying the vehicle type. This is a foreign key to the VehicleType table.
number_of_vehicles	Integer	The number of vehicles of this vehicle type that the carrier has available. This default is 0.
under_weight_cost	Double	The penalty cost per unit of weight-unit for violating the minimum weight usage. The default is 0.0 This field is optional.
over_weight_cost	Double	The penalty cost per unit of weight-unit for violating the maximum weight usage. The default is 0.0 This field is optional.
under_sports_cost	Double	The penalty cost per spot for violating the minimum spots usage. The default is 0.0. This field is optional.
under_sports_cost	Double	The penalty cost per spot for violating the maximum spots usage. The default is 0.0. This field is optional.
over_sports_cost	Double	The penalty cost per spot for violating the maximum spots usage. The default is 0.0. This field is optional.
userfield_1 to userfield_3	TextString	User-defined fields.

Carrier_Location Table

The Carrier_Location table specifies the carriers that service each location. Carriers can service a location as a destination or as a source.

Field	Data Type	Description
carrier_code	NameString	A primary key field. A unique code identifying the carrier. This field is a foreign key to the Carrier table
location_code	LocationCode	A primary key field. A unique code identifying the location. This field is a foreign key to the Location table.
as_destination	YorN	Indicates if the carrier can service the location as destination. Values are: Y: Yes N: No
as_origin	YorN	Indicates if the carrier can service the location as origin. Values are: Y: Yes N: No
userfield_1 to userfield_3	TextString	User-defined fields.

ShippingCost Table

The ShippingCost table specifies the costs associated with using each combination of lane, carrier, and vehicle type.

Field	Data Type	Description
carrier_code	NameString	A primary key field. A unique code identifying the carrier. This field is a foreign key to the Carrier table
lane_code	LaneCode	A primary key field. A unique code identifying the lane. This field is a foreign key to the Lane table.
vehicleType_code	NameString	A primary key field. A unique code identifying the vehicle type. This field is a foreign key to the VehicleType table.
cost	Cost	The cost of using this lane as charged by the carrier for this vehicle type. The default is 1.0. This field is optional.

Field	Data Type	Description
time	Quantity	The expected time in days to travel this lane for this vehicle type. The default is 0.0. Note. Make sure that the value in this field is equal to the lead time that is associated with the transport mode in the Production and Distribution Planning LaneShipProc table.
userfied_1 to userfield_3	TextString	User-defined fields.

VehicleCommitment Table

The VehicleCommitment table specifies vehicles that have been committed for use. The data in this table includes the minimum number of vehicles of one type for one carrier that are committed on a lane. The VehicleCommitment table is optional.

Field	Data Type	Description
carrier_code	NameString	A primary key field. A unique code identifying the carrier. This field is a foreign key to the Carrier table.
lane_code	LaneCode	A primary key field. A unique code identifying the lane. This field is a foreign key to the Lane table.
vehicleType_code	NameString	A primary key field. A unique code identifying the vehicle type. This field is a foreign key to the VehicleType table.
travelling_date	Date	A primary key field. The date for which this vehicle is committed.
Number of vehicles	Integer	The minimum number of vehicles of this type from this carrier that are committed for this lane on this day. The default is 0.0.
userfied_1 to userfield_3	TextString	User-defined fields.

Load Constraint Management Tables

Load Constraint management tables contain data about the load building constraints. Constraints include rules about products that cannot be placed together on the same vehicle and rules about products that cannot be placed on certain vehicle types.

Item_Item Table

The Item_Item table specifies products that cannot be placed together in the same load. The Item_Item table is optional.

Field	Data Type	Description
source_item_code	ItemCode	A primary key field. A unique code identifying the source product that is incompatible with the target product for loading vehicles. You can specify individual products or product groups. This field is a foreign key to the Item table.
target_item_code	ItemCode	A primary key field. A unique code identifying the target product that is incompatible with the source product for loading vehicles. You can specify individual products or product groups. This field is a foreign key to the Item table.
userfied_1 to userfield_3	TextString	User-defined fields.

Item_VehicleType Table

The Item_VehicleType table specifies products that cannot be loaded onto specific vehicle types. The Item_VehicleType table is optional.

Field	Data Type	Description
item_code	ItemCode	A primary key field. A unique code identifying a product that cannot be placed on the vehicle type. You can specify individual products or product groups. This field is a foreign key to the Item table.
vehicleType_code	NameString	A primary key field. A unique code identifying the vehicle type that cannot transport a particular product. This field is a foreign key to the VehicleType table.
userfied_1 to userfield_3	TextString	User-defined fields.

Location_VehicleType Table

The Location_VehicleType table specifies locations that cannot accommodate certain vehicle types. The Location_VehicleType table is optional.

Field	Data Type	Description
location_code	ItemCode	A primary key field. A unique code identifying the location that cannot accommodate the vehicle type. This field is a foreign key to the Location table.
vehicleType_code	NameString	A primary key field. A unique code identifying the vehicle type that the location cannot accommodate. This field is a foreign key to the VehicleType table.
userfield_1 to userfield_3	TextString	User-defined fields.

Dynamic Data Tables

Dynamic data changes regularly. Information about orders and loads is dynamic. Dynamic data is imported either from an external system or from the Vehicle Loading solver at regular intervals.

VL_Order Table

The VL_Order table specifies the deployments that are published by Production and Distribution Planning and imported into Vehicle Loading. This table contains one entry for each published deployment.

Field	Data Type	Description
plan_name	NameString	A primary key field. The name of the system plan that is used to generate this data.
order_number	NameString	A primary key field. A unique number identifying the order. This is initially generated by the Production and Distribution Planning solver.
origin_loc_code	LocationCode	A unique code identifying the location at which the shipment originates. This field is a foreign key to the Location table.
destination_loc_code	LocationCode	A unique code identifying the location where the shipment is to arrive. This field is a foreign key to the Location table.

Field	Data Type	Description
transport_mode	NameString	A unique code identifying the mode of transportation used for this deployment. This field is a foreign key to the LaneShipProc table.
earliest_ship_date	Date	The earliest when the product can be shipped from the originating location.
ship_window	Integer	The time window, in days, during which the product can be shipped without being late. Latest shipping date = ship date + ship window. The default is 0.0.
earliest_arrive_date	Date	The earliest date when the product can arrive at the destination location
arrive_window	Integer	The time window, in days, during which the deployment can arrive without being late. Latest arrive date = arrive date + arrive window. The default is 0.0.
status	NameString	The status of the order. This field is optional.
status_date	Date	The date-time when the status of the record is changed. This date is set by the system. This field is optional
planned-by	NameString	If the record is entered manually, this is the name of the user who generated or created this entry. If the record is generated by the Production and Distribution Planning solver, this is the name of the horizon. This field is optional.
planner_comment	TextString	A comment that can be added by the planner through the approval GUI.
hightest_priority	Integer	Reserved for future use.

Field	Data Type	Description
Pull_forward	Double	The number of days that the deployment can be pulled forward. The value in this field must be an integer. This field is optional.
userfield_1 to userfield_3	TextString	User-defined fields.

VL_OrderItem Table

The VL_OrderItem table specifies the products for each deployment. Production and Distribution Planning generates the data in the VL_OrderItem table. The data is published from Production and Distribution Planning, and then it is imported in Vehicle Loading.

Field	Data Type	Description
plan_name	NameString	A primary key field. The name of the system plan that is used to generate this data. The system plan name is specified by the horizon used in the solve.
order_number	NameString	A primary key field. A unique number identifying the order. This is initially generated by the Production and Distribution Planning solver.
item_code	ItemCode	A primary key field. A unique code identifying the product that is included in the deployment. This field is a foreign key to the Item table.
qty_unit	UOM	A unique code identifying the unit of measure used for the quantity. The default is the standard shipping unit for the product.
quantity	Quantity	The quantity of product to be shipped.
quantity_max	Quantity	The maximum quantity to be shipped for this product. This field is optional.
quantity_min	Quantity	The minimum quantity of the product to be shipped. This field is optional.
over_cost	Quantity	The penalty cost for shipping more than the requested quantity. This field is optional.
under_cost	Quantity	The penalty cost for shipping less than the requested quantity.

Field	Data Type	Description
planner_comment	TextString	A comment that can be added by the planner through the views. This field is optional.
userfield_1 to userfield_3	TextString	User-defined fields.

VehicleLoad Table

The VehicleLoad table specifies the vehicle loading plan generated by the vehicle Loading solver. The system completes the VehicleLoad table when you import vehicle loads produced by the Vehicle Loading solver.

Field	Data Type	Description
load_number	NameString	A primary key field. A unique number identifying the load. Initially, this number is generated by the Vehicle Loading solver.
carrier_code	NameString	A unique code identifying the carrier used for this load.
destination_loc_code	LocationCode	A unique code identifying the destination location. This field is a foreign key to the Location table.
origin_loc_code	LocationCode	A unique code identifying the location at which the shipment originates. This field is a foreign key to the Location table.
receiving_date	Date	The expected date-time when the shipment is to be received at the destination location.
shipping_date	Date	The expected date-time when the shipment is to leave the originating location.

Field	Data Type	Description
status	NameString	The status of the load. Values are: Planned: the status of the load when it is first generated by the Vehicle Loading solver. Approved: The status of the load when it has been approved by a planner Published: The load is approved and is written to an export file Rejected: the load has been rejected for future use
status_date	Date	The date-time when the load is published. This is set by the views. This field is optional.
author	NameString	The name of the planner who most recently changed the status of this load. This field is optional.
author_comment	TextString	A comment that is added by the planner through the views. This field is optional
fixed	YorN	Indicates if the load is to be fixed for the next solve. Values are: Y: The load will be fixed for the next solve N: The load will not be fixed for the next solve
transport_mode	NameString	A unique code identifying the mode of transportation that is to be used for the vehicle load.
vehicleType_code	NameString	A unique code identifying the vehicle type that is to be used for the load. This field is a foreign key to the VehicleType table.
lane_code	NameString	A unique code identifying the lane.
reserved_vehicle	YorN	Indicates if the vehicle is reserved. Values are: Y: The vehicle is reserved N: The vehicle is not reserved
userfield_1 to userfield_3	TextString	User-defined fields.

VehicleLocationItem Table

The VehicleLocationItem table specifies the product composition of the vehicle load as generated by the Vehicle Loading solver. The system completes this table when you import vehicle loads from the Vehicle Loading solver

Field	Data Type	Description
load_number	NameString	A primary key field. A unique number identifying the load. Initially, this number is generated by the Vehicle Loading solver.
item_code	ItemCode	A primary key field. A unique code identifying the product that is to be shipped in this load. This field is a foreign key to the Item table.
plan_name	NameString	A primary key field. The name of the system plan used to generate this data. The system plan name is specified by the horizon that is used in the solve.
order_number	NameString	A primary key field. A unique number identifying the order. Initially, this number is generated by the Production and Distribution Planning solver.
qty_unit	UOM	Reserved for future use. The quantity is assumed to be expressed in the standard shipping unit for the product.
quantity	Quantity	The quantity of the product to be shipped in this load.
lane_code	NameString	A unique code identifying the lane on which the product will travel.

Field	Data Type	Description
minimize_load_mix	YorN	<p>Specifies whether the algorithm for product mix minimization is enabled. Values are:</p> <p>Y: The algorithm for product mix minimization is enabled.</p> <p>N: The algorithm for product mix minimization is not enabled.</p> <p>If you specify N, the original Vehicle Loading algorithm is used, which does not attempt to minimize product mix in vehicle loads.</p> <p>The default is N.</p>
userfield_1 to userfield_3	TextString	User-defined fields.

Tables in Common With Production and Distribution Planning

Data in some tables is used by both Vehicle Loading and Production and Distribution Planning. The tables in common are:

- AlertSource
- AlertSourceView
- Command
- DeleteObject
- DeployOrderAlert
- ExceptionCalendar
- HyperLink
- HyperLinkMap
- IntegrityCheck
- Item
- ItemExceptionCalendar
- ItemFacilityCalendar
- ItemGroup
- Lane
- Location
- PlanRegistry
- Role
- RoleACL

- SCV_View
- System_Option
- System_OptionValues
- SystemAlert
- UnitConversion
- UserRegistry
- UserRole
- ViewParameter
- WorkGroup
- WorkGroupAlert
- WorkGroupCommand
- WorkGroupRole

APPENDIX AC

Foreign and Parent Key Fields

The following table describes the relationship between parent key and foreign key fields in the Production and Distribution Planning and VL data models. Knowledge of this relationship between parent key and foreign key fields is necessary if when you decide to delete data in a view.

Foreign and Parent Key Relationships

This table shows the foreign key fields in the tables that are deleted in the Production and Distribution Planning and VL data models when the parent key field is deleted:

Table Containing Parent Key Field	Parent Key Field	Table Containing Foreign Key Field	Foreign Key Field
SCV_View	system	HyperLink	system
		HyperLinkMap	system
		ViewParameter	system
		AlertSourceView	system
	name	HyperLink	source_view
		HyperLinkMap	source_view
		ViewParameter	view_name
		WorkGroupView	view_name
		AlertSourceView	name
HyperLink	system	HyperLinkMap	system
	source_view	HyperLinkMap	source_view
	link_type	HyperLinkMap	link_type
	link_field	HyperLinkMap	link_field

Table Containing Parent Key Field	Parent Key Field	Table Containing Foreign Key Field	Foreign Key Field
WorkGroupCommand	system	RoleACL	system
	workgroup	RoleACL	workgroup
	command	RoleACL	target_name
WorkGroup	system	WorkGroupView	system
		UserRole	system
		WorkGroupCommand	system
		WorkGroupRole	system
		WorkGroupAlert	system
		WorkGroupView	system
	name	WorkGroupView	workgroup
		UserRole	workgroup
		WorkGroupCommand	workgroup
		WorkGroupRole	workgroup
		WorkGroupAlert	workgroup
WorkGroupAlert	system	RoleACL	system
	workgroup	RoleACL	workgroup
	alert_type	RoleACL	target_name
UserRegistry	user_id	UserRole	user_id
WorkGroupRole	system	RoleACL	system
	workgroup	RoleACL	workgroup
	role	RoleACL	system

Table Containing Parent Key Field	Parent Key Field	Table Containing Foreign Key Field	Foreign Key Field
Item	code	ItemFacility	item_code
		ItemExceptionCalendar	item_code
		ItemGroup	child_code
		UnitConversion	product
		SafetyNetLoc	item_code
		ForecastProfile	product_code
		ProductSubstitute	product_code
		LocResCap	item_code
		Sourcing	item_code
		LaneShipItem	item_code
		VL_Item	item_code
		Item_VehicleType	item_code

Table Containing Parent Key Field	Parent Key Field	Table Containing Foreign Key Field	Foreign Key Field
Location	code	ExceptionCalendar	location_code
		LocationCategory	location_code
		ItemFacility	location_code
		ItemExceptionCalendar	location_code
		StorageType	location_code
		StorageTypeCap	location_code
		SafetyNetLoc	location
		ForecastProfile	location_code
		ProductSubstitute	location_code
		LocMfg	location_code
		LocResCap	location_code
		VL_Horizon	code
		Carrier_Location	location_code
		Lane	origin_loc_code
		Lane	destination_loc_code
		Location_VehicleType	location_code
ItemFacility	location_code	ItemExceptionCalendar	location_code
	item_code	ItemExceptionCalendar	item_code
StorageType	location_code	StorageTypeCap	location_code
	storage_type	StorageTypeCap	storage_type
Lane	code	LaneShipProc	lane_code
		LaneShipCap	lane_code
		DeployReviewCalendar	lane_code
		Sourcing	lane_code
		LaneShipItem	lane_code
		ShippingCost	lane_code

Table Containing Parent Key Field	Parent Key Field	Table Containing Foreign Key Field	Foreign Key Field
LaneShipProc	lane_code	LaneShipItem	lane_code
CustomerOrder	order_number	CustomerOrderItem	order_number
Shipment	shipment_number	ShipmentItem	shipment_number
ShippingCost	carrier_code	VehicleCommitment	carrier_code
	lane_code	VehicleCommitment	lane_code
	vehicleType_code	VehicleCommitment	vehicleType_code
ManufacturingProcess	name	LocMfg	mfg_code
MfgOperation	name	LocMfgRouting	process_name
		AlternateResource	process_name
MfgOperationBOMR	name	LocMfgRouting	process_name
		AlternateResource	process_name
MfgRouting	name	LocMfgRouting	process_name
		AlternateResource	process_name
MfgRoutingDef	name	LocMfgRouting	process_name
		AlternateResource	process_name
Carrier	code	Carrier_Location	carrier_code
		Carrier_VehicleType	carrier_code
		ShippingCost	carrier_code
		VehicleCommitment	carrier_code
Role	name	WorkGroupRole	role
		UserRole	role
		RoleACL	role

Table Containing Parent Key Field	Parent Key Field	Table Containing Foreign Key Field	Foreign Key Field
VehicleType	code	ShippingCost	vehicleType_code
		VehicleCommitment	vehicleType_code
		Location_VehicleType	vehicleType_code
		Item_VehicleType	vehicleType_code
		Carrier_VehicleType	vehicleType_code
		VehicleLoad	vehicleType_code
VL_Order	plan_name	VL_OrderItem	plan_name
		VehicleLoadItem	plan_name
	order_number	VL_OrderItem	order_number
		VehicleLoadItem	order_number
VehicleLoad	load_number	VehicleLoadItem	load_number
WorkOrder	code	WorkOrderBOMR	work_order_code
		WorkOrderOperations	work_order_code
		WorkOrderCustomerOrder	work_order_code

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