JD Edwards EnterpriseOne Applications

Forecast Management Implementation Guide

9.2

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Preface

Welcome to the JD Edwards EnterpriseOne documentation.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at *http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc* .

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit *http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info* or visit *http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs* if you are hearing impaired.

Related Information

For additional information about JD Edwards EnterpriseOne applications, features, content, and training, visit the JD Edwards EnterpriseOne pages on the JD Edwards Resource Library located at:

http://learnjde.com

Conventions

The following text conventions are used in this document:

Convention	Meaning
Bold	Boldface type indicates graphical user interface elements associated with an action or terms defined in text or the glossary.
Italics	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`Monospace`	Monospace type indicates commands within a paragraph, URLs, code examples, text that appears on a screen, or text that you enter.
> Oracle by Example	Indicates a link to an Oracle by Example (OBE). OBEs provide hands-on, step- by-step instructions, including screen captures that guide you through a process using your own environment. Access to OBEs requires a valid Oracle account.

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1 Introduction to JD Edwards EnterpriseOne Forecast Management

JD Edwards EnterpriseOne Forecast Management Overview

Effective management of distribution and manufacturing activities begins with understanding and anticipating market needs. Forecasting is the process of projecting past sales demand into the future.

Implementing a forecasting system enables you to assess current market trends and sales quickly so that you can make informed decisions about the operations.

You can use forecasts to make planning decisions about:

- Customer orders.
- Inventory.
- Delivery of goods.
- Work load.
- Capacity requirements.
- Warehouse space.
- Labor.
- Equipment.
- Budgets.
- Development of new products.
- Work force requirements.

JD Edwards EnterpriseOne Forecast Management Integrations

The JD Edwards EnterpriseOne Forecast Management system from Oracle is one of many systems that make up Oracle's JD Edwards EnterpriseOne Supply Chain Management module. You can use the JD Edwards EnterpriseOne Supply Chain Management module to coordinate the inventory, raw material, and labor resources to deliver products according to a managed schedule.

JD Edwards EnterpriseOne Supply Chain Management is fully integrated and ensures that information is current and accurate across the business operations. It is a closed loop manufacturing system that formalizes the activities of company and operations planning, as well as the execution of those plans.

The JD Edwards EnterpriseOne Forecast Management system generates demand projections that you use as input for the JD Edwards EnterpriseOne planning and scheduling systems from Oracle. The planning and scheduling systems calculate material requirements for all component levels from raw materials to complex subassemblies.

JD Edwards EnterpriseOne Resource Requirements Planning

The JD Edwards EnterpriseOne Resource Requirements Planning (RRP) system from Oracle uses forecasts to estimate the time and resources that are needed to make a product.

Master Production Schedule

The Master Production Schedule (MPS) plans and schedules the products that the company expects to manufacture. Forecasts are one MPS input that help determine demand before you complete the production plans.

Material Requirements Planning

Material Requirements Planning (MRP) is an ordering and scheduling process that breaks down the requirements of all MPS parent items to the component levels. You can also use forecasts as input for lower level MRP components that are service parts with independent demand, which is demand not directly or exclusively tied to production of a particular product at a particular branch or plant.

Distribution Requirements Planning

Distribution Requirements Planning (DRP) is a management system that plans and controls the distribution of finished goods. You can use forecasts as input for DRP so that you can more accurately plan the demand that you supply through distribution.

JD Edwards EnterpriseOne Forecast Management Implementation

This section provides an overview of the steps that are required to implement the JD Edwards EnterpriseOne Forecast Management system.

In the planning phase of the implementation, take advantage of all JD Edwards EnterpriseOne sources of information, including the installation guides and troubleshooting information.

When determining which electronic software updates (ESUs) to install for JD Edwards EnterpriseOne Forecast Management, use the EnterpriseOne and World Change Assistant. EnterpriseOne and World Change Assistant, a Java-based tool, reduces the time required to search and download ESUs by 75 percent or more and enables you to install multiple ESUs at one time.

See *JD Edwards EnterpriseOne Tools Software Updates Guide* .

For information about the Oracle Business Accelerator solution for implementation of JD Edwards EnterpriseOne Forecast Management, review the documentation available.

See *http://docs.oracle.com/cd/E24705_01/index.htm* .

Global Implementation Steps

This table lists the global implementation steps for the JD Edwards EnterpriseOne Forecast Management system:

- Set up global user-defined code tables.

  See *"Working with User Defined Codes" in the JD Edwards EnterpriseOne Tools Runtime Administration Guide* .

- Set up fiscal date patterns, companies, and business units.

  See *"Setting Up Organizations" in the JD Edwards EnterpriseOne Applications Financial Management Fundamentals Implementation Guide* .

- Set up system next numbers.

  See *"Setting Up Next Numbers" in the JD Edwards EnterpriseOne Applications Financial Management Fundamentals Implementation Guide* .

- Set up accounts.

  See *"Creating the Chart of Accounts" in the JD Edwards EnterpriseOne Applications Financial Management Fundamentals Implementation Guide* .

- Set up general accounting constants.

  See *"Setting Up Constants for General Accounting" in the JD Edwards EnterpriseOne Applications General Accounting Implementation Guide* .

- Set up multicurrency processing, including currency codes and exchange rates.

  See *JD Edwards EnterpriseOne Applications Multicurrency Processing Implementation Guide* .

- Set up ledger type rules.

  See *"Setting Up Ledger Types for General Accounting" in the JD Edwards EnterpriseOne Applications General Accounting Implementation Guide* .

- Enter address book records.

  See *"Entering Address Book Records" in the JD Edwards EnterpriseOne Applications Address Book Implementation Guide* .

- Set up default location and printers.

  See *"Working with Report Printing Administration" in the JD Edwards EnterpriseOne Tools Report Printing Administration Technologies Guide* .

- Set up branch/plant constants.

  See *"Defining Branch/Plant Constants" in the JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide* .

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- Set up manufacturing and distribution automatic accounting instructions (AAIs).

  See *"Setting Up AAIs in Distribution Systems" in the   JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide*   .

- Set up document types.

  See *"Setting Up Document Type Information" in the   JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide*   .

- Set up shop floor calendars.

  See *"Setting Up Shop Floor Calendars" in the   JD Edwards EnterpriseOne Applications Shop Floor Management Implementation Guide*   .

- Set up manufacturing constants.

  See *"Setting Up Manufacturing Constants" in the   JD Edwards EnterpriseOne Applications Product Data Management Implementation Guide*   .

Forecast Management Implementation Steps

This table lists the suggested application-specific implementation steps for JD Edwards EnterpriseOne Forecast Management:

- Set up Forecast Management.

  See *Setting Up Forecast Management*.

- Set up sales order history.

  See *Working with Sales Order History*.

- Set up forecast generation.

  See *Working with Detail Forecasts*.

- Set up summary forecasts.

  See *Working with Summary Forecasting*.

- Set up planning bill forecasts.

  See *Working with Planning Bill Forecasts*.

Business Interface Integration Objects

A business interface is a set of components that implementation teams can use to create an integration between JD Edwards EnterpriseOne and an external system. Business interfaces can include one or more of these business interface components:

- Business Services
- Real-Time Events

- Batch Import and Export Programs

For additional information about business interfaces, and the business objects available for this product area, see these topics in the *JD Edwards EnterpriseOne Applications Business Interface Reference Guide* :

- *Business Interfaces Overview*

- *Forecast*

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2 Understanding Forecast Management

Description of Forecast Management

Effective management of distribution and manufacturing activities begins with understanding and anticipating market needs. Forecasting is the process of projecting past sales demand into the future. Implementing a forecasting system enables you to assess current market trends and sales quickly so that you can make informed decisions about the operations.

You can use forecasts to make planning decisions about:

- Customer orders.
- Inventory.
- Delivery of goods.
- Work load.
- Capacity requirements.
- Warehouse space.
- Labor.
- Equipment.
- Budgets.
- Development of new products.
- Work force requirements.

The JD Edwards EnterpriseOne Forecast Management system generates these types of forecasts:

- Detail forecasts, which are based on individual items.
- Summary (or aggregated) forecasts, which are based on larger product groups, such as a product line.
- Planning bill forecasts, which are based on groups of items in a bill of material format and reflect how an item is sold, not how an item is built.

Features of Forecast Management

You can use JD Edwards EnterpriseOne Forecast Management to:

- Generate forecasts.
- Enter forecasts manually.
- Maintain forecasts that are generated by the system and entered manually.
- Create unique forecasts by large customer.
- Summarize sales order history data in weekly or monthly time periods.

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- Generate forecasts that are based on any or all of 12 different formulas that address a variety of forecast situations that you might encounter.

- Calculate which of the 12 formulas provides the best fit forecast.

- Define the hierarchy that the system uses to summarize sales order histories and detail forecasts.

- Create multiple hierarchies of address book category codes and item category codes, which you can use to sort and view records in the detail forecast tables.

- Review and adjust both forecasts and sales order actuals at any level of the hierarchy.

- Integrate the detail forecast records into Master Production Schedule (MPS), Material Requirements Planning (MRP), and Distribution Requirements Planning (DRP) generations.

- Force changes made at any component level to both higher levels and lower levels.

- Set a bypass flag to prevent changes that are generated by the force program being made to a level.

- Store and display original and adjusted quantities and amounts.

- Attach descriptive text to a forecast at the detail and summary levels.

Flexibility is a key feature of JD Edwards EnterpriseOne Forecast Management. The most accurate forecasts consider quantitative information, such as sales trends and past sales order history, as well as qualitative information, such as changes in trade laws, competition, and government. The system processes quantitative information and enables you to adjust it with qualitative information. When you aggregate, or summarize, forecasts, the system uses changes that you make at any level of the forecast to automatically update all of the other levels.

You can perform simulations that are based on the initial forecast to compare different situations. After you accept a forecast, the system updates the manufacturing and distribution plan with any changes that you have made.

The system writes zero or negative detail records. For example, if the quantities or amounts in Refresh Actuals (R3465), Forecast Generation (R34650), or Forecast Revisions (P3460) are zero or negative, the system creates zero or negative records in the Forecast File table (F3460).

Tables Used by Forecast Management

The tables that are used by JD Edwards EnterpriseOne Forecast Management must identify data and processing information to support the forecasting process:

Table	Description
Business Unit Master (F0006)	Identifies branch, plant, warehouse, or business unit information, such as company, description, and assigned category codes.
Address Book Master (F0101)	Stores all of the address information pertaining to customers, vendors, employees, prospects, and others.
Forecast Summary File (F3400)	Contains the summary forecasts that are generated by the system and the summarized sales order history that is created by the Refresh Actuals program (R3465).
Forecast Summary Work File (F34006)	Connects the summary records from the Forecast Summary File table (F3400) to the detail records in the Forecast File table (F3460).

Table	Description
Forecast Prices (F34007)	Stores price information for item, branch, customer, and forecast type combinations.
Forecast File (F3460)	Contains the detail forecasts that are generated by the system and the sales order history that is created by the Refresh Actuals program (R3465).
Category Code Key Position File (F4091)	Stores the summary constants that you set up for each product hierarchy.
Item Master (F4101)	Stores basic information about each defined inventory item, such as item number, description, category codes, and unit of measure.
Item Branch File (F4102)	Defines and maintains warehouse or plant level information, such as costs, quantities, physical locations, and branch level category codes.
Sales Order Detail File (F4211)	Provides sales order demand by the requested date. The system uses this table to update the Sales Order History File table (F42119) for forecast calculations.
Sales Order History File (F42119)	Contains past sales data, which provide the basis for the forecast calculations.

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3 Understanding Forecast Levels and Methods

Forecast Performance Evaluation Criteria

Depending on the selection of processing options and on trends and patterns in the sales data, some forecasting methods perform better than others for a given historical data set. A forecasting method that is appropriate for one product might not be appropriate for another product. You might find that a forecasting method that provides good results at one stage of a product life cycle remains appropriate throughout the entire life cycle.

You can select between two methods to evaluate the current performance of the forecasting methods:

- Percent of accuracy (POA).

- Mean absolute deviation (MAD).

Both of these performance evaluation methods require historical sales data for a period that you specify. This period is called a holdout period or period of best fit. The data in this period is used as the basis for recommending which forecasting method to use in making the next forecast projection. This recommendation is specific to each product and can change from one forecast generation to the next.

Best Fit

The system recommends the best fit forecast by applying the selected forecasting methods to past sales order history and comparing the forecast simulation to the actual history. When you generate a best fit forecast, the system compares actual sales order histories to forecasts for a specific time period and computes how accurately each different forecasting method predicted sales. Then the system recommends the most accurate forecast as the best fit. This graphic illustrates best fit forecasts:

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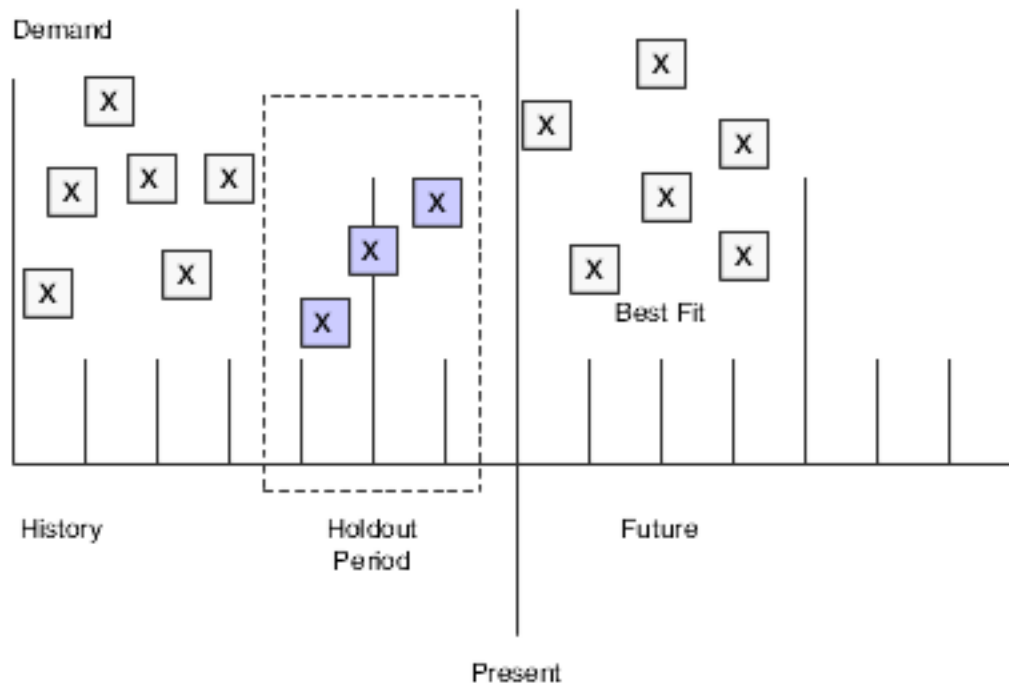
The system uses this sequence of steps to determine the best fit:

1. Use each specified method to simulate a forecast for the holdout period.
2. Compare actual sales to the simulated forecasts for the holdout period.
3. Calculate the POA or the MAD to determine which forecasting method most closely matches the past actual sales.

   The system uses either POA or MAD, based on the processing options that you select.
4. Recommend a best fit forecast by the POA that is closest to 100 percent (over or under) or the MAD that is closest to zero.

Forecasting Methods

JD Edwards EnterpriseOne Forecast Management uses 12 methods for quantitative forecasting and indicates which method provides the best fit for the forecasting situation.

This section discusses:

- Method 1: Percent Over Last Year.
- Method 2: Calculated Percent Over Last Year.
- Method 3: Last Year to This Year.
- Method 4: Moving Average.
- Method 5: Linear Approximation.
- Method 6: Least Squares Regression.
- Method 7: Second Degree Approximation.
- Method 8: Flexible Method.

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- Method 9: Weighted Moving Average.

- Method 10: Linear Smoothing.

- Method 11: Exponential Smoothing.

- Method 12: Exponential Smoothing with Trend and Seasonality.

Specify the method that you want to use in the processing options for the Forecast Generation program (R34650). Most of these methods provide limited control. For example, the weight placed on recent historical data or the date range of historical data that is used in the calculations can be specified by you.

> **Note:** The examples in the guide indicate the calculation procedure for each of the available forecasting methods, given an identical set of historical data.

The method examples in the guide use part or all of these data sets, which is historical data from the past two years. The forecast projection goes into next year.

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 (one year ago)	128	117	115	125	122	137	140	129	131	114	119	137
2 (two years ago)	125	123	115	137	122	130	141	128	118	123	139	133

This sales history data is stable with small seasonal increases in July and December. This pattern is characteristic of a mature product that might be approaching obsolescence.

Method 1: Percent Over Last Year

This method uses the Percent Over Last Year formula to multiply each forecast period by the specified percentage increase or decrease.

To forecast demand, this method requires the number of periods for the best fit plus one year of sales history. This method is useful to forecast demand for seasonal items with growth or decline.

Example: Method 1: Percent Over Last Year

The Percent Over Last Year formula multiplies sales data from the previous year by a factor you specify and then projects that result over the next year. This method might be useful in budgeting to simulate the affect of a specified growth rate or when sales history has a significant seasonal component.

Forecast specifications: Multiplication factor. For example, specify 110 in the processing option to increase the previous year's sales history data by 10 percent.

Required sales history: One year for calculating the forecast, plus the number of time periods that are required for evaluating the forecast performance (periods of best fit) that you specify.

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	128	117	115	125	122	137	140	129	131	114	119	137

This table shows the forecast for next year, 110 Percent Over Last Year:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
141	129	127	138	134	151	154	142	144	125	131	151

January forecast equals 128 × 1.1 = 140.8 rounded to 141.

February forecast equals 117 × 1.1 = 128.7 rounded to 129.

March forecast equals 115 × 1.1 = 126.5 rounded to 127.

Method 2: Calculated Percent Over Last Year

This method uses the Calculated Percent Over Last Year formula to compare the past sales of specified periods to sales from the same periods of the previous year. The system determines a percentage increase or decrease, and then multiplies each period by the percentage to determine the forecast.

To forecast demand, this method requires the number of periods of sales order history plus one year of sales history. This method is useful to forecast short term demand for seasonal items with growth or decline.

Example: Method 2: Calculated Percent Over Last Year

The Calculated Percent Over Last Year formula multiplies sales data from the previous year by a factor that is calculated by the system, and then it projects that result for the next year. This method might be useful in projecting the affect of extending the recent growth rate for a product into the next year while preserving a seasonal pattern that is present in sales history.

Forecast specifications: Range of sales history to use in calculating the rate of growth. For example, specify n equals 4 in the processing option to compare sales history for the most recent four periods to those same four periods of the previous year. Use the calculated ratio to make the projection for the next year.

Required sales history: One year for calculating the forecast plus the number of time periods that are required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation, given n = 4:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	128	117	115	125	122	137	140	129	131	114	119	137
2	None	None	None	None	None	None	None	None	118	123	139	133

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Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Calculation of Percent Over Last Year, given n = 4.

Past year 2 equals 118 + 123 + 139 + 133 = 513.

Past year 1 equals 131 + 114 + 119 + 137 = 501.

ratio percent = (501/513) × 100 percent = 97.66 percent.

This table is the forecast for next year, 97.66 Percent Over Last Year:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
125	114	112	122	119	134	137	126	128	111	116	134

January forecast equals 128 × 0.9766 = 125.00 rounded to 125.

February forecast equals 117 × 0.9766 = 114.26 rounded to 114.

March forecast equals 115 × 0.9766 = 112.31 rounded to 112.

Method 3: Last Year to This Year

This method uses last year's sales for the next year's forecast.

To forecast demand, this method requires the number of periods best fit plus one year of sales order history. This method is useful to forecast demand for mature products with level demand or seasonal demand without a trend.

Example: Method 3: Last Year to This Year

The Last Year to This Year formula copies sales data from the previous year to the next year. This method might be useful in budgeting to simulate sales at the present level. The product is mature and has no trend over the long run, but a significant seasonal demand pattern might exist.

Forecast specifications: None.

Required sales history: One year for calculating the forecast plus the number of time periods that are required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	128	117	115	125	122	137	140	129	131	114	119	137

This table is the forecast for next year, Last Year to This Year:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
128	117	115	125	122	137	140	129	131	114	119	137

January forecast equals January of last year with a forecast value of 128.

February forecast equals February of last year with a forecast value of 117.

March forecast equals March of last year with a forecast value of 115.

Method 4: Moving Average

This method uses the Moving Average formula to average the specified number of periods to project the next period. You should recalculate it often (monthly, or at least quarterly) to reflect changing demand level.

To forecast demand, this method requires the number of periods best fit plus the number of periods of sales order history. This method is useful to forecast demand for mature products without a trend.

Example: Method 4: Moving Average

Moving Average (MA) is a popular method for averaging the results of recent sales history to determine a projection for the short term. The MA forecast method lags behind trends. Forecast bias and systematic errors occur when the product sales history exhibits strong trend or seasonal patterns. This method works better for short range forecasts of mature products than for products that are in the growth or obsolescence stages of the life cycle.

Forecast specifications: n equals the number of periods of sales history to use in the forecast calculation. For example, specify n = 4 in the processing option to use the most recent four periods as the basis for the projection into the next time period. A large value for n (such as 12) requires more sales history. It results in a stable forecast, but is slow to recognize shifts in the level of sales. Conversely, a small value for n (such as 3) is quicker to respond to shifts in the level of sales, but the forecast might fluctuate so widely that production cannot respond to the variations.

Required sales history: n plus the number of time periods that are required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	None	131	114	119	137

Calculation of Moving Average, given n = 4

(131 + 114 + 119 + 137) / 4 = 125.25 rounded to 125.

This table is the Moving Average forecast for next year, given n = 4:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
125	124	126	128	126	126	127	127	126	126	126	126

January forecast equals (131 + 114 + 119 + 137) / 4 = 125.25 rounded to 125.

February forecast equals (114 + 119 + 137 + 125) / 4 = 123.75 rounded to 124.

March forecast equals (119 + 137 + 125 + 124) / 4 = 126.25 rounded to 126.

Method 5: Linear Approximation

This method uses the Linear Approximation formula to compute a trend from the number of periods of sales order history and to project this trend to the forecast. You should recalculate the trend monthly to detect changes in trends.

This method requires the number of periods of best fit plus the number of specified periods of sales order history. This method is useful to forecast demand for new products, or products with consistent positive or negative trends that are not due to seasonal fluctuations.

Example: Method 5: Linear Approximation

Linear Approximation calculates a trend that is based upon two sales history data points. Those two points define a straight trend line that is projected into the future. Use this method with caution because long range forecasts are leveraged by small changes in just two data points.

Forecast specifications: n equals the data point in sales history that is compared to the most recent data point to identify a trend. For example, specify n = 4 to use the difference between December (most recent data) and August (four periods before December) as the basis for calculating the trend.

Minimum required sales history: n plus 1 plus the number of time periods that are required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	129	131	114	119	137

Calculation of Linear Approximation, given n = 4

(137 – 129)/4 = 2.0

This table is the Linear Approximation forecast for next year, given n = 4:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
139	141	143	145	147	149	151	153	155	157	159	161

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January forecast = December of past year 1 + (Trend) which equals 137 + (1 × 2) = 139.

February forecast = December of past year 1 + (Trend) which equals 137 + (2 × 2) = 141.

March forecast = December of past year 1 + (Trend) which equals 137 + (3 × 2) = 143.

Method 6: Least Squares Regression

The Least Squares Regression (LSR) method derives an equation describing a straight line relationship between the historical sales data and the passage of time. LSR fits a line to the selected range of data so that the sum of the squares of the differences between the actual sales data points and the regression line are minimized. The forecast is a projection of this straight line into the future.

This method requires sales data history for the period that is represented by the number of periods best fit plus the specified number of historical data periods. The minimum requirement is two historical data points. This method is useful to forecast demand when a linear trend is in the data.

Example: Method 6: Least Squares Regression

Linear Regression, or Least Squares Regression (LSR), is the most popular method for identifying a linear trend in historical sales data. The method calculates the values for a and b to be used in the formula:

$Y = a + b\,X$

This equation describes a straight line, where Y represents sales and X represents time. Linear regression is slow to recognize turning points and step function shifts in demand. Linear regression fits a straight line to the data, even when the data is seasonal or better described by a curve. When sales history data follows a curve or has a strong seasonal pattern, forecast bias and systematic errors occur.

Forecast specifications: n equals the periods of sales history that will be used in calculating the values for a and b. For example, specify n = 4 to use the history from September through December as the basis for the calculations. When data is available, a larger n (such as n = 24) would ordinarily be used. LSR defines a line for as few as two data points. For this example, a small value for n (n = 4) was chosen to reduce the manual calculations that are required to verify the results.

Minimum required sales history: n periods plus the number of time periods that are required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	None	131	114	119	137

This table is the calculation of Linear Regression Coefficients, given n = 4:

Month and Year	X	Y	XY	X^2
September	1	131	131	1

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Month and Year	X	Y	XY	X^2
October	2	114	228	4
November	3	119	357	9
December	4	137	548	16
Totals (Σ)	ΣX = 10	ΣY = 501	ΣXY = 1264	$ΣX^2$ = 30

b = (nΣXY – ΣXΣY) / [nΣX^2 – (ΣX)^2]

b = [4 (1264) – (10 × 501)] / [4 (30) – (10)^2]

b = (5056 – 5010) / (120 – 100)

b= 46 / 20 = 2.3

a = (ΣY / n) – b (ΣX / n)

a = (501 / 4) – [(2.3)(10 / 4)] = 119.5

This table is the Linear Regression forecast for next year, given Y = 119.5 – 2.3 X, where X = 1 >= September of past year 1:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
131	133	136	138	140	143	145	147	149	152	154	156

January forecast equals 119.5 + (5 × 2.3) = 131.

February forecast equals 119.5 + (6 × 2.3) = 133.3 or 133.

March forecast equals 119.5 + (7 × 2.3) = 135.6 rounded to 136.

Method 7: Second Degree Approximation

To project the forecast, this method uses the Second Degree Approximation formula to plot a curve that is based on the number of periods of sales history.

This method requires the number of periods best fit plus the number of periods of sales order history times three. This method is not useful to forecast demand for a long-term period.

Example: Method 7: Second Degree Approximation

Linear Regression determines values for a and b in the forecast formula Y = a + b X with the objective of fitting a straight line to the sales history data. Second Degree Approximation is similar, but this method determines values for a, b, and c in the this forecast formula:

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$Y = a + b\,X + c\,X^2$

The objective of this method is to fit a curve to the sales history data. This method is useful when a product is in the transition between life cycle stages. For example, when a new product moves from introduction to growth stages, the sales trend might accelerate. Because of the second order term, the forecast can quickly approach infinity or drop to zero (depending on whether coefficient c is positive or negative). This method is useful only in the short term.

Forecast specifications: the formula find a, b, and c to fit a curve to exactly three points. You specify n, the number of time periods of data to accumulate into each of the three points. In this example, n = 3. Actual sales data for April through June is combined into the first point, Q1. July through September are added together to create Q2, and October through December sum to Q3. The curve is fitted to the three values Q1, Q2, and Q3.

Required sales history: 3 × n periods for calculating the forecast plus the number of time periods that are required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	125	122	137	140	129	131	114	119	137

Q0 = (Jan) + (Feb) + (Mar)

Q1 = (Apr) + (May) + (Jun) which equals 125 + 122 + 137 = 384

Q2 = (Jul) + (Aug) + (Sep) which equals 140 + 129 + 131 = 400

Q3 = (Oct) + (Nov) + (Dec) which equals 114 + 119 + 137 = 370

The next step involves calculating the three coefficients a, b, and c to be used in the forecasting formula $Y = a + b\,X + c\,X^2$.

Q1, Q2, and Q3 are presented on the graphic, where time is plotted on the horizontal axis. Q1 represents total historical sales for April, May, and June and is plotted at X = 1; Q2 corresponds to July through September; Q3 corresponds to October through December; and Q4 represents January through March. This graphic illustrates the plotting of Q1, Q2, Q3, and Q4 for second degree approximation:

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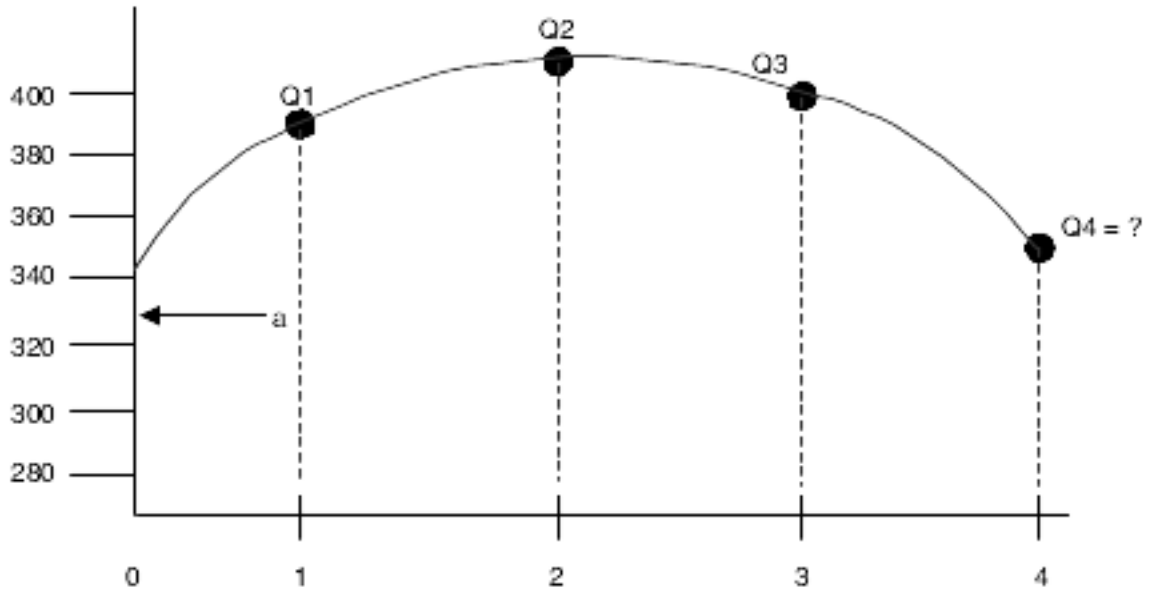
Three equations describe the three points on the graph:

(1) Q1 = a + bX + cX^2 where X = 1(Q1 = a + b + c)

(2) Q2 = a + bX + cX^2 where X = 2(Q2 = a + 2b + 4c)

(3) Q3 = a + bX + cX^2 where X = 3(Q3 = a + 3b + 9c)

Solve the three equations simultaneously to find b, a, and c:

1. Subtract equation 1 (1) from equation 2 (2) and solve for b:

    (2) – (1) = Q2 – Q1 = b + 3c

    b = (Q2 – Q1) – 3c

2. Substitute this equation for b into equation (3):

    (3) Q3 = a + 3[(Q2 – Q1) – 3c] + 9c a = Q3 – 3(Q2 – Q1)

3. Finally, substitute these equations for a and b into equation (1):

    (1)[Q3 – 3(Q2 – Q1)] + [(Q2 – Q1) – 3c] + c = Q1

    c = [(Q3 – Q2) + (Q1 – Q2)] / 2

The Second Degree Approximation method calculates a, b, and c as follows:

a = Q3 – 3(Q2 – Q1) = 370 – 3(400 – 384) = 370 – 3(16) = 322

b = (Q2 – Q1) –3c = (400 – 384) – (3 × –23) = 16 + 69 = 85

c = [(Q3 – Q2) + (Q1 – Q2)] / 2 = [(370 – 400) + (384 – 400)] / 2 = –23

This is a calculation of second degree approximation forecast:

Y = a + bX + cX^2 = 322 + 85X +(–23) (X^2)

When X = 4, Q4 = 322 + 340 – 368 = 294. The forecast equals 294 / 3 = 98 per period.

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When X = 5, Q5 = 322 + 425 – 575 = 172. The forecast equals 172 / 3 = 58.33 rounded to 57 per period.

When X = 6, Q6 = 322 + 510 – 828 = 4. The forecast equals 4 / 3 = 1.33 rounded to 1 per period.

This is the forecast for next year, Last Year to This Year:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
98	98	98	57	57	57	1	1	1	NA	NA	NA

Method 8: Flexible Method

This method enables you to select the best fit number of periods of sales order history that starts n months before the forecast start date, and to apply a percentage increase or decrease multiplication factor with which to modify the forecast. This method is similar to Method 1, Percent Over Last Year, except that you can specify the number of periods that you use as the base.

Depending on what you select as n, this method requires periods best fit plus the number of periods of sales data that is indicated. This method is useful to forecast demand for a planned trend.

Example: Method 8: Flexible Method

The Flexible Method (Percent Over n Months Prior) is similar to Method 1, Percent Over Last Year. Both methods multiply sales data from a previous time period by a factor specified by you, and then project that result into the future. In the Percent Over Last Year method, the projection is based on data from the same time period in the previous year. You can also use the Flexible Method to specify a time period, other than the same period in the last year, to use as the basis for the calculations.

Forecast specifications:

- Multiplication factor. For example, specify 110 in the processing option to increase previous sales history data by 10 percent.

- Base period. For example, n = 4 causes the first forecast to be based on sales data in September of last year.

Minimum required sales history: the number of periods back to the base period plus the number of time periods that is required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	None	131	114	119	137

This is the forecast for next year, 110 percent Over n = 4 months prior:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
144	125	131	151	159	138	144	166	174	152	158	182

Method 9: Weighted Moving Average

The Weighted Moving Average formula is similar to Method 4, Moving Average formula, because it averages the previous month's sales history to project the next month's sales history. However, with this formula you can assign weights for each of the prior periods.

This method requires the number of weighted periods selected plus the number of periods best fit data. Similar to Moving Average, this method lags behind demand trends, so this method is not recommended for products with strong trends or seasonality. This method is useful to forecast demand for mature products with demand that is relatively level.

Example: Method 9: Weighted Moving Average

The Weighted Moving Average (WMA) method is similar to Method 4, Moving Average (MA). However, you can assign unequal weights to the historical data when using WMA. The method calculates a weighted average of recent sales history to arrive at a projection for the short term. More recent data is usually assigned a greater weight than older data, so WMA is more responsive to shifts in the level of sales. However, forecast bias and systematic errors occur when the product sales history exhibits strong trends or seasonal patterns. This method works better for short range forecasts of mature products than for products in the growth or obsolescence stages of the life cycle.

Forecast specifications:

- The number of periods of sales history (n) to use in the forecast calculation.

  For example, specify n = 4 in the processing option to use the most recent four periods as the basis for the projection into the next time period. A large value for n (such as 12) requires more sales history. Such a value results in a stable forecast, but it is slow to recognize shifts in the level of sales. Conversely, a small value for n (such as 3) responds more quickly to shifts in the level of sales, but the forecast might fluctuate so widely that production cannot respond to the variations.

  > **Note:** The total number of periods for the processing option "14 - periods to include" should not exceed 12 months.

- The weight that is assigned to each of the historical data periods.

  The assigned weights must total 1.00. For example, when n = 4, assign weights of 0.50, 0.25, 0.15, and 0.10 with the most recent data receiving the greatest weight.

Minimum required sales history: n plus the number of time periods that are required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	None	131	114	119	137

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Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

This is the calculation of Moving Average, given n = 4:

[(131 × 0.10) + (114 × 0.15) + (119 × 0.25) + (137 × 0.50)] / (0.10 + 0.15 + 0.25 + 0.50) = 128.45 rounded to 128

This is the Weighted Moving Average forecast for next year, given n = 4:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
128	128	128	129	129	129	129	129	129	129	129	129

January forecast equals [(131 × 0.10) + (114 × 0.15) + (119 × 0.25) + (137 × 0.50)] / (0.10 + 0.15+ 0.25 + 0.50) = 128.45 rounded to 128.

February forecast equals [(114 × 0.10) + (119 × 0.15) + (137 × 0.25) + (128 × 0.50)] / 1 = 127.5 rounded to 128.

March forecast equals [(119 × 0.10) + (137 × 0.15) + (128 × 0.25) + (128 × 0.50)] / 1 = 128.45 rounded to 128.

Method 10: Linear Smoothing

This method calculates a weighted average of past sales data. In the calculation, this method uses the number of periods of sales order history (from 1 to 12) that is indicated in the processing option. The system uses a mathematical progression to weigh data in the range from the first (least weight) to the final (most weight). Then the system projects this information to each period in the forecast.

This method requires the month's best fit plus the sales order history for the number of periods that are specified in the processing option.

Example: Method 10: Linear Smoothing

This method is similar to Method 9, WMA. However, instead of arbitrarily assigning weights to the historical data, a formula is used to assign weights that decline linearly and sum to 1.00. The method then calculates a weighted average of recent sales history to arrive at a projection for the short term. Like all linear moving average forecasting techniques, forecast bias and systematic errors occur when the product sales history exhibits strong trend or seasonal patterns. This method works better for short range forecasts of mature products than for products in the growth or obsolescence stages of the life cycle.

Forecast specifications:

n equals the number of periods of sales history to use in the forecast calculation. For example, specify n equals 4 in the processing option to use the most recent four periods as the basis for the projection into the next time period. The system automatically assigns the weights to the historical data that decline linearly and sum to 1.00. For example, when n equals 4, the system assigns weights of 0.4, 0.3, 0.2, and 0.1, with the most recent data receiving the greatest weight.

Minimum required sales history: n plus the number of time periods that are required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	None	131	114	119	137

Here are the Calculation of Weights, given n = 4:

$(n^2 + n) / 2 = (16 + 4) / 2 = 10$

Month	Weight
September	1 / 10
October	2 / 10
November	3 / 10
December	4 / 10
Total Weight	10 / 10

This is the calculation of Moving Average, given n = 4:

[(131 * 0.1) + (114 * 0.2) + (119 * 0.3) + (137 * 0.4)] / (0.1 + 0.0.2 + 0.3 + 0.4) = 126.4 rounded to 126.

This table is the Linear Smoothing forecast for next year, given n = 4:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
126	127	128	128	128	128	128	128	128	128	128	128

Method 11: Exponential Smoothing

This method calculates a smoothed average, which becomes an estimate representing the general level of sales over the selected historical data periods.

This method requires sales data history for the time period that is represented by the number of periods best fit plus the number of historical data periods that are specified. The minimum requirement is two historical data periods. This method is useful to forecast demand when no linear trend is in the data.

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Example: Method 11: Exponential Smoothing

This method is similar to Method 10, Linear Smoothing. In Linear Smoothing, the system assigns weights that decline linearly to the historical data. In Exponential Smoothing, the system assigns weights that exponentially decay. The equation for Exponential Smoothing forecasting is:

Forecast = α (Previous Actual Sales) + (1 −α) (Previous Forecast)

The forecast is a weighted average of the actual sales from the previous period and the forecast from the previous period. Alpha is the weight that is applied to the actual sales for the previous period. (1 − α) is the weight that is applied to the forecast for the previous period. Values for alpha range from 0 to 1 and usually fall between 0.1 and 0.4. The sum of the weights is 1.00 (α + (1 − α) = 1).

You should assign a value for the smoothing constant, alpha. If you do not assign a value for the smoothing constant, the system calculates an assumed value that is based on the number of periods of sales history that is specified in the processing option.

Forecast specifications:

- α equals the smoothing constant that is used to calculate the smoothed average for the general level or magnitude of sales.

  Values for alpha range from 0 to 1.

- n equals the range of sales history data to include in the calculations.

  Generally, one year of sales history data is sufficient to estimate the general level of sales. For this example, a small value for n (n = 4) was chosen to reduce the manual calculations that are required to verify the results. Exponential Smoothing can generate a forecast that is based on as little as one historical data point.

Minimum required sales history: n plus the number of time periods that are required for evaluating the forecast performance (periods of best fit).

This table is history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	None	131	114	119	137

This table is the calculation of Exponential Smoothing, given n = 4, α = 0.3:

Month	Calculation
October Smoothed Average*	= September Actual = α (September Actual) + (1 −α) September Smoothed Average = 1 * (131) + (0) (0) = 131
November Smoothed Average	= 0.3 (October Actual) + (1 − 0.3) October Smoothed Average = 0.3 (114) + 0.7 (131) = 125.9 rounded to 126

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Month	Calculation
December Smoothed Average	= 0.3 (November Actual) + 0.7 (November Smoothed Average) = 0.3 (119) + 0.7 (126) = 123.9 or 124
January Forecast	= 0.3 (December Actual) + 0.7 (December Smoothed Average) = 0.3 (137) + 0.7 (124) = 127.9 or 128
February Forecast	= January Forecast
March Forecast	= January Forecast

* Exponential Smoothing is initialized by setting the first smoothed average equal to the first specified actual sales data point. In effect, α = 1.0 for the first iteration. For subsequent calculations, alpha is set to the value that is specified in the processing option.

This table is the Exponential Smoothing forecast for next year, given α = 0.3, n = 4:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
128	128	128	128	128	128	128	128	128	128	128	128

Method 12: Exponential Smoothing with Trend and Seasonality

This method calculates a trend, a seasonal index, and an exponentially smoothed average from the sales order history. The system then applies a projection of the trend to the forecast and adjusts for the seasonal index.

This method requires the number of periods best fit plus two years of sales data, and is useful for items that have both trend and seasonality in the forecast. You can enter the alpha and beta factor, or have the system calculate them. Alpha and beta factors are the smoothing constant that the system uses to calculate the smoothed average for the general level or magnitude of sales (alpha) and the trend component of the forecast (beta).

Example: Method 12: Exponential Smoothing with Trend and Seasonality

This method is similar to Method 11, Exponential Smoothing, in that a smoothed average is calculated. However, Method 12 also includes a term in the forecasting equation to calculate a smoothed trend. The forecast is composed of a smoothed average that is adjusted for a linear trend. When specified in the processing option, the forecast is also adjusted for seasonality.

Forecast specifications:

- Alpha equals the smoothing constant that is used in calculating the smoothed average for the general level or magnitude of sales.

  Values for alpha range from 0 to 1.

- Beta equals the smoothing constant that is used in calculating the smoothed average for the trend component of the forecast.

  Values for beta range from 0 to 1.

- Whether a seasonal index is applied to the forecast.

> **Note:** Alpha and beta are independent of one another. They do not have to sum to 1.0.

Minimum required sales history: One year plus the number of time periods that are required to evaluate the forecast performance (periods of best fit). When two or more years of historical data is available, the system uses two years of data in the calculations.

Method 12 uses two Exponential Smoothing equations and one simple average to calculate a smoothed average, a smoothed trend, and a simple average seasonal index.

An exponentially smoothed average:

$A_t = \alpha (D_t/S_{t-L}) + (1 - \alpha)(A_{t-1} + T_{t-1})$

An exponentially smoothed trend:

$T_t = \beta (A_t - A_{t-1}) + (1 - \beta)T_{t-1}$

A simple average seasonal index:

$$S_t = \left[(D_{t-L} + D_{t-2L}) / \sum_{n=(t-2L)}^{n=(t-1)} D_n \right] \times L$$

The forecast is then calculated by using the results of the three equations:

$F_{t+m} = (A_t + T_t m)S_{t-L+m}$

where:

- L is the length of seasonality (L equals 12 months or 52 weeks).
- t is the current time period.
- m is the number of time periods into the future of the forecast.
- S is the multiplicative seasonal adjustment factor that is indexed to the appropriate time period.

  This table lists history used in the forecast calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1	128	117	115	125	122	137	140	129	131	114	119	137	1514
2	125	123	115	137	122	130	141	128	118	123	139	133	1534

  Calculation of Linear and Seasonal Exponential Smoothing, given alpha = 0.3, beta = 0.4

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Initializing the Process:

January of past year 1 Seasonal Index, S_1 =

S_1 = (125 + 128 / 1534 + 1514) × 12 = 0.083005 × 12 = 0.9961

January of past year 1 Smoothed Average*, A_1 =

A_1 = (January of past year 1 Actual) / (January Seasonal Index)

A_1 = 128 / 0.9960

A_1 = 128.51

January of past year 1 Smoothed Trend*, T_1 =

T_1 = 0 insufficient information to calculate first smoothed trend

February of past year 1 Seasonal Index, S_2 =

S_2 = (123 + 117 / 1534 + 1514) × 12 = 0.07874 × 12 = 0.9449

February of past year 1 Smoothed Average, A_2 =

$A_2 = \alpha(D_2 / S_2) + (1 - \alpha)(A_1 + T_1)$

A_2 = 0.3(117 / 0.9449) + (1 – 0.3)(128.51 + 0) = 127.10

February of past year 1 Smoothed Trend, T_2 =

$T_2 = \beta(A_2 - A_1) + (1 - \beta)T_1$

T_2=0.4 (127.10 – 128.51) + (1 – 0.4) × 0 = –0.56

March of past year 1 Seasonal Index, S_3 =

S_3 = (115 + 115 / 1534 + 1514) × 12 = 0.07546 × 12 = 0.9055

March of past year 1 Smoothed Average, A_3 =

$A_3 = \alpha(D_3/S_3) + (1 - \alpha)(A_2 + T_2)$

A_3 = 0.3 (115 / 0.9055) + (1 – 0.3)(127.10 – 0.56) = 126.68

March of past year 1 Smoothed Trend, T_3 =

$T_3 = \beta(A_3 - A_2) + (1 - \beta)T_2$

T3 = 0.4(126.68 – 127.10) + (1 – 0.4) x – 0.56 = – 0.50

(Continue through December of past year 1)

December of past year 1 Seasonal Index, S_{12} =

S_{12} = (133 + 137 / 1534 + 1514) × 12 = 0.08858 × 12 = 1.0630

December of past year 1 Smoothed Average, A_{12} =

$A_{12} = \alpha (D_{12}/S_{12}) + (1 - \alpha)(A_{11} + T_{11})$

A_{12} = 0.3 (137/1.0630) + (1 – 0.3)(124.64 – 1.121) = 125.13

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December of past year 1 Smoothed Trend, T_{12} =

$T_{12} = \beta (A_{12} - A_{11}) + (1 - \beta)T_{11}$

$T_{12} = 0.4 (125.13 - 124.64) + (1 - 0.4) \times -1.121 = -0.477$

Calculation of linear and seasonal exponentially smoothed forecast is calculated as follows:

$F_{t+m} = (A_t + T_t m)S_{t-L+m}$

* Calculations for Exponential Smoothing with Trend and Seasonality are initialized by setting the first smoothed average equal to the deseasonalized first actual sales data. The trend is initialized at zero for the first iteration. For subsequent calculations, alpha and beta are set to the values that are specified in the processing options.

This table indicates the Exponential Smoothing with Trend and Seasonality forecast for next year, where alpha = 0.3, beta = 0.4:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
124.16	117.33	112.01	127.10	117.91	128.52	134.73	122.74	118.45	121.77	121.77	126.92

Forecast Evaluations

This section provides an overview of Forecast Evaluations and discusses:

- MAD
- POA

You can select forecasting methods to generate as many as 12 forecasts for each product. Each forecasting method might create a slightly different projection. When thousands of products are forecast, a subjective decision is impractical regarding which forecast to use in the plans for each product.

The system automatically evaluates performance for each forecasting method that you select and for each product that you forecast. You can select between two performance criteria: MAD and POA. MAD is a measure of forecast error. POA is a measure of forecast bias. Both of these performance evaluation techniques require actual sales history data for a period specified by you. The period of recent history used for evaluation is called a holdout period or period of best fit.

To measure the performance of a forecasting method, the system:

- Uses the forecast formulas to simulate a forecast for the historical holdout period.
- Makes a comparison between the actual sales data and the simulated forecast for the holdout period.

When you select multiple forecast methods, this same process occurs for each method. Multiple forecasts are calculated for the holdout period and compared to the known sales history for that same period. The forecasting method that produces the best match (best fit) between the forecast and the actual sales during the holdout period is recommended for use in the plans. This recommendation is specific to each product and might change each time that you generate a forecast.

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Mean Absolute Deviation

Mean Absolute Deviation (MAD) is the mean (or average) of the absolute values (or magnitude) of the deviations (or errors) between actual and forecast data. MAD is a measure of the average magnitude of errors to expect, given a forecasting method and data history. Because absolute values are used in the calculation, positive errors do not cancel out negative errors. When comparing several forecasting methods, the one with the smallest MAD is the most reliable for that product for that holdout period. When the forecast is unbiased and errors are normally distributed, a simple mathematical relationship exists between MAD and two other common measures of distribution, which are standard deviation and Mean Squared Error. For example:

- MAD = (Σ | (Actual) – (Forecast)|)n

- Standard Deviation, (σ) # 1.25 MAD

- Mean Squared Error # $-\sigma 2$

This example indicates the calculation of MAD for two of the forecasting methods. This example assumes that you have specified in the processing option that the holdout period length (periods of best fit) is equal to five periods.

Method 1: Last Year to This Year

This table is history used in the calculation of MAD, given Periods of Best Fit = 5:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	None	None	None	None	None	None	None	128	118	123	139	133

This table is the 110 Percent Over Last Year forecast for the Holdout Period:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	141	130	135	153	146

This table is the Actual Sales History for the Holdout Period:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	129	131	114	119	137

This table is the Absolute Value of Errors, (Actual) – (Forecast):

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	12	1	21	34	9

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Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Mean Absolute Deviation = (12 + 1 + 21 + 34 + 9) / 5 = 15.4

Method 4: Moving Average, n = 4

This table is history used in the Calculation of MAD, given Periods of Best Fit = 5, n = 4:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	125	122	137	140	None	None	None	None	None

This is the Moving Average calculation for the Holdout Period, given n = 4:

Calculation	Month
(125 + 122 + 137 + 140) / 4 = 131	August
(122 + 137 + 140 + 129) / 4 = 132	September
(137 + 140 + 129 + 131) / 4 = 134.25 or 134	October
(140 + 129 + 131 + 114) / 4 = 128.5 or 129	November
(129 + 131 + 114 + 119) / 4 = 123.25 or 123	December

This table is the results of the Moving Forecast Average calculation:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	131	132	134	129	123

This table is the Actual Sales History for the Holdout Period:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	129	131	114	119	137

This table is the Absolute Value of Errors (Actual – Forecast):

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	2	1	20	10	14

Mean Absolute Deviation equals (2 + 1 + 20 + 10 + 14) / 5 = 9.4.

Based on these two choices, the Moving Average, n = 4 method is recommended because it has the smaller MAD, 9.4, for the given holdout period.

Percent of Accuracy

Percent of Accuracy (POA) is a measure of forecast bias. When forecasts are consistently too high, inventories accumulate and inventory costs rise. When forecasts are consistently too low, inventories are consumed and customer service declines. A forecast that is 10 units too low, then 8 units too high, then 2 units too high is an unbiased forecast. The positive error of 10 is canceled by negative errors of 8 and 2.

(Error) = (Actual) – (Forecast)

When a product can be stored in inventory, and when the forecast is unbiased, a small amount of safety stock can be used to buffer the errors. In this situation, eliminating forecast errors is not as important as generating unbiased forecasts. However, in service industries, the previous situation is viewed as three errors. The service is understaffed in the first period, and then overstaffed for the next two periods. In services, the magnitude of forecast errors is usually more important than is forecast bias.

POA = [(ΣForecast sales during holdout period) / (ΣActual sales during holdout period)] × 100 percent

The summation over the holdout period enables positive errors to cancel negative errors. When the total of forecast sales exceeds the total of actual sales, the ratio is greater than 100 percent. Of course, the forecast cannot be more than 100 percent accurate. When a forecast is unbiased, the POA ratio is 100 percent. A 95 percent accuracy rate is more desirable than a 110 percent accurate rate. The POA criterion selects the forecasting method that has a POA ratio that is closest to 100 percent.

This example indicates the calculation of POA for two forecasting methods. This example assumes that you have specified in the processing option that the holdout period length (periods of best fit) is equal to five periods.

Method 1: Last Year to This Year

This table is history used in the calculation of MAD, given Periods of Best Fit = 5:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	None	None	None	None	None	None	None	128	118	123	139	133

This table is the 110 Percent Over Last Year forecast for the Holdout Period:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	141	130	135	153	146

This table is the Actual Sales History for the Holdout Period:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	129	131	114	119	137

Sum of Actuals equals (129 + 131 + 114 + 119 + 137) = 630.

Sum of Forecasts equals (141 + 130 + 135 + 153 + 146) = 705.

POA ratio equals (705 / 630) × 100 percent = 111.90 percent.

Method 4: Moving Average, n = 4

This table is history used in the Calculation of MAD, given Periods of Best Fit = 5, n = 4:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	125	122	137	140	None	None	None	None	None

This is the Moving Average forecast for the Holdout Period, Given n = 4:

Calculation	Month
(125 + 122 + 137 + 140) / 4 = 131	August
(122 + 137 + 140 + 129) / 4 = 132	September
(137 + 140 + 129 + 131) / 4 = 134.25 or 134	October
(140 + 129 + 131 + 114) / 4 = 128.5 or 129	November
(129 + 131 + 114 + 119) / 4 = 123.25 or 123	December

This table is the results of the Moving Forecast Average:

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Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	131	132	134	129	123

This table is the Actual Sales History for the Holdout Period:

Past Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	None	None	None	None	None	None	None	129	131	114	119	137

Sum of Actuals equals (129 + 131 + 114 + 119 + 137) = 630.

Sum of Forecasts equals (131 + 132 + 134 + 129 + 123) = 649.

POA ratio equals (649 / 630) * 100 percent = 103.01 percent.

Based on these two choices, the Moving Average, n = 4 method is recommended because it has POA closest to 100 percent for the given holdout period.

Forecast Management and Demand Patterns

JD Edwards EnterpriseOne Forecast Management uses sales order history to predict future demand. This section discusses:

- Six typical demand patterns.
- Forecast accuracy.
- Forecast considerations.
- Forecasting process.

Forecast methods available in JD Edwards EnterpriseOne Forecast Management are tailored for these demand patterns.

Six Typical Demand Patterns

This graphic illustrates the six typical demand patterns:

Six Typical Demand Patterns

Horizontal   Positive Trend   Negative Trend

Seasonal   Trend-Seasonal   Nonannual Cycle
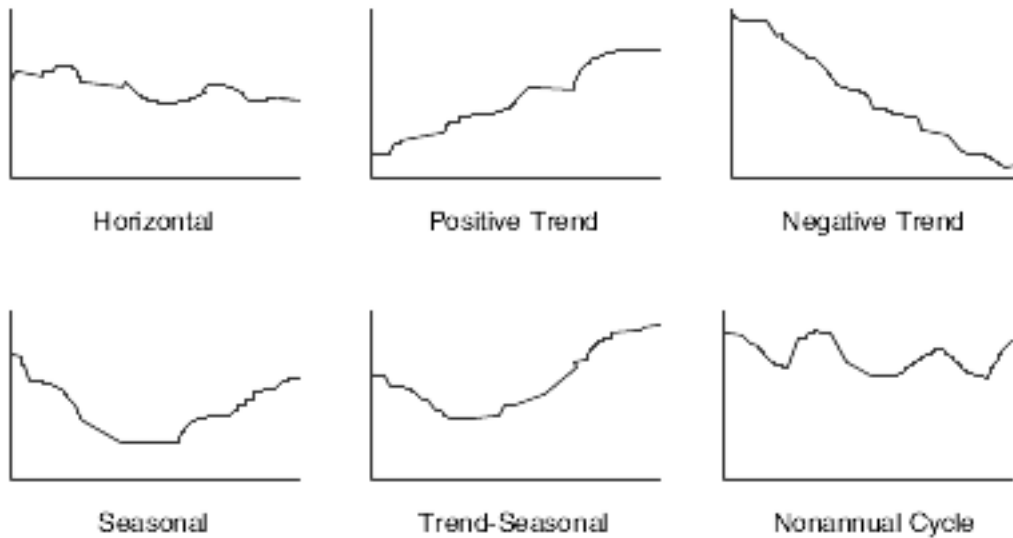
You can forecast the independent demand of information for which you have past data:

- Samples
- Promotional items
- Customer orders
- Service parts
- Interplant demands

You can also forecast demand for manufacturing strategy types by using the manufacturing environments in which they are produced:

This table presents manufacturing strategies:

Manufacturing Strategy	Description
Make-to-stock	The manufacture of end items that meet the customer demand, which occurs after the product is completed.
Assemble-to-order	The manufacture of subassemblies that meet customer option selections.
Make-to-order	The manufacture of raw materials and components that are stocked to reduce leadtime.

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Forecast Accuracy

These statistical laws govern forecast accuracy:

- A long term forecast is less accurate than a short term forecast because the further into the future you project the forecast, the more variables can affect the forecast.

- A forecast for a product family tends to be more accurate than a forecast for individual members of the product family.

  Some errors cancel each other as the forecasts for individual items summarize into the group, thus creating a more accurate forecast.

Forecast Considerations

You should not rely exclusively on past data to forecast future demands. These circumstances might affect the business, and require you to review and modify the forecast:

- New products that have no past data.

- Plans for future sales promotion.

- Changes in national and international politics.

- New laws and government regulations.

- Weather changes and natural disasters.

- Innovations from competition.

- Economic changes.

You can use long term trend analysis to influence the design of the forecasts:

- Market surveys.

- Leading economic indicators.

Forecasting Process

You use the Refresh Actuals program (R3465) to copy data from the Sales Order History File table (F42119), the Sales Order Detail File table (F4211), or both, into either the Forecast File table (F3460) or the Forecast Summary File table (F3400), depending on the kind of forecast that you plan to generate.

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4 Setting Up Forecast Management

Understanding Forecast Management Setup Requirements

This section discusses:

- Company hierarchies.
- Distribution hierarchies.
- Summary of detail forecasts and summary forecasts.
- Summary forecast setup.

Before you generate a detail forecast, you set up criteria for the dates and kinds of data on which the forecasts are based, and set up the time periods that the system should use to structure the forecast output.

To set up detail forecasts, you must:

- Set up inclusion rules to specify the sales history records and current sales orders on which you want to base the forecast.
- Specify beginning and ending dates for the forecast.
- Indicate the date pattern on which you want to base the forecast.
- Add any forecast types not already provided by the system.
- Define large customers for separate customer forecasts.

Supply and Demand Inclusion Rules

JD Edwards EnterpriseOne Forecast Management uses supply and demand inclusion rules to determine which records from the Sales Order Detail File table (F4211) and Sales Order History File table (F42119) to include or exclude when you run the Refresh Actuals program (R3465). Supply and demand inclusion rules enable you to specify the status and type of items and documents to include in the records. You can set up as many different inclusion rule versions as you need for forecasting.

Fiscal Date Patterns

Fiscal date patterns are user-defined codes (UDCs) (H00/DP) that identify the year and the order of the months of that year for which the system creates the forecast. JD Edwards EnterpriseOne Forecast Management uses fiscal date patterns to determine the time periods into which the sales order history is grouped. Before you can generate a detail forecast, you must set up a standard monthly date pattern. The system divides the sales history into weeks or months, depending on the processing option that you select. If you want to forecast by months, you must set up the fiscal date pattern. If you want to forecast by weeks, you must set up both the fiscal date pattern and a 52 period date pattern.

To set up fiscal date patterns, specify the beginning fiscal year, current fiscal period, and which date pattern to follow. JD Edwards EnterpriseOne Forecast Management uses this information during data entry, updating, and reporting. Set up fiscal date patterns for as far back as the sales history extends and as far forward as you want to forecast.

Use the same fiscal date pattern for all forecasted items. A mix of date patterns across items that are summarized at higher levels in the hierarchy causes unpredictable results. The fiscal date pattern must be an annual calendar: For example, from January 1, through December 31; or from June 1, through May 31.

The JD Edwards EnterpriseOne System recommends that you set up a separate fiscal date pattern for forecasting only so that you can control the date pattern. If you use the date pattern that is already established in Oracle's JD Edwards EnterpriseOne Financial Management system, the financial officer controls the date pattern.

See *"Setting Up 52 Period Fiscal Date Patterns" in the   JD Edwards EnterpriseOne Applications General Accounting Implementation Guide* .

52 Period Date Pattern

After you set up forecasting fiscal date patterns, you must set up a 52 period pattern for each code to forecast by weeks. When you set up a 52 period date pattern for a forecast, the period end dates are weekly instead of monthly.

Forecast Types

JD Edwards EnterpriseOne Forecast Management uses Forecast Type (34/DF) to differentiate the multiple forecasts that reside in the Forecast File table (F3460). Forecast Type can identify actual sales history, a system generated best fit forecast, each of the 12 generated forecast methods, or manually entered forecasts. Each time that sales history is extracted or a forecast is generated, you can select a forecast type to identify the data.

You can set up multiple forecasts for the same item, branch/plant, and date by using different forecast types. You can use existing codes or add codes to the UDC table 34/DF to identify forecast types.

This table illustrates different types of forecasts:

Code	Description	Hard Coded
01	Simple Percent Over Last Year	Y
11	Exponential Smoothing	Y
AA	Actual Sales	N
BF	Best Simulated Forecast	N
MF	Maintenance Forecast	N
MM	Maintenance Management	N/A
PP	Production Plan	N/A
SP	Service Parts Forecast	N

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Code	Description	Hard Coded

Processing options in the Distribution Requirements Planning (DRP), Master Production Schedule (MPS), and Material Requirements Planning (MRP) versions of MRP/MPS Requirements Planning (R3482) enable you to enter forecast type codes to define which forecasting types to use in calculations.

Large Customers

For customers with significant sales demand or more activity, you can create separate forecasts and actual history records. Use this task to specify customers as large so that you can generate forecasts and actual history records for only those customers.

After you set up the customer, set the appropriate processing option in the Forecast Generation program (R34650) so that the system searches the Sales Order History File table (F42119) for sales to that customer and creates separate Forecast File table (F3460) records for that customer.

Use a processing option to enable the system to process larger customers by Ship To instead of Sold To.

If you included customer level in the hierarchy, the system summarizes the sales actuals with customers into separate branches of the hierarchy.

Company Hierarchies

You must define the company hierarchy before you generate a summary forecast. It is strongly recommended that you organize the hierarchy by creating a diagram or storyboard.

This graphic shows an example of a company hierarchy:

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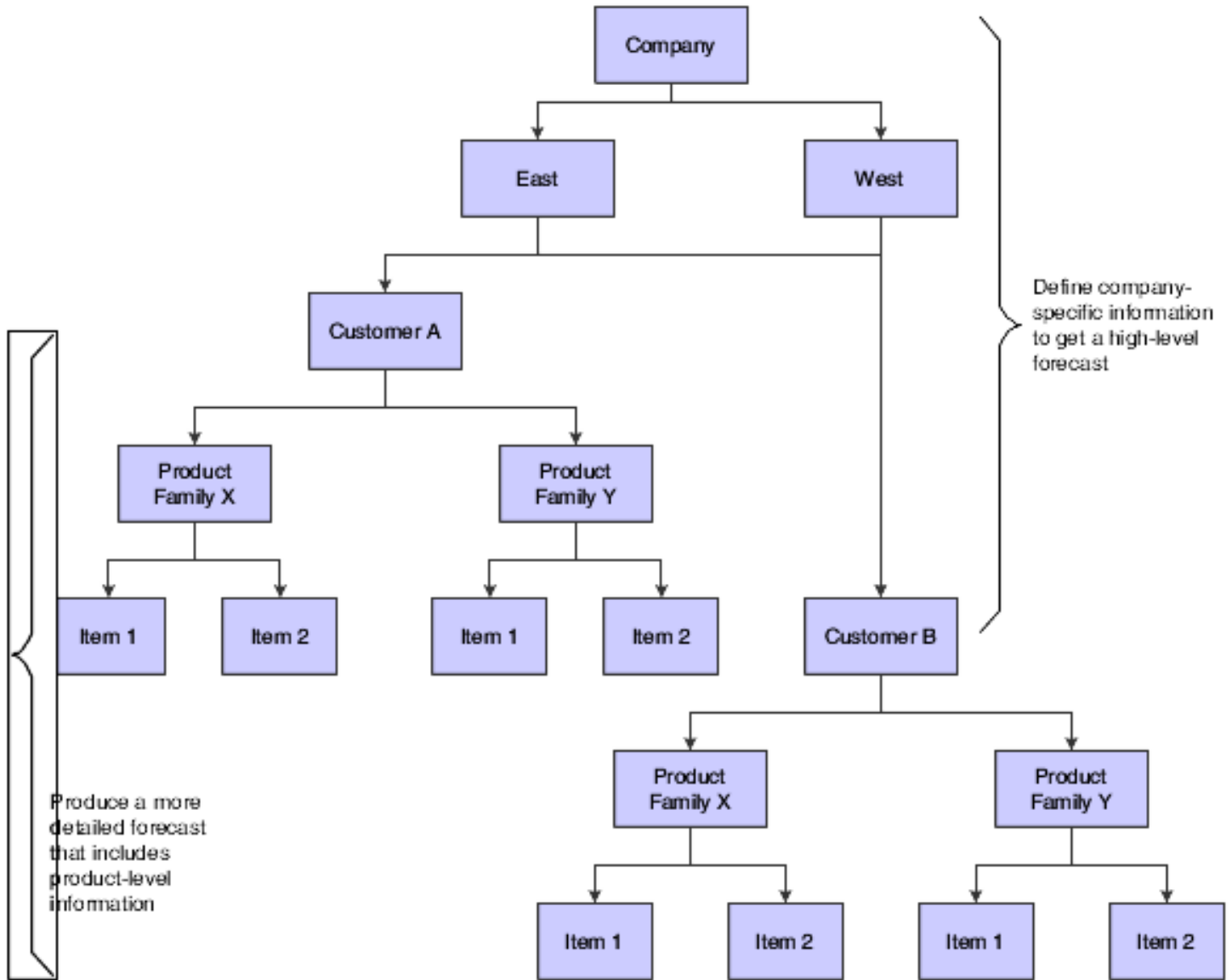
Establish a forecasting structure that realistically depicts the working operation of the company, from item level to headquarters level, to increase the accuracy of the forecasts. By defining the company processes and relationships at multiple levels, you maintain information that is more detailed and can plan better for the future needs.

Distribution Hierarchies

When planning and budgeting for divisions of the organization, you can summarize detailed forecasts that are based on the distribution hierarchy. For example, you can create forecasts by large customer or region for the sales staff, or create forecasts by product family for the production staff.

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To define the distribution hierarchy, you must set up summary codes and assign summary constants. You also must enter address book, business unit, and item branch data.

Example: Distribution Hierarchy

This chart shows an example of a distribution hierarchy:
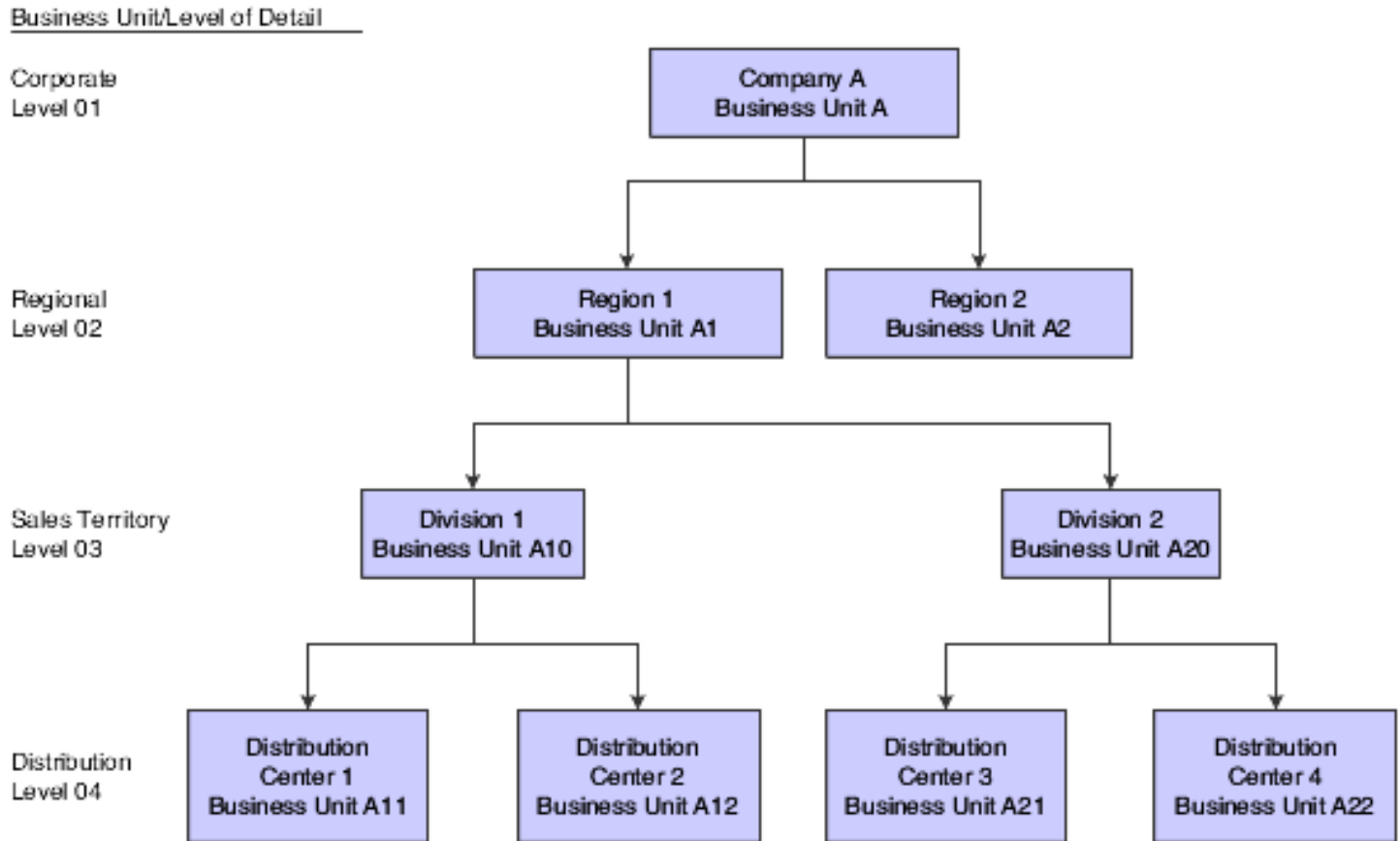
Example: Manufacturing Hierarchy for Company 200

You might want to see a forecast of the total demand for a product summarized by product families.

This chart shows an example of how to set up a hierarchy to get the forecast summary by product:

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Business Unit/Level of Detail
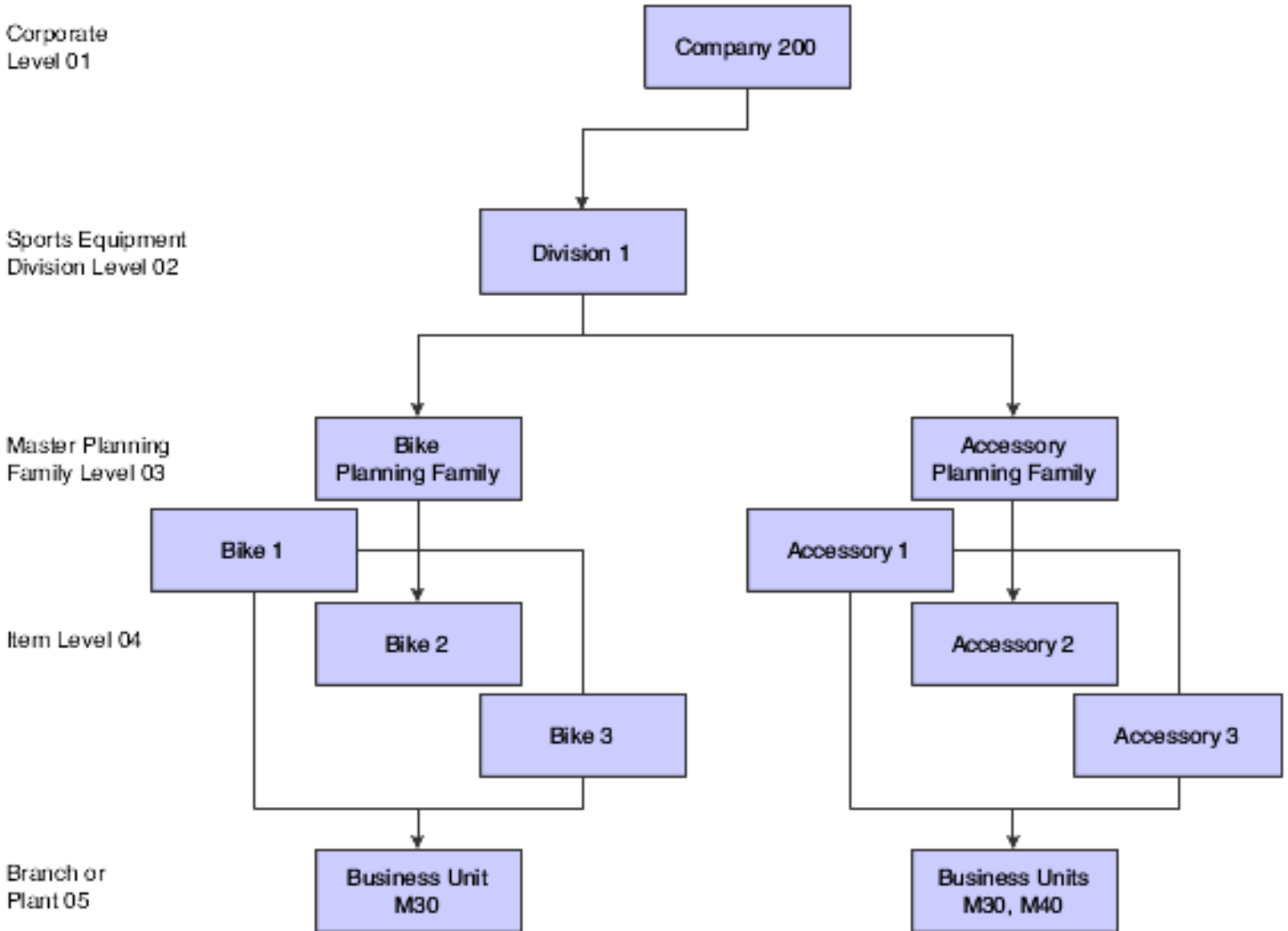
Summary of Detail Forecasts and Summary Forecasts

Summary of Detail forecasts and Summary forecasts are different.

Summary of Detail Forecasts

 A summary of detail forecast uses item level data and predicts future sales in terms of item quantities and sales amounts.

The system updates the Sales Order History File table (F42119) with sales data from the Sales Order Detail File table (F4211). You copy the sales history into the Forecast File table (F3460) to generate summaries of detail forecasts. The system generates summary forecasts that provide information for each level of the hierarchy that you set up with

summary constants. These constants are stored in the Category Code Key Position File table (F4091). Both summaries of detail forecasts and summary forecasts are stored in the Forecast Summary File table (F3400).

This diagram illustrates the process with shaded blocks:
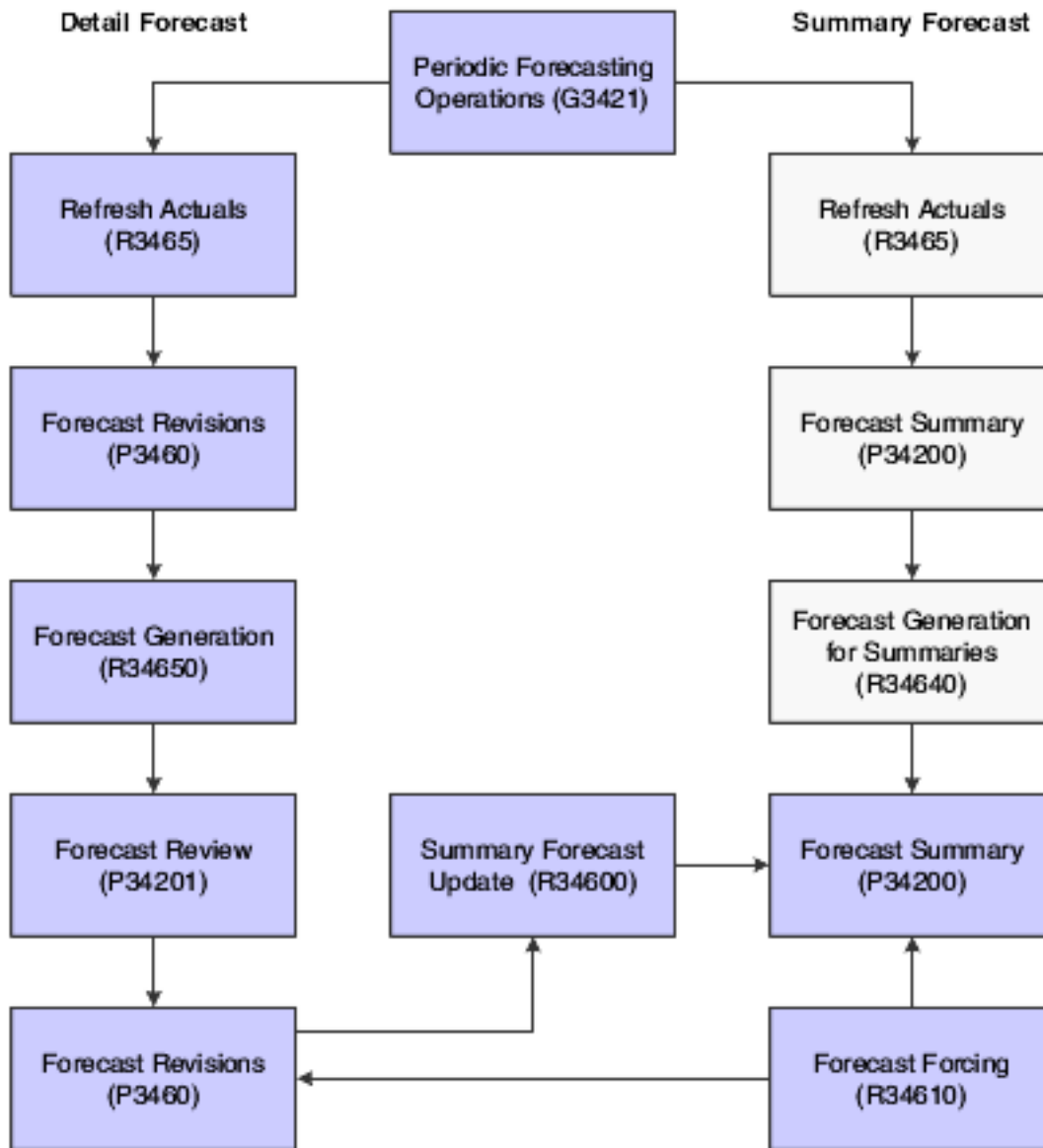
Summary Forecasts

Use summary forecasts to project demand at a product group level. Summary forecasts are also called aggregate forecasts. You generate a summary forecast that is based on summary actual data.

Summary forecasts combine sales history into a monetary value of sales by product family, by region, or in other groupings that are used as input to the aggregate production planning activity. You can use summary forecasts to run simulations.

The system updates the Sales Order History File table (F42119) with sales data from the Sales Order Detail File table (F4211) to generate summary forecasts. You copy the sales history into the Forecast Summary File table (F3400) to generate summary forecasts. The system generates summary forecasts that provide information for each level of the

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hierarchy that you set up with summary constants. Summary constants are stored in the Category Code Key Position File table (F4091). Both summary forecasts and summaries of detail forecasts are stored in table F3400.

Summary Forecast Setup

For summary forecasts, the JD Edwards EnterpriseOne Forecast Management system requires you to set up the information for detail forecasts and set up and define a summary hierarchy.

You set up the summary codes (40/KV) and then identify the constants for each summary code. These summary codes and constants define the distribution hierarchy.

To set up summary forecasts, you must:

- Define the hierarchy with summary codes and constants.

- Enter address book data, business unit data, and item branch data.

You must set up detail forecasts before you can set up summary forecasts.

Summary Codes

To set up the hierarchy, you must set up summary codes. For each hierarchy that you define, you must specify a unique identifier called a summary code. Summary codes are set up in UDC 40/KV.

This table illustrates examples of summary codes:

Codes	Description	Hard Coded
200	Sales Channel Summarization	N
CUS	Large Customer Summarization	N
EAS	Eastern Forecast	N
MDW	Midwestern Forecast	N
PHR	Pharmaceutical Forecast	N
SM	Marketing Summarization Code	N

When creating summary forecasts, you select a summary code to indicate the hierarchy with which you want to work.

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Summary Code Constants

For each summary code, use summary constants to define each level of the hierarchy. You can use category codes from the Address Book program (P01012) and Item Master table (F4101) to define up to 14 levels in the hierarchy. You can define these levels as follows:

- Define the top level as the Global Summary to summarize forecasts for several companies into a single corporate view.

- Define the second level as the Company Summary to summarize forecasts for all of the facilities in a single company.

- Define up to 11 middle levels, which include the category codes and the customer level.

- Use as many as 20 address book category codes and 20 item branch category codes to assign other levels in the hierarchy.

- Use the Customer Level field as another category code. You can specify each of the large customers as a level of the hierarchy.

  This action enables you to create specific forecasts for each large customer.

- The lowest level that you can define is the item level.

- Define an Item Summary level that provides forecasts for the individual item level.

  All detail forecast records for an item can be summarized at this level.

Detail records for a branch/plant item are automatically placed after all levels of the hierarchy. The system does not include these detail records as one of the 14 levels of the hierarchy.

Setting Up Detail Forecasts

This section discusses how to:

- Set up forecasting supply and demand inclusion rules.

- Set up forecasting fiscal date patterns.

- Set up the 52 period date pattern.

- Set up large customers.

- Assign constants to summary codes.

Forms Used to Set Up Detail Forecasts

Form Name	FormID	Navigation	Usage
Work With Supply/ Demand Inclusion Rules	W34004A	Material Planning Setup (G3442), Supply/Demand Inclusion Rules	Set up forecasting supply and demand inclusion rules. Select the lines that you want to include. The program changes the included value of each line

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Form Name	FormID	Navigation	Usage
			that you selected from 0 (not included) to 1 (included).
Set Up Fiscal Date Pattern	W0008A	Organization & Account Setup (G09411), Company Names & Numbers On the Work With Companies form, select Date Pattern from the Form menu. On the Work With Fiscal Date Patterns form, click Add.	Set up forecasting fiscal date patterns.
Set Up 52 Periods	W0008BF	52 Period Accounting menu (G09313), Set 52 Period Dates On the Work With 52 Periods form, select Add.	Set up the 52 period date pattern. Enter a fiscal date pattern, a beginning date for the fiscal year, and an end date for each period.
Customer Master Revision	W03013B	Sales Order Management Setup (G4241), Customer Billing Instructions On the Work With Customer Master form, select a record.	Set up large customers.
Revise Summary Constants	W4091G	Forecasting Setup (G3441), Summary Constants	Assign constants to summary codes and define hierarchy levels. Select the More button for additional summary constants.

Setting Up Forecasting Supply and Demand Inclusion Rules

Access the Work With Supply/Demand Inclusion Rules form.

Rule Version

Enter a user-defined code (40/RV) that identifies an inclusion rule that you want the system to use for this branch/ plant. The JD Edwards EnterpriseOne Manufacturing system and Oracle's JD Edwards EnterpriseOne Warehouse Management system use these inclusion rules:

- ○ For JD Edwards EnterpriseOne Manufacturing:

  Enables multiple versions of resource rules for running MPS, MRP, or DRP.

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o For JD Edwards EnterpriseOne Warehouse Management:

Enables multiple versions of inclusion rules for running putaway and picking. The system processes only those order lines that match the inclusion rule for a specified branch/plant.

Included

Enter a code that is used to prompt detail selection from a list of items. Values are:

0: Not included

1: Included

Order Type

Enter a user-defined code (00/DT) that identifies the type of document. This code also indicates the origin of the transaction. The JD Edwards EnterpriseOne system has reserved document type codes for vouchers, invoices, receipts, and time sheets, which create automatic offset entries during the post program. (These entries are not self balancing when you originally enter them.)

These document types are defined by the JD Edwards EnterpriseOne system and should not be changed:

P: Accounts Payable documents.

R: Accounts Receivable documents.

T: Payroll documents.

I: Inventory documents.

O: Purchase Order Processing documents.

J: General Accounting/Joint Interest Billing documents.

S: Sales Order Processing documents.

Line Type

Enter a code that controls how the system processes lines on a transaction. It controls the systems with which the transaction interfaces, such as Oracle's JD Edwards EnterpriseOne General Accounting, Oracle's JD Edwards EnterpriseOne Job Cost, Oracle's JD Edwards EnterpriseOne Accounts Payable, Oracle's JD Edwards EnterpriseOne Accounts Receivable, and JD Edwards EnterpriseOne Inventory Management. It also specifies the conditions under which a line prints on reports, and is included in calculations. Codes include:

S: Stock item.

J: Job cost.

N: Nonstock item.

F: Freight.

T: Text information.

M: Miscellaneous charges and credits.

W: Work order.

Line Status

Enter a user-defined code (40/AT) that indicates the status of the line.

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Setting Up Forecasting Fiscal Date Patterns

Access the Set Up Fiscal Date Pattern form.

Fiscal Date Pattern

Enter a code that identifies date patterns. You can use one of 15 codes. You must set up special codes (letters A through N) for 4-4-5, 13 period accounting, or any other date pattern unique to the environment. An R, the default, identifies a regular calendar pattern.

Date Fiscal Year Begins

Enter the first day of the fiscal year.

Setting Up the 52 Period Date Pattern

Access the Set Up 52 Periods form.

Setting Up Large Customers

Access the Customer Master Revision form.

Select the Credit tab.

ABC Code Sales

Enter **A** in this field.

The ABC code indicates an item's ABC ranking by sales amount. During ABC analysis, the system groups items by sales amount in descending order. It divides this array into three classes called A, B, and C. The A group usually represents 10 percent to 20 percent of the total items and 50 percent to 70 percent of the projected sales volume. The next grouping, B, usually represents about 20 percent of the items and 20 percent of the sales volume. The C class contains 60 percent to 70 percent of the items and represents about 10 percent to 30 percent of the sales volume. The ABC principle states that you can save effort and money when you apply different controls to the low value, high volume class than you apply to improve control of high value items.

You can override a system assigned ABC code on the Item/Branch Plant Info. form (W41026A) on the Additional Info. tab.

Assigning Constants to Summary Codes

Access the Revise Summary Constants form.

Summary Code

Enter a user-defined code (40/KY) that indicates the type of summary forecast.

Global Summary Y/N (global summary yes/no)

Enter a code that indicates whether the forecast should be summarized to the global level. The global level is the top level of the forecasting hierarchy and represents a summary of all levels.

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Company Summary Y/N (company summary yes/no)

Enter a code that indicates whether the forecast should be summarized to the company level. The company level is the next level indicated as number one in the hierarchy. The system summarizes all forecasts within the company into this level.

Item Summary Y/N (item summary yes/no)

Enter a code that indicates whether the forecast should be summarized down to the item number level. This level is the last level in the hierarchy. The system summarizes all forecast detail records for an item into this level.

Customer Level

Enter a code that indicates the customer number as one of the levels in the forecasting hierarchy.

Setting Up Planning Bills

This section provides an overview of planning bill setup and discusses how to:

- Set up Item Master information.
- Set up category code information.
- Set up additional system information.
- Enter planning bills.

Understanding Planning Bill Setup

You must set up a planning bill before you generate a planning bill forecast. You use the JD Edwards EnterpriseOne Product Data Management system from Oracle to set up a planning bill. Then the system uses the planning bill to generate a forecast for the hypothetical average parent item. The forecast presents the component level exploded.

Item Master Information

Before you enter the criteria that you want to use on the planning bill, you must set up item master information on which the planning is based. The system stores this information in the Item Master table (F4101).

The Item Branch File table (F4102) also stores the item information. After you add item master records for the appropriate part numbers, the system retrieves item information from table F4102.

Planning Bills

You enter a planning bill in the JD Edwards EnterpriseOne Product Data Management system to change the percentages on which the hypothetical average parent item is based. This action enables you to account for any planning variations on which you might want to base forecasts.

Forms Used to Set Up Planning Bills

Form Name	FormID	Navigation	Usage
Item Master Revisions	W4101A	Inventory Master/Transactions (G4111), Item Master	Set up item master information.

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Form Name	FormID	Navigation	Usage
		On the Work With Item Master Browse form, select Add.	Complete the Item Number, Description, Stocking Type, GL Class, and Kit/Configurator Pricing Method fields.
Category Codes	W4101B	On the Work With Item Master Browse form, select a record and select Category Codes from the Row menu.	Set up category code information. Complete the Master Planning Family field.
Additional System Information	W4101C	On the Work With Item Master Browse form, select a record and select Addl System Info from the Row menu.	Set up additional system information. Complete the Planning Code field.
Enter Bill of Material Information	W3002A	Daily PDM Discrete (G3011), Enter/Change Bill On the Work with Bill of Material form, select a record.	Enter planning bills. Enter Item Number, Quantity, and Feat Plan percent information. Review the information in the Is Cd field.
Bill of Material Inquiry, Single Level	W30200C	On the Work with Bill of Material form, select BOM Inquiry from the Form menu.	View the single level bill of material.
Bill of Material Inquiry – Multi Level	W30200C	On the Bill of Material Inquiry, Single Level form, select Multi Level from the View menu.	View the multilevel bill of material.

Setting Up Item Master Information

Access the Item Master Revisions form.

On Item Master Revisions, complete these fields and click OK:

- Item Number
- Description
- Stocking Type
- GL Class
- Kit/Configurator Pricing Method

Depending on how the processing options are set, other forms might appear.

Stocking Type

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Enter a user-defined code (41/I) that indicates how you stock an item, for example, as finished goods or as raw materials. These stocking types are hard coded and you should not change them:

0: Phantom item

B: Bulk floor stock

C: Configured item

E: Emergency/corrective maintenance

F: Feature

K: Kit parent item

N: Nonstock

The first character of Description 2 in the user-defined code table indicates if the item is purchased (P) or manufactured (M).

G/L Class (general ledger class)
Enter a user-defined code (41/9) that controls which general ledger accounts receive the dollar amount of inventory transactions for this item.

Kit/Configurator Pricing Method
Enter a code that determines how the system calculates the price for kit items or configured items. Values are:

Blank: Use for items that are neither kit items nor configured items.

1: The system accumulates the base prices of components with the configured price adjustments, and then discounts the total.

2: The system accumulates the base price of the parent item with the configured price adjustments, and then discounts the total.

3: The system accumulates the configured price adjustments, and then discounts the total.

4: The system accumulates the individually discounted price of the components with the configured price adjustments.

Note: Configured price adjustments are only included in the calculation for a configured item. Also, the system only discounts costs if you are using Oracle's JD Edwards EnterpriseOne Advanced Pricing system.

The following is an example of how the system uses the various methods:

Parent Item: 125

Component A: 50

Component B: 100

Configured Cost Adjustment 1: 15

Configured Cost Adjustment 2: 10

Advanced Price Discount: 10%

Method 1: 50 + 100 = 150 + 15 + 10 = 175 - 17.50 = 157.5

Method 2: 125 + 15 + 10 = 150 - 15 = 135

Method 3: 15 + 10 =25 - 2.5 = 22.5

Method 4: (50 - 5) + (100 - 10) = 135 + 15 + 10 = 160

Setting Up Category Code Information

Access the Category Codes form.

To set up category code information:

1. On Work With Item Master form, click Find.
2. Select the item, and then select Category Codes from the Row menu.
3. Complete the Master Planning Family field and click OK.

Master Planning Family

Enter a user-defined code (41/P4) that represents an item property type or classification, such as commodity type or planning family. The system uses this code to sort and process like items.

This field is one of six classification categories available primarily for purchasing purposes.

Setting Up Additional System Information

Access the Additional System Information form.

1. On Work With Item Master form, click Find.
2. Select the item, and then select Additional System Information from the Row menu.
3. On the Manufacturing Data tab, complete the Planning Code field and click OK.
   If the Item Branch Revisions form appears, click Cancel to return to the Work With Item Master form.

Planning Code

Enter a code that indicates how Master Production Schedule (MPS), Material Requirements Planning (MRP), or Distribution Requirements Planning (DRP) processes this item. Values are:

0: Not Planned by MPS, MRP, or DRP.

1: Planned by MPS or DRP.

2: Planned by MRP.

3: Planned by MRP with additional independent forecast.

4: Planned by MPS, Parent in Planning Bill.

5: Planned by MPS, Component in Planning Bill.

These codes are hard coded.

Entering Planning Bills

Access the Bill of Material Inquiry - Multi Level form.

Feat Plan percent

Review the percentage of demand for a specified feature based on projected production. For example, a company might produce 65 percent of their lubricant with high viscosity, and 35 percent with low viscosity, based on customer demand.

MRP in the JD Edwards EnterpriseOne Requirements Planning system uses this percentage to accurately plan for the process co-products and by-products. Enter percentages as whole numbers, for example, enter 5 percent as 5.0. The default value is 0 percent.

Is Cd (issue code)

Review the code that indicates how the system issues each component in the bill of material from stock. In JD Edwards EnterpriseOne Shop Floor Management, it indicates how the system issues a part to a work order. Values are:

I: Manual issue.

F: Floor stock (there is no issue).

B: Backflush (when the part is reported as complete).

P: Preflush (when the parts list is generated).

U: Super backflush (at the pay point operation).

S: Subcontract item (send to supplier).

Blank: Shippable end item.

You can issue a component in more than one way within a specific branch/plant by using different codes on the bill of material and the work order parts list. The bill of material code overrides the branch/plant value.

5 Working with Sales Order History

Understanding Sales Order History

The system generates detail forecasts based on sales history data, current sales data, or both, that you copy from the Sales Order Detail File table (F4211) and the Sales Order History File table (F42119) into the Forecast File table (F3460). If you want the forecast to include current sales data, you must so specify in a processing option for the extraction program. When you copy the sales history, you specify a date range that is based on the request date of the sales order. The demand history data can be distorted, however, by unusually large or small values (spikes or outliers), data entry errors, or lost sales (sales orders that were canceled due to lack of inventory).

You should review the data in the date range that you specified to identify missing or inaccurate information. Then you can revise the sales order history to account for inconsistencies and distortions before you generate the forecast.

After you copy the sales order history into the Forecast File table (F3460), you should review the data for spikes, outliers, entry errors, or missing demand that might distort the forecast. You can then revise the sales order history manually to account for these inconsistencies before you generate the forecast.

Running the Refresh Actuals Program

This section provides an overview of the Refresh Actuals program, lists prerequisites, and discusses how to:

- Run the Refresh Actuals program.
- Set processing options for Refresh Actuals (R3465).

Understanding the Refresh Actuals Program

The system generates detail and summary forecasts that are based on data in the Forecast File table (F3460), Forecast Summary File table (F3400), or both. Use the Refresh Actuals program (R3465) to copy the sales order history (type AA) from the Sales Order History File table (F42119) to table F3460, table F3400 table, or both, based upon criteria that you specify.

This program enables you to:

- Select a date range for the sales order history, current sales order information, or both.
- Select a version of the inclusion rules to determine which sales history to include.
- Generate monthly or weekly sales order histories.
- Generate a separate sales order history for a large customer.
- Generate summaries.
- Generate records with amounts, quantities, or both.

You do not need to clear table F3460 before you run this program. The system automatically deletes any records for the same:

- Period as the actual sales order histories to be generated.

- Items.
- Sales order history type.
- Branch/plant.

Prerequisites

Before you complete the tasks in this section:

- Set up the Forecast Generation program (R34650).
- Update sales order history.

Running the Refresh Actuals Program

Select Periodic Forecasting Operations (G3421), Extract Sales Order History.

Setting Processing Options for Refresh Actuals (R3465)

Sometimes you must *refresh* or update sales history information that will be used as the input to the forecast generation process.

Process

These processing options enable you to specify how the system performs edits when generating sales history.

1. Forecast Type

Specify the forecast type that the system uses when creating the forecast actuals. Forecast type is a user-defined code (34/DF) that identifies the type of forecast to process. Enter the forecast type to use as the default value or select it from the Select User Define Code form. If you leave this field blank, the system creates actuals from AA forecast types.

2. Supply Demand Inclusion Rules

Specify the version of the Supply/Demand Inclusion Rules program that the system uses when extracting sales actuals. You must enter a version in this field before you can run the Extract Sales Order History program (R3465).

Versions control how the Supply/Demand Inclusion Rules program displays information. You may need to set the processing options to specific versions to meet the needs.

3. Actuals Consolidation

Specify whether the system uses weekly or monthly planning when creating actuals. Values are:

1: Weekly planning.

Blank: Monthly planning.

4. Large Customer Summary

Specify whether the system creates summary records for large customers when creating actuals. Values are:

1: Creates.

Blank: Does not create.

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5. Ship To or Sold To Address

Specify whether the system uses the ship to address on which to base large customer summaries, or the sold to address, when creating actuals. Values are:

1: Ship To address.

Blank: Sold To address.

6. Amount or Quantity

Specify whether the system creates detail forecasts with quantities, amounts, or both. Values are:

1: Quantities.

2: Amounts.

Blank: Quantities and amounts.

7. Use Active Sales Orders

Specify whether the system uses both the Sales Order Detail table (F4211) and the Sales Order History table (F42119) when creating actuals, or uses only the history table. Values are:

1: Both tables.

Blank: History table.

Dates

These processing options enable you to specify the fiscal date pattern that the system uses and the beginning and ending dates of the records that the system includes in the processing.

1. Fiscal Date Pattern

Specify the fiscal date pattern that the system uses when creating actuals. The fiscal date pattern is a user-defined code (H00/DP) that identifies the fiscal date pattern. Enter a pattern to use as the default value or select it from the Select User Defined Code form.

2. Begin Extract Date

Specify the beginning date from which the system processes records. Enter the beginning date to use as the default value or select it from the calendar. If you leave this field blank, the system uses the system date.

3. End Extract Date

Specify the ending date that the system uses when creating actuals. Enter the ending date to use as the default value or select it from the calendar. Enter an ending date only if you want to include a specific time period.

Summary

These processing options enable you to specify how the system processes edits.

1. Summary or Detail

Specify whether the system creates summarized forecast records, detail forecast records, or both. Values are:

1: Summarized and detail forecast records.

2: Summarized forecast records.

Blank: Detail forecast records.

2. Forecast Summary Code

Specify the summary code that the system uses to create summarized forecast records. The summary code is a user-defined code (40/KV) that identifies the code to create summarized forecast records. Enter the code to use as the default value or select it from the Select User Define Code form.

3. Category Codes Address Book

Specify from where the system retrieves the address book category codes. Values are:

1: Retrieves the address book number from the Forecast table (F3460).

Blank: Uses the cost center to determine which address book number to use to retrieve the category codes.

Interop

These processing options enable you to specify the default document type for the system to use for the purchase order and whether to use before or after image processing.

1. Transaction Type

Specify the transaction type to which the system processes outbound interoperability transactions. The transaction type is a user-defined code (00/TT) that identifies the type of transaction. Enter a type to use as the default value or select it from the Select User Define Code form.

2. Image Processing

Specify whether the system writes before or after image processing. Values are:

1: Writes before the images for the outbound change transaction are processed.

Blank: Writes after the images are processed.

Working with the Forecast Revisions Program

This section provides an overview of the Forecast Revisions program and discusses how to:

- Set processing options for Forecast Revisions (P3460).
- Use real-time summarization in the Forecast Revisions program (P3460).
- Revise sales order history.

Understanding the Forecast Revisions Program

Forecast Revisions enables you to create, change, or delete a sales order history manually. You can:

- Review all entries in the Forecast File table (F3460).
- Revise the sales order history.
- Remove invalid sales history data, such as outliers or missing demand.
- Enter descriptive text for the sales order history, such as special sale or promotion information.

Example: Revising Sales Order History

In this example, you run Refresh Actuals (R3465). The program identifies the actual quantities.

You use Forecast Revisions to associate the forecasted quantities with the forecasted amounts. The system reflects the changes made to a quantity in its corresponding amount and to an amount in its corresponding quantity. The system

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does so by retaining the same ratio that existed before the change. For example, when a change increases the quantity to 24, a quantity of 15 and an amount of 100 become a quantity of 24 and an amount of 160.

Form Used to Revise Sales Order History

Form Name	FormID	Navigation	Usage
Work With Forecasts	W3460B	Periodic Forecasting Operations (G3421), Enter/Change Actuals	Review forecasts.
Forecast Summary	W3460SWA	Select the Grid Aggregate icon on the Forecast Quantity or Forecast Amount field in the QBE line of the Work With Forecasts form.	Use real-time summarization in the Forecast Revisions program (P3460).
Detail Forecast Revisions	W3460A	Select a record on the Work With Forecasts form.	Revise sales order history. To attach information to a forecast type, select the row and then select Attachments from the Form menu.

Setting Processing Options for Forecast Revisions (P3460)

Processing options enable you to specify the default processing for programs and reports.

Defaults

1. Default Forecast Type

Specify a user-defined code (34/DF) that indicates one of these:

- The forecasting method used to calculate the numbers displayed about the item.
- The actual historical information about the item.

2. Default header Forecast Type to grid records on Copy

Specifies whether the system uses the header forecast type in grid records upon copy. Values are:

1: Populate grid records with header Forecast Type on copy.

3. Customer Self Service

Specifies whether you are creating an order in standard order entry mode or self-service mode. If you select self-service mode, you can select items from multiple applications before using Sales Order Entry (P4210) to create an order. You might use this feature if you are entering orders in a web environment. Values are:

Blank: Standard mode.

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1: Activate Self Service mode.

Interop

1. Type - Transaction

Enter the Transaction Type for processing outbound interoperability transactions.

2. Before Image Processing

Enter a value to control image processing in interoperability transactions.

Blank: Only after images will be written.

1: Write before images for outbound change transactions.

Versions

Enter the version for each program. If left blank, version ZJDE0001 will be used.

1. Forecast Online Simulation (P3461)

Specify the version of the Forecast Online Simulation program (P3461) that the system uses.

Production No.

1. Production Number Type

Specify a user-defined code (34/PT) that defines the structure of the production number.

2. Production Number Generation

Specify whether to generate a production number automatically for production controlled items.

Blank: Do not generate a production number.

1: Generate a production number.

Using Real-Time Summarization in the Forecast Revisions Program (P3460)

Access the Forecast Summary form.

In selected JD Edwards EnterpriseOne programs, you can use real-time summarization to quickly review aggregated totals, instead of scrolling to the end of the grid to review the totals.

On the Work with Forecasts form, search for records to populate the grid and then click the Grid Aggregate icon on the Forecast Quantity and Forecast Amount fields in the QBE line to view the aggregated totals. When you click the Grid Aggregate icon, the system displays the Forecast Summary form from the Forecast Revisions program (P3460SW).

When you select the Forecast Quantity or the Forecast Amount Grid Aggregate icon, the totals are aggregated by forecast type and customer number, and totaled by forecast type. The system displays both aggregated totals for both the Forecast Quantity and Forecast Amount fields, regardless of which Grid Aggregate icon you select.

After you view the aggregated totals on the Forecast Summary form, you click Cancel to return to the Work with Forecasts form, or you can select a record to view the detailed transactions on the Work with Forecasts form. If you select a record Forecast Summary form, the system populates the header fields and QBE fields of the Work with

Forecasts form to display the detail records associated with that aggregated total. You can delete or change the values in these fields if you want to search for additional records.

> **Note:** The Forecast Quantity totals are displayed in the unit of measure indicated on the Work with Forecasts form. Due to conversion, the total in the summarized grid might not match the totals in the detail grid.

Revising Sales Order History

Access the Detail Forecast Revisions form.

Forecast Type

Enter a user-defined code (34/DF) to indicate one of these:

- The forecasting method used to calculate the numbers displayed about the item.
- The actual historical information about the item.

Request Date

Enter the date that an item is scheduled to arrive or that an action is scheduled for completion.

Forecast Quantity

Enter the quantity of units forecasted for production during a planning period.

Forecast Amount

Enter the current amount of the forecasted units for a planning period.

Bypass Forcing

Enter a code that indicates whether to bypass the Forecast Forcing program (R34610). A **Y** indicates that the quantity and amount of a forecast should not be changed by an adjustment made to a forecast higher in the summary hierarchy. This flag is effective only when forecast forcing is done down the summary hierarchy.

Original Quantity

Review the original forecast quantity that you entered in the system. This value cannot be changed.

Original Amount

Review the original forecast amount that you entered in the system. This value cannot be changed.

> **Note:** To purge forecast records, See *Purging Forecast Records*

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6 Working with Detail Forecasts

Understanding Detail Forecasts

Detail forecasts are based on individual items. Use detail forecasts to project demand at the single item level, according to each item's individual history.

Forecasts are based on sales data from the Sales Order History File table (F42119) and the Sales Order Detail File table (F4211). Before you generate forecasts, you use the Refresh Actuals program (R3465) to copy sales order history information from tables F42119 and the F4211 into the Forecast File table (F3460). This table also stores the generated forecasts.

You can generate detail forecasts or summaries of detail forecasts, based on data in table F3460. Data from the forecasts can then be revised.

After you set up the actual sales history on which you plan to base the forecast, you can run the Forecast Generation program (R34650), to generate the detail forecast for one or multiple items. You can then revise the forecast to account for any market trends or strategies that might make future demand deviate significantly from the actual sales history.

The system creates detail forecasts by applying multiple forecasting methods to past sales histories and generating a forecast that is based on the method which provides the most accurate prediction of future demand. The system can also calculate a forecast that is based on a method that you select.

When you generate a forecast for any method, including best fit, the system rounds off the forecast amounts and quantities to the nearest whole number.

When you create detail forecasts, the system:

- Extracts sales order history information from the Forecast File table (F3460).
- Calculates the forecasts by using methods that you select.
- Calculates the percent of accuracy (POA) or the mean absolute deviation (MAD) for each selected forecast method.
- Creates a simulated forecast for the months that you indicate in the processing option.
- Recommends the best fit forecast method.
- Creates the detail forecast in either dollars or units from the best fit forecast.

The system designates the extracted actual records as type AA and the best fit model as BF. These forecast type codes are not hard coded, so you can specify the codes. The system stores both types of records in table F3460.

When creating detail forecasts, the system enables you to:

- Specify the number of months of actual data to use to create the best fit.
- Forecast for individual large customers for all methods.
- Run the forecast in proof or final mode.
- Forecast up to five years into the future.
- Create zero forecasts, negative forecasts, or both.
- Run the forecast simulation interactively.

Creating Detail Forecasts

This section discusses how to:

- Run the Forecast Generation program.
- Set processing options for Forecast Generation (R34650).

Running the Forecast Generation Program

Select Periodic Forecasting Operations (G3421), Create Detail Forecast.

> **Note:** Use the data selection for the Forecast Generation program to create detail forecasts for one or multiple items.

Setting Processing Options for Forecast Generation (R34650)

Processing options enable you to specify the default processing for programs and reports.

Method 1-3

These processing options specify which forecast types that the system uses when calculating the best fit forecast. You can also specify whether the system creates detail forecasts for the selected forecast method.

Enter **1** to use the forecast method when calculating the best fit. The system does not create detail forecasts for the method. If you enter zero before the forecast, for example, 01 for Method 1: Percent Over Last Year, the system uses the forecast method when calculating the best fit and creates the forecast method in the Forecast File table (F3460). If you leave the field blank, the system does not use the forecast method when calculating the best fit and does not create detail forecasts for the method.

A period is defined as a week or month, depending on the pattern that is selected from the Date Fiscal Patterns table (F0008). For weekly forecasts, verify that you have established 52 period dates.

1. Percent Over Last Year
Specify which type of forecast to run. This forecast method uses the Percent Over Last Year formula to multiply each forecast period by a percentage increase or decrease that you specify in a processing option. This method requires the periods for the best fit plus one year of sales history. This method is useful for seasonal items with growth or decline. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

01: Uses the Percent Over Last Year formula to create detail forecasts.

2. Percent
Specify the percent of increase or decrease used to multiply by the sales history from last year. For example, type 110 for a 10 percent increase or type 97 for a 3 percent decrease. Values are any percent amount, however, the amount cannot be a negative amount. Enter an amount to use or select it from the Calculator.

3. Calculated Percent Over Last Year

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Specify which type to run. This forecast method uses the Calculated Percent Over Last Year formula to compare the periods specified of past sales to the same periods of past sales of the previous year. The system determines a percentage increase or decrease, then multiplies each period by the percentage to determine the forecast. This method requires the periods of sales order history indicated in the processing option plus one year of sales history. This method is useful for short term demand forecasts of seasonal items with growth or decline. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

02: Uses the Calculated Percent Over Last Year formula to create detail forecasts.

4. Number of Periods
Specify the number of periods to include when calculating the percentage increase or decrease. Enter a number to use or select a number from the Calculator.

5. Last Year to This Year
Specify which type of forecast to run. This forecast method uses Last Year to This Year formula which uses last year's sales for the year's forecast. This method uses the periods best fit plus one year of sales order history. This method is useful for mature products with level demand or seasonal demand without a trend. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

03: Uses the Last Year to This Year formula to create detail forecasts.

Methods 4-6

These processing options specify which forecast types that the system uses when calculating the best fit. You can also specify whether the system creates detail forecasts for the selected forecast method.

1. Moving Average
Specify which type of forecast to run. This forecast method uses the Moving Average formula to average the months that you indicate in the processing option to project the next period. This method uses the periods best fit from the processing option plus the number of periods of sales order history from the processing option. You should have the system recalculate this forecast monthly or at least quarterly to reflect changing demand level. This method is useful for mature products without a trend. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

04: Uses the Moving Average formula to create detail forecasts.

2. Number of Periods
Specify the number of periods to include in the average. Enter a number to use or select a number from the Calculator.

3. Linear Approximation
Specify which type of forecast to run. This forecast method uses the Linear Approximation formula to compute a trend from the periods of sales order history indicated in the processing options and projects this trend to the forecast. You should have the system recalculate the trend monthly to detect changes in trends. This method requires periods best fit plus the number of periods that you indicate in the processing option of sales order history. This method is useful for new products or products with consistent positive or negative trends that are not due to seasonal fluctuations. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

05: Uses the Linear Approximation formula to create detail forecasts.

4. Number of Periods
Specify the number of periods to include in the linear approximation ratio. Enter the number to use or select a number from the Calculator.

5. Least Squares Regression
Specify which type of forecast to run. This forecast method derives an equation describing a straight line relationship between the historical sales data and the passage of time. Least Squares Regression (LSR) fits a line to the selected range of data such that the sum of the squares of the differences between the actual sales data points and the regression line are minimized. The forecast is a projection of this straight line into the future. This method is useful when there is a linear trend in the data. This method requires sales data history for the period represented by the number of periods best fit plus the number of historical data periods specified in the processing options. The minimum requirement is two historical data points. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

06: Uses the Least Squares Regression formula to create detail forecasts.

6. Number of Periods
Specify the number of periods to include in the regression. Enter the number to use or select a number from the Calculator.

Methods 7-8

These processing options let you specify which forecast types that the system uses when calculating the best fit. You can also specify whether the system creates detail forecasts for the selected forecast method.

1. Second Degree Approximation
Specify which type of forecast to run. This method uses the Second Degree Approximation formula to plot a curve based on the number of periods of sales history indicated in the processing options to project the forecast. This method adds the periods best fit and the number of periods, and then multiplies by three. You indicate the number of periods in the processing option of sales order history. This method is not useful for long term forecasts. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

07: Uses the Second Degree Approximation formula to create detail forecasts.

2. Number of Periods
Specify the number of periods to include in the approximation. Enter the number to use or select a number from the Calculator.

3. Flexible Method
Specify which type of forecast to run. This forecast method specifies the periods best fit block of sales order history starting n months prior and a percentage increase or decrease with which to modify it. This method is similar to Method 1. Percent Over Last Year, except that you can specify the number of periods that you use as the base. Depending on what you select as n, this method requires periods best fit plus the number of periods indicated in the processing options of sales data. This method is useful for a planned trend. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

08: Uses the Flexible method to create detail forecasts.

4. Number of Periods

Specify the number of periods before the best fit that you want to include in the calculation. Enter the number to use or select a number from the Calculator.

5. Percent Over Prior Period

Specify the percent of increase or decrease for the system to use. For example, type 110 for a 10 percent increase or type 97 for a 3 percent decrease. You can enter any percent amount, however, the amount cannot be a negative amount.

Methods 9

These processing options let you specify which forecast types that the system uses when calculating the best fit. You can also specify whether the system creates detail forecasts for the selected forecast method.

1. Weighted Moving Average

Specify which type of forecast to use. The Weighted Moving Average forecast formula is similar to Method 4: Moving Average formula, because it averages the previous number of months of sales history indicated in the processing options to project the next month's sales history. However, with this formula you can assign weights for each of the prior periods in a processing option. This method requires the number of weighted periods selected plus periods best fit data. Similar to Moving Average, this method lags demand trends, so this method is not recommended for products with strong trends or seasonality. This method is useful for mature products with demand that is relatively level. Values are:

Blank: Does not use this forecast.

1: Calculates the best fit forecast.

09: Uses the Weighted Moving Average formula to create detail forecasts.

2. One Period Prior through 13. Twelve Periods Prior

Specify the weight to assign to one period through 12 periods prior for calculating a moving average. Enter the number to use or select it from the Calculator.

14. Periods to Include

Specify the number of periods to include. Enter the number to use or select a number from the Calculator.

Method 10-11

These processing options let you specify which forecast types that the system uses when calculating the best fit. You can also specify whether the system creates detail forecasts for the selected forecast method.

1. Linear Smoothing

Specify which type of forecast to run. This forecast method calculates a weighted average of past sales data. You can specify the number of periods of sales order history to use in the calculation (from 1 to 12) in a processing option. The system uses a mathematical progression to weigh data in the range from the first (least weight) to the final (most weight). Then, the system projects this information for each period in the forecast. This method requires the periods best fit plus the number of periods of sales order history from the processing option. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

10: Uses the Linear Smoothing method to create detail forecasts.

2. Number of Periods

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Specify the number of periods to include in the smoothing average. Enter the number to use or select a number from the Calculator.

3. Exponential Smoothing

Specify which type of forecast to run. This forecast method uses one equation to calculate a smoothed average. This becomes an estimate representing the general level of sales over the selected historical range. This method is useful when there is no linear trend in the data. This method requires sales data history for the time period represented by the number of periods best fit plus the number of historical data periods specified in the processing options. The minimum requirement is two historical data periods. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

11: Uses the Exponential Smoothing method to create detail forecasts.

4. Number of Periods

Specify the number of periods to include in the smoothing average. Enter the number to use or select a number from the Calculator.

5. Alpha Factor

Specify the alpha factor, a smoothing constant, the system uses to calculate the smoothed average for the general level or magnitude of sales. You can enter any amount, including decimals, from zero to one.

Method 12

These processing options let you specify which forecast types that the system uses when calculating the best fit. You can also specify whether the system creates detail forecasts for the selected forecast method.

1. Exponential Smoothing with Trend and Seasonality

Specify which type of forecast to run. This forecast method calculates a trend, a seasonal index, and an exponentially smoothed average from the sales order history. The system then applies a projection of the trend to the forecast and adjusts for the seasonal index.

This method requires months best fit plus two years of sales data and is useful for items that have both trend and seasonality in the forecast. Use the processing options to enter the alpha and beta factor rather than have the system calculate them. Values are:

Blank: Does not use this method.

1: Calculates the best fit forecast.

12: Uses the Exponential Smoothing with Trend & Seasonality method to create detail forecasts.

2. Alpha Factor and 3. Beta Factor

Specify the alpha factor or beta factor, smoothing constants that the system uses to calculate the smoothed average for the general level or magnitude of sales. You can enter any amount, including decimals, from zero to one.

4. Seasonality

Specify whether the system includes seasonality in the calculation. Values are:

0: Does not include seasonality.

1: Includes seasonality.

Blank: Does not include seasonality.

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Defaults

These processing options let you specify the defaults that the system uses to calculate forecasts. The system extracts actual values from Sales History and stores the forecasts that are generated in the Forecast File table (F3460). You can define forecast types for Actuals (AA) and best fit (BF).

1. Actuals Forecast Type

Specify the forecast type that identifies the sales order history used as the basis for the forecast calculations, or Actuals. Forecast type is a user-defined code (34/DF) that identifies the type of forecast to run. Enter the forecast type to use as the default value or select it from the Select User Define Code form.

2. Best Fit Forecast Type

Specify the forecast type that is generated because of the best fit calculation. Forecast type is a user-defined code (34/DF) that identifies the type of forecast to run. Enter the forecast type to use as the default value or select it from the Select User Define Code form.

Process

The system applies the selected forecasting methods to past sales order history and compares the forecast simulation to the actual history. When you generate a forecast, the system compares actual sales order histories to forecasts for the months or weeks that you indicate in the processing option, and computes how accurately each of the selected forecasting methods would have predicted sales. Then the system recommends the most accurate forecast as the best fit.

Mean Absolute Deviation (MAD) is the mean of the absolute values of the deviations between actual and forecast data. MAD is a measure of the average magnitude of errors to expect, given a forecasting method and data history. Because absolute values are used in the calculation, positive errors do not cancel out negative errors. When comparing several forecasting methods, the one with the smallest MAD has is the most reliable for that product for that holdout period.

Percent of Accuracy (POA) is a measure of forecast bias. When forecasts are consistently too high, inventories accumulate and inventory costs rise. When forecasts are consistently too low, inventories are consumed and customer service declines. A forecast that is ten units too low, then eight units too high, then two units too high is an unbiased forecast. The positive error of ten is canceled by negative errors of eight and two.

1. Mode

Specify whether the system runs in proof or final mode. Values are:

Blank: Proof mode, creating a simulation report.

1: Final mode, creating forecast records.

2. Large Customers

Specify whether to create forecasts for large customers. Based on the Customer Master table (F0301), if the ABC code is set to A and this option is set to **1** the system creates separate forecasts for large customers. Values are:

Blank: Does not create large customer forecasts.

1: Creates large customer forecasts.

3. Weekly Forecasts

Specify weekly or monthly forecasts. For weekly forecasts, use fiscal date patterns with 54 periods. For monthly forecasts, use fiscal date patterns with 14 periods. Values are:

Blank: Monthly forecasts.

1: Weekly forecasts.

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4. Start Date

Specify the date on which the system starts the forecasts. Enter a date to use or select a date from the Calendar. If you leave this field blank, the system uses the system date.

5. Forecast Length

Specify the number of periods to forecast. You must have previously established fiscal date patterns for the forecasted periods. If you leave this field blank, the system uses **3.**

6. Actual Data

Specify the number of periods of actual data that the system uses to calculate the best fit forecast. If you leave this field blank, the system uses **3.**

The system applies the selected forecasting methods to past sales order history and compares the forecast simulation to the actual history. When you generate a forecast, the system compares actual sales order histories to forecasts for the months or weeks you indicate in the processing option and computes how accurately each of the selected forecasting methods would have predicted sales. Then, the system recommends the most accurate forecast as the best fit.

7. Mean Absolute Deviation

Specify whether the system uses the Mean Absolute Deviation formula or the Percent of Accuracy formula to calculate the best fit forecast. Values are:

Blank: Percent of Accuracy formula.

1: Mean Absolute Deviation formula.

8. Amounts or Quantity

Specify whether the system calculates the best fit forecast using amounts or quantities. If you specify to use amounts, you must also extract sales history using amounts. This also affects forecast pricing. Values are:

Blank: Quantities.

1: Amounts.

9. Fiscal Date Pattern

Specify the fiscal date pattern type to use for the forecast calculations. When generating weekly forecasts, the fiscal date pattern defined here must be set up for 52 periods.

10. Negative Values

Specify whether the system displays negative values. Values are:

Blank: Substitutes a zero value for all negative values.

1: Displays negative values.

Interop

This processing option lets you specify the transaction type that the system uses for interoperability.

1. Transaction Type

Specify the transaction type used for interoperability. Values are:

Blank: Does not create outbound forecasts.

JDEFC: Creates outbound forecasts.

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Creating Forecasts for a Single Item

Use the Forecast Online Simulation program (P3461) to create a detail forecast for a single item. After you run the simulation interactively, you can modify the simulated forecast and commit it to the Forecast File table (F3460).

This section discusses how to:

- Set processing options for Forecast Online Simulation (P3461).
- Create forecasts for a single item.

Form Used to Create Forecasts for a Single Item

Form Name	FormID	Navigation	Usage
Forecast Calculations	W3461D	Periodic Forecasting Operations (G3421), Online Simulation On Work With Forecast Simulations, complete the Item Number, Actual Type, and Branch fields and select Find. Select a record and click Select.	Create forecasts for a single item. Modify the simulated forecasts to commit changes to the Forecast File table (F3460).

Setting Processing Options for Forecast Online Simulation (P3461)

Processing options enable you to specify the default processing for programs and reports.

Method 1-3

Enter a **1** or a Forecast Type next to the Method desired.

1. Percent Over Last Year

Specify a user-defined code (34/DF) that indicates one of these:

- The forecasting method used to calculate the numbers displayed about the item.
- The actual historical information about the item.

Percent

Specify results in a calculation.

> **Note:** Enter the percent increase over last year (such as 110 for a 10 percent increase, 97 for a 3 percent decrease).

2. Calculated Percent Over Last Year

Specify Forecast Method 2 (TYPF2).

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Enter the number of periods to include in the percentage

Specify the number of periods for which the system generates forecasts. If you leave this processing option blank, the system uses three periods. The forecasted periods must already have fiscal date patterns established.

3. Last Year to This Year

Specify Forecast Method 3 (TYPF3).

Method 4-6

Enter a Forecast Type next to the Method desired.

4. Moving Average

Specify Forecast Method 4 (TYPF4).

Enter the number of periods to include in the average

Specify the number of periods of actual data the system uses to calculate the best fit forecast. If you leave this processing option blank, the system uses three periods. The system determines the best fit forecast by applying the selected forecasting methods to past sales order history and comparing the forecast simulation to the actual history. When you generate a forecast, the system compares the actual sales order histories to forecasts for the months or weeks you indicate in the processing option and computes how accurately each of the selected forecasting methods would have predicted sales. The system then recommends the most accurate forecast as the best fit.

5. Linear Approximation

Specify Forecast Method 5 (TYPF5).

Enter the number of periods to include in the ratio

Specify the number of periods of actual data the system uses to calculate the best fit forecast. If you leave this processing option blank, the system uses three periods.

The system determines the best fit forecast by applying the selected forecasting methods to past sales order history and comparing the forecast simulation to the actual history. When you generate a forecast, the system compares the actual sales order histories to forecasts for the months or weeks you indicate in the processing option and computes how accurately each of the selected forecasting methods would have predicted sales. The system then recommends the most accurate forecast as the best fit.

6. Least Squares Regression

Specify Forecast Method 11 (TYPF11).

Enter the number of periods to include in the regression

Specify Number Of Periods 04 (NUMP4).

Method 7-8

Enter a Forecast Type next to the Method desired.

7. Second Degree Approximation

Specify Forecast Method 6 (TYPF6).

Enter the number of periods

Specify Number Of Periods 08 (NUMP8).

8. Flexible Method (Percent over N periods prior)

Specify Forecast Method 7 (TYPF7).

Enter the number of periods prior

Specify Number Of Periods 05 (NUMP5).

Enter the percent over the prior period

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Specify the percent over the prior period. For example, 110 for a 10 percent increase, 97 for a 3 percent decrease.

Method 9

Enter a Forecast Type next to the Method desired.

9. Weighted Moving Average
Specify Forecast Method 8 (TYPF8).

> **Note:** The weights must add up to 100 (for example 60, 30, and 10).

Weight for one period prior through Weight for twelve periods prior
Specify Moving Average Weight 1 (WGHT1) through Moving Average Weight 12 (WGHT12).

> **Note:** If no weight is entered for a period within the number of periods specified, a weight of zero will be used for that period. Weights entered for periods greater than the number of periods specified will not be used.

Enter the number of periods to include
Specify Number Of Periods 10 (NUMP10).

Method 10-11

Enter a Forecast Type next to the Method desired.

10. Linear Smoothing
Specify Forecast Method 9 (TYPF9).

Enter the number of periods to include in smoothing average
Specify Number Of Periods 06 (NUMP6).

11. Exponential Smoothing
Specify Forecast Method 12 (TYPF12).

Enter the number of periods to include in the smoothing average
Specify Number Of Periods 07 (NUMP7).

Enter the Alpha factor
Specify a value for the alpha factor. If zero, it will be calculated.

Method 12

Enter a Forecast Type next to the Method desired.

12. Exponential Smoothing with Trend and Seasonality factors
Specify Forecast Method 10 (TYPF10).

Enter the Alpha factor
Specify a value for the alpha factor. If zero, it will be calculated.

Enter the Beta factor
Enter a value for the beta factor. If zero, it will be calculated.

Include seasonality in the calculation
Specify whether to include seasonality in the calculation.

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Blank: Seasonality will not be used.

1: Include seasonality in the calculation.

Process 1

1. Enter the Forecast Type to use when creating the Best Fit Forecast
Specify Forecast Type 2 (TYPFF).

2. Enter a "1" to create summary records for large customers (ABC = type)
Specify whether the system creates summary records for large customers (type = ABC). Values are:

Blank: Do not create summary records for large customers.

1: Create summary records for large customers.

3. Enter a "1" to specify weekly forecasts
Specify whether the forecasts are weekly or monthly. Values are:

Blank: Monthly forecasts

1: Weekly forecasts

4. Enter the date to start forecasts
Specify the date that an item is scheduled to arrive or that an action is scheduled for completion. If left blank, the system uses today's date.

5. Enter Number of periods to forecast
Enter the number of periods to forecast. If left blank, the system uses **3** periods.

6. Enter the number of periods of actual data to be used to calculate best fit forecast
Enter a value that represents the available quantity, which might consist of the on hand balance minus commitments, reservations, and backorders. You enter this value in the Branch/Plant Constants program (P41001).

If left blank, the system uses 3 periods of data.

Process 2

7. Calculate Best Fit forecast
Enter a value to specify how the system calculates the best fit forecast. Values are:

Blank: Calculate the Best Fit forecast using Percent of Accuracy.

1: Calculate the Best Fit forecast using Mean Absolute Deviation.

8. Forecast using amounts or quantities
Enter a value to specify whether the system calculates forecast using amounts or quantities. Values are:

Blank: Forecast using quantities.

1: Forecast using amounts.

9. Enter the Fiscal Date Pattern Type to use for forecast dating
Specify a date pattern. You can use one of 15 codes. You must set up special codes (letters A through N) for 4-4-5, 13 period accounting, or any other date pattern unique to the environment. An R, the default, identifies a regular calendar pattern.

10. Allow negative values to be written
Enter a value to specify how negative values are written. Values are:

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Blank: Negative values are written as zeroes.

1: Negative values are written.

Versions

Enter the version for each program. If left blank, version ZJDE0001 will be used.

1. Forecast Review by Type (P34300)
Specify the version of Forecast Review by Type (P34300) that the system uses.

Creating Forecasts for a Single Item

Access the Forecast Calculations form.

Actual Type
Specify a user-defined code that indicates one of these:

- ○ The forecasting method used to calculate the numbers displayed about the item.
- ○ The actual historical information about the item.

Reviewing Detail Forecasts

This section provides an overview of detail forecast review and discusses how to:

- Set processing options for Forecast Review (P34201).
- Review detail forecasts.

Understanding Detail Forecast Review

Review forecasts to compare the actual sales to the detail forecast. The system presents the forecast values, and actual quantities or sales order extended price for an item for the specified year.

Detail mode lists all item numbers. Summary mode consolidates data by master planning family. Select the Summary option in the header area, and then select Find to review information in summary mode.

This chart shows a comparison between a forecast and sales order history:
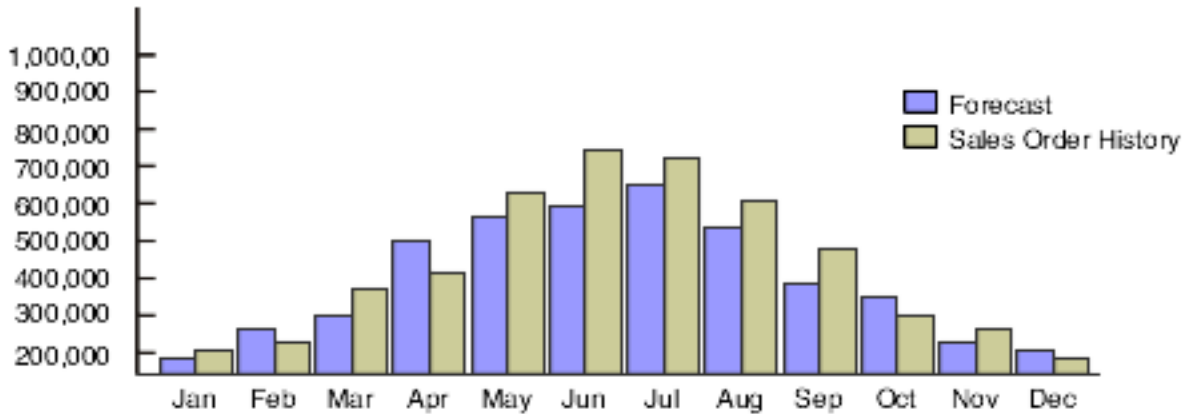
You can review information by planner, master planning family, or both. You can then change the forecast type to compare different forecasts to the actual demand. You can also display all of the information that is stored in the Forecast File table (F3460), select whether to review quantities or amounts, and view the data in summary or detail mode.

Form Used to Review Detail Forecasts

Form Name	FormID	Navigation	Usage
Work With Forecast Review	W34201A	Periodic Forecasting Operations (G3421), Review Forecast On Work With Forecast Review, locate a detail forecast.	Review detail forecasts.

Setting Processing Options for Forecast Review (P34201)

Processing options enable you to specify the default processing for programs and reports.

Defaults

1. Enter the default Forecast Type

Specify a user-defined code (34/DF) that indicates one of these:

- The forecasting method used to calculate the numbers displayed about the item.
- The actual historical information about the item.

2. Enter the default type for Actual

Specify a value from UDC 34/DF that the system uses for the default type for actual.

Versions

Specify the version of each program. If left blank, version ZJDE0001 will be used.

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1. Forecast Revisions (P3460)
Specify the version of Forecast Revisions (P3460) that the system uses.

Reviewing Detail Forecasts

Access the Work With Forecast Review form.

YR (year)
Enter a number that identifies the year that the system uses for the transaction.

Planner Number
Enter the address number of the material planner for this item.

Master Planning Family
Enter a user-defined code (41/P4) that represents an item property type or classification, such as commodity type or planning family. The system uses this code to sort and process like items.

This field is one of six classification categories available primarily for purchasing purposes.

Forecast Quantity
Enter the quantity of units forecasted for production during a planning period.

Actual Quantity
Enter the quantity of units affected by this transaction.

Qty % (quantity percent)
Enter a number that represents the percent of the forecast that has been consumed by the actual sales.

Forecast Amount
Enter the current amount of the forecasted units for a planning period.

Actual Amount
Enter the number of units multiplied by the unit price.

Amount %
Enter a number that represents the percent of the forecast amount that has been consumed by the actual sales.

Revising Detail Forecasts

This section provides an overview of detail forecast revisions and discusses how to revise detail forecasts.

Understanding Detail Forecast Revisions

After you generate and review a forecast, you can revise the forecast to account for changes in consumer trends, market conditions, competitor activities, marketing strategies, and so on. When you revise a forecast, you can change information in an existing forecast manually, add or delete a forecast, and enter descriptive text for the forecast.

You can access the forecasts that you want to revise by item number, branch/plant, forecast type, or any combination of these elements. You can specify a beginning request date to limit the number of periods.

As you revise the forecast, be aware that these combinations must be unique for each item number and branch record:

- Forecast type

- Request date

- Customer number

For example, if two records have the same request date and customer number, they must have different forecast types.

Form Used to Revise Detail Forecasts

Form Name	FormID	Navigation	Usage
Detail Forecast Revisions	W3460A	Periodic Forecasting Operations (G3421), Enter/ Change Forecast On Work With Forecasts, locate a forecast to revise.	Revise detail forecasts. To associate text or drawings with a forecast type, select the row and then select Attachments from the Form menu.

Revising Detail Forecasts

Access the Detail Forecast Revisions form.

U/M (unit of measure)
Enter a user-defined code (00/UM) that indicates the quantity in which to express an inventory item, for example, CS (case) or BX (box).

Revising Forecast Prices

This section provides an overview of forecast price revisions and discusses how to revise forecast prices.

Understanding Forecast Price Revisions

You can enter prices for unique combinations of item number, branch/plant, forecast type, and customer number. All these values are stored in the Forecast Prices table (F34007), and are used to extend the amount or quantity on a detail forecast record in the Forecast File table (F3460) and the Forecast Summary File table (F3400). You can roll up these prices to the higher level items in the forecast hierarchy by using the Forecast Price Rollup program (R34620).

If the forecast is stated in terms of quantity, you can use table F34007 to extend the forecast in amounts, for example, as a projection of revenue. In the case of a sales forecast, the forecast might already be stated in terms of revenue. In this case, you might want to convert the forecast into quantities to support production planning.

Form Used to Revise Forecast Prices

Form Name	FormID	Navigation	Usage
Forecast Pricing Revisions	W34007B	Periodic Forecasting Operations (G3421), Enter/ Change Forecast Price On Work With Forecast Prices, locate a forecast and select.	Revise forecast prices.

Revising Forecast Prices

Access the Forecast Pricing Revisions form.

Effective Date

Enter a date that indicates when a component part goes into effect on a bill of material or when a rate schedule is in effect.

The default is the current system date. You can enter future effective dates so that the system plans for upcoming changes. Items that are no longer effective in the future can still be recorded and recognized in Oracle's JD Edwards EnterpriseOne Product Costing system, JD Edwards EnterpriseOne Shop Floor Management system, and Oracle's JD Edwards EnterpriseOne Capacity Planning system. The JD Edwards EnterpriseOne Requirements Planning system uses Material Requirements Planning (MRP) to determine valid components by effectivity dates, not by the bill of material revision level. Some forms display data based on the effectivity dates you enter.

Expiration Date

Enter a date that indicates when a component part is no longer in effect on a bill of material, or when a rate schedule is no longer active. It can also indicate when a routing step is no longer in effect as a sequence on the routing for an item.

The default is December 31 of the default year defined in the Data Dictionary for Century Change Year. You can enter future effective dates so that the system plans for upcoming changes. Items that are no longer effective in the future can still be recorded and recognized in JD Edwards EnterpriseOne Product Costing, JD Edwards EnterpriseOne Shop Floor Management, and JD Edwards EnterpriseOne Capacity Planning. The JD Edwards EnterpriseOne Requirements Planning system uses MRP to determine valid components by effectivity dates, not by the bill of material revision level. Some forms display data based on the effectivity dates you enter.

Price

Enter the list or base price to be charged for one unit of this item. In sales order entry, all prices must be set up in the Item Base Price File table (F4106).

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Generating a Forecast Price Rollup

Use the Forecast Price Rollup program (R34620) to roll up the prices that you entered on the Forecast Pricing Revisions form to the higher level items in the forecast hierarchy. This program uses the manually entered prices to extend the amount or quantity on a detail record and rolls up the prices through the forecasting hierarchy.

This section discusses how to:

- Generate a forecast price rollup.
- Set processing options for Forecast Price Rollup (R34620).

Generating a Forecast Price Rollup

Select Periodic Forecasting Operations (G3421), Price Rollup.

Setting Processing Options for Forecast Price Rollup (R34620)

Processing options enable you to specify the default processing for programs and reports.

Control

1. Enter the Summary Code to use for pricing the summary forecast records
Specify a user-defined code (40/KY) that indicates the type of summary forecast. If left blank, only the detail forecasts will be priced.

2. Rollup Method
Specify whether the system performs a rollup based on amount or quantity.

Blank: Rollup based on quantity.

1: Rollup based on amount.

Purging Forecast Records

Managing the volume of forecast records improves requirements planning performance. As data becomes obsolete, use the Purge Forecast program (R3460P) to remove selected data from the forecast table (F3460).

The records to be purged are selected through data selection. A processing option is provided to control whether the records that you select to purge are saved to a purge table (F3460S).

When a record is deleted, the media objects associated with the record are also deleted.

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Setting Processing Options for the Purge Forecast Program (R3460P)

Processing options enable you to specify the default processing for programs and reports.

Process

Select the Process tab.

This processing option controls whether the records that you select to purge are saved to the F3460S Purge Forecast File. Values are:

Blank: Do not save the records.

1: Save the records.

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7 Working with Summary Forecasting

Understanding Summary Forecasts

You use summary forecasts to project demand at a product group level. Summary forecasts are also called aggregate forecasts. You can generate a summary of a detail forecast or a summary forecast based on summarized actual sales history.

Address Book Category Codes

You use address book category codes to define business attributes for the summary hierarchy For example, regions, territories, and distribution centers. The address book category codes associate the levels of the hierarchy when you generate the summary forecast. Optionally, you can define the category codes with the business unit if the hierarchy is tied to the business unit structure.

This chart shows an example of a workflow for assigning category codes:
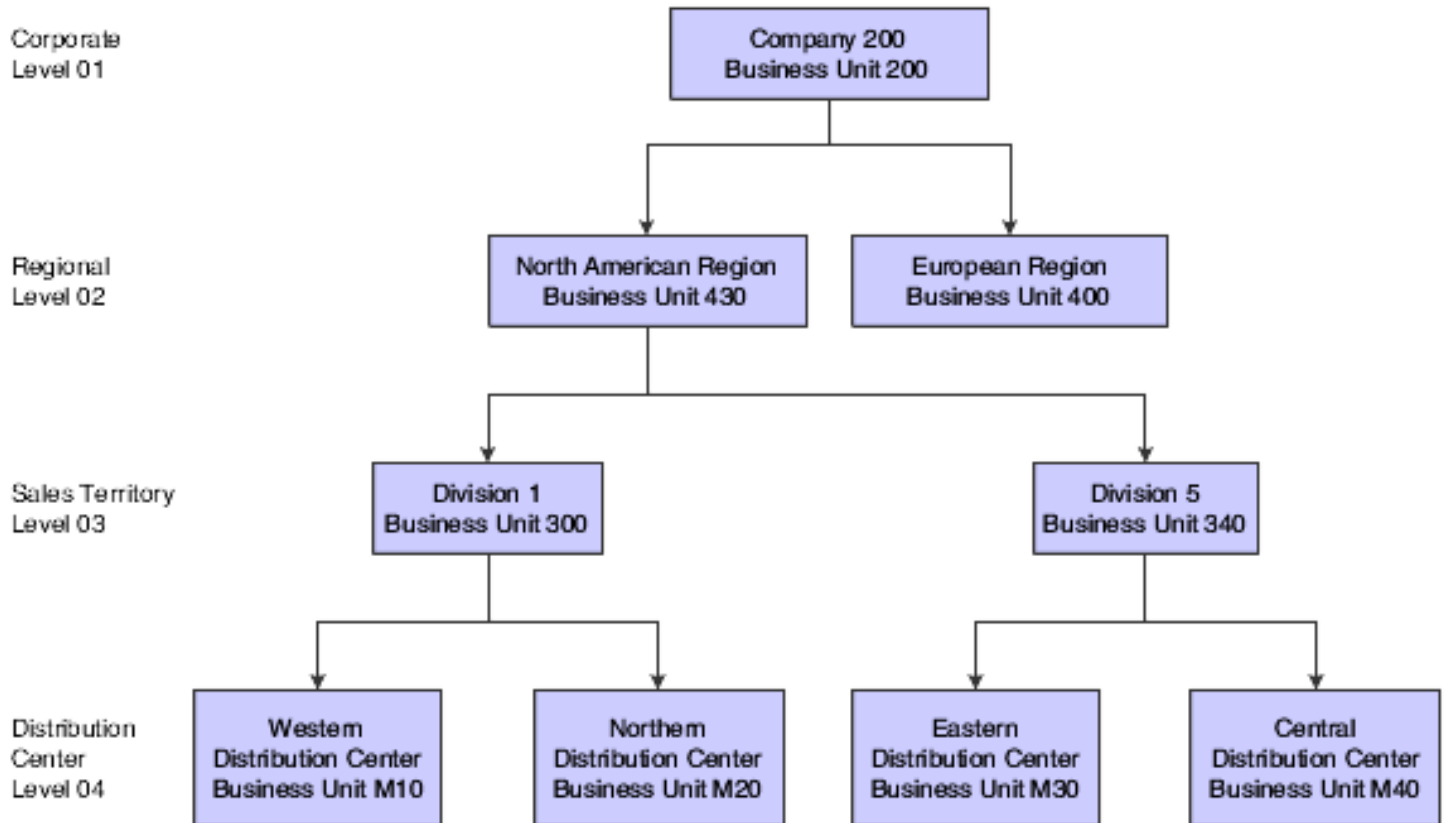
For example, Division 1 (in the North American Region) uses business unit code 430 as its address book Sales Territory (03) category code. The Western Distribution Center resides in Division 1. To establish the link to the North American Region, the address book category codes for the Western Distribution Center must include the business unit codes that are defined at each level of the hierarchy. In the address book for Western Distribution Center (M10), the Division 1 business unit code (300) resides in the Sales Territory (03) category code. The North American Region business unit code (430) is assigned to the Region category code (02).

This table illustrates the category codes for the North American Region hierarchy:

Business Unit Description	Business Unit Number	Level of Detail	Address Book	Address Book Category Code
Corporate Business Unit	200	1	200	
North American Region	430	2	1234	
European Region	400	2	4567	
Division 1	300	3	5678	Territory (03): 430
Division 5	340	3	8765	Territory (03): 430
Northern Distribution Region	M20	4	6066	Territory (03): 300 Region (04): 430
Western Distribution Region	M10	4	6058	Territory (03): 300 Region (04): 430
Central Distribution Region	M40	4	6082	Territory (03): 340 Region (04): 430
Eastern Distribution Region	M30	4	6074	Territory (03): 340 Region (04): 430

At each level in the hierarchy, the first category code defines the highest level in the hierarchy. The second category code defines the second higher level, and so on.

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Business Unit Data

Review the company business units and business unit address book numbers to verify that the business units and corresponding address book numbers have been set up correctly. To review company business units, review the level of detail for each business unit in the company hierarchy, and verify that the appropriate address book number is assigned to the business unit.

Item Branch Category Codes

Information for an item at a specific branch is maintained in item branch records. The system stores this information in the Item Branch File table (F4102). You should review the item branch records to verify that the items in each branch/plant contain data for the category codes that you selected as levels on the Revise Summary Constants form.

For example, if you select a Master Planning Family as part of a company hierarchy, you must verify that a corresponding user-defined code (UDC) exists in the item branch category code field for that Master Planning Family.

Summary Forecast Generation

The system generates summary forecasts that are based on sales history data that you copy from the Sales Order History File table (F42119) into the Forecast Summary File table (F3400). When you copy the sales history, you specify a date range that is based on the request date of the sales order. The sales history data can be distorted by unusually large or small values (spikes or outliers), data entry errors, or missing demand (sales orders that were canceled due to lack of inventory).

You should review the data in the date range that you specified to identify missing or inaccurate information. You then revise the sales order history to account for inconsistencies and distortions when you generate the forecast. If you want to account for changes in sales order activity for an especially large customer, JD Edwards EnterpriseOne Forecast Management enables you to work with that customer's changes separately.

> **Note:** To generate summary forecasts for item quantities on all levels of the hierarchy, generate a detail forecast first, and then run the Summary Forecast Update program (R34600).

The Forecast Generation for Summaries program (R34640) enables you to test simulated versions of future sales scenarios without having to run full detail forecasts. You can use this program to simulate and plan long range trends because this program does not update information in the Forecast File table (F3460), which is used as input to Distribution Requirements Planning (DRP), Master Production Schedule (MPS), and Material Requirements Planning (MRP) generation.

You can simulate multiple forecasting methods, including the system's 12 hard coded methods, with past sales order histories; and then select the best fit as determined by the system or another appropriate model to generate a forecast of future sales amounts. You can also select a specific forecasting method and use that model to generate the current forecast. The system generates forecasts of sales amounts for each level in the hierarchy and stores them in the Forecast Summary File table (F3400).

The Forecast Generation for Summaries program uses the same 12 forecasting methods that are used to create detail forecasts. However, the system creates forecast information for each level in the hierarchy.

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You can also use the Forecast Generation for Summaries program to:

- Specify the summary code for the hierarchy for which you want to forecast.
- Generate summary forecasts that are based on sales history.
- Select a best fit forecast.
- Store any or all of the forecast methods in table F3400.
- Generate the forecast in a fiscal date pattern that you select.
- Specify the number of months of actual data to use to create the best fit.
- Forecast for individual large customers.
- Forecast an unlimited number of periods into the future.

If you use the default type codes in the processing options, the actual sales history records are identified by type AA, and the best fit model is identified by type BF. The system saves the BF type and AA type records (or corresponding type codes that you designate) in table F3400. However, forecast types 01 through 12 are not automatically saved. You must set a processing option to save them.

When you run the Forecast Generation for Summaries program, the system:

- Extracts sales order history information from table F3400.
- Calculates the forecasts by using methods that you select.
- Determines the Percent of Accuracy (POA) or Mean Absolute Deviation (MAD) for each selected forecast method.
- Recommends the best fit forecast method.
- Generates the summary forecast in both monetary amounts and units from the best fit forecast.

Summary Sales Order History

The system generates summary forecasts that are based on data in the Forecast Summary File table (F3400). Use the Refresh Actuals program (R3465) to copy the sales order history (type AA) from the Sales Order History File table (F42119) to table F3400, based upon criteria that you specify.

The system stores sales order histories in table F3400 with forecast type AA or a type code that you designate.

You do not need to clear table F3400 before you run this program. The system automatically deletes any records for the same:

- Period as the actual sales order histories to be generated.
- Items.
- Sales order history type (AA).
- Branch or plant.

  Note: The Refresh Actuals program (R3465) converts sales orders into the primary unit of measure and adjusts the resulting quantities.

After you copy the sales order history into the Forecast Summary File table (F3400), you should review the data for spikes, outliers, entry errors, or missing demand that might distort the forecast. Revise the sales order history manually to account for these inconsistencies before you generate the forecast.

Summarized Detail Forecasts

After generating the forecasts, you can compare them to actual sales order histories. You can then revise both history and forecast data, according to the criteria.

When you review summaries of forecasts, you can also access a previously generated forecast. You can access a date range to find the sales order history, and the forecast of item quantities or sales amounts. Then you can compare actual sales to the forecast.

When you revise summaries of forecasts, you revise information in a specific level of the forecast. You can also use the Forecast Forcing program (R34610) to apply changes that you made to the summary. You can apply these changes up the hierarchy, down the hierarchy, or in both directions.

Use the Forecast Summary program (P34200) to review summaries of the forecasts. You can also review previously generated forecasts.

After reviewing the forecasts, you can compare them to actual sales order histories. You can then revise both forecast data, according to the criteria.

If you run the Forecast Generation for Summaries program (R34640) to update the Summary Forecast File table (F3400), the revision forms do not indicate lower level forecasts of item quantities. However, if you run the Summary Forecast Update program (R34600) to update table F3400, these forms indicate the lower level forecasts of item quantities.

Summary Forecasts Using Forecast Forcing

The Forecast Forcing program (R34610) enables you to apply the manual changes that you made to the summary of a forecast either up the hierarchy (aggregation), down the hierarchy (disaggregation), or in both directions. The system stores these changes in the Forecast Summary File table (F3400).

You can force changes to quantities, amounts, or both. When you make changes both up and down the hierarchy, the program resets the flag on the record to indicate the change. The program makes changes down the hierarchy to the lowest detail level. These changes are also updated in the Forecast File table (F3460).

> **Note:** If you force changes in only one direction, the program resets the flag, based on a processing option. You can lose the ability to make changes in the other direction if you force a change in only one direction. On Forecast Summary (P34200), you can set the Bypass Forcing flag on the Summary Forecast Revisions form for records in the hierarchy. The system subtracts the bypassed record amounts and quantities from the parent amounts and quantities before calculating the percentages. The system distributes the total amounts to the other children in the hierarchy that were not bypassed. You can only bypass records when you make changes down the hierarchy.

Example of Forecast Forcing (R34610)

The Forecast Forcing program (R34610) uses the parent/child relationship at each level within the hierarchy to calculate a parent/child ratio. The parent/child ratio is the percentage of the amount or quantity for each child level, based on the total amount or quantity of the parent.

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In this example, the parent original amount is 200 and its two children in the next level each have an original amount of 100. The program calculates the ratio as 50 percent of the parent. The parent/child ratio is calculated at each level of the hierarchy.

When forcing the changes up the hierarchy, the program summarizes each record again so that the summarized total of the records reflects the adjusted amount.

The system summarizes the changes to the lower levels up to the parent level. If you change Product Family X from a quantity of 100 to a quantity of 300, the parent quantity changes to 400.

The Forecast Forcing program also makes adjustments down the hierarchy. The parent/child ratio can be based on an original parent/child ratio or an adjusted parent/child ratio.

Using the original parent/child ratio, the system maintains the parent/child ratio when the parent quantity changes. The system uses the adjusted quantity of the parent to calculate the changes at the next lower level. An increase of 600 units to Customer A using the original ratio of 50 percent for each child results in the children calculation of 600 ×.5 = 300 each.

Setting Up Summary Forecasts

This section lists prerequisites and discusses how to:

- Revise address book category codes.

- Review business unit data.

- Verify item branch category codes.

Prerequisites

Before you complete the tasks in this section:

- Enter new records for all locations and customers that are defined in the distribution hierarchy which are not included in the address book.

- Set up the address book numbers for each business unit.

> **Note:**
> - *"Setting Up Business Units" in the JD Edwards EnterpriseOne Applications Financial Management Fundamentals Implementation Guide .*

Forms Used to Set Up Summary Forecasts

Form Name	FormID	Navigation	Usage
Address Book Revision	W01012A	Daily Processing (G0110), Address Book Revisions	Revise the address book.

Form Name	FormID	Navigation	Usage
		Complete the Alpha Name and Search Type fields and select Find. Select an address number.	
Address Book Revision	W01012A	Select the Cat Code 1 through 10 tab and complete any of the fields. To access additional category code fields, select the Cat Code 11 through 30 tab. Select OK.	Revise address book category codes.
Work With Business Units	W0006B	Organization & Account Setup (G09411), Review and Revise Business Units Complete the Company field and select Find. Select a business unit.	Review business unit data.
Revise Business Unit	W0006A	Select the More Detail tab and complete the Address Number field. Select OK.	Revise business unit data.
Work With Item Branch	W41026E	Inventory Master/Transactions (G4111), Item Branch/Plant Complete the Item Number field and select Find. Select a branch/plant and then select Category Codes from the Row menu. Complete the Commodity Class field.	Revise item branch data.

Revising Address Book Category Codes

Access the Address Book Revision form.

Alpha Name

Enter the text that names or describes an address. This 40 character alphabetic field appears on a number of forms and reports. You can enter dashes, commas, and other special characters, but the system cannot search on them when you use this field to search for a name.

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Reviewing Business Unit Data

Access the Work With Business Units form.

Company
Enter a code that identifies a specific organization, fund, or other reporting entity. The company code must already exist in the Company Constants table (F0010) and must identify a reporting entity that has a complete balance sheet. At this level, you can have intercompany transactions.

> **Note:** You can use company **00000** for default values such as dates and automatic accounting instructions (AAIs). You cannot use company **00000** for transaction entries.

Address Number
Enter a number that identifies an entry in Oracle's JD Edwards EnterpriseOne Address Book system, such as employee, applicant, participant, customer, supplier, tenant, or location.

Verifying Item Branch Category Codes

Access the Work With Item Branch form.

Commodity Class
Enter a code (table 41/P1) that represents an item property type or classification, such as commodity type, planning family, or so forth. The system uses this code to sort and process like items.

This is one of six classification categories available primarily for purchasing purposes.

Generating Summary Forecasts

This section provides an overview of generating summary forecasts, lists prerequisites, and discusses how to:

- Run the Forecast Generation for Summaries program.
- Set processing options for Forecast Generation for Summaries (R34640).
- Set processing options for Forecast Summary (P34200).
- Revise sales order history.
- Run the Summary Forecast Update program.
- Set processing options for Summary Forecast Update (R34600).
- Review a summary forecast.
- Revise a summary forecast.
- Revise summary forecasts using Forecast Forcing (R34610).
- Set processing options for Forecast Summary (R34610).

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Understanding Generating Summary Forecasts

 The system generates summary forecasts that are based on sales history data that you copy from the Sales Order History File table (F42119) into the Forecast Summary File table (F3400). When you copy the sales history, you specify a date range that is based on the request date of the sales order. The sales history data can be distorted by unusually large or small values (spikes or outliers), data entry errors, or missing demand (sales orders that were canceled due to lack of inventory).

You should review the data in the date range that you specified to identify missing or inaccurate information. You then revise the sales order history to account for inconsistencies and distortions when you generate the forecast. If you want to account for changes in sales order activity for an especially large customer, JD Edwards EnterpriseOne Forecast Management enables you to work with that customer's changes separately.

Note: To generate summary forecasts for item quantities on all levels of the hierarchy, generate a detail forecast first, and then run the Summary Forecast Update program (R34600).

Summary Sales Order History

  The system generates summary forecasts that are based on data in the Forecast Summary File table (F3400). Use the Refresh Actuals program (R3465) to copy the sales order history (type AA) from the Sales Order History File table (F42119) to table F3400, based upon criteria that you specify.

The system stores sales order histories in table F3400 with forecast type AA or a type code that you designate.

You do not need to clear table F3400 before you run this program. The system automatically deletes any records for the same:

- Period as the actual sales order histories to be generated.

- Items.

- Sales order history type (AA).

- Branch or plant.

  Note: The Refresh Actuals program (R3465) converts sales orders into the primary unit of measure and adjusts the resulting quantities.

Summary Forecasts

 The Forecast Generation for Summaries program (R34640) enables you to test simulated versions of future sales scenarios without having to run full detail forecasts. You can use this program to simulate and plan long range trends because this program does not update information in the Forecast File table (F3460), which is used as input to DRP, MPS, and MRP generation.

You can simulate multiple forecasting methods, including the system's 12 hard coded methods, with past sales order histories; and then select the best fit as determined by the system or another appropriate model to generate a forecast of future sales amounts. You can also select a specific forecasting method and use that model to generate the current forecast. The system generates forecasts of sales amounts for each level in the hierarchy and stores them in the Forecast Summary File table (F3400).

The Forecast Generation for Summaries program uses the same 12 forecasting methods that are used to create detail forecasts. However, the system creates forecast information for each level in the hierarchy.

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You can also use the Forecast Generation for Summaries program to:

- Specify the summary code for the hierarchy for which you want to forecast.

- Generate summary forecasts that are based on sales history.

- Select a best fit forecast.

- Store any or all of the forecast methods in table F3400.

- Generate the forecast in a fiscal date pattern that you select.

- Specify the number of months of actual data to use to create the best fit.

- Forecast for individual large customers.

- Forecast an unlimited number of periods into the future.

If you use the default type codes in the processing options, the actual sales history records are identified by type AA, and the best fit model is identified by type BF. The system saves the BF type and AA type records (or corresponding type codes that you designate) in table F3400. However, forecast types 01 through 12 are not automatically saved. You must set a processing option to save them.

When you run the Forecast Generation for Summaries program, the system:

- Extracts sales order history information from table F3400.

- Calculates the forecasts by using methods that you select.

- Determines the Percent of Accuracy (POA) or Mean Absolute Deviation (MAD) for each selected forecast method.

- Recommends the best fit forecast method.

- Generates the summary forecast in both monetary amounts and units from the best fit forecast.

Sales Order History Revisions

After you copy the sales order history into the Forecast Summary File table (F3400), you should review the data for spikes, outliers, entry errors, or missing demand that might distort the forecast. Revise the sales order history manually to account for these inconsistencies before you generate the forecast.

Summary Forecast Update Program (R34600)

The Summary Forecast Update program (R34600) generates summary forecasts, which are stored in the Forecast Summary File table (F3400) and are based on data from the Forecast File table (F3460). The Summary Forecast Update program enables you to use detail data to generate summary forecasts that provide both sales amount and item quantity data. You can summarize detail actual sales data or forecasted data. Proper data selection is critical to accurate processing. You should include only items in the summary constants hierarchy.

Data in table F3460 is based on both input that is copied from the Sales Order History File table (F42119) by using the Refresh Actuals program (R3465) and input that is generated by the Forecast Generation program (R34650).

You do not need to clear table F3400 before you run this program. The system deletes any forecasts in the table for the summary code that you specify. If you enter the from and through dates, the system only deletes those forecasts within the date range. The system adds the forecast amounts to the selected record and to every record in the hierarchy.

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Prerequisites

Before you complete the tasks in this section:

- Run the Refresh Actuals program (R3465).
- Make changes to the sales order history with the Forecast Revisions program (P3460).
- Before revising sales order history, run the Refresh Actuals program (R3465).
- Run the Forecast Generation program (R34650).
- Select the processing option on the Forecast Forcing program (R34610) that indicates the direction in which you want to make changes.
- Set up detail forecasts.
- Set up the summary forecast.
- Generate a summary forecast or a summary of detail forecast.

Forms Used to Generate Summary Forecasts

Form Name	FormID	Navigation	Usage
Work With Summary Forecast	W34200C	Periodic Forecasting Operations (G3421), Enter Change Summaries Complete the Summary Code, Actual Type, Forecast Type, From Date, and Thru Date fields and select Find. Select a record to review.	Revise summary sales order history.
Summary Forecast Revisions	W34200B	Review the fields in the detail area: Original Quantity, Adjusted Quantity, Original Amount, Adjusted Amount. Complete the Change Type and Change Amount fields in the detail area to change information for the forecast summary. To change information for individual lines, complete the Adjusted Quantity, Adjusted Amount, Bypass Forcing fields and select OK.	Revise summary forecast.
Work With Summary Forecast	W34200C	Select Review from the Form menu.	Review the summary forecast.

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Form Name	FormID	Navigation	Usage
Forecast Review by Type	W34200A	Review the options and fields: Weekly, Quantity, Level 1, Fiscal Year, Type, Period 1.	Review the forecast by type.

Running the Forecast Generation for Summaries Program

Select Periodic Forecasting Operations (G3421), Create Summary Forecast.

Setting Processing Options for Forecast Generation for Summaries (R34640)

Processing options enable you to specify the default processing for programs and reports.

Method 1-3

These processing options let you specify which forecast types that the system uses when calculating the best fit forecast for each level in the hierarchy. You can also specify whether the system creates summary forecasts for the selected forecast method.

Enter **1** to use the forecast method when calculating the best fit. If you leave the processing option blank, the system does not use that forecast method when calculating the best fit and does not create summary forecasts for the method.

The system defines a period as a week or month, depending on the pattern that is chosen from the Date Fiscal Patterns table (F0008). For weekly forecasts, verify that you have established 52 period dates.

1. Percent Over Last Year
Specify which type of forecast to run. This forecast method uses the Percent Over Last Year formula to multiply each forecast period by a percentage increase or decrease. You specify the increase or decrease in the Percent processing option. This method requires the periods for the best fit plus one year of sales history. This method is useful for seasonal items with growth or decline. Values are:

Blank: Does not use this method.

1: Uses the Percent Over Last Year formula to create summary forecasts.

2. Percent
Specify the percent of increase or decrease by which the system multiplies the sales history from last year. For example, type 110 for a 10 percent increase or type 97 for a 3 percent decrease. Values are any percent amount; however, the amount cannot be a negative amount. Enter an amount to use or select it from the Calculator.

3. Calculated Percent Over Last Year
Specify which type of forecast to run. This forecast method uses the Calculated Percent Over Last Year formula to compare the periods of past sales that you specify to the same periods of past sales of the previous year. The system determines a percentage increase or decrease, then multiplies each period by this percentage to determine the forecast. This method uses the periods of sales order history that you specify in the Number of Periods processing option plus one year of sales history.

This method is useful for short term demand forecasts of seasonal items with growth or decline. Values are:

Blank: Does not use this method.

1: Uses the Calculated Percent Over Last Year formula to create summary forecasts.

4. Number of Periods

Specify the number of periods to include when calculating the percentage increase or decrease. Enter a number to use or select it from the Calculator.

5. Last Year to This Year

Specify which type of forecast to run. This forecast method uses the Last Year to This Year formula which calculates the year's forecast based on the prior year's sales. This method uses the periods best fit plus one year of sales order history. This method is useful for mature products with level demand or seasonal demand without a trend. Values are:

Blank: Does not use this method.

1: Uses the Last Year to This Year formula to create summary forecasts.

Method 4-6

These processing options let you specify which forecast types that the system uses when calculating the best fit forecast for each level in the hierarchy. You can also specify whether the system creates summary forecasts for the selected forecast method.

Enter **1** to use the forecast method when calculating the best fit. If you leave the processing option blank, the system does not use that forecast method when calculating the best fit and does not create summary forecasts for the method.

The system defines a period as a week or month, depending on the pattern that is chosen from the Date Fiscal Patterns table (F0008). For weekly forecasts, verify that you have established 52 period dates.

1. Moving Average

Specify which type of forecast to run. This forecast method uses the Moving Average formula to average the months that you indicate in the Number of Periods processing option to project the next period. This method uses the periods for the best fit from the Actual Data processing option under the Process 1 tab plus the number of periods of sales order history. You should have the system recalculate this forecast monthly or at least quarterly to reflect changing demand level. This method is useful for mature products without a trend. Values are:

Blank: Does not use this method.

1: Uses the Moving Average formula to create summary forecasts.

2. Number of Periods

Specify the number of periods to include in the Moving Average forecast method. Enter a number to use or select it from the Calculator.

3. Linear Approximation

Specify which type of forecast to run. This forecast method uses the Linear Approximation formula to compute a trend from the periods of sales order history and projects this trend to the forecast.

You should have the system recalculate the trend monthly to detect changes in trends. This method uses period's best fit plus the number of periods that you indicate in the Number of Periods processing option of sales order history. This method is useful for new products or products with consistent positive or negative trends that are not due to seasonal fluctuations. Values are:

Blank: Does not use this method.

1: Uses the Linear Approximation formula to create summary forecasts.

4. Number of Periods

Specify the number of periods to include in the Linear Approximation forecast method. Enter the number to use or select it from the Calculator.

5. Least Squares Regression

Specify which type of forecast to run. This forecast method derives an equation describing a straight line relationship between the historical sales data and the passage of time. Least Squares Regression fits a line to the selected range of data such that the sum of the squares of the differences between the actual sales data points and the regression line are minimized. The forecast is a projection of this straight line into the future. This method is useful when there is a linear trend in the sales data. This method uses sales data history for the period represented by the number of periods best fit plus the number of historical data periods specified in the Number of Periods processing option. The system requires a minimum of two historical data points. Values are:

Blank: Does not use this method.

1: Uses the Least Squares Regression formula to create summary forecasts.

6. Number of Periods

Specify the number of periods to include in the Least Squares Regression forecast method. You must enter at least two periods.

Enter the numbers to use or select them from the Calculator.

Method 7-8

These processing options let you specify which forecast types that the system uses when calculating the best fit forecast for each level in the hierarchy. You can also specify whether the system creates summary forecasts for the selected forecast method.

Enter **1** to use the forecast method when calculating the best fit. If you leave the processing option blank, the system does not use that forecast method when calculating the best fit and does not create summary forecasts for the method.

The system defines a period as a week or month, depending on the pattern that is chosen from the Date Fiscal Patterns table (F0008). For weekly forecasts, verify that you have established 52 period dates.

1. Second Degree Approximation

Specify which type of forecast to run. This forecast method uses the Second Degree Approximation formula to plot a curve based on a specified number of sales history periods. You specify the number of sales history periods in the Number of Periods processing option to project the forecast. This method adds the period's best fit and the number of periods, and then the sum multiplies by three. This method is not useful for long term forecasts. Values are:

Blank: Does not use this method.

1: Uses the Second Degree Approximation formula to create summary forecasts.

2. Number of Periods

Specify the number of periods to include in the Second Degree Approximation forecast method. Enter the number to use or select it from the Calculator.

3. Flexible Method

Specify which type of forecast to run. This forecast method specifies the period's best fit block of sales order history starting n months prior and a percent increase or decrease with which to modify the forecast. This method is similar to Method 1: Percent Over Last Year, except that you can specify the number of periods that you use as the base. Depending on what you select as n, this method requires period's best fit plus the number of periods that you specify in the Number of Periods processing option. This method is useful when forecasting products with a planned trend. Values are:

Blank: Does not use this method.

1: Uses the Flexible Method formula to create summary forecasts.

4. Number of Periods

Specify the number of periods before the best fit that you want to include in the Flexible Method calculation. Enter the number to use or select it from the Calculator.

5. Percent Over Prior Period

Specify the percent of increase or decrease for the system to use. For example, type 110 for a 10 percent increase or type 97 for a 3 percent decrease. Values are any percent amount; however, the amount cannot be a negative amount. Enter an amount to use or select it from the Calculator.

Method 9

These processing options let you specify which forecast types that the system uses when calculating the best fit forecast for each level in the hierarchy. You can also specify whether the system creates summary forecasts for the selected forecast method.

Enter **1** to use the forecast method when calculating the best fit. If you leave the processing option blank, the system does not use that forecast method when calculating the best fit and does not create summary forecasts for the method.

The system defines a period as a week or month, depending on the pattern that is chosen from the Date Fiscal Patterns table (F0008). For weekly forecasts, verify that you have established 52 period dates.

1. Weighted Moving Average

Specify which type of forecast to use. The Weighted Moving Average forecast formula is similar to Method 4: Moving Average formula, because it averages the previous number of months of sales history indicated in the processing options to project the next month's sales history. However, with this formula you use the processing options to assign weights for each of the prior periods (up to 12).

This method uses the number of weighted periods selected plus period's best fit. Similar to the Moving Average, this method lags demand trends, so this method is not recommended for products with strong trends or seasonality. This method is useful for mature products with demand that is relatively level. Values are:

Blank: Does not use this method.

1: Uses the Weighted Moving Average formula to create summary forecasts.

2. One Period Prior through 13. Twelve Periods Prior

Specify the weight to assign to one period prior through 12 periods prior for calculating a moving average. The total of all the weights used in the Weighted Moving Average calculation must equal 100. If you do not enter a weight for a period within the specified number of periods, the system uses a weight of zero for that period. The system does not use weights entered for periods greater than the number of specified periods. Enter the number to use or select it from the Calculator.

14. Periods to Include

Specify the number of periods to include in the Weighted Moving Average forecast method. Enter the number to use or select it from the Calculator.

Method 10-11

These processing options let you specify which forecast types that the system uses when calculating the best fit forecast for each level in the hierarchy. You can also specify whether the system creates summary forecasts for the selected forecast method.

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Enter **1** to use the forecast method when calculating the best fit. If you leave the processing option blank, the system does not use that forecast method when calculating the best fit and does not create summary forecasts for the method.

The system defines a period as a week or month, depending on the pattern that was chosen from the Date Fiscal Patterns table (F0008). For weekly forecasts, verify that you have established 52 period dates.

1. Linear Smoothing

Specify which type of forecast to run. This forecast method calculates a weighted average of past sales data. You can specify the number of periods of sales order history to use in the calculation (from 1 to 12). You enter these periods in the Number of Periods processing option. The system uses a mathematical progression to weigh data in the range from the first (least weight) to the final (most weight). Then, the system projects this information for each period in the forecast. This method requires the period's best fit plus the number of periods of sales order history. Values are:

Blank: Does not use this method.

1: Uses the Linear Smoothing formula to create summary forecasts.

2. Number of Periods

Specify the number of periods to include in the Linear Smoothing forecast method. Enter the number to use or select it from the Calculator.

3. Exponential Smoothing

Specify which type of forecast to run. This forecast method uses one equation to calculate a smoothed average. This becomes an estimate representing the general level of sales over the selected historical range. This method is useful when there is no linear trend in the data. This method requires sales data history for the time period represented by the number of period's best fit plus the number of historical data periods specified in the Number of Periods processing option. The system requires that you specify at least two historical data periods. Values are:

Blank: Does not use this method.

1: Uses the Exponential Smoothing formula to create summary forecasts.

4. Number of Periods

Specify the number of periods to include in the Exponential Smoothing forecast method. Enter the number to use or select it from the Calculator.

5. Alpha Factor

Specify the alpha factor (a smoothing constant) that the system uses to calculate the smoothed average for the general level or magnitude of sales. You can enter any amount, including decimals, from zero to one.

Method 12

These processing options let you specify which forecast types that the system uses when calculating the best fit forecast for each level in the hierarchy. You can also specify whether the system creates summary forecasts for the selected forecast method.

Enter **1** to use the forecast method when calculating the best fit. If you leave the processing option blank, the system does not use that forecast method when calculating the best fit and does not create summary forecasts for the method.

The system defines a period as a week or month, depending on the pattern that is chosen from the Date Fiscal Patterns table (F0008). For weekly forecasts, verify that you have established 52 period dates.

1. Exponential Smoothing with Trend and Seasonality

Specify which type of forecast to run. This forecast method calculates a trend, a seasonal index, and an exponentially smoothed average from the sales order history. The system then applies a projection of the trend to the forecast and adjusts for the seasonal index.

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This method requires month's best fit plus two years of sales data and is useful for items that have both trend and seasonality in the forecast. Use the Alpha Factor and Beta Factor processing options to enter the alpha and beta factors rather than have the system calculate them. Values are:

Blank: Does not use this method.

1: Uses the Exponential Smoothing with Trend and Seasonality formula to create summary forecasts.

2. Alpha Factor

Specify the alpha factor (a smoothing constant) that the system uses to calculate the smoothed average for the general level of magnitude of sales. You can enter any amount, including decimals, from zero to one.

3. Beta Factor

Specify the beta factor (a smoothing constant) that the system uses to calculate the smoothed average for the trend component of the forecast. You can enter any amount, including decimals, from zero to one.

4. Seasonality

Specify whether the system includes seasonality in the calculation. Values are:

Blank: Does not include seasonality.

1: Includes seasonality in the Exponential Smoothing with Trend and Seasonality forecast method.

Defaults

These processing options let you specify the default values that the system uses to calculate forecasts. The system extracts actual values from the Sales Order History File (F42119).

1. Forecast Type

Specify the forecast type that the system uses when creating the summary forecast. Forecast type is a user-defined code (34/DF) that identifies the type of forecast to process. Enter the forecast type to use as the default value or select it from the Select User Define Code form. If you leave this processing option blank, the system does not create any summaries. You must enter a forecast type.

Process

These processing options let you specify whether the system runs the program in proof or final mode; creates weekly or monthly forecasts; and specifies the start date, length, and data that are used to create forecasts.

In addition, you use these processing options to specify how the system calculates the best fit forecast. The system applies the selected forecasting methods to past sales order history and compares the forecast simulation to the actual history. When you generate a forecast, the system compares actual sales order histories to forecasts for the months or weeks that you indicate in the Forecast Length processing option, and computes how accurately each of the selected forecasting methods predict sales. Then the system identifies the most accurate forecast as the best fit. The system uses two measurements for forecasts: Mean Absolute Deviation (MAD) and Percent of Accuracy (POA).

MAD is the mean of the absolute values of the deviations between actual and forecast data. MAD is a measure of the average magnitude of errors to expect, given a forecasting method and data history. Because absolute values are used in the calculation, positive errors do not cancel out negative errors. When you compare several forecasting methods, the forecast with the smallest MAD is the most reliable for that product for that holdout period.

POA is a measure of forecast bias. When forecasts are consistently too high, inventories accumulate and inventory costs rise. When forecasts are consistently too low, inventories are consumed and customer service declines. A forecast that is ten units too low, then eight units too high, and then two units too high, is an unbiased forecast. The positive error of ten is canceled by the negative errors of eight and two.

1. Mode

Specify whether the system runs the summary forecast in proof or final mode. When you run this program in proof mode, the system does not create any forecast records which enables you to run it again with different criteria until you produce appropriate forecast information.

When you run this program in final mode, the system creates forecast records. Values are:

Blank: Proof mode.

1: Final mode.

2. Weekly Forecasts

Specify monthly or weekly forecasts. For weekly forecasts, use fiscal date patterns with 52 periods. For monthly forecasts, use fiscal date patterns with 14 periods. Values are:

Blank: Monthly forecasts.

1: Weekly forecasts.

3. Start Date

Specify the date on which the system starts the forecast. Enter a date to use or select one from the Calendar. If you leave this processing option blank, the system uses the system date.

4. Forecast Length

Specify the number of periods to forecast. You must have previously established fiscal date patterns for the forecasted periods. If you leave this processing option blank, the system uses **3.**

5. Actual Data

Specify the number of periods of actual data that the system uses to calculate the best fit forecast. If you leave this processing option blank, the system uses 3 periods.

The system applies the selected forecasting methods to past sales order history and compares the forecast simulation to the actual history. When you generate a forecast, the system compares actual sales order histories to forecasts for the months or weeks that you indicate in the Forecast Length processing option and computes how accurately each of the selected forecasting methods would have predicted sales. Then, the system identifies the most accurate forecast as the best fit.

6. Mean Absolute Deviation

Specify whether the system uses the Mean Absolute Deviation formula or the Percent of Accuracy formula to calculate the best fit forecast. Values are:

Blank: Percent of Accuracy formula.

1: Absolute Deviation formula.

7. Amounts or Quantities

Specify whether the system calculates the best fit forecast using quantities or amounts. If you specify to use amounts, you must also extract sales history using amounts. This processing option also affects forecast pricing. Values are:

Blank: Quantities.

1: Amounts.

8. Fiscal Date Pattern

Specify the fiscal date pattern type to use for the forecast calculations. If you run weekly forecasts, the fiscal date pattern that you specify here must be set up for 52 periods.

9. Negative Values

Specify whether the system displays negative values. Values are:

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Blank: Substitutes a zero value for all negative values.

1: Displays all negative values.

Setting Processing Options for Forecast Summary (P34200)

Processing options enable you to specify the default processing for programs and reports.

Defaults

Forecast Type

Specify a user-defined code (34/DF) that indicates the forecasting method used to calculate the numbers displayed about the item.

Actual Type

Specify a user-defined code (34/DF) that indicates the actual historical information about the item.

Versions

Enter the version for each program.

1. Forecast Forcing (XJDE0001) (R34610)

Specify the version of the Forecast Forcing program (R34610) that the system uses. If you leave this processing option blank, the system uses version XJDE0001.

2. Forecast Review By Type (P34300)

Specify the version of the Forecast Review By Type program (P34300) that the system uses.

If you leave this processing option blank, the system uses version ZJDE0001.

3. Forecast Revisions (P3460)

Specify the version of the Forecast Revisions program (P3460) that the system uses.

If you leave this processing option blank, the system uses version ZJDE0001.

Revising Sales Order History

Access the Summary Forecast Revisions form.

Bypass Forcing

Enter a code that indicates whether to bypass the Forecast Forcing program (R34610). A **Y** indicates that the quantity and amount of a forecast should not be changed by an adjustment made to a forecast higher in the summary hierarchy. This flag is effective only when forecast forcing is done down the summary hierarchy.

Weekly

Displays weekly or monthly records.

Quantity

Displays the Quantity or the Amount data in records.

Level 1 and Level 10

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Enter the first key or the tenth key position of the forecasting hierarchy. The value in this field relates to the first or tenth level chosen in the forecasting constants.

Fiscal Year

Enter a value of **00** through **99** to designate a specific fiscal year.

Blank: To designate the current fiscal year (financial reporting date).

*: To designate all fiscal years.

–9 through **–1:** To designate a previous fiscal year (relative to the financial reporting date).

+1 through **+9:** To designate a future fiscal year (relative to the financial reporting date).

Period 1 and Period 52

Enter date or quantity in Time Series Column 01 or Time Series Column 52. These columns will hold time series dates or quantities.

Running the Summary Forecast Update Program

Select Periodic Forecasting Operations (G3421), Summarize Detail Forecasts.

Setting Processing Options for Summary Forecast Update (R34600)

Processing options enable you to specify the default processing for programs and reports.

Process

These processing options let you specify the default values the system uses for the Summary Forecast Update program (R34600). These default values include summary code, forecast type, beginning and ending dates, address, and fiscal date pattern.

The Summary Forecast Update program generates summary forecasts that are based on data from the Forecast File table (F3460) and stores the forecasts in the Forecast Summary File table (F3400). The summary forecasts provide both sales amount and item quantity data. Proper data selection is critical to accurate processing. Include only items in the summary constants hierarchy.

Summary Code

Specify which summary code the system uses when running the summary. Summary code is a user-defined code (40/KV) that identifies the summary code for running the summary. You define summary codes using the Summary Constants program (P4091) from the Forecasting Setup menu (G3441). Enter the summary code to use as the default value or select it from the Select User Define Code form.

Forecast Type

Specify the detail forecast type that you want the system to use to summarize the forecast. Forecast type is a user-defined code (34/DF) that identifies the detail forecast type. Enter the forecast type to use as the default value or select it from the Select User Define Code form.

From Date and Thru Date

Specify the date from which the system begins or ends the summary forecast. Enter a date to use as the beginning or the ending forecast date, or select a date from the calendar. If you leave these processing options blank, the system uses all data to generate the summary forecast.

Address

Specify whether the system considers the address book numbers are part of the hierarchy or if the system retrieves the address book numbers from the business unit associated with the forecast.

If you leave this field blank, the system retrieves the address book numbers from the business units associated with the forecast detail. In the Business Units program (P0006) on the Organization Account Setup menu (G09411) you can determine which address number is assigned to a business unit. In this case, the system uses the category codes for that address number if you are using address book category codes in the summarization hierarchy.

If you enter **1,** the system considers the address book numbers of the customers are part of the hierarchy. This customer number comes from the Forecast table (F3460). The customer number would be part of the forecast as a result of generating forecasts for large customers. If you did not generate forecasts for large customers or if you do not have any customers defined as large (ABC code on the Customer Master table (F0301) set to A) the system does not associate address book numbers with the forecasts. Values are:

Blank: Retrieves the address book number from the business units associated with the forecast detail.

1: Considers the address book numbers of the customers are part of the hierarchy.

Fiscal Date Pattern

Specify the monthly fiscal date pattern the system uses to create summary forecasts. Fiscal date pattern is a user-defined code (H00/DP) that identifies the date pattern for the forecast. The system retrieves the pattern from the Date Fiscal Patterns table (F0008). Enter the fiscal date pattern to use as the default value or select it from the Select User Define Code form. If you leave this processing option blank, the system creates records using dates from the detail forecast records.

Reviewing a Summary Forecast

Access the Summary Forecast Revisions form.

From Date

Enter the date that an item is scheduled to arrive or that an action is scheduled for completion.

Thru Date

Enter the date that specifies the last update to the file record.

Adjusted Quantity

Enter the quantity of units forecasted for production during a planning period.

Adjusted Amount

Enter the current amount of the forecasted units for a planning period.

Revising a Summary Forecast

Access the Work With Summary Forecast form.

Change Type

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Indicates a field that tells the system whether the number in the New Price field is an amount or a percentage. Values are:

A: Amount

percent: Percentage

Change Amount

Enter the amount of the future change in unit price. This number can be either a dollar amount or a percentage value. If the next field (Column Title = PT) is a $ sign, the change is in dollars; if the value is a percent (%) sign, the change is to be a percentage of the current price.

> **Note:** When entering a percentage, enter it as a whole number.

Revising Summary Forecasts Using Forecast Forcing (R34610)

Select Periodic Forecasting Operations (G3421), Force Changes.

Setting Processing Options for Forecast Forcing (R34610)

Processing options enable you to specify the default processing for programs and reports.

Process

These processing options let you specify how you want the system to process the manual changes that are made to the applicable summary forecast.

1. Hierarchy Direction

Specify the direction in which to force the changes made to the summary forecast. The system updates the changes in the Forecast table (F3460).

Blank: Forces the changes up and down the hierarchy and automatically resets the flag on the record to indicate the change.

1: Forces the changes up the hierarchy.

2: Forces the changes down the hierarchy.

If you set this processing option to **1** or **2** and you want the system to reset the flag on the changed record, set the Revised Flag processing option to **1.**

2. Revised Flag

Specify whether the system resets the revised flag for the records changed when you set the Hierarchy Direction processing option to **1** or **2.**

Blank: Does not reset.

1: Resets.

3. Quantities and Amounts

Specify whether the system forces the changes made to quantities or amounts or both.

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Blank: Quantities and amounts.

1: Quantity changes.

2: Amount changes.

4. Ratio Calculations

Specify whether the system calculates the parent/child ratios using the original or the adjusted forecast values. The parent/child ratio is the percentage of the amount or quantity for each child level, based on the total amount or quantity of the parent.

Blank: Original forecast values.

1: Adjusted forecast values.

5. Summary Code (Required)

Specify the summary code for which to force changes. This processing option is required and the system overrides any summary code specified in the data selection. Summary code is a user-defined code (40/KV) that identifies the summary code. You define summary codes using the Summary Constants program from the Forecasting Setup menu (G3441).

Enter the summary code to use or select it from the Select User Define Code form.

6. Fiscal Date Pattern

Specify the fiscal date pattern used to create this summary forecast. This processing option is required if you set the Hierarchy Direction processing option to force changes down and if you created the summary and detail forecasts using different fiscal date patterns. Fiscal date pattern is a user-defined code (H00/DP) that identifies the date pattern for the forecast. The system retrieves the pattern from the Date Fiscal Patterns table (F0008). Enter the fiscal date pattern to use or select it from the Select User Define Code form. If you leave this processing option blank, the system forces the changes both up and down the hierarchy.

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8 Working with Planning Bill Forecasts

Understanding Planning Bill Forecasts

This section discusses:

- Planning bills.
- Planning bill forecasts.
- Exploding the forecast to the item level.

Planning Bills

Planning bills are groups of items in a bill of material format that reflect how an item is sold rather than how an item is built. Planning bills enable you to account for the variety of possible options and features that might be included as components in a saleable end item.

Planning Bill Forecasts

After setting up a planning bill, you can generate a planning bill forecast to help you plan configurations for end products. The MRP/MPS Requirements Planning program (R3482) reads the detail forecast for the selected parent planning bill items and explodes it to create a forecast for the planning bill components for the same time periods.

You can use a planning bill to configure a hypothetical average parent item that is not manufactured, but represents the components which are needed to satisfy demand for all the combinations of options and features that you expect to sell. For example, if the sales history indicates that 60 percent of all the bikes you sell are 10 speed bikes and 40 percent are 15 speed bikes, the planning bill includes an average parent bike that is neither a 10 speed bike nor a 15 speed bike, but a hybrid bike that is 60 percent 10 speed bike and 40 percent 15 speed bike.

Use planning bills during master scheduling or material planning. You can forecast with a planning bill to determine component demand within Master Production Schedule (MPS), Material Requirements Planning (MRP), and Distribution Requirements Planning (DRP) in the JD Edwards EnterpriseOne Requirements Planning system.

Document Types for MRP/MPS Requirements Planning (R3482)

When you select a forecast type to use with a planning bill, you must also enter the type code for this forecast as a forecast type to be read. This action enables the system to read the forecast and explode it down to the component level. You can specify up to five forecast types to be read in a sequence that you specify.

Example: Average Parent Item

The sales history indicates that 60 percent of the bikes that you sell are 10 speed bikes and 40 percent are 15 speed bikes. Of the 10 speed bikes, 70 percent are blue and 30 percent are green. Of the 15 speed bikes, 80 percent are blue and 20 percent are green. You use these percentages to configure an average parent item.

The average parent bike will be:

- 60 percent 10 speed.

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- 40 percent 15 speed.

- 42 percent blue 10 speed (70 percent of 60 percent).

- 18 percent green 10 speed (30 percent of 60 percent).

- 32 percent blue 15 speed (80 percent of 40 percent).

- 8 percent green 15 speed (20 percent of 40 percent).

You decide to manufacture or purchase at these percentages.

Summary forecasts are more accurate than detail forecasts. For example, a forecast for the total number of bikes that will sell in the next year is more accurate than a forecast for blue 10 speed bikes that will sell in the next year.

The forecast is based upon total bike sales history. This forecast is the summary forecast. The option percentages produce a production (or purchase) forecast for each of the options. This forecast is the detail forecast.

Exploding the Forecast to the Item Level

You use the planning bill to explode a forecast for the total number of products down to the level of the specific combination of options and features that are included in each saleable end item.

As you set up a planning bill, you designate each level of the item hierarchy end item level as an average parent with a planning code of 4. You designate the saleable end items as components of the phantom parents with a planning code of 5.

As you generate the planning bill forecast, you use processing options to designate a forecast type to be read as input and a forecast type to be calculated for the components. You also designate the calculated forecast type as the second type to be read so that it can be exploded down through each level of the hierarchy until the forecast is applied to the saleable end items.

Example: Exploding the Forecast

You use a planning bill to configure an average parent item that represents total bike sales. This average parent bike represents the top level of the item hierarchy and is configured as follows:

- 60 percent 10 speed bike.
- 40 percent 15 speed bike.

Because bikes with both the 10 speed and 15 speed options can be further divided into blue and green bikes, both the total of all 10 speed bikes and the total of all 15 speed bikes are represented by average parent bikes on the second level of the item hierarchy. These average parents are configured as follows:

- 10 speed bikes:

  - 70 percent blue
  - 30 percent green

- 15 speed bikes:

  - 80 percent blue
  - 20 percent green

The system enables you to process multiple parent items as in this example. You use planning code 4 to designate each of the phantom products on the two higher levels of the hierarchy (total bikes on the top level, and total 10 speed bikes

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and total 15 speed bikes on the second level) as parent items. You use planning code 5 to designate the end item bikes (for example, blue 15 speed bikes) on the bottom level as components of the phantom parent items.

You assign user-defined codes (UDCs) to additional forecast types that you want to include in the processing options which were not supplied with the system. For this forecast, you plan to use forecast types that you have defined and assigned to codes 13 and 16. You designate 16 in processing options as the forecast type to be read as input for the top level parent item and 13 as the forecast type to be created for calculating the forecast for the components.

The system reads the forecast for total bike sales as determined by forecast type 16 and assigns a percentage of the total forecast to each of the portions of the total on the next level of the hierarchy (total 10 speed and total 15 speed sales).

These percentages are based on feature planned percents. Feature planned percents are the percentage of total products that include features that differentiate some products in the total from others. You define the feature planned percent on the Enter/Change Bill - Enter Bill of Material Information form. In this example, the feature planned percents are 60 percent for the 10 speed feature and 40 percent for the 15 speed feature.

The system then calculates a forecast that is based on forecast type 13 which it applies to the next level. You also designate 13 as the second forecast type to be read as input so that the system reads the forecast for the second level, which it then applies to the saleable end items (blue and green 10 speed bikes and blue and green 15 speed bikes).

The system reads forecast type 16 and calculates a type 13 forecast of 20,000 total bikes. The system then reads the forecast and explodes it down the hierarchy to the end item level as follows:

- 60 percent of the 20,000 total bikes equals 12,000 10 speed bikes.
- 40 percent of the 20,000 total bikes equals 8,000 15 speed bikes.
- 70 percent of the 12,000 10 speed bikes (42 percent of total bike sales) equals 8,400 blue 10 speed bikes.
- 30 percent of the 12,000 10 speed bikes (18 percent of total bike sales) equals 3,600 green 10 speed bikes.
- 80 percent of the 8,000 15 speed bikes (32 percent of total bike sales) equals 6,400 blue 15 speed bikes.
- 20 percent of the 8,000 15 speed bikes (8 percent of total bike sales) equals 1,600 green 15 speed bikes.

Note:

- *"Working with Multilevel Master Schedules" in the JD Edwards EnterpriseOne Applications Requirements Planning Implementation Guide .*
- *"Setting Up Bills of Material" in the JD Edwards EnterpriseOne Applications Product Data Management Implementation Guide .*

Prerequisites

Before you complete the tasks in this section:

- Enter a planning bill.
- Run the Forecast Revisions program (P3460) manually to add the forecast for the parent item.

Generating Planning Bill Forecasts

Select Single Site Periodic Planning Operations (G3422), MPS Regeneration.

Setting Processing Options for MRP/MPS Requirements Planning (R3482)

Processing options enable you to specify the default processing for programs and reports.

For programs, you can specify options such as the default values for specific transactions, whether fields appear on a form, and the version of the program that you want to run.

For reports, processing options enable you to specify the information that appears on reports. For example, you set a processing option to include the fiscal year or the number of aging days on a report.

Do not modify JD Edwards EnterpriseOne demo versions, which are identified by ZJDE or XJDE prefixes. Copy these versions or create new versions to change any values, including the version number, version title, prompting options, security, and processing options.

Horizon

1. Generation Start Date
Specify the date the program uses to start the planning process. This date is also the beginning of the planning horizon.

2. Past Due Periods
Enter a value. The program includes supply and demand from this number of periods prior to the Generation Start Date. Values are:

0: 0 periods (default)

1: 1 period

2: 2 periods

3. Planning Horizon Periods
Specify the number of planning days, weeks, and months the system uses in the planning horizon.

Number of planning days
Specify the number of days to be included in the plan. For example, when you view the time series, you see daily data for the number of planning days, then weekly data for the number of planning weeks, then monthly data for the number of planning months.

Number of planning weeks
Specify the number of weeks to be included in the plan. For example, when you view the time series, you see daily data for the number of planning days, then weekly data for the number of planning weeks, then monthly data for the number of planning months.

Number of planning months

Specify the number of months to be included in the plan. For example, when you view the time series, you see daily data for the number of planning days, then weekly data for the number of planning weeks, then monthly data for the number of planning months.

Parameters

1. Generation Mode

Enter a value to specify net change or gross regeneration. A gross regeneration includes every item specified in the data selection. A net change includes only those items in the data selection that have changed since the last time you ran the program. Values are:

1: Net change

2: Gross regeneration

2. Generation Type

Enter the type of generation the system performs. Values are:

1: Single level MPS/DRP.

2: Planning bill.

3: Multi level MPS.

4: MRP with or without MPS.

5: MRP with frozen MPS.

3. UDC Type

Specify the UDC table (system 34) that contains the list of quantity types to be calculated and written to the Time Series table (F3413). The default value is **QT.**

4. Version of Supply/Demand Inclusion Rules

Specify the version of supply/demand inclusion rules the program reads. These rules define the criteria used to select items for processing.

On Hand Data

1. Include Lot Expiration Dates

Specify whether the system performs lot validations when calculating on-hand inventory. Values are:

Blank: Do not include.

1: Include.

If you leave this processing option blank, the system does not perform lot validations when calculating on-hand inventory. If you set this processing option to **1**, the system performs lot validations when calculating on-hand inventory.

> **Note:**
> ○ *"Setting Up Dates for Lots" in the JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide* .

2. Safety Stock Decrease

Specify whether to plan based on a beginning available quantity from which the safety stock quantity has been subtracted. Values are:

Blank: Do not decrease

1: Decrease

3. Receipt Routing Quantities

Specify whether quantities on a receipt routing are included in inventory calculations. In a manufacturing environment, sometimes it is necessary to establish where stock is to determine whether it is available for immediate use.

Quantity in Transit

Specify whether quantities in-transit are included in inventory calculations. In a manufacturing environment, sometimes it is necessary to establish where stock is to determine whether it is available for immediate use. Enter **1** if you want quantities in transit to be included in the Beginning Available calculation on the time series. Otherwise, the program includes these quantities in the In Receipt (+IR) line of the time series. The quantities are still considered available by this program. The difference is only in how you view the quantities in the time series. Values are:

Blank: Do not include in on hand inventory.

1: Include in on hand inventory.

Quantity in Inspection

Specify whether quantities in inspection are included in inventory calculations. In a manufacturing environment, sometimes it is necessary to establish where stock is to determine whether it is available for immediate use. Enter **1** if you want quantities in inspection to be included in the Beginning Available calculation. Otherwise, the program includes these quantities in the In Receipt (+IR) line of the time series. The quantities are still considered available by this program, however. The difference is only in how you view the quantities in the time series. Values are:

Blank: Do not include in on hand inventory.

1: Include in on hand inventory.

User-Defined Quantity 1

Specify whether user-defined quantities are included in inventory calculations. In a manufacturing environment, sometimes it is necessary to establish where stock is to determine whether it is available for immediate use. Enter **1** if you want these user-defined quantities (defined on Receipt Routings Revisions in the Update Operation 1 field) to be included in the Beginning Available calculation. Otherwise, the program includes these quantities in the In Receipt (+IR) line of the time series. The quantities are still considered available by this program, however. The difference is only in how you view the quantities in the time series. Values are:

Blank: Do not include in on hand inventory.

1: Include in on hand inventory.

User-Defined Quantity 2

Specify whether user-defined quantities are included in inventory calculations. In a manufacturing environment, sometimes it is necessary to establish where stock is to determine whether it is available for immediate use. Enter **1** if you want these user-defined quantities (defined on Receipt Routings Revisions in the Update Operation 2 field) to be included in the Beginning Available calculation. Otherwise, the program includes these quantities in the In Receipt (+IR) line of the time series. The quantities are still considered available by this program, however. The difference is only in how you view the quantities in the time series. Values are:

Blank: Do not include in on hand inventory.

1: Include in on hand inventory.

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4. Lot Hold Codes (up to 5)

Specify the lots to be included in the calculation of on hand inventory. You can enter a maximum of 5 lot hold codes (41/L). Values are:

Blank: Include no held lots in calculation of on hand inventory.

*: Include all held lots in calculation of on hand inventory.

5. Include Past Due Rates as a supply

Specify whether the system considers open quantity from rate schedules that are past due as a supply. If you enter a **1** in this processing option, the system includes these quantities in the calculation of the rate schedule unadjusted (+RSU) and the rate schedule adjusted (+RS) quantities. Values are:

Blank: Do not consider past due orders as a supply.

1: Consider past due orders as a supply.

> **Note:** You can review these quantity types in the MPS Time Series program (P3413) if you have set up the past due buckets to display.

6. Location Hold Codes (up to 5) (Release 9.2 Update)

Specify the locations to be included in the calculation of on-hand inventory. You can enter a maximum of five lot location codes (41/LS).

Blank: Include no held locations in the calculation of on-hand inventory.

*: Include all held locations in the calculation of on-hand inventory.

For more information, see *Allowing Inventory Locations to be Put on Hold* in the *JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide.*

Forecasting

1. Forecast Types Used (up to 5)

Define which forecast quantities created by which forecast type are included in the planning process. Forecasts are a source of demand. You can create forecasts using 12 different forecast types (34/DF) within the JD Edwards EnterpriseOne Forecasting system. One is considered the Best Fit (BF) type compared to an item's history of demand. Enter multiple values with no spaces, for example 0102BF.

2. Forecast Type For Planning Bills/Forecast Consumption By Customer

Specify the forecast type (UDC 34/DF) that the system uses to create forecasts for components when you explode generation type 2 planning bills. This value must equal that of the Forecast Types Used processing option for this functionality.

This functionality is for future use.

When Forecast Consumption Logic is set to 2, Forecast Consumption by Customer, this processing option specifies the forecast type (34/DF) that is used to create a forecast for the actual daily demand by customer. This value cannot equal the value for the Forecast Types Used processing option for this functionality.

3. Forecast Consumption Logic

Specify whether to use forecast consumption logic during the requirements planning processing. Values are:

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Blank: Do not use forecast consumption.

1: Use forecast consumption. This value invokes forecast consumption logic applied to aggregate sales order and forecast quantities within the forecast consumption period for selected items with a planning fence rule equal to H.

2: Use forecast consumption by customer. This functionality will be delivered in a future release. This value invokes forecast consumption logic applied to sales order and forecast quantities for individual customers. This value must be use in conjunction with the Forecast Type for Planning Bills / Forecast Consumption by Customer.

4. Default Customer Address Relationship for Forecast Consumption by Customer
Specify the customer address book number to use when performing forecast consumption by customer. When Forecast Consumption Logic processing option is set to 2, Forecast Consumption by Customer, then this processing option specifies the customer address relationship, that is the address book number (ship to or sold to) used for calculation purposes. Values are:

1: Use ship to address book number.

2: Use sold to address book number.

Document Types

1. Purchase Orders
Specify the document type to appear as the default when you receive messages related to purchase order creation. The default value is **OP.**

2. Work Orders
Specify the document type to appear as the default when you receive messages related to work order creation. The default value is **WO.**

3. Rate Schedules
Specify the document type to appear as the default when you receive messages related to rate schedule creation. Enter the UDC 00/DT of the document type for the rate schedule that you want to use.

Lead Times

1. Purchased Item Safety Leadtime
Specify a value that the program adds to the item's level lead time to calculate the total leadtime for items with stocking type P.

2. Manufactured Item Safety Leadtime
Specify a value that the program adds to the item's level lead time to calculate the total leadtime for items with stocking type M.

3. Expedite Damper Days
Specify a value that the program uses to calculate the number of days that expedite messages are suppressed. The calculation starts on the generation start date and continues for the number of days entered in this processing option.

4. Defer Damper Days
Specify a value that the program uses to calculate the number of days that defer messages are suppressed. The calculation starts on the generation start date and continues for the number of days entered in this processing option.

Performance

1. Clear F3411/F3412/F3413 Tables

Specify whether the system purges tables. If you enter **1,** records in the MPS/MRP/DRP Message table (F3411), the MPS/MRP/DRP Lower Level Requirements (Pegging) table (F3412), and the MPS/MRP/DRP Summary (Time Series) (F3413) table are purged. Values are:

Blank: Do not clear tables.

1: Clear tables.

> **CAUTION:** Use this processing option with extreme caution! Access to this program should be limited. If multiple users run this program concurrently with this processing option set to **1,** a record lock error results and prevents complete processing.

2. Input B/P Where Planning Tables Will Be Cleared (input branch/plant where planning tables will be cleared)

Specify which Branch/Plant records in the MPS/MRP/DRP Message File table (F3411), the MPS/MRP/DRP Lower Level Requirements File table (F3412), and the Summary (Time Series) table (F3413) are purged.

> **Note:** This option is only valid when the Clear F3411/F3412/F3413 Tables processing option on the Performance tab is set to **1** and the Delete Branch/Plant processing option has a valid Branch/Plant. This processing option enables a preprocess purge of these tables. If this processing option is not enabled or set to Blank, the system purges records for a given Branch/Plant and Item as you plan the item. Depending on processing option combinations, these scenarios can occur.

Example 1:

Clear F3411/F3412/F3413 Tables processing option is set to **1.**

(a) Delete Branch/Plant is set to Blank. All records from the three tables will be prepurged.

(b) Delete Branch/Plant contains a valid Branch/Plant number. Records for all the items that belong to M30 will be prepurged from the three tables.

(c) Delete Branch/Plant contains an invalid Branch/Plant number. No records from the three tables will be prepurged from the three tables.

Example 2:

Clear F3411/F3412/F3413 Tables set to Blank

Delete Branch/Plant is not active.

No records from any of the three tables will be prepurged.

3. Initialize MPS/MRP Print Code

Specify whether the system initializes the Item Branch table (F4102). If you enter **1** in this processing option, the program initializes every record in the Item Branch table by setting the Item Display Code (MRPD) to blank. If you leave this field blank, processing time is decreased. The system will not clear the records in the Item Branch table. Regardless of how you set this processing option for each item in the data selection, the MRPD field is updated as follows:

- o 1 if messages were not created.

- 2 if messages were created.

The Print Master Production Schedule program (R3450) enables you to enter data selection based on the MRPD field. Values are:

Blank: Do not initialize the Item Branch file.

1: Initialize the Item Branch file.

4. Messages And Time Series For Phantom Items

Specify whether the program generates messages and time series for phantom items. Values are:

Blank: Do not generate

1: Generate

5. Ending Firm Order Status

Specify the work order status at which messages are no longer exploded to components. If you leave this field blank, all messages are exploded to components.

6. Extend Rate Based Adjustments

Specify whether adjustments for rate based items are exploded to components, thereby creating messages for the components. Values are:

Blank: Do not extend

1: extend

7. Closed Rate Status

Enter the status of closed rates. When planning for a rate based item, the program does not consider rate orders at this status or higher.

8. Set Key Definition For Table F3411

Specify whether the system is enabled to run multiple MRP/MPS jobs concurrently. The value that you enter specifies the range for the number of records in the MPS/MRP/DRP Message File table (F3411) and the MPS/MRP/DRP Lower Level Requirements File table (F3412) for a given run. This value must be large enough to include the number of records that will be generated for the table. For example, if you enter a value of 8 for the first run and 10 for the second run, the range of records that the system reserves for two simultaneous MRP/MPS runs would be as follows:

First run:

The system reserves records in the range of [1] to [$1*10^8$], or 1 through 100,000,000.

Second run:

The system reserves records in the range of [$1*10^8 + 1$] to [2*10 10], or 100,000,001 through 20,000,000,000.

> **Note:** The values that you enter are the exponents in the calculations. Enter a value from 7 to 14. If you do not enter a value, the system uses 10. This processing option is applicable only when a subsequent MRP/MPS job is submitted while an existing job is currently running. The number of records that the MRP/MPS Requirements Planning program (R3482) and Master Planning Schedule, Multiple Plant program (R3483) generate is based on the values that you enter in this processing option. You determine the optimum number of records that the system includes. All values should be the same for all versions. If version settings differ, the system might generate unpredictable results.

9. Set Key Definition For Table F3412

Specify whether the system is enabled to run multiple MRP/MPS jobs concurrently. The value that you enter specifies the range for the number of records in the MPS/MRP/DRP Message File table (F3411) and the MPS/MRP/DRP Lower Level Requirements File table (F3412) for a given run. This value must be large enough to include the number of records

that will be generated for the table. For example, if you enter a value of 8 for the first run and 10 for the second run, the range of records that the system reserves for two simultaneous MRP/MPS runs would be as follows:

First run:

The system reserves records in the range of [1] to [1*10ˆ8], or 1 through 100,000,000.

Second run:

The system reserves records in the range of [1*10ˆ8 + 1] to [2*10 10], or 100,000,001 through 20,000,000,000.

> **Note:** The values that you enter are the exponents in the calculations. Enter a value from 7 to 14. If you do not enter a value, the system uses 10. This processing option is applicable only when a subsequent MRP/MPS job is submitted while an existing job is currently running. The number of records that the MRP/MPS Requirements Planning program (R3482) and Master Planning Schedule, Multiple Plant program (R3483) generate is based on the values that you enter in this processing option. You determine the optimum number of records that the system includes. All values should be the same for all versions. If version settings differ, the system might generate unpredictable results.

10. Suppress Time Series

Specify whether the MRP/MPS Requirements Planning program (R3482) generates the time series. Values are:

Blank: Generate the time series.

1: Do not generate the time series.

> **Note:** Performance improves if the system does not generate the time series.

11. Planning Control UDC Type

Specify the UDC table in system 34 that contains the list of planning control flags. The default value is **PC.**

Mfg Mode

1. Process Planning

Specify whether the system performs planning for process manufacturing. If you use process manufacturing, enter **1** to generate the plan based on the forecasts of the co/byproducts for the process. The program then creates messages for the process. Values are:

Blank: Discrete

1: Process

2. Project Planning

Specify whether the system includes supply and demand from items that are associated with Engineer to Order (ETO) projects or Project Manufacturing production numbers.

ETO project-specific items have a Special Handling Code of type P. Values are:

Blank: Do not include items associated with ETO projects or Project Manufacturing production numbers.

1: Include items associated with ETO projects.

2: Include items associated with Project Manufacturing production numbers.

3. Configurator Components Table

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Specify whether the system processes configurator components from the Configurator Component table (F3215) and adds them to the Sales Order Detail File table (F4211) and the Work Order Parts List table (F3111). If you enter a **1** in this processing option, the system processes the items on the Configurator Component table as demand items.

Blank: Do not process items from the Configurator Component table.

1: Process items from the Configurator Component table.

Parallel

1. Number of Subsystem Jobs

Specify the number of subsystems in a server. The default value is **0** (zero).

2. Pre Processing

Specify whether the system runs preprocessing during parallel processing. During preprocessing, the system checks supply and demand and plans only the items within supply and demand. Preprocessing improves performance when you run MRP and is valid only when the number of items actually planned is less than the total number of items in the data selection. Values are:

Blank: The system does not run preprocessing.

1: The system runs preprocessing.

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Address

Specify whether the system considers the address book number as part of the hierarchy or if the system retrieves the address book number from the business unit associated with the forecast.

Address Number

Enter a number that identifies an entry in Oracle's JD Edwards EnterpriseOne Address Book system, such as employee, applicant, participant, customer, supplier, tenant, or location.

Alpha Name

Enter the text that names or describes an address.

Branch/Plant

Enter a code that identifies a branch or plant.

Company

Enter a code that identifies a specific organization, fund, or other reporting entity.

Effective Date

Enter a date that indicates when a component part goes into effect on a bill of material or when a rate schedule is in effect.

End Extract Date

Enter the ending date that the system uses when creating actuals.

Forecast Type

Enter the forecasting method used to calculate the detail forecast for a specific item. Forecast type is also used to summarize forecasts in the system. For planning bills, the forecast type is used to create forecasts for components when you explode planning bills.

Item Number

Enter the number that the system assigns to an item. The number can be in short, long, or third item number format.

Planner Number

Enter the address number of the material planner for this item.

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