



Administration Guide

QAD Demand Management Engine

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DemandManagementEngine_IG_v61.pdf/lmr/lmr

QAD Inc.

100 Innovation Place
Santa Barbara, California 93108
Phone (805) 566-6000
<http://www.qad.com>

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Change Summary

The following table summarizes significant differences between this document and the version released with QAD Demand Management 5.5.

[illegible]

Chapter 1

Introduction

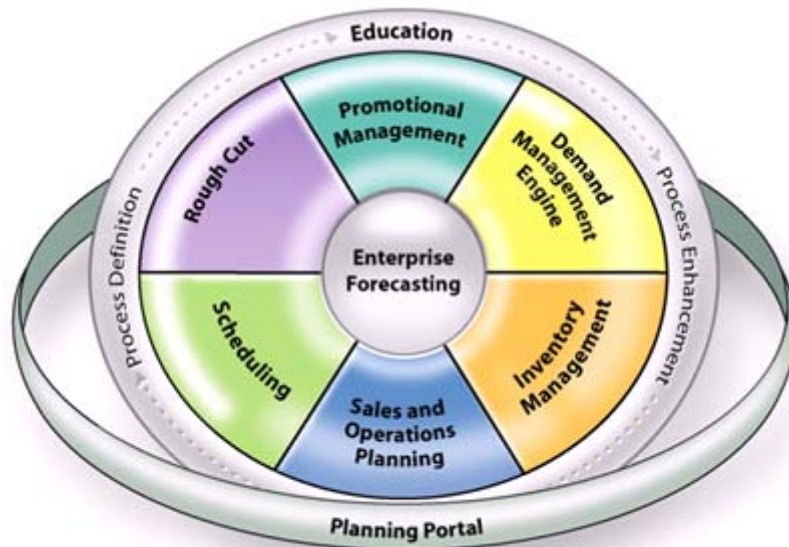
Overview 2

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Overview

The Demand Management Engine (DME) is used for forecasting and planning.



Demand Management Engine Highlights

Some of the new features of the DME are:

- Support localization for currency and numeric values
- Improved Batch Scheduler
- Retagging

Logging In

You can log in to the DME Admin Tool from the **Add-Ins** tab in the Viewer. You can also change the password for your User ID in DME Admin Tool once you are logged in.

Table 1.1 Default Username and Password

Log In	Password
Username	fxadmin
Password	fxadmin

Note Usernames and passwords are case sensitive.

Logging Out

To log out of the application, click the DME button  in the upper right-hand corner of the Viewer and select **Logout** from the menu.

Documentation Conventions

Text

The following table lists text conventions in this user guide.

Table 1.2 Text Convention Descriptions

Convention	Description
Text represented as a screen display.	This typeface represents displays that appear on your terminal screen, for example: <code>lom></code>
Text represented as menu or sub-menu names.	This typeface represents all menu and sub-menu names within procedures, for example: On the File menu, click New .

Screen Captures

The sample screens in this guide may not represent what you see on your monitor and should only be used as guidelines.

Acronyms and Abbreviations

Term	Definition
ANOVA	ANalysis of VAriance
ARIMA	Moving Average
BOM	Bill of Materials
DTL	Detail Scenario
DF	Degrees of Freedom
PO	Purchase Order
DME	Demand Management Engine
FG	Finished Goods
MAPE	Mean Absolute Percentage Error
MOU	Mass Observation Update
MSU	Mass Series Update
IM	Inventory Management

Installation

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Overview

The DME consists of five applications, which are detailed in the table below:

Application	Description
FX_JGD – DME Database	SQL Server Database, which serves as the DME database and repository.
Admin Tool	Configures data loading, forecast method and user management among other configuration settings.
Viewer	Center of DME; controls and launches all the major features within the DME.
Batch Scheduler	Enables you to configure and run repetitive tasks as part of a batch process, such as monthly maintenance routine. It consists of a server component and a management UI.
FX Connection Utility	Defines FX_JGD Database location and log in information.

All data for the DME is in the FX_JGD Database. This database may exist on a Server or locally on the PC. If the database exists on a server, it should be a SQL Server 2005 or 2008. If the database exists locally it uses either of the following:

- SQL Server 2005 or 2008 (Local)
- Microsoft SQL Server Express 2005 or 2008

Installation Requirements

The installation process for the DME is automated. However, there are certain hardware and software requirements necessary to ensure the application installs successfully.

Hardware

The list below details the required hardware to install the DME.

Hardware	Minimum	Recommended
CPU	Pentium 3 - 700 MHZ	Pentium 4 - 2.0 GHZ Pentium M - 1.2 GHZ
RAM	512 MB	1 GB
Hard Disk	50 MB	100 MB

Software Media

The list below details the required software to install the DME application.

Note The provided DME installer will download all the necessary pre-requisites once it finds an internet connection in the system.

- Demand Management Engine v6.0 CD or installation media
- Microsoft .NET Framework 3.5 SP 1
- MSXML 6.0 SP1
- Microsoft SQL Server Native Client
- Microsoft SQL Server Command Line Query
- Microsoft SQL Server 2005 Backward Compatibility Components

- Microsoft SQL Server 2005 Management Objects Collection

Installing the DME

There are three components in the Demand Management Engine:

- Admin Tool
- Batch Scheduler
- Viewer

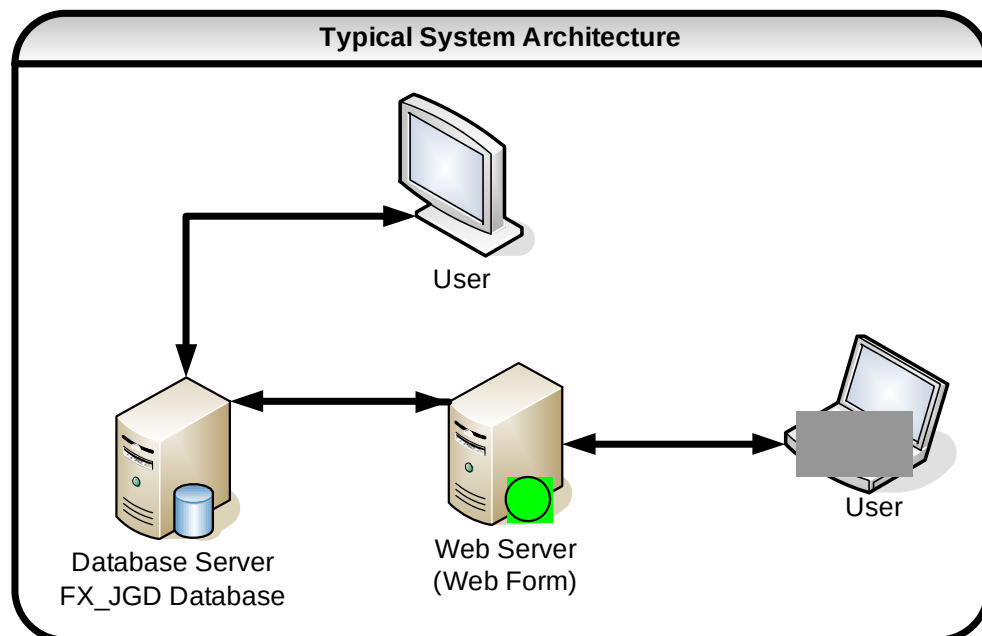
The Admin Tool and the Viewer installation also install the Connection Utility. The Demand Management Engine installation process is driven by the following series of steps.

The depiction below displays the interrelationships between the applications of the Demand Management Engine. The left side of the figure illustrates the server or data side of the application. The right side of the figure illustrates the applications and the order in which they are installed during the process. Notice that the Admin Tool and the Batch Scheduler are installed together after the FX_JGD Database is installed on either a server or locally on a PC.

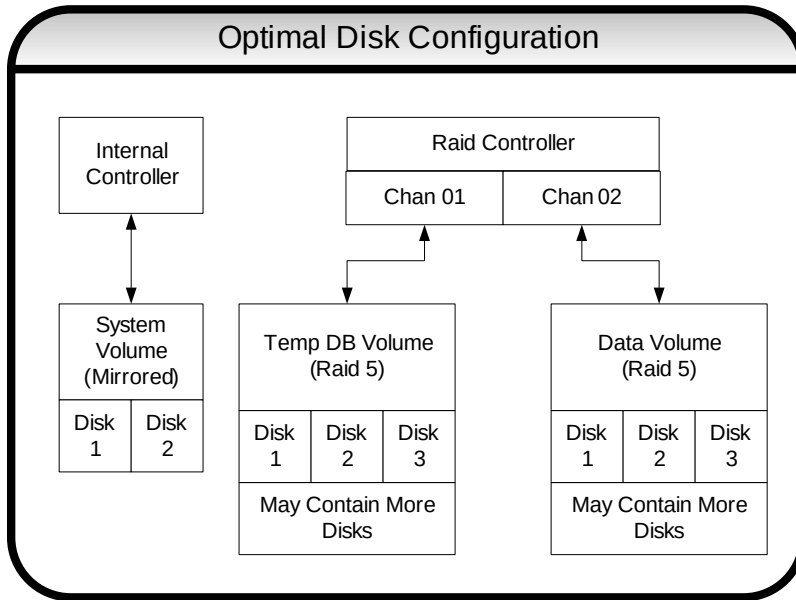
Installing DME/Viewer in a Network Environment

In a network environment, the DME database is accessible from different workstations with the database residing on a SQL 2005 or 2008 Server.

The following figure illustrates two workstations that access the same DME database. Both workstations request and save data in the same database.



The following illustration details the optimal disk configuration for the database server.



Depending on the data volume and performance requirements it is possible to change this configuration.

In a network environment, you must install the DME in the following order:

Location	Description
SQL 2005 or 2008 Server	On the SQL 2005 or 2008 Server, install the DME using the Local installation type.
Workstation	On each workstation, install DME using the Connect to existing database installation type. The workstations will access the DME database on the remote SQL server.

Admin Tool & Viewer Installation

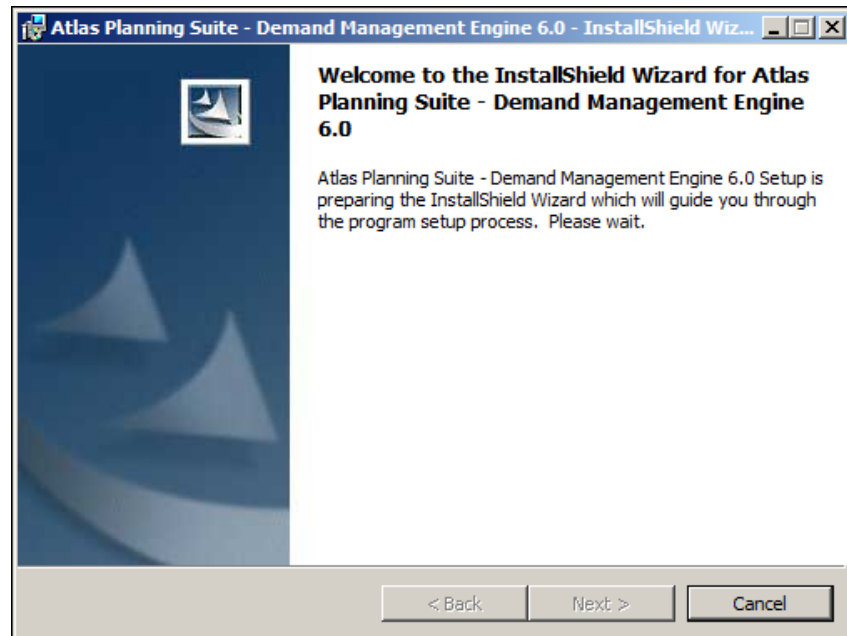
This section describes how to install the Admin Tool and Viewer:

- 1 Insert the **Demand Management Engine CD** into your CD-ROM drive.
- 2 Click the **Start** button and select **Run** from the menu.
- 3 Enter the **drive letter:\Setup.exe** in the **Run** dialog box.

Note The drive letter is the drive assigned to your CD. If you do not know the letter assigned to your CD-ROM drive, click the **Browse** button in the prompt window to locate the appropriate drive.

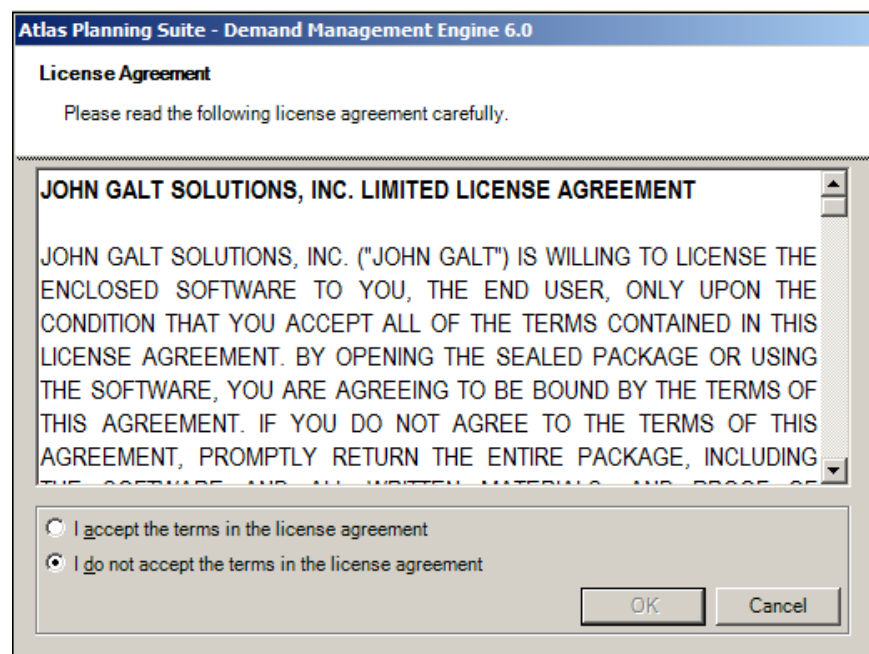
- 4 Click **OK**.

The **Installation Wizard** screen displays.



- 5 Click **Next**.

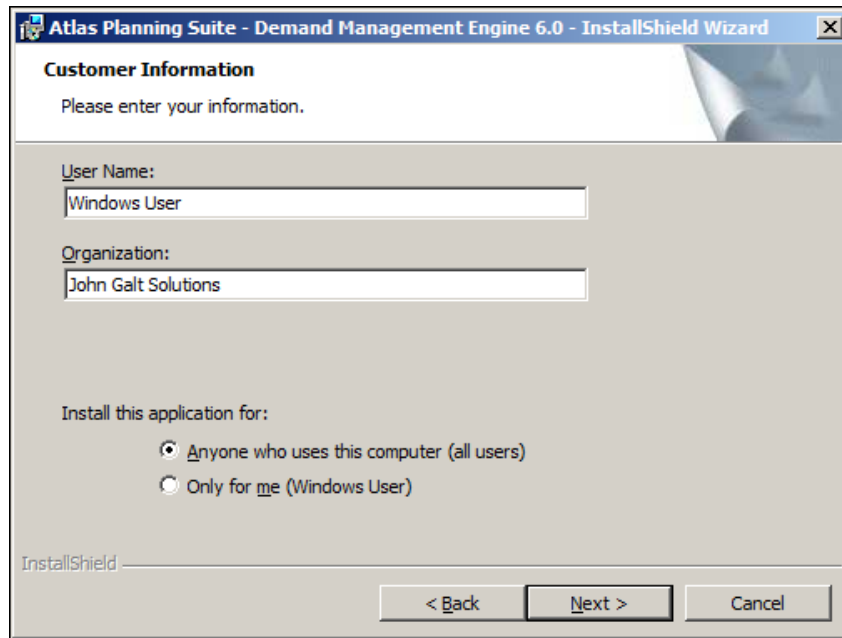
The **License Agreement** window displays.



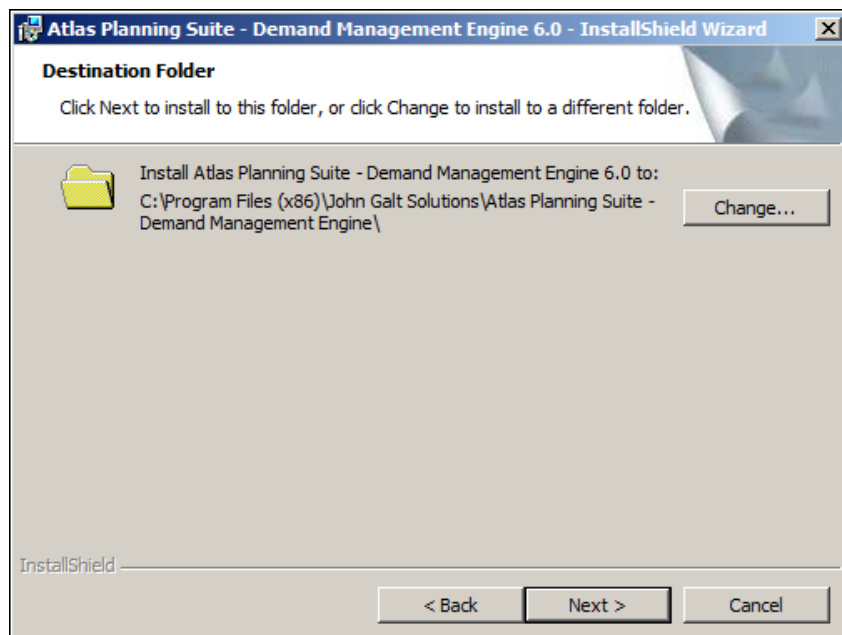
- 6 Select **I accept the terms in the license agreement** if you agree to the terms and click **OK**. Click **Cancel** to quit the installer program.

Note The **OK** button will not be activate until the **I accept the terms in the license agreement** option is selected.

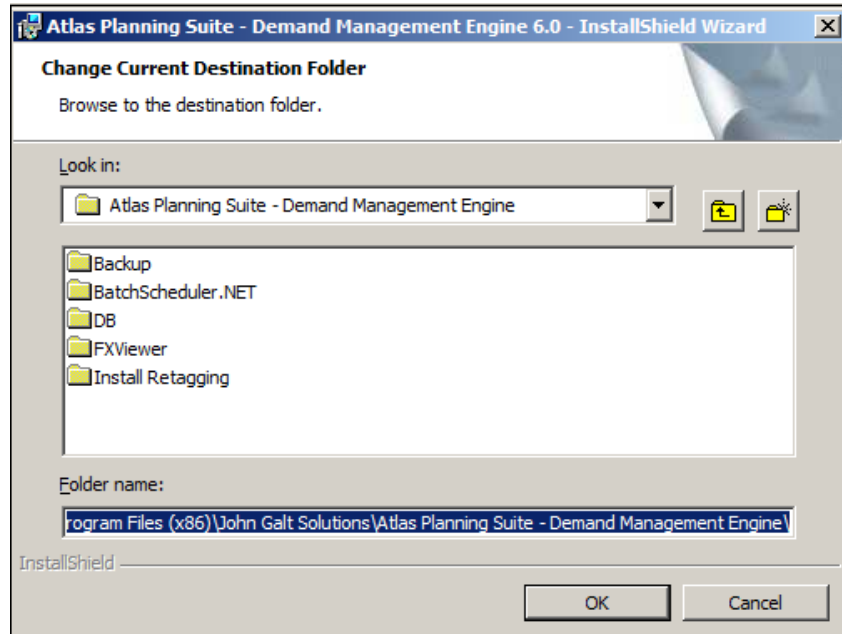
The **Customer Information** window displays.



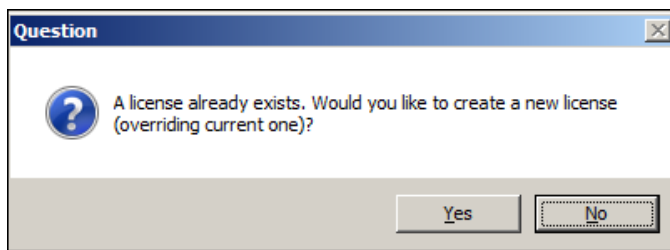
- 7 Enter your name in the **User Name** textbox.
- 8 Enter your company name in the **Organization** textbox and click **Next**.
The **Destination Folder** window displays.



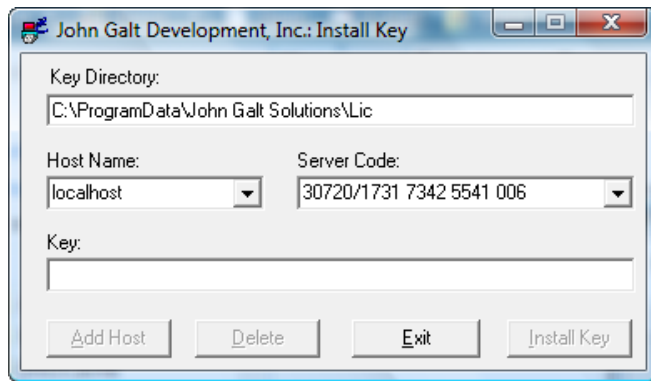
- 9 Verify the Destination Folder location and click **Next** to install the application in the default location.
To install the software in a different location, click the **Change** button.
The **Change Current Destination Folder** dialog box displays.



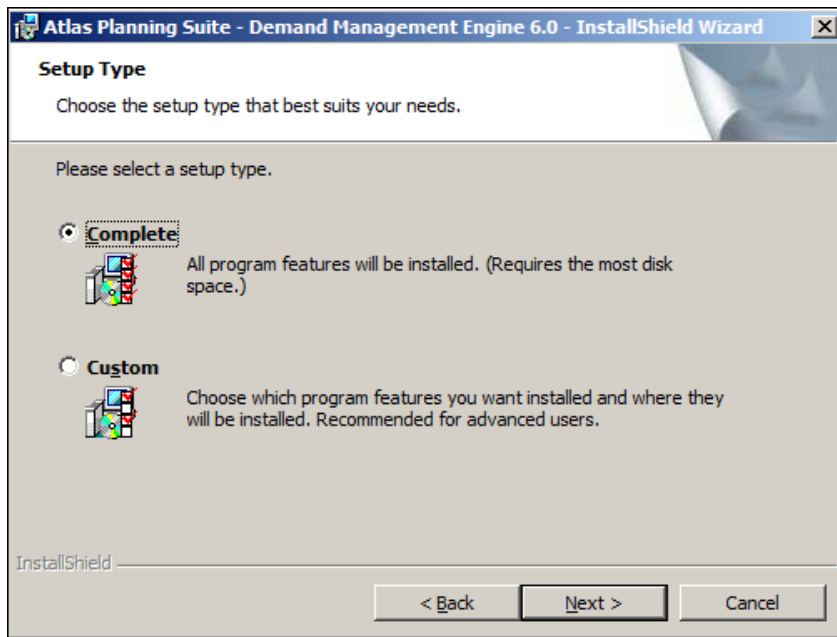
- 10 Select the location where you want the application installed and click **OK**.
- 11 On the **Destination Folder** screen, click **Next**.
- 12 The installation process will now try to locate a license key for the application. If a license key is located, DME will prompt you to either override the existing license with a new one or keep the existing license.



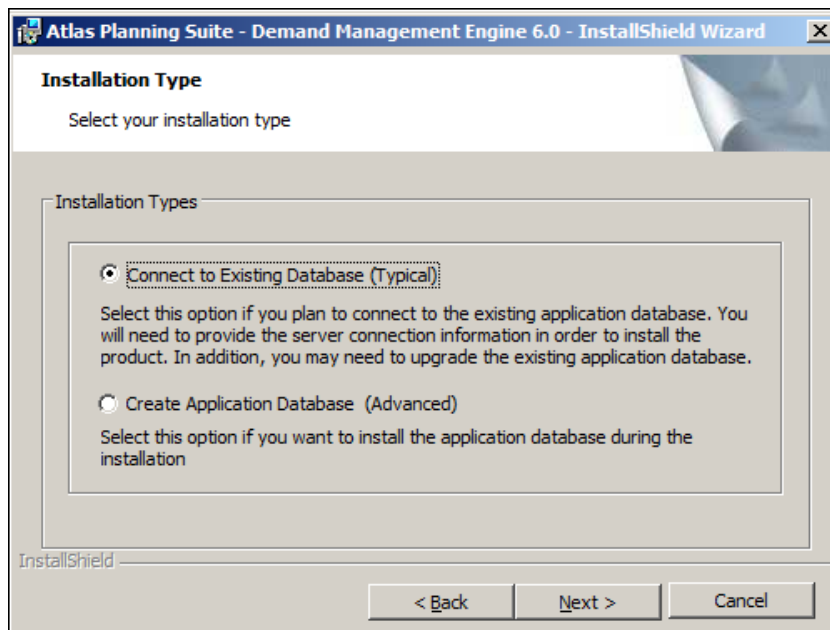
- 13 If you select to install a new key, you will be prompted with a Licensing window with the contact information. Submit a New Incident at <http://support.qad.com/> for your license key.
- 14 To begin the Key Installation, click **Yes**.
The **Install Key** window displays:



- 15 Enter the installation key provided by QAD in the **Key** textbox and click **Install Key**.
- 16 Click **OK** in the information messages that the license has been correctly installed.
- 17 Click **Exit** in the Install Key window to continue the installation process.
The **Setup Type** window displays.



- 18 In this setup step you can decide which components of the DME suite you wish to install. Select a **Complete** installation to install all components or select a **Custom** installation to choose which components to install.
- 19 Click **Next**.
The **Installation Type** window displays.

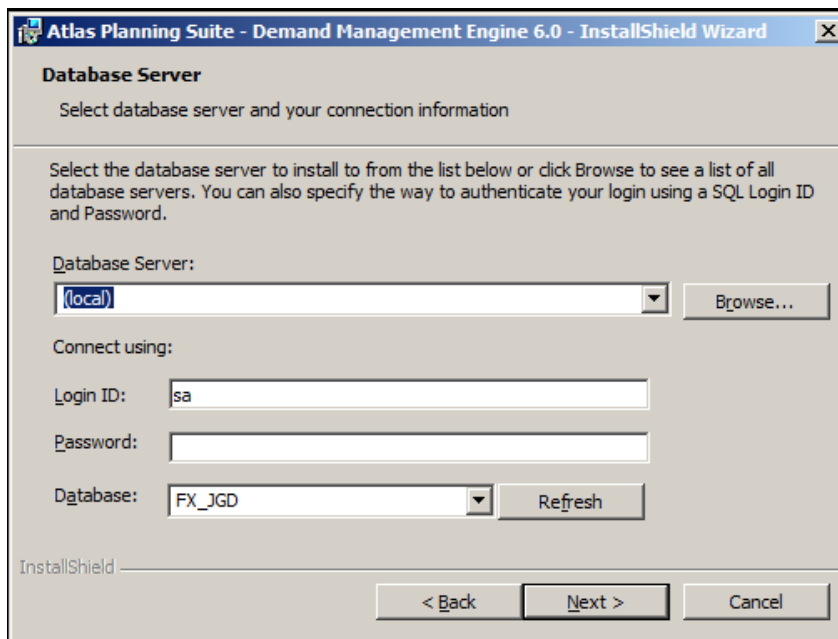


- 20 Select **Connect to Existing Database** to use an existing DME database or select **Create Application Database** if you do not have a DME database.

- 21 Select **Connect to Existing Database** and click **Next**.

Note If you selected to create the application database, you will need to run the installer again on the created database to update it correctly.

The **Database Server** window displays:



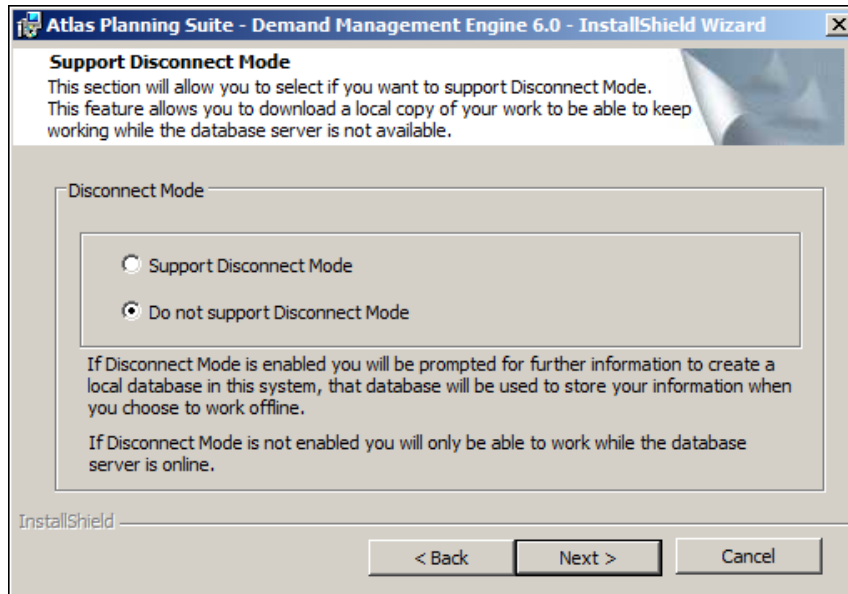
- 22 Provide the necessary information to connect to your database server, including the **Database Server** name, **Login ID** and **Password**.

- 23 Click the **Refresh** button. If your connection information is correct, the **Database** drop-down list will be populated with the databases in your SQL Server. Select your DME database from the list.

Note The installation requires the database system administrator user (sa) login as password.

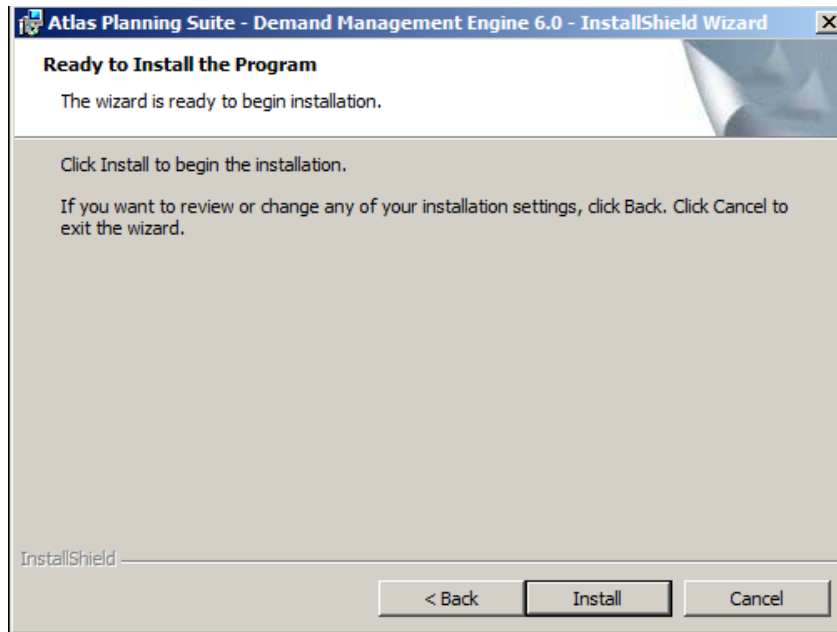
- 24 Click **Next**. If you did not select to install the DME Viewer, please skip ahead to Step 26.

The **Support Disconnect Mode** window displays:



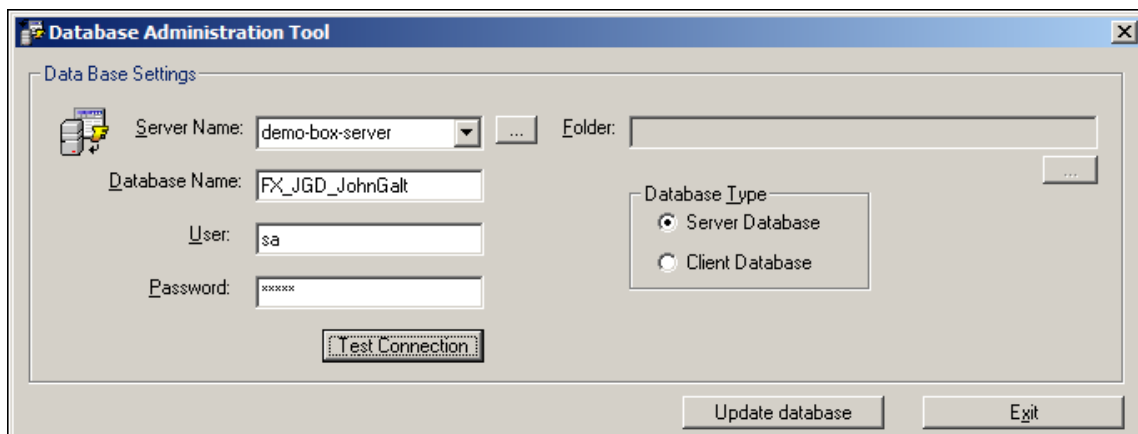
- 25 This step gives you the ability to enable the Disconnect mode feature. If you enable this option a SQL Server Express 2005 instance will be installed locally on the computer running the installer. Select your option and click **Next**.

The **Ready to Install the Program** window displays.



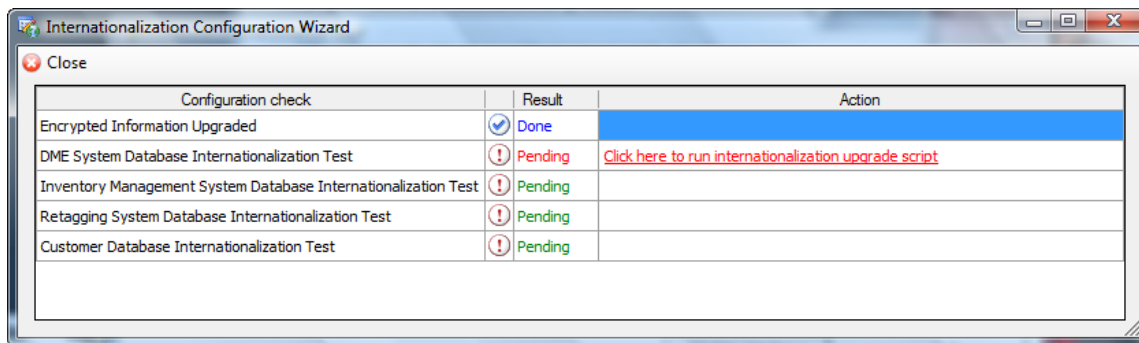
26 Click **Install** to begin the installation process or click **Back** to change any of your settings.

27 After the installation process is done, the **Database Administration Tool** displays.



28 Verify the database settings and click the **Test Connection** button. If the test was successful, click **Upgrade Database**.

29 After the database upgrade has been completed you will see the Internationalization Configuration Wizard window.



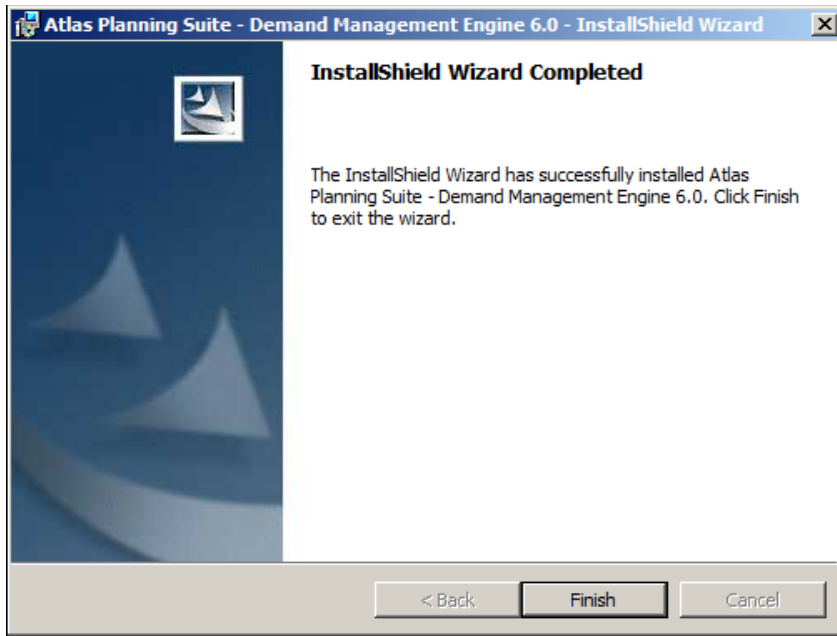
This window will allow you to convert your database so that it supports double byte characters necessary for some languages. Some of the configuration checks must be passed even if you do not plan to support double byte characters, there are three configuration checks:

Configuration	Description
Encrypted Information Upgrade	This configuration check that needs to be passed regardless of the type of installation you are performing. If your result shows failed for this test you can click on the link under the Action column to resolve it.
Customer Database Internationalization Test	This configuration check is used to convert your customer database, usually named FX_DATA to support multi byte characters.
DME System Database Internationalization Test	This configuration checks to see if the DME database you are trying to upgrade supports double byte characters, if the result for this check failed you can resolve it by clicking the link under the Action column.
It is highly recommended you backup your database before running this option.	

30 When you have completed upgrading the necessary components for the internationalization support, you can close this window.

31 Click **Finish**.

The installation is now successfully installed and a new shortcut for the DME Viewer is created on your desktop.



Database Installation and Upgrade

DME 6.0 only supports SQL Server 2005 or 2008. If you are running SQL Server 2000 or lower upgrade the server to SQL Server 2005 or 2008 before installing DME 6.0.

Warning: It is highly recommended that you backup the current database before upgrading to the DME 6.0 database.

Note The installation or upgrade requires the database system administrator user (sa) user login as password.

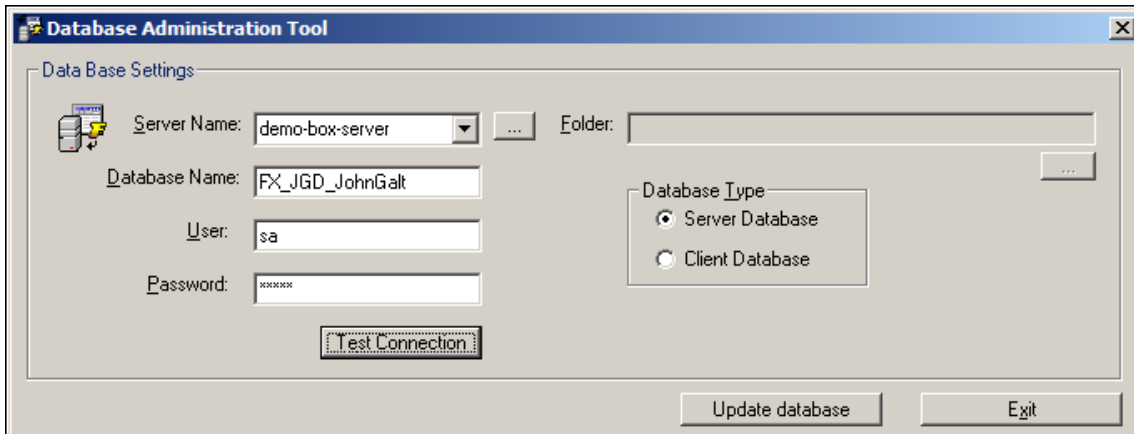
Backup the Database

- 1 Go to **Start > All Programs** folder and locate the SQL Server folder. Open “SQL Server Management Studio”.
- 2 After logging into the server containing your DME database, right-click the DME database and select **Backup Database from the Tasks menu option**.
- 3 Once in the backup window, you must provide a Destination file for the backup; you do this by clicking on the Add button. The window, next specify a file for the backup.
- 4 Ensure that the **Database-complete** option is checked and complete the other options based on your environment and click **OK**.

Upgrade the DME Database

There are two options to upgrading a DME database. The first one is to upgrade the database with the installation process, so look for step 22 from the following section [“Admin Tool & Viewer Installation” on page 8](#).

The second option is to update the database without installing the software. Within the installation files provided, you will see a folder named **C:\Program Files\QAD\Demand Management Engine\DB**. Inside this folder you will find a file named **DBUpgrade.bat**. Running this file will allow you to upgrade any database to the latest version.



After entering the right information for the **Server Name**, **Database Name** and the login credentials, you can test your connection to the server by clicking the **Test Connection** button. When the connection test has been passed you can upgrade your database by clicking the **Upgrade Database** button.

Note The upgrade requires the database system administrator user (sa) login and password.

Restoring or Attaching DME Database

If you have a completely updated DME Database and need to restore a backup or need to attach it to the same SQL Server instance or in a different SQL Server Instance, you will need to follow these steps:

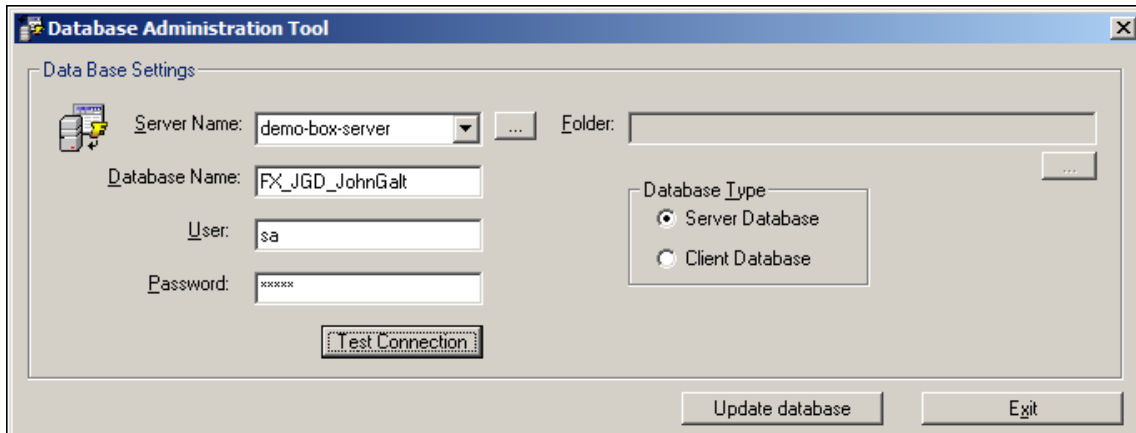
Warning: These steps need to be applied if you are restoring a DME database from and to SQL Server 2005 or SQL Server Express 2005 or SQL Server 2008.

- 1 Restore your database's backup or attach it to the new server.
- 2 Go to the folder where the DME files were installed (the default location is C:\Program Files\QAD\Demand Management Engine\). In a folder named **DB** you will find a file named **CLRConfigure.sql**. This file needs to be executed pointing to the restored database.

Before running the script you must edit it. This file has two references to the FX_JGD database. If your DME database has a different name, then you must change the .sql file accordingly before executing it. Be sure to run the script as the System Administrator user (sa) of the SQL Server instance.

Creating a New DME Database

The installation media for the DME v6.0 includes a folder name **DB**, which contains several files, including one named **DBCreate.bat**. This file can be used to create a new empty DME Database.



After running this tool, you will have to specify the **Server Name**, **Database Name** and log in credentials to the SQL server. You must run this tool locally on the computer running the SQL Server because you must also specify the local folder where the database files will be stored.

After completing the required data, you can verify the settings by clicking the **Test Connection** button. If the test is successful, you can start the database creation by clicking the **Create Database** button.

Updating and Using SQL 2005

When you select Integration Services for installation, Setup also installs support for DTS packages, including the DTS runtime and DTS package enumeration in SQL Server Management Studio. Support in the runtime is enhanced to enable DTS packages to access the SQL Server 2005 data sources. For additional information, go to <http://msdn2.microsoft.com/en-gb/library/ms143706.aspx>

The SQL Server 2005 Integration Services (SSIS) does not install the DTS designer. An updated version of the DTS package designer is available as a separate Web download. Download the Microsoft SQL Server 2000 or 2005 DTS Designer Components or go to <http://www.microsoft.com/downloads/details.aspx?familyid=df0ba5aa-b4bd-4705-aa0a-b477ba72a9cb&displaylang=en>

Retagging Installation

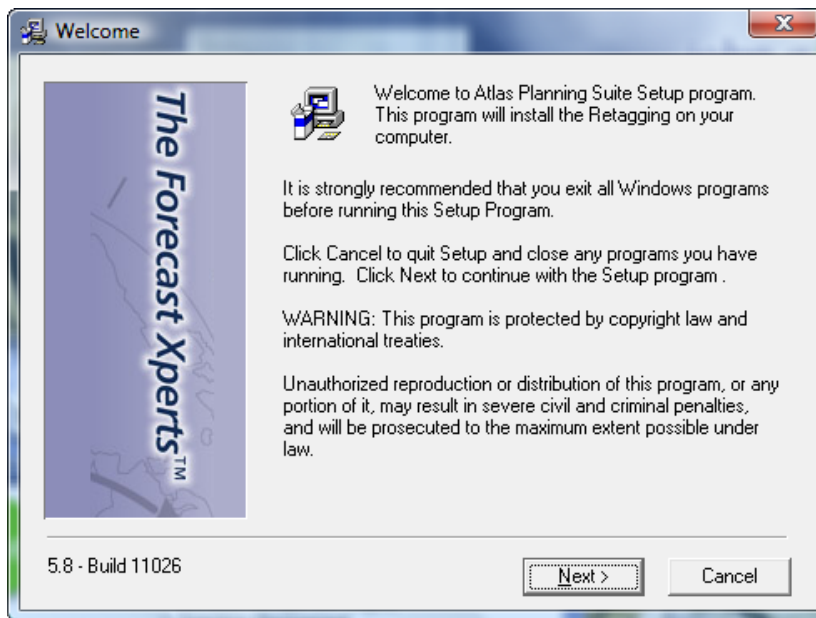
The **Retagging** module is an add-on component to the DME Viewer and has its own separate installation. You must have the DME Viewer installed prior to installing Retagging.

This section details the procedures to install Retagging successfully. For information in regard to configuring Retagging, see [“Retag Configuration” on page 154](#).

In order to install Retagging as an add-on to the DME Viewer v6.0, you need an installation CD or another media with the installation files for Retagging v6.0.

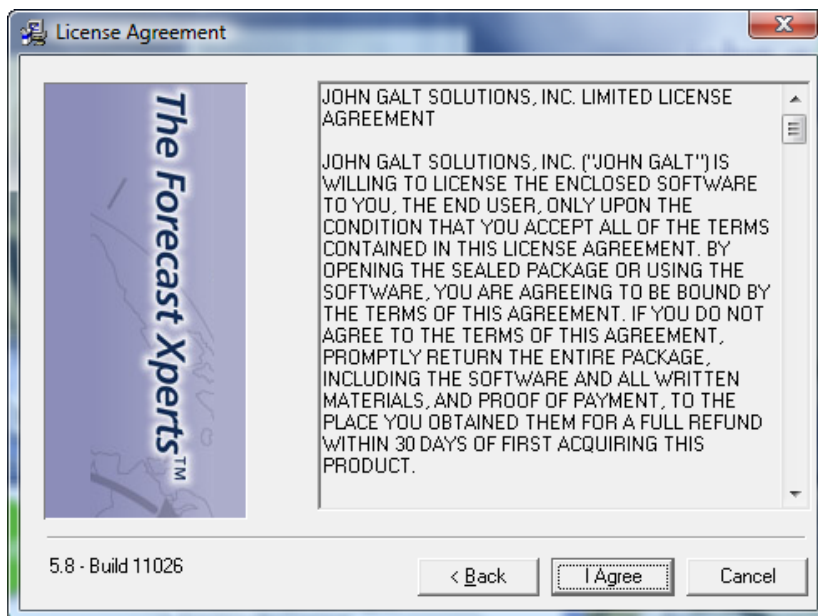
- 1 Make sure the DME Viewer is closed.
- 2 Click on the **Setup Retagging.exe** file.

The **Welcome** screen displays.



3 Click **Next**.

The **License Agreement** window displays.



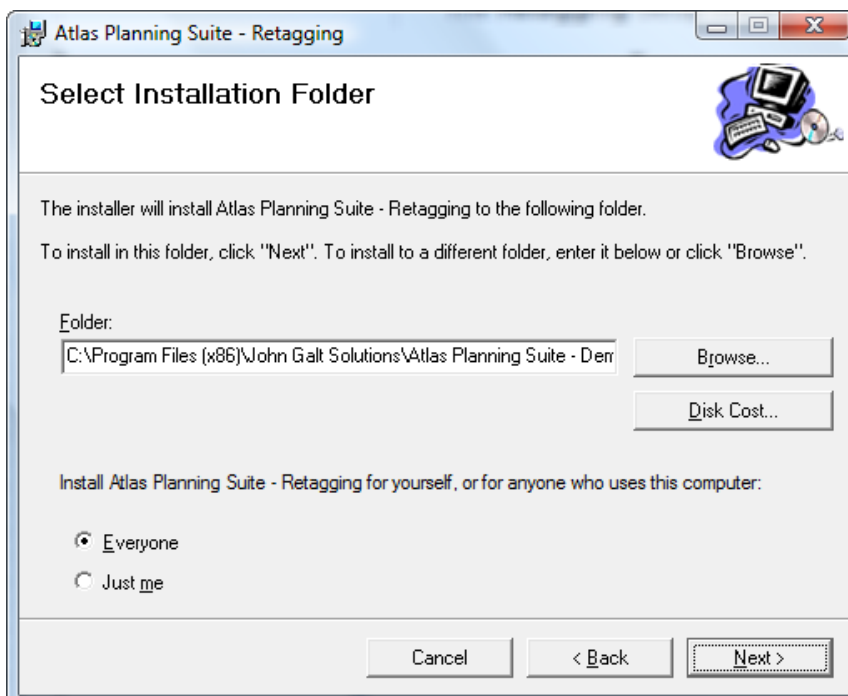
4 Click **I Agree**.

The **Retagging** Setup Wizard window displays.



5 Click **Next**.

The **Select Installation Folder** window displays.



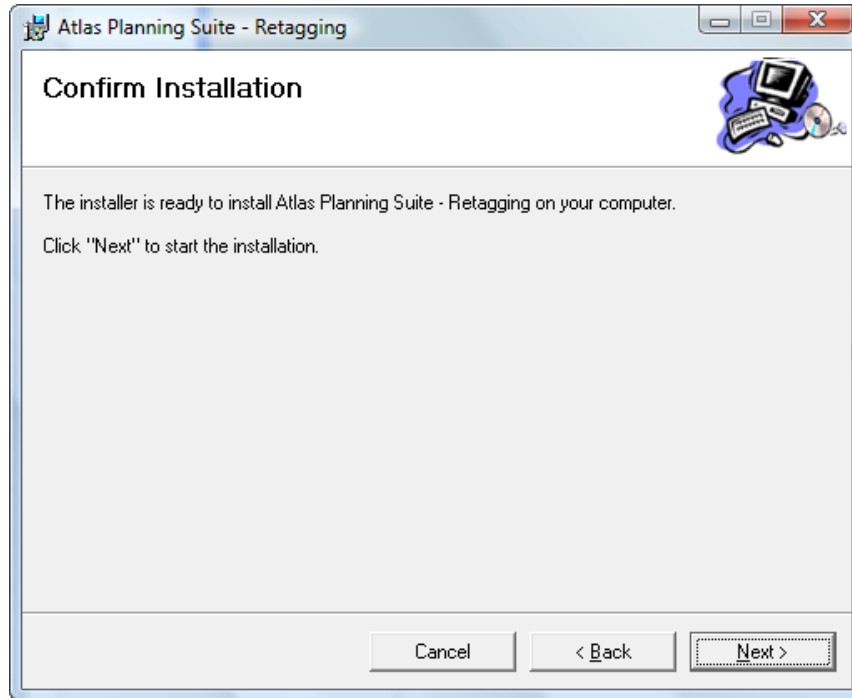
6 By default, the application installs in the directory shown above. To choose a different location, click **Browse**.

- To view the disk space available on your computer, click the **Disk Cost** button.

- Select the **Everyone** radio button to allow anyone to access the DME from your computer or select **Just Me** to allow only yourself access.

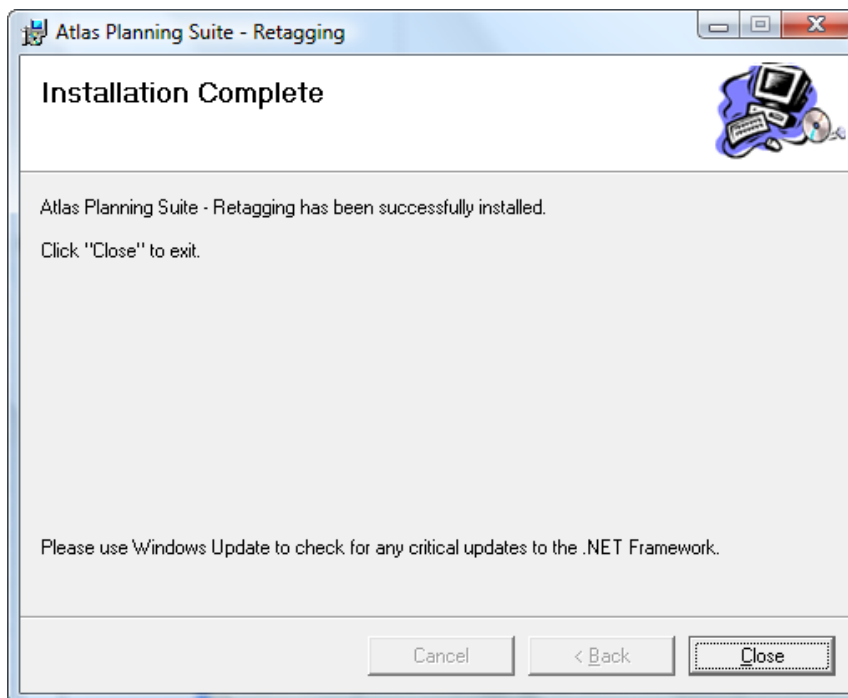
7 Click **Next**.

The **Confirm Installation** window displays.



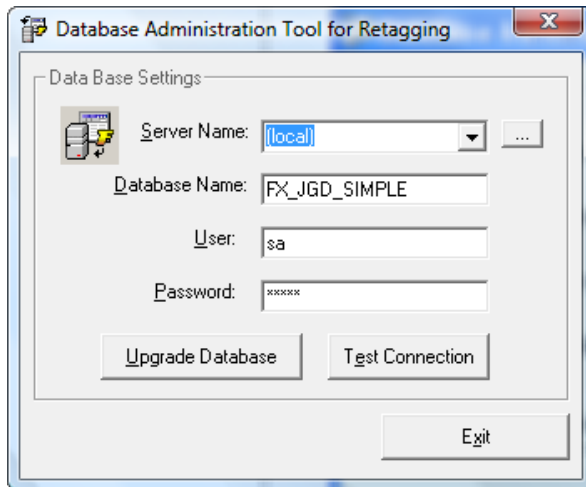
8 Click **Next**.

The **Installation Complete** window displays:



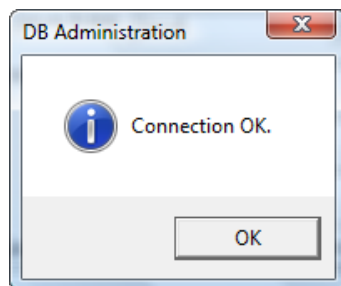
- 9 Click **Close**.

The **Database Administration Tool for Retagging** window displays:



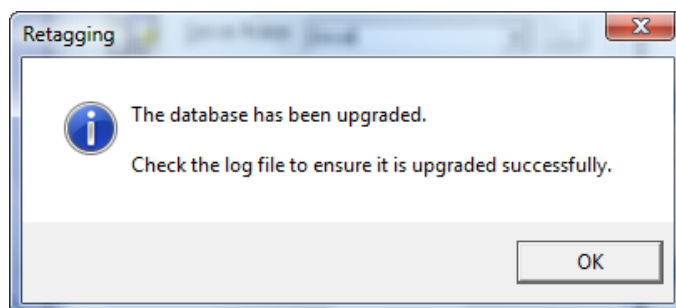
- 10 Verify the **Database Settings**, and click the **Test Connection** button to verify if the test was successful.

The **Test Connection Confirmation** window displays.



- 11 If the test was not successful, verify your Database connection settings. If the test was successful, click the **Upgrade Database** button to upgrade the database.

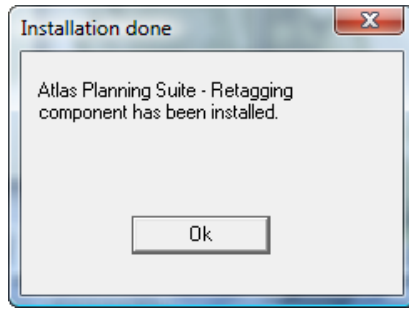
The **Confirmation** window displays.



- 12 Click **OK**.

- 13 Click **Exit**.

The **Installation done** window displays.



14 Click OK.

The Retagging feature is now installed. You can access the feature from the DME Viewer on the **Add Ins** tab.

Batch Scheduler Installation

This section details how to install the Batch Scheduler. The Batch Scheduler installation is separate from the DME installation.

In order to install the Batch Scheduler, you need an installation CD or another media with the installation files for the Batch Scheduler .NET v6.0.

The Batch Scheduler requires an existing FX_JGD Database which can be created by the Demand Management Engine installer, see link for more information. This database may exist on a Server or locally on the PC.

The Batch Scheduler has two components to it: Batch Scheduler Manager and Batch Scheduler Server components. The table below details each component.

Component	Description
Batch Scheduler Manager	This component is required to connect to the FX_JGD database to schedule new jobs to run.
Batch Scheduler Server Components	This component is the one responsible for creating all the jobs to run in SQL, this component has no GUI but is required to

- The Batch scheduler Server component must be installed in the server that holds the DME Database. If you are using an SQL Cluster the Batch Scheduler Server components must be installed in all the computers that hold databases and are part of the Cluster.

Installation Requirements

There are certain hardware and software requirements necessary to ensure the application installs successfully.

Hardware

The list below details the required hardware to install the Batch Scheduler.

Hardware	Minimum	Recommended
CPU		
RAM		
Hard Disk		

Software

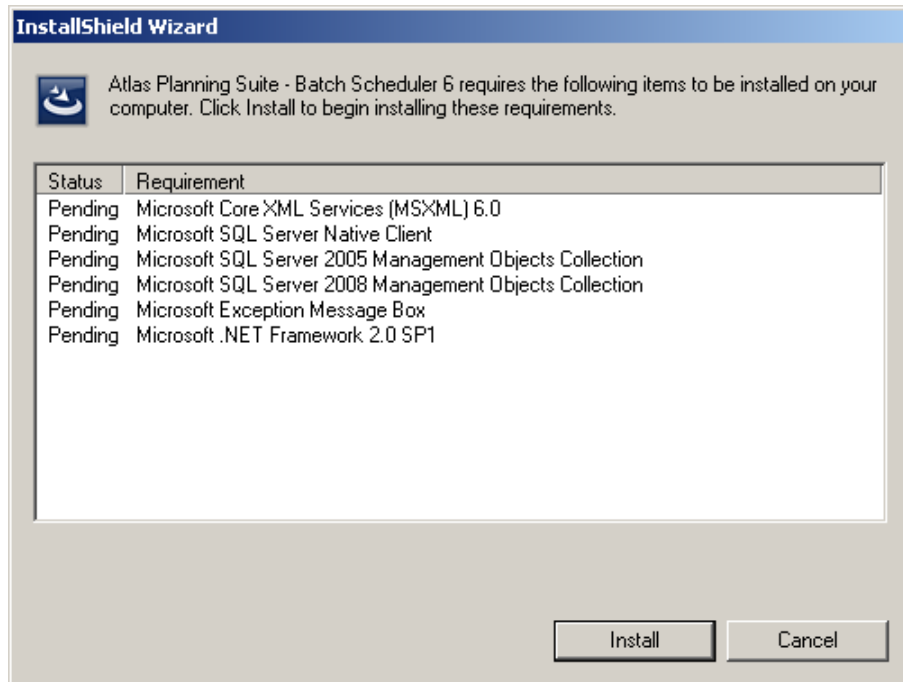
The list below details the required hardware to install the Batch Scheduler

- Microsoft .NET Framework 3.5
- Microsoft .NET Framework 3.5 Service Pack 1
- Microsoft Core XML Services (MSXML) 6.0 SP1
- Microsoft Exception Message Box
- Microsoft SQL Server Native Client
- Microsoft SQL Server 2005 Management Objects Collection
- Microsoft SQL Server 2008 Management Objects Collection

Installing the Batch Scheduler

- 1 Close all DME applications
- 2 Run **Setup.exe**.

If you are missing any of the pre-requisites you will see the following screen that will guide you through installing all the necessary pre-requisites. The Installation Wizard screen displays.



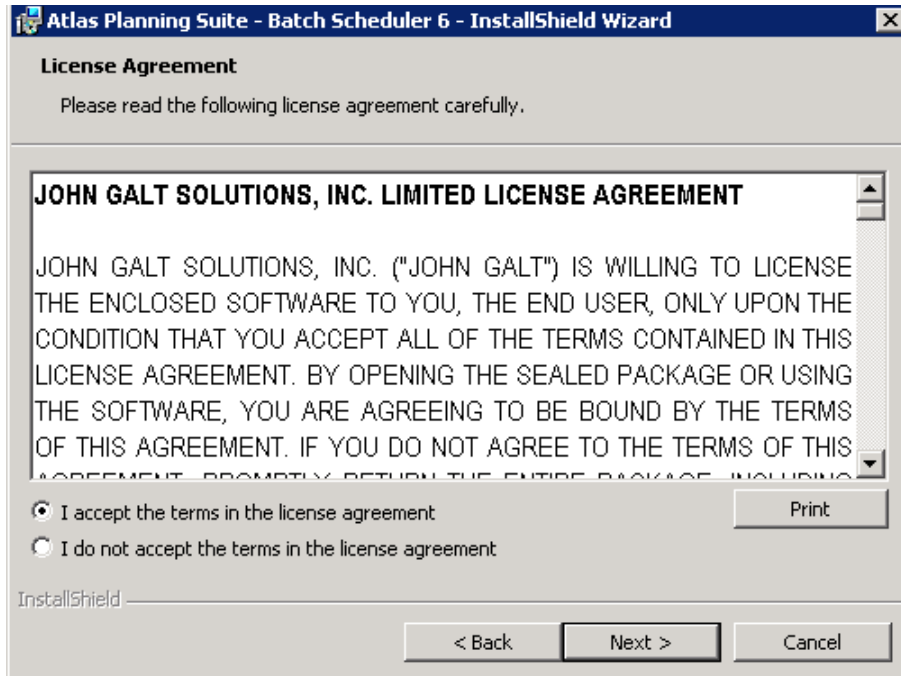
- 3 Click **Install** to install any required pre-requisites and follow any steps when prompted. Some of the pre-requisites might need for you to restart the computer before you continue with the Batch Scheduler setup.

After all the pre-requisites have been installed or if you did not need any of the prerequisites you will see the main installation window.



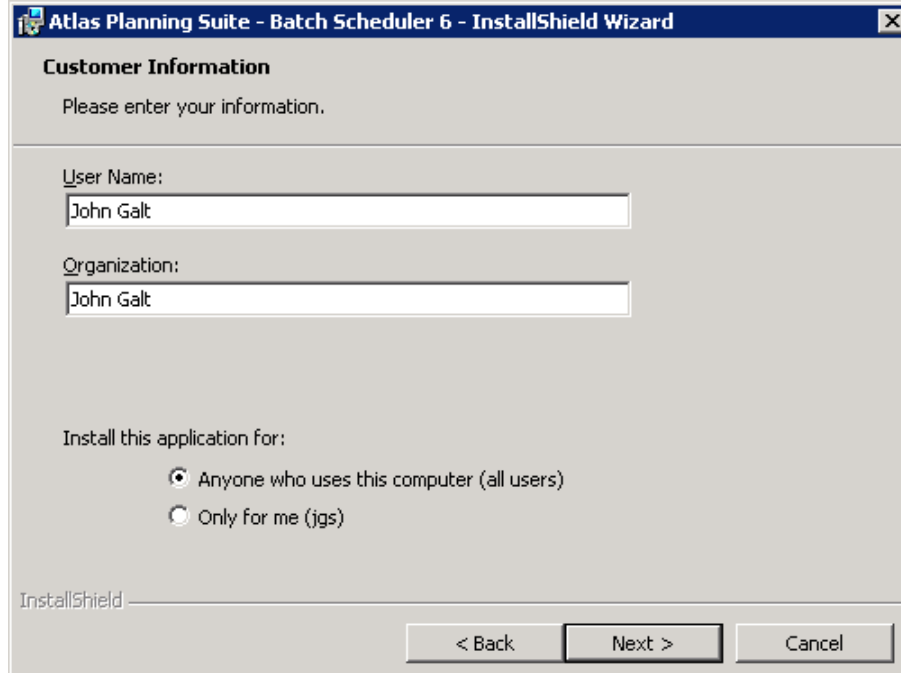
- 4 Click **Next**.

The **License Agreement** window displays.

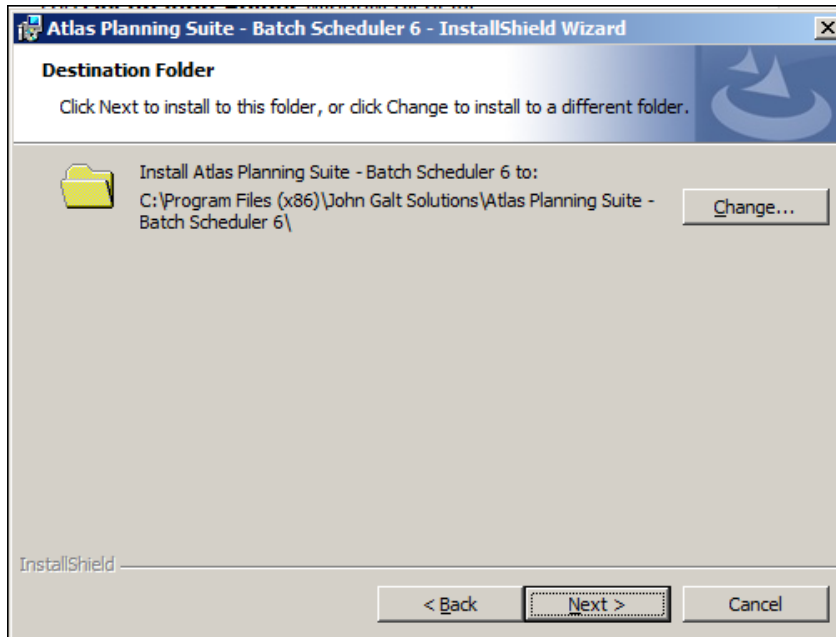


- 5 Click **I accept the terms in the license agreement** if you agree the terms, or click **Cancel** to quit.

The **Customer Information** window displays.



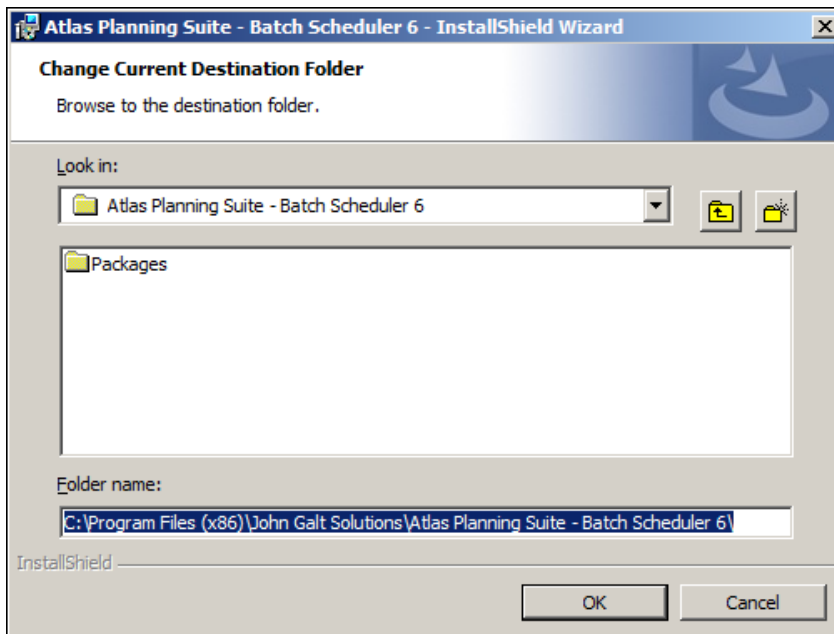
- 6 Enter your name in the **User Name** textbox.
- 7 Enter your company name in the **Organization** textbox and click **Next**.
The **Destination Folder** window displays.



- 8 Select the **Destination Folder** location and click **Next** to install the files in the default location.

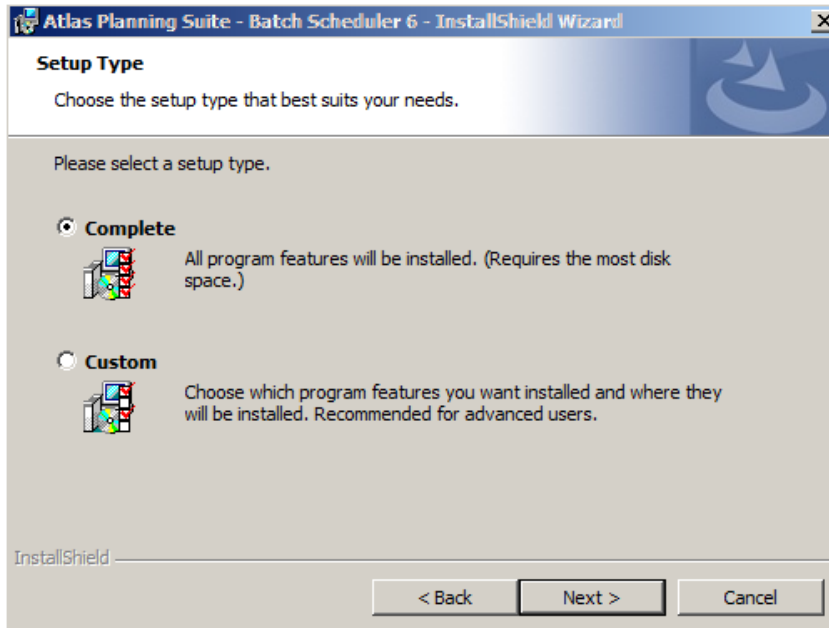
If you want the software installed in another location click the **Change** button.

The **Change Current Destination Folder** dialog box displays.



- 9 Select the location where you want the application to be installed and click **OK**. Then click **Next**.

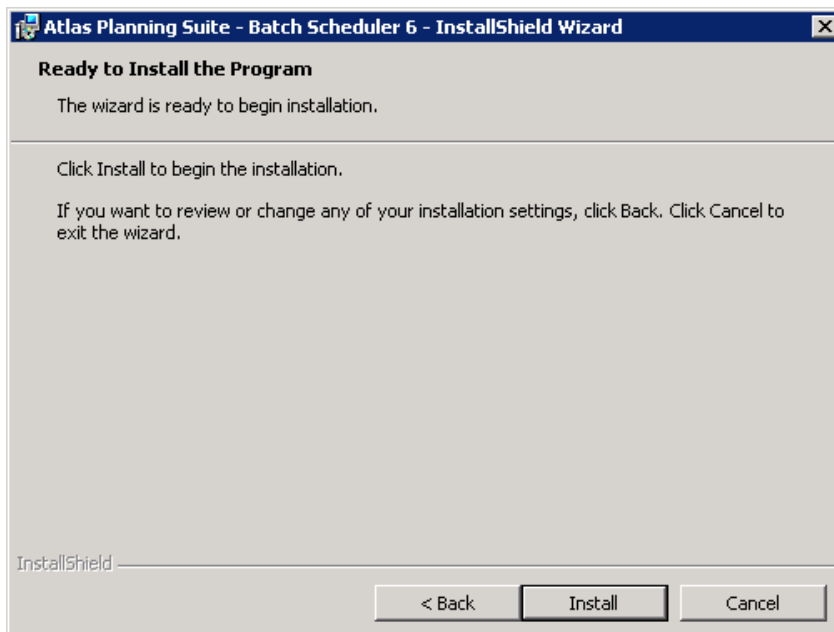
The **Setup Type** window is displayed.



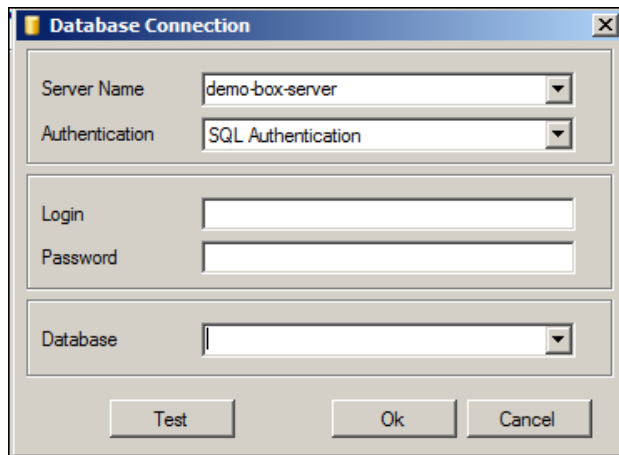
- 10 Select a **Complete** installation to install all components of the Batch Scheduler. Select a **Custom** installation to only install only some components.

- 11 Click **Next** for a Complete installation.

The **Ready to Install the Program** confirmation window displays.



- 12 Click **Install** to start the installation process.
- 13 The installer prompts you to enter the database to which you want to connect. The **Database Connection** window displays:

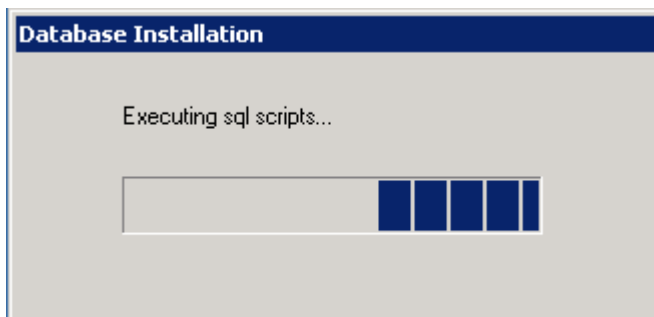
A dialog box titled "Database Connection" with a close button (X) in the top right corner. It contains several input fields: "Server Name" with a dropdown menu showing "demo-box-server", "Authentication" with a dropdown menu showing "SQL Authentication", "Login" with a text box, "Password" with a text box, and "Database" with a dropdown menu. At the bottom, there are three buttons: "Test", "Ok", and "Cancel".

- 14 Provide the necessary information to connect to your database server, including the **Server Name**, **Login** and **Password**.

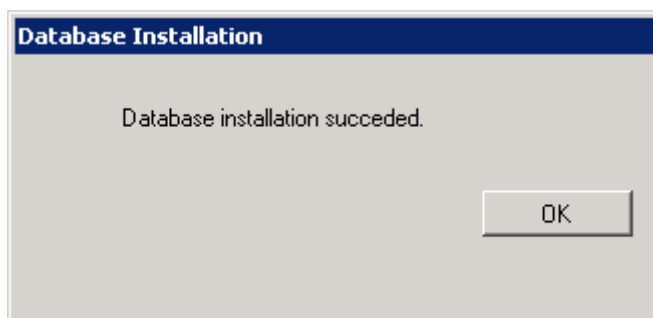
- 15 After configuring these parameters, click the **Test** button to verify the server connection. If your connection information is correct, the **Database** drop-down list will be populated with the databases in your SQL Server. Select your DME database from the list.

Note The installation requires the database system administrator user (sa) user login as password.

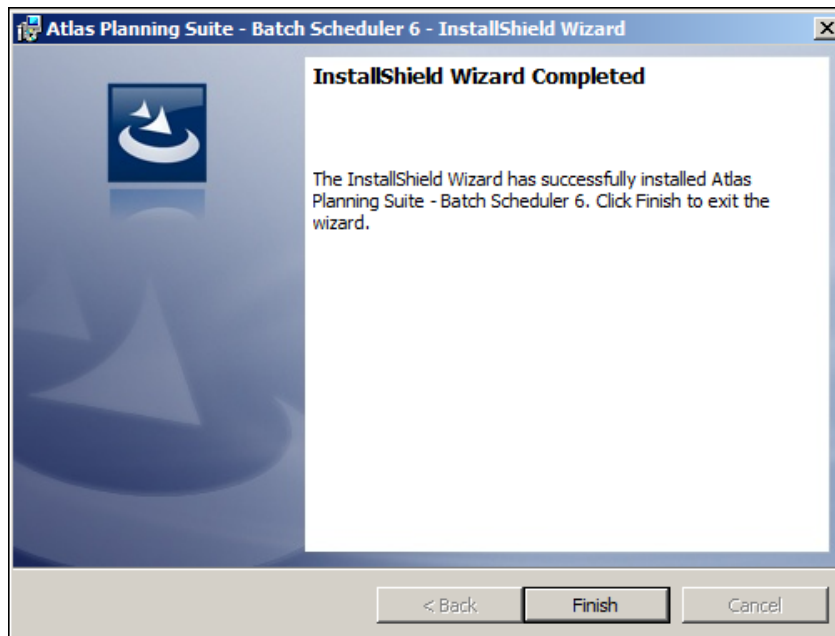
- 16 The installer executes the necessary scripts to update the database



- 17 If the scripts were run successfully you will get the following message. Click **OK** to continue.



18 Click **Finish** to complete the installation.



The installation is now successfully installed and a new shortcut for DME Viewer is created on your desktop.

Batch Scheduler Configuration

The Batch Scheduler consists of two components:

- Batch Scheduler Server
- Batch Scheduler Manager

Batch Scheduler Server

The batch scheduler server has to be installed wherever the database is installed. It is the component that the Batch Scheduler Manager depends on to create all the necessary tasks and batches. If you are using a SQL Cluster, you must install the Batch Scheduler Server components in each computer that is part of the cluster.

- SQL Server Agent needs to be running for the Batch Scheduler server to run correctly. If it is not running, users will not be able to create or run tasks, schedules or batches.

Troubleshooting

The table below details common troubleshooting Scenarios and solutions.

Problem	Solution
Previous version of Microsoft SQL Server 2000 or earlier is installed	You must upgrade your existing SQL Server to Microsoft SQL Server 2005 or 2008 for a DME 6.0 installation.

Problem	Solution
MSDE could not be started	Try to install the service manually: <i>Start > MSDE > Service Manager</i> When the dialog box displays, click the Start/Continue button.
Installation could not start Microsoft SQL Server	Start the service manually from the Control Manager. If there is still an error, check the log in account for the appropriate permissions.
The DME database is already installed and you want to complete an update	Backup FX_JGD before updating the database. To upgrade the database, see “Database Installation and Upgrade” on page 17 in this chapter.
Database preparation has failed	Check the following: • SQL Server is running; • User ID, Password and server name are correct; • Permissions to attach and detach to the databases are correct.
Cannot login to the DME	If you are trying to login with a user ID other than sa , check to make sure the permissions are correct.

DME Admin Tool

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Logging In to the Admin Tool 34

Available Functionality 35

Overview

The purpose of the DME Admin Tool is to allow you to configure the DME user interface and features. The Admin Tool is used primarily by the System Administrator to set up and maintain key aspects of the Viewer, such as:

- User IDs, Passwords, and Security
- Scenarios
- Display Sets
- Conversions and Conversion Groups
- Data Filters and Exceptions
- ABC Templates
- Data Permissions
- Data Domain Security
- Localization Editor

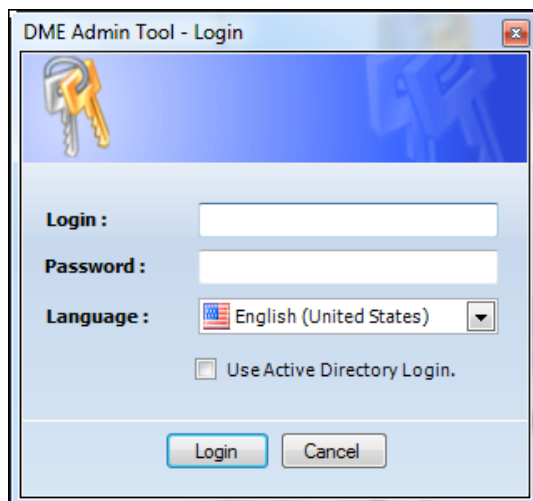
In addition to providing access to these various features, the Admin Tool can be used to create the permissions and domains necessary for the DME's database, also known as the Living Master Scenario. For additional information regarding these features, see [Living Master Scenarios](#).

Logging In to the Admin Tool

- 1 From your Windows Start Menu, go to **Start > All Programs > QAD > Demand Management Engine > Admin Tool**.

Note Users can also access the Admin Tool from the AddIns tab in the Viewer.

The **DME Admin Tool - Login** window displays.



- 2 Enter “fxadmin” in both the **Login** and **Password** fields.

- 3 Click **Login**.

The DME Admin Tool displays.

Available Functionality

The DME Admin Tool provides System Administrators and Super Users with the ability to configure the features available in the Viewer, such as Scenarios, Filters, or Data Permissions.

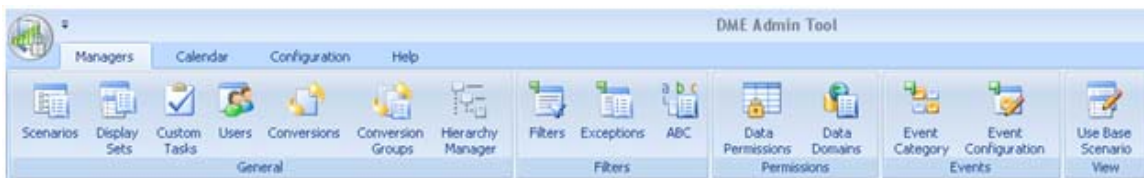
While all of the features control aspects of DME, some of the configuration also applies to the Planning Portal; for example:

- Adding Users and their Data Permissions and Data Domains
- Notes configuration
- Hierarchy Manager
- Filters, Exceptions, ABC

Most features cross all scenarios in the database, others must be assigned to a scenario (i.e., Display Sets, Event Configuration).

Some features are only available in the DME Admin Tool. Other features are available in both the DME Admin Tool and the DME Viewer, such as:

- Display Sets
- Conversions & Conversion Groups
- Hierarchy Manager*
- Filters*, Exception*, ABC
- Custom Tasks



The **Managers** tab in the Admin Tool consists of four different sections:

- General
- Filters
- Permissions
- Localization
- Events
- View

Each section contains different functionality that is featured later in this document.

Table 3.1 DME Admin Tool Functionality

Function	Description
Scenarios	Used to create and manage Scenarios, as well as set up the data for a Scenario.
See Creating and Managing Scenarios for more information.	

Table 3.1 DME Admin Tool Functionality

Function	Description
Display Sets	Used to create alias for series properties and opinion lines or data lines to customize the application in order to tailor it to your needs; you can also configure how many decimal points to display data lines with among other settings. See Display Sets for more information.
Users	Used to add, delete and modify user login accounts, as well as set security permissions to provide users with access to data, Scenarios, and Viewer functionality. See Creating and Managing Users for more information.
Conversions	Used to define data conversion based on opinion lines or series attributes. See Conversions and Conversion Groups for more information.
Conversion Groups	Used to create groups of conversion definitions, you can have a group convert only one or multiple opinion lines. In order to create a valid conversion group you need at least one valid conversion created. See Conversions and Conversion Groups for more information.
Filters	Used to create filters on your data to locate items based specific conditions in series attributes. See Creating Filters and Exceptions for more information.
Exceptions	Used to create exceptions that help you identify items in which a particular opinion line or data line meet certain conditions. See Creating Filters and Exceptions for more information.
ABC	Used to create ABC templates that help you prioritize items by creating categories depending on the opinion lines or data lines. See Chapter 6 of the <i>DME User Guide</i> for more information.
Data Permissions	Used to create permission groups so that users can only access a sub set of all the data available. See Permissions for more information.
Data Domains	Used to define access and read and writer permissions to series attributes and opinion lines. See Permissions for more information.

Table 3.1 DME Admin Tool Functionality

Function	Description
Localization	Used to configure the DME Admin Tool's User Interface to be able to support other languages. See Localization for more information.
Event Category	Used to create classifications for the different types of events being created. See Event Configuration for more information.
Event Configuration	Used to define how event opinion lines are used in conjunction with forecasts. See Event Configuration for more information.
Use Display Set From	Allows you to use a Display Set to view opinion lines and attributes for a scenario. See Event Configuration for more information.

Creating and Managing Scenarios

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Create a New Scenario 50

Edit a Scenario 51

Share a Scenario 53

Copy a Scenario 54

Additional Scenario Set Up Tasks 55

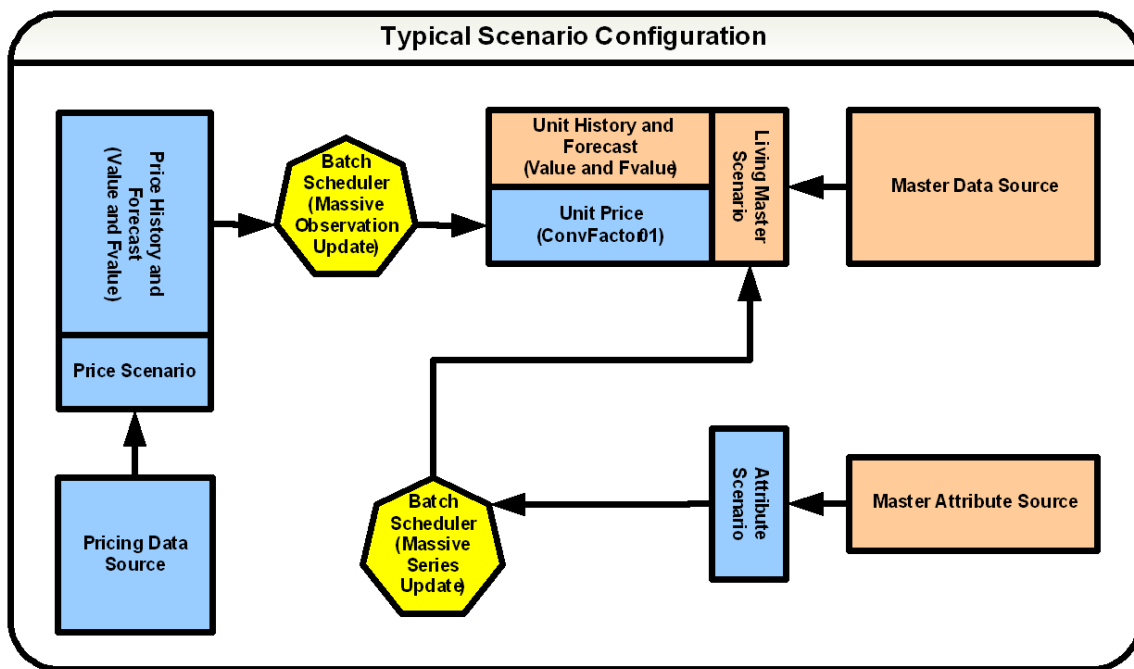
Overview

The DME uses Scenarios to create forecasts. A Scenario is composed of data, statistical information and instructions. This chapter describes how to create and manage Scenarios, as well as how to set up the data for a Scenario.

Scenarios are used to bring data into the DME, as well as providing a mechanism for developing forecasts. Proper Scenario setup when combined with the Batch Scheduler provides a very powerful method for managing data within the DME.

In the majority of cases, the DME is configured with a single Living Master Scenario that contains the active version of the forecast. In addition, it is likely that there will be a series of helper Scenarios that bring additional data into the DME.

The following illustration details a simple Scenario setup within the DME that pulls in and forecasts unit data before adding time-phased pricing back to the Living Master as a conversion factor.



In this case, the Batch Scheduler loads the price update attributes. By segmenting the data into multiple Scenarios, it is easy to manage and update each Scenario and post the results into the Living Master Scenario.

Each Scenario is unique and contains different information. The DME uses each Scenario to examine and forecast a different aspect of your business. In order to ensure the integrity of their forecasts, users must closely manage their Scenarios. This section explains how to keep Scenarios unique, as well as share Scenarios with other users.

Main Settings

The **Main Settings** section, enter a name in the *Scenario Name* field.

Main Settings

Scenario Name : New Scenario

Data Source : Microsoft Access 97-2003

Connection String : Select DataSource

Table Name : Select Table Name

Filter :

Data Organization : ☐ Columns ☒ Rows

Seasonality :

The following fields are available in the Main Settings section:

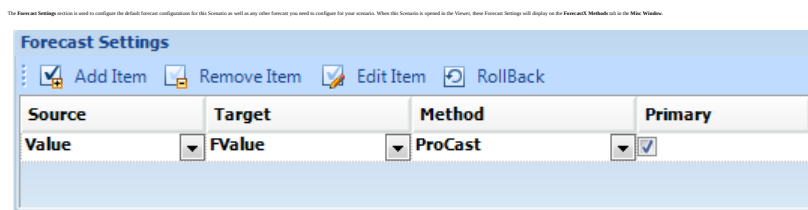
Table 4.1 Main Settings

Field	Description
Scenario Name	Name of the Scenario being created.
Data Source	Indicates the source of the forecast data being used in the Viewer. Possible values are: Access Database file, Excel Spreadsheet, SQL Server, and Other. See “Selecting the Data Source” on page 55. for more information.
Connection String	The name of the individual file or database information containing the data that will be used as the source for the scenario.
Table Name	The individual table within the Data Source that contains the data being loaded. This drop-down list will be populated automatically once the Connection String has been configured.
Filter	Allows the user to create a filter expression to limit the data that is populated from the Data Source. See “Creating a Filter Expression” on page 59. for more information.
Data Organization	Specify if the data in the selected data source is organized in rows or columns.
Seasonality	Indicates the number of seasonal periods used in this Scenario. For example, if data contains quarterly seasonality, enter “4” in the Seasonality field.
Forecast Data Periods	Specifies the number of periods you want the DME to include in the Scenario. The DME defaults to 12 periods and can forecast up to 999 periods.

Forecast Settings

When creating a scenario you can create one or several forecast settings. Each forecast setting is a group of settings that will use the data being loaded into the scenario and can use different forecast methods to calculate an accurate forecast.

When creating a scenario for the first time or reloading a scenario from its source data, the only opinion line (Source field) that will have data is the “Value” line.



A Forecast Setting consists of the following values:

Table 4.2 Forecast Settings

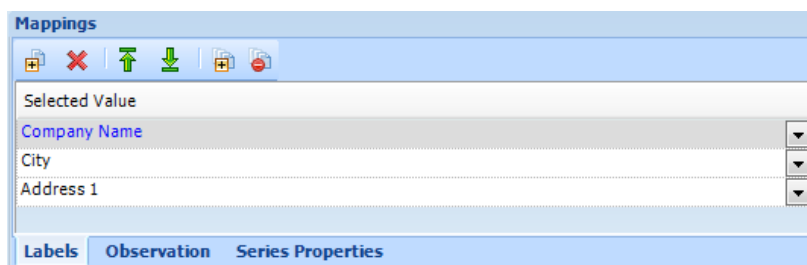
Field	Description
Source	This column indicates the Source opinion line for each forecast setting. The opinion line configured here will be the historical data used to generate the forecast.
Target	This column indicates what the Target opinion line is for each forecast setting. The opinion line configured here will be where the forecast data is stored after generating a forecast.
Method	This column will display the forecast method selected for this particular forecast Source and Target.
Primary	This setting will show you if the forecast line is the Primary forecast setting for the Scenario. The Primary forecast setting is specified when the Scenario is created and always has the Value line as the Source and the FValue line as the Target. This forecast setting cannot be deleted.

Mappings

The Mappings section consists of three tabs: Labels, Observation, and Series Properties.

Labels Tab

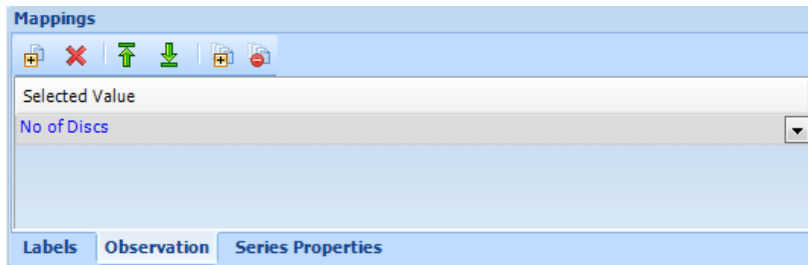
The **Labels** tab allows users to select fields from the Data Source to represent unique products or items in the DME. This label is displayed in the DME Viewer as the description for each Series. The name of the field selected as the label must be unique or the system automatically changes the label to make it unique.



Click the **Add** icon to add a new label and then use the drop-down list to select a field from the Data Source. Use the two arrow icons (**Up** and **Down**) to change the order in which the labels display.

Observation Tab

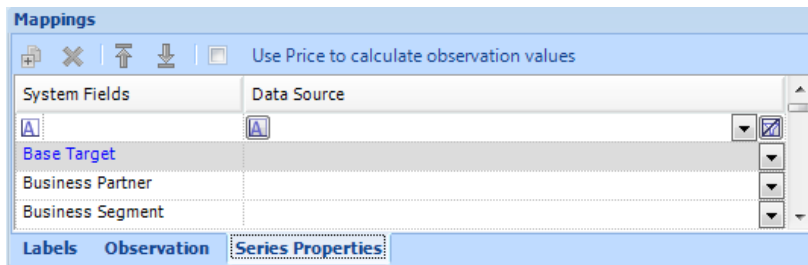
The **Observation Tab** is used to select fields from the Data Source to represent the Historical information used to create the Forecast. The DME automatically selects all numeric fields in the Data Source as observations in the same order as they appear in the Table/Query. The Observations tab allows you to change that configuration.



Click the **Add** icon to add a new observation and then use the drop-down list to select the field from the Data Source. Use the two arrow icons (**Up** and **Down**) to change the order in which the observations display.

Series Properties Tab

The **Series Properties** tab allows users to map individual system fields to fields in the Data Source for this Scenario. This allows you to import additional information for each individual series, such as cost, price or description.



Date Settings

Regardless of the organization of the data, you can configure the series date fields in your data source. By configuring these dates, you can specify how dates are displayed in the generated reports.

Date Settings

Start Year :

Start Period :

Cycles/Year :

In the **Date Settings** section of the **Scenario** tab, select the appropriate values for the following fields:

Series Date	Description
Start Year	Specify the starting year of the data in the series.
Start Period	Specify the date cycle. For example, when using weekly data, the value “2” indicates that the dates start in the second week of the year.
Cycles/Year	Specify when the period starts in the beginning of the year. For example, the value “52” means weekly, “365” means daily, and “12” means monthly.

The following are examples of various types of data and how the configured date fields are displayed in the Viewer.

Daily Data

A daily data set up of:

Date Settings

Start Year : 2008

Start Period : 7

Cycles/Year : 365

Will return the following dates:

Demand Data

History 6

Description	Base Fcst (CvRev)(S)	Stat SS
2008-01	S/0	33.90
2008-02	S/0	33.90
2008-03	S/0	33.90
2008-04	S/0	33.90
2008-05	S/0	33.90
2008-06	S/0	33.90
2008-07	S/0	33.90
2008-08	S/0	33.90
2008-09	S/0	33.90
2008-10	S/0	33.90
2008-11	S/0	33.90
2008-12	S/0	33.90

Weekly Data

A weekly data set up of:

Date Settings

Start Year : 2006

Start Period : 31

Cycles/Year : 52

Will return the following dates:

Demand Data

History

Description	Value	FValue
2006-29	1,460.00	1,579.36
2006-30	1,460.00	1,579.36
2006-31		1,502.28
2006-32		1,502.28
2006-33		1,502.28
2006-34		1,502.28
2006-35		1,429.24
2006-36		1,429.24

Monthly Data

A monthly data set up of:

Date Settings

Start Year : 2006

Start Period : 7

Cycles/Year : 12

Will return the following dates:

Demand Data

History

Description	Base Fcst (CvRev)(S/)	Stat SS
2006-07	S/0	33.90
2006-08	S/0	33.90
2006-09	S/0	33.90
2006-10	S/0	33.90
2006-11	S/0	33.90
2006-12	S/0	33.90
2007-01	S/0	33.90

Properties

The Properties section consists of two tabs: Time Level Settings and User Field Settings.

Time Level Settings Tab

These attributes are used for further definition and to group Scenarios. For example, if Time Level 1 is set to **Monthly**, then a forecast can be grouped for all Scenarios that forecast monthly. The table details the default and predefined values for the following attributes:

Time Level	Description
Type	This field is not currently used by DME, but is reserved for future use.
Use	This field is not currently used by DME, but is reserved for future use.
Status	This field is not currently used by DME, but is reserved for future use.
Time Level 1	The default value is Monthly . The predefined values are Daily , 4 Weeks , Weekly , Monthly , and Quarterly . The values are defined in TBL_ModuleClassValue.
Time Level 2	This attribute contains the same default and predefined values as Time Level 1.

User Field Settings Tab

These fields are used to define the type of Scenario and what it used for. For example, the User Field 1 is used to set the internal type of Scenario, such as a **Normal** (default) or **Living Master**.

Table 4.3 User Field Settings

Field	Description
Class	This field is not currently used by DME, but is reserved for future use.
User Field 1	Indicates the type of Scenario. Possible values are: • Calendar - Contains the transformation information for transferring data from one time scale to another. • Currency - This option is not currently used by DME, but is reserved for future use. • Living Master - Scenario containing almost all detail data. Controlled by the System Administrator and works as a data warehouse. Other users populate data from a Living Master Scenario, make changes, and commit the changes back to the Living Master Scenario. • Normal (Default) - General Scenario used for the purpose of forecasting. • Profile - Contains profiling data using in a Life Cycle Forecast routine.
User Field 2	This field is used to indicate if this Scenario can be loaded in the Planning Portal. Select “Webform” from the drop-down to make this Scenario viewable in the Planning Portal or leave this field blank to hide the Scenario from PP.
User Field 3	This field is not currently used by DME, but is reserved for future use.
User Field 4	This field is not currently used by DME, but is reserved for future use.

Table 4.3 User Field Settings

Field	Description
User Field 5	This field is not currently used by DME, but is reserved for future use.
User Field 6	This field is not currently used by DME, but is reserved for future use.

Options

The **Options** section consists of three tabs: Cleansing, Accuracy, and Reload Options.

Cleansing Tab

The Cleansing tab allows users to cleanse their data in order to generate a more accurate Forecast. Data Cleansing is applied to the history of the Forecast. Data cleansing options for Historical shaping include:

- Removal of outliers
- Removal of zeros
- Removal of missing values

The screenshot shows the 'Options' dialog box with the 'Cleansing' tab selected. The dialog has three tabs: 'Cleansing', 'Accuracy', and 'Reload Options'. The 'Cleansing' tab contains the following settings:

- Replace Missing Values : ☐
- Forecast Technique : Average(Default) (dropdown menu)
- Lower Val : 0 (text input)
- Upper Val : 0 (text input)
- Leading : ☒
- Trailing : ☐

The 'Cleansing' tab is highlighted with a dashed border.

On the **Cleansing** tab you can select the options you want to use in the Forecast:

Option	Description
Replace Outlier	Select this check box to replace outliers. An outlier is an anomaly within a data set with a low chance of occurrence. This outlier disturbs the accuracy of a forecast. For example, the effect on sales of snow shovels that resulted from a snow storm in Texas in the middle of July, would cause an outlier within a data set. The following options will become active once the Replace Outlier check box is selected: • Std Dev - Specify the standard deviation. The default is two standard deviations from the mean. The outlier is replaced with a number that is calculated using a forecast technique. - Or, you can select how far a data point needs to be from the data series mean in order to be considered an Outlier by selecting the number of standard deviations. • Forecasting Technique - Select the forecasting technique you want to use to perform outlier replacement. • Replacement Type - Select the type of value with which you want outliers replaced. The choices are “Upper” value, “Lower” value, or “Both (Default)”.
Replace Missing Values	Select this option to replace any missing or erroneous values in the data set. For example, if a period or a range of periods is not reported, instead of leaving it blank, the DME can replace it with a value calculated by a forecast technique. The following options will become active once the Replace Missing Values check box is selected: • Forecast Technique - Select the forecasting technique you would like to use to perform Replace Missing Values. • Lower Val/Upper Val - Use these values to expand the scope of the missing values range beyond zero.
Remove Zero Values	The Leading and Trailing fields are used to indicate how to treat zero values. This is useful in new product introductions, when there are long strings of zeros representing when the product did not exist. • Leading - Select this option to remove leading zeros. • Trailing - Select this option to remove trailing zeros.

Accuracy Tab

The **Accuracy** tab contains additional advanced options to ensure checks and balances for Forecast Accuracy. Forecast Accuracy is applied to the Forecast. You can configure the DME's monitoring processes that provide added measures of confidence to the Forecasts.

Select the **Accuracy** options for the Forecast.

Option	Description
Apply Tracking Signal	The Tracking Signal is used for fine-tuning the overall accuracy of a forecast. Fitted values serve as the baseline for your Forecast, while the Tracking Signal determines if the fitted values are under-forecasting or over-forecasting. The following options will become active once the Apply Tracking Signal check box is selected: • Iterations - Enter the number of Iterations you want to apply. • Under Forecast Percentage - Enter the Under Forecast Percentage to be tracked. • Over Forecast Percentage - Enter the Over Forecast Percentage to be tracked.
Use Holdback	Select this option to judge whether the current Forecasting process is sufficient by enabling users to specify a time period in data to be held out and compared with another mini-forecast. The DME produces an out-of-sample table in the Audit trail report for further analysis. • Iterations - Enter the number of Iterations you want to hold back.
Trend Adjustment	The Trend Adjustment option enables you to set the number of Growth Periods and Decline Periods for new or old products.
Convert negative values to zero	Select this option if you want any negative values in your data to be changed to zeros.
Integer Only Forecast	Select this option if you want the Forecasted values as an integer instead of a decimal.

Reload Options Tab

Reload Options is the third tab in the **Options** section. These options affect the reloading of data for each Scenario.

When some properties of a Scenario change, the DME must reload the Scenario in order for the changes to take place. Reloading the Scenario removes all the existing forecasted values and modifications. The Freeze Scenario option enables users to freeze those properties of a Scenario, which prevents the DME from reloading the Scenario. When a Scenario is frozen, you are unable to reload a Series or adjust any of the configuration options associated with the reloading series.

When a scenario is frozen, the following configurations are Read-Only:

- Date Settings
- Mapping Configuration (Labels, Observations, Series Properties)
- Remove trailing and leading zeroes (Cleansing tab)
- Outliers and missing Values (Cleansing tab)

Note With shared Scenarios, users only have the capability to freeze or unfreeze Scenarios where the System Administrator grants permission in User Preferences.

Forecast Overwrite Range

The Forecast Overwrite Range fields enable users to select a specific forecast range that can be overwritten with a new system generated Forecast. The Forecast is overwritten when the Historical Data is re-forecasted. You can select the **Forecast Overwrite** checkbox to set the overwrite range using the **To** and **From** fields. This allows you to overwrite only a specific range while keeping another part of the forecast.

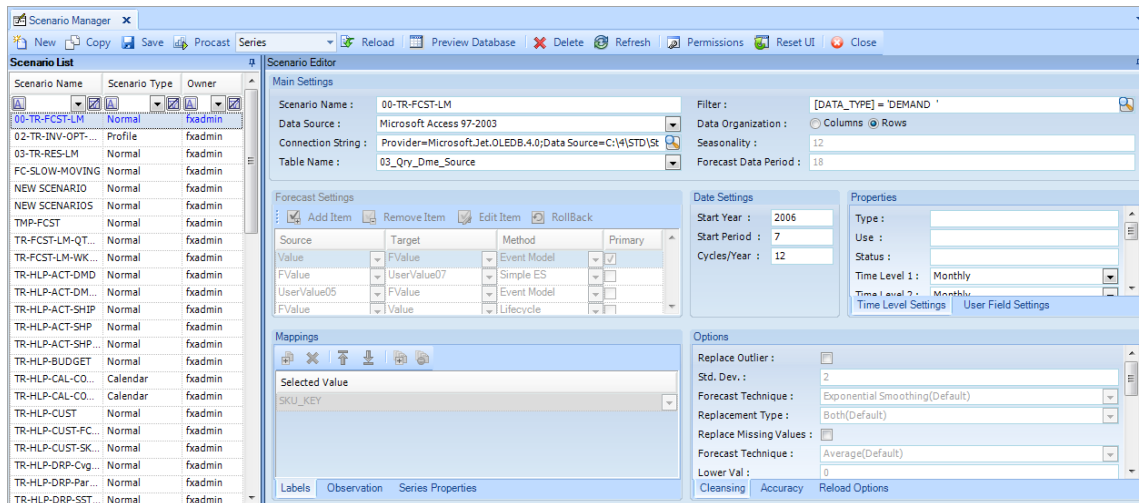
- 1 Select the **Forecast Overwrite** checkbox to overwrite the forecast.
- 2 When the **Forecast Overwrite** box is selected, the **From:** and **To:** textboxes will become active. Use these fields to select the range.
- 3 Select the **Overwrite Adjust Forecast** checkbox to overwrite the Adjusted Forecast.
- 4 Click **Save** when finished.

Create a New Scenario

- 1 From the Windows Start menu, select **Programs > QAD> Demand Management Engine > Admin Tool**.

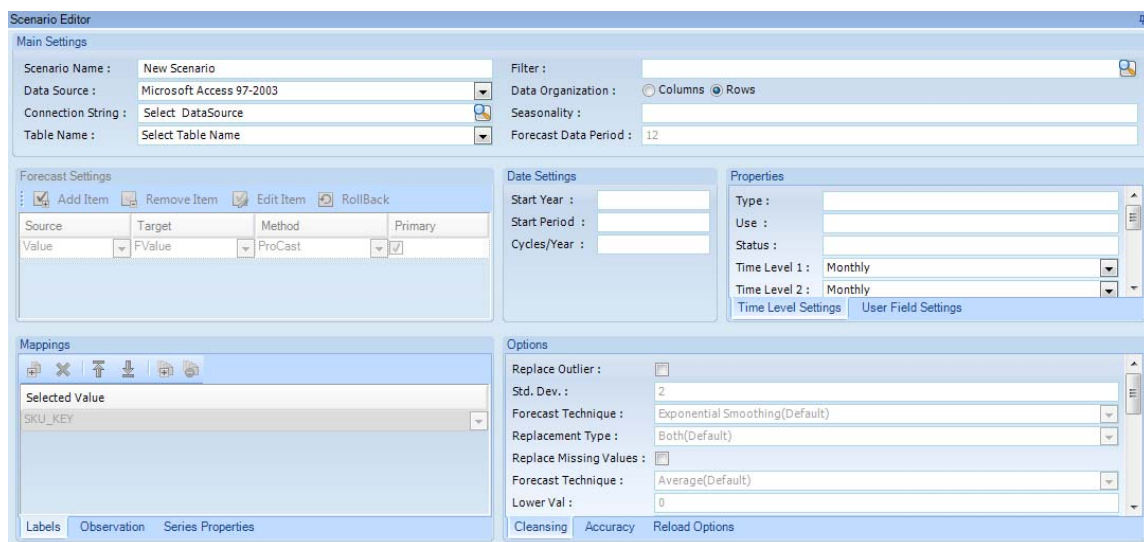
Note Users can also access the Admin Tool from the AddIns tab in the Viewer.

- 2 On the **Managers** tab in the ribbon, click the **Scenarios** button.
The **Scenario Manager** tab displays.



3 Click the **New** button.

The fields in the **Scenario Editor** section are cleared.



Edit a Scenario

- 1 To make changes to an existing scenario, click the **Scenarios** button on the **Managers** ribbon. The **Scenario Manager** tab displays.
- 2 Select the **Scenario** to modify from the Scenario List at the left. The details for the selected scenario will display on the Scenario Editor.

The screenshot shows the 'Scenario Editor' window. The 'Main Settings' tab is active, displaying fields for Scenario Name (00-TR-FCST-LM), Data Source (Microsoft Access 97-2003), Connection String, Table Name (03_Qry_Dme_Source), Filter ([DATA_TYPE] = 'DEMAND'), Data Organization (Columns), Seasonality (12), and Forecast Data Period (18). Other tabs include Forecast Settings, Date Settings, Properties, Mappings, and Options.

- 3 In the **Main Settings** section, change the **Scenario Name** and make any necessary changes to the Scenario attributes.

The attributes are used for further definition and to group Scenarios. For example, in the **Properties** section, if **Time Level 1** is set to “Monthly”, then a forecast can be grouped for all Scenarios that forecast monthly.

This table details the default and predefined values for the following attributes:

Time Level	Description
Level 1	The default value is Monthly. The predefined values are Daily, Weekly, Monthly and Quarterly. These values are defined in TBL_ModuleClassValue.
Level 2	This attribute contains the same default and predefined values as Time Level 1.

On the **User Field Settings** tab in the **Properties** section, you can set the internal type of Scenario in the **User Field 1** setting. The default value is Normal, but you can also select Living Master, Profile, Currency, or Calendar.

The table below details the default and predefined values for this field:

Scenario	Description
Living Master	A Scenario holding almost all detail data. It is controlled by the System Administrator and works as a data warehouse. Other users populate data from the Living Master Scenarios, make their changes, and commit them back to Living Master Scenarios.
Profile	A Scenario holding profiling data using in a Life Cycle Forecast routine.
Currency	This type of scenario is currently not used.
Calendar	A Scenario holding the transformation information for transfer data from one time scale to another time scale.
Normal	A general Scenario used for the purpose of forecasting.

Share a Scenario

When you create a Scenario, only you can view or edit the Scenario information. If you want to allow others users to view or make additions to your Scenario, you can share the Scenario.

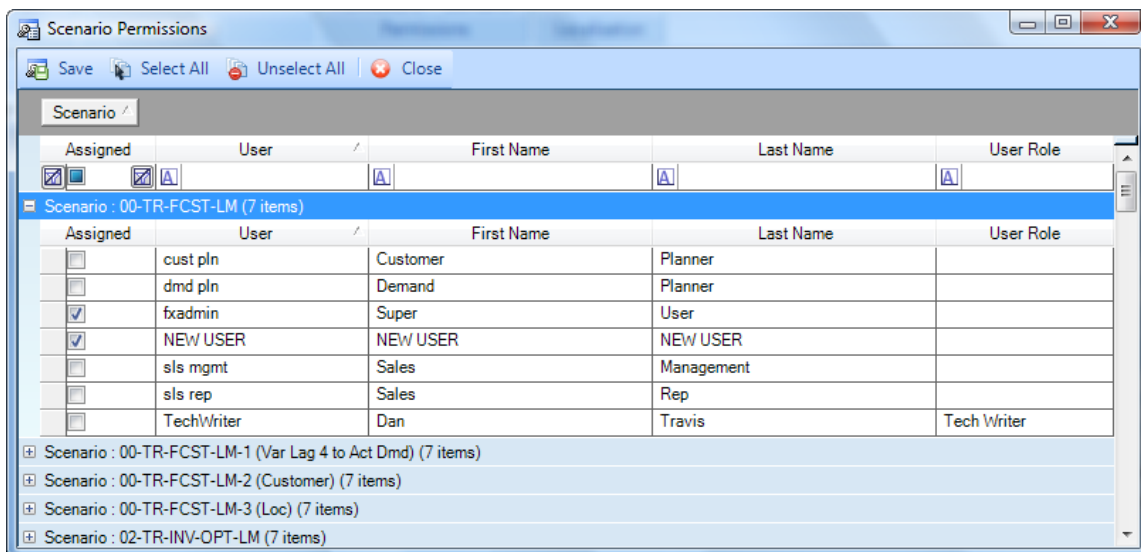
If you designate a Scenario as Living Master, then other users are able to extract information from your Scenario, make changes, and commit them back to the database.

You can share your Scenario if you would like to give other users direct access to it. Depending on the shared Scenario permissions that have been granted, users can share a Scenario with another user, view the Scenario in read-only mode, or make changes to the Scenario.

Note For additional information on sharing Scenario permissions, please refer to [Creating and Managing Users](#).

Share a Scenario with a User

- 1 On the **Managers** ribbon, click the **Scenarios** button.
The **Scenario Manager** tab displays.
- 2 Select the **Scenario** to share and click **Permissions**.
The **Scenario Permissions** window displays.



Note The selected Scenario is expanded to show all users who have sharing Scenario permissions.

- 3 Use the check boxes in the **Assigned** column to select the users with whom you want to share the Scenario.
- 4 Click the **Save** button.
A message confirming the sharing of the Scenario displays.

Delete/Remove Sharing from a Scenario

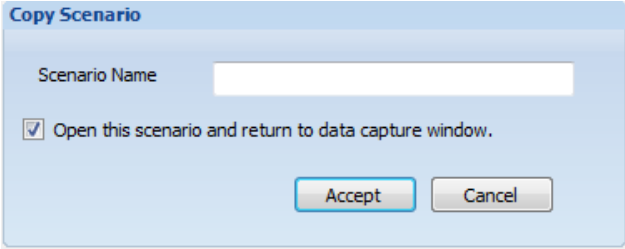
- 1 On the **Managers** ribbon, click the **Scenarios** button.
The **Scenario Manager** tab displays.
- 2 Select the **Scenario** you want to remove, and click **Delete**.
A message displays asking you to confirm the deletion.
- 3 Click **Yes** to delete the selected Scenario.
A message displays confirming that the Scenario has been deleted.

Copy a Scenario

When creating a new Scenario that is similar to an existing Scenario, you can copy the options from the existing Scenario to the new one. Make the necessary changes and save the new Scenario.

Making a copy of a Scenario enables you to avoid recreating the entire Scenario. Please note that copying a Scenario copies only the options and not the data.

- 1 On the **Managers** ribbon, click the **Scenarios** button.
The **Scenario Manager** tab displays.
- 2 Select the **Scenario** to copy and click the **Copy** button.
The **Copy Scenario** window displays.

A screenshot of the 'Copy Scenario' dialog box. It has a light blue header with the title 'Copy Scenario'. Below the header, there is a text input field labeled 'Scenario Name'. Underneath the input field is a checked checkbox with the label 'Open this scenario and return to data capture window.' At the bottom right of the dialog box are two buttons: 'Accept' and 'Cancel'.

- 3 Enter a *new and unique Scenario Name*.
- 4 Select the **Open this scenario and return to data capture window** check box if you want to open the new Scenario once the copy is complete.
- 5 Click **Accept**.
A confirmation window displays when the copy is completed.

Additional Scenario Set Up Tasks

Selecting the Data Source

Use the **Data Source** field to select the source of the forecast data you will be using in the Viewer. The following table details each type of data source.

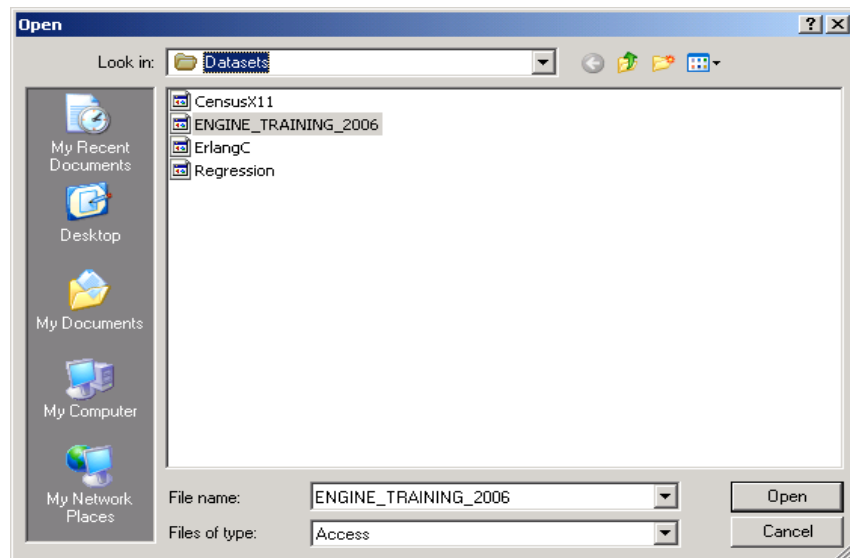
Data Source	Description
Microsoft Access Database file (.mdb)	A file created in Microsoft Access containing a database layout, including tables, indices and queries.
Excel Spreadsheet file (.xls)	A spreadsheet created in Excel that contains the data in a tabular format.
SQL Server	A server-based relational database management system.
Other: ODBC, Oracle, etc.	Various other data sources.

In the **Connection String** field, click the search icon .

The **Open** dialog box displays to select a file of the type you selected as the Data Source. Depending on the type of file you selected for the Data Source, the dialog box displays a different file type.

Microsoft Access Database

If you selected Microsoft Access Database file (.mdb) as your Data Source, the Open window displays and filters for Access Database files.



- 1 Select the .mdb file and click **Open**.
- 2 Click the **Preview Database** button.
The **Database Preview** dialog box displays.

Database Preview

Drag a column header here to group by that column.

REGION	CUSTOMER	PARTNO	PRODCLASS	PRODFAMILY	PRODGROUP
EAST	BIG DEPOT	1080	GASS GRILLE	SURE CHEF	GRILLS
WEST	BIG DEPOT	1080	GASS GRILLE	SURE CHEF	GRILLS
EAST	DISCOUNT PALACE	1080	GASS GRILLE	SURE CHEF	GRILLS
WEST	DISCOUNT PALACE	1080	GASS GRILLE	SURE CHEF	GRILLS
WEST	GARDEN SOURCE	1352	ELECTRIC GRILLE	SUPER CLEAN	GRILLS
EAST	GARDEN SOURCE	1352	ELECTRIC GRILLE	SUPER CLEAN	GRILLS
WEST	BIG DEPOT	1352	ELECTRIC GRILLE	SUPER CLEAN	GRILLS
EAST	BIG DEPOT	1352	ELECTRIC GRILLE	SUPER CLEAN	GRILLS
WEST	BIG DEPOT	1905	RIDING MOWER	GRASS EATER	LAWN
EAST	OUTDOOR WORLD	1905	MOWERS RIDING	GRASS EATER	LAWN
WEST	OUTDOOR WORLD	1905	MOWERS PUSH	GRASS EATER	LAWN
EAST	DISCOUNT PALACE	1905	PUSH MOWER	GRASS EATER	LAWN
WEST	DISCOUNT PALACE	1905	RIDING MOWER	COOK FAST	GRILLS
EAST	EVAN'S HARDWARE	1905	PUSH MOWER	COOK FAST	GRILLS
WEST	EVAN'S HARDWARE	1905	PUSH MOWER	COOK FAST	GRILLS
WEST	DISCOUNT PALACE	1352	ELECTRIC GRILLE	SUPER CLEAN	GRILLS
WEST	BIG DEPOT	1402	POWER GRILLE	SUPER CLEAN	GRILLS

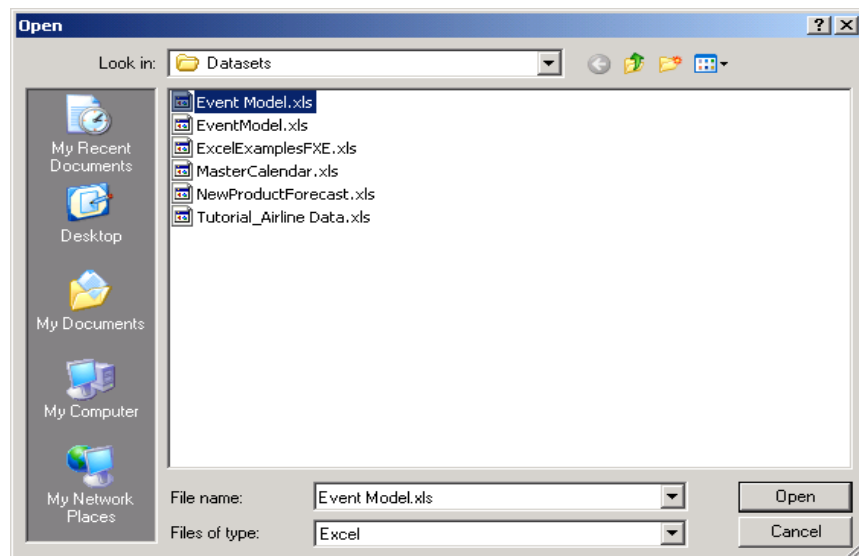
Count : # 24

- 3 Select the table you want to use for the forecast from the **Preview Table** drop-down list and click **Close**.

Excel Spreadsheet File (.xls)

If you choose “Excel Spreadsheet File” as the Data Source, click the search icon  in the **Connection String** field.

A Windows Open dialog displays.



- 1 Browse to the location of your .xls file and click **Open**.
- 2 Select the **Table Name** from the drop-down list.

- 3 On the **Data Capture** screen, click the **Preview Database** button.

The **Database Preview** dialog box displays.

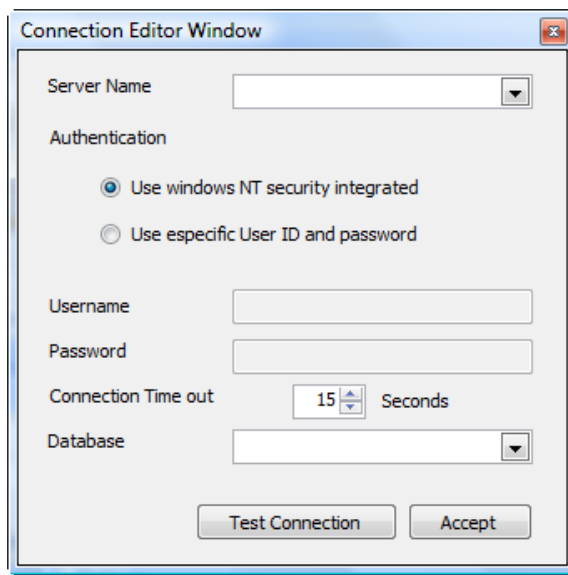
F1	F2	F3	F4	F5	F6	F7	F8
	Application	User	Date	Series	Opinion Line	Method	
	Demand Manage	fxadmin	40107.427453	[1825685C1]	Unsp Dmd	Polynomial Regre	
	Anova						
	Source of variation	SS	df	MS	SEE		
	Regression	406971.765	1	406971.765			
	Error	5063670.8141	22	230166.8552	479.7571		
	Total	5900684.4609	23				
	Coefficient						
	SeriesDescription	Included in model	Coefficient	Standard error	T-test	P-value	F-test
	[1825685C1]	Dependent	1403.6863	765.3571	1.834	0.0802	3.3637
	Adj Hist	Yes	-0.4383	0.2558	-1.7134	0.1007	2.9358
Count: # 14							

- 4 You can group your data together based on any column by clicking and dragging the column to the top of the screen.
- 5 Click **Close** to return to the New Scenario tab.

SQL Server

If you selected Microsoft **SQL Server** as the Data Source, click the search icon  in the **Connection String** field.

The **Connection Editor Window** displays.

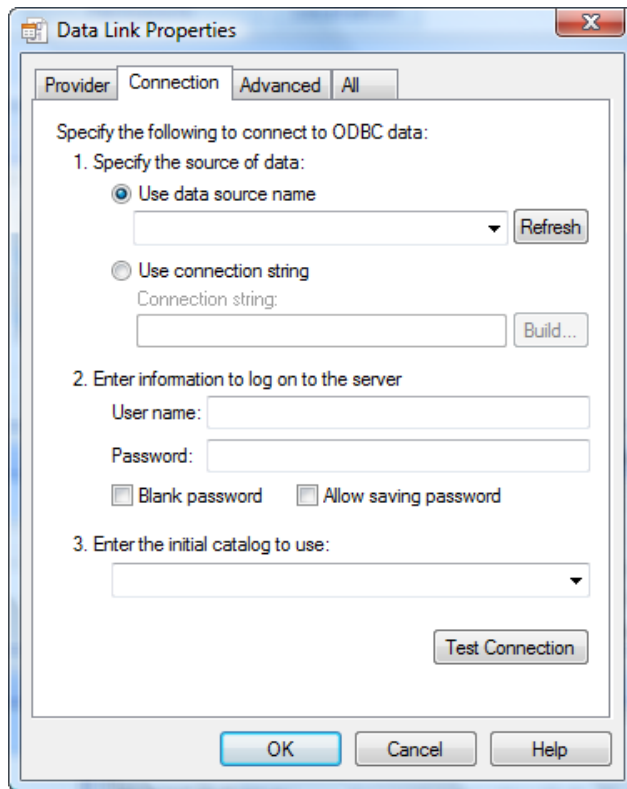


- 1 Enter the appropriate **Server Name**, **Login**, **Password**, and **Database** information for the SQL server in the appropriate textboxes
- 2 Click the **Test Connection** button to verify your settings.
- 3 If the test is successful, click **Accept**.

Other: ODBC, Oracle, etc.

If you selected **Other: ODBC, Oracle, etc.** as the Data Source, click the search icon  in the **Connection String** field.

The **Data Link Properties** window displays.



- 1 Select the data option for the source data connection and the user log in information.
Note Refer to Microsoft or SQL documentation or the documentation for the specific provider you selected for additional information on configuring these types of files.
- 2 Click the **Test Connection** button to verify your settings.
- 3 If the test is successful, click **OK**.

Creating a Filter Expression

Since many tables and queries can be large, you have the ability to filter the source data using the **Filter** field in the Main Settings section.

Use the **Filter Editor** to create a filter expression indicating the particular groups or sections of the source data you want to for use. An Expression is a combination of values that specify exactly what values to use in the forecast.

For instance, you have a table in your data source that lists your earnings for June 2008. However, for your forecast you want the DME to only use the values for the last two weeks in June. You can use the **Filter Editor** to build an expression instructing the DME to only display the earning values between the dates of June 15 and June 30.

The expression would look like this:

Date >= '%6/15/08%' AND Date <= '%6/30/08%'

As another example, you have a table listing all your employees, their departments, and start dates. You want to know how many people started in the Marketing and Sales departments during 2007. You can build an expression that specifies to look only at start dates in 2007 and employees in the Sales or Marketing departments.

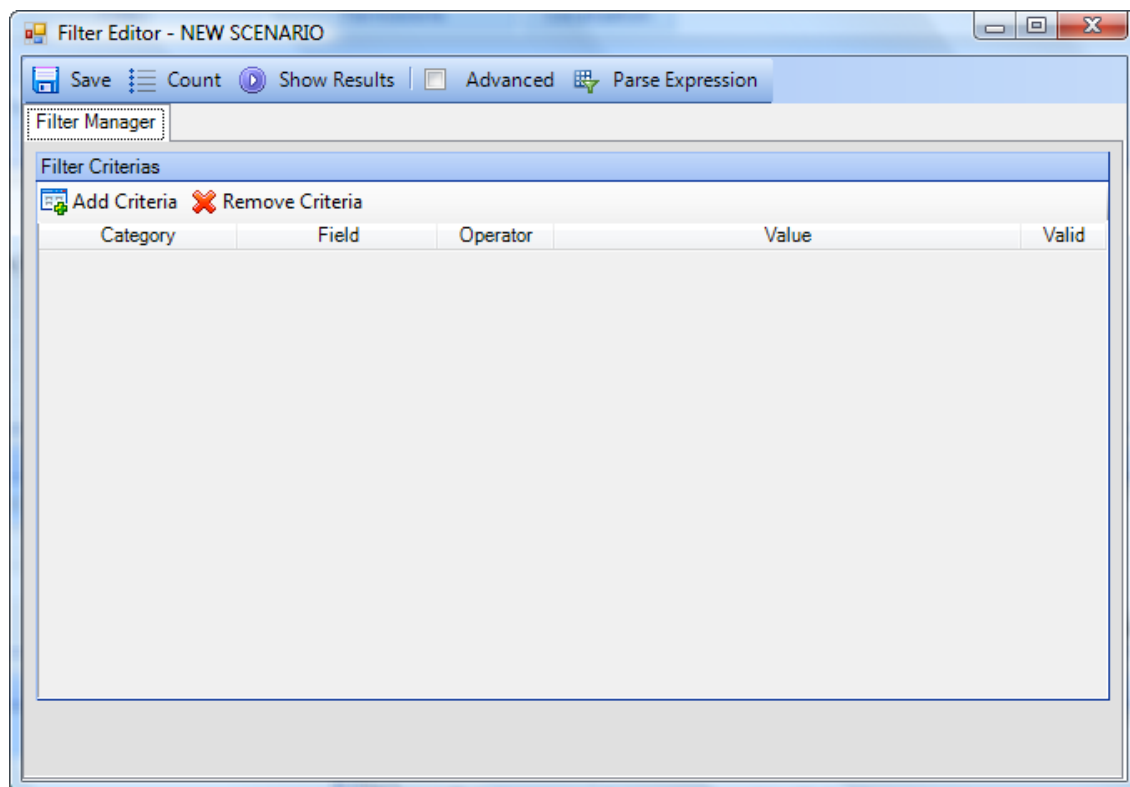
The expression would look like this:

*Start Date >= '%1/1/07%' AND Start Date <= '%12/31/07%' AND
(Dept = Sales OR Dept = Market)*

To apply a filter to your new scenario you have two options, Basic Filtering and Advanced filtering:

Basic Filters

Click the search icon  in the **Filter** field to open the **Filter Editor**.



- 1 Click the **Add Criteria** button. A new row is added to the filter.
- 2 Select the **Category** of the data source to use in this filter.
- 3 Select the **Field** within the data that you want to filter on from the drop-down list.

Note The values in this drop-down vary based on the fields in the table, view or query from the data source you selected.

- 4 Select the **Operator** to use in the filter from the drop-down list.

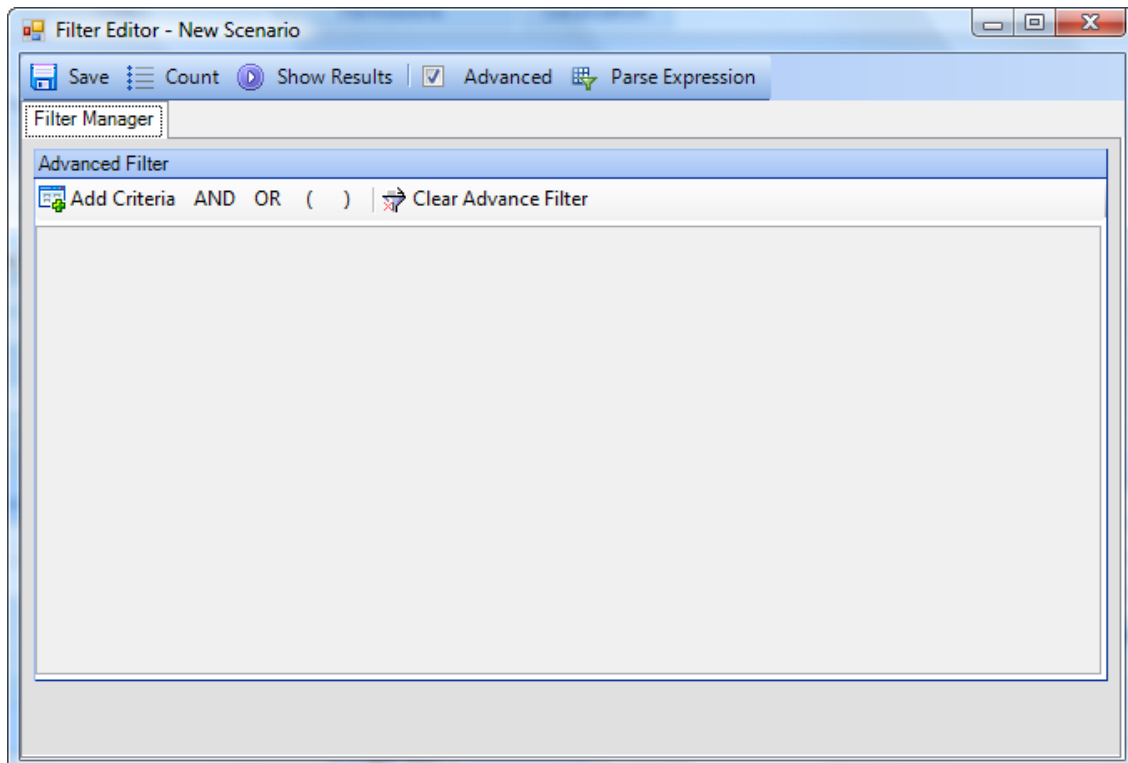


The operator choices are:

- = (Equal to)
 - <> (Not equal to)
 - > Greater than)
 - >= (Greater than or Equal to)
 - < (Less than)
 - <= Less than or Equal to)
 - In
 - Not In
 - Like
 - Not Like
- 5 Select the **Value** from the drop-down list that is populated based on the available options for the selected **Field**. This field will display each distinct value for the selected field.
- 6 The **Valid** field will indicate whether or not this filter expression is valid.
- 7 To make sure the expression is valid, click the **Parse Expression** button. If the expression is not valid, an error message displays.
- 8 Click the **Count** button to show how many records would be returned by applying this filter to the data source. The count displays in the lower left section of the Filter Editor window.
- 9 Click **Show Results** when you are finished building the expression.
Any values meeting your criteria will display.
- 10 Click the **Export to Excel** button to save the filter results as a spreadsheet.
- 11 Click the **Save** button when finished.

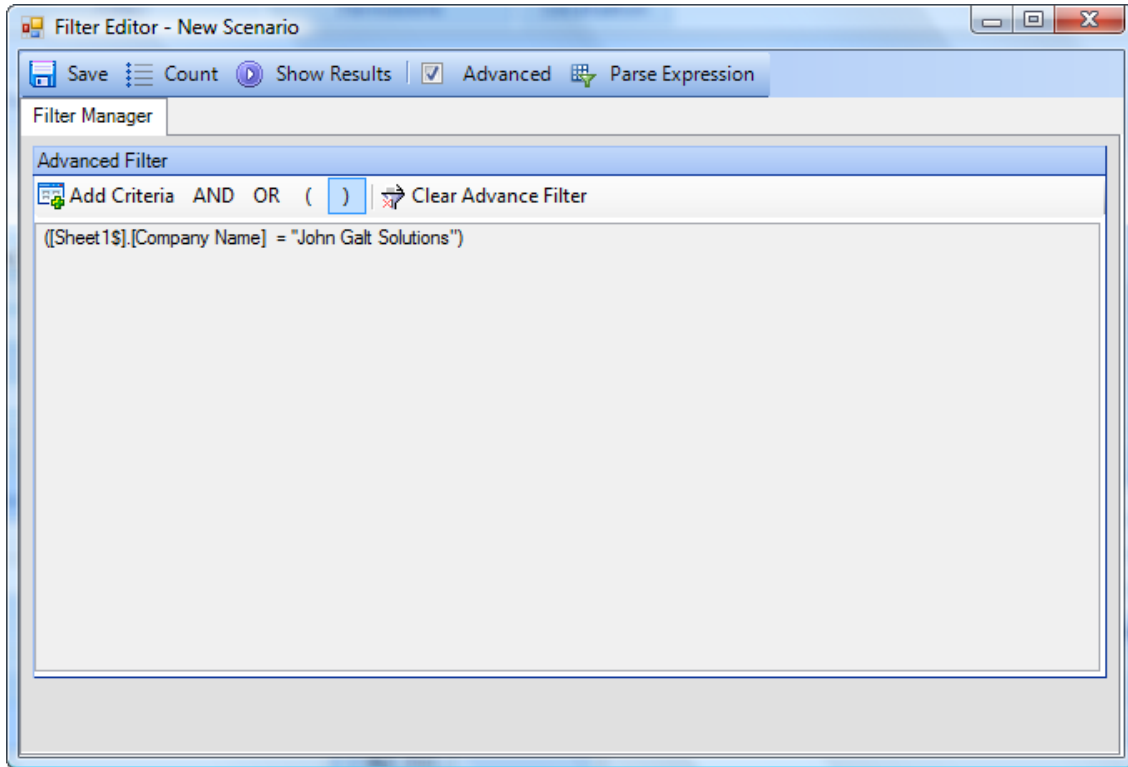
Advanced Filters

In the Filter Editor window, select the **Advanced** check box to switch to the Advanced Filter mode:



- 1 Click the **Add Criteria** button to add a condition and a new row is added to the filter just as it was in the Basic mode.

However, once you add the criteria you will see it displayed as SQL statement in the advanced filtering window.



You can use the “AND”, “OR” and parenthesis buttons to add to the SQL statement. You also can manually enter any valid ANSI SQL statements using the columns and data in your data source.

- 2 As you work with your filter, you can still click the **Show Results** button to view the resulting data or click **Parse Expression** to see if your filter expression is valid.
- 3 Click the **Save** button when finished.

Data Organization - Rows vs. Columns

In the Main Settings section, you must specify how the data in the selected data source is organized. Data can be organized in rows or columns based on your selection in the **Data Organization** field.

Note Indicating the correct layout is crucial to ensure an accurate forecast.

Data layout can be organized by:

Data Layout	Description
Series	Represents an individual product or item in your database.
Observations	A set of values for the series.

To indicate the layout of data, use the radio buttons in the **Data Organization** field to select the layout that describes your data source. You can select either **Columns** or **Rows**.

When data is organized in rows, the observations go across the X axis (horizontal):

	A	B	C	D	E	F	G	H
2	BASE MODEL	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97
3	DT1000	8047	6732	6329	9192	6062	7500	7604
4	DT4300	3785	2819	3770	3464	2590	3163	3141
5	DT9700	1322	564	488	447	336	546	590

When data is organized in columns, the observations go vertically down the data set or spreadsheet and series go across the columns. The following illustration displays an example.

Demand Data							
[Z-ALL OTHER][WEST][NASHVILLE-MAT][10461052][CHRIS][ALL]							
History	6						
Description	Base Fcst (CvRev)(S/)	Stat SS	Snl SS	End Inv Bgt	End Inv Cons Fcst	End Inv Pr Cons Fcst	Event
2008-01	S/0	33.90	11.12	0.00	0.00	0.00	2.00
2008-02	S/0	33.90	68.07	0.00	0.00	0.00	3.00
2008-03	S/0	33.90	129.67	0.00	0.00	0.00	4.00
2008-04	S/0	33.90	30.17	0.00	0.00	0.00	5.00
2008-05	S/0	33.90	31.99	0.00	0.00	0.00	6.00
2008-06	S/0	33.90	53.74	0.00	0.00	0.00	7.00
2008-07	S/0	33.90	126.29	0.00	0.00	0.00	8.00
2008-08	S/0	33.90	46.92	0.00	0.00	0.00	9.00
2008-09	S/0	33.90	30.15	0.00	0.00	0.00	10.00
2008-10	S/0	33.90	67.30	0.00	0.00	0.00	11.00
2008-11	S/0	33.90	41.66	0.00	0.00	0.00	12.00
2008-12	S/0	33.90	34.03	0.00	0.00	0.00	1.00

Observations span rows when data is organized in columns, meaning that using filters reduces the length of each series. When pieces of data are eliminated from the forecast, fewer rows are needed to store the data.

- 4 Enter the *number of periods* in the **Forecast Data Period** textbox.

Living Master Scenarios

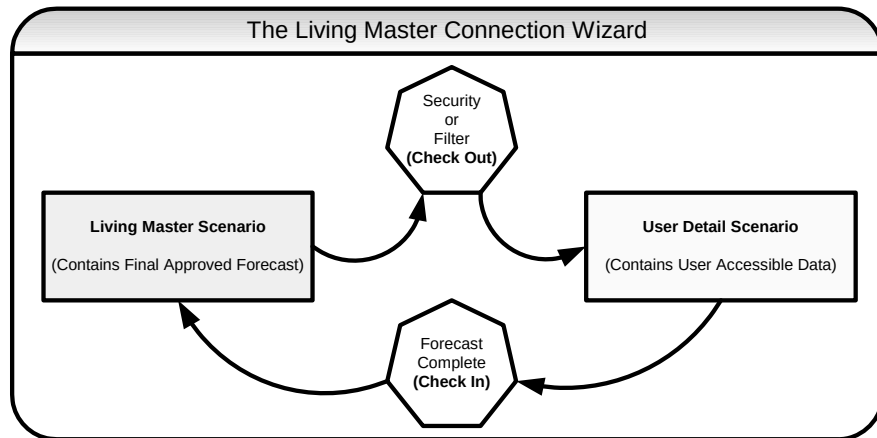
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Living Master Scenario Access 66

Living Master Scenario Management 67

Overview

The Living Master is a tool that centralizes the data and provides a data repository for your forecasting and planning efforts. This tool helps expedite the performance of the DME and Viewer. Users can take a portion of data to work on rather than managing a large Scenario. The illustration below provides an overview of the living master process.



The Living Master Scenario enables users to download a portion of a Master Scenario into their own Scenario, make changes, and then commit the changes back to the Master Scenario. This will allow users to have a sandbox to make changes and do scenario planning or “what if”. If the user wants to make changes directly into the Living Master or “Live” changes, the user can log directly into the Living Master and make changes directly. In both cases, user permissions will be in effect.

Living Master Scenario Access

The System Administrator can provide extra security to the Living Master Scenario by using the security component, DME Manager and its permissions and domains. The System Administrator can limit the data a user may use and specify what changes can be made to the Living Master Scenario.

Permissions and domains control the user’s access to the Living Master Scenario data. The System Administrator assigns one **permission** and one **domain** to each user.

Permissions are administrator-defined filters that limit access to the Living Master Scenarios and series. The System Administrator can create and administer permissions using the DME Admin Tool. For additional information on creating and assigning permissions see [Display Sets](#).

Domains are System Administrator-defined access rights to the observation lines for the series that the user populates to the DTL Scenario. Access rights include which observation lines the user can see and whether or not those observation lines can be changed. For example, a domain may provide a user access to only the Value, FValue, Original, UserValue01, and ConvFactor01 observation lines, with Value and Original set as Read-Only. For additional information on creating and assigning Domains see [Display Sets](#).

Living Master Scenario Management

With the appropriate security, a user can access the Living Master directly to make changes or check out a portion of data with which they need to work for their personal sandbox. The user downloads the data into the default Scenario, which is a DTL (Detail) scenario that is created for the user when their user ID is created by the System Administrator.

Note Users created prior to a Living Master being designated do not have a DTL Scenario.

Downloading data into a DTL Scenario is referred to as “populating the DTL Scenario”. A DTL Scenario may be populated and repopulated at any time with data from one and only one Living Master Scenario. Users can then make changes to their DTL Scenario and commit selected changes back to the Living Master Scenario.

Create a Living Master Scenario

Living Master Scenarios are Normal Scenarios created and designated as Living Master Scenarios by the System Administrator. For additional information, see Section [Main Settings](#) in the *Creating and Managing Scenarios* chapter.

- 1 To designate a scenario as the Living Master, click the **Scenarios** button on the **Managers** ribbon.

The **Scenarios Manager** tab displays.

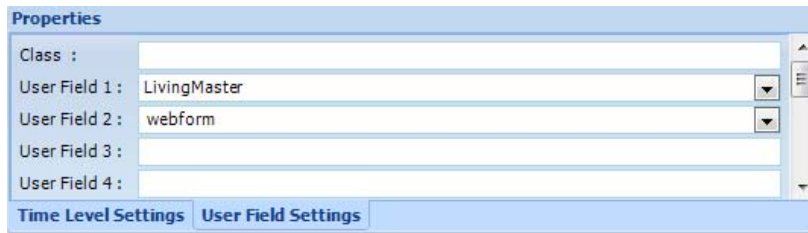
- 2 Select the **Scenario** that you want to designate as the Living Master Scenario from the Scenario List at the left.

The details of the scenario are displayed in the **Scenario Editor**

The screenshot displays the 'Scenario Editor' window with the following sections:

- Main Settings:**
 - Scenario Name: 00-TR-FCST-LM
 - Data Source: Microsoft Access 97-2003
 - Connection String: Provider=Microsoft.Jet.OLEDB.4.0;Data Source=C:\4\STD\St
 - Table Name: 02_Qry_Dme_Source
 - Filter: [DATA_TYPE] = 'DEMAND '
 - Data Organization: Columns Rows
 - Seasonality: 12
 - Forecast Data Period: 18
- Forecast Settings:**
 - Buttons: Add Item, Remove Item, Edit Item, RollBack
 - Table with Source, Target, Method, Primary columns.
- Date Settings:**
 - Start Year: 2006
 - Start Period: 7
 - Cycles/Year: 12
- Properties:**
 - Type:
 - Use:
 - Status:
 - Time Level 1: Monthly
 - Time Level 2: Monthly
 - Buttons: Time Level Settings, User Field Settings
- Mappings:**
 - Buttons: Add, Remove, Copy, Paste, Undo, Redo
 - Selected Value: SKU_KEY
- Options:**
 - Replace Outlier:
 - Std. Dev.: 2
 - Forecast Technique: Exponential Smoothing(Default)
 - Replacement Type: Both(Default)
 - Replace Missing Values:
 - Forecast Technique: Average(Default)
 - Lower Val: 0
 - Buttons: Cleansing, Accuracy, Reload Options

- 3 On the **User Field Settings** tab in the **Properties** section, select “*Living Master*” from the **User Field 1** drop-down list.



The screenshot shows a software window titled "Properties". Inside, there is a tabbed interface with two tabs: "Time Level Settings" and "User Field Settings". The "User Field Settings" tab is currently selected. It contains five rows, each with a label and a text input field. The labels are "Class :", "User Field 1 :", "User Field 2 :", "User Field 3 :", and "User Field 4 :". The "User Field 1" input field contains the text "LivingMaster" and has a small downward arrow on its right side, indicating it is a drop-down menu. The "User Field 2" input field contains the text "webform" and also has a small downward arrow on its right side. The other input fields are empty. To the right of the input fields is a vertical scrollbar.

- 4 Click **Save**.

Configuring Statistical Forecast

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Incremental Update 71

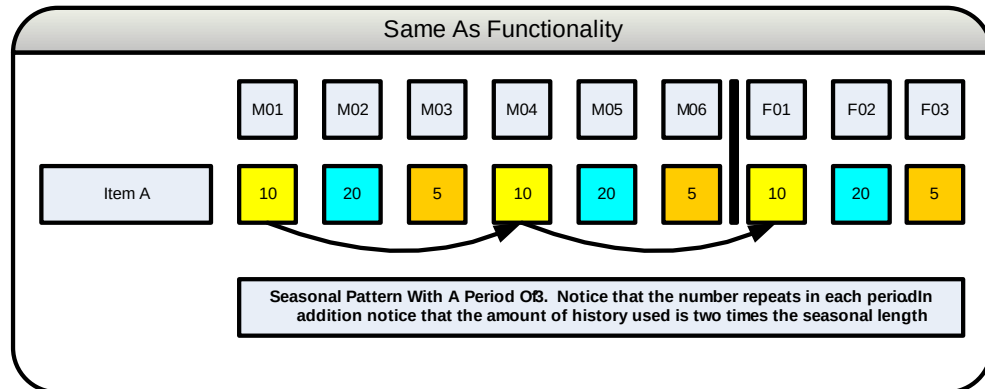
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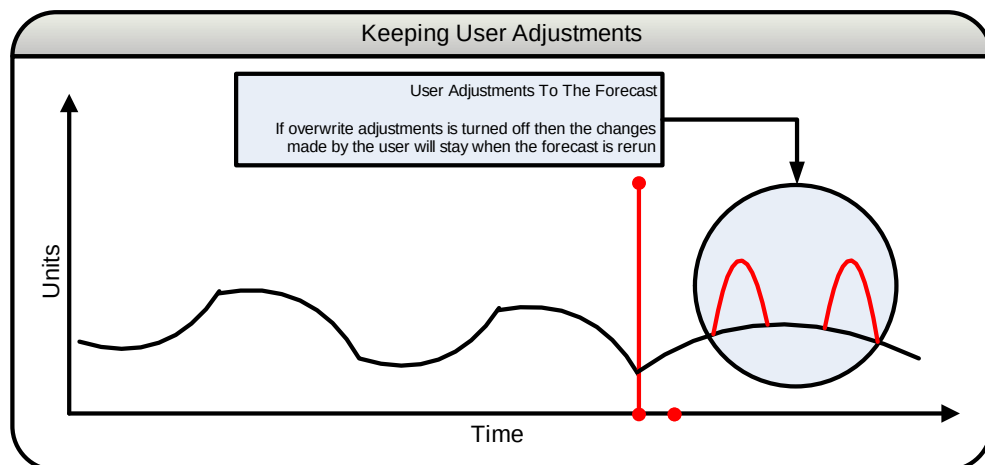
Overview

The DME provides the following configurations to assist you with defining the most accurate forecasts and simple forecasting processes.

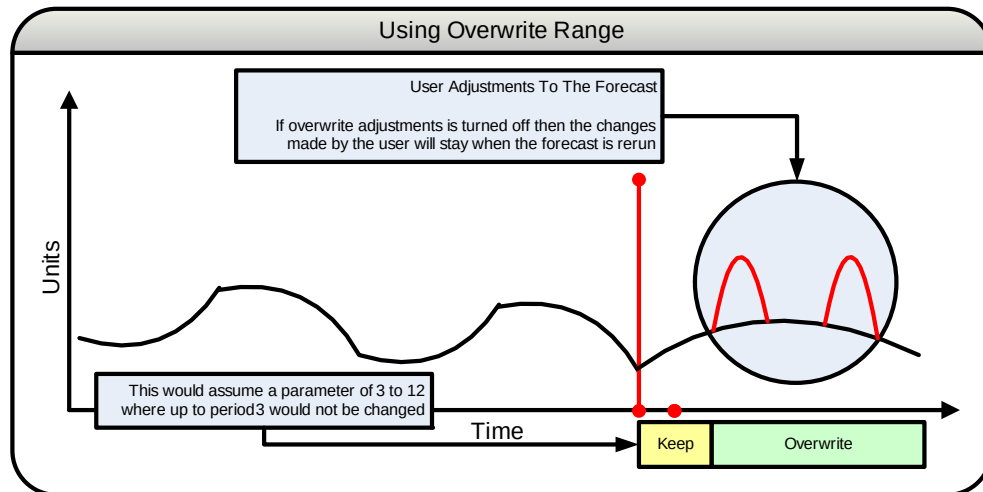
Seasonality provides the ability to signal to the DME that there may be patterns within the data. In general, it requires two times the seasonal length of data to generate an accurate Forecast. When using monthly data, it will take at least 24 months of data to generate a good seasonal Forecast. Seasonality can also be generated with smaller data sets. The following diagram illustrates seasonal patterns:



Two useful features in the DME are the **Forecast Overwrite Range** and the **Reload** option. These parameters enable you to control the information that is overwritten when a Forecast is run. The depiction below details how these options affect the Forecast:



Notice that all the non-adjusted values are overwritten when the Statistical Forecast is rerun. To preserve these values, you can use the overwrite range. This feature assumes that if users have reviewed a Forecast, then they have tacitly agreed to the result. To change those numbers with a new forecast means that the numbers that the user had approved would no longer apply. Using the overwrite range prevents this from happening. The depiction below details this point:



Both the Overwrite Adjusted Forecast and Forecast Overwrite range are used in combination to provide a stable forecast that can be adjusted. For more information on the configuration parameters that can be set for the Forecast, see [Main Settings](#).

Incremental Update

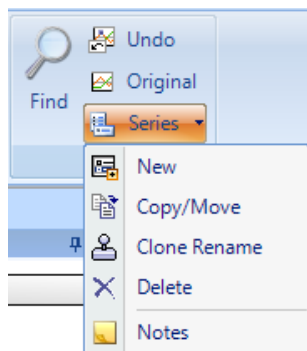
The latest Historical data is usually available at the beginning of each Forecasting cycle and will directly affect the accuracy of the forecast. Including this new information in the new forecasting cycle is called an incremental update.

One way to include the latest Historical data in a Scenario is to change the observation configuration and reload the data. However, this process also removes all the existing forecasted values, including any modifications. In most cases, this is not an acceptable solution. In order to allow users to apply the most recent Historical data to an existing Scenario without losing the existing forecast, the DME utilizes the **Incremental Update** feature in the Batch Scheduler component. For additional information see [Batch Scheduler](#).

Including New Items in the Forecast

Business changes and grows every day. This means there is always a demand to include new items in the forecasting data pools. These new items may be new customers, new stores, or new products.

To add these new items, clone or move existing items, locate the **Home** tab in the ribbon, use the **Series** drop-down in the **Edit** section.



Similar to the incremental update process, users can also include the new items by reloading the data for a Scenario. However, this process also removes any existing forecasted values including all the modifications. In most cases, this is not an acceptable solution. The DME provides several ways to include new items for an existing Scenario without losing the forecasted values and modifications.

Clone

Use the **Clone** option to create a copy of an existing series and then modify the new series with different properties and new values. This method is straightforward, but it is not efficient for a large number of new items. For additional information on cloning a series and editing a series, see [Chapter 2 Viewer](#) of the DME User Guide.

Copy/Move

In the Viewer, you can copy or move one or more series from one Scenario to another. Use the **Copy/Move** option to include new items in an existing Scenario. First, create a Scenario to load all the new items and then use the Viewer to Copy or Move the items in this new Scenario. This method is more efficient than the Clone method, but it requires the user to identify the new items from their source data. For more information of copying/moving series, see [Chapter 2 Viewer](#) of the DME User Guide.

New Series

The **New Series** option is used to create a new series into your data. The following configurations need to be set in order for this feature to work properly:

- The Scenario must have a Display Set applied to it.
- The applied Display Set must have at least one Series Attribute configured in the “Label” column. This new Label column indicates which series attributes are used, and in which order, to form the “Description” fields for your series.

- 1 Select the “New Series” option from the **Series** drop-down in the **Edit** section of the **Home** menu.

The **New Series** window displays.

New series

☒ Check Unique

Fields

Alias	Value
Customer	
Loc	
SKU Name	
Sku	
Sales Rep	
Fcst Lvl	

New series options

Copy Obs.

Value

Historical Periods

Copy Series Forecasting ☐

- 2 Provide information in the **Fields** section to define a new unique series. Click on the **Value** column fields to view a drop-down list populated with the values from all existing series
- 3 Click the **Check Unique** button to verify that the series being created is unique.
- 4 In the **New Series Options** section, select one of the following to indicate which observations will be used for the new series.

Observation	Description
Copy Obs	Indicates whether you want to copy the observations from an existing series or set the number of observations to zero. Possible values are "CopyFromSeries" or "InitialWithZero"
Value	If "CopyFromSeries" is selected above, this field becomes a drop-down list of all available series. If "InitialWithZero" is selected above, this field will be inactive.
Historical Periods	If "InitialWithZero" is selected above, this field allows you to select the number of historical periods you want to create for the new series. If "CopyFromSeries" is selected above, this field will be inactive.

- 5 Click **Create**.

Include New Items Using the Batch Scheduler

In the Batch Scheduler, select **Massive Observation Update** from the menu. Use the **Send New Item to Scenario** option to include items for an existing Scenario. This option works in a standalone or with an Incremental Update process. This method is similar to Copy/Move. The advantages of using this option are:

- No user interaction;
- A user does not need to identify the new items from the source data.

For additional information, see [Batch Scheduler](#).

Display Sets

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Overview

Using the Display Set function you can customize the following:

- Specify a name (alias) for each Opinion Line or series field
- Show or hide an Opinion Line
- Specify the number of decimal positions

A Display Set enables you to rename the defined series and Observation Fields. Display Sets are created in the DME Admin Tool, which allows you to share Display sets with other users and apply them to one or more Scenarios. When you open a Scenario affected by a Display Set, the Viewer displays the aliases assigned in the Display Set instead of the default names.

A Display Set is composed of the following:

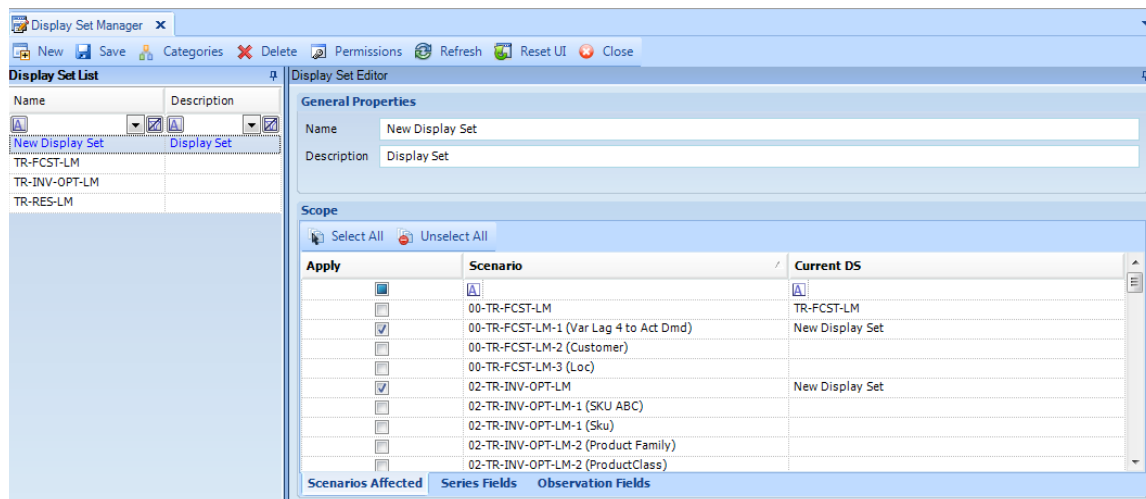
Component	Description
Name	Name of the current Display Set.
Description	Optional description of the current Display Set.
Scenarios Affected List	Names of the Scenarios that are affected by the current Display Set.
Series Fields definition	Defines the number of decimal points, the visibility of the fields at the Series level, and the alias of each series field.
Observations Fields definition	Defines the number of decimal points, the visibility of the fields at the Observations level, and the alias of each observation field (Opinion Line).

Create a Display Set

- 1 Select **Start > Programs > QAD> Demand Management Engine > DME Admin Tool** from the Windows Start menu.

Note Users can also access the DME Admin Tool from the AddIns tab in the Viewer.

- 2 On the **Managers** tab, click the **Display Sets** icon in the **General** section of the ribbon. The **Display Set Manager** displays.



3 Click the **New** button.

The fields in the Display Set Editor are cleared.

Apply	Scenario	Current DS
☒	A	A
☐	00-TR-FCST-LM	TR-FCST-LM
☐	00-TR-FCST-LM-1 (Var Lag 4 to Act Dmd)	New Display Set
☐	00-TR-FCST-LM-2 (Customer)	
☐	00-TR-FCST-LM-3 (Loc)	
☐	02-TR-INV-OPT-LM	New Display Set
☐	02-TR-INV-OPT-LM-1 (SKU ABC)	
☐	02-TR-INV-OPT-LM-1 (Sku)	
☐	02-TR-INV-OPT-LM-2 (Product Family)	
☐	02-TR-INV-OPT-LM-2 (ProductClass)	

There are two main sections to this window:

- General Properties
- Scope - Scenarios Affected, Series Fields, and Observation Fields tabs

4 In the **General Properties** section, enter a **Name** and **Description** for the new Display Set in the text boxes provided.

5 In the Scope section, click the **Scenarios Affected** tab.

6 Use the checkboxes in the **Apply** column to select the Scenarios that will use this Display Set.

Scope

Select All Unselect All

Apply	Scenario	Current DS
☐	A	A
☐	00-TR-FCST-LM	TR-FCST-LM
☐	00-TR-FCST-LM-1 (Var Lag 4 to Act Dmd)	New Display Set
☐	00-TR-FCST-LM-2 (Customer)	
☐	00-TR-FCST-LM-3 (Loc)	
☐	02-TR-INV-OPT-LM	New Display Set
☐	02-TR-INV-OPT-LM-1 (SKU ABC)	
☐	02-TR-INV-OPT-LM-1 (Sku)	
☐	02-TR-INV-OPT-LM-2 (Product Family)	
☐	02-TR-INV-OPT-LM-2 (ProductClass)	

Scenarios Affected Series Fields Observation Fields

Note The Current DS column indicates the Display Set currently assigned to each scenario, if any. Since a scenario can only have one Display Set assigned to it, assigning a new Display Set will replace the existing one.

7 Click the **Series Fields** tab.

Scope

Select All Unselect All Add Add All

Category	Physical Name	Alias	Active	Dec. Points	Label
A	Cust01	Cust01	☒	2	A
Customer	Cust02	Cust02	☒	2	
Customer	CustomerRank	CustomerRank	☒	2	
Customer	CustomerType	CustomerType	☒	2	
Customer	LocationCountry	LocationCountry	☒	2	
Customer	LocationName	LocationName	☒	2	
Customer	LocationRank	LocationRank	☒	2	
Customer	LocationRegion	LocationRegion	☒	2	

Scenarios Affected Series Fields Observation Fields

8 Click the **Add** button. A new blank row displays in the grid.

You can also click the **Add All** button to insert all available options into the grid.

9 Select the **Category** and **Physical Name** from the drop-down lists.

10 In the **Alias** column, enter your custom *name* for the selected field. This is the name that will display in the Viewer when the Display Set is applied.

11 Use the **Active** column to indicate whether or not this field is active.

12 Use the drop-down list in the **Dec. Points** column to select the number of decimal positions required.

Note The Decimal Points option does not apply to string fields.

13 Use the drop-down lists in the **Label** field to specify the order in which these Attributes are used to define the new Series description.

14 Click the **Observation Fields** tab.

Physical Name	Alias	Active	Decimal Points
FValue	FValue	☒	2
Value	Value	☒	2

- 15 The “FValue” and “Value” fields are already added by default. The Active column for these fields cannot be de-selected.
- 16 Add any additional fields using the same method as on the Series Fields tab.
- 17 Click **Save**.
The next time that you open an affected Scenario, you will see that it locks the Display Set as it was defined.

Edit a Display Set

- 1 On the **Display Set List**, select the *Display Set* you want to modify and click the **Edit** button. The **Display Set Manager** displays.
- 2 Select the Display Set to update from the Display Set List.
The details for the selected Display Set are displayed.

Physical Name	Alias	Active	Decimal Points
ActShipments	POS Fcst	☒	2
AvgEventValue	Pr Act Dmd	☒	2
BackLog	Cap Fcst	☒	2
ConfInterval	Conf. Int.	☒	2
ConvFactor01	Budget	☒	2
ConvFactor02	Pr Price	☒	2
ConvFactor03	Promo	☒	2
ConvFactor04	Sales Fcst	☒	2

- 3 Make any necessary changes to the Display Set.

- 4 Click **Save**.

Share a Display Set

You can share a Display Set with other users allowing them to apply it to their own scenarios. Once the Display Set is shared, other users can apply it to their Scenarios, but will not be able to modify or share the Display Set.

Note If a user is populating data from the Living Master Scenario, by default the Display Set from the Living Master is applied to the DTL Scenario and the display set is shared with the user.

- 1 On the **Display Set Manager**, select the *Display Set* you want to share and click the **Permissions** button.

The **Display Set Permissions** window displays.

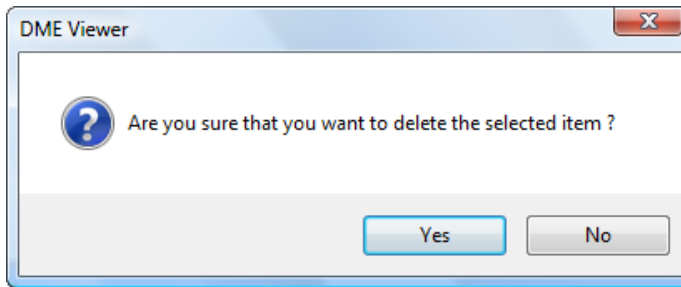
Assigned	User	First Name	Last Name	User Role
☒	cust pln	Customer	Planner	
☐	dmd pln	Demand	Planner	
☒	fxadmin	Super	User	
☐	NEW USER	NEW USER	NEW USER	
☐	sls mgmt	Sales	Management	
☐	sls rep	Sales	Rep	
☐	TechWriter	Dan	Travis	Tech Writer

- 2 Use the checkboxes in the **Assigned** column to indicate the users you want to have access to this Display Set.
- 3 Click **Save**.

Delete a Display Set

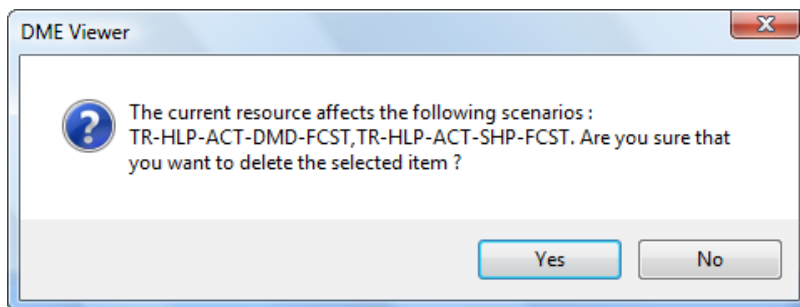
- 1 Select the Display Set you want to delete from the Display Set Manager.
- 2 Click the **Delete** button.

The Admin Tool prompts you to confirm the deletion.



- 3 Click **Yes** to delete the Display Set.

If the Display Set currently affects Scenarios, the following message displays asking you to confirm the deletion again.



Creating and Managing Users

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Overview

The **Users Manager** screen allows the Super User as fxadmin to create and configure the accounts that allow other users access to the features and functionality within the DME. On the User Editor screen, there are three types of security that can be assigned to each user who logs in to the DME.

The Main section allows you to set basic user information such as the ID and password. The Notifications section allows you to select specific events which will trigger a email message to be sent to this user whenever they occur. The Permissions section is used to indicate the system functionality in the DME to which the user can access, create or modify.

User Editor - Main

The **Main** section contains personal information for the user such as name, e-mail, and job function. This section is also used to set the User ID and Password this user will use to log in to DME.

The screenshot shows a web form titled 'Main' for creating a user. It includes the following fields and controls:

- User ID: Text input with 'fxadmin' entered.
- First Name: Text input with 'Super' entered.
- Middle Initial: Empty text input.
- Last Name: Text input with 'User' entered.
- E-mail 1: Empty text input.
- Password: Text input with masked characters '*****'.
- Confirm Password: Text input with masked characters '*****'.
- Type: Empty text input.
- Role: A dropdown menu.
- Active Directory User: Empty text input.
- Reset Password: A checkbox.

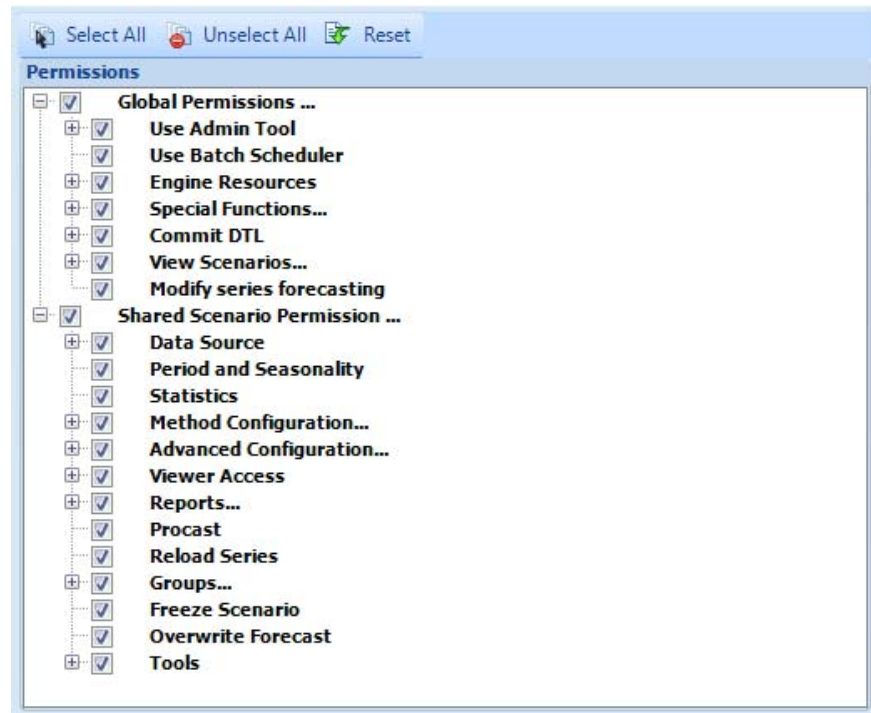
Note During the installation of the DME, the System Administrator User ID and password are created automatically. The default User ID and password for the System Administrator account is **fxadmin**.

Table 8.1 User Information

Field	Description
User ID	The ID assigned to the user. This ID is used when logging into the DME and the Planning Portal.
First Name	The first name of the user being created. (not required)
Middle Initial	The middle initial of the user being created.
Last Name	The last name of the user being created.
E-mail 1	The primary e-mail address for this user. Only required if e-mail notifications are checked in the Notifications section below.
Password	The password assigned to this account. This password is used when logging into the DME and the Planning Portal.
Confirm Password	Confirm the password entered above.
Type	Indicates the type of user, such as “Sales” or “Support”. Used in the Planning Portal for sorting and filtering.
Role	Select the user’s job title from the drop-down list. Used in the DME Admin tool for sorting and filtering during various permissions assignments.
Active Directory User	Grant access to the system based on Windows account login.
Reset Password	If selected, the user will be asked to reset their password the first time they log in to the Viewer.

Permissions

The **Permissions** control which DME features are available to this user.



All fields are checked by default; however, the Administrator can uncheck the appropriate permission options *to remove the user's access to this feature*.

Note When permission is granted, a check displays in the box. If the box is not checked, the user will not have access to that feature or function.

Features and Functionality are assignable based on Global permissions and Shared/Owner functionality. The fxadmin owns the Living Master(s) and the users own their Detail Scenario (DTL). Users can be given “Shared” access to the Living Master. Refer to [“Living Master Scenarios” on page 65](#) of this manual for more information.

The following table describes the features of the Security types.

Table 8.2 User Permissions

Permission	Description
Global Permissions	If checked, all functions within this category are granted to the user for all scenarios.

Table 8.2 User Permissions

Permission	Description
Use Admin Tool	This option gives a user the ability to access the Admin Tool. You can also grant permission to the following options individually: • Create Scenario: Enables the user to create new scenarios. • Share Scenario: Enables the user to share existing scenarios. • Open Admin Tool: Enables the user to open the Admin Tool. • Event Configuration: Enables the user to create and configure Event Categories and scenario Event Configurations. • Localization Provider: Enables the user to edit localization settings such as the labels used for various languages. • Calendar: Enables the user to create and configure Calendars and Calendar Conversions. • Series Mapping: Enables the user to create and configure Series Mappings to be used with Scenario Data Transfer. • Scenario Data Transfer: Enables the user to create and configure Scenario Data Transfers.
Use Batch Scheduler	This option allows the user to access the Batch Scheduler component for scheduling repeatable jobs such as forecasting data, reports, or incremental updates.
Engine Resources	The DME enables the user to manage custom functions. If checked, all functionality within this category are granted to the user. You can also grant permission to the following options individually: • Manage Filters: Enables the user to create and manage Filters. • Manage Display Sets: Enables the user to create and manage Display Sets. • Manage Exceptions: Enables the user to create and manage Exceptions. • Manage Events: Enables the user to create and manage Events. • Manage Custom Tasks: Enables the user to create and manage custom tasks based on stored procedures. • Manage ABC Templates: Enables the user to create and manage ABC Templates. • Manage Hierarchies: Enables the user to create and manage Hierarchies. • Manage Conversions: Enables the user to create and manage Conversions and Conversion Groups.

Table 8.2 User Permissions

Permission	Description
Special Functions	The DME enables the user to manage special functions. If checked, all functionality within this category are granted to the user. You can grant permission to the following options individually: • General Inventory: Enables the user to access the Inventory Management Tool when installed. • Run PO Launcher: Enables the user to work with Purchase Orders within the inventory Management tool. • Run Retagging: Enables the user to access the Retagging feature when installed.
Commit DTL	Used to specify permissions regarding what a user can do in their DTL Scenario. If checked, all functionality within this category are granted to the user. You can also grant permission to the following options individually: • Allow Observation Values: If this option is checked, the user will be able to commit the changes to Observation periods back to the Living Master Scenario. If it is not checked, all the changes made to the series will remain on the DTL Scenario when committing changes. • Allow Series Attributes: If this option is checked, the user will be able to commit changes to the series attributes back to the Living Master. If it is not checked, changes made to the series attributes will remain on the DTL Scenario when committing changes. • Allow New Series: If this option is checked, the user will be able to create new Series in their DTL Scenario. • Allow New Observations: If this option is checked, the user will be able to create new Observations points in their DTL Scenario. • Allow Events: If this option is checked, the user will be able to create Events in their DTL Scenario.

Table 8.2 User Permissions

Permission	Description
View Scenarios	Used to allow access to the different types of scenarios available. If checked, all functionality within this category are granted to the user. You can also grant permission to the following options individually: • Owned/Shared Scenarios: Allows the user to view their own scenarios and any scenarios that have been shared with them. • Living Master Permissions: This section is used to define the operations a user can perform in a Living Master scenario. • Delete/Move Series – enables the user to use the Delete series and use the Copy/Move functionality on the Home tab under the Edit Series menu. • New/Add/Clone Series - enables the user to add New series and use the Clone in the Clone/Rename functionality on the Home tab under the Edit Series menu. • Rename Series - enables the use the Rename in the Clone/Rename functionality on the Home tab under the Edit Series menu. • Delete Observations – enables the user to delete Observation periods in the Misc Window functionality. • Run Custom Task – enables the user to Run Custom tasks from the Home tab. • Generate Inventory – enables the user to run DRP if Inventory Management is installed. • Run PO Launcher - enables the user to run the PO Launcher if Inventory Management is installed.

Table 8.2 User Permissions

Permission	Description
View Scenarios (cont.)	• Run Retagging – enables the user to run Retagging in the Retag Profile if installed. • Reforecast – Allows the user to run Reforecast from the Home tab. • Series Forecast: ○ Allow Modify – allows the user to modify existing Series Forecast settings in the Misc Window ForecastX Method tab ○ Allow Add/Modify – allows the user to add new or modify existing Series Forecast settings in the Misc Window ForecastX Method tab • Living Master Scenarios: This option is used to allow the user to view Living Master scenarios in the list of available Scenarios. When users open Living Master scenarios, the data they have access to will depend on the assigned Data Permissions.
Notes	• Create/Edit Notes: Enables the user to create new notes and edit existing notes from the Notes Editor. • Delete Notes: Enables the user to delete notes from the Notes Editor.
Series Forecasting	This permission allows users to add, edit or delete existing forecast settings in owned scenarios, including DTL scenarios.
Shared Scenario Permissions	These options apply to the recipient of the shared Scenario user. For example: • If User A shares Scenario1 with User B, User B can only change the period and seasonality of Scenario 1 if User B is granted permissions to do so. • If a user is not granted any Shared Scenario Permissions, all Scenarios shared with the user are Read-Only. These options allow the user to change the configuration of the shared scenario (such as the Living Masters) source data source during loading, the periods and seasonality settings and the statistics generated. NOTE: This area in configuring the Living Master and helper scenario loading is rarely re-configured after the implementation by a user. The Administrator or QAD Demand Management consultant may reconfigure these settings due to changes in business requirements.

Table 8.2 User Permissions

Permission	Description
Data Source	Enables the user to alter the data source for a shared Scenario. If you grant the user permission to alter Data Source Information, the user will automatically have permission for Table Selection and Data Organization. • Table Selection: Enables the user to select which table in the data source is used to load the scenario in the Main Settings of the Scenario Editor. • Data Organization: Enables the user to select the organizational method of the data used in the selected table in the Main Settings of the Scenario Editor.
Period and Seasonality	Enables the user to adjust the number of forecast periods generated and seasonality periods used data regarding in the Main Settings of the Scenario Editor for a shared Scenario.
Statistics	Enables the user to add or change the statistics generated for the Primary statistical method for the scenario. These settings can be accessed in the Forecast Setting area of the Scenario Editor by selecting Edit Item.
Method Configuration	Enables the user to or change the forecast method and settings used for the Primary statistical method If you grant the user permission to Method Configuration, the user is automatically granted permission to the items below. You can also grant permission to the following options individually. These settings can be accessed in the Forecast Setting area of the Scenario Editor by selecting Edit Item: • Select Method: Enables the user to select the method used to generate the primary statistical forecast in a shared Scenario. • Modify Parameters: Enables the user to change the parameters of a method used for the Primary statistical forecast. • Series Configuration: Enables the user to add or change series information on a method used for the forecasting of a shared Scenario.

Table 8.2 User Permissions

Permission	Description
Advanced Configuration	Enables the user to add or change the Advanced Configuration options of a shared Scenario used in loading the scenario and generating the Primary statistical forecast. If you grant the user permission to Advanced Configuration, the user is automatically granted permission to the options below. You can also grant permission to the following options individually. • Dates: Enables the user change information regarding the dates used to defined the start period of the source data during loading of a shared Scenario. These settings are found in the Dates Settings area of the Scenario Editor. • Series Layout: Enables the user to add or change information in the Mapping section of the Scenario Editor regarding the series fields used during loading of a shared Scenario. • Cleansing tab: Enables the user to add or change information regarding the Cleansing information used in the generating the Primary statistical forecast of a shared Scenario. For example adding Outlier Adjustment used to reduce the affect of spikes in historical data in generating the primary statistical forecast. • Accuracy tab: Enables the user to change information regarding the Accuracy information used in the generating the Primary statistical forecast of a shared Scenario. For example converting negative historical values to zero or generating an integer only forecast.
Viewer Access	Grants access to change the series information or observations for any series in a Scenario. If you grant the user permission to Viewer Access, the user is automatically granted permission to the options below. You can also grant permission to the following options individually. • Modify Series: Enables the user to change the series attribute information in the Series Information window for a shared Scenario. • Modify Observations: Enables the user to change the observation or observation values of a shared Scenario. • Modify series forecasting: Enables the user to change or add new forecast settings in a shared scenario. • Allow Modify: Allows the user to modify existing Series Forecast settings in the Misc Window ForecastX Method tab. • Allow Add/Modify: Allows the user to add new or modify existing Series Forecast settings in the Misc Window ForecastX Method tab.
Reports	Enables the user to run or change configurations to reports for the shared Scenarios. If you grant the user permission to Reports, the user is automatically granted permission to the options below. You can also grant permission to the following options individually. • Run Report: Enables the user to run reports on a shared Scenario. • Report Options: Enables the user to add or change report options for a shared Scenario.

Table 8.2 User Permissions

Permission	Description
Procast	Enables the user to use Procast a shared Scenario in the Admin tool.
Reload Series	Enables the user to reload the series information and observation values from the source data in the database for a shared Scenario in the Admin Tool. NOTE: This setting should rarely be used as saved data would be eliminated. Most reloading occurs via a set of jobs in the Batch Scheduler.
Groups	These settings are related to past functionality that is no longer available
Freeze Scenario	Enables the user to freeze a shared Scenario, in the Reload Options area of the Scenario Editor.
Overwrite Forecast	Enables the user to overwrite the forecast data in a Scenario shared, in the Reload Options area of the Scenario Editor.
Tools	Enables the user to access DME Tools/Resources in a shared Scenario. If you grant the user permission to Tools, the user is automatically granted permission to the options below. You can also grant permission to these options individually. • Hierarchy: • Rebalance: Enables the user to rebalance in a Scenario shared to the user. • Remove Hierarchy: Enables the user to remove the hierarchy in a Scenario shared to the user. • Reforecast: Enables the user to reforecast a Scenario shared with the user. • Calendar: If this option is selected, all shared Scenarios can be possible target Scenarios for Calendar. If this option is not selected, those Scenarios are not displayed as possible target Scenarios. • Conversion: Enables the user to apply conversion factors in a Scenario shared with the user. • ABC Analysis: Enables the user to use ABC Analysis in a Scenario shared with the user. • Bill of Materials: Enables the user to use Bill of Materials in a Scenario shared with the user. • Run Exception: Enables the user to apply an exception in a Scenario shared with the user.

Click **Save** when you are finished granting the user permissions.

Note Use the **Reset** button to remove newly assigned permissions. If you made permission changes that you do not want to apply, click **Reset**. The previous saved permissions for the user are then activated.

Click **Close** when finished.

Notifications

In the **Notifications** section, the user can define situations or events that will result in the user being notified by e-mail.

Description	Value
Engine Finished forecasting a Living Master Scenario .	☐
A scenario has been Marked as disconnected.	☐
Scenario has been marked as connected.	☐
User populates his/her DTL scenario.	☐
User commits his/her DTL scenario.	☐
Forecast error report .	☐
Batch process result .	☐

Use the check boxes in the **Value** column to generate the desired e-mail subscriptions for the current user. For each item selected, the user will receive an email if they occur.

Note This feature is explained in more detail in [“Email Service” on page 217.](#)

Add a New User

- 1 Select **Start > Programs > QAD > Demand Management Engine > Admin Tool** from the Windows menu.

Note Users can also access the Admin Tool from the AddIns tab in the Viewer.

- 2 On the **Managers** tab in the ribbon, click the **Users** button.

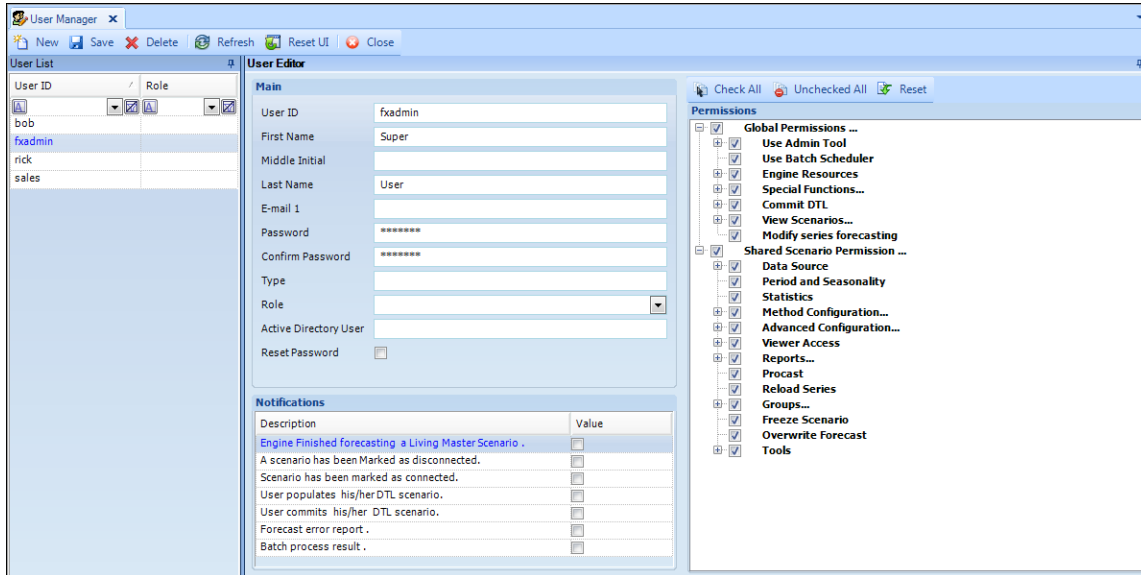
The **User Manager** tab displays.

- 3 Click the **New** button to begin the configuration of a new user. Enter information in the areas as previous described.

Edit a User

- 1 On the **User Manager** tab, select the user you want to update from the User List on the left side of the screen.

The details for the selected user will display on the **User Editor**.



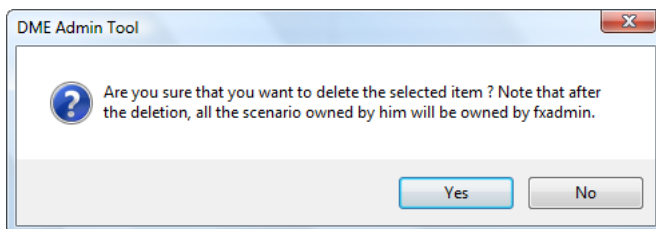
The fields are populated with the user's existing information. Please note that the user ID cannot be changed.

- 2 Make any necessary changes to the user data.
- 3 Click **Save**.

Delete a User

- 1 On the **User Manager** tab, select the user you want to remove from the User List on the left side of the screen.
- 2 Click the **Delete** button.

The following message displays.



- 3 Click **Yes**.
- The deleted user no longer appears in the User List.

Note After deleting a user, any Scenarios owned by that user are now owned by the System Administrator (fxadmin).

Permissions

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Data Permissions 98

Data Domains 105

Overview

Permissions for the data available to the user and their availability to read/write are configured in the Data Permissions and Data Domain sections of the Admin Tool.

Data Permissions

In order to retrieve data from the Living Master Scenarios, users must have permission to access the data and be assigned to use only one Data Permission entity. Only System Administrators have access to the security resources. The user must have access to the series of Living Master Scenarios in order to access them.

If a user's permissions allow it, users can access data from the Living Master directly. The data they will have access to from the Living Master will be defined by the Data Permission assigned to them.

Data Permissions are applied when users try to access a Living Master scenario in Living Master Mode or DTL Scenarios. They do not apply to owned or shared scenarios.

For additional information on Living Master Scenarios, see [Living Master Scenarios](#).

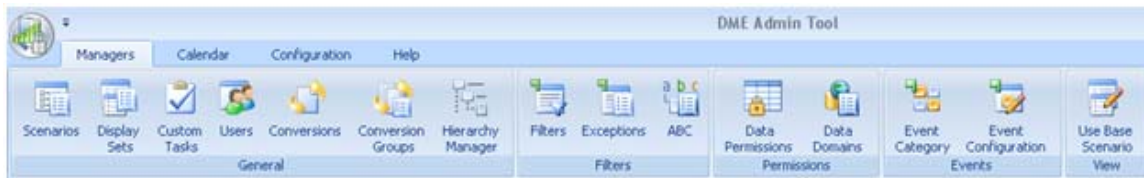
Note For information on User Permissions in the Planning Portal, see the Planning Portal Administration Guide.

View Data Permissions

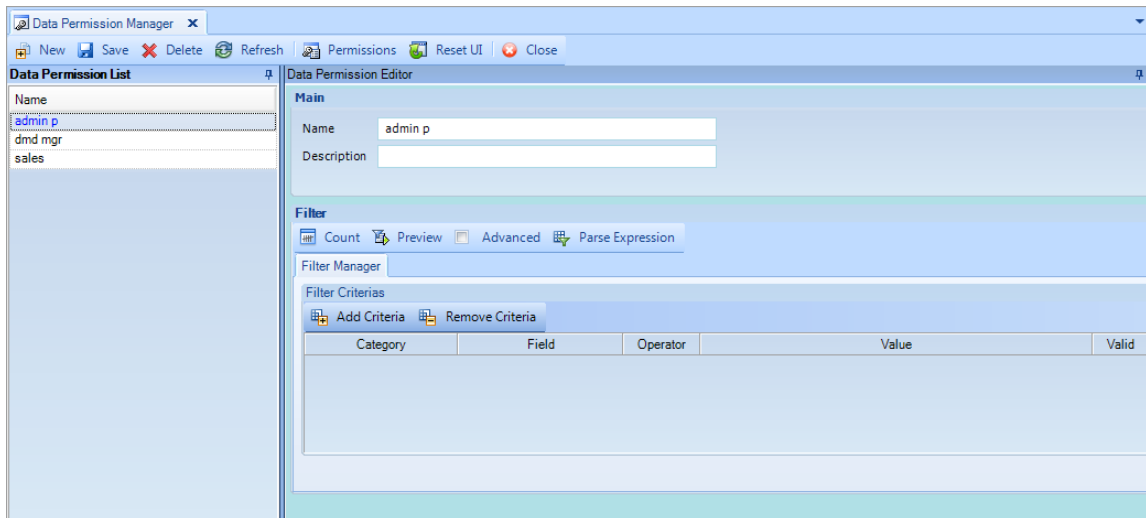
- 1 Select **Start > Programs > QAD > Demand Management Engine > Admin Tool** from the Windows menu.

Note Users can also access the Admin Tool from the AddIns tab in the Viewer.

- 2 On the **Managers** tab, click the **Data Permissions** button in the **Permissions** section of the ribbon.



The **Data Permission Manager** displays.

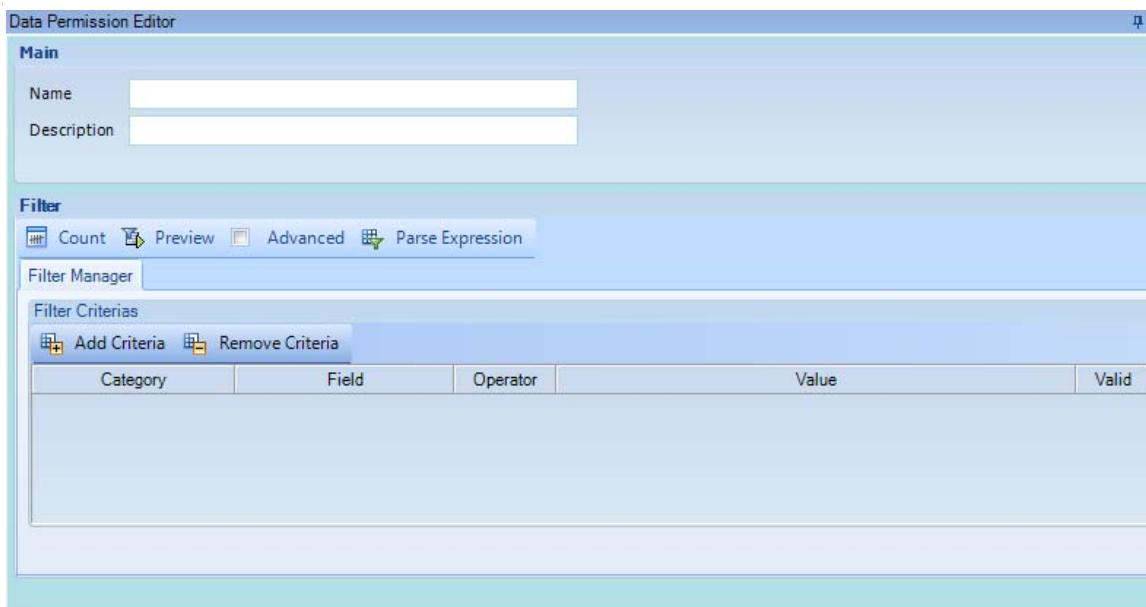


Create a Data Permission

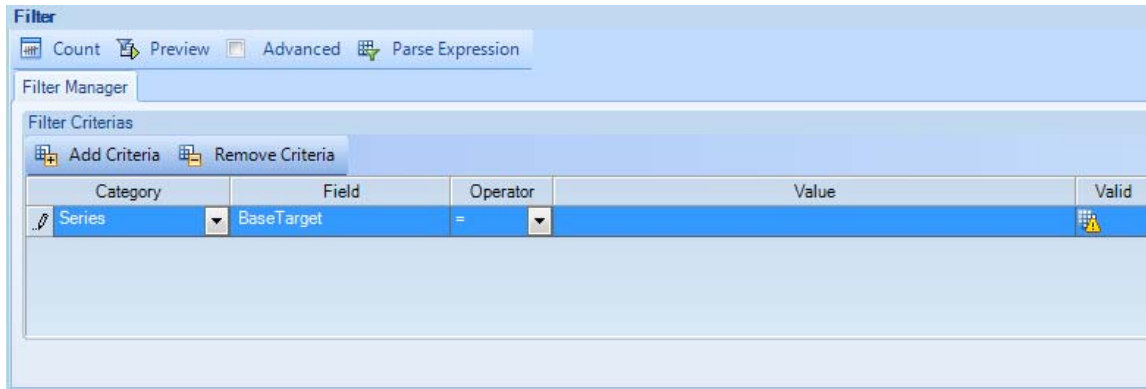
You can use a basic filter or an advanced filter to create a new data permission. The following sections describe how to use each filter type.

Basic Filtering

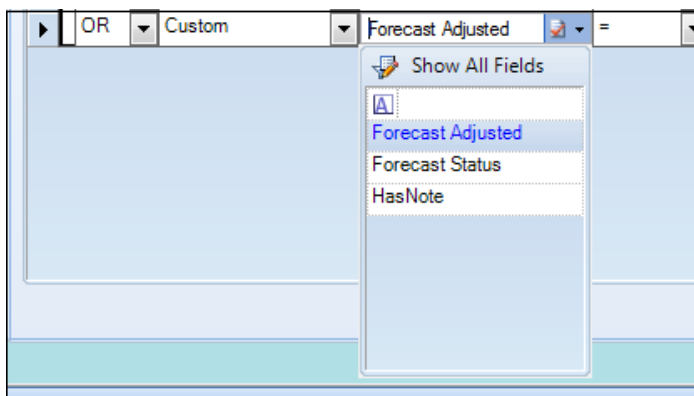
- 1 On the Data Permission Manager, click the **New** button.



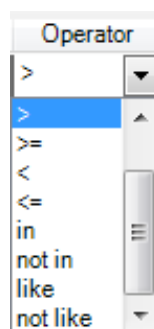
- 2 In the **Main** section, enter a **Name** and **Description** for this data permission.
- 3 In the **Filter** section, click the **Add Criteria** button. A new row is added to the filter.



- 4 Select the **Category** of the data source to use in this filter. The available options are:
- **Series** - Filter on series attributes.
 - **Scenario** - Filter on attributes assigned to the scenario.
 - **StatisticsValues** - Filter on certain statistics of the elements in your scenario such as MAPE or the forecast Method.
 - **Custom** - Filter on fields for special settings, such as the existence of a Note or a Forecast Status of "Forecast Complete".

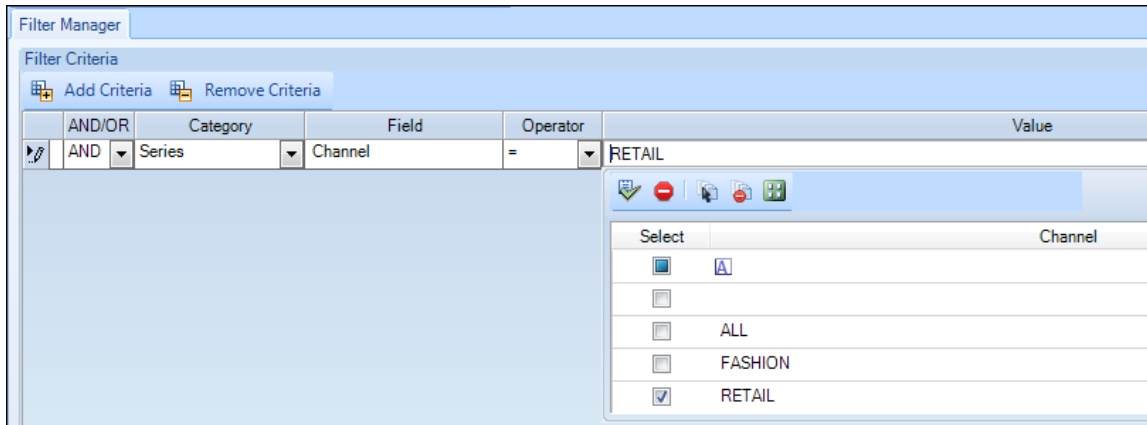


- 5 Select the **Field** within the data that you want to filter on from the drop-down list. The values in this drop-down vary based on the option selected in the Category field.
- 6 Select the **Operator** to use in the filter from the drop-down list.

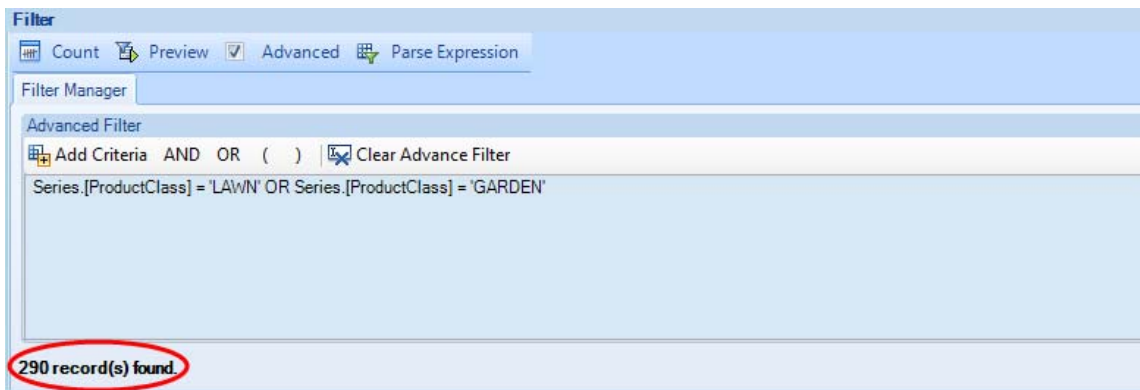


The operator choices are: = (Equal to), <> (Not equal to), > Greater than), >= (Greater than or Equal to), < (Less than), <= Less than or Equal to), In, Not In, Like, Not Like.

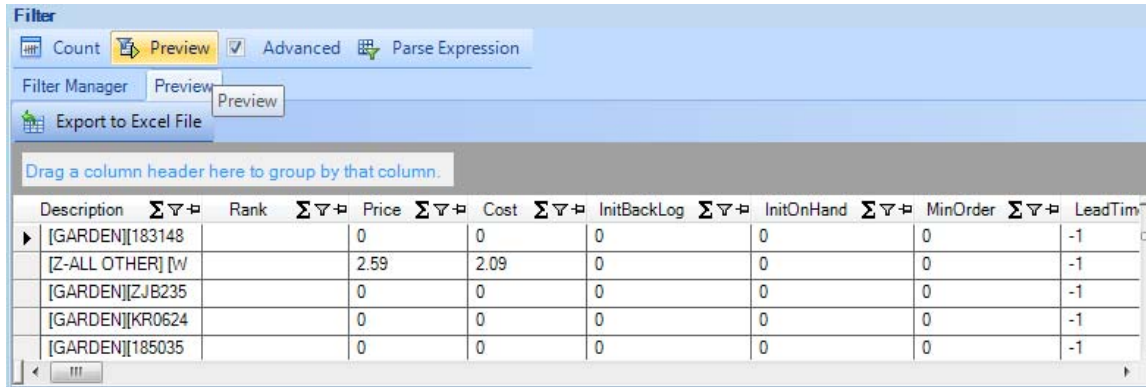
- 7 Select the **Value** you want to filter on from the drop-down list. This drop-down list is populated with all available options for the selected **Field**.



- 8 The **Valid** field will indicate whether or not this filter expression is valid.
- 9 To make sure the expression is valid, click the **Parse Expression** button. If the expression is not valid, an error message displays.
- 10 Click the **Count** button to show how many records would be returned by applying this filter to the data source. The count displays in the lower left corner of the Filter Editor window.



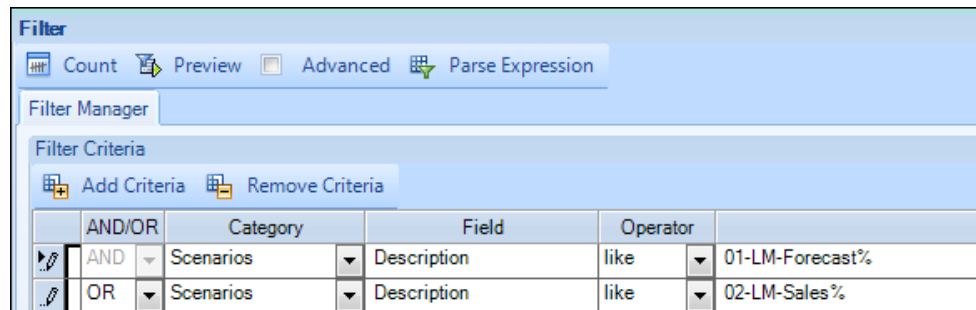
- 11 Click **Preview** when you are finished building the expression. Any values meeting your criteria will display on a new tab.



12 Click the **Export to Excel** button to save the filter results as a spreadsheet.

13 Click the **Save** button when finished.

Note Most users are set up to access one or more specific scenarios. For example, you may have an LM-Forecast for Planners and an LM-Inventory for the Schedulers. Planners would only access LM-Forecast. A data permission would be created using “like” to also allow access to Static hierarchy levels or for Planning Portal users using on fly hierarchies.



Advanced Filtering

Advanced Filtering allows for the creation filters using more involved logic than may be available with the standard drop-down box selections. Users can enter standard ANSI SQL logic in this area.

- 1 On the Data Permission Manager, click the **New** button.

- 2 In the **Main** section, enter a **Name** and **Description** for data permission as previously described.
- 3 In the **Filter** section, select the **Advanced** check box.

Enter the desired valid ANSI SQL statements referencing the scenario or series tables and the field names from your Display Set.

- 4 As you work with your filter you can still click on **Show Results** to view the resulting data or **Parse Expression** to see if your filter is valid.
- 5 Click the **Save** button when finished.

Edit a Data Permission

- 1 On the **Data Permission Manager**, select the permission you want to update from the Data Permission List.

The details for this permission are displayed in the **Data Permission Editor** section.

The screenshot shows the 'Data Permission Manager' window. On the left is the 'Data Permission List' with a table containing the following rows:

Name
admin p
dmd mgr
sales

The 'dmd mgr' permission is selected. The main area is the 'Data Permission Editor' for 'dmd mgr'. It has a 'Main' section with 'Name' (dmd mgr) and 'Description' (empty). Below is a 'Filter' section with buttons for 'Count', 'Preview', 'Advanced', and 'Parse Expression'. The 'Advanced Filter' section shows a table with one row:

Category	Field	Operator	Value	Valid
Series	BaseTarget	=	Critical Understock	→

- 2 Modify the Permission as necessary.
- 3 Click **Save**.

Assign the Permission to Other Users

- 1 On the Data Permission Manager, select the Permission to share with other users and click the **Permissions** button.

The **Data Permissions** window displays.

The screenshot shows the 'Data Permissions' window. It has a table with columns: 'Assigned', 'User', 'First Name', 'Last Name', and 'User Role'. The table is divided into three sections based on the permission selected: 'admin p (7 items)', 'dmd mgr (7 items)', and 'sales (7 items)'. The 'dmd mgr (7 items)' section is expanded, showing the following data:

Assigned	User	First Name	Last Name	User Role
☐	cust pln	Customer	Planner	
☒	dmd pln	Demand	Planner	
☐	fxadmin	Super	User	
☐	NEW USER	NEW USER	NEW USER	
☐	sls mgmt	Sales	Management	
☐	sls rep	Sales	Rep	
☐	TechWriter	Dan	Travis	Tech Writer

- 2 Use the check boxes in the Assigned column to indicate which users will have access to this Permission.

Note A user can only be assigned to one User Permission. If you assign permission to a user with an existing permission assignment, the user loses the previous permission and acquires the new permission.

- 3 Click **Save**.

Delete a Permission

- 1 On the Data Permission Manager, select the Permission to remove and click the **Delete** button. A message box displays asking you to confirm the deletion.

- 2 Click **Yes**.

Note Once you delete the permission, you must reassign the user to another permission or else the user will not have access to the Living Master Scenarios.

Data Domains

Data Domains are System Administrator-defined access rights to the Observation lines and the attributes for series. These permissions apply to what users have Read-only or Read-write access when accessing Living Master scenarios directly or when using their DTL Scenario.

Access rights include which observation lines the user can see and whether or not those observation lines can be edited. For example, a domain may provide a user access to only the Value, FValue, Original, UserValue01, and ConvFactor01 observation lines, with Value and Original set as Read-Only.

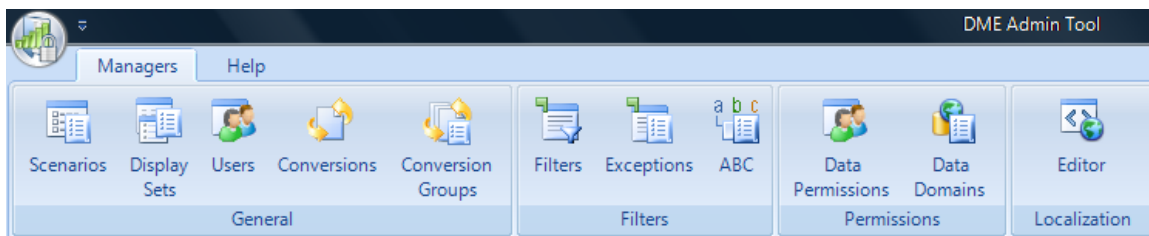
Note A domain is used to protect the Living Master Scenario's data. Owned or shared Scenarios do not use domains. Data Domains are only required if a user has a DTL Scenario or if they are accessing a Living Master scenario directly. For additional information on Domains and Planning Portal, see the Planning Portal Administration Guide.

Domain Properties Tab

- 1 Select **Start > Programs > QAD > Demand Management Engine > Admin Tool** from the Windows menu.

Note Users can also access the Admin Tool from the AddIns tab in the Viewer.

- 2 On the **Managers** tab, click the **Data Permissions** button in the **Permissions** section of the ribbon.



The **Data Domain Manager** tab displays

The screenshot shows the 'Data Domain Manager' application. On the left is the 'Data Domain List' with a table containing 'default domain', 'LM', and two 'New Domain' entries. The main area is the 'Data Domain Editor' for the 'default domain'. It has a 'Main' section with fields for 'Name' (default domain), 'Description', and 'Last Locked Period' (2008-06). Below is the 'Scope' section with a toolbar (Add, Remove, Remove All, Add All, Set All as Read Only, Set All as Read and Write) and a table of physical names and access modes.

Physical Name	Access Mode
BaseTarget	Read and Write
BusinessPartner	Read and Write
BusinessSegment	Read and Write
BusinessUnit	Read and Write
Cost	Read and Write
CostCenter	Read and Write
Country	Read and Write
Cust01	Read and Write

At the bottom of the Scope section are tabs for 'Series Field' and 'Observations Field'.

A Domain consists of the following parts:

Domain Part	Description
Name	Name of the current domain.
Description	Additional description of the domain (optional).
Last Locked Period	A user cannot change the Opinion Lines in periods that come from a locked period or before the locked period. You can create a user's domain that does not contain the last locked period. The drop-down contains the available periods in the Viewer.

Create a Domain

- 1 On the Data Domain Manager, click the **New** button.

The screenshot shows the 'Data Domain Editor' for creating a new domain. The 'Main' section has empty fields for 'Name', 'Description', and a 'Last Locked Period' dropdown menu currently showing '(no locked periods)'. The 'Scope' section is identical to the previous screenshot, showing a table of physical names and access modes.

- 2 In the Main section, enter a **Name** and **Description** for this domain.

- 3 Use the **Last Locked Period** drop-down list to select the appropriate period or use the “no locked periods” default setting. Opinion Lines cannot be changed in periods that include a locked period or those prior to the locked period.
- 4 Click **Save**.
- 5 In the **Scope** section, click the **Series Field** tab. From this tab, you can select the series attributes to which the user has read or write access.
- 6 Use the **Access Mode** drop-down to set the attribute as “Read Only” or “Read and Write”.
- 7 Click on the **Observations Field** tab.
- 8 In the **Physical Name** column, use the drop-down list select the *Opinion Lines* that will be available to the users assigned to this Data Domain.

The screenshot shows the **Data Domain Editor** window. The **Main** section has fields for Name, Description, and Last Locked Period (set to "no locked periods"). The **Scope** section is active, showing a toolbar with icons for Add, Remove, Remove All, Add All, Set All as Read Only, and Set All as Read and Write. Below the toolbar is a table with two columns: **Physical Name** and **Access Mode**. The table lists several attributes: ConfInterval, FValue, Notes, Original, and Value. Each attribute has a corresponding Access Mode dropdown menu, all of which are currently set to "Read and Write". At the bottom of the Scope section, there are two tabs: **Series Field** and **Observations Field**, with **Series Field** currently selected.

Physical Name	Access Mode
ConfInterval	Read and Write
FValue	Read and Write
Notes	Read and Write
Original	Read and Write
Value	Read and Write

- 9 Use the **Access Mode** drop-down to set the attribute for each Opinion Line as “Read Only” or “Read and Write”.
- 10 Click **Save**.

Note Opinion lines not selected will not be available for view to the user.

Edit a Domain

- 1 On the Data Domain Manager, select the Domain to update from the Data Domain List. The details for the selected domain display in the **Data Domain Editor** section.

Data Domain Editor

Main

Name: New Domain

Description: New Domain

Last Locked Period: 2012-05

Scope

Physical Name | Access Mode

Physical Name	Access Mode
BaseTarget	Read and Write
BusinessPartner	Read and Write
BusinessSegment	Read and Write
BusinessUnit	Read and Write
Cost	Read and Write
CostCenter	Read and Write
Country	Read and Write
Cust01	Read and Write

Series Field | Observations Field

- 2 On the **Series Field** tab, make any necessary changes to the access for the opinion lines in this domain by using the **Access Mode** drop-down.
- 3 On the **Observations Field** tab, use the drop-down lists in the **Physical Name** column to add new *Opinion Lines* to this Data Domain.
- 4 Use the **Access Mode** drop-down to set the attribute for each Opinion Line as “Read Only” or “Read and Write”.
- 5 Click **Save** when finished.

Assign Domains to Users

- 1 On the Data Domain List, select the Domain you want to assign to users and click the **Edit** button

The **Data Domain Permissions** window displays.

Data Domain Permissions

Save | Select All | Unselect All | Close

Data Domain

Assigned	User	First Name	Last Name	User Role
Data Domain : default domain (7 items)				
Data Domain : LM (7 items)				
Data Domain : New Domain (7 items)				
Assigned	User	First Name	Last Name	User Role
☐	cust pln	Customer	Planner	
☐	dmd pln	Demand	Planner	
☐	fxadmin	Super	User	
☐	NEW USER	NEW USER	NEW USER	
☐	sls mgmt	Sales	Management	
☐	sls rep	Sales	Rep	
☐	TechWriter	Dan	Travis	Tech Writer

- 2 Use the check boxes in the **Assigned** column to indicate which *users* will be assigned access to this Domain.

Note A user can only be assigned to one domain.

- 3 Click **Save**.

Delete a Domain

- 1 On the Data Domain Manager, select the Domain you want to delete and click **Delete**.
A message box displays asking you to confirm the deletion.
- 2 Click **Yes**.

Creating Filters and Exceptions

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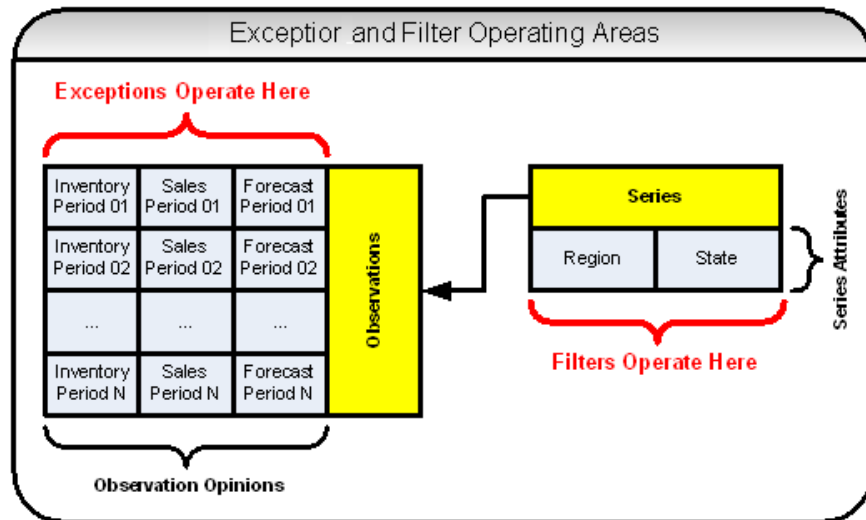
Filter Management 113

Exceptions Manager 119

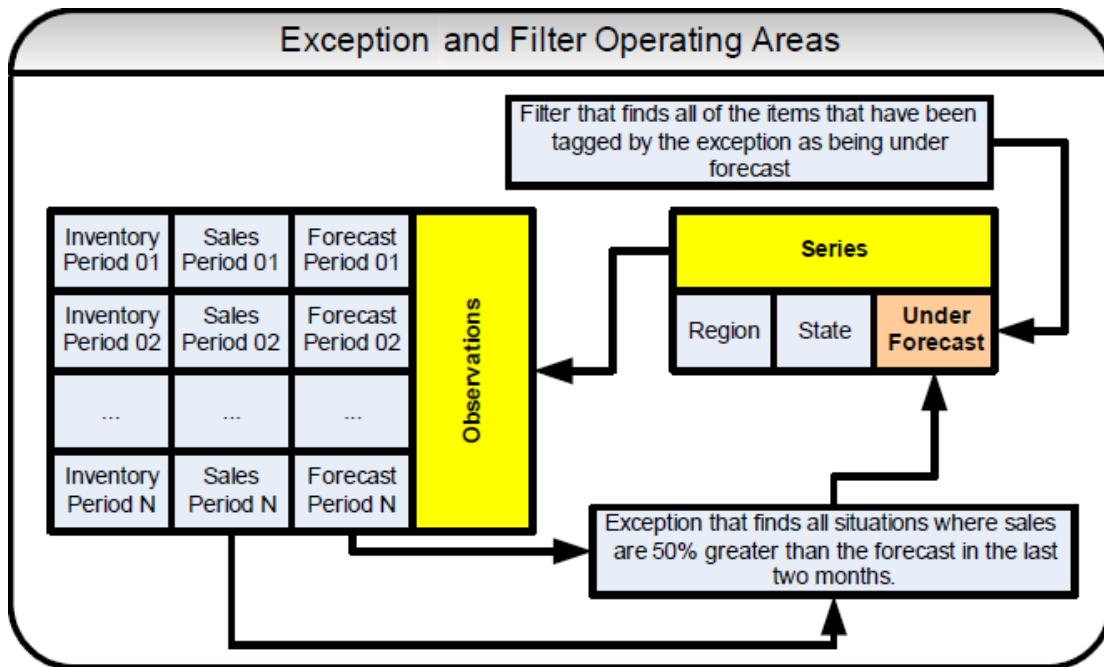
Overview

Filters and Exceptions provide users the ability to manage, control and identify forecasts. Using Filters and Exceptions improves the accuracy of the forecast by focusing on the items that have the greatest impact on the overall results. Filters provide the ability to select the items displayed based on series attributes. Exceptions provide the ability to select items based on the numerical information that is stored in observations. By using these two features within the DME, you can manage the forecast in a very effective manner.

The figure below details how Filters and Exceptions interact:



It is important to note that Exceptions have an additional feature that enables you to update attributes within the series. This way, when an Exception is run, the results of the Exception are stored so that they can be accessed later using a filter. The illustration below details the interaction between Exceptions and Filters.



In this case, the Exception flags the items by setting the series attributes. Once the attribute has been set by the Exception, a filter is then used to select the series at any point in time. If the attribute is made editable, then users are able to replace the flag, which then removes it from the filter so that the item no longer displays. This allows the System Administrator to set Exceptions and users can clear them.

Filter Management

You can specify particular groups or sections of data to view in DME through the use of filters. Filters enable you to perform quick analysis on specific pieces of data.

Each Filter contains a Filter Expression defined by the user. Prior to creating a filter, you must understand how the DME defines that Filter Expression.

When using filters, remember that a user's Data Permissions are taken into account. So if the user does not have access to certain data, that data will not be returned by a filter even if it fits the parameters of the filter expression.

Filter Expression

A Filter Expression is a combination of fields, operators, and values which indicate to the DME the specific data to display in the Viewer.

A Filter Expression has the format of:

Field Name Logical Operator Data Value

Example

In your source data, you want to display only the items that BIG MART purchases in the Midwest.

The filter expression would look like this:

Customer=“BIG MART” AND Region=“Midwest”

In this example, the Field Name is Customer, the operator is = and the Data Value is BIG MART.

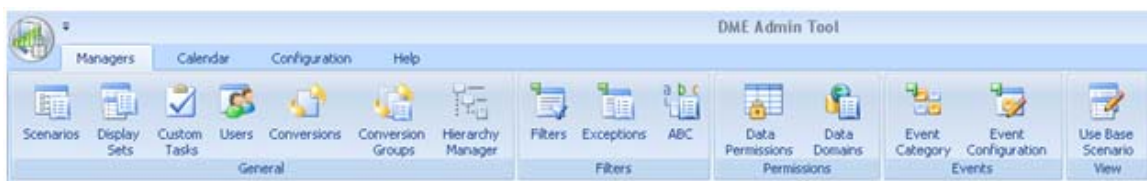
Create a Filter

DME provides two methods for creating a filter expression: Basic Filters and Advanced Filters.

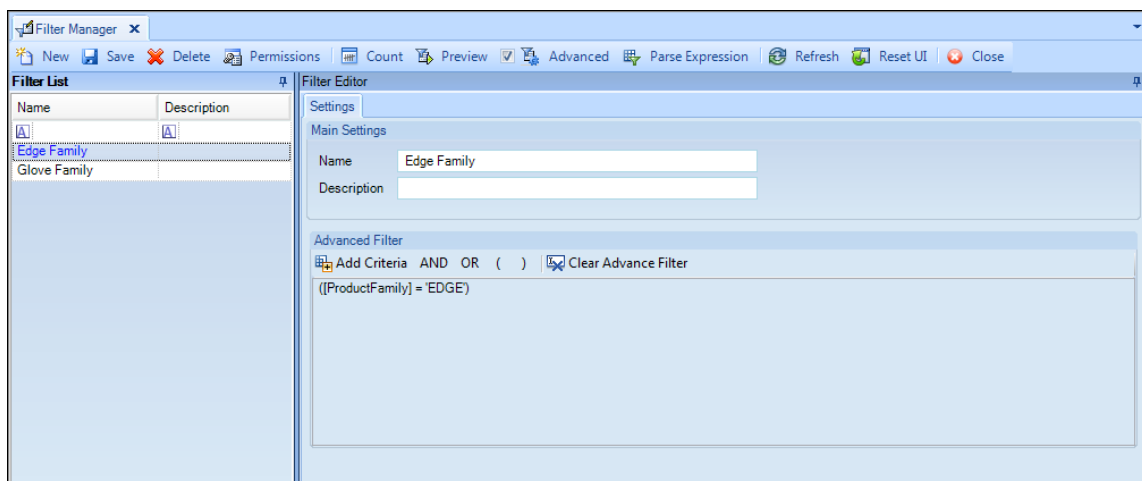
The Basic Filter feature allows you to build your filter expression by using drop-down lists to select your criteria and operators.

Advanced Filters allow you to manually enter your filter expression as SQL code and provides buttons to insert operators such as “AND” or “OR” into your statement. To use the Advanced Filter, select the **Advanced** check box in the toolbar of the Filter Editor.

- 1 On the **Managers** tab, click the **Filters** icon in the **Filters** section of the ribbon.



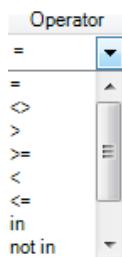
The **Filter Manager** displays.



- 2 Click the **New** button.

The fields in the **Filter Editor** are cleared.

- 3 Enter a **Name** and **Description** for this filter.
- 4 Click the **Add Criteria** button. A new row is added to the **Filter Criteria** grid.
- 5 Select the **Category** of this filter from the drop-down list. Possible values are Series, Scenario, Statistics Values, and Custom.
- 6 Use the **Field** drop-down to select the field on which you want filter. The values in the Field drop-down will vary based on the selected Category.
- 7 Click the **Operator** drop-down list and select the operator.



The operators are:

- = Equal to
- <> Not equal to
- > Greater than
- < Less than
- >= Greater than or Equal to
- <= Less than or Equal to
- In (Included in a list of values)
- Not In (Not included in a list of values)

- Like (Any values containing the entered criteria)
 - Not Like (Any values containing the entered criteria)
- Click the **Values** drop-down field. Any values that coincide with the selected Field will display in this drop-down list.
 - The **Valid** field will indicate if this filter expression is valid.



Filter expression is valid.



Filter expression is not valid.

- To test the filter, select a **Scenario** from the drop-down list at the top of the tab.
- Click the **Count** button to calculate how many Series would be returned by applying this filter to the selected scenario.
- Click the **Parse Expression** button to verify that the filter expression is valid. If the filter expression is not valid, an error message displays.
- Click the **Preview** button to view the filter results for the selected Scenario on a new tab.

Filter Editor

Settings Preview

Export to Excel File

Drag a column header here to group by that column.

Description	Σ ▾ ▴ ▹ ▸	Rank	Σ ▾ ▴ ▹ ▸	Price	Σ ▾ ▴ ▹ ▸	Cost	Σ ▾ ▴ ▹ ▸	InitBackLog	Σ ▾ ▴ ▹ ▸	InitOnHand	Σ ▾ ▴ ▹ ▸	MinOrder	Σ ▾ ▴ ▹ ▸	Lead Time	Σ ▾ ▴ ▹ ▸
► [TARGET] [WEST] [				19.99		11.99		0		0		0		-1	
[Z-ALL OTHER] [W				27.85		25.34		0		0		0		-1	
[Z-ALL OTHER] [W				18.89		16.63		0		0		0		-1	
[Z-ALL OTHER] [EA				8.52		5.24		0		0		0		-1	
[Z-ALL OTHER] [EA				5.52		3.63		0		0		0		-1	
[Z-ALL OTHER] [W				3.99		3.1		0		0		0		-1	
[K-MART] [WEST] [				39.99		35.69		0		0		0		-1	

- Click the **Export to Excel File** button to save these filter results as a spreadsheet.
- Click **Save** when finished. The new filter now displays in the Filter List.

Advanced Filters

In the Filter Editor window, select the **Advanced** check box to switch to the Advanced Filter mode:

- 1 Click the **Add Criteria** button to add a condition and a new row is added to the filter just as it was in the Basic Filter mode.

However, once you select the criteria, it displays as a SQL statement in the Advanced Filter section.

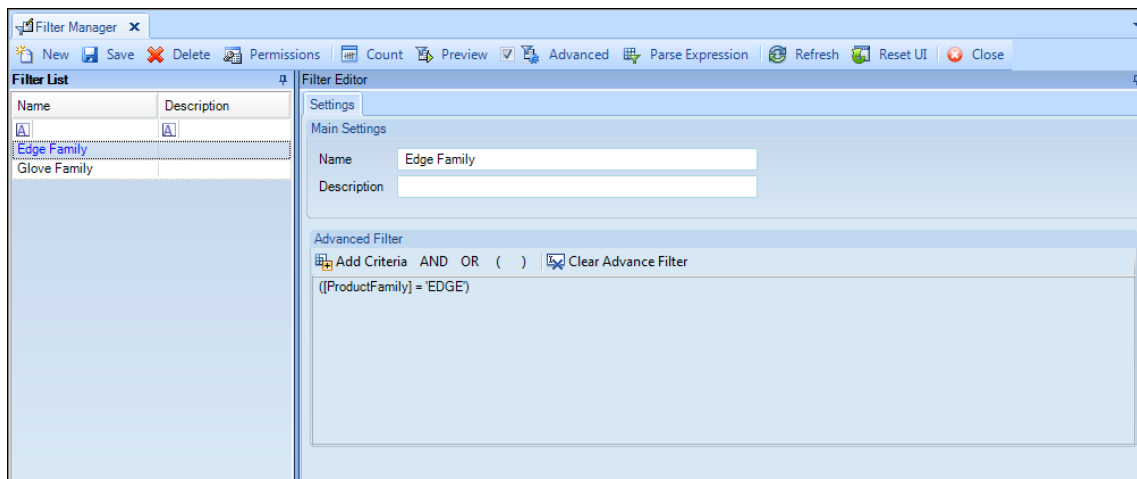
The screenshot shows the 'Filter Editor' window. At the top is a 'Settings' tab. Below it is the 'Main Settings' section with two input fields: 'Name' containing 'Advanced Filter' and 'Description' containing 'Consumer Garden Products'. Below that is the 'Advanced Filter' section. It features a toolbar with buttons for 'Add Criteria', logical operators 'AND' and 'OR', parentheses '(', and ')', and a 'Clear Advance Filter' button. The main text area of the 'Advanced Filter' section displays the following SQL statement: `([Series].[ProductBrand] = 'CONSUMER') AND([Series].[ProductClass] = 'GARDEN')`.

You can use the “AND”, “OR” and parenthesis buttons to add to the SQL statement. You also can manually enter any valid ANSI SQL statements using the columns and data in your data source.

- 2 As you work with your filter, you can still click the **Show Results** button to view the resulting data or click **Parse Expression** to see if your filter expression is valid.
- 3 Click the **Save** button when finished.

Edit a Filter

- 1 On the **Filter Manager**, select the filter to modify from the Filter List.
The details for the selected filter are displayed in the **Filter Editor**.



2 Make any necessary changes to the filter.

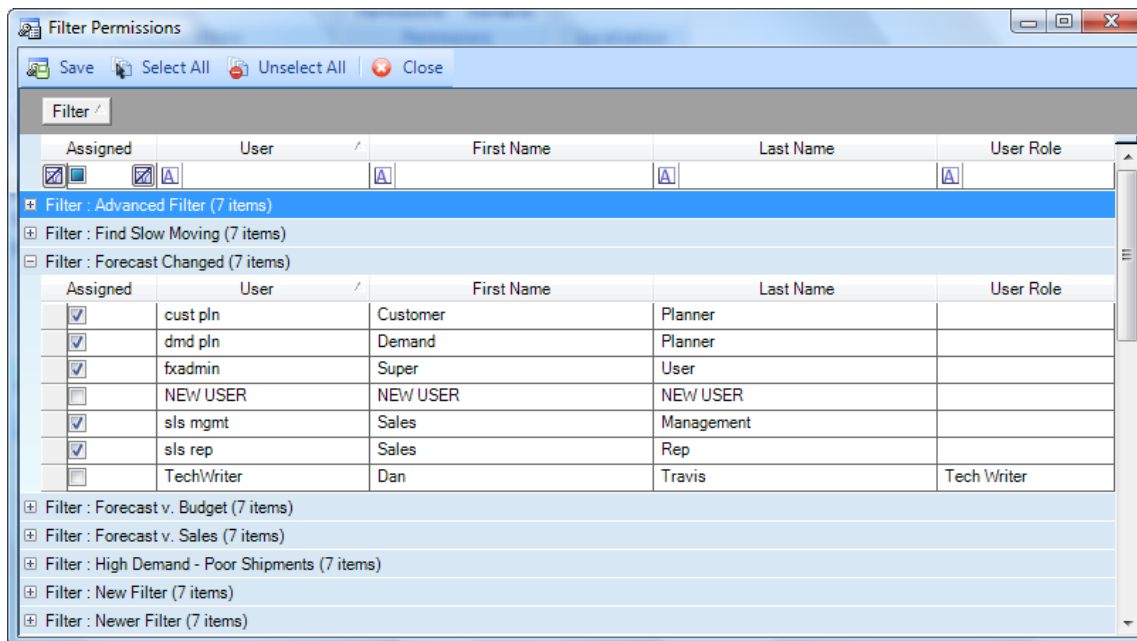
3 Click **Save** to update the filter.

Share a Filter

The System Administrator can share filters they have created with other users and allow those users to apply the filter to their Scenarios. Users cannot share or edit filters that have been shared with them.

1 On the **Filter List**, select the filter you want to share and click the **Permissions** button.

The **Filter Permissions** window displays.



2 Use the checkboxes in the **Assigned** column to select the users with whom you want to share this filter.

3 Click **Save**.

The selected users can now view and apply this filter to their Scenarios.

Delete a Filter

- 1 On the **Filter Manager**, select the filter to remove and click the **Delete** button.
- 2 The DME will prompt you to confirm the deletion.
- 3 Click **Yes**. The filter is deleted and no longer displays in the Filter List.

Exceptions Manager

Overview

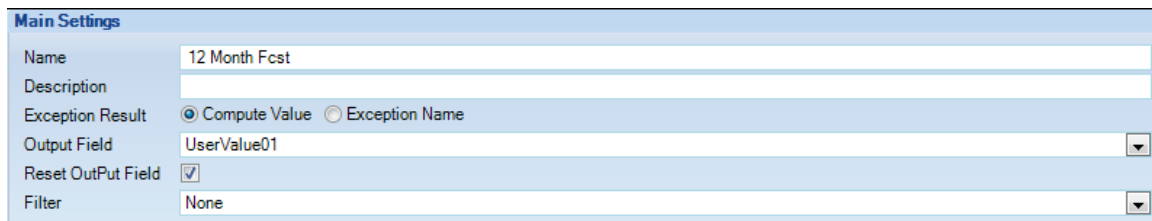
The term Exception refers to applying a business rule that filters out any items that meet certain criteria.

Exceptions capture abnormal items before the data values reach a certain threshold. You must define Exceptions before each forecast cycle. Identifying and removing exceptions enables you to focus your attention on this specific forecast area.

The Exceptions Manager consists of two tabs: Definition and Results. The Definitions tab is used to define the characteristics of the Exception, while the Results tab is used to indicate how the data affected by the Exception is handled in the Viewer.

Main Settings

The **Main Settings** section of the Definitions tab allows you to enter basic information such as the **Name** and **Description** for the Exception being created.



Main Settings	
Name	12 Month Fcst
Description	
Exception Result	☒ Compute Value ☐ Exception Name
Output Field	UserValue01
Reset OutPut Field	☒
Filter	None

Table 10.1 Main Settings

Field	Description
Name	Name for the Exception being created.
Description	General description of the Exception being created.

Table 10.1 Main Settings

Field	Description
Exception Result	Allows you to select one of two options for the output from this exception: • Compute Value: Output the calculated value of the variance or percentage variance to a numeric Series Information field for each matching series. • Exception Name: Output the name of the Exception to a field in the Series Information panel of the Viewer.
Output Field	Used to select the field where the resulting “Compute Value” or “Exception Name” is stored. This information can be viewed in the Series Information panel in the Viewer. The options available in this drop-down list will vary based on the selected Exception Result.
Reset OutPut Field	Indicate whether or not the DME should overwrite existing values in the selected Output Field.

Base Opinion Line

The **Base Opinion Line** section allows you to indicate which existing Opinion Line to use as a base for this exception. Only one base Opinion Line can be selected and this data is compared to the criteria by the Exception calculation.

Date Range Type

Use the **Date Range Type** field to select either a Fixed or Sliding date range. The fields below the radio buttons will change based on your selection.

The “Fixed” option allows you to specify a fixed date range using **Start Period** and **End Period** drop-down lists.

The screenshot shows the 'Base Opinion Line' form. The 'Opinion Line' dropdown is set to 'Act Dmd'. Under 'Date Range Type', the 'Fixed' radio button is selected. Below this, the 'Start Period' dropdown is set to '2009-01' and the 'End Period' dropdown is set to '2009-12'.

The “Sliding” option allows you to set the number of **Historical** and **Forecast Periods** to create the range.

The screenshot shows the 'Base Opinion Line' form. The 'Opinion Line' dropdown is set to 'Act Dmd'. Under 'Date Range Type', the 'Sliding' radio button is selected. Below this, the 'Historical Periods' spinner is set to 12 and the 'Forecast Periods' spinner is set to 12.

Comparison

The **Comparison** section uses the **Compare Against** radio buttons to choose the type of comparison. There are two ways to do the comparison and the fields below will change based on your selection.

Select the “Constant” option to display the **Value** field, allowing you to compare against a specific threshold. Using this option will compare the base opinion against the number in the **Value** field.

The image shows a 'Comparison' dialog box. It has a title bar 'Comparison'. Below it, there are two radio buttons: 'Constant' (which is selected) and 'Opinion Line'. Below the radio buttons, there is a label 'Value' followed by a text input field containing '0.00' and a small up/down arrow button.

Select the “Opinion Line” option to display the **Opinion Line** and **Offset Periods** fields. Using this option compares the Base Opinion Line against another Opinion Line.

The image shows a 'Comparison' dialog box. It has a title bar 'Comparison'. Below it, there are two radio buttons: 'Constant' and 'Opinion Line' (which is selected). Below the radio buttons, there are two fields: 'Opinion Line' with a dropdown menu showing 'Com Ord Rel' and 'Offset Periods' with a text input field containing '6' and a small up/down arrow button.

The **Offset Periods** field allows you to indicate which periods of the two opinion lines are compared against each other. For example, selecting “6” offset periods allows you to compare the next six periods of the selected opinion line against the previous six periods of the Base Opinion Line.

Exception Definition

The **Exception Definition** section contains information used to define the buckets and comparison methods used in this exception. This section also allows you to create a filter expression to apply to one of the Comparison Methods (“Method inside Buckets” or “Method outside Buckets”).

The image shows an 'Exception Definition' dialog box. It has a title bar 'Exception Definition'. On the left, there are four rows of settings: 'Periods in Bucket' with a value of '1', 'Method inside Buckets' with a dropdown set to 'Sum', 'Calculate' with a dropdown set to 'Variance', and 'Method outside Buckets' with a dropdown set to 'Sum'. On the right, there is a table with three columns: 'Operator', 'Value', and 'Condition Type'. The first row shows a dropdown with '>', a value of '0.00', and a condition type of 'None'. There are also small icons for adding, deleting, and saving the condition.

Operator	Value	Condition Type
>	0.00	None

Table 10.2 Exception Definition

Field	Description
Periods in Bucket	The number of periods in this bucket. A bucket is a logical unit which groups periods together. For example, if the data is monthly, and you specify the number of Periods in the Bucket as “3”, you are grouping your data into 3 month buckets and doing a quarter by quarter comparison.
Method inside Buckets	Select the aggregate methods for grouping the data within a bucket. Possible values are: • Sum - Add all values. • Average - The average of all values. • Min - Select the lowest value. • Max - Select the highest value.
Calculate	Select the comparison method to use in this Scenario. Possible values are: • % Absolute Variance - The difference between the values and the thresholds or another Opinion Line. That difference may be positive or negative. • % Variance - The percentage of the difference between the values and the threshold or another Opinion Line. The equation is: $(a - b)/b \times 100\%$ Where a is the threshold and b is the value of the base line. • Absolute Variance - The absolute difference between the values and the thresholds or another Opinion Line. This difference is always positive. • Variance - The absolute percentage of the difference between the values and the threshold or another Opinion Line.
Method outside Buckets	Select the aggregate method to use for data that is not included in a bucket. Possible values are: • Sum - Add all values. • Average - The average of all values. • Min - Select the lowest value. • Max - Select the highest value.
Condition Type	Defines the expression which compares the Method against the expression.

Design Model Sample Data

The **Design Model Sample Data** panel displays a preview of the Exception based on the current settings. As you enter or change the settings for the Exception, the data in the Design Model will be updated.

The totals for the Base Opinion Line and the Comparison selection are displayed below each row using the selected method. In the example below, these totals are displayed in the “Sum” field. The Design Model panel also includes a total for the Exception with the Calculation applied, as shown below in the “Abs % Variance” field.

Design Model Sample Data												
Monthly	2008-11	2008-12	2009-01	2009-02	2009-03	2009-04	2009-05	2009-06	2009-07	2009-08	2009-09	2009-10
Com Ord Ar	14.00	28.00	42.00	56.00	70.00	84.00	98.00	112.00	126.00	140.00	154.00	168.00
	Sum											1,092.00
UserValue02	29.00	58.00	87.00	116.00	145.00	174.00	203.00	232.00	261.00	290.00	319.00	348.00
	Sum											2,262.00
											Abs %Variance	6,844.50
											Result(Sum)	6,844.50

There is also a grand total for the Exception at the very bottom of the panel that is also based on the selected method. In the example above, this total displays in the “Result (Sum)” field.

The Design Model also provides these totals for each bucket in an Exception. In the example below, the Exception contains three periods per bucket, so the Design Model lists the totals for each bucket.

Design Model Sample Data												
Monthly	2009-11	2009-12	2010-01	2010-02	2010-03	2010-04	2010-05	2010-06	2010-07	2010-08	2010-09	2010-10
MaxEventValue	8.00	16.00	24.00	32.00	40.00	48.00	56.00	64.00	72.00	80.00	88.00	96.00
	Avg			Avg			Avg			Avg		
Act Fost	17.00	34.00	51.00	68.00	85.00	102.00	119.00	136.00	153.00	170.00	187.00	204.00
	Avg			Avg			Avg			Avg		
Abs %Variance		1.62		Abs %Variance		10.12		Abs %Variance		25.92		Abs %Variance
Result(Avg)												21.67

Results

The **Results** tab allows you to select how data is handled in the Viewer when the Exception is applied. For example, you can choose to display only items meeting the Exception criteria or to display all items while highlighting items meeting the Exception criteria.

Action Profilers

The **Action Profilers** section of the Results tab consists of four check boxes. The first two check boxes, “Limit List” and “Flag Exception”, are used to indicate what happens when an Exception occurs. Only one of these options can be selected at a time.

The second check boxes, “Color” and “Email” are used to indicate how Exceptions are noted. Selecting either of these options will activate the corresponding sections of the screen below. The “Color” and “Email” items can both be selected at the same time.

The screenshot shows the 'Exception Editor' window with the 'Results' tab selected. Under the 'Action Profilers' section, there are two groups of options. The first group contains two radio buttons: 'Limit List' and 'Flag Exception'. The second group contains two checkboxes: 'Color' and 'Email'.

Table 10.3 Results Tab - Action Profilers

Action	Description
Limit List	Selecting this option instructs the Viewer to display only items meeting the Exception criteria.
Flag Exception	Selecting this option instructs the Viewer to display all items, but to flag any items meeting the Exception criteria.
Color	Select this option to highlight Exceptions in the Viewer and make them easier to locate.
	Selecting this option will activate the Color section below and allow you to choose the color used to highlight the Exception.
Email	Select this option to send an email to a specified account whenever an Exception occurs.
	Selecting this option will activate the Email section below and allow you to set your email preferences.

Email

The **Email** section allows you to enter the email address and options for sending Exception notifications. This section will only be active is the “Email” option is selected in the Action Profilers section above.

The screenshot shows the 'Email' configuration section. It includes input fields for 'From' (containing 'jdoe@johngalt.com'), 'To', and 'Subject'. Below these are three checked checkboxes: 'Include Record Count', 'Include Series Detail', and 'Include Definition'.

Table 10.4 Results Tab - Email Options

Field	Description
From	The email address from which the notification will be sent.
To	The email address to which the notification will be sent.
Subject	The default subject line of the email notification.
Include Record Count	Select this option to include the number of records affected by the Exception in the email.
Include Series Detail	Select this option to include the series information for the records affected by the Exception in the email.
Include Definition	Select this option to include a definition of why the Exception occurred.

Color

The **Color** section allows you to choose the color used to highlight Exceptions in the Viewer. Highlighting items affected by the Exception makes the items easier to find. This section will only be active if the “Color” option is selected in the Action Profilers section above.

Users can select different colors to help differentiate between Exceptions to the Opinion Line, Compare Opinion, or Output Field.

Type	Field	Color
Opinion Line	UserValue02	Yellow
Compare Opinion	BackLog	Red
Output Field	UserField4	Green

Table 10.5 Results Tab - Color Options

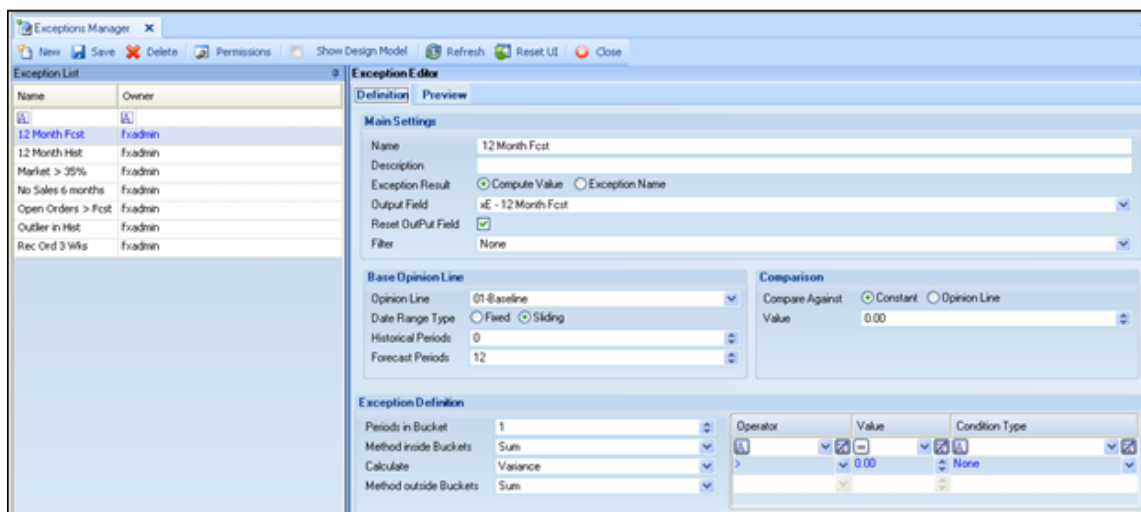
Field	Description
Type	Indicates the object for which you are selecting the highlight. Possible values are Opinion Line, Compare Opinion, and Output Field.
Field	Indicates the currently selected value for each Type on the Description tab.
Color	Drop-down list allowing you to select the color used to highlight the Exception. This drop-down contains three tabs: • Custom - Choose your own color from the palette. • Web - Commonly used colors. • System - Colors used within the system.

Create an Exception

- 1 On the **Managers** tab, click the **Exceptions** icon in the **Filters** section of the ribbon.



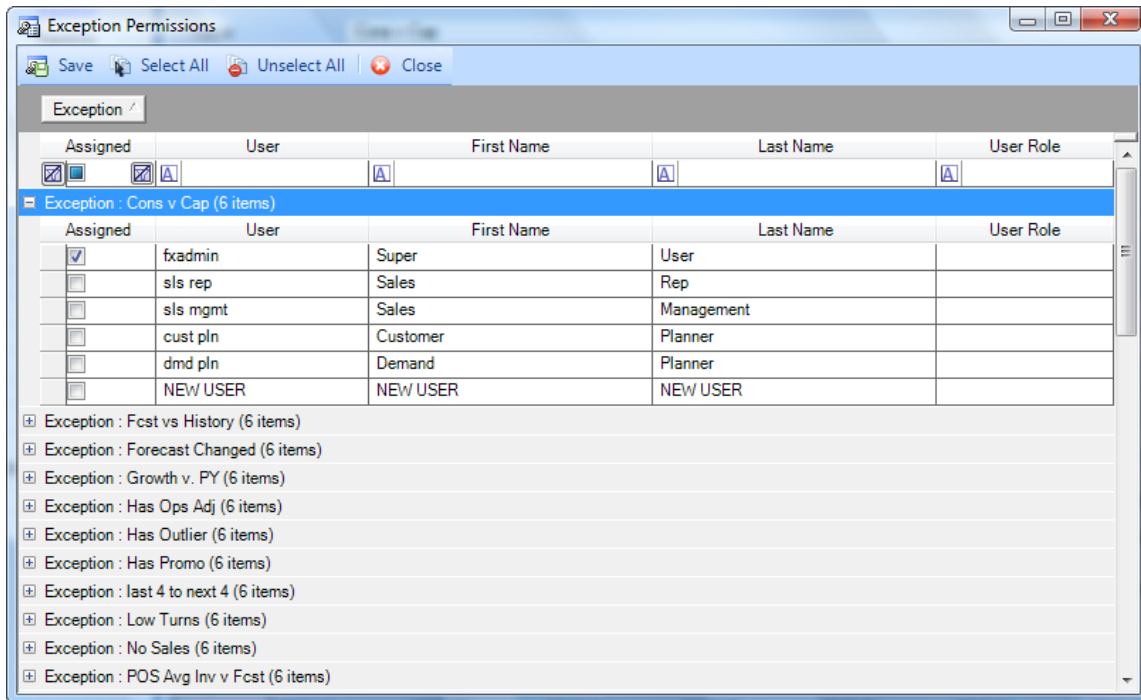
The **Exception Manager** tab displays.



- 2 Click the **New** button.
All fields in the **Exception Editor** window are reset and cleared.
- 3 Enter criteria for the new Exception.
For more information on the individual fields available on this screen, refer to Sections 3-2 through 3-7 above.
- 4 Click **Save** when finished. The new exception is added to the Exception List.

Share an Exception

- 1 In the **Exceptions List** panel, select the exception that you want to share.
- 2 Click the **Permissions** button.
The **Exception Permissions** window displays.



- 3 Use the checkboxes in the **Assigned** column to select the users with whom the exception will be shared.
- 4 Click **Save**.

Delete an Exception

- 1 Select the exception to delete from the **Exception List**.
- 2 Click the **Delete** button.
DME will prompt you to confirm the deletion.
- 3 Click **Yes**.
The Exception is deleted and no longer displays in the Exception List.

Conversions and Conversion Groups

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Conversion Management 130

Conversion Groups 132

Overview

The DME provides a function that converts the data into different units of measurement (for example, eaches to cases or units to dollars). In addition, it is possible to create factors that change the total unit sales to average daily sales. This is important because the number of sales days in a month dramatically affects the sales volume. By “normalizing” the raw data to account for the number of sales days, DME can improve the accuracy of the Forecast. The converted data is not saved in the database.

Conversion factors have a very powerful capability in the sense that they are bi-directional. For example, if you are selling 100 units at \$10 to achieve \$1,000 in revenue and you anticipate revenue to increase to \$1,200, you could adjust either units or price to achieve this result. With conversion factors, it is possible to adjust the revenue and have it affect either the units or the price. The results are determined by the way in which the conversion factor is applied. The following table depicts the ways that conversion factors can be used.

Revenue Increase Achieved Through Unit Volume Increase					
Base Number	Conversion Factor	Result	Change	Return To Base	Result
Units	Price	Units * Price	Revenue	(Revenue / Price)	Price
100	\$10	\$1,000	\$1,200	120	\$10
Revenue Increase Achieved Through Pricing Increase					
Base Number	Conversion Factor	Result	Change	Return To Base	Result
Price	Units	Price * Units	Revenue	(Revenue / Units)	Units
\$10	100	\$1,000	\$1,200	\$12	100

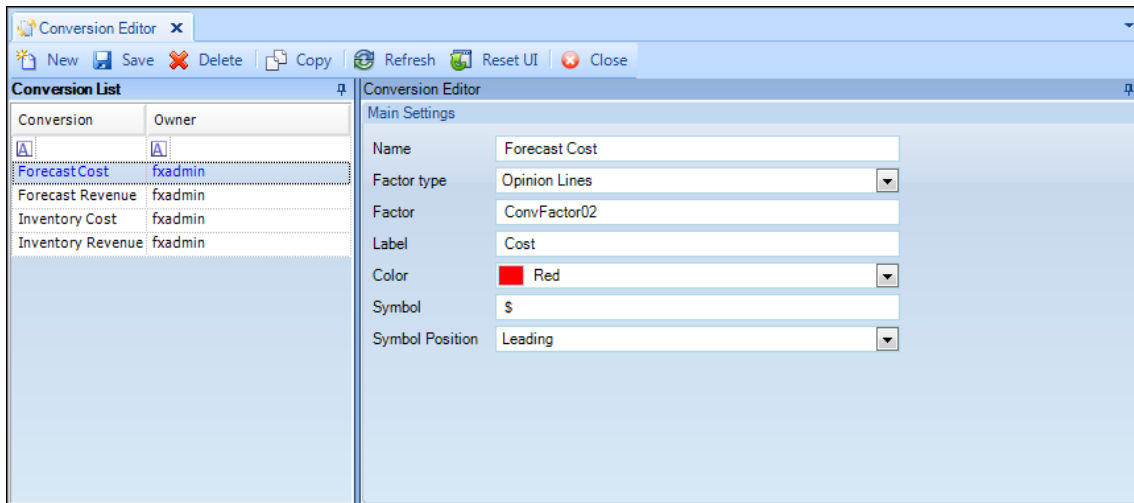
In all cases, the number on the left side of the equation serves as the base that is converted by the factor. It is possible to achieve the desired revenue growth through both pricing and unit volume changes.

Conversion Management

Conversions are created and edited using the DME Admin Tool. Once created, they can be used to create Conversion Groups which are applied to Scenarios in the DME Viewer.

Create a Conversion

- 1 Click the **Conversions** button in the **General** section of the **Managers** tab.
The **Conversion Editor** displays.



- 2 Click the **New** button. The fields in the Conversion Editor section are cleared.

The following fields are used to create a conversion:

Table 11.1 New Conversion

Field	Description
Name	The name for this conversion. Should provide a description of the conversion for easy reference.
Factor Type	Indicates whether this conversion will be applied to an Opinion Line or a Series Attribute.
Factor	Indicates the individual field to which the conversion will be applied. Values in this drop-down list vary based on the selected Factor Type.
Label	A custom name for the selected Factor that displays in the Viewer when this conversion group is applied.
Color	Indicates the color that will display in the column header while the data is converted.
Symbol	Indicates the symbol that will display in the data while it is converted.
Symbol Position	Indicates if the Symbol will display Leading or Trailing the value in the converted opinion line displayed.

- 3 Click **Save** when finished.

Edit a Conversion

- 1 Click the **Conversions** button in the **General** section of the **Managers** tab.

The **Conversion Editor** tab displays. Select the conversion you want to update and the details display in the Conversion Editor section.

Conversion	Owner
ForecastCost	fxadmin
Forecast Revenue	fxadmin
Inventory Cost	fxadmin
Inventory Revenue	fxadmin

Main Settings	
Name	Forecast Cost
Factor type	Opinion Lines
Factor	ConvFactor02
Label	Cost
Color	Red
Symbol	\$
Symbol Position	Leading

The **Conversion Editor** allows you to make updates to any field.

- 2 Click **Save** when finished to save your changes.
- 3 Click the **Close** button to exit the Conversion Editor.

Conversion Groups

Conversion Groups are comprised of one or more conversion factors that can be applied to a Scenario in the Viewer.

Create a Conversion Group

- 1 Click the **Conversion Groups** button in the **General** section of the **Managers** tab.
The **Conversion Group Editor** displays.

Conversion Group	Owner
Forecast Numbers	fxadmin
Inventory Numbers	fxadmin

Main Settings		
Name: Forecast Numbers		
Calculations		
Add Delete		
Conversion	Opinion Line	Vali
Forecast Revenue	UserValue04	→
Forecast Cost	UserValue04	→
Forecast Revenue	ActShipments	→
Forecast Revenue	UserValue01	→
Forecast Revenue	UserValue02	→
Forecast Revenue	UserValue03	→
Forecast Revenue	FValue	→

- 2 Click the **New** button. The fields in the Conversion Group Editor are cleared.

- 3 Enter a **Name** for the Conversion Group being created. This name will display in the Conversions drop-down list in the Viewer.
- 4 In the **Calculations** section, click the **Add** button to insert a new row.

- 5 Use the drop-down lists to select the **Conversion** and the **Opinion Line** to which it will be applied.

The icon in the **Valid** column will indicate whether or not this calculation is valid.



Filter expression is valid.



Filter expression is not valid.

- 6 Repeat these steps for each Conversion you want to add to the Conversion Group.
- 7 Click **Save** when finished.

Note Opinion lines can be used in multiple Conversion Groups since the results are displayed in separate temporary columns. For example, you could display the forecast converted into both cost and price, or pallets and cases.

Conversion	Opinion Line	Valid
Forecast Revenue	UserValue04	→→
Forecast Cost	UserValue04	→→
Forecast Revenue	ActShipments	→→
Forecast Revenue	UserValue01	→→
Forecast Revenue	UserValue02	→→
Forecast Revenue	UserValue03	→→
Forecast Revenue	FValue	→→

Edit a Conversion Group

- 1 Click the **Conversion Groups** button in the **General** section of the **Managers** tab.
The **Conversion Group List** tab displays. Select the conversion you want to update and the details display in the Conversion Group Editor.

The screenshot shows the 'Conversion Group Editor' window. On the left is the 'Conversion Group List' pane with a table:

Conversion Group	Owner
Conversion Group Factor10	fxadmin
FValue Conversion	fxadmin

The 'Conversion Group Factor10' group is selected. The main pane shows the 'Main Settings' section with the 'Name' field set to 'Conversion Group Factor10'. Below this is the 'Calculations' section with an 'Add' button and a table:

Conversion	Opinion Line	Valid
Default Conversion Revenue	FValue	→→
Default Conversion Revenue	ConvFactor10	→→

- 2 The **Conversion Group Editor** section allows you to make updates to any field.

This screenshot shows a closer view of the 'Conversion Group Editor' window. The 'Main Settings' section has the 'Name' field set to 'FValue Conversion'. The 'Calculations' section has an 'Add' button and a table:

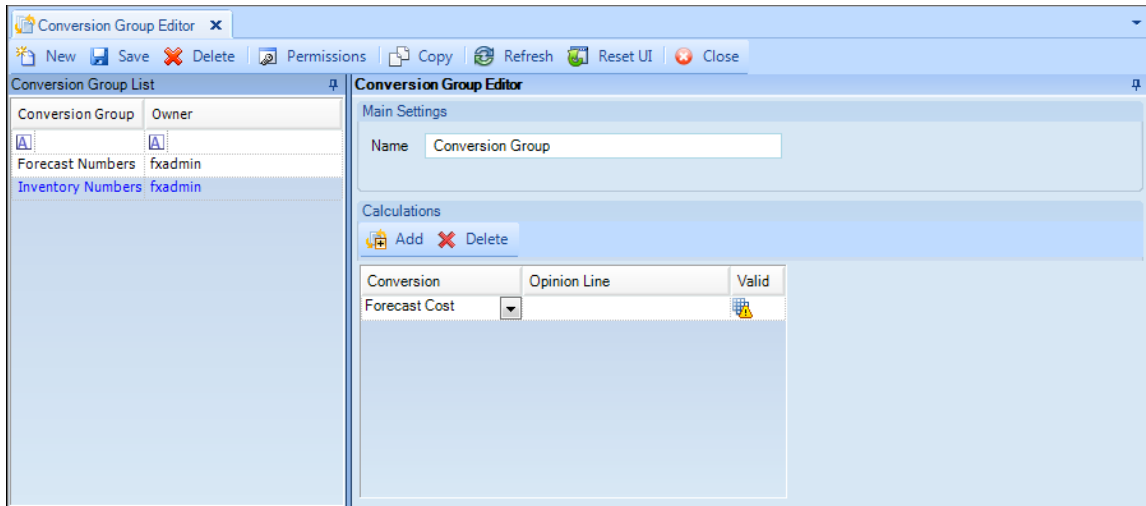
Conversion	Opinion Line	Valid
Conversion Attribute	FValue	→→

- 3 Click **Save** when finished to save your changes.
- 4 Click the **Close** button to exit the Conversion Group Editor.

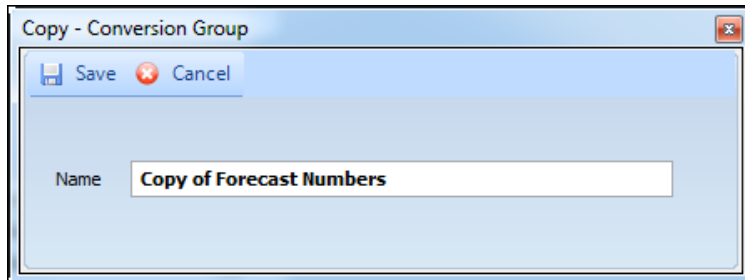
Create a Copy of a Conversion Group

Making a copy of a conversion group allows users to create a new group based on an existing one without having to recreate it.

- 1 Click the **Conversion Groups** button in the **General** section of the **Managers** tab.
The **Conversion Group List** tab displays. Select the conversion you want to make a copy of and the details display in the Conversion Group Editor.



- 2 Click the **Copy** button.
- 3 In the **Copy - Conversion Group** window, enter the name of the new conversion group you are creating.



- 4 Click **Save**. The new conversion group is created and added to the Conversion Group List.
- 5 Select the new conversion group to view the settings in the Conversion Group Editor window.
- 6 Make any necessary changes and click **Save**.

Grant Access to a Conversion Group

You can share a Conversion Group with other users allowing them to use the group, but they will not be able to modify the group.

- 1 Click the **Conversion Groups** button in the **General** section of the **Managers** tab.
- 2 The **Conversion Group List** tab displays. Select the conversion you want to assign permission to and the details display in the Conversion Group Editor.
- 3 Click the **Permissions** button and the **Conversion Permissions** window opens.

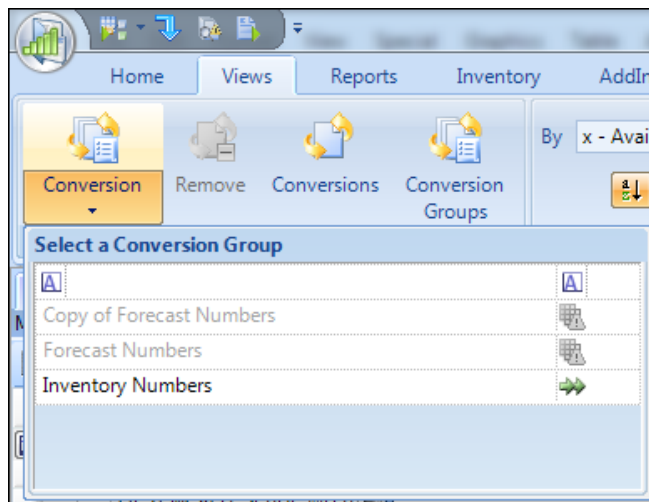
Assigned	User	First Name	Last Name	User Role
☐	bob	Bob	Bob	
☒	fxadmin	Super	User	
☐	new	new	new	
☐	rick	Rick	Rick	
☐	sales	Sales	Sales	

- 4 Use the **Assigned** checkboxes to indicate the users you want to have access to this conversion group.
- 5 Click **Save**.

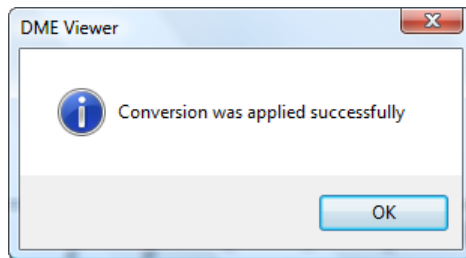
Apply a Conversion Group

Once a Conversion Group is defined and the data is loaded, it is possible to assign and apply the conversion to Scenarios in the Viewer.

- 1 In the DME Viewer, open a **Scenario**.
- 2 On the **Views** tab, click the **Conversion** button to display the drop-down list
- 3 Select the **Conversion Group** you want to apply:



- 4 DME will ask you to confirm that you want to apply the conversion. Click “Yes” to apply or click “No” to cancel.
- 5 The “Conversion was applied successfully” message displays.



To remove the Conversion Group, click the **Remove** button on the Views ribbon.

Notes

- Users cannot commit DTL scenarios with applied conversion factors. The data must be stored in a consistent unit of measure in the Living Master scenario.
- Conversions can be applied in the Data and user created views, as well as in the Summary View.
- Conversion can be applied while in a hierarchy. Ensure values like price/cost are defined in the Hierarchy manager set up to use a weighted average calculation, otherwise data will not have a value at a hierarchy level.

Event Configuration

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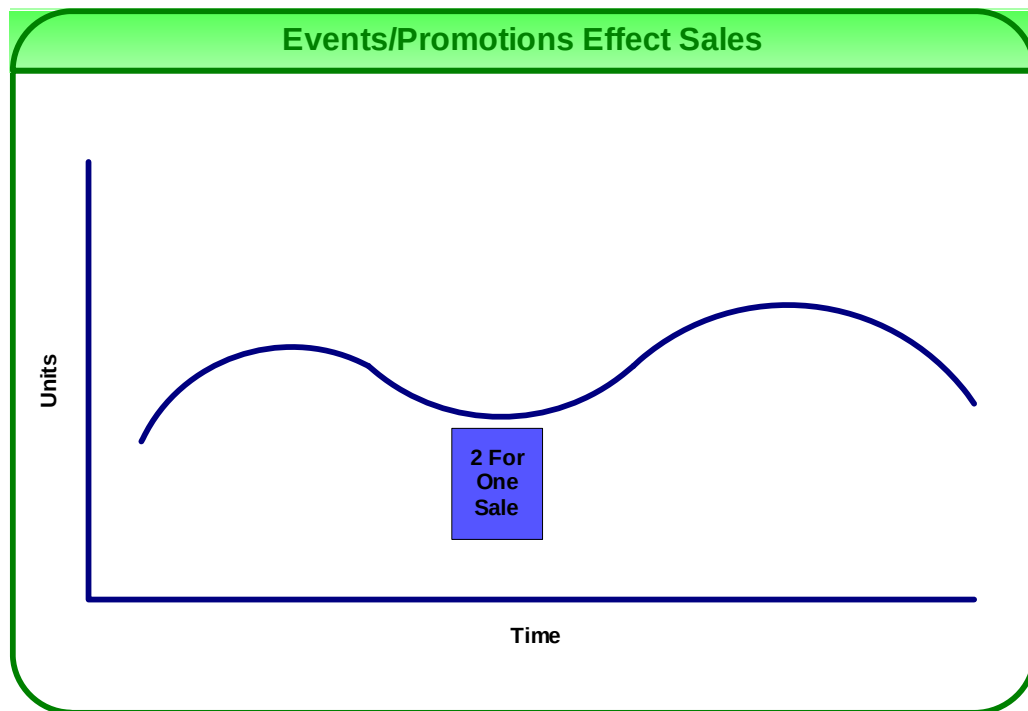
Overview

Events are special situations or actions that can change forecasting behavior. An event may be applied to any series, and a series may be applied to any number of events at the same time.

It is important to track Assumptions made during the forecasting process. The Event Manager tracks the Assumptions made and applied to a forecast, so that each time the forecast is run, the same assumptions are tracked. Events are first defined and then applied to the forecast. Each record is flagged and then noted with the appropriate event.

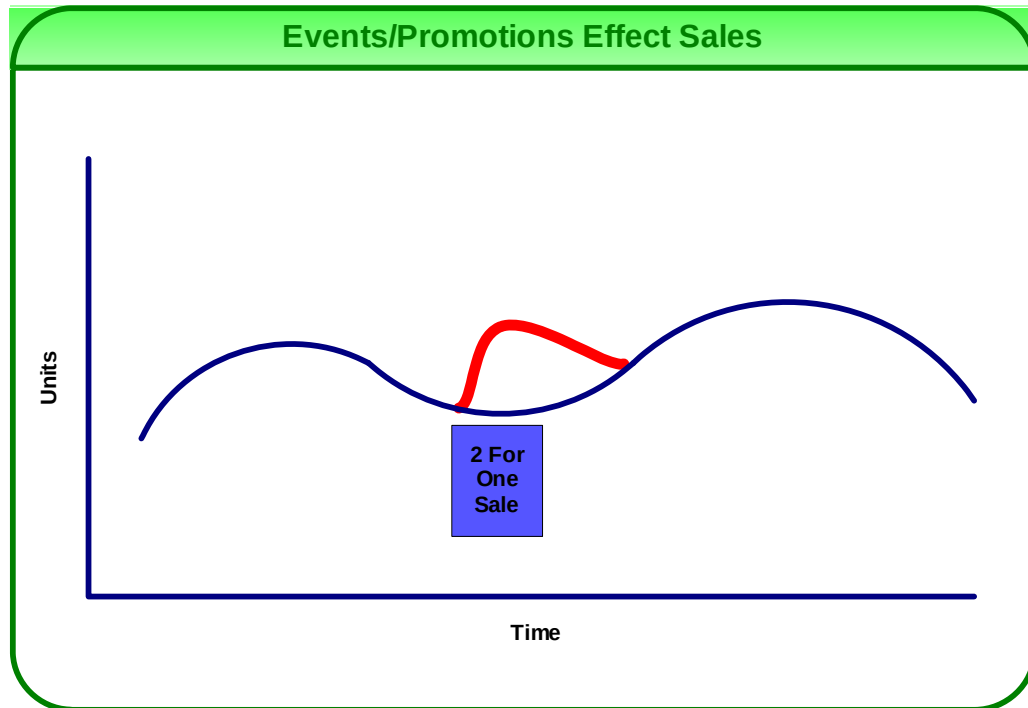
The Event Manager enables users to apply their business knowledge regarding the impact of outside events on the Forecast data. By using the Event Manager, you can define, track and publish these outside events.

The following figure depicts the Forecast prior to an event being applied. This is a typical situation where a Promotion is run during a time when sales are slow. The Event Manager enables you to document the assumptions and the effect of the promotion on the forecast.



In the figures above and below, the event has directly changed the calculated forecast. Once the location and timing of the event is placed, then the details of the event must be worked out to quantify both the effect and the duration. The Event Manager makes this process possible. When the event is put in place, the adjustment to the forecast can be noted and tracked.

The following figure depicts the effect of the 2-For-One sale on the Forecast.



By tracking and managing the promotion, the Forecasting process begins to track the assumptions, as well as the impacts of marketing and business factors on the forecast.

Before moving on, some basic terminology requires definition.

Term	Description
Lift	The absolute percentage that represents the change in the forecast before and after applying the event. This value can also be an amount.
Promotion	A particular set of events used to increase sales.
Forecast Layers	The effects of multiple events.

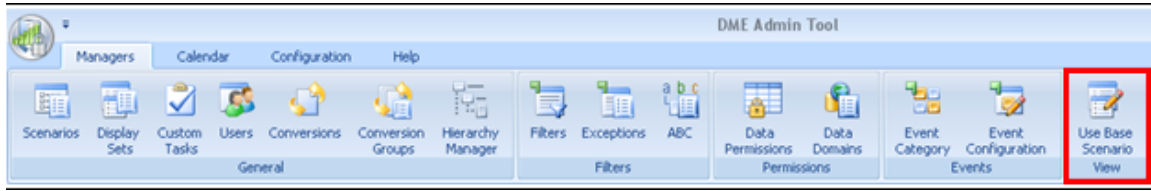
Configuring Events

The Event Configuration module of the DME Admin Tool is the primary method for defining how events are used in conjunction with forecasts. Using the Event Configuration tab, you can create, remove, display, copy, and edit event configurations.

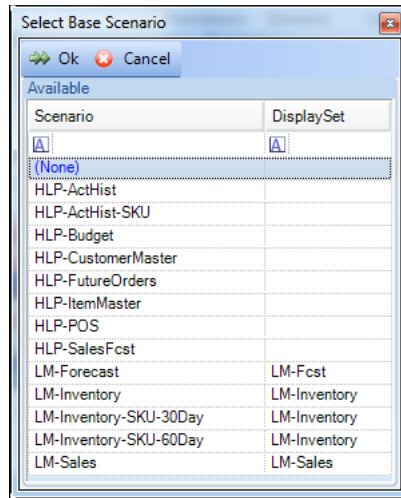
Once created, event configurations can be assigned to scenarios. Only the owner who created the event configuration can delete or update the event.

- 1 In the DME Admin Tool select **Use Base Scenario** to show the mapped opinion line names from the desired scenario. This will make the Event Configuration easier.

Note This assumes that your display set is already complete.

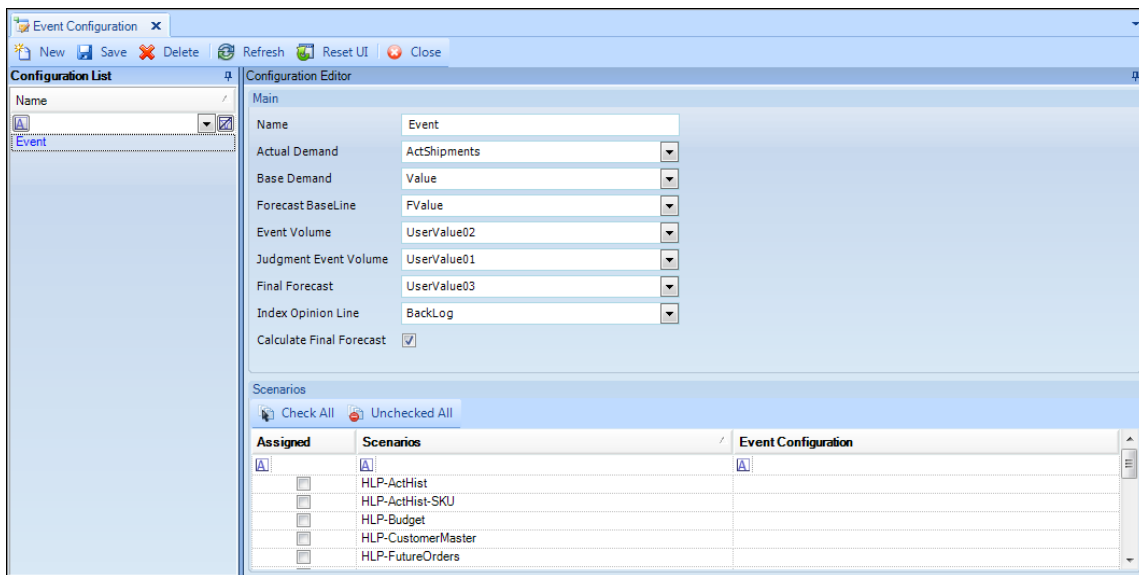


- 2 The **Scenario Selector** window will display. Select a scenario and click **OK**.



Now all the features in DME Admin will use the opinion line and observation display set names instead of the physical names.

- 3 Click the **Event Configuration** icon in the toolbar.
The **Event Configuration** tab displays.



- 4 Click the **New** button.
The fields in the **Configuration Editor** panel become active.

Configuration Editor

Main

Name: Event Configuration 1

Actual Demand: Act Hist

Base Demand: Adj Hist

Forecast BaseLine: 01-Baseline

Event Volume: 05-Events

Judgment Event Volume: 03-Promo

Final Forecast: 04-Consensus Fcst

Index Opinion Line: 06-Index

Calculate Final Forecast: ☒

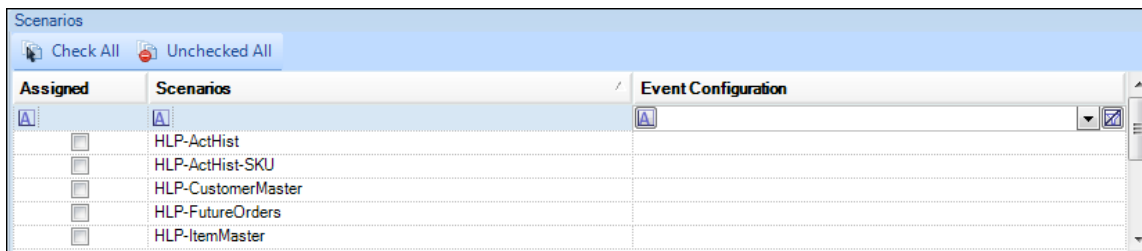
Scenarios

☒ Check All ☐ Unchecked All

Assigned	Scenarios	Event Configuration
☒	HLP-ActHist	☒
☐	HLP-ActHist-SKU	
☐	HLP-CustomerMaster	
☐	HLP-FutureOrders	
☐	HLP-ItemMaster	
☐	HLP-PDS	
☐	LM-Forecast	

- 5 Enter the **Name** for the Event Configuration.
Note The name must be unique for all the definitions created by this user. The name is a required field.
- 6 Select the **Actual Demand** opinion line from the drop-down list. Actual Demand represents the original order history that shows the previous customer demand.
- 7 Select the **Base Demand** opinion line from the drop-down list. Base Demand is Actual Demand with Event volume adjustments. For example, if there was a promotion that increased demand by 25%, the Base Demand would be 80% of Actual Demand. Base Demand is used to calculate Forecast Baseline.
- 8 Select the **Forecast Base Line** opinion line from the drop-down list. Forecast Base Line is the statistical forecast calculated using Base Demand and is intended to exclude any effect from past events.
- 9 Select the **Event Volume** opinion line from the drop-down list. Event Volume refers to the volume associated with a statistical event type added by the user.
- 10 Select the **Judgment Event Volume** opinion line from the drop-down list. Judgment Event Volume is the volume associated with an event adjustment type of amount, exact value, or percentage.
- 11 Select the **Final Forecast** opinion line from the drop-down list. Final Forecast can be calculated by either adding the Statistical and Judgment Event Volumes to the Forecast Baseline or it can be a custom calculation. Final Forecast is intended to be the total forecast for base demand and event volume.

- 12 Select the **Index Opinion Line** from the drop-down list. This will be used for the Event Model forecast method and the Event Index feature.
- 13 Check the **Calculate Final Forecast** check box to indicate that you want DME to automatically calculate the final forecast. Uncheck this box if you have a Custom Task to calculate the final forecast.
- 14 In the **Scenarios** panel, use the check boxes in the “Assigned” column to indicate the scenarios to which this event will be assigned.



You can also use the **Check All** button to assign this event to all scenarios. Click the **Uncheck All** button to remove the Event from all selected scenarios.

Note Each Scenario can only have one Event Configuration assigned to it.

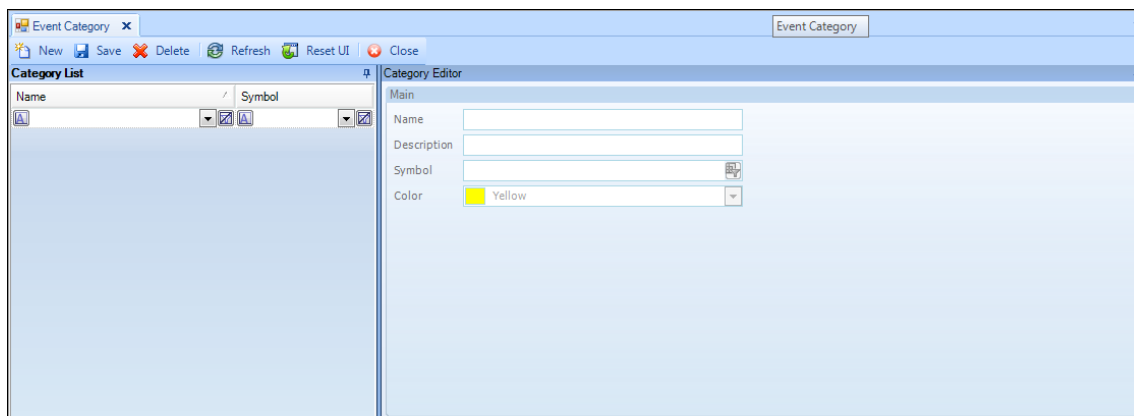
- 15 Click the **Save** button at the top of the window to create the event and add it to the assigned scenarios.

Event Categories

Event Categories are used as classifications for different types of events. For instance, typical Categories would be “Sales”, “Holiday”, “BOGO (Buy One Get One Free)”, “Promotions” or “Weather”.

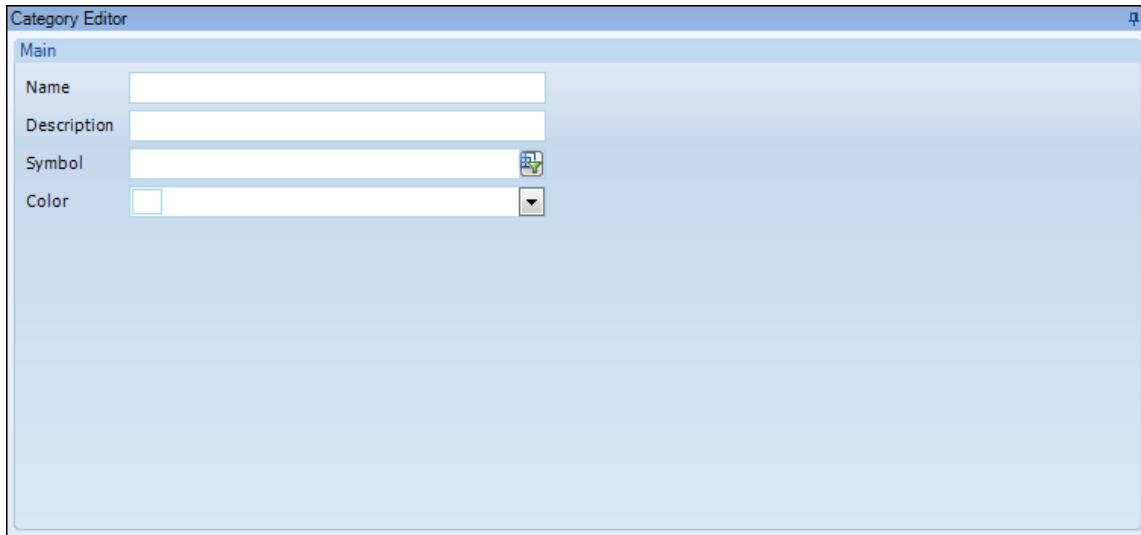
These Categories are created in the Admin Tool, but can then be selected in the DME Viewer when creating events. Categories can be used to group similar events together into one classification.

- 1 In the DME Admin Tool, click the **Event Configuration** icon in the toolbar.
The **Event Category** tab displays.



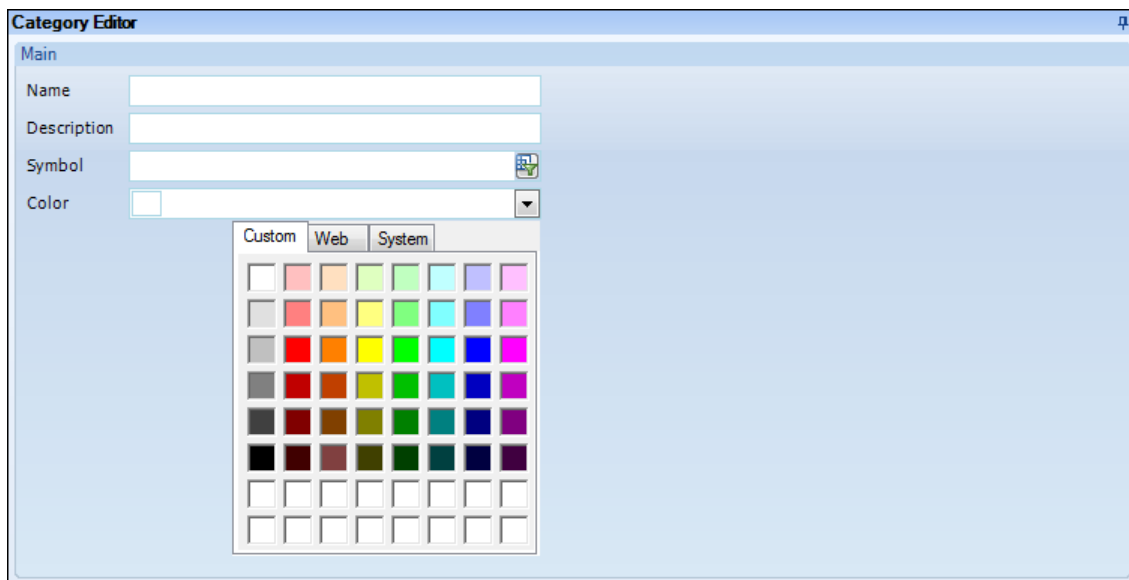
- 2 Click the **New** button.

The fields in the Category Editor panel become active.



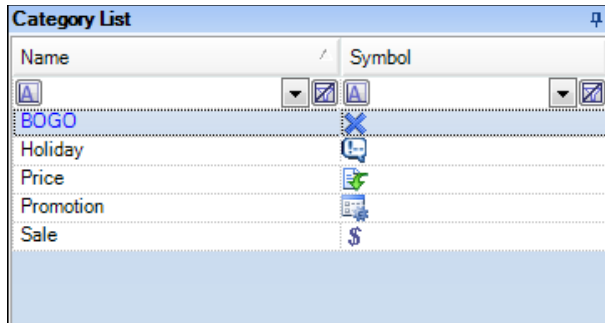
The screenshot shows the 'Category Editor' window with the 'Main' tab selected. On the left, there are four input fields: 'Name', 'Description', 'Symbol', and 'Color'. The 'Name' and 'Description' fields are empty text boxes. The 'Symbol' field is empty and has a small icon button to its right. The 'Color' field is a small white box with a dropdown arrow to its right. The rest of the window is a large, empty light blue area.

- 3 Enter a **Name** and **Description** for the category being created.
- 4 Select a **Symbol** to represent this category when displayed on graphs and charts.
Click the  icon to browse and select the graphic to use.
- 5 Use the **Color** drop-down palette to select the color to represent this event when used in graphs.



This screenshot shows the 'Category Editor' window with the 'Color' dropdown menu open. The menu displays a grid of color swatches organized into three tabs: 'Custom', 'Web', and 'System'. The 'Custom' tab is active, showing a 6x6 grid of various colors including grays, reds, oranges, yellows, greens, blues, and purples. The 'Web' and 'System' tabs are also visible but not active.

- 6 Click the **Save** button. The new category is added to the Category List.



Name	Symbol
BOGO	
Holiday	
Price	
Promotion	
Sale	

- 7 The Category can now be applied to an Event in the Viewer, and the associated Symbol will display to represent the event.

Once the Event Configuration and Event Category screens are completed, users will be able to create events in DME.

Retagging

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Overview

The Retagging feature in the DME automates the process in which one Series is copied or moved to another Series. Retagging is beneficial when a product is at the end of life cycle and the company is introducing a new product to replace it. Or even if a company is introducing a product similar to one that already exists. Retagging can also be used to merge products together, split them apart, or combine customers.

Retagging works by copying part or all of an Opinion Line from one Series to another, which enables the user to base the Forecast on History from another item. Retagging copies the data from the source to the target for dates within the specified range. It then multiplies the source data by the remain percentage.

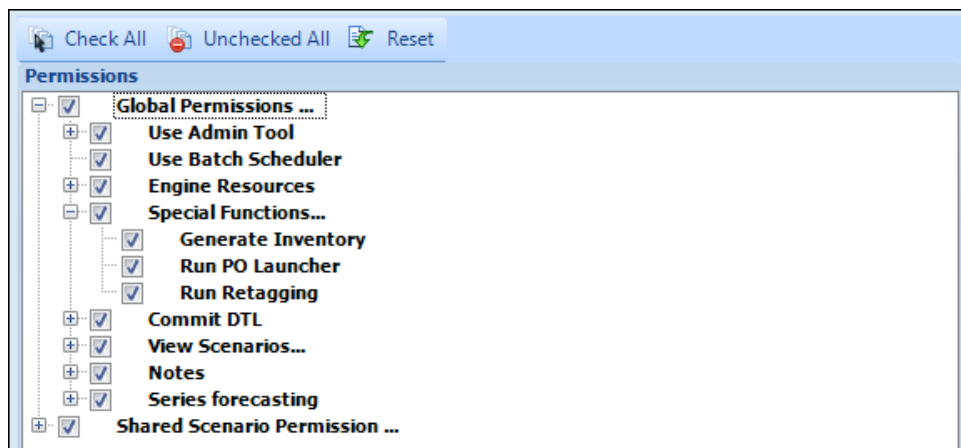
Each Retag contains:

- Source Series
- Target Series
- Start Date
- End Date
- Remain Percentage

Access to Retagging

Retagging may not be available to all users and will not display in DME until it has been configured by a System Administrator. Administrators can grant access to a user through the User Manager screen in the DME Admin Tool.

- 1 Click the **Users** button on the **Manager** ribbon. The User Manager screen is displayed.
- 2 In the **User List**, select the ID of the user to which you are granting access to Retagging.
- 3 The **User Editor** section is populated with the data for the selected user.
- 4 In the **Permissions** panel at the far right, click the “Global Permissions” section and expand the tree view.
- 5 Expand the “Special Functions” option and check the “Run Retagging” option.

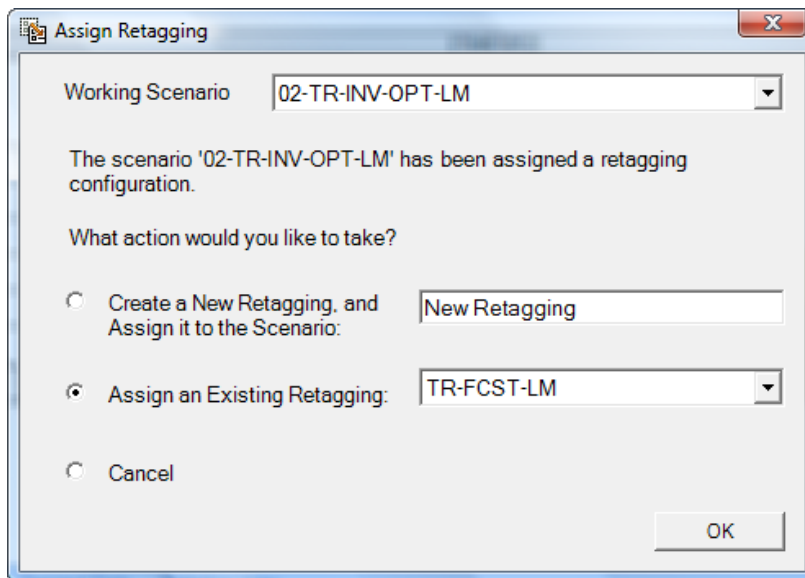


- 6 Click **Save**.
- 7 The user will now have access to Retagging the next time they log in to the DME Viewer. If they are currently logged in, the changes will not display until the user exits and logs in again.

Assign Retagging

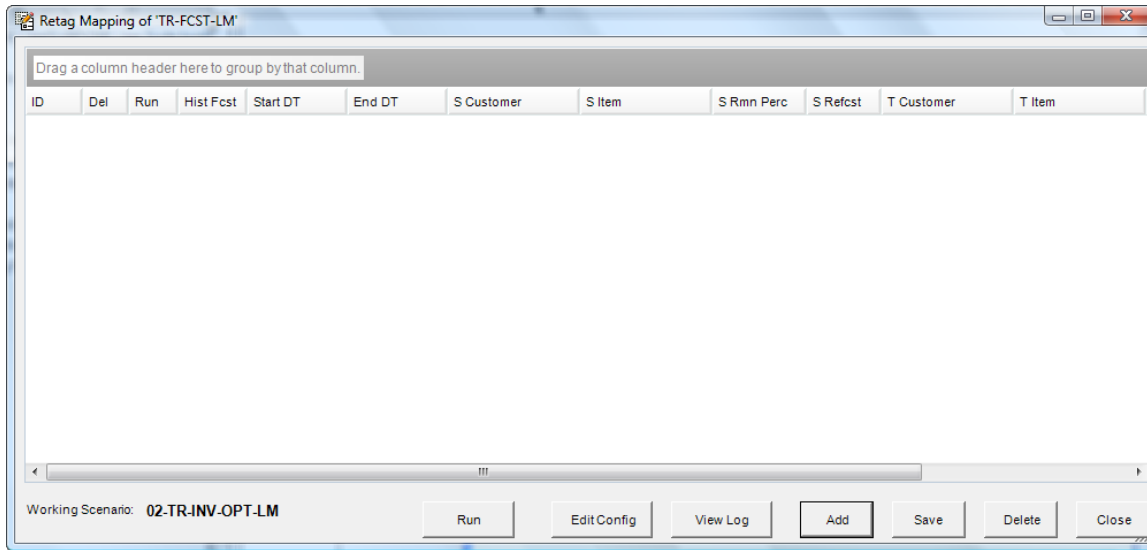
The System Administrator can configure the Retagging feature for users through the DME Viewer. Click the **Retagging** button in the ribbon on the **Admin** tab.

The **Assign Retagging** window displays and allows you to create a new retagging or assign an existing retagging to the current scenario.



Create a New Retagging and Assign it to the Scenario

- 1 Select “Create a New Retagging, and Assign it to the Scenario” and enter the name of the new retagging in the textbox to the right.
- 2 Click **OK**.
The **Retag Mapping** window displays.



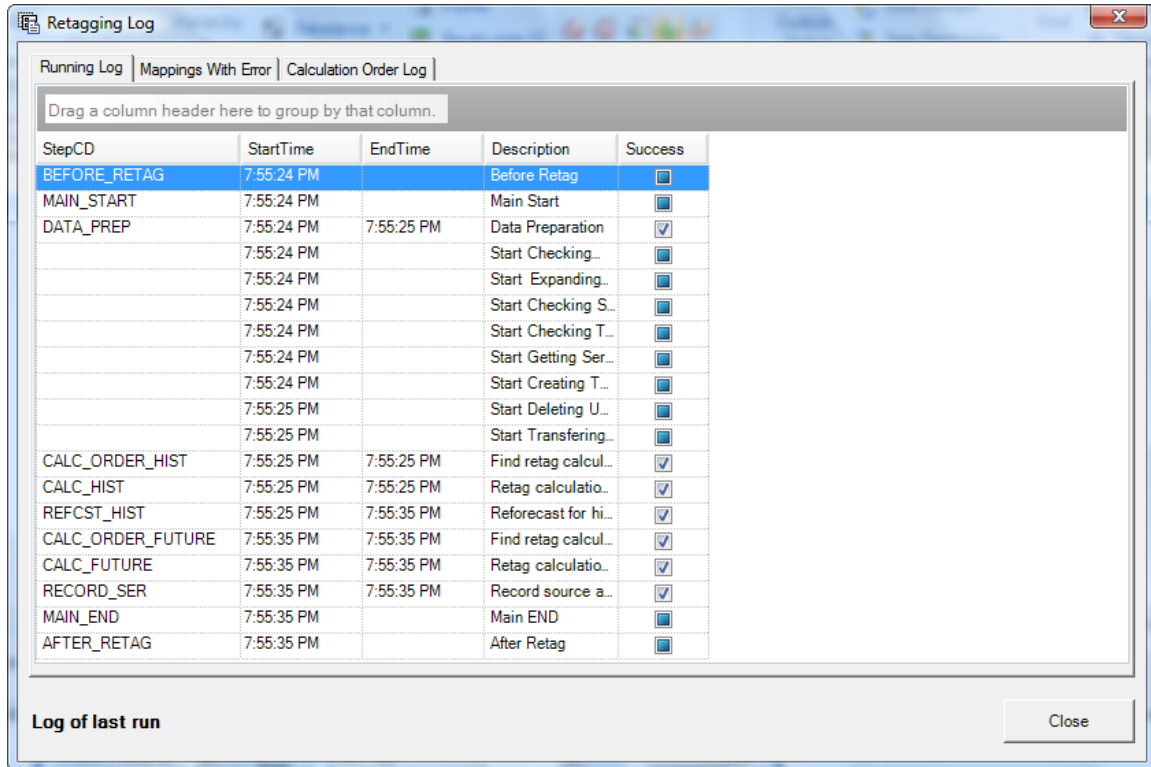
The table below details what each column means.

Column	Description
ID	System generated ID used to identify each mapping contained in a Retag configuration.
Del	Select to delete a mapping created for a Retag configuration. Click the Delete button to delete all mappings with this check box selected.
Run	Select this check box to run a mapping. Any mappings with this check box enabled will be executed when the Run button is clicked. Note: Prior to running a retag, you must enable the Run checkbox for any mapping you would like to execute.
Hist Fcst	Determines which time periods in a Scenario will be affected by the mapping. There are three available options: • History - Mapping only affects Historical periods in the Scenario. • Future - Mapping only affects Forecast periods in the Scenario. • Both - Mapping affects both Historical and Forecast periods in the Scenario.
Start DT	The beginning of the date range for data that will be affected by this mapping. Data from any period before this date will not be affected by this mapping. Note: If a period after this date was not affected by a mapping, check if the period is included in the “His Fcst” option.

Column	Description
End DT	The end of the date range for data that will be affected by this mapping. Data from any period after this date will not be affected by this mapping. Note: If a period before this date was not affected by a mapping, check if the period is included in the “His Fcst” option.
S Customer	Retrieves observations and inserts them in the Target Series. This is the only source field configured by default. Note: The amount of source fields can be configured for each retag. (See section Mapping Fields below).
S Item	Indicates the source mapping fields. Multiple series can be retagged with one mapping and any two series can be matched.
S Rmn Perc	Specifies what percentage of the original value to leave in the source.
S Refcst	Indicates whether the Source Series should be reforecasted after the mapping has run.
T Customer	Identifies the Target Series that will take the information from the Source Series. This is the only target field configured by default. Note: The number of source fields can be configured for each retag (See section Mapping Fields below).
T Item	Indicates the Target mapping fields. Multiple series can be retagged with one mapping and any two series can be matched.
T Alloc Perc	Specifies what percentage of the Source Series should be allocated to the Target Series.
T Refcst	Indicates whether the Target Series should be reforecasted after the mapping has run.
T Reset	Specifies whether the system should reset any existing observations in the Target Series before saving information from the Source Series. If unchecked, then the existing values in the Target Series are added to the ones from the Source Series.

Note Before running a mapping, the “Run” check box should be selected in order to indicate which of the mappings are being run.

- 3 Select the “Run” check box for each mapping you want to enable and then click the **Run** button at the bottom of the window to run the selected retag mappings.
- 4 After retagging has run, click the **View Log** button to open the **Retagging Log** window.



The following table details each tab in the Retagging Log:

Tab	Description
Running Log	Displays the description of what was performed during the Retag.
Mappings With Error	Displays any mappings that failed in the execution.
Calculation Order Log	Displays which Series was retagged to which Series.

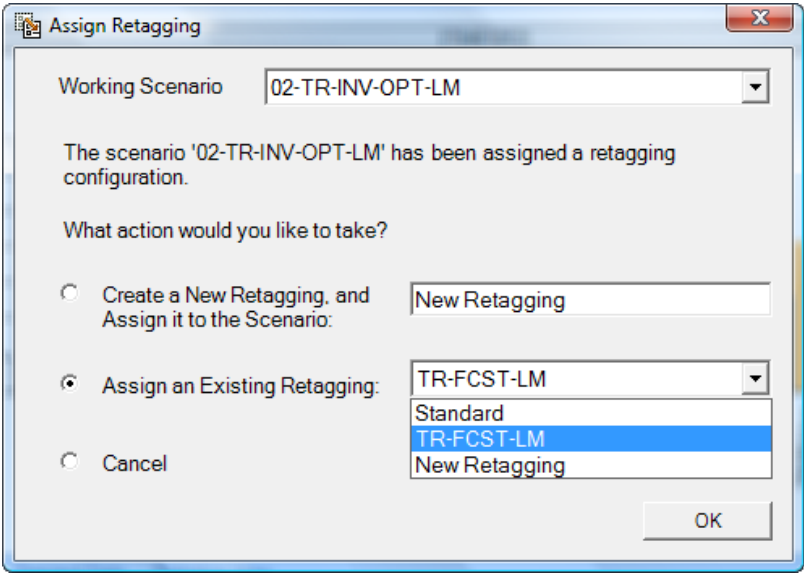
- 5 Click the **Close** button when finished.
- 6 Click the **Save** button to save your changes.
- 7 To delete a retag mapping, select the “Del” check box for that retag mapping and click the **Delete** button at the bottom of the window.
- 8 Click the **Close** button when finished to close the window.

Note You can click on the column headings to arrange the retags in increasing or decreasing order.

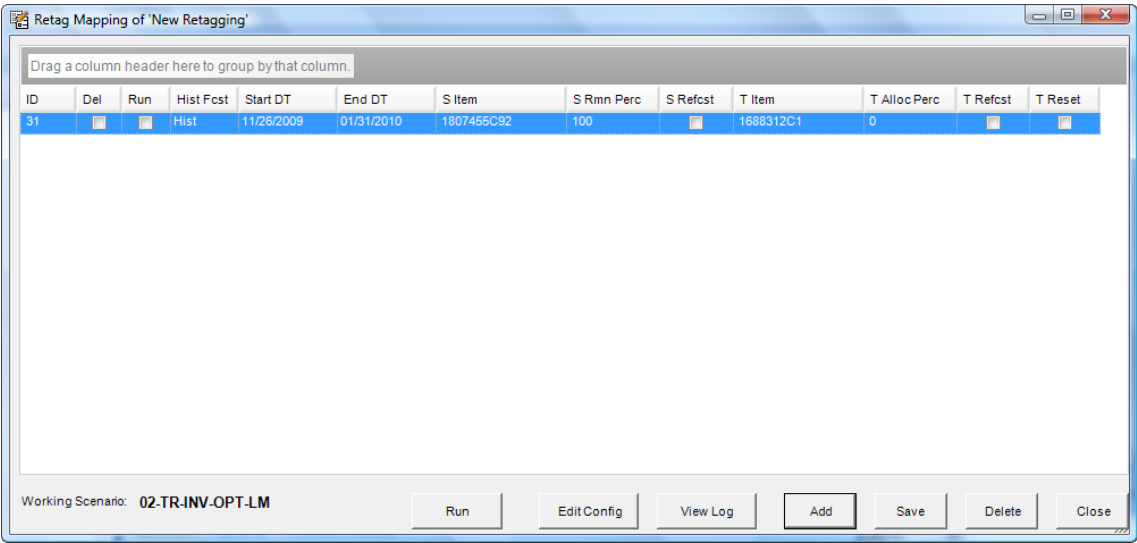
You can drag a heading to the grey area to display only that column. You can also add more columns to group the columns in hierarchal order.

Assign an Existing Retagging

- 1 Select “Assign an Existing Retagging” and then choose the retagging from the drop-down list to the right.



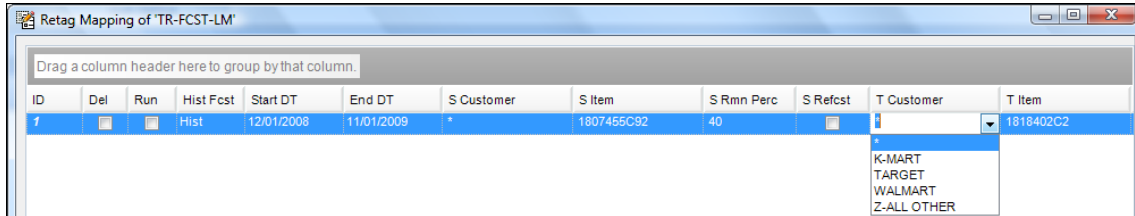
- 2 Click **OK**.
The **Retag Mapping** window displays.



- Note** See Section [Create a New Retagging and Assign it to the Scenario](#) for additional information on each of the features available in the Retag Mapping window.
- 3 Select the “Run” check box for each mapping you want to enable and click the **Run** button at the bottom of the window to run the retag mapping on this Scenario.

Using Universal Matchers (*)

Universal matchers are allowed in place of any of the source or target fields in a retag mapping. This allows multiple series to be retagged with one mapping. The Universal Matcher can match any two series. Here is an example using the Universal Matchers:



Note the asterisks (*) in the Customer fields. This mapping will retag any series with Sku=“1807455C92” to another series with Sku=“1818402C2”, provided Customer matches for those two series. If there is no matching Target Series, the Source Series will not be retagged, unless the CREATE_TARGET option is enabled.

Series ID	SKU	Customer
1000	1807455C92	Big Depot
1001	1807455C92	Q Mart
1002	1807455C92	Leftorium
1003	1818402C2	Big Depot
1004	1818402C2	Q Mart

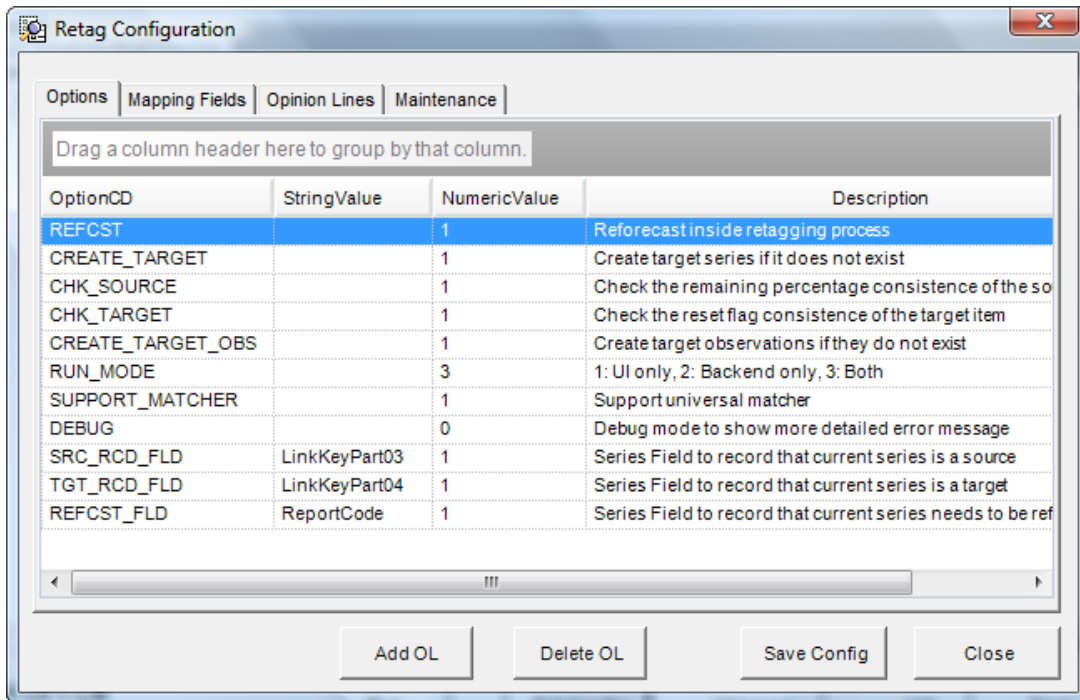
If CREATE_TARGET is disabled, the above example retags SeriesID 1000 to 1003, 1001 to 1004, and does nothing to 1002. If CREATE_TARGET is enabled, a new series is created and the data from the Series 1002 is retagged to it.

Series ID	SKU	Customer
1005	1818402C2	Leftorium

Retag Configuration

On the **Retag Mapping** screen, select the mapping you want to configure and click the **Edit Config** button at the bottom of the window.

The **Retag Configuration** window displays.



Options Tab

On the **Options** tab, you can edit the values for each setting by clicking on the field and entering your changes.

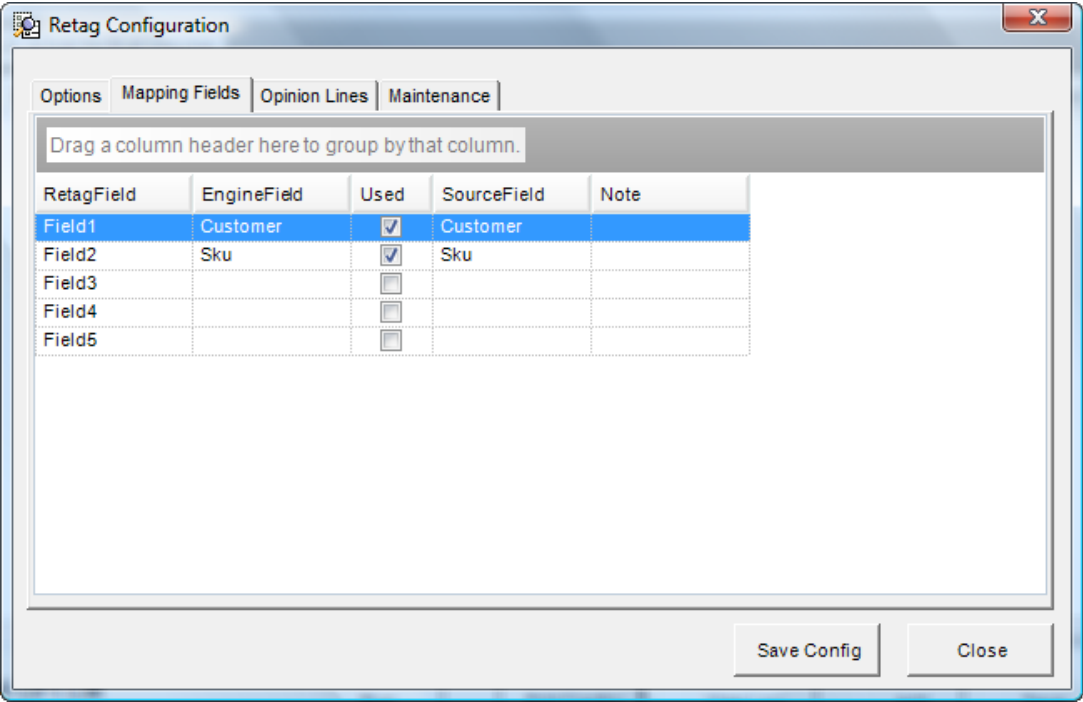
The table below details the fields listed on the Options tab:

Option	Description
REFCST	Reforecast. Set the NumericValue to "1" to enable or "0" to disable. If enabled, the task recalculates the Statistical Forecast for the series that have been affected.
CREATE_TARGET	Create Target. Set the NumericValue to "1" to enable or "0" to disable. If enabled, the task creates the Target Series, if it does not currently exist.
CHK_SOURCE	Check Source Series. Set the NumericValue to "1" to enable or "0" to disable. If enabled, the task will check the Source Series for consistency. For example, if the same series is specified as a source twice, but with different remain percentages, a warning message is generated.
CHK_TARGET	Check Target Series. Set the NumericValue to "1" to enable or "0" to disable. If enabled, the task will check the Target Series for consistency.

Option	Description
CREATE_TARGET_OBS	Create Target Observations. Set the NumericValue to “1” to enable or “0” to disable. If enabled, the task will create observation periods in the Target Series that are present in the source, but not the target. For example, if the Source Series had history going back to 2004-02, but the target only went back to 2004-06, enabling this option would allow the task to create observations in the target for 2004-02 through 2004-05.
RUN_MODE	Run Mode. Set the NumericValue to “1” to allow retagging to run from the User Interface only. Set the NumericValue to “2” if you only want to run retagging from a Custom Task or another backend process. Set the NumericValue to “3” to allow retagging to run from both.
SUPPORT_MATCHER	Support Universal Matcher. Set the NumericValue to “1” to enable the use of the universal matcher (*) operator. Note: Universal matchers are allowed in place of any of the source or target fields of a retag mapping. For more information, see Helpful Hints .
SRC_RCD_FLD	Source Record Field. Set the StringValue to the name of a series attribute. This attribute determines which field the process will use as a flag when indicating which series were used as a source. After retagging, the field specified will contain “Y” if used as a source or “N” if it was not. Note: This field should be set to a series field that is not currently in use or all existing values will be overwritten.
TGT_RCD_FLD	Target Record Field. Set the StringValue to the name of a series attribute. This attribute determines which field the process will use as a flag when indicating which series were used as a target. After retagging, the field specified will contain “Y” if used as a target or “N” if it was not. Note: This field should be set to a series field that is not currently in use or all existing values will be overwritten.
REFCST_FLD	Reforecast Field. Set the StringValue to the name of a series attribute. This attribute determines which field the process will use as a flag when indicating which series needs to be reforecast (if reforecasting is enabled). Note: This field should be set to a series field that is not currently in use or all existing values will be overwritten.

Mapping Fields

The **Mapping Fields** tab contains the key fields used to link the Source Series with the Target Series. You can specify up to five fields. For each field you use, select the **Used** checkbox and enter the field name from the Series table into the **EngineField** field. The **SourceField** and **Note** columns are for reference purposes only. The number of fields selected here determines the number of Source and Target columns on the Retag Mapping window.

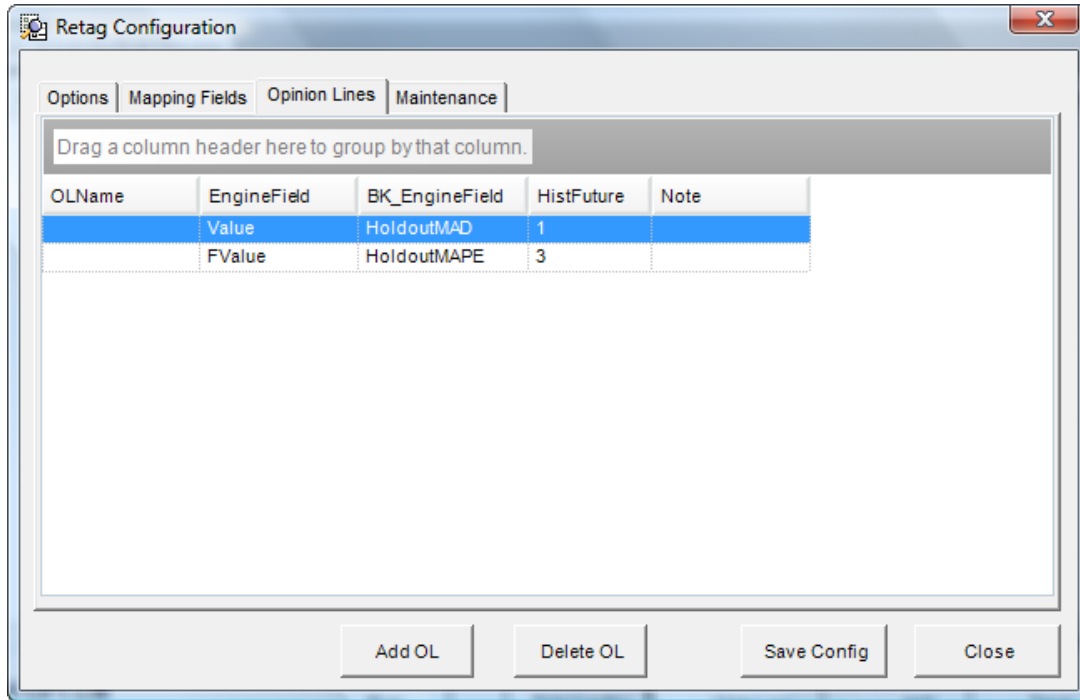


Click the **Save Config** button when finished.

Opinion Lines Tab

The Opinion Lines tab determines which Opinion Lines are affected by retagging. Click the **Add OL** button to add new opinion lines. Enter the name of the field in the Observations table into the **EngineField** field. The **OLName** and **Note** columns are for reference purposes only.

Set **HistFuture** to “1” to affect historical periods only, “2” for forecast periods only, or “3” for both history and forecast. The **BK_EngineField** is used to set a backup field for an Opinion Line for use with the **SaveValues** task on the **Maintenance** tab. To delete an Opinion Line, select the line and click the **Delete OL** button.



The Opinion Lines tab specifies which Opinion Lines are affected by Retagging. The table below details what each column means:

Column	Description
OLName	Used for reference only.
EngineField	Name of the field in the Observations table.
BK_EngineField	Used to set the backup field for an Opinion Line for use the Save Values task on the Maintenance tab.
HistFuture	Used to affect Forecasting periods: • 1 - Historical periods only • 2 - Forecast periods only • 3 - Both Historical and Forecast periods Note: The settings on the Retag Mappings screen will take precedence over these settings.
Note	Used for reference only.

Click the **Save Config** button when finished.

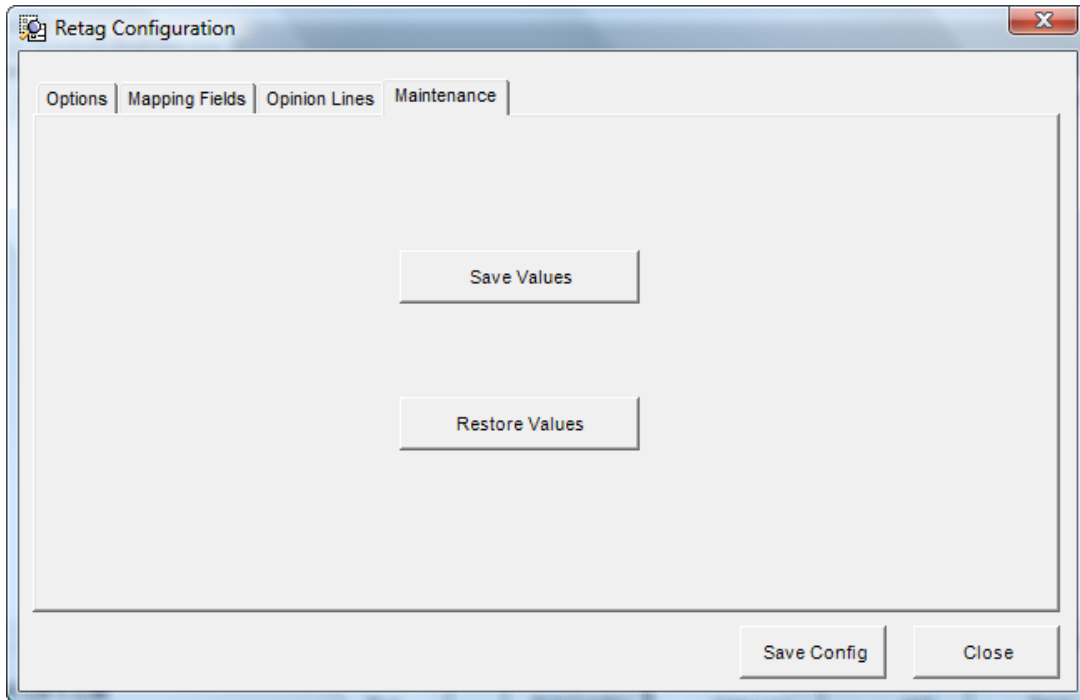
Maintenance Tab

The **Maintenance** tab contains two features: **Save Values** and **Restore Defaults**.

- Click the **Save Values** button to back up the information of the Opinion Lines to their respective backup fields.

The backup fields were set in the **BK_EngineField** column on the Opinion Lines tab.

- Click the **Restore Defaults** button to restore the default configuration for this Retag



Click the **Save Config** button when finished.

Note After saving a Retag configuration, close the Retag window and reopen it to see the changes made to the configuration.

Click the **Close** button to exit the Retag Configuration window.

Helpful Hints

This section provides useful hints when using the Retagging feature in the DME.

- **Run Retagging in the Living Master**
To optimally run the Retagging feature, run it in the Living Master because a new series with Retagging can only be saved in the Living Master. In addition, a New Observation added in History with Retagging can only be saved in the Living Master.
- **Using Target Forecast**
When Retagging the Forecast, do not use Target Forecast. The Target Forecast feature is used for Retagging History.
- **Schedule Retagging in Batch Scheduler**
- **Use Stored Procedure (Usp_Retag_CT).**
- **Create Retagging as Custom Task 1 (i.e., Retag Name, Mapping IDs, Planning Portal Permission).**

Custom Tasks

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Share a Custom Task 168

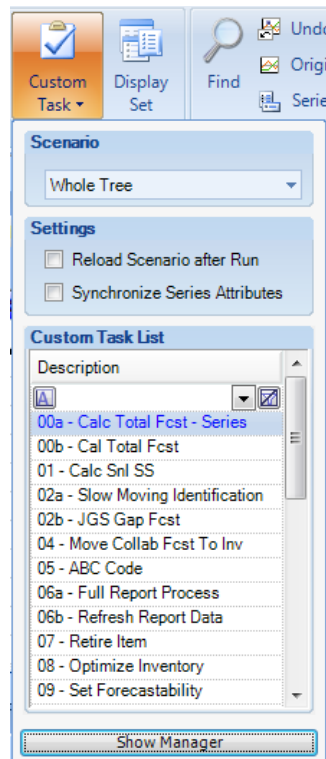
Run Custom Tasks in the Viewer 169

Overview

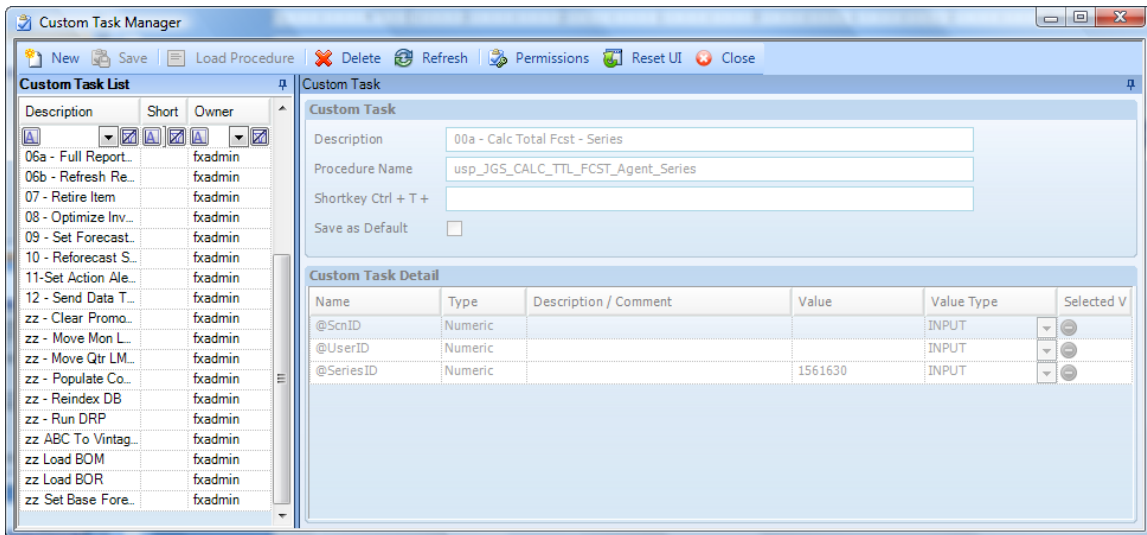
Custom Tasks are special calculations such as an Order Replenishment Calculation. Using the Custom Tasks function in the Admin Tool, you can create, delete, edit and share custom tasks. Custom Tasks can also be created and applied from the **Tools** section of the **Home** ribbon in the Viewer.

Create a Custom Task

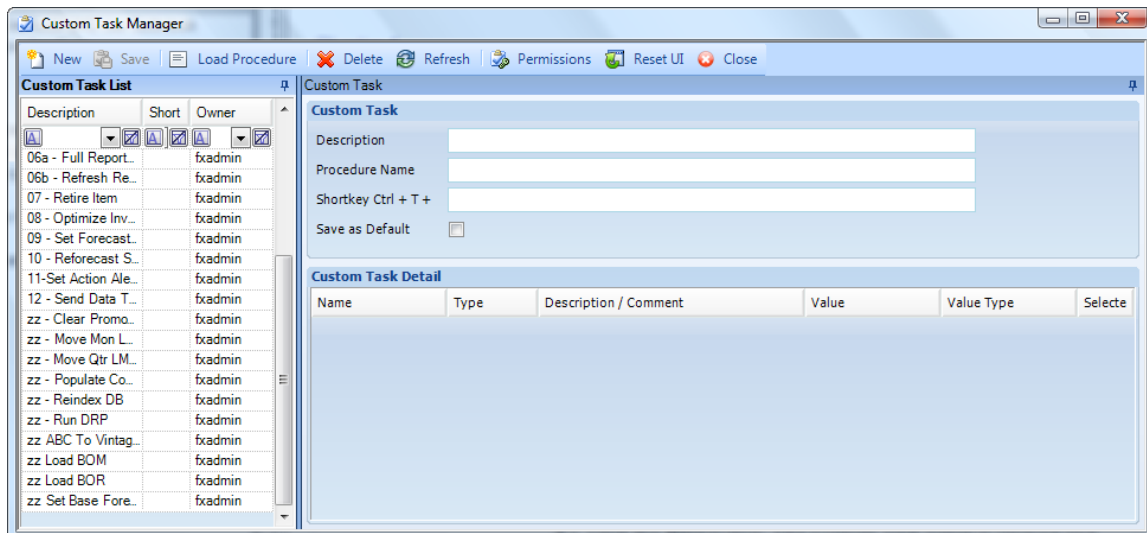
- 1 In the **Tools** section of the **Home** menu, click on the **Custom Task** icon to expand the drop-down menu.



- 2 Click the **Show Manager** button.
The **Custom Task Manager** window displays.



3 Click the **New** button. The Custom Task panel is cleared and activated.



- 4 Enter a **Description** for this task.
- 5 Enter the name of the *stored procedure* you want to use in the **Procedure Name** field.
- 6 The **Shortcut Ctrl + T +** field allows you to create a keyboard shortcut key to apply this task. For example, if you entered C in this field, pressing Ctrl+ T+ C will apply this task.
- 7 Check the **Save as Default** box to enable the parameter values to be used in Hierarchies and Detail Scenarios.
- 8 Click the **Load Procedure** button.

If the stored procedure does not exist in the DME database, an error message displays.

To use a stored procedure in a Custom Task, the following rules apply and all parameter names are case sensitive:

- The first parameter must be “@ScnID” with the **Type** set to “Numeric”. The DME passes the Scenario ID to this parameter automatically when you run the custom task.

- The second parameter must be “@UserID” with the **Type** set to “Numeric”. The DME passes the user ID to this parameter automatically when you run the custom task.
- If you want the DME to pass the series ID of the selected series, add the parameter “@SeriesID” with the **Type** set to “Numeric” in your stored procedure. This parameter can be anywhere in the definition of the stored procedure except the first or second position.
- To run a custom task that only affects the data that is currently displayed in the Viewer, you can use the “@UserSessionID” parameter. For example, you could use this parameter to generate the resulting series from running a filter or an exception.

However, this parameter does require some logic to be included in your Custom task and you must use this new parameter to limit the series used in your custom task to the ones in the dme5SeriesViewer table. For example, performing a JOIN between the Series table and the dme5SeriesViewer table with a WHERE clause of UserSessionID equals @UserSessionID.

- 9 If there are additional parameters in the stored procedure besides @ScnID and @UserID, then you must provide the default values for those parameters.

Name	Type	Description / Comment	Value	Value Type	Selected
@ScnID	Numeric			INPUT	
@UserID	Numeric			INPUT	
@DataFld	String	Fvalue	Fvalue	INPUT	
@ConvFld	String	ConvFactor10	ConvFactor10	INPUT	
@useConv	Boolean	0	0	INPUT	
@FromDate	String	2004-10	2004-10	INPUT	
@ToDate	String	2007-10	2007-10	INPUT	
@GroupBy	String	sku	sku	INPUT	
@APerc	Numeric	70	70	INPUT	

For parameters other than “@ScnID”, “@UserID”, “@SeriesID” and “@UserSessionID”, you can enter a description to explain the parameters, and set initial values and value lists for these parameters.

- 10 The **Value** field indicates how values for parameters are entered when running the custom task.
 - **INPUT** - The user must enter the value.
 - **LIST** - Select a value from a drop-down list of custom options.
 - **QUERY** - Uses a custom command to query the database and generate a list of values to choose from.

If you select INPUT as the Value for a parameter, you must enter the initial value for that parameter.

- 11 If you selected LIST as the Value for a parameter, click the **Edit List** link that displays in the **Selected Value** column.

Custom Task Detail					
Name	Type	Description / Comment	Value	Value Type	Selected V
@ScnID	Numeric			INPUT	
@UserID	Numeric			INPUT	
@Prod_Cycle	String		Prod Cycle	LIST	Edit List
@Svc_Lvl	String		Service Level	LIST	Edit List
@Fcst_Data	String		Forecast	LIST	Edit List
@Hist_Data	String		History	LIST	Edit List
@Update_SS_Calc	String		Safety Stock	LIST	Edit List
@Update_FC_Calc	String		Ttl Fcst Calc	LIST	Edit List
@Update_TL_Calc	String		Ttl SS Calc	LIST	Edit List

- 12 The **Edit Custom Task Value List Query** window displays.

Parameter Name : @Update_TL_Calc

Add Row

Value	Text
X11Irregular	Ttl SS Calc
*	

Ok

- 13 Enter a list of values and text in the **Value** and **Text** columns.
- The Value column contains the values used to pass to the stored procedure when the custom task runs. The Text column contains the labels for their corresponding values, which are displayed in the drop-down list you see when running a custom task.
- 14 Click **Ok**.
- 15 If you selected QUERY as the Value Type for a parameter, click the **Edit List** link that displays in the **Selected Value** column

Custom Task Detail					
Name	Type	Description / Comment	Value	Value Type	Selected Val
@scn	Numeric			INPUT	▼
@usr	Numeric			INPUT	▼
@sd_range	Numeric	Range of standard deviations	2	INPUT	▼
@sd_hit_limit	Numeric	Standard Deviation outside range limit	4	INPUT	▼
@cv_limit	Numeric	Coefficient of Variation limit	0.90	INPUT	▼
@zero_pd_ratio_limit	Numeric	Zero Period ratio limit	0.50	INPUT	▼
@wmape_limit	Numeric	Weighted MAPE limit	0.50	▼ QUERY	▼ Edit Query

The **Edit Custom Task Value List Query** window displays.

Parameter Name :

Query Statement : (Note : Use @UserID to refer to current User,
Use @ScenarioID to refer to current scenario).

SELECT [col1] AS [Value], [col2] AS [Text]
FROM [Table list]
WHERE [Where condition]

/* Insert sentence here */

Ok Cancel

- 16 Enter a query that returns the list of pairs of value and text. Make sure [Value] is unique in the query results.
- 17 Click **Ok**.
- 18 Select a value from the drop-down list or enter a value as the initial value for each parameter except “@ScnID”, “@UserID”, and “@SeriesID”.
- 19 Click **Save Custom Task**.

Edit a Custom Task

- 1 From the **Custom Task Manager** window, select the task you want to modify.
- 2 Click the **Edit** button. The **Custom Task** panel activates and displays the settings for the selected task.

Custom Task

Description: 05 - ABC Code

Procedure Name: USP_ABC_CustomTask

Shortkey Ctrl + T +

Save as Default: ☐

Custom Task Detail

Name	Type	Description / Comment	Value	Value Type	Selected
@ScnID	Numeric			INPUT	
@UserID	Numeric			INPUT	
@DataFld	String	Fvalue	Fvalue	INPUT	
@ConvFld	String	ConvFactor10	ConvFactor10	INPUT	
@useConv	Boolean	0	0	INPUT	
@FromDate	String	2004-10	2004-10	INPUT	
@ToDate	String	2007-10	2007-10	INPUT	
@GroupBy	String	sku	sku	INPUT	
@APerc	Numeric	70	70	INPUT	

3 Modify the *Custom Task* and click **Save**.

Delete a Custom Task

1 From the **Custom Task Manager** window, select the task you want to delete.

Custom Task Manager

New Save Load Procedure Delete Refresh Permissions Reset UI Close

Custom Task List

Description	Short	Owner
06a - Full Report...		fxadmin
06b - Refresh Re...		fxadmin
07 - Retire Item		fxadmin
08 - Optimize Inv...		fxadmin
09 - Set Forecast...		fxadmin
10 - Reforecast S...		fxadmin
11-Set Action Ale...		fxadmin
12 - Send Data T...		fxadmin
zz - Clear Promo...		fxadmin
zz - Move Mon L...		fxadmin
zz - Move Qtr LM...		fxadmin
zz - Populate Co...		fxadmin
zz - Reindex DB		fxadmin
zz - Run DRP		fxadmin
zz ABC To Vintag...		fxadmin
zz Load BOM		fxadmin
zz Load BOR		fxadmin
zz Set Base Fore...		fxadmin

Custom Task

Description: 00a - Calc Total Fcst - Series

Procedure Name: usp_JGS_CALC_TTL_FCST_Agent_Series

Shortkey Ctrl + T +

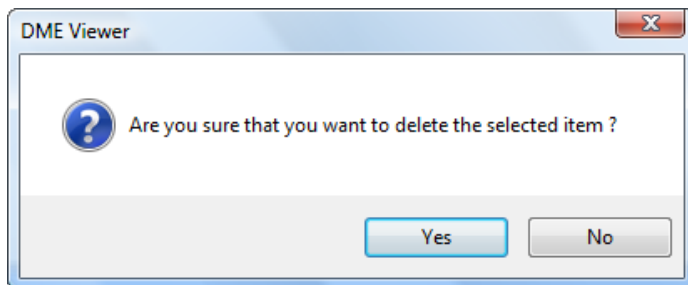
Save as Default: ☐

Custom Task Detail

Name	Type	Description / Comment	Value	Value Type	Selected V
@ScnID	Numeric			INPUT	
@UserID	Numeric			INPUT	
@SeriesID	Numeric		1561630	INPUT	

2 Click the **Delete** button.

3 The confirmation window displays asking you to confirm the deletion.

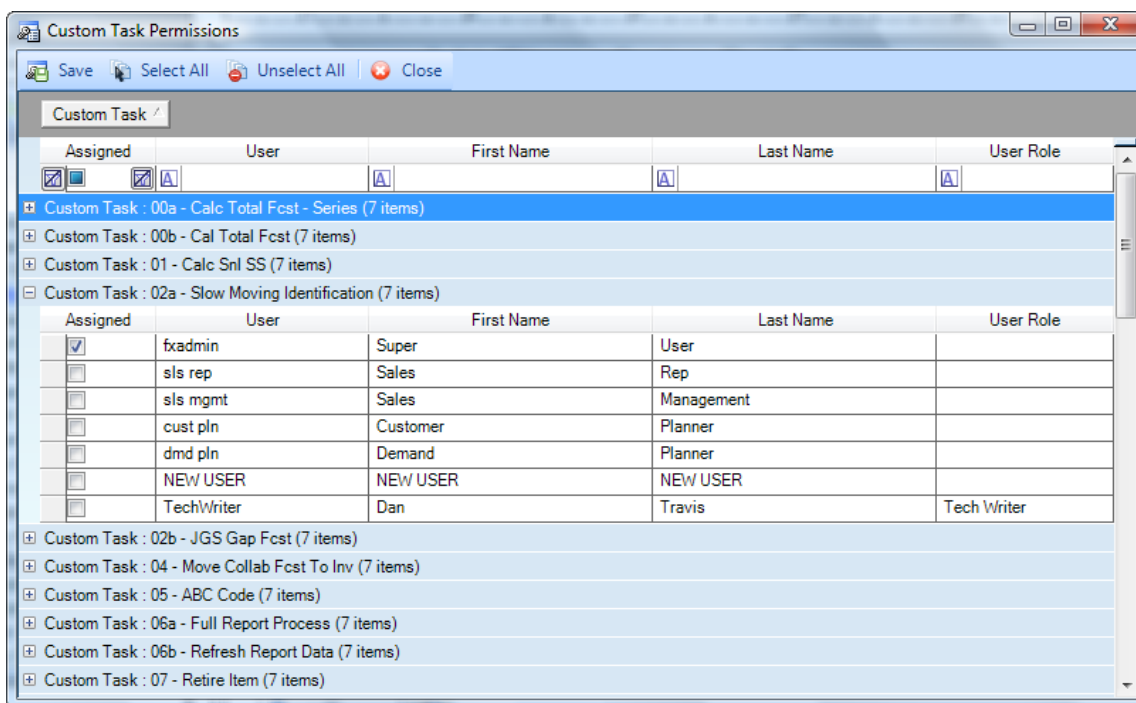


- 4 Click **Yes**.

Share a Custom Task

You can share a Custom Task that you own with other users. Once it is shared, other users can run it in their own Scenario, but they cannot modify the custom task.

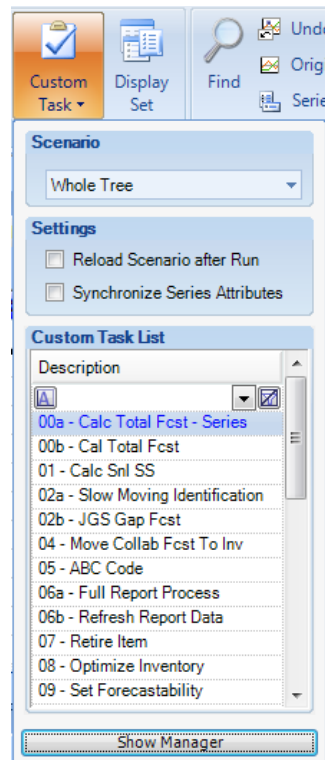
- 1 From the **Custom Task Manager** window, select the task you want to share.
- 2 Click the **Permissions** button. The **Permission Editor** tab displays.



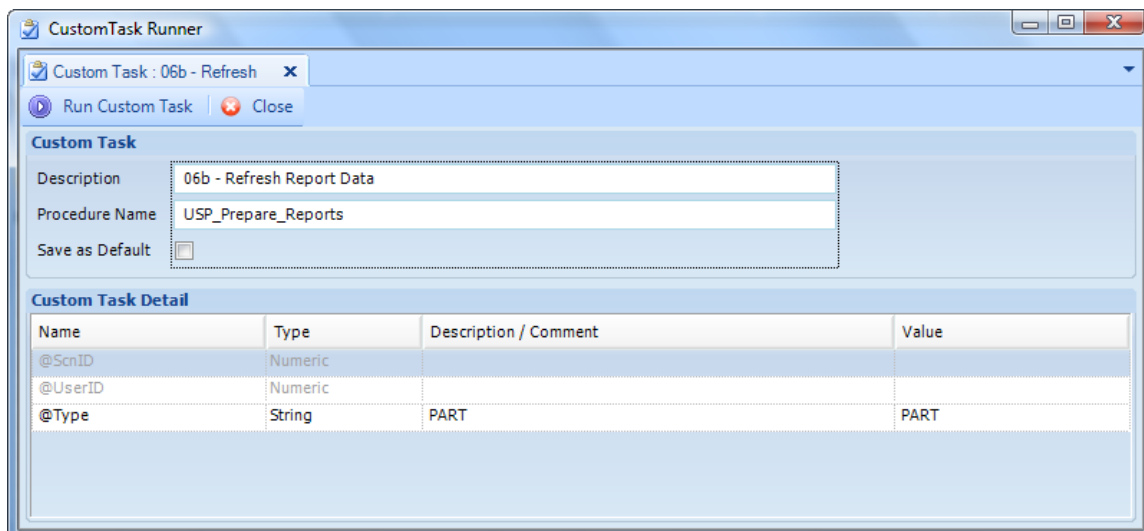
- 3 Use the checkboxes in the **Assigned** column to select the *users you want to share this task with*.
- 4 Click **Save**.

Run Custom Tasks in the Viewer

- 1 In the **Tools** section of the **Home** menu, click on the **Custom Task** icon.



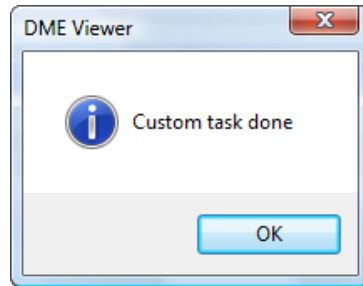
- 2 Select a *custom task* from the drop-down list.
The **Custom Task Runner** displays.



- 3 Make sure a **Value** is entered or selected for each parameter you want to use.
- 4 Click the **Run Custom Task** button.

Note If you want to use these values for other Scenarios, check the **Save as Default** checkbox.

- 5 The DME displays a messaging indicating the task is done.



Hierarchy Management

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Static Hierarchy Management 173

On Fly Hierarchies 185

Overview

Grouping is sometimes referred to as “Multi-level Forecasting” because it provides a powerful mechanism for Forecasting and planning. The process provides the ability to group information that is by itself unstable, but when combined it becomes stable and, therefore, forecastable. This is often seen in seasonal products where individual items appear erratic, but when all of the items at a customer site are taken together, a forecastable pattern can be seen.

Hierarchy Management is a powerful component of the DME that is used for allocating forecast changes among different, aggregating levels. For example, if you have a detailed level for your demand planners and a product family level for your service teams. The demand planners could take the changes that were made at the product family level and group the changes to the detailed level.

In the DME there are three ways to perform grouping.

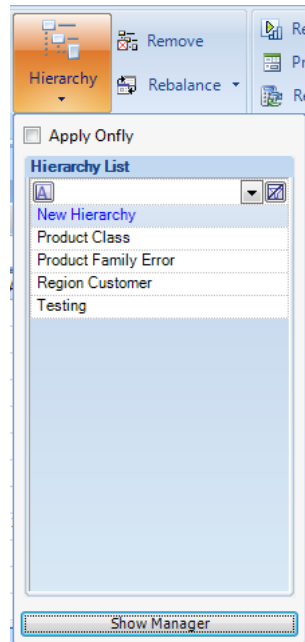
Grouping	Description
Bottom-Up Aggregation	Aggregates the detailed series to higher levels within a business hierarchy.
Top-Down Grouping	Provides the mechanism for rolling detail information up to a higher level to allow the pattern to emerge and then provides the ability to push the results back down on a percentage basis to properly forecast the lowest level of detail. When higher level information is pushed down into the detail, the forecast is said to be developed top down.
Middle-Out Grouping	Used when there is not enough differentiation at the top level and the data may appear to be flat. But when looking at the division level, there may be enough differentiation to build a strong seasonal pattern. In this case, forecasting at the top level would not yield the most accurate results.

The Hierarchy Manager enables you to look at your data at a higher level or even across levels, make changes to the data and submit the changes down to the detail data. The Hierarchy Manager is available in the Viewer and allows users to dynamically create aggregates and roll up, down or across.

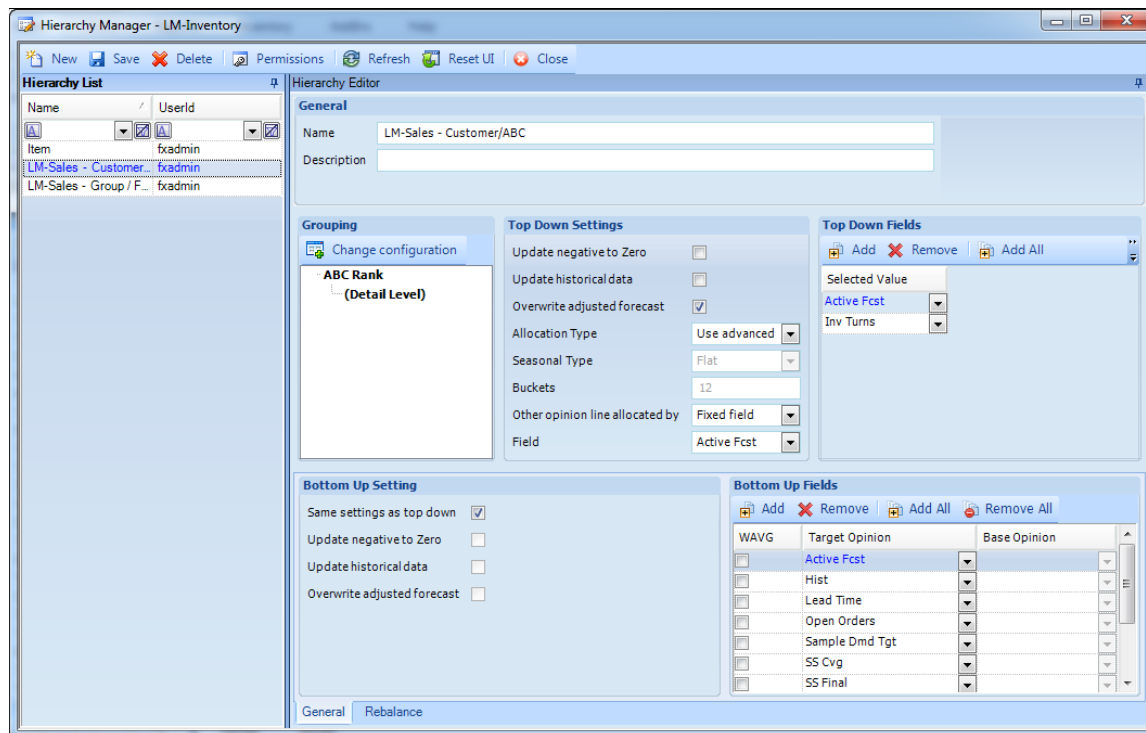
Static Hierarchy Management

Create a Static Hierarchy

- 1 On the **Home** menu, click the **Hierarchy** icon to open the drop-down.



- 2 Click the **Show Manager** button at the bottom of the drop-down.
The **Hierarchy Manager** window displays.



The following table details how each button is used.

Button	Description
New	Create a new static hierarchy.
Save	Saves any changes to the current hierarchy.
Delete	Erase a static hierarchy.
Refresh	Refresh the manager to show new hierarchies.
Reset UI	Returns the interface to its original settings.
Close	Closes the Hierarchy Manager window.

- Click the **New** button. The fields in the **Hierarchy Editor** are cleared and reset.

General

- Enter a **name** for the hierarchy in the **Name** text box

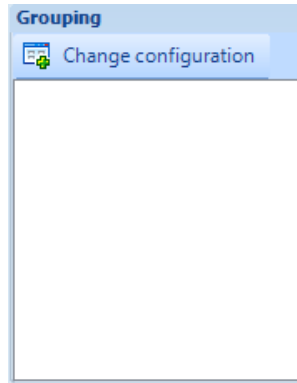
- Enter a brief **Description** of the hierarchy in the text field.
- Check the **Sharable** checkbox if you would like other users to be able use this hierarchy.

Note Shared hierarchies are available to all users and do not have to be assigned to individual users.

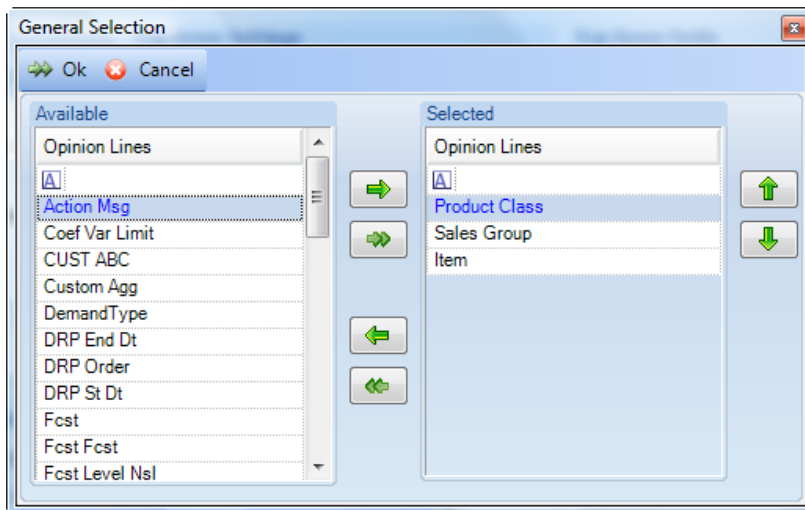
- 4 Click the **Save** button.

Grouping

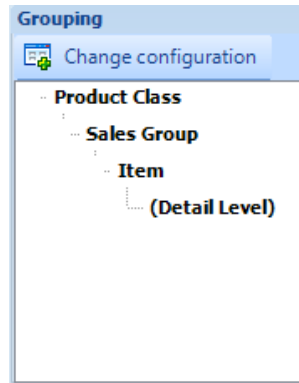
- 1 In the **Grouping Section**, click the **Change Configuration** button.



The **General Selection** window displays.



- 2 Select the opinion lines you want to display from the **Available** column and use the arrow buttons in the middle to move them to the **Selected** column.
The double arrow buttons allow you to select or remove all lines.
- 3 You can also select lines and use the **Up** and **Down** arrow buttons at the far right to change the order in which the lines are displayed.
- 4 Click **Ok**.
The Grouping section displays your hierarchy selections.



Top Down Settings

- 1 In the **Top Down Settings** section, you can configure the following settings:

Update Negative to Zero, Update Historical Data, and Overwrite Adjusted Forecast are advanced features and have the following effects on the forecast.

Checkbox	Description
Update Negative to Zero	Any negative values in the Top Down Fields are set to zero.
Update Historical Data	Only future values are updated.
Overwrite Adjusted Forecast	If checked, any manual adjustments made to the forecast are affected. If unchecked, the manual adjustments remain.

- 2 Select the **Allocation Type** to be used from the following options:

Option	Description
Forecast	This option uses future data to allocate values throughout the hierarchy.
	If this option is selected you can also choose between the two Seasonal options available.

Option	Description
Historical	This option uses historical data to allocate values throughout the hierarchy.
	If this option is selected, you can choose between two seasonal options to allocate values: • Flat: This option uses a specific number of Periods of data for the allocation. • Seasonal: This option uses a specific number of Buckets of data for the allocation.
Use Advanced Settings	Selecting this option will use the configuration from the remaining Top Down fields for the allocation. When this option is selected, the Allocation Basic Settings field will be disabled.

- 3 Use the **Other Opinion Line Allocated By** field to select one of the following:

Other Opinion Line	Effect	Example
Fixed Field	The weight for fields other than Value and FValue, utilizes the field selected in the drop-down list.	
Itself	Additional fields, other than Value and FValue, will utilize their own weights.	For example if UserValue01 is added to the list. The weight for UserValue01 uses UserValue01 as opposed to the fixed fields (Value and FValue) weights.

Top Down Fields

- 4 In the **Top Down Fields** section, click the **Add** button make changes to the list. A new field will be added to the list.

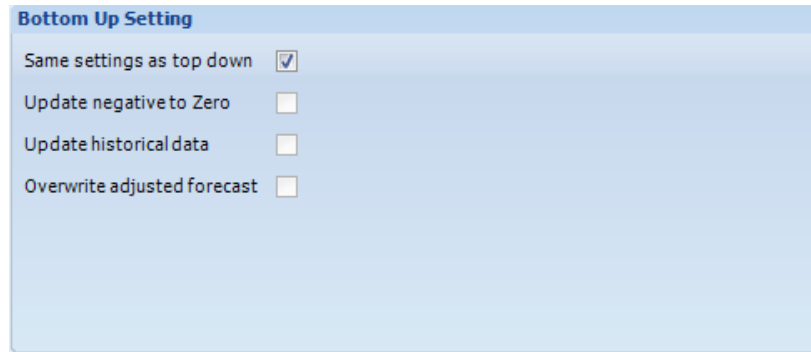


- 5 Use the drop-down list to select the fields to be added.
- 6 To delete a field from the list, select it and click **Remove**.

You can use the **Add All** and **Remove All** buttons to add all available fields or remove all selected fields.

Bottom Up Setting

- 1 In the **Bottom Up Setting** section, you can identify which fields that are updated during rebalancing.



Bottom Up Setting

Same settings as top down ☒

Update negative to Zero ☐

Update historical data ☐

Overwrite adjusted forecast ☐

- 2 Check **Same Settings as Top Down** box.

When this setting is selected, DME uses the settings you chose in the **Top Down Settings** section for “Update Negative to Zero”, “Update Historical Data”, and “Overwrite Adjusted Forecast”.

In addition, series marked as “Do not Forecast” or “Forecast Completed” are not updated.

Uncheck the **Same Settings as Top Down** text box to select different settings than in the Top Down Settings.

- 3 Use the **Update Negative to Zero**, **Update Historical Data**, and **Overwrite Adjusted Forecast** settings to have the following effects on the forecast:

Checkbox	Description
Update Negative to Zero	Any negative values in the Bottom Up Fields are set to zero.
Update Historical Data	If unchecked, only future values are updated.
Overwrite Adjusted Forecast	If checked, any manual adjustments made to the forecast are affected. If unchecked, the manual adjustments remain.

Bottom Up Fields

- 1 In the **Bottom Up Fields** section, click the **Add** button make changes to the list. A new field will be added to the list.

WAVG	Target Opinion	Base Opinion
☐	Adj Hist	
☐	Stat Fcst	

- 2 Use the drop-down list to select the fields to be added.
- 3 To delete a field from the list, select it and click the **Remove** button. You can use the **Add All** and **Remove All** buttons to add all available fields or remove all selected fields.

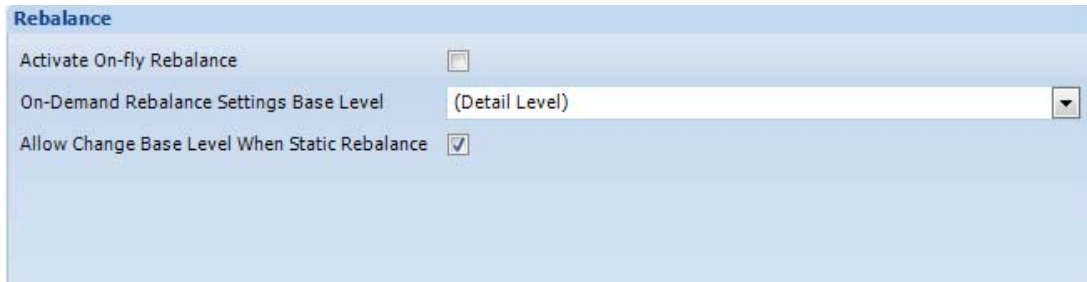
Rebalance Tab

At the bottom the Hierarchy Manager screen, you will notice two tabs: **General** and **Rebalance**. If the General tab is selected, the Bottom Up Settings and Bottom Up Fields are displayed. If the Rebalance tab is selected, the Rebalance section is displayed.

- 1 Click the **Rebalance** tab.

2 The DME supports two rebalancing methods:

- **On-Fly** – rebalancing is done immediately following any adjustments. Selecting the **Activate On-Fly Rebalance** check box will disable the On Demand fields.
- **On-Demand** – users can rebalance by clicking the **Rebalance** button in the **Hierarchy Section** of the **Home** menu.



The screenshot shows a window titled "Rebalance". It contains three settings:

- Activate On-fly Rebalance**: An unchecked checkbox.
- On-Demand Rebalance Settings Base Level**: A dropdown menu currently showing "(Detail Level)".
- Allow Change Base Level When Static Rebalance**: A checked checkbox.

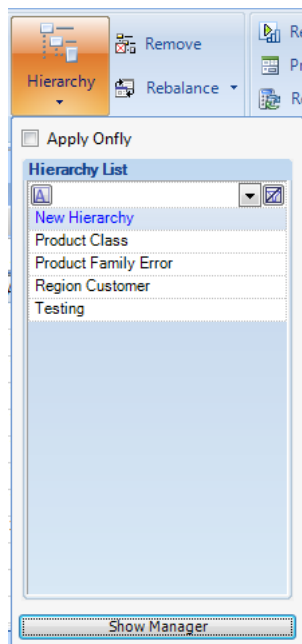
3 Select the **Allow Change Base Level When Static Rebalance** check box to rebalance with the lowest level of detail.

4 Click the **Save** button.

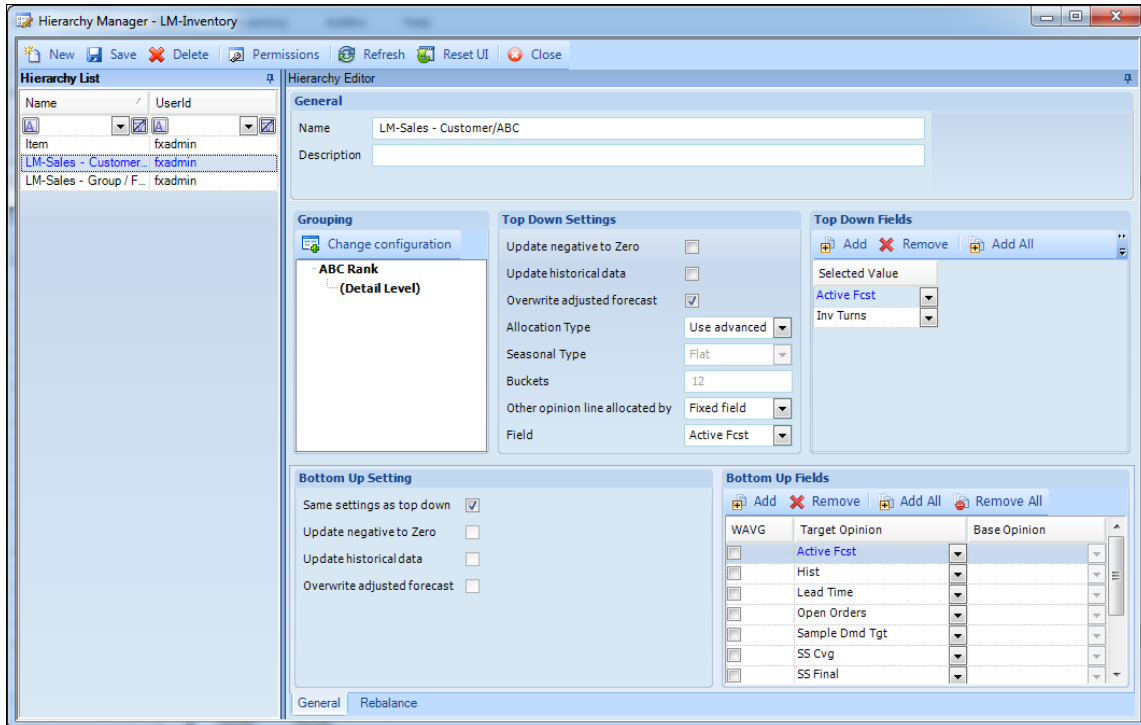
Edit a Hierarchy

You can edit a hierarchy at any time.

1 On the **Home** menu, click the **Hierarchy** icon to open the drop-down.



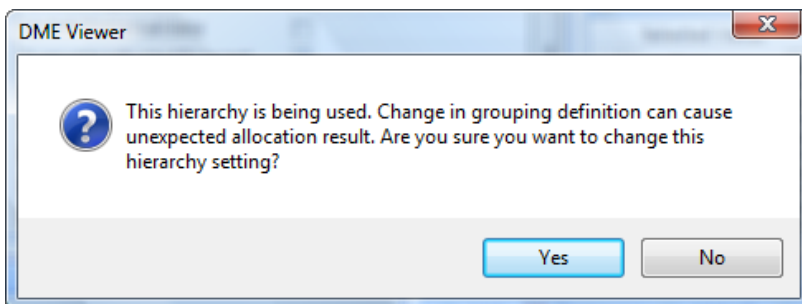
2 Click the **Show Manager** button at the bottom of the drop-down.
The **Hierarchy Manager** window displays.



3 Select the Hierarchy to update in the Hierarchy List pane and the details for the selected hierarchy display in the Hierarchy Editor.

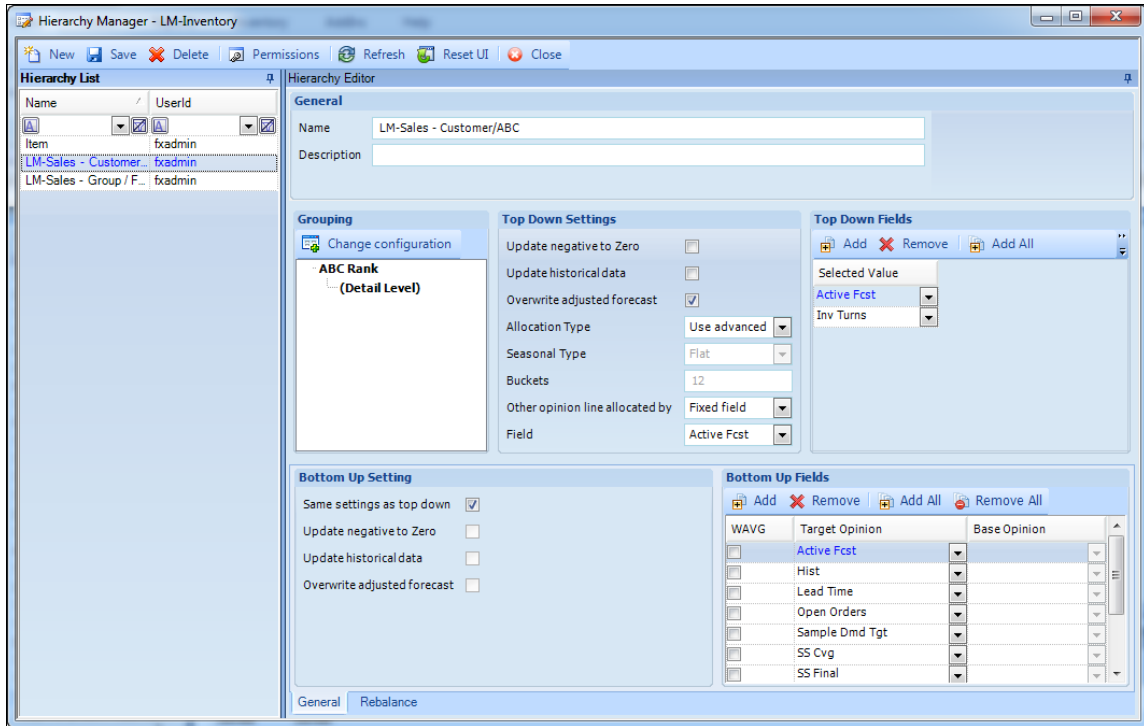
4 Make any necessary changes to the hierarchy and click **Save**.

If the hierarchy has been applied to a Scenario, and you change the Grouping, a confirmation window displays.

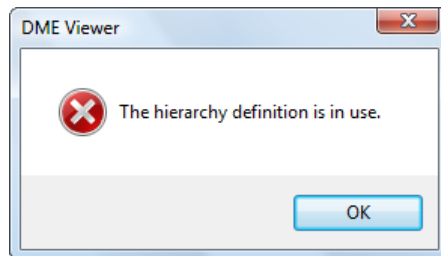


Delete a Hierarchy

- 1 Select the *hierarchy* you want to delete and click **Delete**.



If the hierarchy was applied to a Scenario, the following message displays.

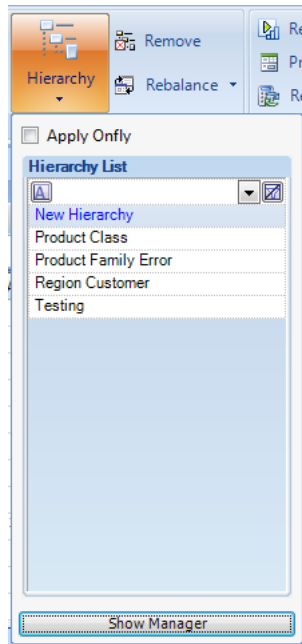


- 2 Click **OK**. The hierarchy is not deleted from the hierarchy list.

Note To delete a hierarchy in use, you must remove it first. See Section [Remove a Hierarchy](#) for information on how to remove a hierarchy.

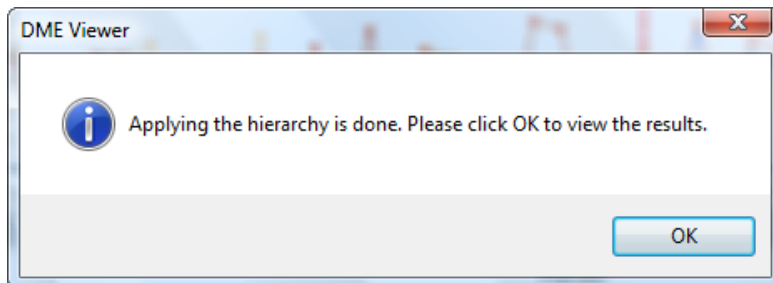
Apply a Hierarchy to a Scenario

- 1 On the **Home** menu, click the **Hierarchy** icon to open the drop-down.



- 2 Select the *hierarchy* you want to apply.

After the Viewer applies the hierarchy to the Scenario, the following message displays:



- 3 Click **OK**.

The tree structure is displayed in the Viewer. After applying the hierarchy, new Scenarios are created automatically to hold aggregated series.

There is one Scenario for each level except for the detail level. The new Scenario names are the name of the Scenario appended by “–”, then appended by the level number.

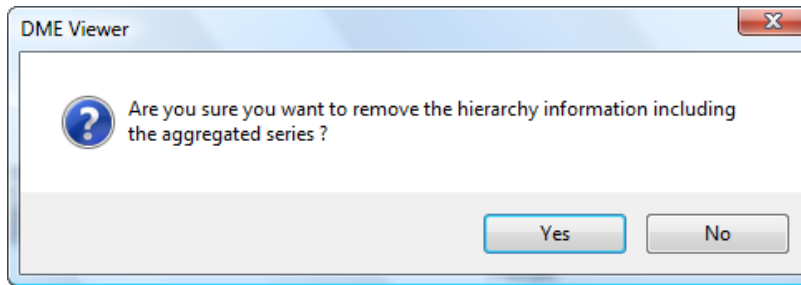
For example, the name of the detail Scenario is “ABC”. The applied hierarchy has three levels, detail level, level 1, and level 2 (its grouping has two fields).

After applying the hierarchy, the Scenario names are the following:

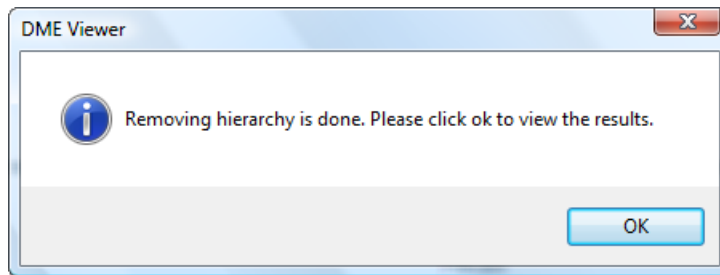
- Scenario ABC is the detail level
- Level 1 Scenario is ABC – 1.
- Level 2 Scenario is ABC – 2.

Remove a Hierarchy

- 1 Click the **Remove** button in the **Hierarchy** section of the **Home** tab in the ribbon.
The following message displays.



- 2 Click **Yes**.
The following message displays when the operation is done



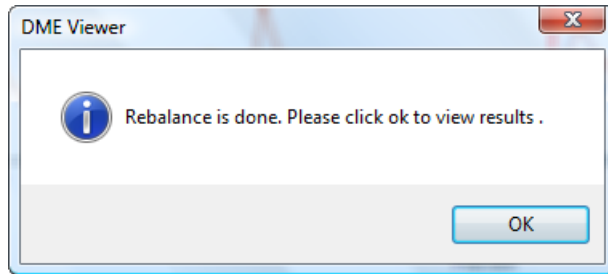
- 3 Click **OK**.
The tree structure is removed. After removing the hierarchy, the created series are deleted, and the detail series remains.

Make Adjustments to the Forecast

Following any adjustments, if the hierarchy applied to the Scenario has “Activate On-Fly Rebalance” checked, the new values of the series are grouped to series at other levels when the series is saved (explicitly or by moving to other series), and the base level is the level the series belongs to. Otherwise, the new values will not be grouped until you rebalance the tree explicitly.

Rebalance a Hierarchy

- 1 Open a Scenario that has a hierarchy applied.
- 2 Click the **Rebalance** button in the **Hierarchy** menu in the ribbon.
- 3 When the hierarchy is removed, the following window displays:



4 Click **OK**.

On Fly Hierarchies

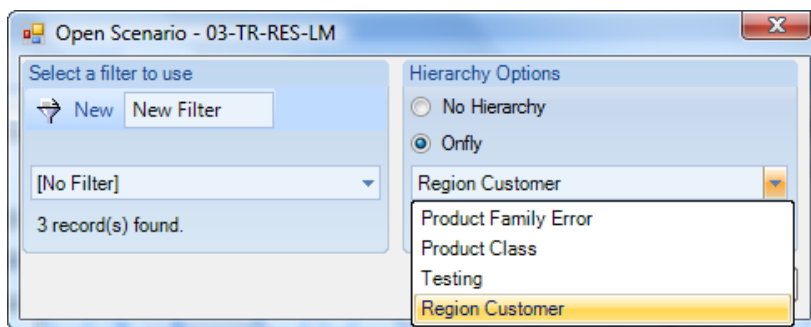
On Fly hierarchies are different from Static hierarchies and offer the user some key advantages:

- Improved performance when applying the hierarchy to a scenario. Opening a scenario with an On-Fly hierarchy is much faster than applying a Static hierarchy.
- Ability to apply different On-Fly hierarchies to the same scenario without having to remove the previous hierarchy, which involves opening a scenario more than once.

Using On Fly Hierarchies

On-Fly hierarchies use the same structure as Static hierarchies. To open a scenario with an On-Fly hierarchy, you must first create a new Static hierarchy structure using the Hierarchy Manager. To learn how to create a hierarchy, please see [Static Hierarchy Management](#). After creating the hierarchy structure, you can make this new hierarchy available to other users by opening a scenario with the On-Fly hierarchy at least once. After it has been used one time, the hierarchy will be available to other users.

After the hierarchy has been created, the next time you log in and open the scenario, you can select the hierarchies created from the drop-down list on the Open Scenario screen.



You can also view Shared Hierarchies. Please see [General](#) to learn how to share hierarchies.

When using an On-Fly hierarchy, the aggregated series are only saved temporarily by the system because the user has requested the On-Fly hierarchy. In the same way, the data for those aggregated series is only retrieved once a user clicks on the series description. Series that have been calculated will display with the Description field in a bold font.

The only other setting regarding On-Fly hierarchies is the “Recreate Base” option. The first time an On-Fly hierarchy is opened, this option is used regardless if it has been selected or not. This option is used by the DME to scan the items in a Scenario and classify the items based on the hierarchy. The Recreate Base option can only be used by the hierarchy owner

For example, if you created new items in a scenario and opened the scenario with an On-Fly hierarchy, the new items may not be included in the tree structure of the scenario until you reopen it using the Recreate Base option. The same applies if you have changed the Attributes that are used in the hierarchy definition for an item.

The Recreate Base option should be enabled when reloading the Series in the scenario on which the On-Fly hierarchy is going to be applied. This can occur when running a Reforecast from either DME or the Batch Scheduler.

Using On-Fly Hierarchies Without On-Fly Rebalance

When a hierarchy definition does not use the “On-Fly rebalance” option, the user must rebalance the changes they make on the hierarchy. Since aggregated series are not saved to the database, changes in the aggregated levels are lost if you don’t save them and manually rebalance your hierarchy.

Another option is to make your changes to the desired level of the hierarchy and press the refresh key (F5). If there are unsaved changes, you will be prompted to save. You can then rebalance your hierarchy to apply those changes. This message will also be displayed when you try to close a scenario with changes to the aggregate level series.

Limitations with On-Fly hierarchies

On-Fly hierarchies are available only if your DME database was installed in a SQL 2005 DB engine. If your database is created in a prior version, this option will be disabled.

While using On-Fly hierarchies in the Viewer, there are certain limitations on aggregated series. Any operation can be performed on the detail level series, but since aggregated series are not saved to the database, the following operations cannot be performed:

- Run DRP
- Run Retagging
- Apply events
- Run Exceptions
- Apply a lifecycle profile
- Run an ABC analysis or custom task
- Apply a conversion factor
- When a scenario is opened with a hierarchy in any View except Units, the scenario is changed to a Read Only mode.
- The “Allow Change Base Level When Static Rebalance” option is ignored in On-Fly hierarchies. You will be prompted to select the level at which to rebalance.
- The following options are ignored regardless of what was selected in the hierarchy definition:
 - **Bottom Up** – Update Historical Data; the system will assume it is always unchecked.

- **Bottom Up** – Overwrite Adjusted Forecast; the system will assume it is checked.
 - **Top Down** – Allocation Type; the system always uses the “Same Settings as Top Down” option, which means all seasonal options are ignored.
 - **Top Down** – Overwrite Adjusted Forecast; the system will always assume this as checked, so adjusted forecast will always be overwritten.
- Since aggregated series are not saved to the database, they cannot be cloned, renamed, copied, or moved.

Chapter 16

ABC Analysis

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ABC Template Management 191

Overview

ABC Analysis enables you to group a set of data into buckets based on the value of the Forecasted items. After the items are tagged and coded, you can filter on the items to focus on those that have the largest impact on the business. The following diagram depicts the methodology for ABC coding items based on Forecast error.

Date	Shirts		Pants		Shoes	
	Actual	Forecast	Actual	Forecast	Actual	Forecast
2003-01	40	44	51	49	1,743	1,764
2003-02	60	62	91	89	1,863	1,868
2003-03	20	21	39	39	1,394	1,447
2003-04	10	10	10	10	14	14
2003-05	10	11	17	16	65	67
2003-06	40	42	64	58	3,695	3,849
2003-07	50	54	69	68	390	396
2003-08	70	75	94	89	1,859	1,884
2003-09	80	95	96	87	6,721	6,752
2003-10	80	84	115	104	1,531	1,552
2003-11	120	127	124	115	2,907	2,960
2003-12	50	59	78	78	6,065	6,085
Total	630	684	849	802	28,247	28,639
Error		(54)		47		(391)
Abs Pct Error		8.53%		5.53%		1.39%
Ranking On Error		B		C		A
Ranking On Abs Pct Error		A		B		C

As depicted in this example, the method by which the ABC Analysis assigns its values impacts the items that would receive the largest amount of review.

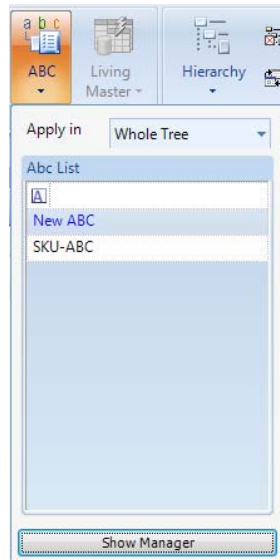
You can view the categorized data by total value and percentage of the total value over a specified time. For example, the items can be categorized as the top percentage of products or A-items, the second percentage of items or B-items, the third percentage of items or C-items, or the bottom-dollar percentage.

The result of the ABC calculation is a field populated with the appropriate ranking; the user may create a filter in order to focus on a particular group of ranked products that require the most attention.

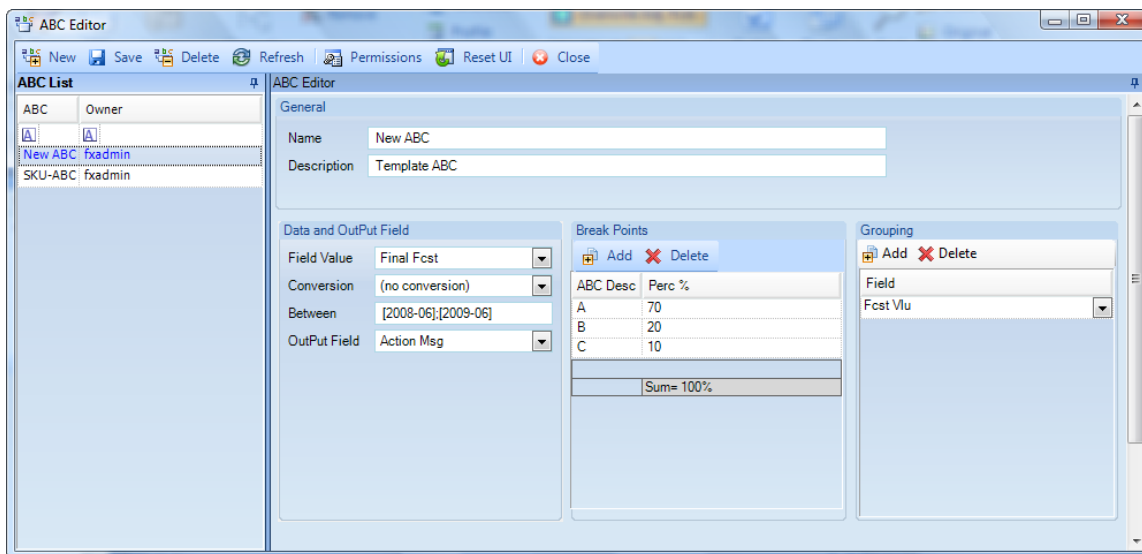
ABC Template Management

Create an ABC Template

- 1 On the **Home** menu, click the **ABC** icon to open the drop-down.



- 2 Click the **Show Manager** button.
The **ABC Manager** window displays.



- 3 Click the **New** button. A new template is added to the **ABC List** and the fields in the **ABC Editor** are cleared

The screenshot shows the ABC Editor window with the following sections:

- General:** Fields for Name and Description.
- Data and OutPut Field:**
 - Field Value: Act Dmd
 - Conversion: (no conversion)
 - Between: (empty)
 - OutPut Field: Action Msg
- Break Points:**

ABC Desc	Perc %
A	70
B	20
C	10
Sum= 100%	
- Grouping:** Field (empty)

- 4 Enter a **Name** and **Description** for this template in the respective text boxes.
 - 5 In the **Data and OutPut Field** section, select a data field from the **Field Value** drop-down list. This field is the basis of the ABC calculation.
 - 6 Select a *conversion* (or *no conversion*) from the **Conversion** drop-down list. If conversion factors are loaded (i.e., price, units, tons, pallets or others), select the appropriate Opinion Line.
- Note** If you select a conversion factor other than (no conversion), the ABC template uses the value (Data Field * Conversion) to do the ABC calculation instead of the value in Data Field.
- 7 Click the **Between** field to open the date range pop-up and select the **From** and **To** dates from the respective drop-down lists to create a date range.

The screenshot shows the Date Range pop-up window with the following fields:

- Date Range Type:** Fixed
- From:** 2008-06
- To:** 2009-06

- 8 Select the **Output Field** from the drop-down list.

- 9 In the **Break Points** section, make any necessary changes to default values.

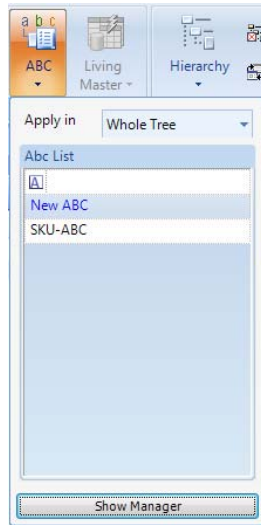
ABC Desc	Perc %
A	70
B	20
C	10
Sum= 100%	

- 10 Click the **Add** button to add another new group and percentage.
- 11 Enter the *group name* in the **ABC Desc** textbox.
- 12 Enter a *percentage* for each group in the **Perc %** textbox.
- Note** The total of all percentages entered in the Perc % fields must equal 100%.
- 13 In the **Grouping** section, click the **Add** button to insert a new row in the grid below.
- 14 Select the field you want to use to group data in analysis from the drop-down list.

- 15 Repeat these steps to add more fields for grouping.
- Note** The DME uses these fields as a group and uses each group as a unit in the analysis. All series belonging to the same group will have the same ABC analysis category. For example, if the fields selected from the Grouping drop-down list are “Region” and “Customer”, each Region-Customer combination is given a ranking.
- 16 Click **Save** to save this template.

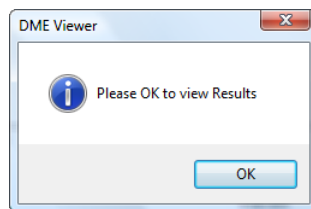
Run ABC Template

- 1 On the **Home** menu, click the **ABC** icon to open the drop-down.



- 2 From the **Apply In** drop-down, select “*Whole Tree*” to perform the ABC analysis on every Scenario (levels) in the currently applied hierarchy. The “*Whole Tree*” option is disabled if there is not a hierarchy applied to current Scenario or if the Scenario has an On-Fly hierarchy applied.
- 3 You can also use the **Apply In** drop-down to select an individual *scenario* and only apply the ABC analysis to that one Scenario.
- 4 Select the *template* from the **ABC List** drop-down.

When the ABC analysis finishes, the following message displays.



- 5 Click **OK**.

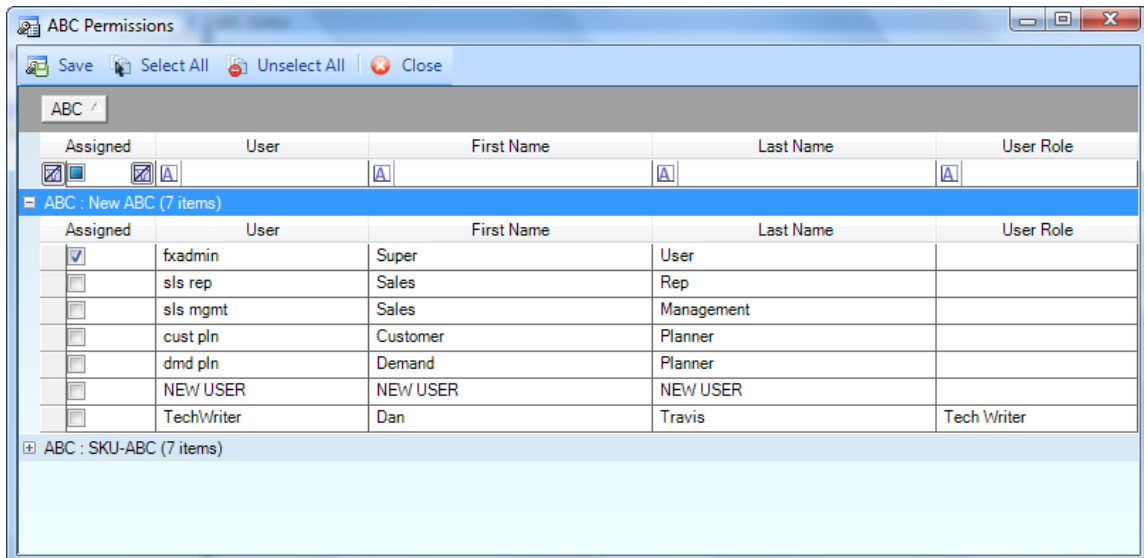
Note When an ABC analysis is run, the current Data Permissions and applied filters are taken into consideration.

Share an ABC Template

After an ABC template is created, you can share it with other users, allowing them apply a similar ranking to their data.

- 1 From the **ABC Manager** window, select the template you want to share and click the **Permissions** button.

The **ABC Permissions** window displays.



- 2 Use the check boxes in the **Assigned** column to select users with whom you want to share the *template*.
Use the **Select All** and the **Unselect All** to check or uncheck all the checkboxes.
- 3 Click **Save**. The selected users can now view the template and apply it to their data.
- 4 Click **Close** to exit the ABC Permissions window.

Scenario Data Transfer

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<i>Calendar Management</i>	<i>198</i>
<i>Calendar Conversion</i>	<i>201</i>
<i>Series Mapping</i>	<i>203</i>
<i>Scenario Data Transfer</i>	<i>205</i>
<i>Calendar Limitations</i>	<i>207</i>

Overview

The Scenario Data Transfer functionality allows you to transfer data between two scenarios, such as from a monthly scenario to a weekly scenario. While forecasts in DME are often configured in monthly buckets at the product or product/customer level, the demand plan in DRP needs to be more granular with respect to both time and location or other attributes. As another example, you may want to see your monthly forecast scenario in weeks or aggregate into quarters or years.

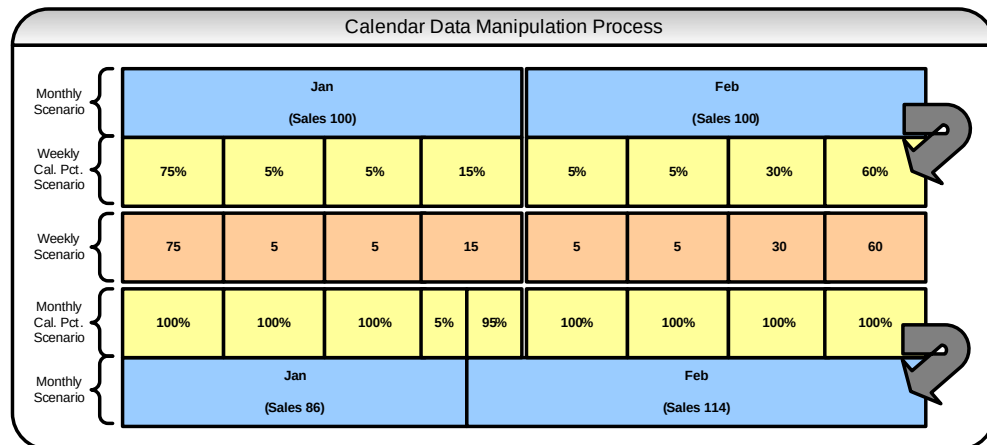
The location aspect is handled through a mapping of attributes including an allocation option. The time aspect will be handled through Calendar definition and configuration that will allow the user to:

- 1 View system-calculated splits for the demand to translate from months to weeks.
- 2 Override values and save as a new calendar.
- 3 Create or import user-defined calendars.
- 4 Assign calendars to products or other hierarchy level with effective dates.

These configuration items will be features in DME Admin. The user should have the option to run them interactively from the Viewer and also from Batch Scheduler.

Calendar Management

Calendars provide the ability to view information from any time scale and make updates, if necessary. It is possible to collect data at multiple levels of time detail, convert them all to a common base so that the information can be merged together to form a consistent whole. The following diagram depicts the relationships that can be established using a calendar moving from one time scale to another.



In this example, you are placing demand in the appropriate period based on percentage-based and calendar-based profiles.

The Calendar feature enables users to convert data into different time periods. The DME supports any calendar transformation, but the default time levels are:

- Monthly
- Fiscal Monthly

- Weekly 7 Days
- Weekly 5 Days
- Quarterly
- Imported
- Weekly 445

The analysis of the same data at different times exists in many Demand Planning processes. For example, Promotion is usually weekly-based. However, the most accurate Forecasting level is monthly, and the financial Forecasting level is quarterly.

In the DME, each Scenario is set at a specific time level (i.e., weekly or monthly). In order to view the data at different time-levels, the Calendar feature transforms the specific time-level from one Scenario to another Scenario with the desired time level. In addition to the source and target Scenarios, a Calendar Scenario is used to hold the mapping information between the two time levels. The following figure depicts the relationship among the three Scenarios using weekly and monthly Scenarios as an example.

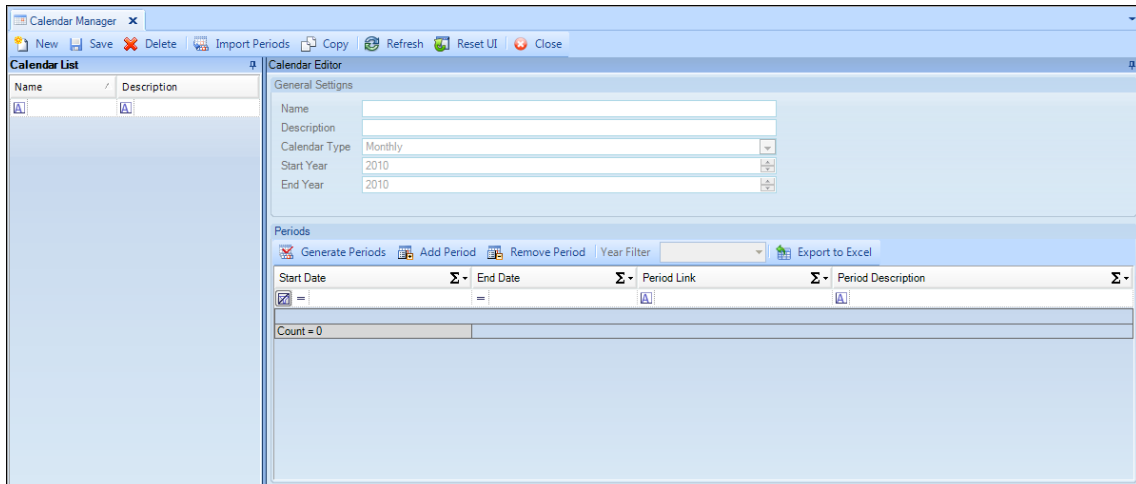
Note The same Calendar Scenario may be used in two transformation directions; weekly to monthly and monthly to weekly.



The time level information is defined in the Calendar Configuration.

Create a Calendar

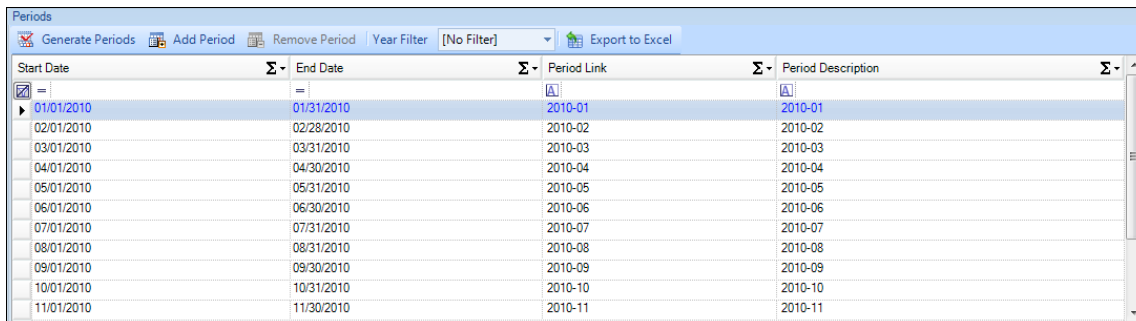
- 1 Click on the **Calendar** tab.
- 2 From the toolbar, click the **Calendar** button.
The Calendar Manager screen displays



- 3 Click the **New** button. The fields in the **Calendar Editor** panel at the right become active.
- 4 In the General Settings section enter a **Name** and **Description** for the calendar being created.

- 5 Use the Calendar Type drop-down to select the structure of the calendar you are creating.

- 6 Use the Start Year and End Year fields to set the date range for the calendar.
- 7 In the Periods panel, click the **Generate Periods** button. DME will use the selected Calendar Type and the date range selected to determine the number of periods to create.
In the example below, the Periods created are for a Monthly calendar in the year 2010.



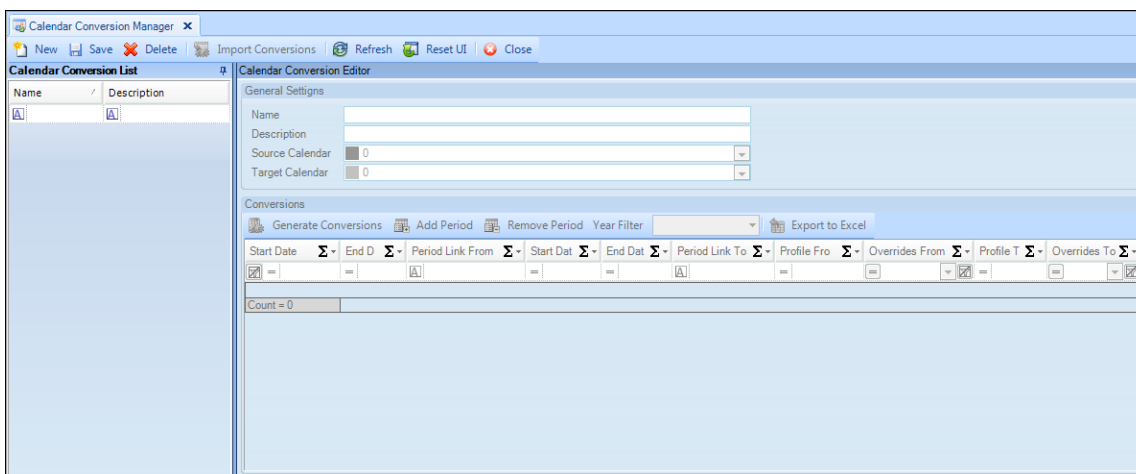
Start Date	End Date	Period Link	Period Description
01/01/2010	01/31/2010	2010-01	2010-01
02/01/2010	02/28/2010	2010-02	2010-02
03/01/2010	03/31/2010	2010-03	2010-03
04/01/2010	04/30/2010	2010-04	2010-04
05/01/2010	05/31/2010	2010-05	2010-05
06/01/2010	06/30/2010	2010-06	2010-06
07/01/2010	07/31/2010	2010-07	2010-07
08/01/2010	08/31/2010	2010-08	2010-08
09/01/2010	09/30/2010	2010-09	2010-09
10/01/2010	10/31/2010	2010-10	2010-10
11/01/2010	11/30/2010	2010-11	2010-11

- 8 Click the **Add Period** button to create additional periods.
- 9 Click the **Save** button at the top of the screen to save the calendar.
The calendar is added to the **Calendar List** in the left panel.

Calendar Conversion

Within the Calendar Manager there will also be a method to tie two calendars together, called Calendar Conversion. This is similar to the Calendar Conversions done with the Excel Master Calendar as well as the DRP Calendar table today. The conversion will calculate profile percentages for expansion and compression of data across the calendars defined.

- 1 Click on the **Calendar** tab.
- 2 From the toolbar, click the **Calendar Conversion** button.
The Calendar Conversion Manager screen displays.



The screenshot shows the 'Calendar Conversion Manager' window. On the left is the 'Calendar Conversion List' with columns for Name and Description. On the right is the 'Calendar Conversion Editor' panel. The 'General Settings' section includes fields for Name, Description, Source Calendar (set to 0), and Target Calendar (set to 0). Below this is the 'Conversions' section, which has a toolbar with 'Generate Conversions', 'Add Period', 'Remove Period', 'Year Filter', and 'Export to Excel'. It also contains a table with columns: Start Date, End D, Period Link From, Start Dat, End Dat, Period Link To, Profile Fro, Overrides From, Profile T, and Overrides To. At the bottom of the conversions section, it says 'Count = 0'.

- 3 Click the **New** button. The fields in the Calendar Conversion Editor panel at the right become active.
- 4 In the **General Settings** section, enter a **Name** and **Description** for the conversion settings being created.

General Settings

Name

Description

Source Calendar

Target Calendar

- 5 From the **Source Calendar** drop-down, select the calendar that is being converted.
- 6 From the **Target Calendar** drop-down, select the calendar where the converted data is being sent.
- 7 To manually enter the data for conversion, click the **Add Period** button. A new period is added to the table and you can manually enter the conversion settings.
Repeat this process for each period you want to add.
- 8 Click the **Generate Conversions** button to allow the system to create the conversion periods automatically.

Conversions

Generate Conversions Add Period Remove Period Year Filter [No Filter] Export to Excel

Start Date	End Date	Period Link From	Start Date	End Date	Period Link To	Profile From	Overrides From	Profile To	Overrides To
01/01/2010	01/31/2010	2010-01	01/01/2010	01/07/2010	2010-01	0.23		1.00	
01/01/2010	01/31/2010	2010-01	01/08/2010	01/14/2010	2010-02	0.23		1.00	
01/01/2010	01/31/2010	2010-01	01/15/2010	01/21/2010	2010-03	0.23		1.00	
01/01/2010	01/31/2010	2010-01	01/22/2010	01/28/2010	2010-04	0.23		1.00	
01/01/2010	01/31/2010	2010-01	01/29/2010	01/31/2010	2010-05	0.08		0.43	
02/01/2010	02/28/2010	2010-02	02/01/2010	02/04/2010	2010-05	0.14		0.57	
02/01/2010	02/28/2010	2010-02	02/05/2010	02/11/2010	2010-06	0.25		1.00	
02/01/2010	02/28/2010	2010-02	02/12/2010	02/18/2010	2010-07	0.25		1.00	
02/01/2010	02/28/2010	2010-02	02/19/2010	02/25/2010	2010-08	0.25		1.00	
02/01/2010	02/28/2010	2010-02	02/26/2010	02/28/2010	2010-09	0.11		0.43	
03/01/2010	03/31/2010	2010-03	03/01/2010	03/04/2010	2010-09	0.13		0.57	
03/01/2010	03/31/2010	2010-03	03/05/2010	03/11/2010	2010-10	0.23		1.00	
03/01/2010	03/31/2010	2010-03	03/12/2010	03/18/2010	2010-11	0.23		1.00	

- 9 In the **Conversion Settings** section, you also have the ability to create periods, populate the start and end dates for each period, the label used, and enter the profile percentages used in converting.

Conversions

Generate Conversions Add Period Remove Period Year Filter Export to Excel

Start Date	End Date	Period Link From	Start Date	End Date	Period Link To	Profile Fro	Overrides From	Profile T	Overrides To

Count = 0

- 10 To remove a period, select it from the table and click the **Remove Period** button.
Note Only periods that were added manually can be edited or removed. Periods generated by the system cannot be removed.
- 11 Click the **Save** button.

- 12 The new conversion setting is added to the Calendar Conversion List in the left panel.

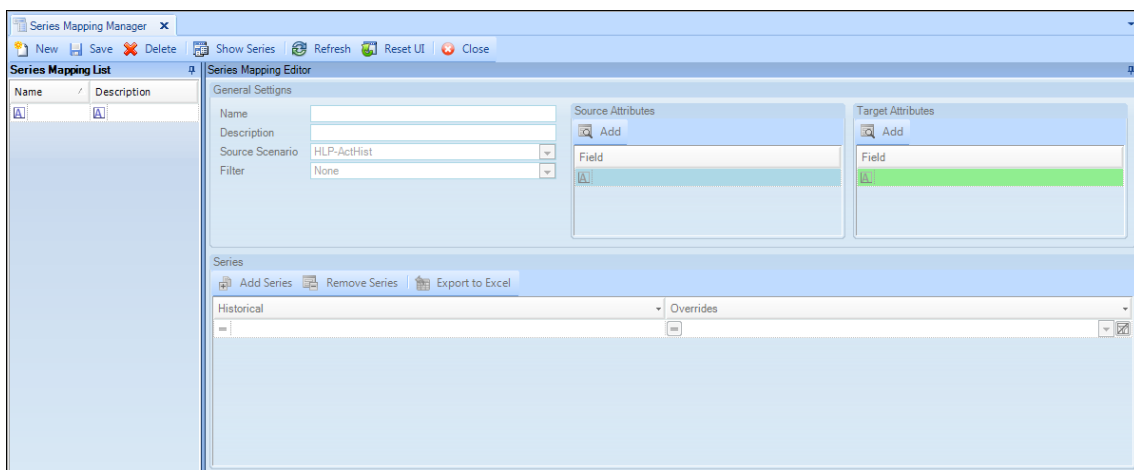
Series Mapping

The Series Mapping Editor allows you to define the relationships between two different scenarios. This feature allows you to select the individual attributes that are mapped between the two modules. For example, you may want to transfer the forecast at the product and customer level to the product and source location.

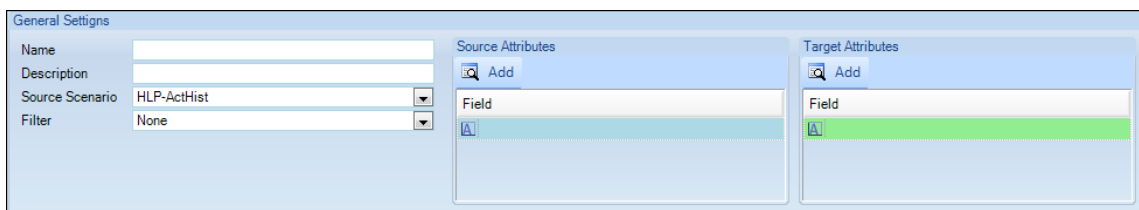
Creating a mapping includes the ability to allocate the demand to multiple source locations based on shipment history. The user may then choose to override the historical allocations for future calculations or use the default settings.

- 1 Click on the **Calendar** tab.
- 2 From the toolbar, click the **Series Mapping** button.

The Series Mapping Manager screen displays:

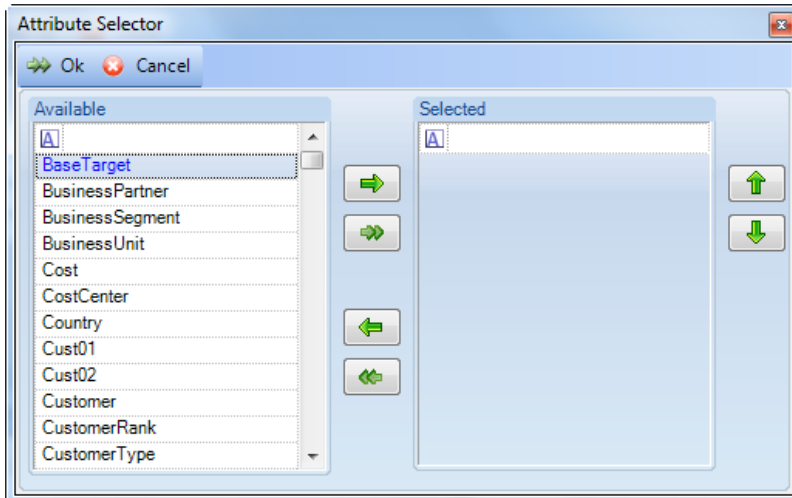


- 3 Click the **New** button. The fields in the Series Mapping Editor panel at the right become active.
- 4 In the **General Settings** section, enter a **Name** and **Description** for the mapping being created.



- 5 Use the **Source Scenario** drop-down to select the Scenario from which you want to select attributes.
- 6 Select a **Filter** to limit the list of populated data (optional).
- 7 Use the **Source Attributes** field to choose the attributes from the Source Scenario that will be mapped to the Target Attributes.

- 8 Use the **Target Attributes** field to indicate the fields to which the Source Attributes are being mapped.
- 9 By default, two attributes are selected for both the Source and Target Attributes. To add or remove attributes, or change the sequence of attributes click the **Add Attributes** button.
Use the Attribute Selector to indicate which fields to add:



Click **OK** when finished.

- 10 The **Series** section of the screen is used to view and edit attribute data and allocation based on historical records. The columns in this section are based on the selected attributes. The Historical column is populated based on the Scenario's history.
- 11 Click the **Add Series** button to add rows to the Series section.

Series									
Add Series Remove Series Export to Excel									
Drag a column header here to group by that column.									
Cost	Σ	Cust01	Σ	Price	Σ	Cust02	Σ	Historical	Σ
A		A		A		A		=	
								10.000%	
								10.000%	
Count = 2									

- 12 For the columns corresponding to the selected attributes, you can manually enter the corresponding values.
- 13 Click the **Save** button.
- 14 The new mapping is added to the Series Mapping List in the left panel.

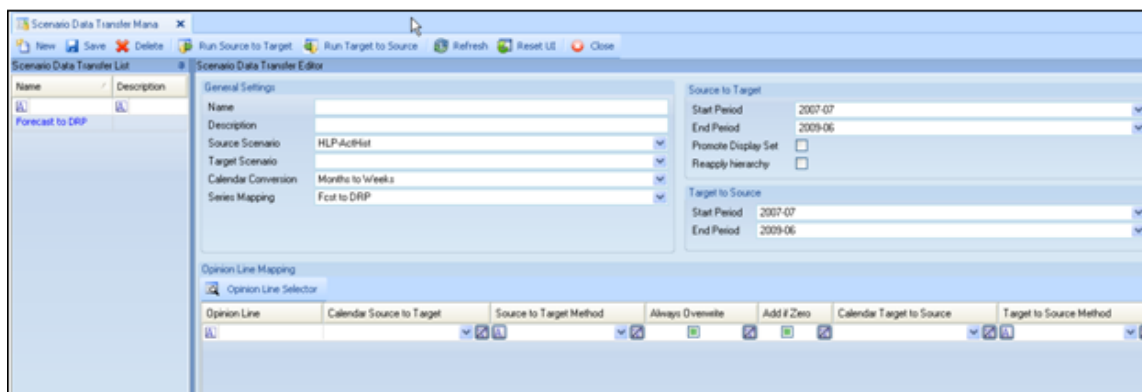
Scenario Data Transfer

Configure a Scenario Data Transfer

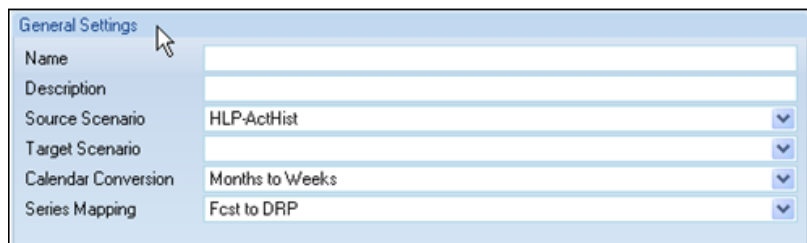
This section details how opinion line values are transferred between two scenarios, including how values are aggregated and disaggregated across time and series attributes.

- 1 Click on the **Calendar** tab.
- 2 From the toolbar, click the **Scenario Data Transfer** button.

The Scenario Data Transfer Manager screen displays.



- 3 Click the **New** button. The fields in the Scenario Data Transfer Editor panel at the right become active.
- 4 In the **General Settings** section, enter a **Name** and **Description** for the transfer being created.



- 5 Select the scenario to transfer from the **Source Scenario** drop-down list.
- 6 Select the scenario that will receive the data being transferred from the **Target Scenario** drop-down list.
- 7 Select the **Calendar Conversion** to use from the drop-down list.
- 8 Select a **Series Mapping** for this transfer.
- 9 The **Source to Target** and **Target to Source** sections allow you to select an expansion and/or compression method to use in the transfer.

Source to Target	
Start Period	2007-07
End Period	2009-06
Promote Display Set	☐
Reapply hierarchy	☐
Target to Source	
Start Period	2007-07
End Period	2009-06

- 10 For the Expansion Method, select the **Start Period** and **End Period** from the drop-down lists.
- 11 Use the **Promote Display Set** check box to indicate that you want the display set from the Source Scenario to be applied to the Target Scenario.
- 12 Use the **Reapply Hierarchy** check box to indicate that you want the hierarchy from the Source Scenario to be applied to the Target Scenario.
- 13 For the Compression Method, select the **Start Period** and **End Period** from the drop-down lists.
- 14 The **Opinion Line Mapping** section allows you to select opinion lines to map to the new scenario along with the expansion and compression methods.

For expansion, “Percent” is generally used for forecast, demand, and inventory data while “Flat” is used for opinion lines like price. For compression, “Sum” is used generally used for forecast, demand, and inventory.

Opinion Line	Calendar Source to Target	Source to Target Method	Always Overwrite	Add if Zero	Calendar Target to Source	Target to Source Method
04-Consensus Est	YES	Percent	☒	☐	YES	Sum
Supply Plan	YES	Percent	☒	☐	YES	Sum

- 15 Click the **Show Selector** button to choose the opinion lines to use in the transfer.

Opinion Lines Selector	
Ok Cancel Available ActShipments AvgEventValue BackLog ConflInterval ConvFactor01 ConvFactor02 ConvFactor03 ConvFactor04 ConvFactor05 ConvFactor06 ConvFactor07 ConvFactor08 → → ← ↔ Selected ActShipments ↑ ↓	

- 16 Choose the lines you want to use from the “Available” list, and click the right-arrow button to select them.

- 17 Click the **OK** button to close the selector window. The selected lines will now display in the Opinion Line Mapping section.
- 18 Click the **Save** button at the top of the screen to save the transfer settings.
- The Transfer is added to the **Scenario Data Transfer List** in the left panel.

Calendar Limitations

If you have a period that is shared between two different time periods (i.e., Week 9 is shared by both the month of February and March), the forecast or Historical periods may shift by one period. The following table provides an example of this occurrence.

From (month)	To (week)	% (from monthly to weekly)	% (from weekly back to monthly)
2000-02	2000-05	20%	100%
2000-02	2000-06	20%	100%
2000-02	2000-07	20%	100%
2000-02	2000-08	20%	100%
2000-02	2000-09	20%	50%
2000-03	2000-09	20%	50%
2000-03	2000-10	20%	100%
2000-03	2000-11	20%	100%
2000-03	2000-12	20%	100%
2000-03	2000-13	20%	100%

This example is simplified and is only used to depict this concept. The actual Calendar is slightly more complex than this. Refer to the [Create a Calendar](#) for additional information.

Notice that Week 9 is shared between the month of February and March. Assume that the value is 100 for both February and March.

Period	Value
February (Historical)	100
March (forecast)	100

After applying the Calendar, the target Scenario has the following results:

Period	Value
2000-05 (Historical)	20
2000-06 (Historical)	20
2000-07 (Historical)	20
2000-08 (Historical)	20
2000-09 (forecast)	40
2000-10 (forecast)	20
2000-11 (forecast)	20
2000-12 (forecast)	20
2000-13 (forecast)	20

Notice that Week 9 is forecasted; this is because for Week 9, part of the data comes from a Historical source and part of the data comes from a Forecast source. In this situation, the DME sets the value to Forecast.

Convert the weekly Scenario back to monthly, after the conversion, the monthly results are:

Period	Value
2000-02 (forecast)	100
2000-03 (forecast)	100

Notice that February now becomes the Forecast. Again, like Week 9, part of its data comes from a Historical source and the other part from the Forecast source (Week 9). By default, the DME sets the February result to Forecast.

Under some conditions, the DME adds periods to the target Scenario. Assume that you have the same Calendar as the previous example.

From (month)	To (week)	% (from monthly to weekly)	% (from weekly back to monthly)
2000-02	2000-05	20%	100%
2000-02	2000-06	20%	100%
2000-02	2000-07	20%	100%
2000-02	2000-08	20%	100%
2000-02	2000-09	20%	50%
2000-03	2000-09	20%	50%
2000-03	2000-10	20%	100%
2000-03	2000-11	20%	100%
2000-03	2000-12	20%	100%
2000-03	2000-13	20%	100%

However, only data for February exists, but not March.

Period	Value
February (Historical)	100

After the monthly-to-weekly conversion, the data looks like this:

Period	Value
2000-05 (Historical)	20
2000-06 (Historical)	20
2000-07 (Historical)	20
2000-08 (Historical)	20
2000-09 (Historical)	20

Notice that 2000-09 is created. This is normal because in your calendar, February does have Week 9. Now, if you convert it back to monthly, it will become:

Period	Value
2000-02 (Historical)	90
2000-03 (Historical)	10

Notice that March is created and it takes 10 from February; this is because Calendar Week 9 is shared between February and March.

These are the limitations for the current DME Calendar transformation implementation, and they only occur when a Target period is shared by two different Source periods.

Localization

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Localization Editor 212

Adding a Language 212

Delete a Language 214

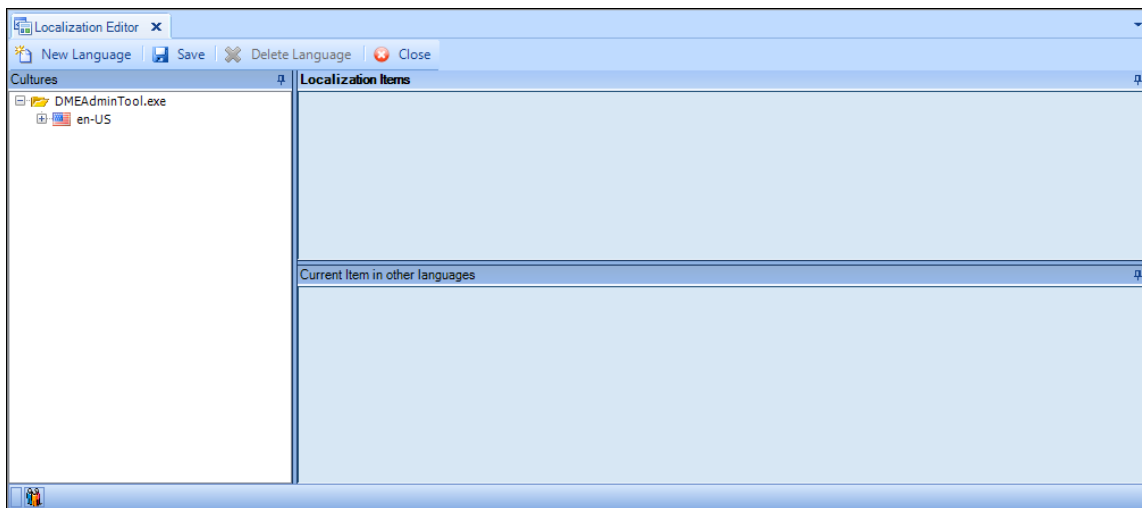
Overview

The **Localization Editor** feature allows for the advanced configuration of DME, by allowing the internationalization of languages and systems. This will change the language and symbols used in the images, messages and labels within DME.

Localization Editor

- 1 In the DME Admin Tool, click the Localization Editor button on the Localization section of the Configuration Managers tab.

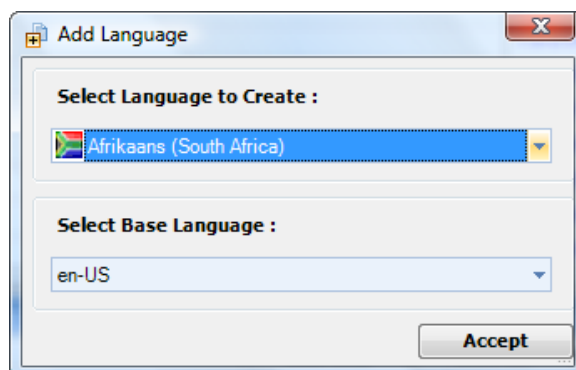
The **Localization Editor** displays.



Adding a Language

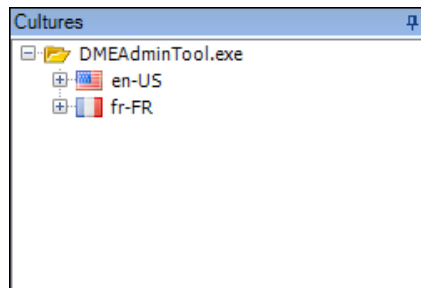
- 2 On the **Localization Editor** screen, click the **New Language** button.

The **Add Language** window displays.

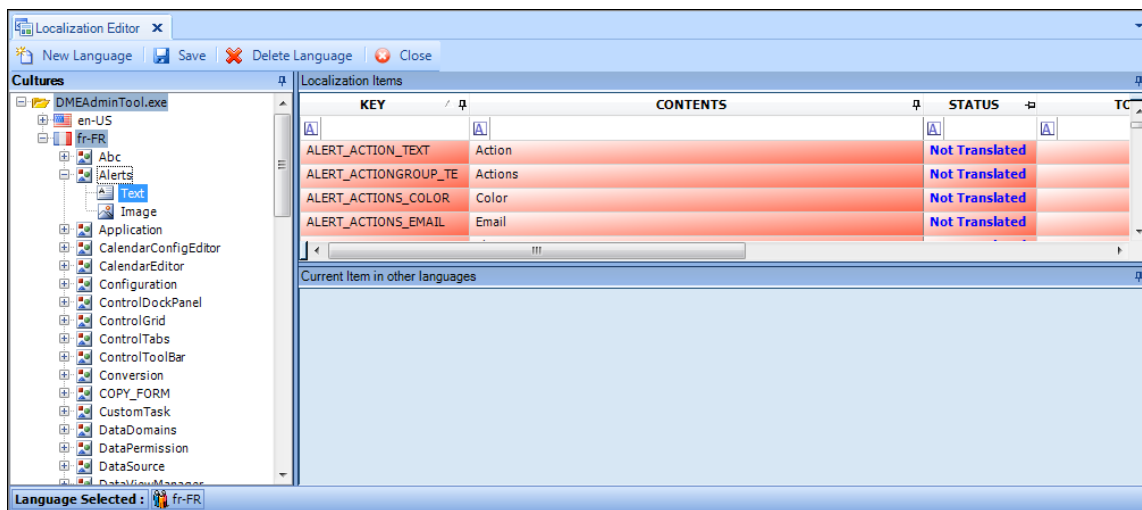


- 3 Use the **Select Language to Create** drop-down list to indicate the language you want to add to DME.

- 4 Use the **Select Base Language** drop-down list to select the existing language on which to base the settings for the new language.
- 5 Click **Accept**. The new language is added to the tree view in the **Cultures** panel to the left.

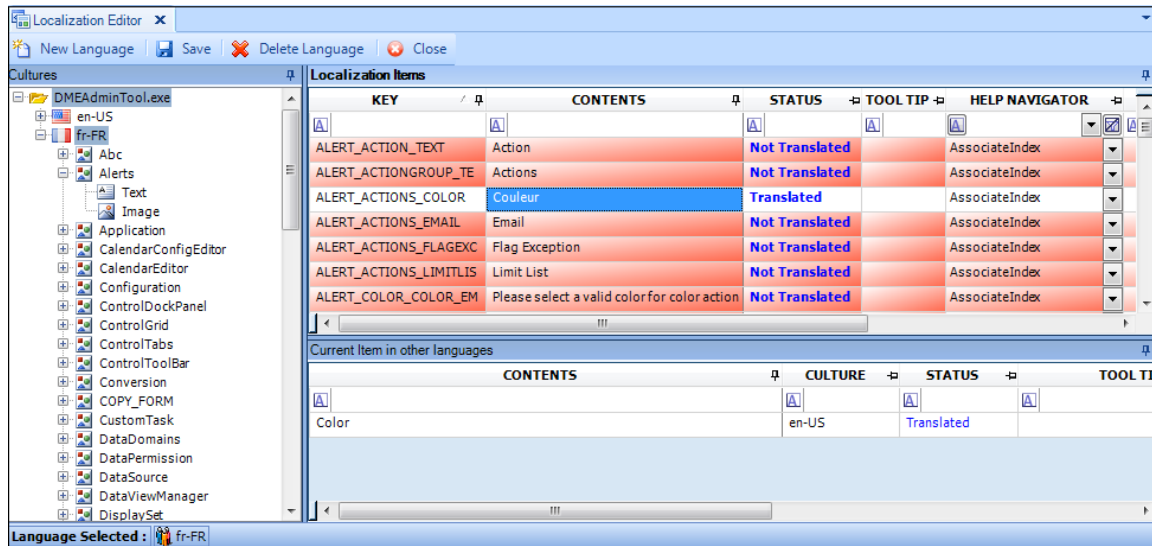


- 6 Expand the tree view of the new language and select any attribute. The **Localization Items** section displays all items in the attribute and highlights the items that have not been translated.



- 7 Double-click in the **Contents** column of a “Not Translated” item to enter the translation for this term in the new language. The Status will update to “Translated” and the item is no longer highlighted.

For suggestions when translating, select any “Not Translated” item and the translation for this item in other languages currently loaded in the DME will display below in the “Current Item in Other Languages” section.



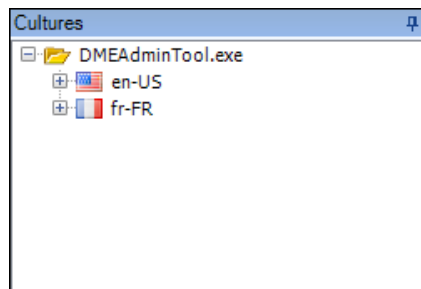
8 Click **Save** when you are finished making changes.

Delete a Language

If a language is no longer used, it can be removed from the system. Deleting a language will cause you to lose any translations or customizations you have performed for this language.

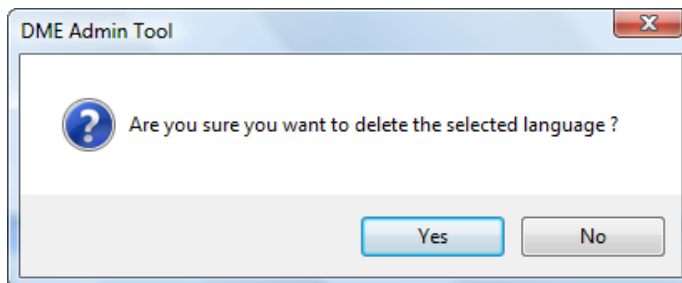
Note The “en-US” language setting cannot be deleted.

1 Select the language you want to delete from the tree view in the **Cultures** panel to the left.



2 Click the **Delete Language** button.

3 The following message box displays asking you to confirm the deletion.



- 4 Click **Yes** to delete the language.

The deleted language no longer displays in the Cultures panel.

Chapter 19

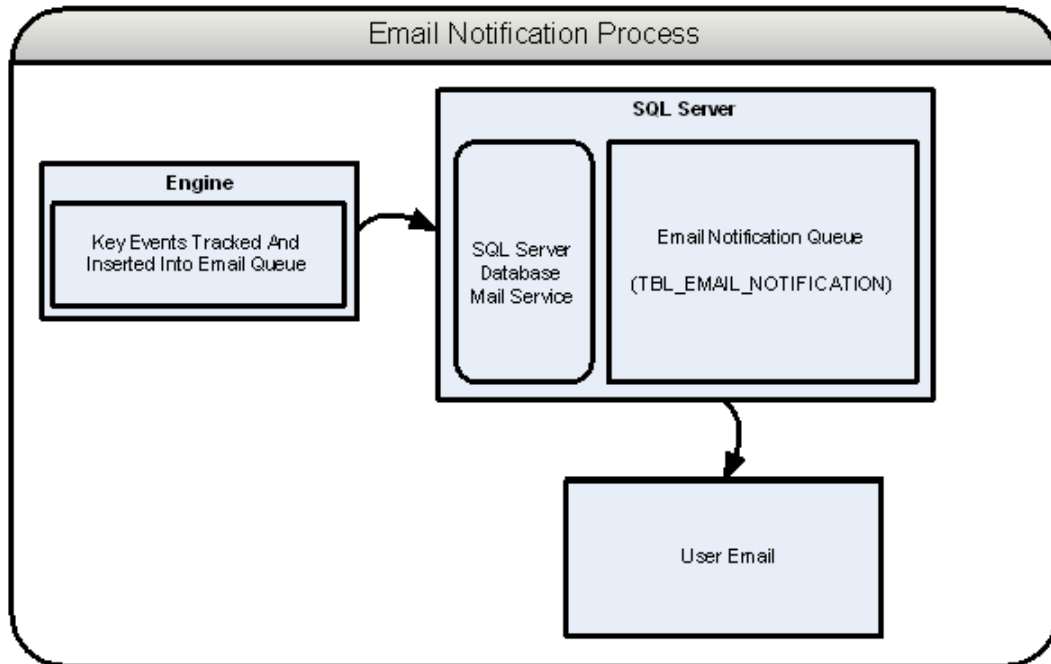
Email Service

Overview 218

Email Service Management 219

Overview

The Email Service provides email notification to users of any updates. The email notifications describe the event and action, while enabling users to update information, if necessary. The depiction below details displays the email workflow:



Email Service is used to notify a user when any of the following have occurred:

- DME has finished a Living Master Scenario.
- A Scenario is marked as disconnected.
- A Scenario is marked as connected.
- A user populates a DTL Scenario.
- A user commits a DTL Scenario.
- Forecast error report.
- Batch Process results.
- Exception results.

It is important to note that technical users can add their own messages into the email notification queue. By doing so, DME functionality can be extended to send a range of additional messages that provide additional information to the Forecasting process.

Note The Database Mail procedures are disabled by default when SQL Server is installed. To activate this feature in SQL Server, right-click on the instance name that you would like to configure and select “Facets” from the menu. On the View Facets window, set the “Database Mail Enabled” setting to True.

Email Service Management

Email Service Setup

The DME Mail can use the SQLMail or Database Mail to perform its operations. The list below details the prerequisites necessary to use the Email Service:

- An email profile exists on the SQL Email Service.
- A Messaging Applications Programming Interface (MAPI) profile must be configured in the mail option of the control panel using the mail service.

Note MAPI Profiles are used in SQL Server 2005 and earlier versions. MAP Profiles are not required in newer versions of SQL Server.

- SQL Server Agent is running.
- SQL Server Mail is running properly with a valid email profile.

For additional references on how to launch the SQL Server Email Service refer to SQL Server documentation.

Note The SQL Mail supports an extended MAPI.

Configure DME Email Service

The DME Email Service is a JOB that is scheduled to run periodically. Typically, this job runs every few minutes and executes a stored procedure that sends a message, to check if it exists in the Email Service queue.

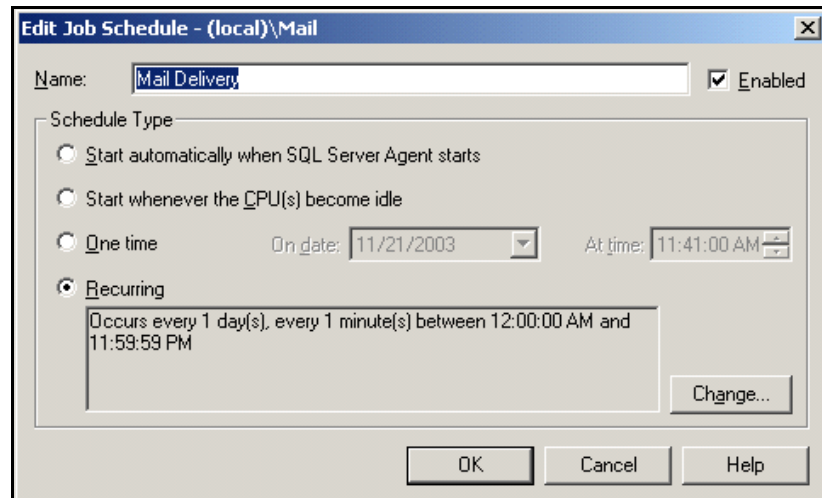
Messages are stored in the TBL_EMAIL_NOTIFICATION table. This table stores a flag along with the message. If the flag has a value of 1, the message was processed. If the flag has a value of 0, the Email Service has not processed the message.

For maintenance purposes you can check that table and remove any old messages. For more details, please check the database maintenance section of this document.

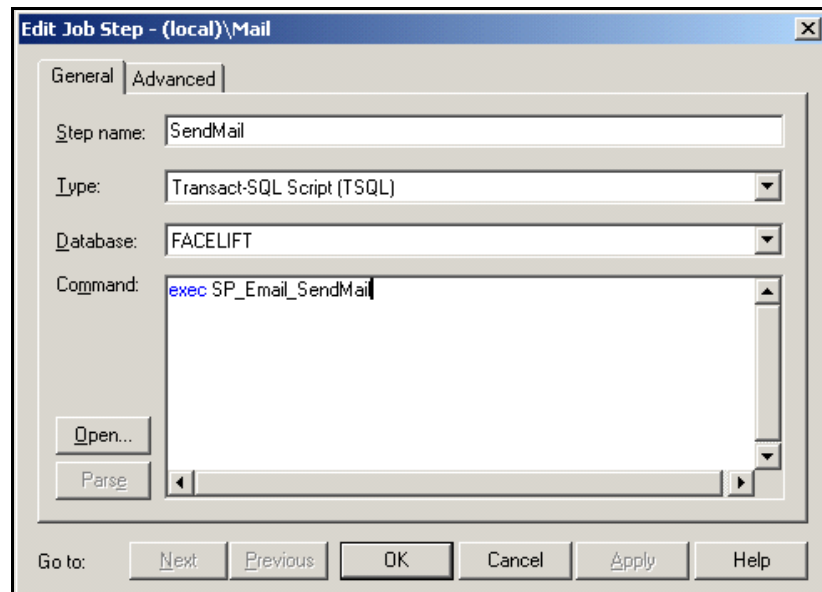
Start the DME Email Service

- 1 Create a **SQL Server JOB**.

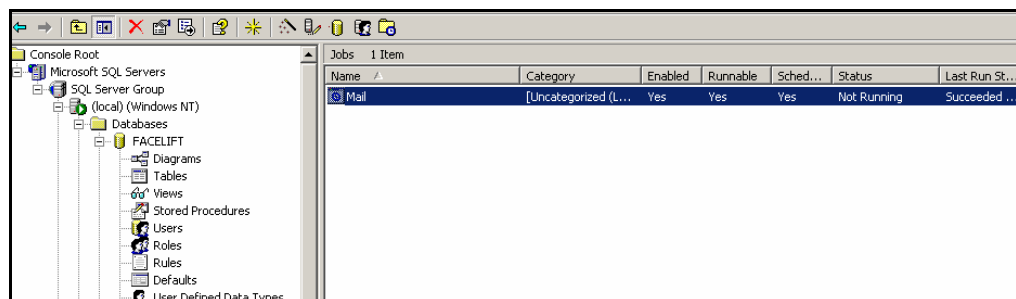
The JOB must be scheduled to run periodically, such as every minute or hourly.



- 2 Specify the JOB to run the Stored Procedure “SP_Email_SendMail”. Run the task against DME Database (default is FX_JGD).



The following window displays.



Setup an Email Account

Users must have a valid email addresses to receive email notifications. The ForecastX Administrator (fxadmin) can specify the email account when editing a User's Properties. For additional information, see [Creating and Managing Users](#).

Email Subscriptions

A user can receive email notifications for specific events. A user can also receive customized data that may be of interest to them. These alerts are set in the **Notifications** section of the **User Information** tab.

Notifications	
Description	Value
Engine Finished forecasting a Living Master Scenario .	☐
A scenario has been Marked as disconnected.	☐
Scenario has been marked as connected.	☐
User populates his/her DTL scenario.	☐
User commits his/her DTL scenario.	☐
Forecast error report .	☐
Batch process result .	☐
Exception result .	☐

You can configure up to eight events as email subscriptions for users.

The following table summarizes what each subscription option means:

Issue	Description	Email Content
Engine Finished forecasting a Living Master Scenario.	The forecasting process is complete and run against a Living Master Scenario.	The user receives the first 20 items and the total forecast. Only users that have access to the items and the total forecast may receive the notifications. Refer to Creating and Managing Users for additional information.
A scenario has been Marked as disconnected.	A user chooses to disconnect from the server.	The Scenario name was marked as disconnected.
Scenario has been marked as connected.	A user connects to the server.	The Scenario was marked as connected.
User populates his/her DTL scenario.	A user has populated data in the DTL Scenario.	The user receives the first 20 items and the total forecast. Only users that have access to the items and the total forecast may receive the notifications. Refer to Creating and Managing Users for additional information.
User commits his/her DTL scenario.	A user has committed data in the DTL Scenario.	The user receives the first 20 items and the total forecast. Only users that have access to the items and the total forecast may receive the notifications. Creating and Managing Users for additional information.
Forecast error report.	Errors have occurred during forecasting a Scenario.	Error report.

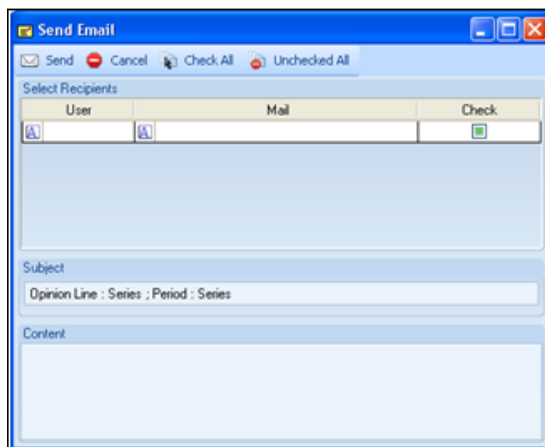
Issue	Description	Email Content
Batch process result.	Batch scheduler sends the status of the processes.	Process status, errors and exceptions.
Exception result.	System detects which series now fulfills the exception and which fields no longer fulfill the exception. Note that the first time an exception runs, all series will be sent as new series.	Subscriber receives the items in the following way: • List of NEW items that fulfill an exception • List of items that no longer fulfill the exception Note that items that already fulfill the exceptions are not sent. To determine the new items that fulfill the exception, the DME keeps a list of the items from the previous exception execution. That list is then compared with the actual exception list.

User Email Initiation

A user can send email to other users.

- 1 In the **Notes View**, right-click on a note.
- 2 Select **Send Item Notes**.

The **Send Email** window displays:



- 3 Use the checkboxes to select which users should receive the note.
- 4 Use the **Content** text field to enter any additional comments to this message.
- 5 Click **Send** to send the e-mail.

Forecast Techniques and Methods

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Same As Method 233

Overview

This chapter details how to use the following features:

- Forecast Techniques and Methods
- Regression Methods
- Same As

Forecast Techniques and Methods

There are several Forecast techniques available for the generation of the statistical Forecast.

Select a Forecasting technique based on the specific demands of the Forecast you need to generate. The DME enables you to select Forecasting methods that enhance the technique you selected. You can adjust the parameters for each method.

The following table details the available Forecast Techniques and Forecast Methods and how they are grouped.

Forecast Techniques and Methods	Description
Distribution	ErlangB (accepts secondary method) ErlangC (accepts secondary method) Poisson (accepts secondary method)
Business Promotional Event Model	Event Model (accepts secondary method)
Exponential Smoothing	Adaptive ES Croston Intermittent Double ES Brown Double Holt Simple ES Triple ES Brown
Slow Moving Item	Slow Method
Expert	Procast
Moving Average	Moving Average
New Product Curve	Gompertz Curve Logistic Curve New Product Curve
Regression	Linear Regression
Seasonal Mode	Box-Jenkins Holt-Winters Census X-11 (accepts secondary method)

The Forecast Methods are divided into three groups depending on the configuration:

- Methods with basic configurations
- Method that require additional series or indices
- Regression methods

Select Methods with Basic Configurations

- 1 On the **ForecastX Methods** tab, double-click on a forecast profile or select Edit Item.
The **Forecast Settings** window displays.

Forecast Settings: LM-Inventory - [10461052] [NASHVILLE-MAT] [WH A], Opinion Line : Stat Fcst Main

Save RollBack Close

Forecast Settings

Source Opinion Line: Adj Hist
Target Opinion Line: Stat Fcst Main
Forecast Method: ProCast
Overwrite History: ☒
Automatic Forecast: ☒

History Range

Range Type: Fixed
Fixed Start Period:
Fixed End Period:
Floating Start Periods:
Floating End Periods:

Forecast Range

Forecast periods: 52

ForecastX Method Parameter

Error Term: Sum Squared Error
Include New Product Curve: ☐
Include when numb. of obs: 6

General Statistics

MAPE: ☒
BIC: ☐
AIC: ☐
Sum Squared Error: ☐
R-Square: ☒
Adjusted R-Square: ☐
Durbin Watson: ☐
Mean: ☒
Median: ☐
Standard Deviation: ☒
Variance: ☐
Multiple Statistics: ☐

Accuracy Statistics

Mean Absolute Error: ☐
Mean Error: ☐
Mean Square Error: ☐
Normality Error: ☐
Root Mean Square Error: ☐
Standard Deviation Error: ☐
Theil: ☐
Standardized Mae: ☐

Descriptive Statistics

Range: ☐
Auto Covariance: ☐
Max: ☐
Auto Correlation: ☐
Min: ☐
Coefficient Of Variation: ☐
Kurtosis: ☐
Sum Squared Deviation: ☐
Skewness: ☐
Root Mean Square: ☐
Mode: ☐
Mean Squared Deviation: ☐
LjungBox: ☐
Mean Absolute Deviation: ☐

Safety Stock Statistics

Active: ☒
Add Forecasted Values: ☐
Lead Time: 2.00
Level%: 90

Confidence Limits Statistics

Active: ☒
Limit%: 90

Regression Table

Anova: ☐
Coefficient: ☐
Correlation Coefficient: ☐
Coefficient of Determination: ☐
Covariance: ☐

Statistics Attribute Mapping

Statistic	Attribute
MAPE	
Mean	
R-Square	
Standard Deviation	

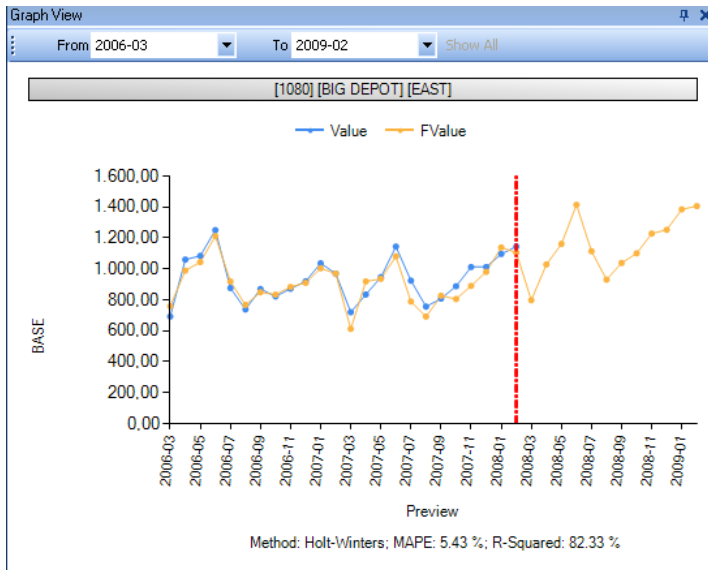
- 2 In the **Forecast Settings** section, select the **Forecast Method** from the drop-down list.
Based on the selected Method, the fields in the **ForecastX Method Parameter** section will change.
Note If you select Procast as the Forecast Method, the DME selects the best method to analyze the data for the Forecast.
- 3 In the ForecastX Method Parameter section, select the desired additional settings; as well as the **Secondary Method** from the drop-down list if the Primary Method has a secondary method.
Note If you do not set any additional parameters, the DME selects the best parameters for the data.
- 4 Click **Save**.

Primary Method Procast

When you select “Procast” as the **Forecast Method**, the DME analyzes the data and chooses the method that best fits the data.

Procast Method

In order to know what method the DME selects for each Series, open the scenario in the Viewer and select the Graph View. At the bottom of the graph you will see the selected Method.



You can also select the “Method” attribute in the Multi-series view.

Multi Series View				
Select All Unselect All Max # of Series: 10				
Series	xE - 12 Month Fcst	* Customer Nbr	xE - Sales Vs Base	Method
TARGET.1830606C94.FLORAL POT	41,244	58000		Holt-Winters
TARGET.1831487C93.MIT-OMATIC 101	21,270	58000		Holt-Winters
TARGET.1836542C1.MIN POT	192,403	58000		Holt-Winters
TARGET.1840078C1.DIRT WEASEL 102	37,472	58000		Holt-Winters
TARGET.1840752C91.TRAVEL CHAIR 101	48,234	58000		Holt-Winters
TARGET.1840773C1.DIRT WEASEL 103	501,536	58000		Holt-Winters
TARGET.1841139C92.MIT-OMATIC 102	30,155	58000		Holt-Winters
TARGET.1850353C1.DIRT WEASEL LX	173,848	58000		Exponential Sm...
TARGET.CNE4707DQ21.MINI ROCK 101	25,290	58000		Holt-Winters
K-MART.CR35058.PURDUE MAT	58	12000		Slow moving de...
K-MART.CR47692.BLOOMINGTON MAT	21,579	12000		Holt-Winters
K-MART.EC408RA.DANIEL MAT	164,800	12000		Holt-Winters

Forecasting Methods Requiring More Series or Indices

The Indices tables must be arranged in order to be valid for the DME. The Indices must be compliant with either a columns or rows layout. The following Forecast Techniques require the use of additional indices in order to run a Forecast:

- Business Promotional Model (Event Model)
- Distribution (with ErlangC)
- Seasonal Model (with Census X-11)

Note Before running a Forecast using the ErlangC, Event Model, or Census X-11 method, make sure that all the forecasting series are mapped to an additional series. For the event model, the additional series is the event index series. For event index series, there more requirements: ² You have pre-defined indices. ² The indices are stored in a separate table. ² The indices are compliant with column and row layouts. ² The indices values are consecutive, such as, 1, 2, 3. (1, 2, 5, is not valid). There must be enough values to forecast, meaning that the amount of index values must be greater than or equal to the history + periods.

Columns

If the data that you want to use for the Forecast is in Excel, you must have an additional spreadsheet with your indices.

In the spreadsheet, the type of index values in the columns, the entries below the index label, are numeric. You must start in the cell A1, and you can have as many index series as you want.

The following is an example of a valid index configuration with a column layout.

	A	B
1	Optimistic	Pesimistic
2	1	1
3	1	2
4	1	3
5	1	1
6	2	2
7	2	3
8	2	1
9	4	2
10	0	3
11	4	1
12	4	2

Below is an invalid index configuration.

	A	B	
1			Does not start in first row.
2	Optimistic	Pesimistic	
3	1	1	
4	1	2	Text is not a valid value.
5	Invalid	3	
6	1	1	
7	2	2	
8	2 FXE	1	Decimal index values are not allowed.
9	2	1	
10	4	2	
11	0	3	
12	4.4	1	
13	4	2	
14	4	3.2	
15	4	1	

If your data is stored in a database such as Access, SQL Server, or Oracle, you must have a separate table containing only the index. The field type should be numeric.

The depiction below details an example of an invalid configuration.

	Optimistic	Pesimistic
	1	1
	2	4
	3	1
	1	4
	2.01	4
	3	2
	1	2
	2	2
	3	3
	1	3
	2	4
	3	4
*	0	0

Decimal values
are not valid.

Rows

When the data is in Excel, you must have a separate spreadsheet in the index or indices. You need to define the labels that appear horizontally. For each row, the first column should be text to represent the index name. After this column you need to enter the numeric index values.

Below is an example of a valid index configuration in Excel.

	A	B
1	Optimistic	Pesimistic
2	1	1
3	1	2
4	1	3
5	1	1
6	2	2
7	2	3
8	2	1
9	4	2
10	0	3
11	4	1
12	4	2
13	4	3
14	4	1

Below is an example of an invalid index configuration example in Excel.

	A	B	C	D	E	F	G
1							
2	First	1	2	1	2	2	2
3	1	2	3	1	2	3	1

No Index Name
for Each Series

No Labels

If you have the data that you want to forecast in a database, then you need a table with one text field to store the index name, and as many numeric fields as you need to store the index values. Please see the example below.

	IndexName	Index1	Index2	Index3	Index4	Index5	Index6	Index7
	Optimistic	1	2	3	1	2	3	1
	Pesimistic	1	1	4	4	1	1	4

If you try to provide an incorrect index table, the DME detects it and reports an error. The forecast fails if you do not provide the index values for the history and period in the data.

Methods that Require Additional Series or Indices

- 1 On the **ForecastX Methods** tab, double-click on a forecast.
The **Forecast Settings** window displays.

- 2 In the **Forecast Settings** section, select “ErlangC”, “Event Model” or “Census X-11” from the **Forecast Method** drop-down list.

- 3 In the ForecastX Method Parameter section, select a **Secondary Method** from the drop-down list if the Primary Method permits another selection.
- 4 Set the *parameters* for both the *primary* and *secondary* methods.
For example if you selected “ErlangC” from the Forecast Method list, the following dialog box displays.

Note Remember to set the parameters for the forecast. If you do not set them, the DME selects the best parameters for the data.

5 Click **Save**.

Forecasting By Series

Forecast Methods can also be set at a series level, this way each series or group of series will have its own settings for a particular forecast method.

For more information on how to setup series level forecasting please refer to Chapter 2 of the DME User Guide and see the ForecastX Method tab.

Regression Methods

There are four regression methods available for the Regression Forecasting Technique.

- Trend (Linear) Regression
- Multiple Regression
- Stepwise
- Polynomial Regression

The Trend (Linear) Regression method applies to each series in a Scenario. The other methods require one dependent series and several independent series. The independent series are determined using the Opinion Line Picker in the DME Admin Tool.

Select Regression Methods

Note When you select a Regression method, the Remove Leading or Trailing Zero Values options are not available.

- 1 On the **ForecastX Methods** tab, double-click on a forecast.

The **Forecast Settings** window displays.

- 2 Select one of the *Regression* options from the **Forecast Method** drop-down list. In this example, we will use “Multiple Regression”.

The Forecast X Method Parameter window extends and displays the following options:

Note If you select “Multiple Regression”, “Polynomial Regression” or “Stepwise”, the DME displays a Secondary Method text box used to identify the independent series.

- 3 Select the *statistical method* that you want applied to the independent series from the **Secondary Method** drop-down list.

- 4 Select any additional *parameters* for the **Primary Method**.

Note Remember that if you do not set the appropriate parameters, the DME selects the best parameters for the data.

Polynomial Parameters

- 1 Select “Polynomial Regression” from the **Forecast Method** drop-down list.

The ForecastX Method Parameter section refreshes and displays the following options:

Forecast X Method Parameter

Max Degree	
Partial F-Value	4.00
Min.F-Value In	2.00
Max.F-Value Out	1.00
Secondary Method	ProCast
Opinion Lines	
Error Term	Sum Squared Error
Include New Product Curve	☐
Include when numb. of obs	6

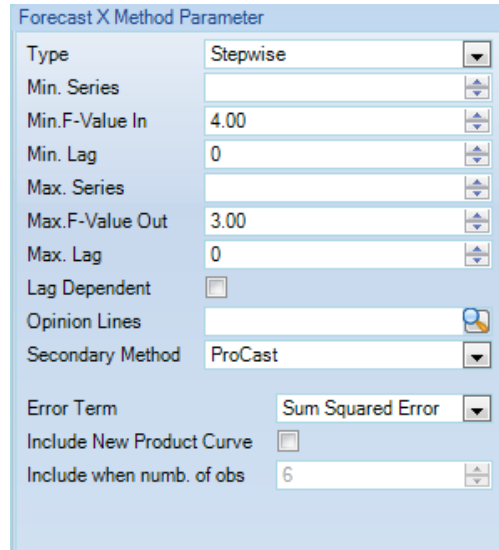
- 1 Select the appropriate *parameters*.

Primary Parameter	Description
Max Degree	Indicate the maximum degree that the polynomial regression can have.
Partial F-Value	Enter the value used to determine which degree the polynomial regression should use.
Min F-Value In/ Max F-Value Out	Enter the F-value that is used to determine which series can be included in the polynomial regression model.

- 2 Select the **Secondary Method** from the drop-down list.
- 3 Enter the appropriate **Secondary Method** parameters.
- 4 Click the **Save** button.

Stepwise Parameters

Selecting “Stepwise” as from the Forecast Method displays the following set of parameters:



Forecast X Method Parameter

Type: Stepwise

Min. Series:

Min.F-Value In: 4.00

Min. Lag: 0

Max. Series:

Max.F-Value Out: 3.00

Max. Lag: 0

Lag Dependent: ☐

Opinion Lines:

Secondary Method: ProCast

Error Term: Sum Squared Error

Include New Product Curve: ☐

Include when numb. of obs: 6

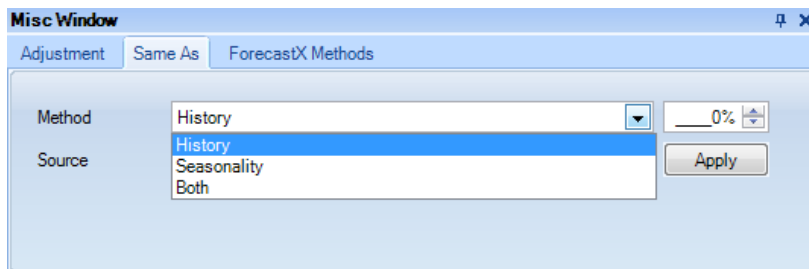
- 1 Select the appropriate *parameters*.

Primary Parameter	Description
Type	Indicate the direction to search the stepwise model.
Min/Max Series	Indicate the range of the number of series that the Stepwise model can have.
Min F In/Max F Out	Indicate the F-value used to determine which series can be included in the stepwise model.
Lag Dependent	Indicate whether the stepwise model includes a lag dependent series.

- 2 Select the **Secondary Method** from the drop-down list.
- 3 Enter any additional **Secondary Method** parameters.
- 4 Click the **Save** button.

Same As Method

There are two types of **Same As** methods from the **Method** drop-down in the **Misc View** window. When you configure Same As values, they do not take effect until you run the Forecast.



Misc Window

Adjustment Same As ForecastX Methods

Method: History

Source: History, Seasonality, Both

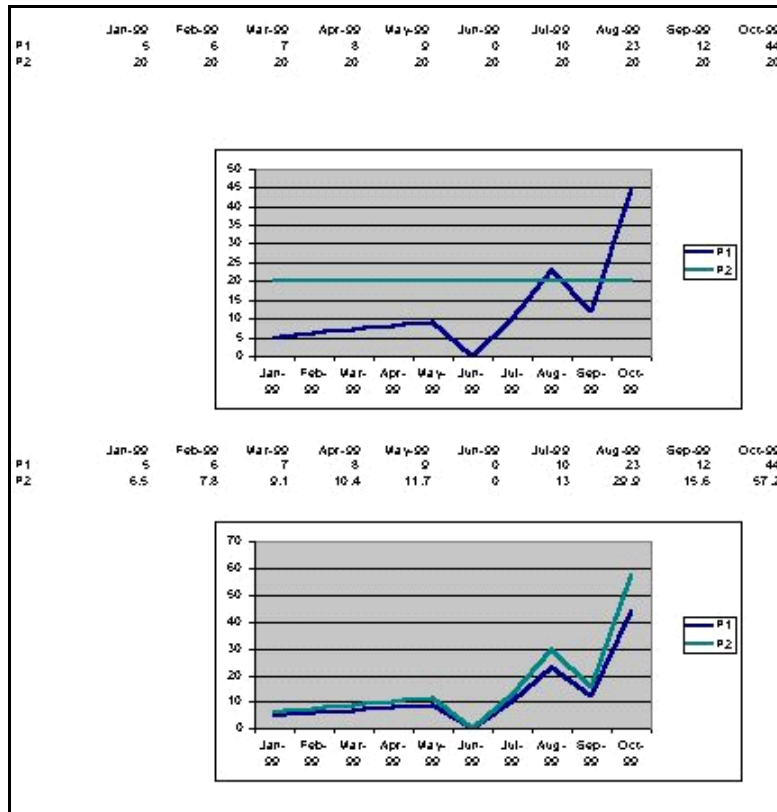
0%

Apply

Same As History

Same As History affects the product's history. The Same As History function enables you to replace one product's history with another product's history by a certain percentage.

For example, if you have three products P1, P2, P3, you can indicate that P2's history is 30% of P3's history, and P1's history is 15% of P3's history.



Same As Seasonality

The **Same As Seasonality** feature enables you to replace one product's Forecast with the Forecast from another product to simulate data for products with similar properties. Same As Seasonality affects the product's Forecast.

For example, if you have products P1, P2, and P3, you can indicate the Forecast of P1 is going to be similar in pattern of that of P2 and P3's Forecast is going to be similar to P2's seasonality.

Statistical Information

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Overview

The DME's Statistics options on the **Forecast Settings** screen enables you to apply statistics to the Forecasting process. The statistics that are generated measure the accuracy of the Forecast and help you better understand your data. The statistics you choose are viewed in reports. You can select the statistics that are to be applied in a Forecast. The DME supports more than 40 types of statistics.

This chapter serves as a reference guide for questions you may have on statistical methods used by the DME.

Forecasting Settings

The DME's Forecast Settings screen offers a variety of options based on specific business models and data. Use this screen to define the statistics you want applied to your Forecast and choose the parameters for your Safety Stock Properties and Confidence Limits.

This section introduces the Forecast Settings screen, explains its options, and provides instructions on how to select and use these options effectively in your Forecast.

- 1 In the **Misc Window** section of the Viewer, click the **ForecastX Method** tab.

Source	Target	Method	Level	Primary	Periods
Adj Hist	Stat Fcst	ProCast	Scenario	☒	17
Dep Dmd	Dep Dmd	Double Holt	Scenario	☐	17
Stat Fcst	Adj Hist	Lifecycle	Series	☐	17

- 2 Select the Forecast to which you want to apply statistics and click the **Edit Item** button.
The Forecast Settings screen displays:

- 3 Use this screen to set the appropriate options for your Forecast. Select the checkbox for each option you want to include in the following sections:

Option	Description
General	Select the statistics that you want applied to your Forecast.
Safety Stock Properties	Select the appropriate Safety Stock Properties for your Forecast. • Active - Select this option to be able to view Safety Stock Properties in your Forecast. Safety Stock is what a manufacturer needs to keep on hand in order to ensure that they are never over or under stock on an item. • Add Forecasted Values - Check this box to include Forecasted values in your Safety Stock calculations, or leave this box unchecked to use only Historical values. • Lead Time - Specify the number of periods covered by a Safety Stock Properties. In other words, the duration between the reorder and receipt of order. • Level % - Specify the level you want to maintain. For instance, enter 90 if you want to ensure adequate stock 90% of the time.
Confidence Limits Properties	Select the Confidence Limits properties for your Forecast. • Active - Select this option to view the Confidence Limits that represent the trustworthiness of the Forecasted data within Executive Reports and the Series Preview screen. • Limit % - Specify the measure of confidence you want your Forecast view to reflect.

- 4 The additional statistics are divided into three sections:

- Accuracy Statistics
- Descriptive Table
- Regression Statistics

General Statistics		Accuracy Statistics	
MAPE	☒	Mean Absolute Error	☐
BIC	☐	Mean Error	☐
AIC	☐	Mean Square Error	☐
Sum Squared Error	☐	Normality Error	☐
R-Square	☒	Root Mean Square Error	☐
Adjusted R-Square	☐	Standard Deviation Error	☐
Durbin Watson	☐	Theil	☐
Mean	☒	Standardized Mae	☐
Median	☐		
Standard Deviation	☒		
Variance	☐		

Safety Stock Statistics		Regression Table	
Active	☒	Anova	☒
Add Forecasted Values	☐	Coefficient	☒
Lead Time	2.00	Correlation Coefficient	☐
Level%	95	Coefficient of Determination	☐
		Covariance	☐

Confidence Limits Statistics	
Active	☒
Limit%	90

The Accuracy and Descriptive statistics can be selected with any Forecast technique, but the Regression category is available only when a Regression Forecast Method is selected.

- 5 Click **Save** when finished.

Statistics View

The Statistics View allows you to view more detailed information regarding a forecast and allows you to select which statistics are displayed. You can also change how you view the statistics by grouping them together based on any column in the **Statistics View**.

You can also customize the information that displays in this view by adding or removing fields using the Forecast Settings window.

Please note that after upgrading versions of the DME, your statistics will need to be re-generated. Simply run your forecasts and your statistics will be displayed.

- 1 In the **Series View**, select the **Statistics View** tab at the bottom of the main window.

The Statistics View displays data relating to the statistics selected for this series.

Statistics View				
Drag a column header here to group by that column.				
Source	Target	Category	Statistic	Value
Base Fcst	End Inv Bgt	A	A	=
Base Fcst	End Inv Bgt	General	MAPE	0.0828
Base Fcst	End Inv Bgt	General	Mean	2,292.6096
Base Fcst	End Inv Bgt	General	R-Square	0.0000
Base Fcst	End Inv Bgt	General	Standard Deviation	224.1139

- 2 To view statistics for multiple forecasts within this series, clear your filter criteria from the top row of the table.

Grouping in the Statistics View

You can sort the Statistics View by any column by clicking on the title and then clicking again to reverse the sort order.

You will also notice that above the statistics is an area that says “Drag a column header here to group by that column.” This allows you to group your statistics by any column from the Statistics View. You can drag additional columns to this area to further group and sort your statistics.

Category	Statistic	Value
General	MAPE	0.0828
General	Mean	2,292.6096
General	R-Square	0.0000
General	Standard Deviation	224.1139

Graph View Data View Demand Data **Statistics View**

Drag the statistics boxes back to the list view to remove this level of grouping and restore the column to the list view.

Changing the Statistics View

The Forecast Settings screen is used to select which statistics display on the Statistics View tab and select the parameters used in generating these statistics. The **Forecast Method** can also be changed from this screen by selecting a new method from the **Forecast Settings** section. Changes made to the fields on the Statistics View will only display when the forecast re-run.

- 1 In the **Misc Window** section of the Viewer, click the **ForecastX Method** tab.

Source	Target	Method	Level	Primary	Periods
Adj Hist	Stat Fcst	ProCast	Scenario	☒	17
Dep Dmd	Dep Dmd	Double Holt	Scenario	☐	17
Stat Fcst	Adj Hist	Lifecycle	Series	☐	17

- 2 Select the Forecast to which you want to change statistics and click the **Edit Item** button. The Forecast Settings screen displays.

Forecast Settings: 02-TR-INV-OPT-LM - [10461052], Opinion Line : Stat Fcst

Save RollBack Close

Forecast Settings

Source Opinion Line: Adj Hist
 Target Opinion Line: Stat Fcst
 Forecast Method: ProCast
 Overwrite History: ☒
 Automatic Forecast: ☒

History Range

Fixed Start Period:
 Fixed End Period:
 Floating Start Periods:
 Floating End Periods:

Forecast Range

Forecast periods: 17

Forecast X Method Parameter

Error Term: Sum Squared Error
 Include New Product Curve: ☐
 Include when numb. of obs: 6

General Statistics

MAPE: ☒
 BIC: ☐
 AIC: ☐
 Sum Squared Error: ☐
 R-Square: ☒
 Adjusted R-Square: ☐
 Durbin Watson: ☐
 Mean: ☒
 Median: ☐
 Standard Deviation: ☒
 Variance: ☐

Accuracy Statistics

Mean Absolute Error: ☐
 Mean Error: ☐
 Mean Square Error: ☐
 Normality Error: ☐
 Root Mean Square Error: ☐
 Standard Deviation Error: ☐
 Theil: ☐
 Standardized Mae: ☐

Descriptive Statistics

Range: ☐
 Auto Covariance: ☐
 Max: ☐
 Auto Correlation: ☐
 Min: ☐
 Coefficient Of Variation: ☐
 Kurtosis: ☐
 Sum Squared Deviation: ☐
 Skewness: ☐
 Root Mean Square: ☐
 Mode: ☐
 Mean Squared Deviation: ☐
 LjungBox: ☐
 Mean Absolute Deviation: ☐

Safety Stock Statistics

Active: ☒
 Add Forecasted Values: ☐
 Lead Time: 2.00
 Level%: 95

Confidence Limits Statistics

Active: ☒
 Limit%: 90

Regression Table

Anova: ☐
 Coefficient: ☐
 Correlation Coefficient: ☐
 Coefficient of Determination: ☐
 Covariance: ☐

Statistics Attribute Mapping

Statistic	Attribute
MAPE	
Mean	
R-Square	
Standard Deviation	

- 3 Use the check boxes to select the statistics to display.
- 4 Click **Save**. The Forecast Settings window closes.
- 5 Re-run the forecast to update the Statistics View with the new settings.

Descriptive Statistics

The Descriptive Statistics section of the Forecast Settings screen contains different statistics that describe data. This section provides detailed information for the different types of statistics available in DME.

Descriptive Statistics	
Range	☐
Auto Covariance	☐
Max	☐
Auto Correlation	☐
Min	☐
Coefficient Of Variation	☐
Kurtosis	☐
Sum Squared Deviation	☐
Skewness	☐
Root Mean Square	☐
Mode	☐
Mean Squared Deviation	☐
LjungBox	☐
Mean Absolute Deviation	☐

Auto Correlation

Auto Correlation describes the dependence between two variables of the same Series at different time periods. Auto Correlation helps determine if there is a causal connection between two variables, even though there is a time lag between their occurrences. For example, Auto Correlation can be useful in sales for determining if a special promotional event occurring at regular intervals is a causal factor in increased sales after the events happen.

Coefficient of Determination

Auto Correlation can tell you if Y is dependent on X, even though X happens before Y. Not only can Auto Correlation be used to determine Seasonality, it also helps describe if a Series is stationary. A Stationary Series is one that has properties independent of the time period in which they occurred.

Also known as R-Squared tells the proportion of variance in Y that can be explained by X. X is an Independent Variable that has some influence on Y's variance. It can also explain how dispersed the data points are from the mean data point. This can be useful in determining if an Independent Variable affects the Seasonality of your data.

Coefficient of Variation

The relative amount of dispersion in the data can be calculated by expressing the standard deviation as a percentage of the mean. This measurement is called the Coefficient of Variation. This enables comparison of the dispersions of two separate data sets that are entirely different.

Confidence or Interval Estimate

The Confidence or Interval Estimate is defined by two numbers and within these two numbers lays the parameter point of interest. The parameter point of interest is retrieved by forming an interval around the point estimate (i.e., a value arrived at from the sample data that estimates the unknown

population value) and is computed using either the Normal distribution or the T distribution. The goal of the Confidence Estimate is to help determine whether the Forecast is trustworthy. Therefore, if the Forecast is trustworthy, the Confidence Estimate is small.

Correlation Coefficient

Correlation Coefficient determines how strongly two variables are related. The value of the Correlation Coefficient is always between -1 and 1. That means that if the value is 0, then the two variables, X and Y, are independent.

If the Correlation Coefficient is positive, it means when X is large, Y is likely to be large as well. If the Correlation Coefficient is closer to 1, then X and Y are almost directly related. However, if there is a negative correlation, it means that when X is large, Y is likely to be small. The closer the Correlation Coefficient is to -1, the stronger the negative correlation.

Covariance

The degree of dependence between two random variables is measured by Covariance. This is useful if you have two random, dependent variables, such as X and Y.

Difference

Difference is one of the easiest ways to make comparisons of a time-Series variable over time. It is accomplished by subtracting the current value of a variable by a past value.

This procedure is useful to see the absolute change in the direction the variable is taking. Differencing is often used to make a non-stationary time Series stationary, or de-trended. A non-stationary time Series is one that does not have a fixed mean.

Kurtosis

Kurtosis measures the thickness of the tails of a distribution. Kurtosis is a measure of flatness and tail thickness of a distribution as compared with the normal distribution. Positive Kurtosis, or Leptokurtic, indicates a relatively peaked distribution. Negative Kurtosis, or Platykurtic, indicates a relatively flat distribution.

For a normal distribution, Kurtosis is equal to three. When the tail of the distribution is thicker than the normal distribution, Kurtosis is greater than three. When the tail of the distribution is thinner than the normal distribution, the kurtosis is less than three.

See [Skewness](#) for additional information.

Ljung Box

Ljung Box tests the overall Auto Correlation of the fitted errors of a model. It determines how a variable relates to itself when it is lagged one or more periods. It also shows that if the correct ARIMA model is estimated, the Ljung Box statistic tends to be smaller. Conversely, an erroneous model would tend to inflate the Ljung Box statistic.

Max

Maximum is the largest value in the data set.

Mean

Mean is the *average*. The Mean is calculated by adding the values of the items and then dividing the total by the number of items added. Like Median, it is often used as a measure of location for a frequency or probability distribution.

Median

Median is the middle item after the entire sequence is arranged in either ascending or descending order. Median is used to measure the location for a frequency or probability distribution.

Min

Minimum is the smallest value in the data set.

Mode

The value or values that appear most frequently within your data set.

Range

The difference between the Max and the Min.

Skewness

Skewness is similar to Mean and Variance, which calculate the distribution of a random variable. Skewness measures whether or not the distribution is symmetrical. A symmetric distribution has a Skewness of 0. If the tail of the distribution is long and in the positive direction, then it has positive Skewness. If the distribution has a long tail in the negative direction, then the Skewness is negative.

Standard Deviation

Standard Deviation is a descriptive statistic that is derived from taking the square root of the variance. The variance allows you to see how far each data point is from the mean within the data set.

Sum of Squared Deviation

With the Sum of Squared Deviation, given a single data Series, each observation is subtracted from the estimated mean of the data Series, and then squared. All Observations are then added to produce the Sum Squared Deviations. The Sum Squared Deviations are used to calculate the sample variance, alternatively called the Mean Squared Deviation (MS), of a single data Series.

Variance

Variance measures the dispersion of the data. Variance is calculated by determining how far each data point is from the Mean.

Statistical Methods

This section details the different types of Statistical Methods that are used within the DME.

Holt-Winters Method

The Holt-Winters method is an exponential smoothing technique that incorporates growth and Seasonality into the Forecast by producing seasonal lift factors for each seasonal period. The DME displays the seasonal indices in the Audit Trail report.

The Holt-Winters formula uses three parameters, or smoothing constants, to calculate a Forecasted value:

Parameter	Description
Alpha	The level of smoothing.
Gamma	Determines growth trend.
Beta	Determines seasonality.

The value of each parameter is always between 0 and 1.

If the Historical data changes rapidly, large smoothing constants should be used. For stable, naturally consistent data, the smoothing constants should be closer to zero. In either case, the DME automatically optimizes the parameters when they are not already specified.

Holt-Winters Method Example

The Holt-Winters Method example is based on the volume of ticket sales for bus rides. The **Go Anywhere** bus line is trying to determine when the company should deploy the largest number of buses to meet its rider demand. Using the Holt-Winters method, Go Anywhere will Forecast its ticket volume sales.

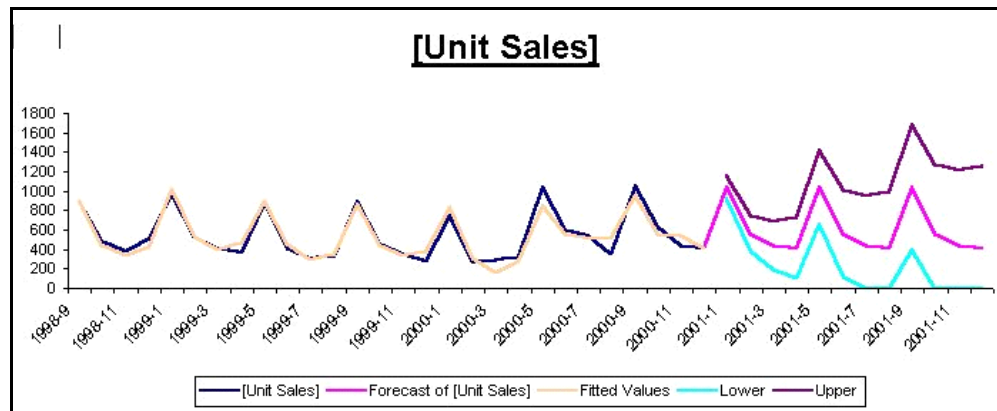
- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select “Excel Spreadsheet” as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the **ExcelExampleFXE.xls** file and click **Open**.
- 5 Select “Holt-Winters Table/Query” as the **Table Name** from the drop-down list.
In this example there are 28 months of Historical ticket-sales on which to base the Forecast.
- 6 Select “Columns” in the **Data Organization** field.
- 7 In the **Forecast Settings** section,

8 Select “*Holt-Winters*” from the **Method** drop-down list.

9 Click the **Procast** button.

When the Forecast is complete, a message box will display asking you to view the updated data in the Viewer.

After running the Forecast, the DME creates a graph and table with the Seasonal indices. The graph enables users to quickly assess the trend and Seasonality of data by visualizing the peaks and valleys of data.



Graph Results

The statistical tables enable users to determine the accuracy of a Forecast. The table below details the lines on the graph.

Line	Description
Brown	Represents the Fitted Values of the Forecast and illustrates how closely the Forecasted and actual values match.
Dark Blue	Represents the Actual Values.
Pink	Represents the Forecast Values.
Light Blue	Above and below the Forecasted values are the Confidence Limits. These values represent the likelihood, within 5%, of the Forecast to fall within that range.
Purple	Above and below the Forecasted values are the Confidence Limits. These values represent the likelihood, within 5%, of the Forecast to fall within that range.

Overall, the graph shows that there is an upward trend in the sale of bus tickets, with this seasonal trend continuing in the future.

Audit Trail Results

Audit Trail statistics reveal that the DME created an accurate and trustworthy Forecast shown by the very low Mean Absolute Percentage Error of 12.54%. In addition, the Audit Trail report displays the smoothing constants, Alpha, Beta, and Gamma, as well as the seasonal indices. You can use this detail to learn about the trends and Seasonality of your data.

Audit Trail - Statistics			
Accuracy Measures		Value	
Mean Absolute Percentage Error (MAPE)		12.54%	
R-Square		90.26%	
Forecast Measures		Value	
Mean		539.36	
Standard Deviation		249.18	
Method Statistics		Value	
Primary Method		Holt Winters	
Alpha		0.78	
Beta		1.00	
Gamma		0.00	
Seasonal Length		4.00	
Decomposition Type		Additive	

Using the Forecast, the **Go Anywhere** bus line can operate more efficiently and cost effectively. Bus drivers are staffed as needed, the correct number of buses are deployed at the appropriate times, and the company is able to service the buses during down times, which results in not losing any riders due to lack of buses. Ultimately, **Go Anywhere** adds to its bottom line by providing the highest level of customer service.

Simple Exponential Smoothing

Simple Exponential Smoothing is a method of Forecasting using both Historical data and Fitted data to generate the new Forecast. The underlying concept of Simple Exponential Smoothing is that recent values are given relatively more weight than older observations.

For example, in a three period Moving Average Forecast, the February, March, and April actual values evenly determine May's Forecast.

Depending on the level (Alpha value) given to the Data Series, a Simple Exponential Smoothing method creates a Forecast for May that more heavily relies on April's observations. Simple Exponential Smoothing is most effective as a Forecasting method when irregular influences comprise the main effects on the Historical time Series values.

The Alpha value, or the level of smoothing, always is a value between 0 and 1. If the Alpha value is closer to 1, then the level of smoothing is going to more closely reflect the actual data. If the value is closer to 0, the level of smoothing is going to more closely reflect the fitted line, or Forecasted values.

As with all other Smoothing techniques within the DME, you have the freedom to either set the Smoothing constants yourself or enable the DME to optimize the values.

Simple Exponential Smoothing Example

The following example uses data that does not have recognizable patterns such as Trend or Seasonality. This makes Simple Exponential Smoothing an optimal method to use.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select "Excel Spreadsheet" as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the **ExcelExampleFXE.xls** file and click **Done**.

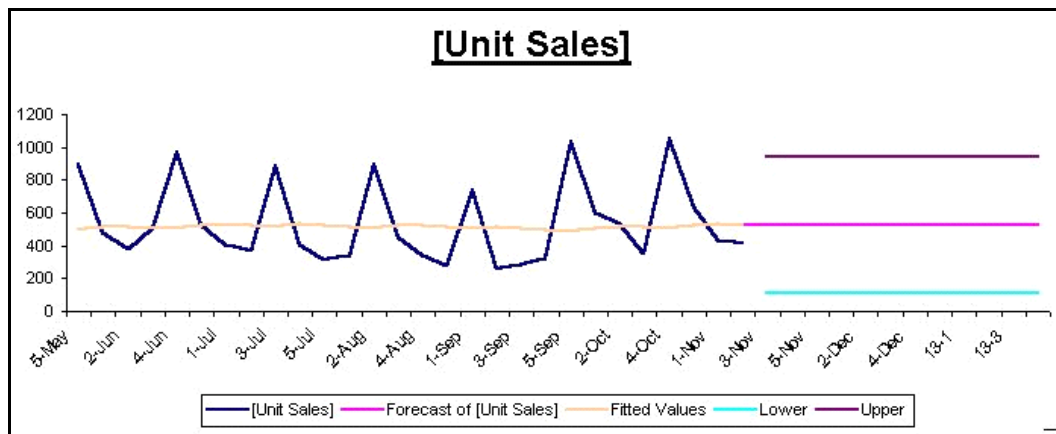
- 5 Select the “*Simple Exp. Smoothing*” from the **Table** drop-down list.
- 6 Select “*Simple ES*” from the **Method** drop-down list in the **Forecast Settings** section.
- 7 Click the **Procast** button.

When the Forecast is complete, a message box will display asking you to view the updated data in the Viewer.

Summarizing the Results

The DME provides two tools to judge the accuracy of your Forecast and determine the direction of your business. The first thing you see is the Executive Report chart. One line shows the actual values, and the other line represents the fitted values and the Forecasted values.

The DME also creates a detailed table that displays the optimized parameters for your Exponential Smoothing Forecast. The table indicates that the Forecast has an average error of 6.53%. This means that the DME smoothed your data to a considerable degree. A low smoothing value indicates a high level of smoothing.



Audit Trail

Summary Comments			
The forecast has an average error of	6.53%		
the data has a standard deviation of	1.20		
the forecast exceeds the accuracy of a simple average by	0.07%		
Audit Trail - Summary Analysis			
Audit Trail Statistics			
Accuracy Measures		Value	Forecast Statistics
Mean Absolute Percentage Error (MAPE)	0.02%		Mean
R-Square	0.00%		Standard Deviation
Method Statistics		Value:	
Method Selected	Exponential Smoothing		
Alpha	0.12		

Adaptive Exponential Smoothing

The Adaptive Exponential Smoothing method is derivative from the Simple Exponential Smoothing method. The difference with Adaptive Exponential Smoothing is that the Alpha value systematically changes from period to period to enable pattern changes in the Historical data.

The Adaptive Exponential Smoothing method is completely automated and uses the advantages of Simple Exponential Smoothing. This method is most useful in the following situations:

- There is a large number of items in the data
- The data is not Seasonal
- There is no trend in the data

Adaptive Exponential Smoothing Example

An example of when to use Adaptive Exponential Smoothing is when a product has been sold for a long period of time, and has recently had a significant market change. While Forecasting, you want to consider the most recent sales data more than older sales data.

In the dataset file that was installed with the DME, you can use a file to generate a sample Forecast using the Adaptive Exponential Smoothing method.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select “Excel Spreadsheet” as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the *ExcelExampleFXE.xls* file and click **Done**.
- 5 Select “Adaptive Exp. Smoothing” from the **Table** drop-down list.
- 6 Select “Columns” in the **Data Organization** field.
- 7 Select “Exponential Smoothing” from the **Forecasting Technique** drop-down list. Leave the parameters blank so the DME can optimize the values.
- 8 Click the **Procast** button to run the Forecast.

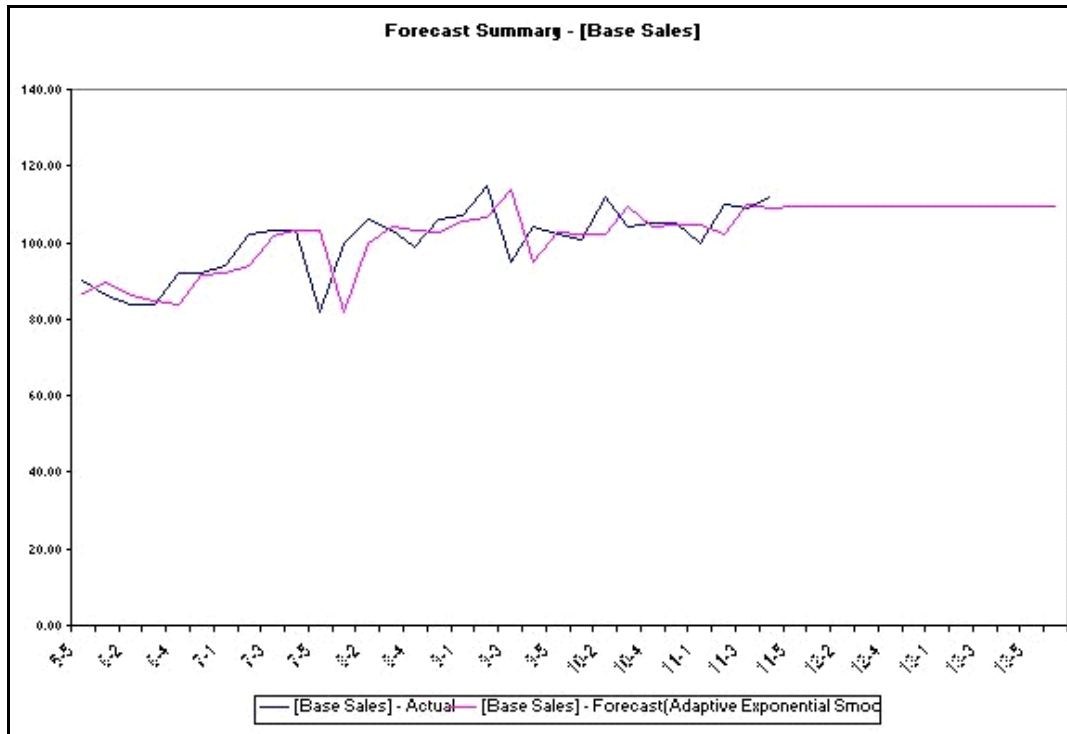
Summarizing the Results

There are two areas in the Standard report for you to see the results of your Forecast.

- 1 The Excel spreadsheet, which is called Chart1, produced by the DME displays three criteria:
 - The actual values of your original Historical data
 - The Forecast method chosen
 - The Forecasted values for both the original Historical data and the future values
- 2 Near the bottom of the spreadsheet is a table that contains basic error measurements:
 - Mean Absolute Percentage Error
 - R-Square Error
 - Mean
 - Standard Deviation

This table shows that your Forecast accuracy is good, and the fit of the Forecast, represented by the R-Square value, is very good.

Click the tab in the lower-left corner of the spreadsheet to view a graph. The graph enables you to view the Forecast's future and also the behavior of the data's history.



As the graph indicates, the market changes from April '97 to June '99 affected the sales of your product. Because you chose the Adaptive Exponential Smoothing method, the DME weighed the most recent values more heavily than older values. This enables you to consider how the market is currently behaving, and how that behavior is going to affect your total sales.

Box-Jenkins ARIMA Modeling

The basis for the Box-Jenkins methodology consists of three phases:

- Identification
- Estimation
- Testing and applying the ARIMA model

This methodology is a multi-step model building strategy aimed at optimizing the ARIMA process. The DME automatically optimizes the best ARIMA using the Box-Jenkins methodology. For users who are more advanced, the DME enables to perform data transformation and analyze the ACF and PACF charts for model selection. Box Jenkins is best used on extensively long Historical data sets with lower volatility.

The Box-Jenkins Methodology

There are four phases of the Box-Jenkins method. The table below details what each means.

Phase	Description
Model Identification	Data is plotted (if needed) for performing transformation and differencing analysis. A data transformation stabilizes the variance within a set of data points. Differencing the data makes it stationary. A first guess at the ARIMA model is analyzed.
Estimation and Forecasting	The model parameters are chosen based on the model that provides the lowest error term. The data is then Forecasted.
Diagnostic Checking	The decision whether to re-run using a different model or continue using the ARIMA model diagnosed is made based on an analysis of the Statistical Accuracy of the model.
Forecasting	A Forecast of the time Series is generated using the ARIMA model.

The two basic classes of components in Box-Jenkins are trend and seasonality. The airline example is an excellent way to learn trend and Seasonality within Box-Jenkins, as well as demonstrate how Box-Jenkins projects future travel patterns and, in turn, gross sales.

Seasonality differs from trend in that sporadic changes in the number of passengers traveling happen repeatedly throughout the year and various seasons. The fact that these elements come into play at a specific time of the year demonstrates Seasonality.

When looking for trends in data, look for gradual increases in sales over time that does not repeat within the time range being Forecasted. For instance, the number of people who fly in general has increased over the last ten years resulting in a consistent upward slope in the data. This, in combination with higher sales during certain times of the year (seasonality), signifies an increase in sales from year to year that follows a seasonal pattern, which is why we've chosen to use the Box-Jenkins/ARIMA modeling to handle this data.

Box-Jenkins Example

During holiday seasons, airline flights are booked. Frequently, more people are trying to fly than the airlines can accommodate. This Forecasting problem has become a classic example for time Series Forecasting. Most textbooks and college courses use the famous airline data from 1949 to 1960's to walk through Box-Jenkins ARIMA methodology.

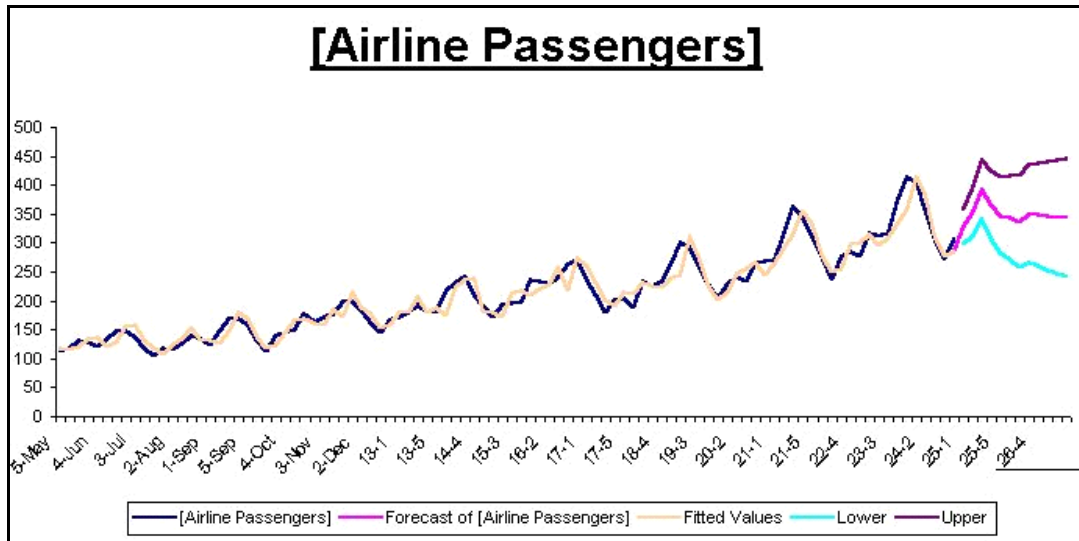
In the dataset file that was installed with the DME, you can use a file to generate a sample Forecast using the Box-Jenkins method.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select "Excel Spreadsheet" as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the **Tutorial_AirlineData.xls** file and click **Done**.
- 5 Select "Data" from the **Table** drop-down list.

- 6 Select “Columns” in the **Data Organization** box.
- 7 Set the **Forecast** to “36” to Forecast three years into the future.
- 8 Set the **Seasonality** to “12”.
- 9 In the Forecast Settings section, select “Box-Jenkins” as the **Method**.

Note For this example, we did not set seasonal parameters. We allow the DME to select the best parameters.

- 10 Click the **Procast** button.



Performing ARIMA Analysis

The DME includes several tools to analyze your data and assist on ARIMA selection. These tools include:

- **Customize ARIMA Model Input:** The ability to input a non-seasonal and seasonal ARIMA model.
- **On the Forecasting Method screen,** you can select Box-Jenkins and enter your own ARIMA model.
- **Data Transformation** charts the variance and provides the functionality to transform your data. By examining the Variance chart, you can perform a log, square, and square root transformation. Click the Series Preview and Transformations button at the bottom of the DME window and the Transformation screen is displayed. Review the Variance chart. The goal is to have data distributed evenly around the Mean.
- **The Data Analysis chart** includes the ACF and PACF charts (Auto Correlation Function and Partial Auto Correlation Function) and provides functionality to difference your data. By examining the ACF chart, you can determine if differencing is required and also what the order of the ARIMA should be.

- From the Series Preview and Transformation screen, select the Analyze tab. You can set the differencing parameters. Differencing enables you to remove the trend by subtracting adjacent data points. The correlogram displays the ACF and PACF, which show you the Auto Correlations and relationships that each variable has with the past. If correlation is high, it indicates that the variable is predictable.
- The ACF and PACF (Auto Correlation Function and Partial Auto Correlation Function) are used in determining whether or not your data is stationary. It also enables you to see Seasonality and Trend. As discussed previously, your data may contain both factors and, therefore, must be differenced before we can choose our ARIMA model. The DME enables you to put in the differencing parameters and view the changes in the correlogram as you create them. In addition, looking at the pattern of the data in both the ACF and the PACF helps determine the best model.

Holt's Double Exponential Smoothing

Holt's Linear Exponential Smoothing is similar in principle to Simple Exponential Smoothing. It calculates Alpha, the level component, to measure the trend in the Forecast. It also adds the parameter Gamma, the trend component, to create a linear trend in the Forecast. This equation is similar to a linear Regression line and is useful when a product is experiencing an exponential growth or decline, while not exhibiting recognizable Seasonality. In other words, if your data is very dynamic and doesn't change due of seasonal factors, then Double Holt is an appropriate method to employ.

Holt's Double Exponential Smoothing Example

The following example uses a short data set that is very intermittent. As Sales Manager of this new product, you need to determine what the trend is likely to be, despite given such sporadic data.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select "Excel Spreadsheet" as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
- 4 A Windows Open dialog displays.
- 5 Browse to the *ExcelExampleFXE.xls* file and click **Done**
- 6 Select "Double Holt" from the **Table** drop-down list.
- 7 Select "Columns" in the **Data Organization** field.
- 8 In the Forecast Settings section, select "Double Holt" as the **Method**.
- 9 On the **Cleansing** tab in the Options section, select the **Replace Outliers** checkbox. The DME automatically removes the outliers and produce a more accurate Forecast as a result.
- 10 Click the **Procast** button.

Life Cycle Forecasting

The DME Life Cycle Forecast method allows users to predefine the life cycle pattern. With this feature, life cycle information is created using the Profile Manager. Different types of Profiles (i.e., introduction, seasonal patterns, and retirement) can be created using opinion line data from one or more series in the scenario. When applying a Life Cycle Forecast, a user can specify different Profiles for different forecasting periods. A user can define as many as Profiles as needed.

For more information on Life Cycle Forecasting and Profiles, please refer to [Chapter 9 Life Cycle Forecasting](#) in the DME User Guide.

Additional Smoothing Methods

This section introduces additional smoothing methods available. The example reports in this section use the *Tutorial_AirlineData.xls* data file with the respective method.

Moving Average

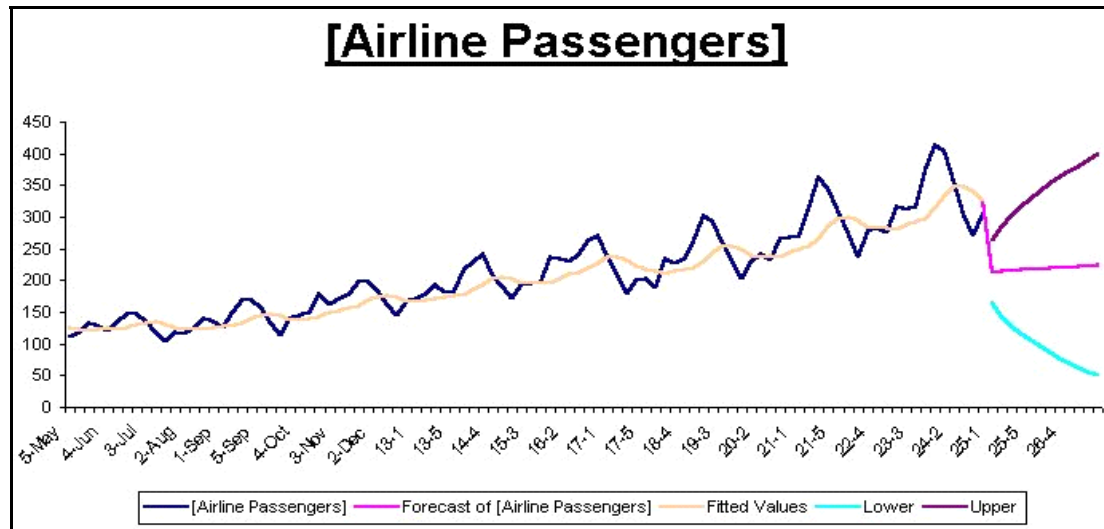
A Moving Average Forecast is the average of a time Series over a specific number of preceding periods. When a new value is added, the last is dropped from the calculation, so that the specific number of preceding periods remains a constant.

However, two drawbacks are that Moving Averages do not effectively handle significant trends in data and all Historical data must be stored to create the moving average. In the case of time Series data, Moving Average Forecasts are often used to eliminate unwanted fluctuations, thereby smoothing the time Series. The appropriate number of preceding periods should be determined by selecting the amount of periods that yields the least amount of error.

The start value of a moving average is where the calculation begins. The start value uses zero as its first value, so if you would want to start at the fourth observation, the start value would be three. The number of Observations to include in the average calculation is called the History.

For example, if you want to start at the fifth observation and perform a moving average with three Historical Observations, the start value would be 4 because the count starts at 0.

The moving average calculation would include the third, fourth, and fifth Observations.



Weighted Moving Averages

Rather than replace the oldest Observations within the data, the Weighted Moving Average replaces the oldest moving average with the most recent moving average. In this way, Weighted Moving Averages handles significant data trends.

Use Weighted Moving Average Forecasts to overcome the strong affects of extreme values within a time Series by assigning current data more weight than older data. The start and history parameters are the same as those in moving averages.

Brown's Double Exponential Smoothing

The Brown's Double Exponential Smoothing method attempts to create a linear equation. It performs two simple exponential smoothing Forecasts and then adjusts for the linear trend in the data.

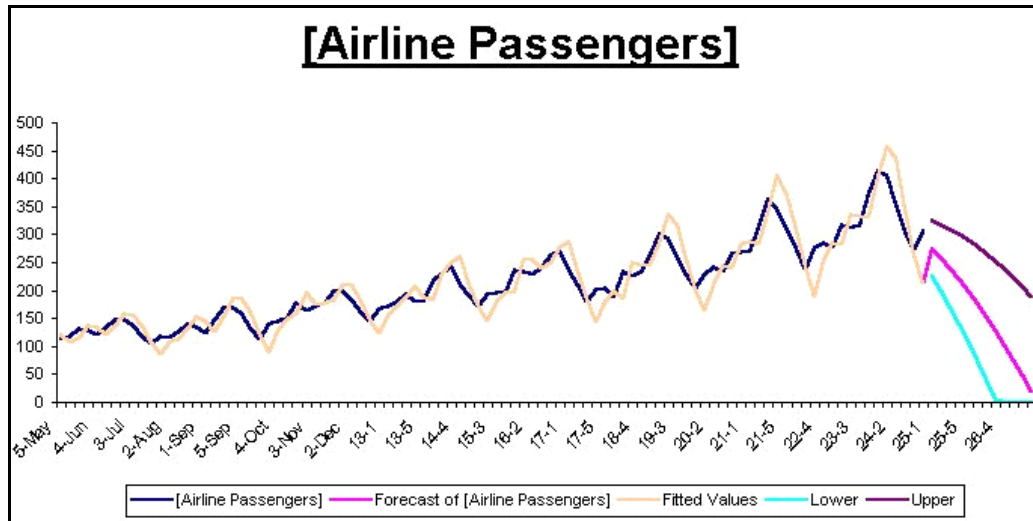
Brown's Double Exponential Smoothing method is similar to Holt's method in the fact that the goal is to create a linear trend, but Brown's does so without adding additional parameters to the equation.

Since Forecasts can be expressed as a function of the single and double smoothed constants, the procedure is known as Double Exponential Smoothing. Brown's Double Exponential Smoothing is most appropriate for data that shows a linear trend over time. As defined above, the smoothing component is Alpha.

Brown's Triple Exponential Smoothing

Brown's Triple Exponential Smoothing is implemented on data showing a quadratic trend over time. It works well for data that has a very steep growth or decline.

The Brown's Triple Exponential Smoothing method attempts to create a linear equation by performing three simple exponential smoothing Forecasts and then adjusting for the linear trend in the data.



Census X-11

Census X-11 is a refinement of the Seasonal-decomposition method. Census X-11 is best suited for a Series where the number of days in the time period directly affects the values in those time periods. It seasonally adjusts and decomposes your data through a Series of predefined steps:

- Seasonal
- Trend
- Cycle
- Random or Irregular

A Seasonal component of a time Series occurs regularly (i.e., Christmas), while a Cycle has a duration that varies from cycle to cycle. Economic variables are cyclical. A depression occurs at Random or Irregular intervals.

During the Forecasting process, Census X-11 factors in trading days to refine the Forecast and reduce the irregular component of the Forecast by weighting each period by the number of trading days. The DME enables you to account for trading days with one easy step or Forecast without adjusting for trading days. The former produces more accurate Forecasts when trading days are important.

This is especially useful if the number of trading days dramatically affects the amount of business that is done in a time period. For example, you have a value of 100 in two consecutive months. On first glance, it appears that the two months are equal. However, assume that the first month has 25 trading days while the second has 15. In this case, Census X-11 will take the value 100 and spread it over 25 ($100/25$) for the first month and 15 ($100/15$) for the second. It's advantageous to use Census X-11 here because it is likely any extreme observations between the months can be explained by the number of trading days.

Trading days also can be specifically known for each time period. For example, you can determine how many trading days each of the last 12 months contained by reviewing how many official working days took place. You can easily determine how many trading days are going to occur over the next 36 months (or whatever your Forecast periods) by taking into account days off, holidays, or weekends. Census X-11 offers another way of determining factors affecting your Forecasts.

Census X-11 also identifies two types of Seasonality:

- Additive
- Multiplicative

Consider the following example to differentiate the two. Suppose you look at an annual sales report for product X with a peak that repeats every year in the months of November and December. Every year during December, the sales of X increase by \$200,000. Each year \$200,000 (over the annual average) is added to the sales of X in December. The Seasonality is Additive. However, suppose that sales of X increase by 20% during December. Then the Seasonality is Multiplicative. Additive Decomposition assumes the data is the sum of the time-Series components and is independent of the trend. Multiplicative Decomposition assumes the data is the product of the time-Series components and is a ratio of the trend.

Census X-11 Example

In this example, you are the owner of the Club Sport Gear import-export clothes store. Through the global-nature of the Internet, you have realized that your business is highly seasonal and influenced by holidays. In addition, your clothes distributor is located in China.

As your business grows, your Forecast accuracy decreases because the overall affect of the Chinese New Year is not factored into Forecasts. During the Chinese New Year, which never falls on the same day in consecutive years, your Forecasts haven't allowed you to make confident decisions. That is because the Chinese Distribution Company you have come to depend on always allows employees a traditional five days off work during their holiday and your sales in China decrease on their holiday, as well as the days surrounding it. The challenge you face is determining the extent to which the Chinese New Year affects your sales.

The Chinese New Year may fall in mid-January one year and late February the next. You have been able to Forecast using the amount of money you make per month in exports, but you know the Forecast would be more accurate if you could factor in the number of actual business (or trading) days per month. If all factors are not taken into account, the Forecast output is not as accurate as it could be.

Since the number of days you do business with the Chinese Distribution Company varies, this year you have selected the Forecasting technique Census X-11, which enables you to factor in the irregular work schedule. This added factor to your Forecast greatly improves the overall accuracy of the Forecast.

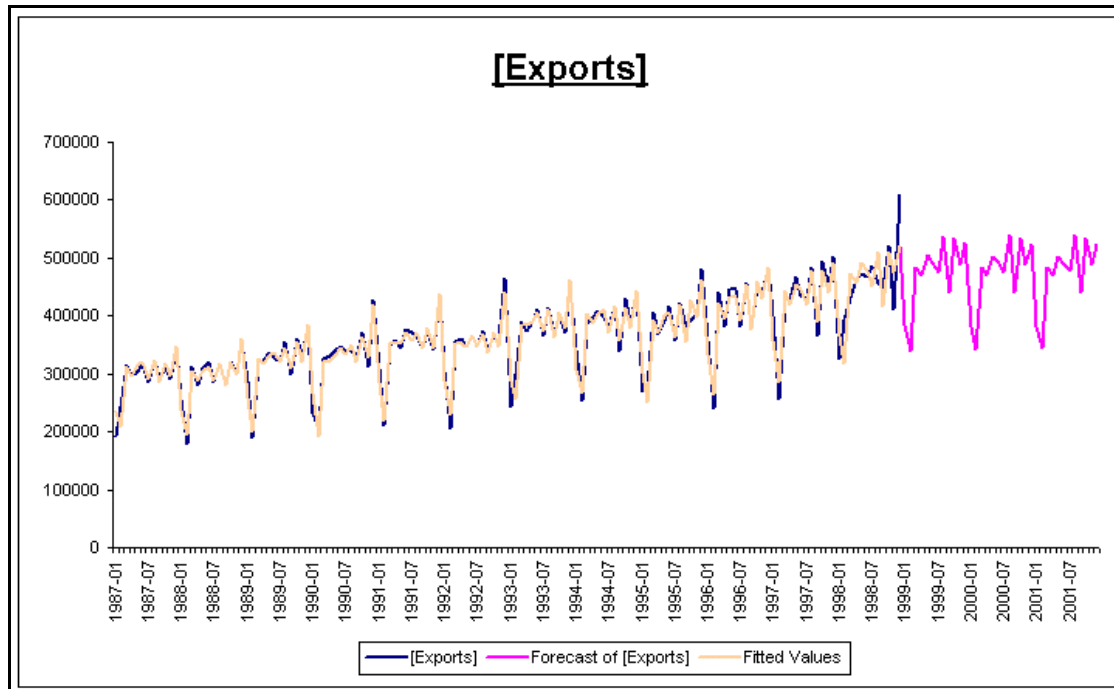
According to your data, you have increased sales on exports each of the past 11 years. The Chinese New Year dramatically increases your export sales in November and December. Whereas, the months of the Chinese New Year always decrease your export sales in either January or February, depending on when the holiday occurs. You know when the Chinese New Year occurs over the next several years.

With Census X-11, you can account for the factor that is affecting your Forecasts. The DME accomplishes this by dividing your original data by the number of trading days that you specify. This weighs the monthly Observations in accordance to their respective trading-days for each month. Now your Forecast is based on more accurate data. To illustrate the power of Census-X11, perform the first Forecast without accounting for trading days.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select “Microsoft Access” as the **Data Source**.
- 3 In the **Connection String** field, click the search icon .
The **Open** dialog box displays
- 4 Browse to the **CensusX-11.mdb** file and click **Done**.
- 5 Select the “Census X-11Table” from the **Table** drop-down list.
- 6 Select “Columns” in the **Data Organization** field.
- 7 Enter “12” in the **Seasonality** field.
- 8 To produce a Forecast for three years, enter “36” in the Forecast field.
- 9 In the Forecast Settings section, select “Census X-11” from the **Method** drop-down list.
- 10 Click the **Procast** button.

Summarizing the Results

Notice the DME has confirmed the Chinese New Year does affect your sales in the months preceding and following the holiday. Watch for the following information. According to the Forecast, sales through your distribution outlet continue to increase over the next three years. Although, since you didn't take the actual number of business or trading days into account, the average error of your Forecast is 3.81%. Now you decide to run a Forecast that does account for the actual trading days in each month. The goal here is to produce an even more accurate Forecast.



Summary Comments

The forecast has an average error of	3.81%
The data has a standard deviation of	73,637.65
The forecast exceeds the accuracy of a simple average by	92.97%

Forecasting With Advanced Census X11

- 1 Select the **CensusX-11.mdb** sample spreadsheet as the **Data Source**.
- 2 Select “Data” from the **Table** drop-down list.
- 3 Select “Columns” in the **Data Organization** field.
- 4 Enter “12” in the **Seasonality** box to indicate that the data is monthly.
- 5 Enter “36” in the **Forecast** field to make a direct comparison to your previous three years of Forecast.
- 6 Click the **Forecast Method** tab, and from the **Forecasting Technique** drop-down list, select **Seasonal Model**.
- 7 In the Forecast Settings section, select “Census X-11” from the **Method** drop-down list.
- 8 In the **Seasonal Type** box, select “Multiplicative”.
- 9 Select the **Trading Day Adjustment** checkbox.
- 10 Select **Procast** from the **Secondary Method** drop-down list.
- 11 Click **Procast**.

Croston's Intermittent Model

Croston's Intermittent Model is the method used to handle sporadic data. For example, consider a manufacturer whose inventory is constantly in sporadic demand; there are no precursors to when orders will be placed, or the demand is often zero even though the average demand is for several units. In addition when an order is placed, it is usually for more than one particular item.

This situation causes an over calculation of the average or mean demand. At times the demand is zero, and other times the demand is for multiple orders, which limits how accurately the manufacturer is able to predict stock needed. Orders do not arrive at predictable times, so there are times when the manufacturer is over or under stocked.

Croston's Intermittent Model is specifically designed to deal with such a situation with a two-step process. The main goal is to provide a good Safety Stock, resulting in a situation where the manufacturer is neither over nor under stocked. This is accomplished by considering two aspects of the data: the demand size and the demand occurrence.

Croston's Intermittent Model is superior to Exponential Smoothing in a case like this because Exponential Smoothing does not take into account the sporadic nature of the data. For example, suppose that the average order for a manufacturer is 10 units, but they occurred only 10 times a year in the past, in irregular patterns, and the demand was often zero. In this case, Croston's Intermittent Model recognizes both the sporadic timing of the orders and that the average order (10) is actually a misrepresentation if it is spread evenly over the number of days.

Croston's Intermittent Example

This example shows how Croston's Intermittent Model can accurately Forecast intermittent demand and help you control stock. This Forecast example tracks the compact disc sales from a new group who has just released their first album.

As the manager of a music store, you started Forecasting demand for the new CD. Although sales for this group has sky rocketed, their daily sales began to take a more irregular pattern of sales. You decide to Forecast the demand in order to save money and space for other, almost-as-popular CDs.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select "Excel Spreadsheet" as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the *ExcelExamples\FXE.xls* file and click **Done**.
This spreadsheet contains daily records of the CDs you have sold. The demand is unpredictable, both when the Demand occurs and in what quantity it occurs.
- 5 Select the "Croston's Table" from the **Table** drop-down list.
- 6 Select "Columns" in the **Data Organization** field.
- 7 In the Forecast Settings section, select "Croston Intermittent" as the **Method**.

The **Alpha** field displays in the **Forecast X Method** section. Leave this field blank. The DME optimizes the value for you.

8 Click **Procast** to run the Forecast.

With Croston's Intermittent Forecasting method, you can control and smooth sporadic data. This method provides excellent results for product control and Forecasted demand. In the standard report, you can see the MAPE is 75.05% and the R-Square is 0.

At first glance, the Forecast result is poor. However, because there are many zeros in the data set, these two statistics are not useful in judging the accuracy of the Croston's Intermittent Forecast. The most important measure is the Forecast observations themselves. In this example, 0.73 is the value of each and every Forecast observation.

With the Forecast values, the Mean, and the Standard Deviation of the data set, the Safety Stock can be calculated accurately. You can retrieve the Safety Stock from the Audit Trail report. It has been theoretically proven that for intermittent data sets, Croston's Intermittent Forecasting method can produce much more accurate Safety Stock than other Exponential Smoothing methods.

Slow Moving Method

For slow moving demand, most Forecasting packages use the Croston method. The issue with Croston is that it assumes the incoming demand is a normal distribution and it does not consider seasonal pattern. In reality, a lot of demands are not normal distribution and has some seasonal pattern.

The Slow Moving method is a special Forecasting technique that has been developed after two years of testing and development to overcome the shortcoming in Croston method. The technique is designed to calculate the optimal stocking level for sporadic data. This technique works for items that have large numbers of zeros and items that have highly variable non-seasonal demand.

The following chart displays the types of data that are suitable for the slow moving stocking level technique. In each case, it is important to note that neither of the data Series contains a pattern nor the demands are not normally distributed around a Mean which would lend itself to a more traditional Forecasting technique.



The purpose of the slow moving technique is to set the appropriate stocking level to ensure that the proper amount of inventory is in place to meet demand taking into account service level and lead time.

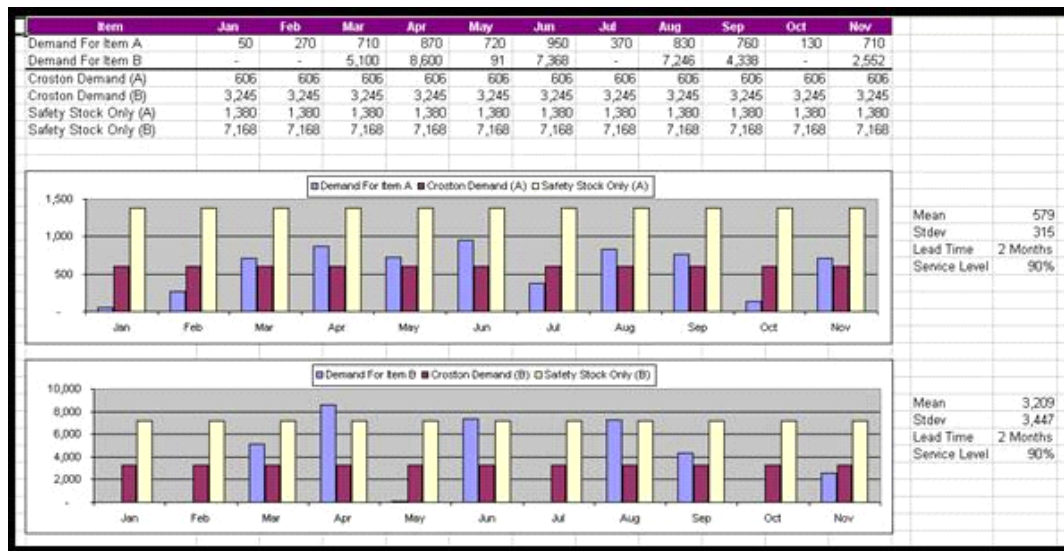
When the slow method is run the result is the total stocking level required to support demand and an average sales rate. This allows demand to be decomposed into its two components: an average sales rate, and Safety Stock.



In this case, the Slow Method was configured to support a 90% service level with a 2-month lead-time. The Slow Method then developed an event model to measure the demand impulses and compute a stocking level demand to meet the expected demand in the lead-time period.

What this means is that in each case the slow method was able to recommend a stocking level to achieve the desired service level for the sporadic item.

When this is contrasted to the Croston technique several major differences emerge because Croston assumes that the data being Forecasted is normally distributed. When this is the case, as often occurs with sporadic data the results are dramatic.



Because the data is not normally distributed, Croston yields results that may not guarantee that the desired service level is achieved. In the case of Item A the safety stock level is significantly higher, 1380 vs. 1121, than in the slow method resulting in a potential over investment in inventory for this item. In the case of Item B we see that the situation is precisely reversed, 7168 vs. 9729, resulting in under investment and the potential of lost sales. Therefore, as a general rule, it is better to use the Slow Moving method for Forecasting rather than Croston and the calculated Safety Stock as the stocking levels.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select "Excel Spreadsheet" as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the **ExcelExamplesFXE.xls** file and click **Done**.
This spreadsheet contains daily records of the CDs you've sold. The demand is unpredictable; both when the demand occurs and in what quantity it occurs.
- 5 Select the "Croston's Table" from the **Table** drop-down list.
- 6 Select "Columns" in the **Data Organization** field.

- 7 In the Forecast Settings section, select “*Slow Method*” from the **Method** drop-down list.
- 8 In the ForecastX Method Parameter section, select the **Event Index Creation** from the drop-down list. There are two options.

Option	Description
Seasonal	This method is used to create the event indexes in the Historical period automatically. The number cannot be larger than the number of Observations. If it is empty, the cycle is the same as the number of observations. In this mode, the index starts from 1 until the cycle number, and then repeat.
Std Bucket	Use the mean and standard deviation to determine the event index. The options include: - Exclude 0 - Use Exclude 0 when using the mean and standard deviation. In this option, all 0 are assigned a same event index 0. - Start - For values in the range [mean, mean + Start * std], assign index 1 to Start. For values in the range [mean – Start * std, mean], assign index 2 to Start. - Incr - For values in the range around the mean by (Start + x) * std, assign x*2 and x*2 + 1 index to Incr (depend on the direction). - End - For values in the range around the mean by End * std, assign the last two index to End.

- 9 Select the **Base Calculation Method** used to calculate the base line of the event model. Select from the following options.

Option	Description
Mean	Use the mean as the base line. Select Exclude 0 when calculating the mean.
Croston	Use the Croston method to calculate the base line.

- 10 Select the **Base Forecast Method** used to calculate the Forecasted value of the baseline of the event model. Select from the following options:

Option	Description
Same as Base Calculation	Use the same method as the one used in the base line calculation.
Select a specific method	It can be one of: Simple ES, Croston, Adaptive ES, Linear Regression, Double-Holt, Double-Brown, New Product Curve or Procast.

- 11 Select **Event Replace Type**. This option simulates the events in the future periods. Select from the following options:

Option	Description
Yes	Randomly selects an event from Min event to Max event. Note that for case that all 0s are assigned the same event (0), this special event needs more possibility to be selected then other events.

Option	Description
No	Each event and the number of its appearance are in a pool. An event is randomly selected and the number of the corresponding appearance is reduced by 1. If the lead time is longer than the Historical periods, this option is disabled. Note that the number of the events in future periods is the ceiling value of the safety stock lead time because the lead time can be a fractional number. As an example, if the lead time is 2.7, then 100% of Forecasted period 1, 100% of period 2, 70% of period 3 is used.

- 12 Enter the **Number of Simulations**. These options specify how many simulations are needed before the safety stock is calculated. Select from the following options:

Option	Description
Fixed	Enter a fixed number, such as 100.
% Threshold	Enter a threshold percentage to stop the calculation. When a safety stock is not different to the previous one by the threshold (e.g., the difference is less than 1%), then stop the simulation. To improve the performance, the simulation will not calculate the percent difference until it finishes at least 10 simulations.

- 13 Select the **Service Level As** option. This service level will determine the calculation of Safety Stock.

Option	Description
% of Total	The Safety Stock is cut at the specified percentage of the total simulated demand.
Std of Sample	The Safety Stock is calculated by the specified Standard Deviation of the sample, assuming that the simulated demand is normal distribution.

- 14 Select the Service Level in Hist As option. This option determines the calculation of service level in the Historical periods if the same Safety Stock is used in the Historical periods. Select from the following:

Option	Description
% of Amount	The Safety Stock is calculated as the percentage of the under stock amount over the total demand in the whole Historical periods.
% of Periods	The service level is calculated as the percentage of the periods when the under stock occur over the total Historical periods.

- 15 Click **Procast**.

Linear Regression

Linear Regression analysis uses an equation to analyze the relationship between two or more quantitative variables in order to predict one from the other(s). Linear Regression is best used when one Independent Variable significantly influences a dependent variable. Linear Regression measures the relationship between two variables: X and Y. Where X is the Independent Variable and Y is the Dependent Variable. A particular observation of Y depends on X and an additional random error.

$$Y = mX + b$$

The relationship between X and Y can be expressed by the slope coefficient, or the parameter b. The parameter b represents the nature of the relationship between the dependent and the Independent Variable. If b is negative, an inverse relationship exists. If b is positive, there is a direct relationship between X and Y.

If the slope coefficient is zero, then there is no relationship between X and Y. Parameter b is also used to quantify the relationship between the variables. If b is a very large positive or negative number, then it will have a greater influence on the dependent variable, Y. The importance of the slope coefficient is that it represents how the dependent variable changes when the Independent Variable changes by one unit.

The DME estimates the best-fit Regression Line for any input data. However, the user must first make an analysis about the estimated model and whether it provides meaningful information. A question that often arises is whether the Forecasted relationship between X and Y exists, and if it does, how good does the Regression line fit. There are several ways to evaluate and judge the goodness-of-fit of a Regression.

The variance of the Dependent Variable around the Independent Variable can be estimated using sample data. A common statistic used to judge the accuracy of the Regression is called the Standard Error of the Estimate. A large Standard Error indicates a lot of residual or error variation, which signifies a poor fit. If the Standard Error is small, there is a minimal amount of residual variation, thus the fit is good. The Standard Error of the Estimate helps determine how accurate the model is for prediction. The difficulty in using the Standard Error is making judgments about how large errors can be before they become unacceptable.

Another common statistic is the Coefficient of Determination. The Coefficient of Determination, or R-Squared helps make a better judgment about the model's goodness-of-fit.

The R-Squared produces a percentage error term rather than a numerical one. The percentage represents the variation in the Y variable as explained by the Regression. If the R-Squared is large (98%, 89%, etc.), the model is providing a good fit and you can have confidence in its ability to predict. However, if the R-Squared is small, the model is not providing a good fit and you should have less confidence in its ability to predict. Even with the R-Squared, there is still ambiguity about how large the percentage needs to be in order to be considered a good fit. Hypothesis tests such as the F-Test and T-Test enable us to make better judgments about the model as a whole.

The T-Test is used to make a judgment about the variable b, or the slope coefficient. This test indicates whether b is significantly different than zero. Again if b is significantly different than zero, there is a relationship between the Dependent and Independent Variables. For Linear Regression the F-Test and the T-Test deduce the same conclusions.

Linear Regression Example

Suppose you have 12 months worth of sales data. You want to create a Linear Regression Forecast for the next 12 months and determine if the model is reliable. The procedure below details how to create a Linear Regression model.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select “Excel Spreadsheet” as the Data Source.
- 3 Click the search icon  in the **Connection String** field.

A Windows Open dialog displays.

- 4 Browse to the **ExcelExamplesFXE.xls** file and click **Done**.
- 5 Select “Trend (*Linear*) Regression” from the **Table** drop-down list.
- 6 Select “Columns” in the **Data Organization** field.
- 7 In the Forecast Settings section, select “*Linear Regression*” from the **Method** drop-down list.
- 8 In the **Regression Table** section, select “Anova” and “Coefficient”.
- 9 Click **Procast**.

Stepwise Regression

Stepwise Regression is a method used to sort out or determine the relevant explanatory variables from a set of Independent Variables. Explanatory Variables are the variables most useful to explain the dependent variable. Explanatory variables are typically included in the final Regression model.

When the number of Independent Variables is significantly large, it makes it impossible for common Regression models to compute and determine all of the explanatory variables. In such cases, Stepwise Regression is used to determine Explanatory Variables. There are three different types of Stepwise Regression.

Stepwise Forward Regression

From all the Explanatory or Independent Variables, this method selects the one with the highest correlation with Y, the Dependent Variable. It then determines the residuals, or errors, that result from this Regression and consider these residuals a new set of Y values or Dependent Variables. From the remaining Independent Variables, it selects the one that correlates most highly with these residuals.

Remember to consider these residuals as a new set of dependent values. Continue the process until no remaining explanatory or Independent Variable has a significant relationship with the last set of variables.

Stepwise Backward Regression

This method starts with a Regression that includes all the variables, assuming this is possible, and then proceeds to weed out the variable that is least significant in the equation, as measured by the t-test.

When this variable is removed, another Regression is performed to determine the next variable to be removed. This process is repeated until the most significant variable remains.

Stepwise-Forward-with-a-Backward-Look Regression

Combining the advantages of Stepwise Forward Regression and Stepwise Backward Regression, this method is the most powerful and the most popular of the three. This method works through an iterative process to determine the best Explanatory Variables. When it is no longer possible to find any new variable that contributes to the R-Squared value, or if no variable needs to be removed, the iterative process stops.

Stepwise Regression Example

As a sales manager for Super Chewy Bars, Ltd., you are responsible for determining where to spend your promotional and advertising dollars. You have spent the last several months collecting data that tells you how many Super Chewy Bars you have sold, as well as where you have been spending your advertising dollars. In order to decide where to spend your money in the future, you need to determine which advertising avenues are having the biggest impact on your sales.

With so much data, it could take you days or even weeks to determine which media channels would be best for you. Fortunately, you have just purchased the DME. With its advanced functionality, you know your decision-making process has just been made faster, easier, and more accurate.

Immediately, you notice that your spreadsheet provides the following information:

Information	Information
Super Chewy Bar Sales	Radio Advertising
Internet Advertising	Competition Index
Television Advertising	Coupon Discounts
Print Media Advertising	Distributor Discounts

Your goal is to find the promotional method with the greatest affect on Super Chewy Bar sales.

You have your data and Forecasting tool and now need to select your Forecasting technique. After a little research, you choose Stepwise Regression. This form of Regression begins by picking from all the Independent Variables, finding the one with the highest correlation with the dependent variable, and then determining the error between the two.

From the remaining Independent Variables, the one with the highest correlation to the errors of the initial Regression is calculated. This process is repeated until no remaining Independent Variable has a significant relationship with the last set of errors.

Although it sounds complicated, you know that the DME automates the entire process. This means that you are now be able to quickly and accurately determine the Independent Variable, the advertising media, that most directly affects your Super Chewy Bar sales.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select “Excel Spreadsheet” as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to and select the *ExcelExamplesFXE.xls* file and click **Done**.

- 5 Select “*Stepwise Regression*” from the **Table** drop-down list.
- 6 Select “*Columns*” in the **Data Organization** box.
- 7 In the Forecast Settings section, select “*Stepwise*” from the **Method** drop-down list.
- 8 Click **Procast** to run your Forecast.

Multiple Regression

Multiple Regression is similar to Simple Regression except with more X's, or Independent Variables. Often, the Y or dependent variable may be predicted or explained by more than one X or Independent Variable. For example, you may have sales data that is dependent on many factors: time of year, advertising dollars spent, and/or special promotions implemented. Each of these factors potentially has an influence over the sales figures. Multiple Regression is one Forecasting technique that determines the Independent Variable with the greatest impact. As with Linear Regression. Multiple Regression must be interpreted and evaluated by the individual performing the Forecast. There are accuracy and descriptive statistics that help explain what is implied and predicted by the Multiple Regression Forecast.

Like Linear Regression, the slope coefficients, such as b , needs to be interpreted. The coefficients represent the change in Y, or the dependent variable, from a change in the X, or Independent Variable of interest. In other words, Multiple Regression will determine how more than one Independent Variable influences a single dependent variable.

The same concepts are used in both a Linear Regression and a Multiple Regression to evaluate the Regression model. The standard error of the Regression model is based on the residuals. The residuals are the difference between the actual and predicted value for each observation. To accomplish this, the DME uses fitted values. In other words, the DME produces a Forecast of your Historical data and compares those Forecasted values with the actual values. Of course, the DME also produces future Forecasted values based on the number of periods you want to predict.

The R-Squared in a Multiple Regression Forecast is called the coefficient of multiple determination. Although the name is different from the R-Squared used in Linear Regression, it is still the percentage of the variation in the Y, or dependent variable, that's explained by the estimated Regression relationship. The R-Squared tells you what percentage of the variation in the dependent variable is explained by a change in the Independent Variables. A very high R-Squared indicates a strong explanatory relationship between the dependent variable and the Independent Variable.

The F-Tests and T-Tests used in Multiple Regression indicate whether there is explanatory power in the model. As in Linear Regression the DME reports these statistics. The difference is that for Multiple Regression a test is done for each Independent Variable to determine the particular relationship between each X, or Independent Variable, and Y, the dependent variable.

Multiple Regression Example

Data from a mutual savings bank is used as an example to depict Multiple Regression. The concern within the mutual savings bank is that monthly changes in deposits are getting smaller while withdrawals are getting bigger. It is of interest to develop a Forecasting model to Forecast changes in the end of month balances over the next few months.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select “Excel Spreadsheet” as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the *ExcelExamplesFXE.xls* file and click **Done**.
- 5 Select “Multiple Regression” from the **Table** drop-down list.
The spreadsheet contains 60 months of end of month Observations. Additionally, there are AAA bond rates and the rates on United States Government 3-4 year bonds. It is thought that these two rates influence the end of month figures in the bank.
- 6 Select “Columns” in the **Data Organization** field.
- 7 In the Forecast Settings section, select “Multiple Regression” from the **Method** drop-down list.
Since Dif of End of Month is the first Series in the Series list, the DME uses it as the dependent Series.
- 8 Click **Procast**.

Polynomial Regression

Polynomial Regression is one of the most frequently used linear response models in practice. It is an enhancement of Multiple Regression Polynomial Regression models can contain one, two, or even several Independent Variables just like a Multiple Regression model. However, Polynomial Regression goes further and treats the relationship between the Dependent and Independent Variable in more than a linear fashion. Polynomial Regression allows the Independent Variables to be present in various powers.

A Regression model in the second power is called a second-order model. The Independent Variables appear in the first and second powers. These functions often look like a curve. A Regression model in the third power is called a third-order model. The Independent Variables appear in the first, second, and third powers. This function has two curves in it. Theoretically, there are no limitations of orders in Polynomial Regression. Generally when there is only one Independent Variable, it is only necessary to have a maximum order of three.

When there is more than one Independent Variable, it is only necessary to have a maximum order of two. Any degrees higher than that are typically useless.

When the Independent Variables are adjusted according to orders or degrees, which creates new Independent Variables, the relationship shown is more than linear.

Polynomial models with Independent Variables present in higher powers than the third degree are often not employed. The interpretation of the coefficients becomes difficult in such models. It should be noted that a polynomial model of sufficiently high order can always be found to fit the data perfectly, though these models may not show the basic elements of the Regression relationship between X and Y, and may lead to erratic results.

Although Polynomial Regression is more versatile than Multiple Regression, it is often unhelpful to create new sets of Independent Variables without knowing which Independent Variables are the most significant. The DME combines the power of Stepwise Regression with Polynomial Regression to overcome this challenge. Using Stepwise Regression along with Polynomial Regression enables users to determine the most significant Independent Variable from all the Independent Variables.

Example

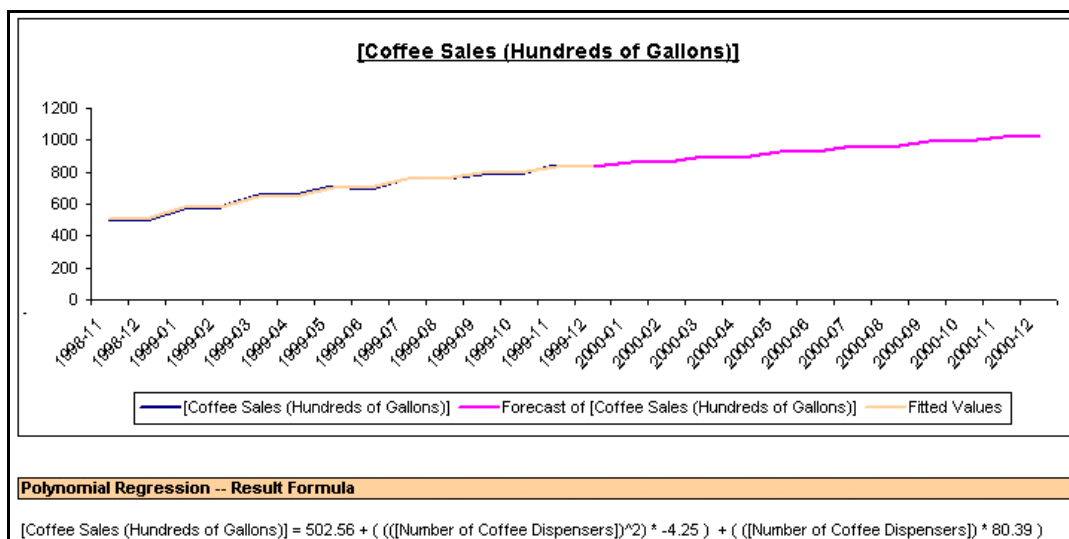
To show how Polynomial Regression is used, consider the relationship between the number of self-service coffee dispensers in a cafeteria line and sales of coffee. The coffee sales are measured in hundreds of gallons of coffee sold. You want to discover whether the relationship between sales and number of self-service dispensers is quadratic in the range of observations.

If so, sales should increase as the number of dispensers. But if the space is cluttered with dispensers, increasing the number of dispensers becomes a slower, more difficult process.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select “Excel Spreadsheet” as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the *ExcelExamplesFXE.xls* file and click **Done**.
- 5 Select “Polynomial Regression” from the **Table** drop-down list.
- 6 Select “Columns” in the **Data Organization** field.
- 7 In the **Forecast Settings** section, select “Polynomial Regression” from the **Method** drop-down list.
- 8 Select “Procast” from the **Secondary Method** drop-down list.
- 9 Click **Procast**.

Summarizing the Results

The formula used to make the Polynomial calculations is located directly below the graph.



The independent Series *Number of Coffee Dispensers* is used twice in this Forecast: the first time to the first order or degree and the second time to the second degree.

An ^2 signifies that an Independent Variable has been taken to the second order.

This means when making the Forecast, the DME factored in both the original *Number of Coffee Dispensers* and a new independent Series, *Number of Coffee Dispensers to the Second Order*.

Summary Comments							
The forecast has an average error of		0.89%					
The data has a standard deviation of		115.18					
The forecast exceeds the accuracy of a simple average by		99.61%					
Audit Trail - Summary Analysis							
Audit Trail - Statistics							
Accuracy Measures		Value					
Mean Absolute Percentage Error (MAPE)		0.89%					
R-Square		99.61%					
Forecast Measures		Value					
Mean		688.48					
Standard Deviation		115.18					
Method Statistics		Value					
Primary Method		Polynomial Regression					
Secondary Method		Procast					
Audit Trail -- ANOVA Table (Polynomial Regression Selected)							
Source of Variation	SS	df	MS				
Regression	171,773.44	2	85,886.72				
Error	679.22	11	61.75				
Total	172,452.66	13					
Audit Trail -- Coefficient Table (Polynomial Regression Selected)							
Series Description	Included in Model	Coefficient	Standard Error	T-test	F-test	Elasticity	Overall F-test
[Coffee Sales (Hundreds of Dependent		502.56	4.85	103.62	10,736.93		1,390.94
[(Number of Coffee Dispen Yes		-4.25	0.61	-7.01	49.12	-0.08	
[Number of Coffee Dispe Yes		80.39	3.79	21.23	450.80	0.35	

However, you still need to determine the independent Series that has the most significant affect on your coffee sales. As you scroll down the output, you come to the Summary Contents, ANOVA Table, and the Coefficient Table.

The ANOVA (ANalysis Of VAriance) Table contains the source of variation, Degrees of Freedom (DF), sums of squares (SS) and the mean square (MS). The degrees of freedom represent the sums of squares and the value of all the errors squared. In this ANOVA table, the SS error of 679.22 indicates that the model is a good fit. Finally, the MS error is a traditional way of determining the accuracy of a Forecast. In this case, the mean square error of 61.75 indicates that the error is still small, even after averaging all the errors and squaring the value.

The Forecast has a Mean Absolute Percentage Error (MAPE) under 1%, which indicates that the Forecasted values are trustworthy. The Coefficient Table contains the dependent variable, Independent Variable and Independent Variable to the second order, T-Test, and F-Test values. As with other Regression models, the F-Test signifies how significant is the model.

The original independent Series ***Number of Coffee Dispensers*** has an F-Test statistic of 450.80 and significantly influences the dependent variable ***Coffee Sales***.

The F-Test value for the ***Number of Coffee Dispensers to the Second Order*** is 49.12, which is not as significant as the original independent Series. The overall F-Test of the dependent Series is very large. That means that the model is a good fit (i.e. the Independent Variables significantly affect the dependent variable).

For this example, Polynomial Regression has shown you that increasing the number of coffee dispensers most likely significantly increases your coffee sales.

New Product Forecasting

Since new products lack Historical data, most Forecasting techniques cannot produce satisfying results. For example, it is typically impossible for Double Exponential Smoothing to determine the trend since the data set is too small. Otherwise, it may only deduce a strong trend despite the fact that the new product has its own growth limitation. To overcome this difficulty, the DME introduces New Product Forecasting.

New Product Forecasting includes three new product models and one automatic model. The three new product models are:

- Gompertz Curve
- Logistic Curve
- Probit Curve

There are two main differences between these three models. The first difference is in the shapes of the product curve (i.e., amount of time that lapses before a product's growth curve stabilizes). The second difference lies in the fact that the three new product models may use different lower and upper limits for the same Forecast data. The automatic model is recommended most often because it can automatically choose the best model from the three basic new product models.

Each new product model has its own lower and upper limit. For most cases, the lower limitation is 0. Determining the upper limit is a complicated undertaking. Fortunately, the DME provides the most flexible settings for a multitude of situations. If you do not know what the upper limit should be, the DME determines the best upper limit for your data. If you know the maximum feasible upper limit according to your business experience, the DME can also employ this useful bit of information to find the best upper limit accordingly. Of course, if you know the exact upper limit, the DME can just use it to determine the model.

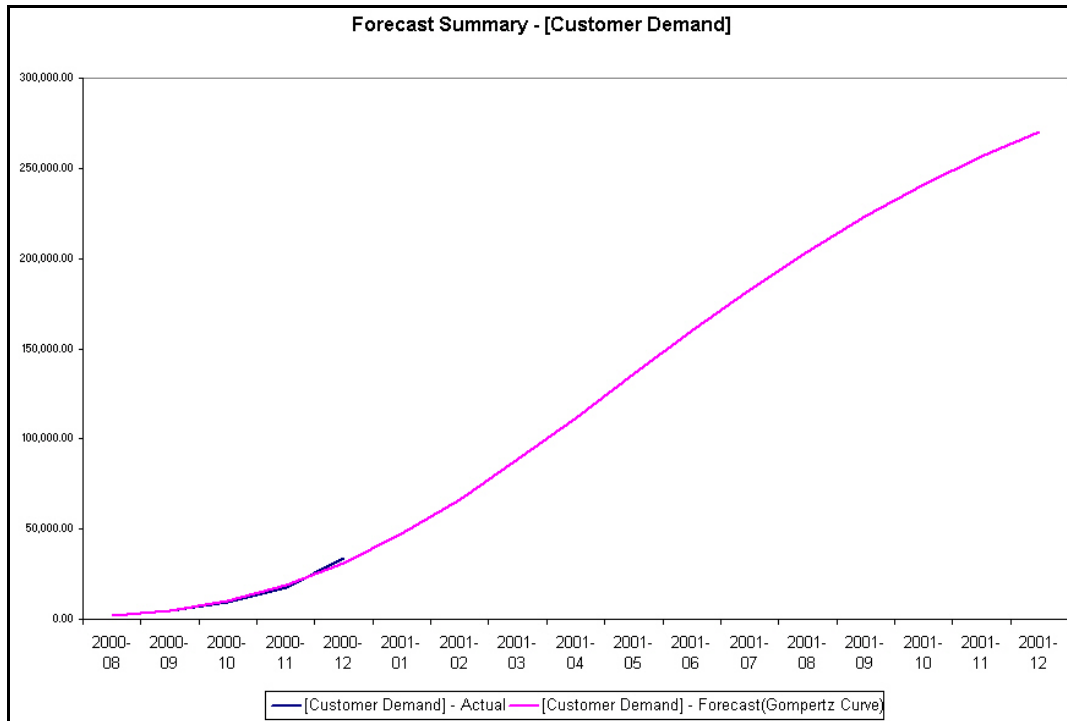
You have just over seen the launch of a new product in your company's toy department. Although the sales have gone well over the past several months, your department head needs a report on future sales over the next year.

That means you need to create a Forecast based on very limited Historical data to show when the sales will stabilize. Given the limited amount of data you have, you're feeling fortunate that you've just loaded the DME on your computer. With its advanced functionality and New Product Forecasting methodology, you know you can deliver the quality Forecast your department head needs.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select “Excel Spreadsheet” as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the *NewProductForecast.xls* file and click **Done**.
- 5 Select “Data” from the **Table** drop-down list.
- 6 Select “Columns” in the **Data Organization** field.
- 7 In the **Forecast Settings** section, select **Gumpertz Curve** as the **Method**.
- 8 Check **Optimized**. The DME selects the best Min and Max values for you.
Note The Min value is the potential minimum value of the model, whereas the Max value is the potential maximum value of the model.
- 9 Click **Procast** to run your Forecasts.

Summarizing the Results

The DME has produced a Gumpertz graph, which displays the new product's Actual and Forecasted data. As you can see, the graph displays the new product launch. The DME recognizes that after several periods, the growth tapers off. As the growth decreases, the line becomes flat.



As you view the standard report results, you can see that the DME has produced a trustworthy Forecast. Given that you only have 5 periods of Historical data, you created a Forecast for your new product.

Using and Creating an Event Model

Whether you are in packaged goods, manufacturing, sales, inventory, or the production planning area of your company, your product sales are often affected by promotional campaigns. The more you are able to account for these irregular occurrences, the better you can plan and thus prepare for their effects.

Event Modeling was designed to enhance your data analysis and allow you to take promotions and other events into account as you develop your Forecasts. Now you can go beyond analyzing the trend and seasonality contained in your Historical data by assessing the impact of promotions on your Historical and future demand.

Companies conduct promotions of various types. At any given moment your organization may use push and pull types of promotions at various times throughout the year. In general, push promotions are designed to push the merchandise off of the shelves through increased customer awareness, whereas pull promotions are designed to attract customer's attention by means of an incentive that causes them to purchase your product.

The whole trick to event modeling is to define and place the proper event indices during the period the promotion or event is taking place. In the case of pull promotions, it is quite simple to mark the section of the Forecast where the effects take place, because the effect on sales is almost

immediate. For example, a newspaper will offer a free month subscription if customers are willing to subscribe for six months. When this promotion is offered, the effect on subscriptions is immediate; therefore, the promotional flag would be added to the month in which it occurred.

In the case of push promotions, assigning event flags is a little more challenging, but the process is essentially the same. The only difference is that the event flags must be applied to the future period where the effects of the promotion begin to take effect. For example, a packaged goods company sends out 50-cent coupons in a mass mailing. The effects of the promotion will not be recognized until the customers begin to redeem the coupons during their next visit to the store.

Event Model Example

In the following Scenario, you are the product manager for Junk Mailers International, a firm that specializes in soliciting sales using mass mail offerings. During a meeting with the CFO of your company, you are asked to participate in the preparation of the earnings estimates that will be delivered to the board in your annual meeting.

Under careful guidance, Junk Mailers has developed equations allowing you to describe your operating costs as a function of the mailings. Because of the set up costs and other factors involved, your costs are higher at the beginning of the year. For this reason, it is critical for you to be able to accurately predict the response rates you will see throughout the year. As the demand planner, you know the importance of developing an accurate Forecast. To do this you know you will need the help from the marketing department.

Your first stop on the tour is with the marketing department, where you present your situation and explain the issues facing you. The first step in the process is to show the marketing department the spreadsheets you've prepared and some initial Forecast results to demonstrate the need to develop a promotional Forecast.

As you begin, you review the Event Model Scenario with the marketing director. While you explain the process, you emphasize how the marketing department's promotional plans will impact the earnings estimate. To further illustrate your point you pull up the DME on your computer and quickly create a Forecast.

- 1 Create a new Scenario. For more detailed instructions, please see Section [Main Settings](#) in [Creating and Managing Scenarios](#).
- 2 Select “Excel Spreadsheet” as the Data Source.
- 3 Click the search icon  in the **Connection String** field.
A Windows Open dialog displays.
- 4 Browse to the **EventModel.xls** file and click **Done**.
The Event Model sample spreadsheet shows the two sheets you need for an event model. The first sheet is the Historical data and the second sheet is the Flags used for the events.
- 5 Select the “Data\$ table/query” from the **Table** drop-down list.
- 6 Select “Columns” in the **Data Organization** field.
- 7 Select “Expert” as the **Primary Technique**.

- 8 Click **Procast** to run the Forecast and then select the Series Preview to view the Forecast or go to the **Reports** tab to print out a report.

Impressed, the marketing director watches in amazement as you present a Forecast in thirty seconds flat. Without any further explanation, the marketing director realizes that the Forecast doesn't take into consideration the Marketing plans for the next year. As you begin to talk through the marketing initiatives that are used, you realize there are four types of marketing initiatives typically used. As you work through the process the two of you realize there is a delayed effect between the mail drop and the increase in sales activity. Together you begin to classify the types of marketing initiatives that are used. The following table details these Event Flags.

Event Flag	Description
Event Type 1	Represents full color catalogs used as a targeted mailing.
Event Type 2	Represents catalogs followed up by solicitation calls.
Event Type 3	Represents blow-ins added to utility bills.
Event Type 4	Represents response cards requiring postage for return.

As you further refine your thoughts, you realize you need to use your Historical data to develop the lift factors that are generated by each campaign. In order to do this, you need to label your events and enter them by month into a separate sheet in your spreadsheet. As you begin to reconstruct history, you realize that it is relatively easy to place the events in the proper month. After you complete your task, you realize that you have created an event model.

Event Modeling from the Series View

Event Models can be created from the Series View by adding a new method and selecting “Event Model” as the Method. You can still set your historical flags on your past performance data and use these to project your forecast data for future dates.

- 1 In the **Misc Window**, click the **Add Item** button. A new line is added to the list.
- 2 Use the **Method** drop-down to select “Event Model”.
- 3 Double-click on the **Target** field in the in the Misc Windows panel.
The **Forecast Settings** screen displays.

Forecast Settings: 02-TR-INV-OPT-LM - [10461052], Opinion Line : Stat Fcst

Save RollBack Close

Forecast Settings

Source Opinion Line: Adj Hist
 Target Opinion Line: Stat Fcst
 Forecast Method: ProCast
 Overwrite History: ☒
 Automatic Forecast: ☒

History Range

Fixed Start Period:
 Fixed End Period:
 Floating Start Periods:
 Floating End Periods:

Forecast Range

Forecast periods: 17

Forecast X Method Parameter

Error Term: Sum Squared Error
 Include New Product Curve: ☐
 Include when numb. of obs: 6

General Statistics

MAPE: ☒
 BIC: ☐
 AIC: ☐
 Sum Squared Error: ☐
 R-Square: ☒
 Adjusted R-Square: ☐
 Durbin Watson: ☐
 Mean: ☒
 Median: ☐
 Standard Deviation: ☒
 Variance: ☐

Accuracy Statistics

Mean Absolute Error: ☐
 Mean Error: ☐
 Mean Square Error: ☐
 Normality Error: ☐
 Root Mean Square Error: ☐
 Standard Deviation Error: ☐
 Theil: ☐
 Standardized Mae: ☐

Descriptive Statistics

Range: ☐
 Auto Covariance: ☐
 Max: ☐
 Auto Correlation: ☐
 Min: ☐
 Coefficient Of Variation: ☐
 Kurtosis: ☐
 Sum Squared Deviation: ☐
 Skewness: ☐
 Root Mean Square: ☐
 Mode: ☐
 Mean Squared Deviation: ☐
 LjungBox: ☐
 Mean Absolute Deviation: ☐

Safety Stock Statistics

Active: ☒
 Add Forecasted Values: ☐
 Lead Time: 2.00
 Level%: 95

Regression Table

Anova: ☐
 Coefficient: ☐
 Correlation Coefficient: ☐
 Coefficient of Determination: ☐
 Covariance: ☐

Confidence Limits Statistics

Active: ☒
 Limit%: 90

Statistics Attribute Mapping

Statistic	Attribute
MAPE	
Mean	
R-Square	
Standard Deviation	

4 Click on the **Opinion Lines** field to open the **Opinion Lines for Regression** window.

Opinion lines for regression

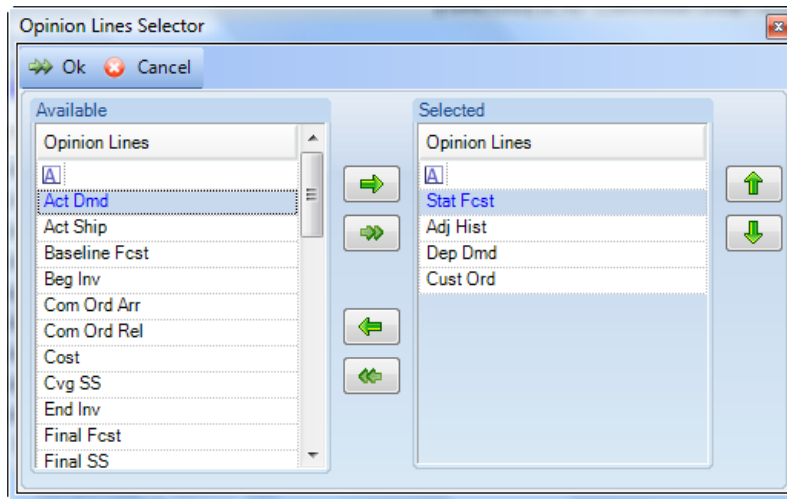
Selected	Description	Overwrite Forecast
☒	Adj Hist	☒
☐	Stat Fcst	☐
☐	Baseline Fcst	☐
☐	Sales Adj	☐
☐	Final Fcst	☐
☐	Dep Dmd	☐
☐	Cust Ord	☐

OK Cancel

5 Select the Opinion Line and click **OK**.

6 On the Forecast Settings screen, click **Save**.

- 7 On the Data View tab, right-click and click “Select Opinion Lines to Show”.
- 8 On the **Select Opinion Lines to Show** screen, click the opinion line you chose above and add it to the “Selected” list.



- 9 Click **OK** to return to the Data View.
- 10 In the new opinion line, use numbers to flag events in the historical data.
Note The numbers used to flag events must be sequential in order for the Event Model to run. For example, you can't have a “1” and a “3” without a “2”. However, each flag can be used multiple times.
- 11 Re-run the forecast and the flags will now display in the Graph View.
Note You can also view more detailed information regarding this model on the Advanced Statistics View.

Advanced Statistics View

Opinion Lines Base Fcst-Multip Statistics Anova Export to Excel File

Anova				
Source of variation	SS	df	MS	SEE
Regression	0.00	1.00	0.00	
Error	0.00	22.00	0.00	0.00
Total	0.00	23.00		

Coefficient								
Series Description	Included in model	Coefficient	Standard error	T-test	P-value	F-test	Elasticity	Overall F-test
[GARDEN] [1831487C93]	Dependent	0.00	0.00	1,000,000,000,000.00	0.00			1,000,000,000,000.00
End Inv Pr Cons Fcst	No							
Adj Dmd	Yes	0.00	0.00	1,000,000,000,000.00	0.00		1,000,000,000,000.00	

Graph View Data View Demand Data Statistics View Advanced Statistics View

- 12 On the Advanced Statistics View, the **Opinion Lines** drop-down allows you to choose which lines are used in this statistics.
- 13 Use the **Statistics** drop-down to change the type of statistics you are viewing.

- 14 You can also save these statistics into a spreadsheet by clicking the **Export to Excel File** button.

Accuracy Statistics

This section details statistics that measure the accuracy of a Forecast.

Akaike Information Criterion (AIC)

Akaike Information Criterion is a statistic that aids in the Box-Jenkins specification stage of model building. A model that minimizes the AIC is considered to be the most appropriate model. This implies that when several models may be appropriate, choose the one with the smallest number of free parameters, thus the smallest AIC.

Adjusted R-Squared

The coefficient of determination establishes that when an explanatory variable is added to a model, R-Squared decreases no matter how useless the additional variable is. Therefore, R-Squared is the fraction of variance explained by the model. Ideally, the measure of fit would decrease when useless variables are entered into the model as explanatory variables. In other words, if the measure of fit decreases every time a useless variable is entered into the model, then the analysts can measure and determine which variables to keep and which to expunge. A statistic widely used to achieve this is the coefficient of determination adjusted for the number of parameters in the model (Adjusted R-Squared). Adjusted R-Squared tells you when the negative effect of the variable outweighs the positive.

Bayesian Information Criterion (BIC)

Bayesian Information Criterion (BIC) is an order estimation criterion used in the Box -Jenkins specification stage of model building. A model that minimizes the BIC is considered to be the most appropriate model. When several models may be appropriate, choose the one with the smallest BIC. The AIC and BIC differ in their second terms, which are penalty functions for extra parameters. Often AIC and BIC lead to the same model choice.

When measuring accuracy, it is necessary to test for Auto Correlation within the errors. Auto Correlation occurs when there is dependence between the successive error values, which is also called a serial correlation. Durbin Watson is the most widely used statistic to determine random errors.

Durbin Watson

The Durbin Watson statistic always lies between 0 and 4. If it is closer to 0, it indicates a positive Auto Correlation. A value close to 4 indicates negative Auto Correlation. A value close to 2 tends to reinforce the conclusion that no correlation exists among the error. Therefore, values below 2 represent positive serial correlation amongst the errors and values above 2 represent negative serial correlation amongst the errors.

Mean Absolute Error (MAE)

Similar to Mean Error, except the MAE considers the absolute values of the errors. In other words, it takes negative values and replaces them with their absolute (i.e. positive) values. This method de-emphasizes large outliers. Negative and positive results are unable to cancel each other. A 0 MAE represents a perfect fit.

Error / Residual

In Forecasting the terms **error** and **residual** are interchangeable. They both refer to the difference between the Forecasted and actual values.

Mean Absolute Percentage Error (MAPE)

Mean Absolute Percentage Error is commonly used in quantitative Forecasting methods because it produces a measure of relative overall fit. The absolute values of all the percentage errors are summed and the average is computed. For example, if you are Forecasting sales that vary greatly from month-to-month and the MAPE is greater than +5%, it is a more useful result than a Mean Error. The MAPE also de-emphasizes outliers, but produces results calculated as the average absolute error in percentage terms, which are easily interpretable.

Mean Error (ME)

Mean Error Calculated as the average error value. It is less reliable in some cases than other accuracy statistics because there is the risk that large outliers can cancel each other out, producing a ME near zero, which would indicate a perfect fit. For example, positive and negative error values could produce an average of zero, which may not be an accurate description of the overall fit of the Forecast.

Mean Square Error

One of the traditional measures of Forecast accuracy. Mean Square Error is used when all of the errors are similar in magnitude. If the data does contain one or two large errors, calculate the mean absolute error (MAE), since using sum squares magnifies these errors. Also use the MAE or MSE to select the right Forecasting model by choosing the model that results in the smallest MAE or MSE. Keep in mind that you cannot compare Forecast models that used different data transformations and you cannot compare MSE to MAE.

Root Mean Square Error

Referred to as the Coefficient of Determination. It tells the amount of variance in Y that can be explained by variable X. Variance is how dispersed the data is, and is calculated by how far away the data points are from the average data point. Where Y is the Dependent Variable and X is the Independent Variable, R-Squared determines the level of influence X has on Y's variance.

The square root of the Mean Square Error It is calculated by taking the square root of the arithmetic mean of squared deviations from the mean. It is also called standard deviation, when the deviations do not represent errors.

Standard Deviation Error

Used in Regression analysis to measure the average variation of the observed values around the Forecast values. It measures how far away the Forecasted values are from the actual values in the data set.

Sum Squared Error (SSE)

An accuracy measure where the errors are squared, then added. It is used to determine the accuracy of the Forecasting model when the data points are similar in magnitude. The lower the SSE, the more accurate the Forecast. Understanding this accuracy statistic helps you choose which Forecasting model best fits your data.

Theil's Statistic

Theil's Statistic is an accuracy measure that compares the accuracy of a Forecast model to the actual model. Theil's uses the actual value of the last time period as the Forecast. The closer Theil's statistic is to zero the more accurate the Forecasting model. For instance, if Theil's Statistic is equal to 1, the Forecast is completely inaccurate. If it is equal to 0, then the Forecasting model is a perfect fit.

Standardized MAE

Standardized MAE is the MAE divided by the average of the absolute values. It is a percentage base statistic. It is similar to MAPE except the Standardized MAE considers the total Absolute Error over the average of the absolute values, while MAPE considers each Absolute Error over each absolute value. MAPE is a large number if when some value is very small. Standardized MAE overcomes the issue.

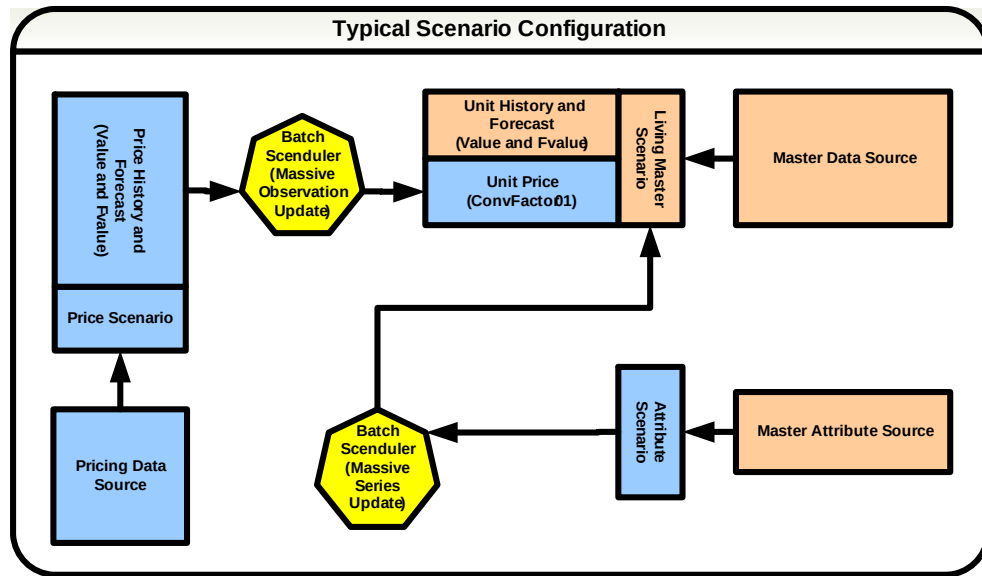
Batch Scheduler

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Overview

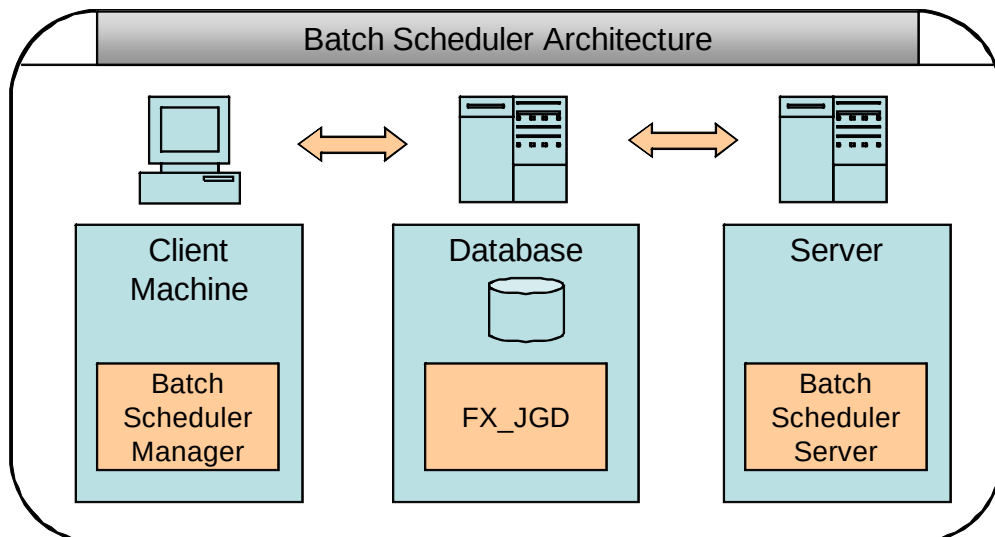
The Batch Scheduler enables you to run Forecasts, load data, run Exceptions and perform Custom Tasks in the DME. The Batch Scheduler enables System Administrators to configure and users to run repetitive tasks as part of a batch process at a specific time. All of these features can be run either on a Client or Server machine.

The Batch Scheduler performs the task of moving data between Scenarios and updating the Attributes. When using the Batch Scheduler, you can update both time series data points and series attributes. The depiction below details one of the key configurations for performing the incremental update process.



Batch Scheduler Architecture Overview

The depiction below details the Batch Scheduler Architecture:



Batch Scheduler Servers

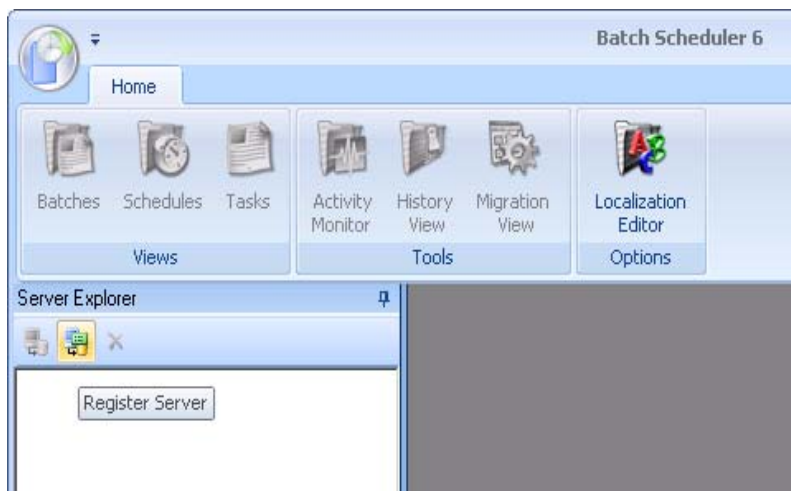
In order for the Batch Scheduler Manager to log in and begin creating and scheduling batches, you must first register at least one Batch Scheduler Server. This can be done using the Batch Scheduler Manager.

- A valid Batch Scheduler server is a computer on which both an FX_JGD database (version 6.0 and higher) and the Batch Scheduler components have been installed.
- A user can register any number of valid Batch Scheduler Servers.

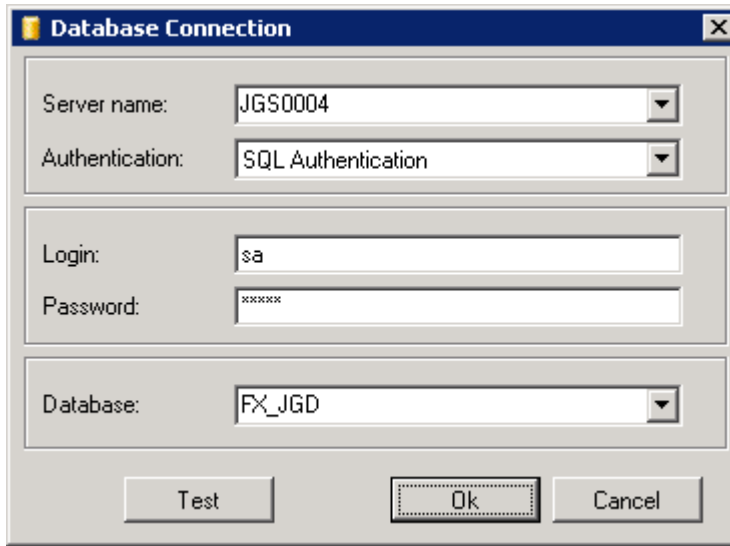
Register a New Server

The following steps are required to register a new Batch Scheduler Server within the Batch Scheduler Manager Interface:

- Once a Server has been registered, you will not need to register it again unless it is manually unregistered or if the credentials used to connect to the server have changed.
- 1 Go to **Start > All Programs > QAD > Demand Management > Batch Scheduler 6 > Batch Scheduler Manager**.
 - 2 Click the **Register Server** icon on the Server Explorer:



- 3 In the **Database Connection** window you must enter all the information needed to connect to the FX_JGD database. This information is a SQL login to the database, which can be a SQL account or a Windows Authentication if your SQL installation supports it



The **Database Connection** dialog box contains the following fields and buttons:

- Server name:** JGS0004
- Authentication:** SQL Authentication
- Login:** sa
- Password:** xxxxxx
- Database:** FX_JGD
- Buttons:** Test, Ok, Cancel

- 4 Verify the log-in information by clicking the **Test** button.
- 5 Click **Ok** to add the Server to the list of registered servers.

Server Status

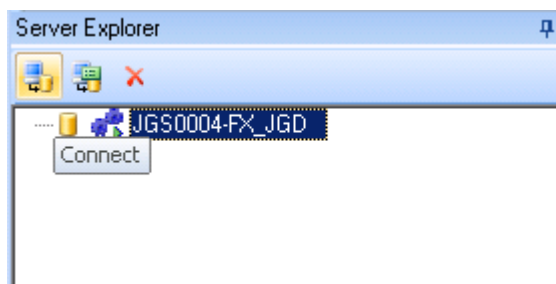
Once you have registered a Batch Scheduler Server, in order for a user to be able to create and run batches the SQL Server Agent Service must be running in the registered database server.

- If SQL Server Agent is running correctly in a particular server, you will see this icon next to the server name .
- If SQL Server Agent is not running for a particular server, you will see this icon next to the server name you registered .
- If the database cannot be reached for any reason, you will see this icon next to the server name you registered .

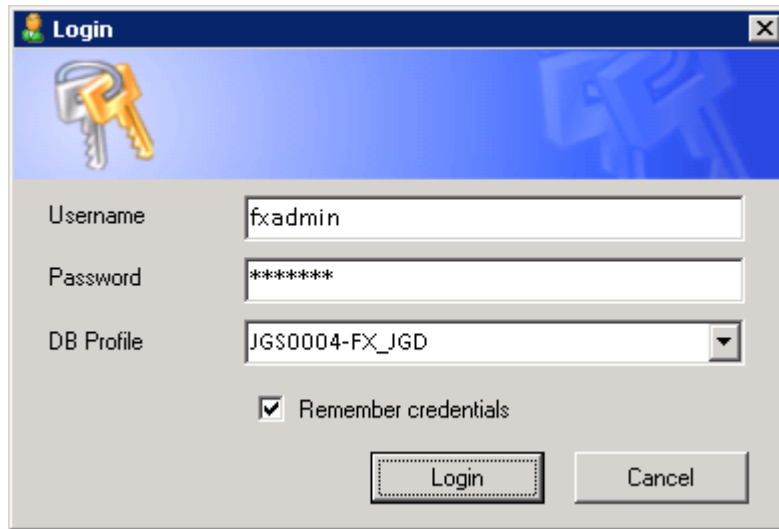
Connect to a Server

Once you have registered a Server, you can connect to it to view the available batches and monitor activity.

- 1 Select the Server to which you want to connect and click the **Connect** button on the Server Explorer pane.



- 2 When connecting to a server, **Login** window will display.

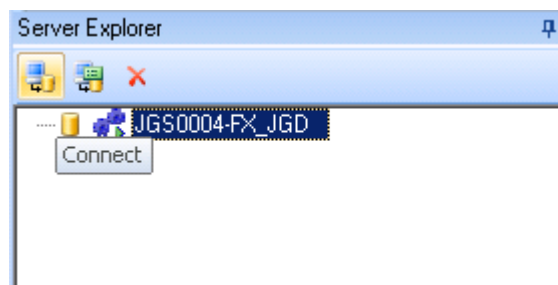


In the Login window you will need to provide DME authentication, which requires a user account being created in the FX_JGD database in the server to which you are connecting. Select the **Remember credentials** option and the next time you connect to this Server, you will not need to provide your DME credentials.

Unregister a Server

If you no longer want a server to be included in the server explorer list, you can remove it from the list by unregistering it using the steps below.

- Once you have disconnected from a server, you will not be able to connect to it until you register it. For more information, please see [Register a New Server](#).
- 1 Select the Server to remove from the list and click the **Disconnect** button on the Server Explorer pane.



Batch Scheduler Manager

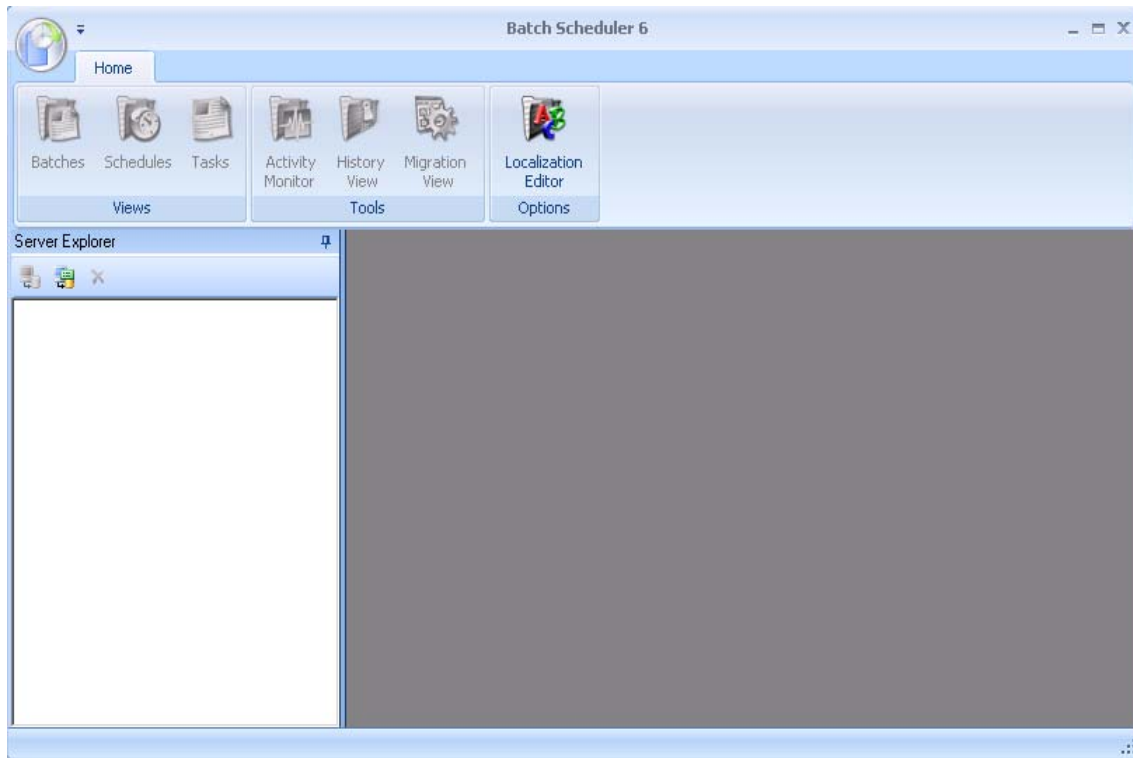
The Batch Scheduler Manager is the graphical interface used to control all tasks, batches, and schedules created in a given database.

Note If you cannot save new batches or run existing batches, please make sure the SQL Server Agent service is running in the database server. For more information, see [Server Status](#).

To launch the Batch Scheduler Manager, use the following steps:

- 1 Go to **Start > All Programs > QAD > Demand Management > Batch Schedule 6> Batch Scheduler Manager**.

The DME Batch Scheduler Manager displays.



The following table details each of the available buttons in the ribbon. These options will be enabled once you have connected to a server and logged in. For more information on registering a server or connecting to a server see [Register a New Server](#) and [Connect to a Server](#).

Button	Description
Batches	Opens the Batches List that displays all the available batches in the database.
Schedules	Opens the Schedules List that displays all the available schedules in the database.
Tasks	Opens the Tasks List that displays all the available tasks in the database.
Activity Monitor	Opens the Activity monitor that is used to view the status of batches running in the database.
History View	Opens the History View that is used to view a detailed log of all the executed batches.
Migration View	Used to migrate batches from a previous version of the Batch Scheduler.

Button	Description
Localization Editor	Opens the Localization Editor that is used to create or edit new languages in which the Batch Scheduler application can be used.

Tasks

A Task is a process performed on one or more scenarios. There are several different types of tasks and each type has different options.

Batches are comprised of one or more Tasks, meaning that you will not be able to create new batches until you have defined at least one task.

- When any of the settings in a task is changed, any batch referring to that task will use those changes the next time they are run.

Task Types

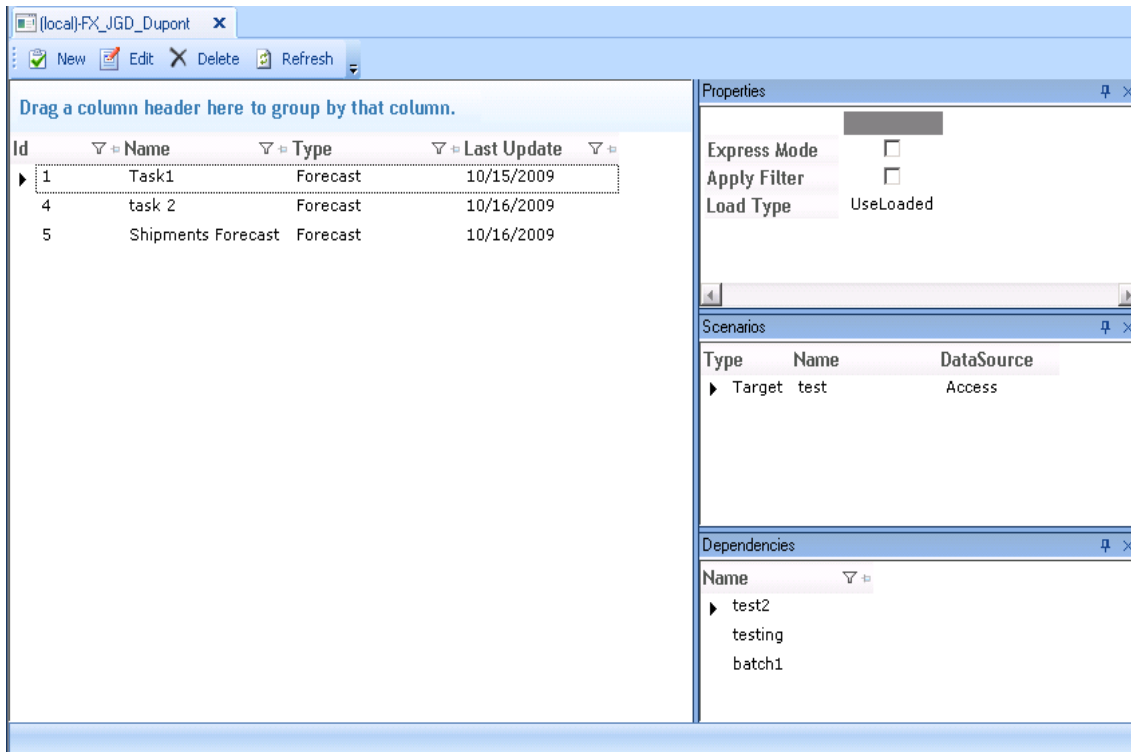
There are seventeen different types of tasks you can schedule in the system. The table below describes the available task types:

Task Type	Description
Apply Hierarchy	Build a specific static hierarchy for scenario(s). Only one hierarchy per scenario. The hierarchy must already be defined.
Commit DTL	Commit data flagged as “Forecast Complete” in the DTL scenario to Living Master.
Custom Task	This type of task can be used to run Custom Tasks that have been pre-defined in the DME Viewer. When this type of task is selected, a custom task will be executed for each selected Scenario. The custom task will use the saved parameters for each Scenario, these saved parameters are defined when creating a custom task.
Exception	Runs specified exceptions for each selected Scenario in batch mode. Used for Forecast and Custom Task features. For additional information, see Creating Filters and Exceptions .
Forecast	A forecast task can be used to run a forecast on the scenario or scenarios affected in the task. Using a Forecast task on a scenario will only reforecast the primary forecast method. Any forecast settings other than the primary will not be recalculated.
Massive Observations Update	Updates values of the Opinion Lines for a group of Scenarios from a common source Scenario, including the incremental update function. For details on how to configure an MOU, see Set Up the Massive Observation Update .
Massive Series Update	Updates series properties or attributes for a group of Scenarios from a common source Scenario. For details on how to configure an MSU task, see “ Setup Massive Series Update Task .”

Task Type	Description
Populate DTL	Populate the DTL scenario with new data. All data in the current DTL scenario will be lost. This step is performed manually using the population wizard.
Recreate Base	Create base levels for On-Fly Hierarchies.
Remove Hierarchy	Removes any static hierarchy on the scenario(s).
Run ABC	Run ABC. ABC must be set up in the DME Viewer.
Run DRP	Run DRP against scenario. Must have Inventory Management Module installed to run.
Run Events	Run Events for scenario. Events must be set up in the DME Viewer.
Run Retag	Run retagging on scenario. Retagging must be set up in the DME Viewer.
Run Series Mapping	Run Series Mapping. This must be set up in the Admin Tool. New history percentages will be calculated.
Run Scenario Data Transfer	Run Scenario Data Transfer to move data from one scenario to another. This must be set up in Admin Tool.
Execute SSIS Package	Run SSIS (SQL Server Integration Services) package.

Task List

The Task List will display all existing tasks in the database. To open the Tasks List, click the **Task** button on the **Home** tab in the ribbon.



The Task List contains the following panes:

Pane	Description
Tasks	The pane on the left-hand side displays a list of all the batch tasks in the database.
Properties	Shows all the options selected for the task.
Scenarios	Displays all the scenarios that are affected in the task.
Dependencies	Displays all the batches that are currently using the selected task.

Express Mode

The Express Mode option is one of the available features when creating a task and can yield better results in certain situations. It can be used for the following task types:

- Forecast
- Massive Series Update
- Massive Observations Update

In a regular task of any of the types mentioned above, the Batch Scheduler will have to load a scenario in order to move the data to a target scenario. Depending on the amount of data in the source scenario, this process could take some time.

Once Express Mode is enabled, you will be able to skip the process mentioned above and reload scenario directly from the source specified for each scenario. For example, if you are loading attributes from a helper scenario that is based on a table in an SQL database, then the attributes will be loaded directly from the table if Express Mode is enabled.

Forecast

The following criteria must be met for the selected scenario to ensure that the Express Mode is running for the Forecast task type:

- **Data Organization: Row** (*DME Admin Tool > Main Settings section > Data Organization - Row is selected*)
- **Use Source Data** (*Batch Scheduler > Task > Use Source Data is selected*)
- At least one **Attribute** is loaded from the Data Source directly into the DME Admin Tool. (*DME Admin Tool > Mappings section > Series Properties tab*)

Massive Series Update

The following criteria must be met for the source scenario selected to ensure that the Express Mode is running for the MSU task type:

- The **Data Organization: Row** is selected. (*DME Admin Tool > Main Settings section > Data Organization - Row*)
- **Use Source Data** is selected. (*Batch Scheduler > Task > Use Source Data*)
- **Attributes** or Labels used in the links and mappings source are loaded from the Data Source directly in the DME Admin Tool. (*DME Admin Tool > Mappings section > Series Properties and Labels tab*)

- At least one **Attribute** is loaded from the Data Source directly in the DME Admin Tool. (*DME Admin Tool > Mappings section > Series properties tab*)

Massive Observations Update

To ensure that the Express Mode is running for the MOU feature, the following criteria must be met:

- **Data Organization: Row** is selected. (*DME Admin Tool > Main Settings section > Data Organization - Row*)
- **Use Source Data** is selected. (*Batch Scheduler > Task > Use Source Data*)
- **Attributes** or Labels used in the links and mappings source are loaded from the Data Source directly in the DME Admin Tool. (*DME Admin Tool > Mappings section > Series properties and Labels tab*)
- Mapping source can only use the “**Value**” opinion line.
- On the **Target Scenarios** tab, the “*Send new items to Scenario*” box is disabled.
- **Incremental Update** is disabled.
- At least one **Attribute** is loaded from the Data Source directly in the DME Admin Tool. (*DME Admin Tool > Mappings section > Series Properties tab*)

Massive Data Update (MDU) Management

The Massive Data Update feature includes the Mass Series Update and Mass Observation Update features. It updates Series Properties or Opinion Lines in Observations by connecting Scenarios based on labels or Series properties. It also eliminates hours of manual editing and retains other existing values. The following examples describe when the Massive Data Update feature is used:

- Import new streams of Opinion Lines, such as financial forecast or custom orders, to compare against the forecast values.
- Introduce new periods of actual values via an incremental update.
- Introduce new items to an existing Scenario.
- Change the price and cost values as they are updated without effecting forecast numbers.
- Add or change attributes, such as sale representative or client information, and modify the series label correspondingly.

MDU performs a copy of the values from a source Scenario to one Target Scenario or a group of Target Scenarios. The copy is required to specify how the series should be linked between the source and Target Scenarios and which fields are required for the update.

The table below details how the MDU works.

Term	Definition
Source Scenario	MDU uses the source Scenario to perform the update. Only one Scenario can be the source Scenario.
Target Scenarios	All Scenarios that are affected by the update. At least one target Scenario must be specified.

Term	Definition
Links	Represents the links at the series level between each Target Scenario with the source Scenario. It can link by series label or series properties. It is essential that all links combined will NOT generate a many-to-one relationship between the source and Target Scenarios. Meaning that one source series can be mapped to one or more target series, but not many sources series are mapped to one target series. Otherwise, the update result will be unexpected.
Mappings	Mapping specifies which target field/Opinion Line is updated using a value of a specific source field/Opinion Line. These links are mapped series properties or observation Opinion Lines.

Massive Series Update

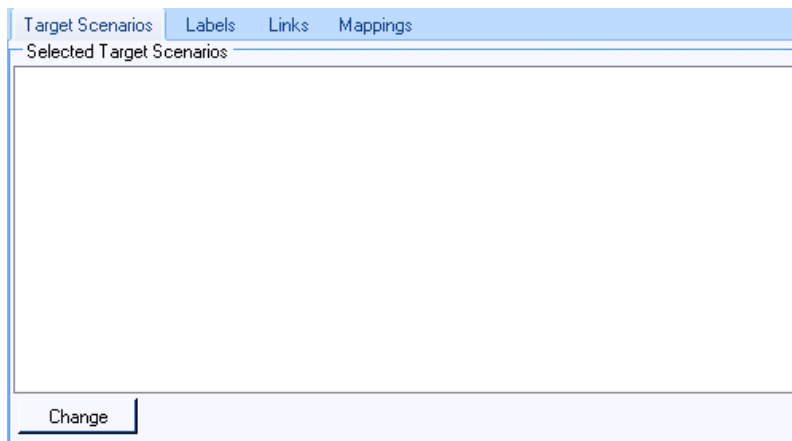
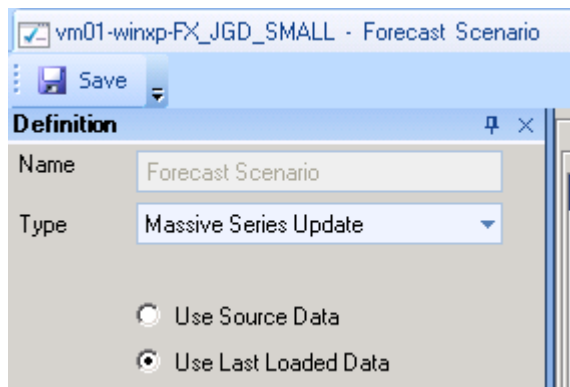
Massive Series Update enables users to update the values of the Series properties for given Target Scenarios in Batch Mode. When using MSU, the user does not need to reload the Scenario in order to set the most updated properties for each Series.

Setup Massive Series Update Task

If you create or edit a task and select Massive Series Update, there are other settings to consider.

Note Only one Scenario can be selected as the source Scenario.

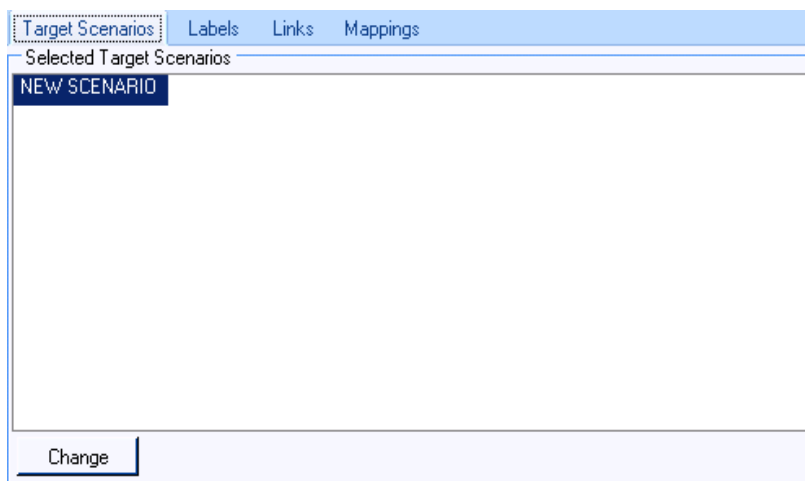
The following window displays.



The extended settings section is displayed once you select “Massive Series Update” as the task type, this section is used to configure a MSU.

Target Scenarios Tab

The **Target Scenarios** tab contains the currently selected Scenarios defined as the target. Use the **Change** button to modify the list.



Labels Tab

The **Labels** tab recreates the labels (Series Description). By default, the option is unchecked. If you want to recreate labels, you must specify at least one field for the label. To modify the list of fields for labels use the **Change** button. Note that the order of the fields is important.

The screenshot shows the 'Labels' tab selected in the 'Target Scenarios' section. The 'Recreate Labels' checkbox is checked. Below it, the 'Selected Fields For Labels' list contains 'Sku', 'Customer', and 'Region'. A 'Change' button is located at the bottom of the list.

Links Tab

The **Links** tab specifies the links between the Target and the Source Scenarios. The combination of source fields represents a unique Series in the source Scenario while the combination of target fields represents a unique series in the Target Scenario.

The screenshot shows the 'Links' tab selected in the 'Target Scenarios' section. The 'Selected Links' table has two columns: 'Source' and 'Target'. The first row shows 'Sku' in both columns. Below the table are 'Add' and 'Remove' buttons.

Source	Target
Sku	Sku

Mappings Tab

The **Mappings** tab specifies the fields that are affected by the update. In the user interface, each mapping is a pairing of a target and source field. At least one mapping should be defined.

Target Scenarios		Labels		Links		Mappings	
Mappings							
Source				Target			
BusinessPartner				BusinessPartner			
Cost				Cost			
Add				Remove			

Massive Observation Update

Massive Observation Update is similar to Massive Series Update. MOU updates the Opinion Line values in observations and a MSU update the series level properties. One significant feature supported by MOU is the incremental update. This feature enables users to introduce new period data without reloading the Scenario. As a result, all other existing Forecasted values remain unchanged. Another difference is that the MOU links observations in the matched Series by the date information. The source and target Scenario should be in the same time level. For example, all are either monthly data or weekly data.

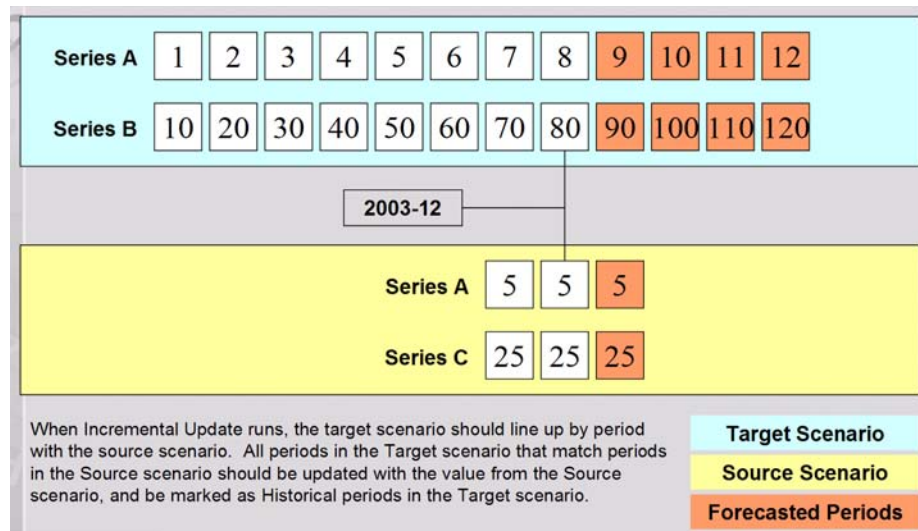
Massive Observation Update enables users to update the Opinion Line values of the observations for given target Scenarios in Batch Mode. This enables users to import new items to an existing Scenario. It also supports the incremental update feature. When using MOU, users do not need to reload the Scenario in order to set the most updated Opinion Line values for each observation.

Incremental Update

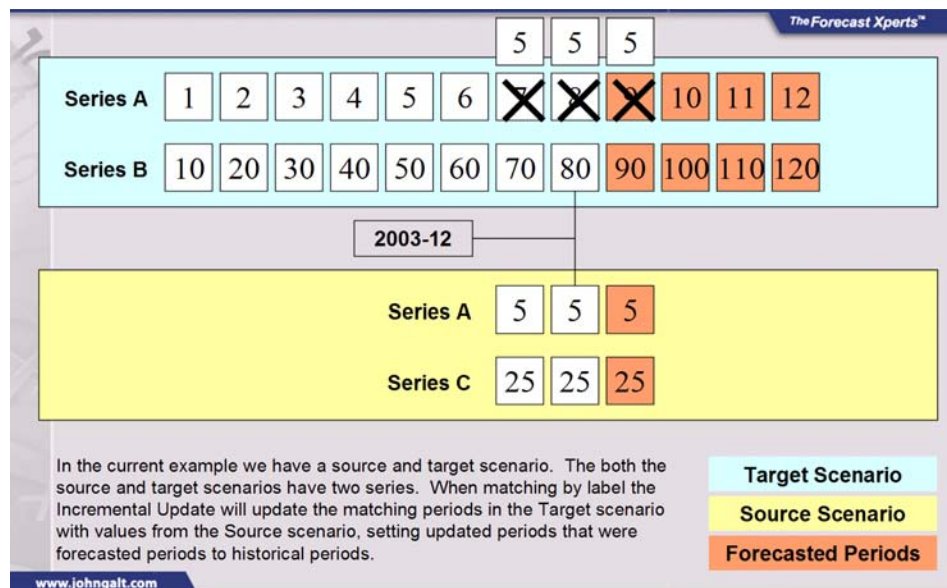
Incremental Update enables users to apply the most recent Historical data to existing, established Scenarios. For each Target Scenario, the Batch Scheduler compares the dates in the Scenario against the source Scenario. Where the dates are the same, the Batch Scheduler uses the data in the source Scenario to update the Historical data in each Target Scenario. The Batch Scheduler uses the Series Label or Series Attributes to identify which Series to update in each Scenario. The Batch Scheduler also adds new periods to the end of the Forecast for each line item in the Target Scenarios. The number of periods added is equal to the number of Forecasted periods updated by the new Historical data.

Incremental Update Example

The incremental update process enables the System Administrator to update the data in the system and extend the time fence based on the new data. In this way, the DME is able to pull in new data and provide the ability to measure any differences that exist between the Forecast and the actual results. The depiction below details the effects that the incremental update has when it is run.

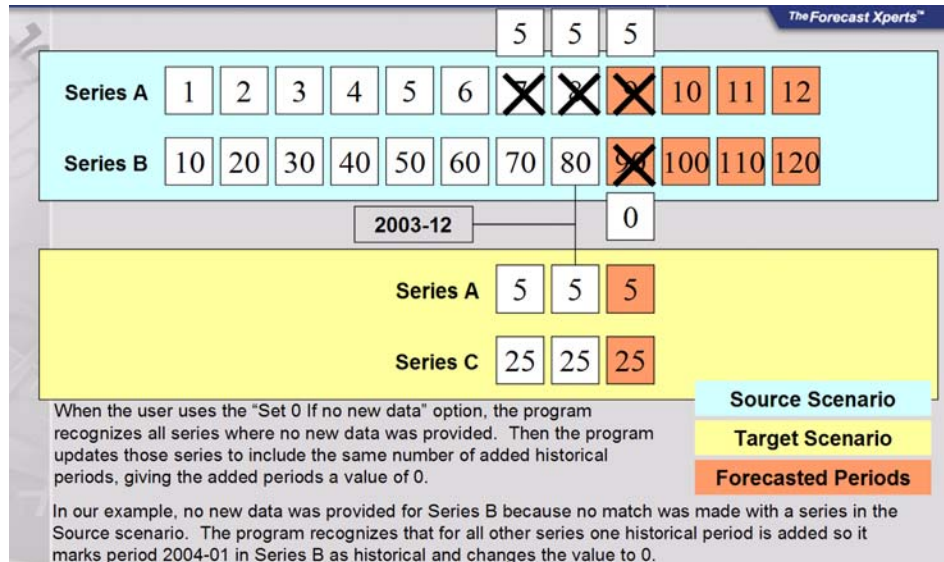


The new data periods in the source Scenario represent the current month's actual data. The purpose of the incremental update is to move the new data to the DME and add any new items. The depiction below details the effect that the incremental update has on the Series:

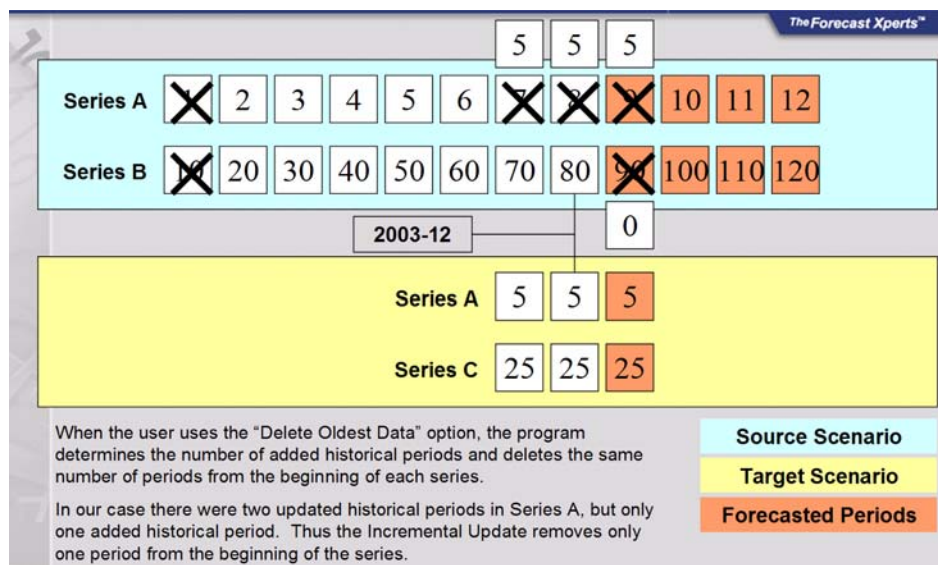


In the update process, the Observations are updated based on the dates that are entered. Using this approach, it is possible to update and remap history, as well as adding data to the future periods. The Incremental update options are note-enabled when the data is updated. However, as shown in the depiction, the time fence will not be advanced and the Forecast will not be extended. This is very useful for adding data to the DME that provides insight into current activity such as POS, customer orders.

If the incremental update option is turned on and the "Set to Zero" option is set, then a different behavior occurs. The depiction below details an example.



If this option is selected, then any Series that does not appear in the source Scenario has the update period set to zero. After the initial update process is complete, the base data cleanup phase begins by removing the oldest data from each Series, if the option is selected. The depiction below details this process.



After the data is updated and the DME determines the number of periods that were added, the DME removes the same number of periods from each Series. Once the deletion process is complete, the DME then extends the Forecast. The depiction below details this process.

The screenshot shows the 'The Forecast Xperts™' interface. At the top, there are three input boxes with the value '5'. Below this, there are two data series: 'Series A' and 'Series B'. Each series has a sequence of boxes representing data points. For Series A, the first six boxes are crossed out with an 'X', followed by three boxes with '5', and then a sequence of forecasted periods: 10, 11, 12, and 12. For Series B, the first box is crossed out, followed by a sequence of values from 20 to 80, then a box with '90' that is crossed out, and then a sequence of forecasted periods: 100, 110, 120, and 120. Below the series, there is a date selector showing '2003-12' and a box with '0'. Further down, there are two more series: 'Series A' with three boxes containing '5', '5', and '5', and 'Series C' with three boxes containing '25', '25', and '25'. At the bottom, there is a text box explaining the 'Add New Obs' option and a legend for the forecasted periods.

When the user uses the "Add New Obs" option, the program determines the number of added historical periods and adds the same number of periods to the end of each series as forecasted periods, which are equal to the settings of the prior last forecasted period.

In our case there was one added historical period. Thus the Incremental Update adds one forecasted period to the end of each series, equal to the value in the prior last forecasted period.

Source Scenario

Target Scenario

Forecasted Periods

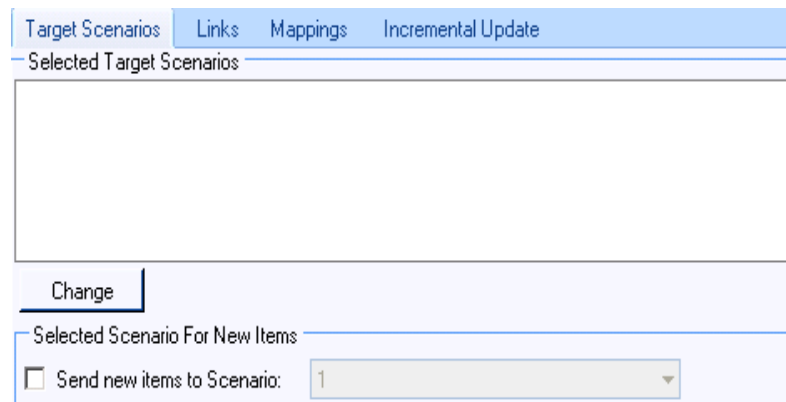
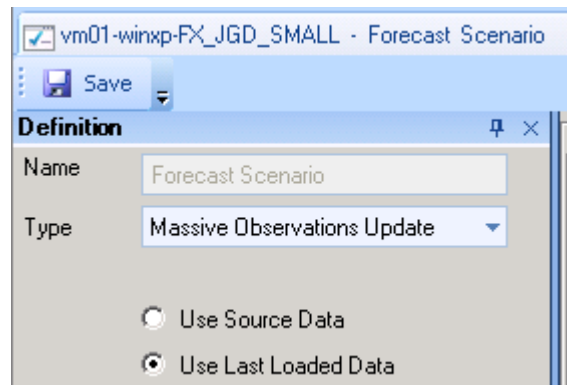
Added Periods

After this process is complete, the DME adds the new items to the Scenario that was selected when the Incremental update was configured. In this way, it is possible to control and Forecast new items separately from the established products. The sections below detail the parameters and settings that are used to perform the Incremental update process.

Set Up the Massive Observation Update

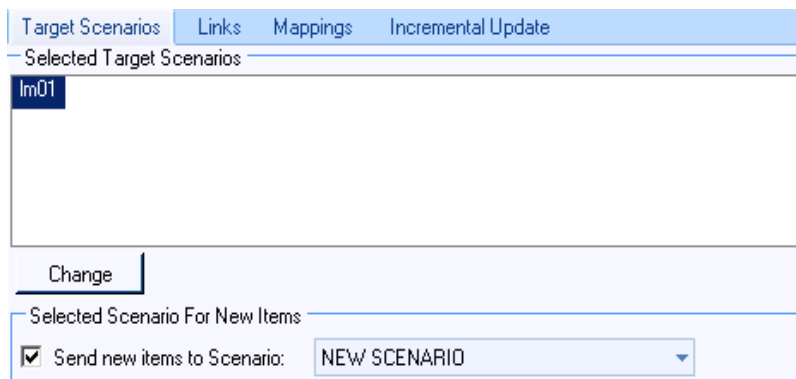
When creating or editing a batch, if choosing Massive Observations Update, you need to configure other settings.

Note Only one Scenario can be selected as the source Scenario.



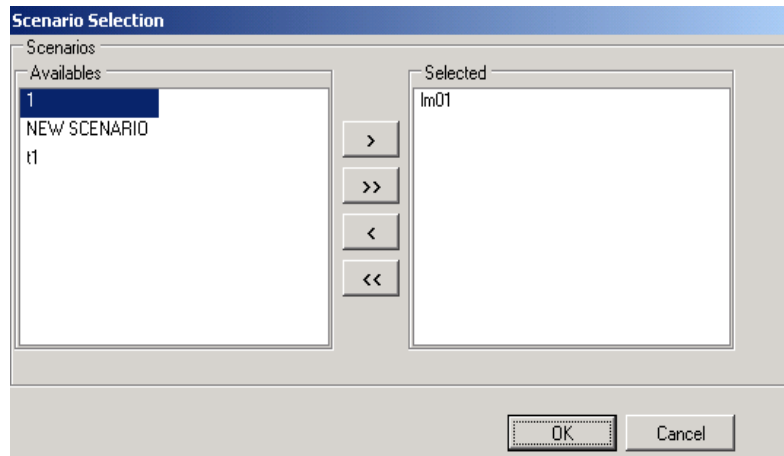
- 1 The Extended Settings section displays once you select “Massive Observation Update” as the task **Type**. This section is used to configure a MOU.

The following window displays.



- 2 Click the **Change** button.

The **Scenarios Selection** dialog box displays.



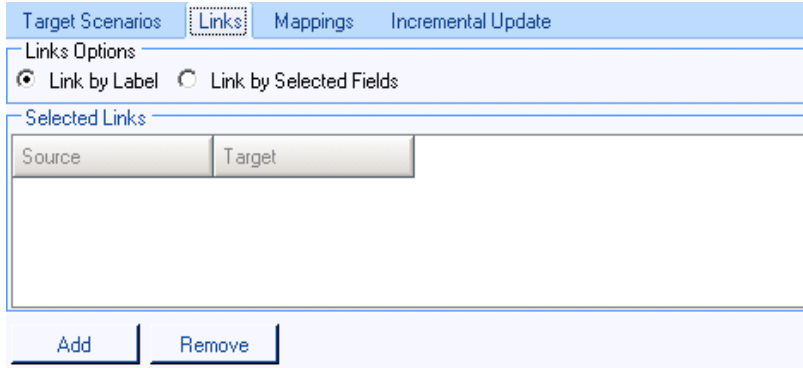
- 3 Select the *target Scenarios* and click **OK**.

The **Send Scenario-to-Scenario** checkbox enables users to send new items from source Scenario to a specified target Scenario.

- 4 Click the **Links** tab.

There are two options:

- Link by Label
- Link by Selected Fields



The "Link by Label" option matches the series in the source Scenario to the targeted Scenarios by Series label.

Target Scenarios Links Mappings Incremental Update

Links Options

☐ Link by Label ☒ Link by Selected Fields

Selected Links

Source	Target
Sku	Sku
Customer	Customer
Region	Region

Add Remove

The “Link by Selected Fields” option matches the series in the source Scenario to the targeted Scenarios by selected Series fields.

- Click the **Mappings** tab.

Target Scenarios Links Mappings Incremental Update

Mappings

Source	Target
ActShipments	ActShipments
CustomerOrders	CustomerOrders

Add Remove

You can select the source Opinion Line and target Opinion Line from the drop-down lists. The number of fields in the source and target Scenarios should be the same.

Incremental Update Tab

- 1 Click the **Incremental Update** tab.

If you deselect the **Activate Incremental Update** checkbox, all options in this dialog are made inactive. The program takes all the source Opinion Lines and updates the corresponding target Opinion Lines, both Historical and Forecast.

If you select the **Activate Incremental Update** checkbox, the following options are available.

The following table explains each of the available options.

Option	Definition
Delete the oldest data	Removes the oldest period of data after incremental update.
Add New Obs	Because the incremental update sets all the updated forecast periods to Historical, you may want to add new periods to ensure that you will not run out of forecast periods. Note that the number of periods being added equals the number of forecasted periods being updated. The values in the new observations are copied from the last Forecasted Observation.
Set 0 if no New Data	The Observations for all Series which do not exist in source Scenario are set to zero.
Reset Measurement	Sets the Measurement Opinion Line to zero.
Set Original to FValue	Sets the Original Opinion Line equal to the FValue Opinion Line.

Option	Definition
Fields in new observations set by last observation	If the “Add New Observations” option is selected, you can set the values in any fields (Opinion Lines) that are copied from the last Observation to the newly added Observations.

Limitations

Incremental update does not update the target Scenario if the dates in the source and target Scenarios do not correspond.

Target Scenario

2000-01	2000-02	2000-03	2000-04	2000-05	2000-06	2000-07	2000-08
10	11	12	13	14	15	16	15

Source Scenario

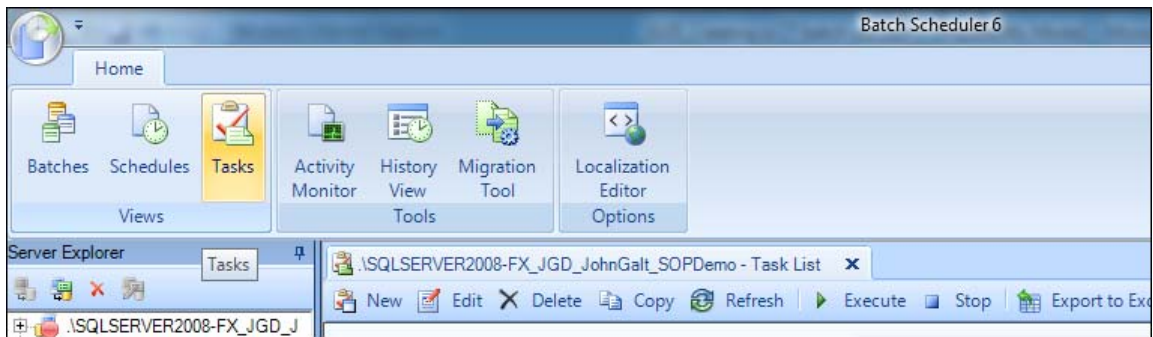
2001-01	2001-02	2001-03	2001-04	2001-05	2001-06	2001-07	2001-08
1	1	1	1	1	22	23	24

In this scenario, the source Scenario start date is 2001-01, but the Target Scenario starts at 2000-01. There is no overlap, so the incremental update will not update the target Scenario.

If the Target Scenario does not have any Forecast periods, the incremental update does not delete the oldest Observation and does not add any new Observations, because there is no Forecast period in the target to update.

Custom Tasks

- 1 Open the Batch Scheduler and select **Task**.



- 2 Select **New** to create a new task to run the Custom Task.
- 3 In the **Definition** area, enter the **Name** of the new task.

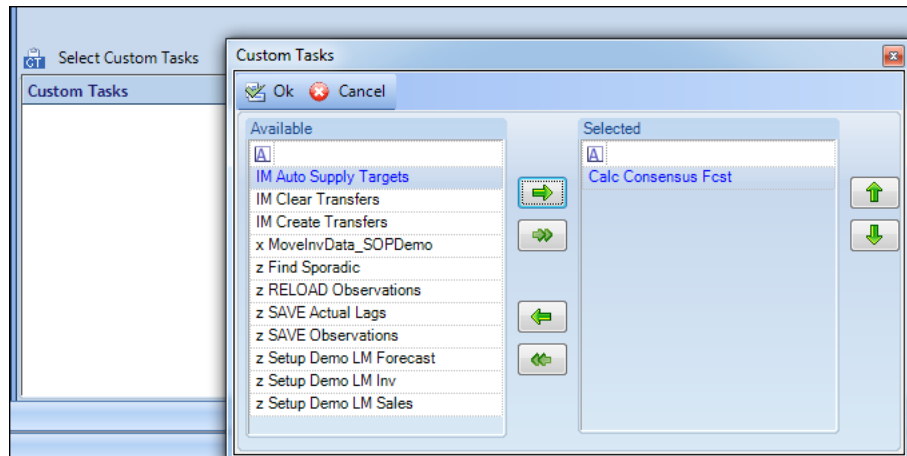
The screenshot shows the 'Definition' dialog box for a custom task. The title bar indicates the file path: .\SQLSERVER2008-FX_JGD_JohnGalt_SOPDe. The dialog has a menu bar with 'Save', 'Execute', 'Stop', and 'Show Se'. The 'Name' field contains 'Update Calculations_CT'. The 'Type' dropdown is set to 'Custom Task'. There are two radio buttons: 'Use Source Data' (unselected) and 'Use Last Loaded Data' (selected). A checkbox 'Force Unlock Scenario' is checked. At the bottom, there are two numeric spinners: 'Retry Attempts' set to 0 and 'Retry Interval (minutes)' set to 0.

- 4 From the **Type** drop-down, select “Custom Task”.
- 5 Leave the default selections for the remaining settings in this section.
- 6 In the **Settings** area, select the button for the Scenario Selection.

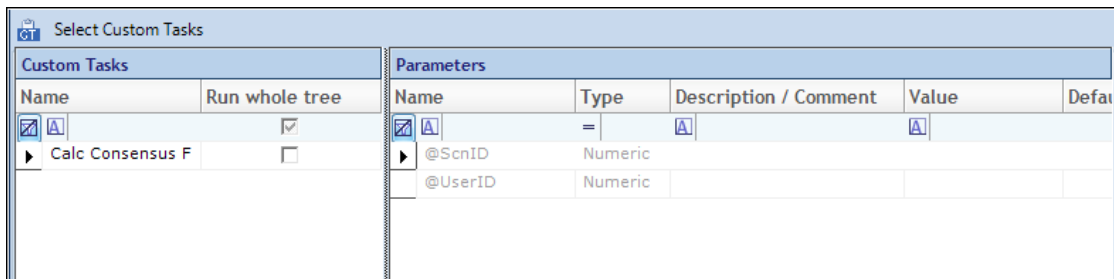
The screenshot shows the 'Settings' dialog box with the 'Scenarios' tab selected. The 'Selected' list is empty. A 'Show Scenario Properties' checkbox is present. Below it, there is a 'Select Custom Tasks' button and a 'Custom Tasks' section. Overlaid on this is the 'Scenario Selection' sub-dialog. It has 'Ok' and 'Cancel' buttons. It contains two lists: 'Available' and 'Selected'. The 'Available' list contains: HLP-ActHist, HLP-ActHist-SKU, HLP-Budget, HLP-CustomerMaster, HLP-FutureOrders, HLP-ItemMaster, HLP-POS, HLP-SalesFcst, jane - DTL, LM-Inventory, LM-Inventory-SKU-30Day, and LM-Inventory-SKU-60Day. The 'Selected' list contains: LM-Forecast. Between the lists are four arrow buttons: a right arrow, a right arrow with a plus sign, a left arrow, and a left arrow with a plus sign.

- 7 Use the middle arrow buttons to move the desired scenario(s) from the Available list to the Selected list to indicate the scenarios in which the Custom task should run.

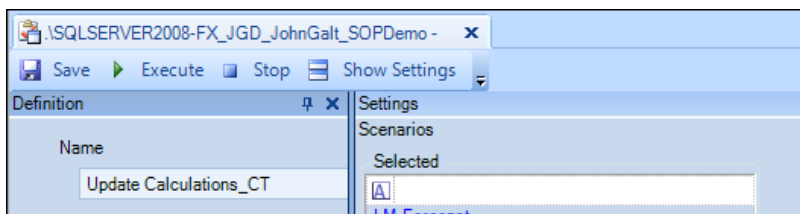
- 8 Click **OK**.
- 9 In the **Settings** area, click the **Select Custom Tasks** button.



- 10 Use the middle arrow buttons to move the desired custom task(s) from the Available list to the Selected List.
- 11 Use the up and down arrows to the right of the Selected list to designate the order in which to run the tasks.
- 12 Click **OK**.
- 13 Change parameter values if necessary. In the **Parameters** area, change the Value if other Name values exist beside @ScnID and @UserID. If not, existing scenario Default from DME values will be used.



- 14 When configuration is complete, click **Save**.

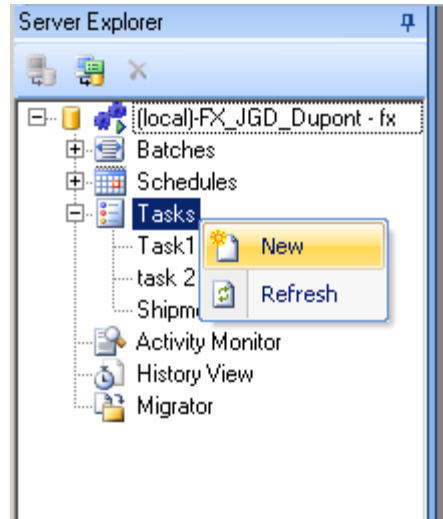


- 15 To run the Task manually, click **Execute**.
- Note** Be sure to select a Custom Task for each Scenario.

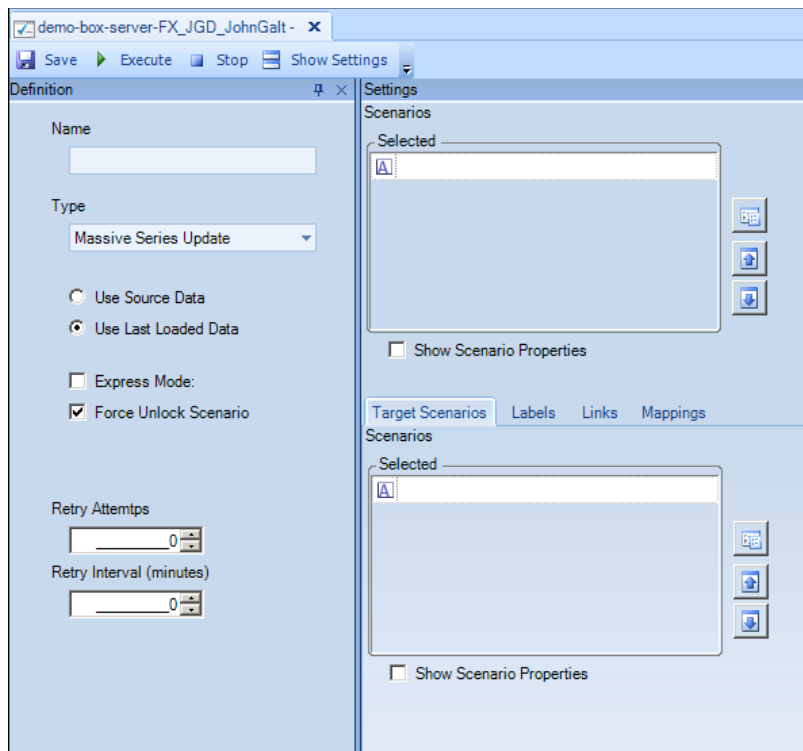
Add a Task

This section describes how to add a new task using the Batch Scheduler Manager:

- 1 Right-click on the **Tasks** option of your database and select **New**:



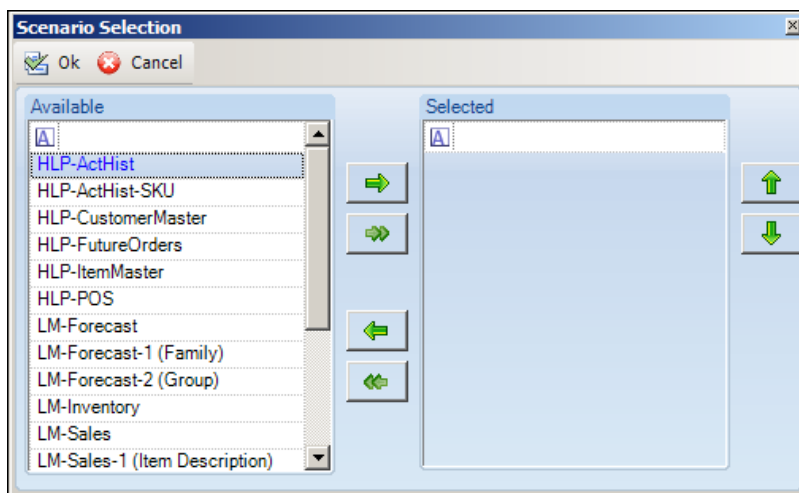
- 2 In the **Task Name** field, enter a descriptive name for the task.



- 3 Select the task type from the **Type** drop-down.
For the Living Master, select "Forecast". Selecting this type will generate a Forecast when this batch is run.

Other Types are available, such as “Massive Series Update” or “Exception Execution”.

- 4 The **Use Source Data** radio button is used to indicate that all scenarios in the Selected list will be reloaded. This means all series attributes and opinion lines in the scenarios will be lost once the task is executed. Only data that is in the source data defined for each scenario will be loaded.
- 5 Check the **Use Last Loaded Data** box to use the exact data values that were generated the last time the data was loaded.
- 6 The **Express Mode** check box can be selected when a Helper Scenario is used.
Helper Scenarios bring attribute or observational data from sources other than the Living Master load. This information is then moved into the Living Master as the Target Scenario.
- 7 Check the **Force Unlock Scenario** box to indicate that batches cannot execute if the target or source scenarios are open and/or locked.
- 8 In the **Scenarios** section, click the button for scenario selection
- 9 Select the appropriate scenario from the Available column and move it to the Selected column.

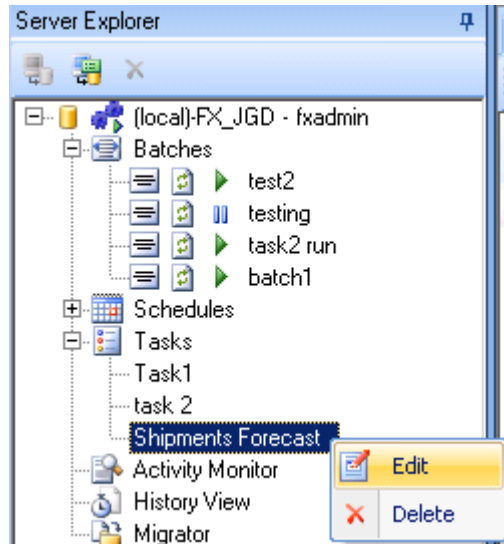


- 10 Click **OK** when finished.
- 11 Click **Save** when finished to save the task.

Edit a Task

This section will describe how to edit an existing task using the Batch Scheduler Manager:

- 1 Right-click on the **Tasks** element under your server in the server explorer and select the **Edit** option. You can also edit a task from the Task List using the Edit button.:

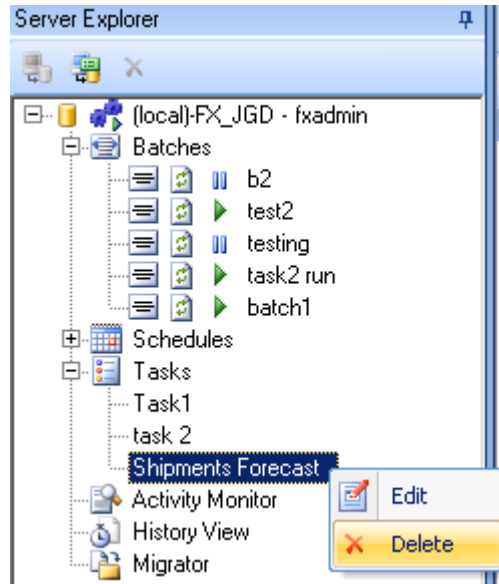


- 2 After the Task tab has opened, you can edit any fields in the task except the name. For more information on each of the fields you can edit, see [“Add a Task” on page 307](#).

Delete a Task

This section describes how to delete an existing task using the Batch Scheduler Manager.

- A task that is currently being used in a batch cannot be deleted, regardless if the batch is enabled or not. To delete task being used in a task, view the task's dependencies in the Task List and remove or replace the task in all the batches that use the task.
- 1 Right-click on the **Task** and select the **Delete** option. You can also delete a task from the Task List using the Delete button.:



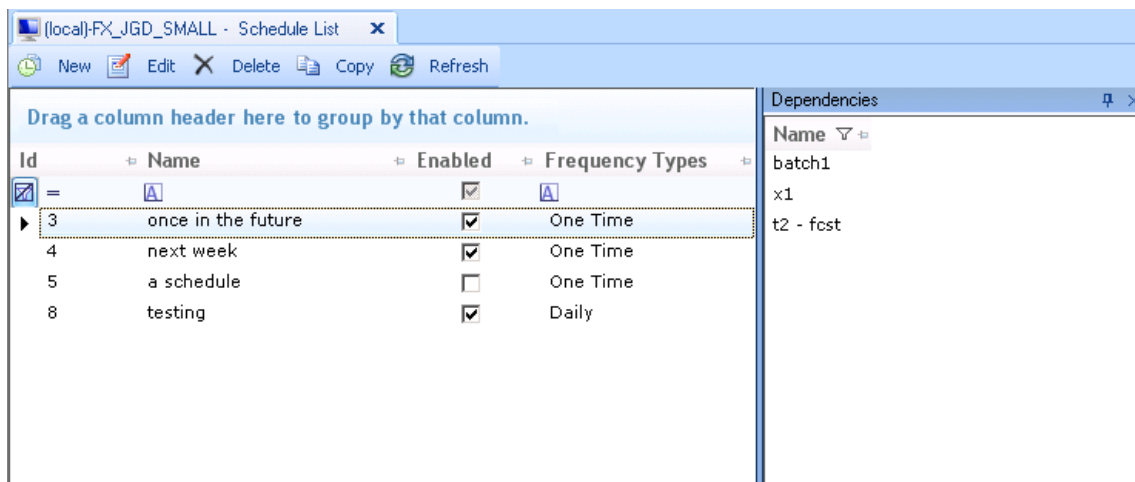
Schedules

A Schedule is an itinerary, a group of settings that define a particular point in time or a recurring set of dates and time at which batch should be executed.

You will not be able to create a new batch until you have defined at least one valid Schedule.

Schedules List

The Schedules list displays all existing schedules in the database. To open the Schedules list, click the Schedules button in the Home tab in the ribbon.



The following list describes the information displayed for each schedule:

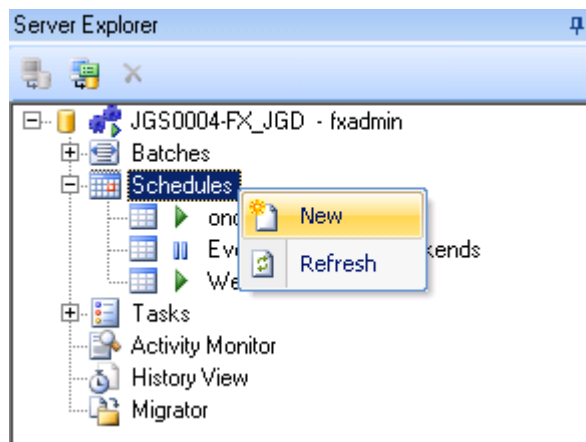
Pane	Description
Name	The name of the schedule.
Enabled	Indicates if a schedule is enabled or not.
Frequency Type	Displays the frequency defined for the schedule.

You will also be able to see which batches are associated to the selected schedule in the Dependencies pane.

Add a Schedule

This section describes how to add a new schedule using the Batch Scheduler Manager:

- 1 Right-click on the **Schedules** option of your database and select the **New** option:



- 2 A new tab is opened with the schedule definition:

The following fields are associated with creating a new schedule:

Option	Description
Name	Enter a name or description for the schedule.
Schedule Type	Defines the periodicity of the schedule which will define how often batches are executed. There are two available options: • One time - Defines a schedule that will only run once at a set date and time. All frequency options will be disabled • Recurring - Defines a schedule that will run with a particular frequency.
One Time Occurrence	This option is only enabled when the Schedule Type is set to "One Time". You will be able to configure the following: • Date - The date on which the batch or batches assigned to it will be executed. • Time - The time at which the batch or batches assigned to it will be executed.

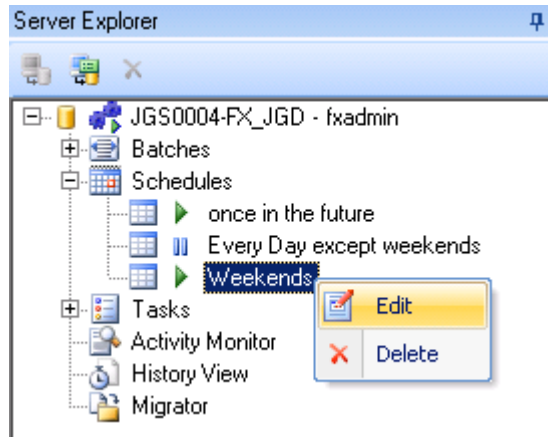
Option	Description
Frequency	This option is only enabled when the Schedule Type is set to “Recurring”. You will be able to configure the following: • Daily - Defines a schedule that runs every “n” number of days. You must complete the “Recast Every” field which will define how often the associated batch or batches will be executed. • Weekly - Defines a schedule that runs every “n” number of weeks. You must complete the “Recast Every” field which will define how often the associated batch or batches will be executed. You should select which days of the week the associated batch or batches will be executed. • Monthly - Defines a schedule that runs every “n” number of months. You can select it to be executed on a particular day of the month, such as the 5th of every month, or it can be configured to be executed on the first Monday of every month.
Daily Frequency	This option is only enabled when the Schedule Type is set to “Recurring”. You will be able to configure one of these two settings: • Occurs once at - Set a single time at which the associated batch or batches will be executed. • Occurs every - Set a time interval at which the associated batch or batches will be executed.
Duration	This option is only enabled when the Schedule Type is set to “Recurring”. You will be able to configure the following: • Start Date - Defines the date on which a schedule will begin to execute the associated batch or batches will be executed. • End Date - Defines the date on which a schedule will no longer execute the associated batch or batches. You can also select the “No End Date” option that makes the associated batch or batches run indefinitely at the specified intervals.

- 3 After you have finished completing all necessary fields click the  **Save** button to save your changes. The schedule will be available in the schedules list and is ready to be used in batches.

Edit a Schedule

This section describes how to edit an existing schedule using the Batch Scheduler Manager:

- 1 Right-click on the **Schedules** element under your server in the server explorer and select the **Edit** option. You can also edit a schedule from the Schedules List using the Edit button.:

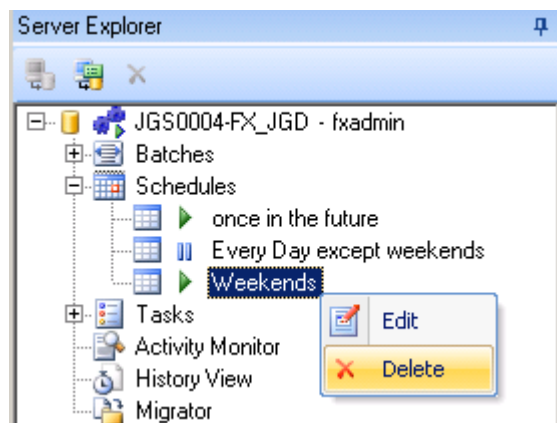


- 2 After the schedule tab has opened, you can edit any fields in the schedule except the name. For more information on each of the fields you can edit, see [Add a Schedule](#).

Delete a Schedule

This section describes how to delete an existing schedule using the Batch Scheduler Manager.

- A schedule that is currently being used in any batch cannot be deleted, regardless if the batch is enabled or not. To delete a schedule that is used in a batch, you must remove the schedule from the batch.
- 1 Right-click on the Schedule and select the **Delete** option. You can also delete a schedule from the Schedules List using the Delete button.



Batches

A batch is a job that can contain one or more tasks that run at particular intervals. Batches can be used to group logical transactional processes. For example you might need several different tasks to run every month in order to populate new data into your system.

Once you have created a new batch it will be executed at the times specified by the schedules assigned to it. Once a batch starts executing, it will run every task associated to it in order.

- You will not be able to create new batches until you have defined at least one valid Task and one valid Schedule. See [Add a Task](#) and [Add a Schedule](#) for more information.

Batches List

The **Batches** list displays all existing batches in the database. To open the Batches list, click the **Batches** button in the **Home** tab in the ribbon.

Id	Name	Description	Enabled	Date Created
2	Sales Data Load		☒	12/17/2009
4	Management Dat		☒	12/17/2009
8	testing schedules		☒	12/17/2009

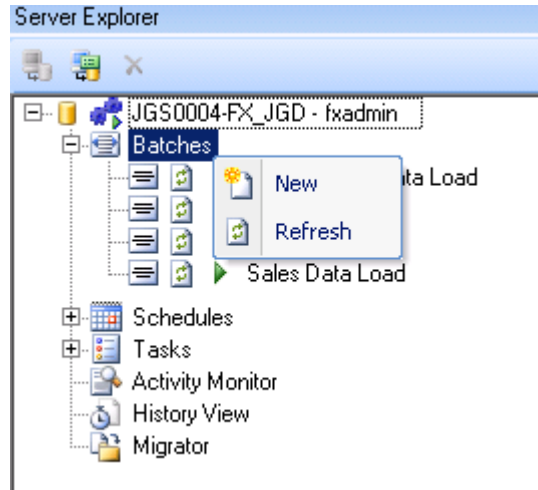
The following list describes the information displayed for each schedule:

Pane	Description
Name	The name of the batch.
Description	The description entered when the batch was created.
Enabled	Indicates whether a particular batch is currently enabled or not.
Date Created	The date when the batch was created.

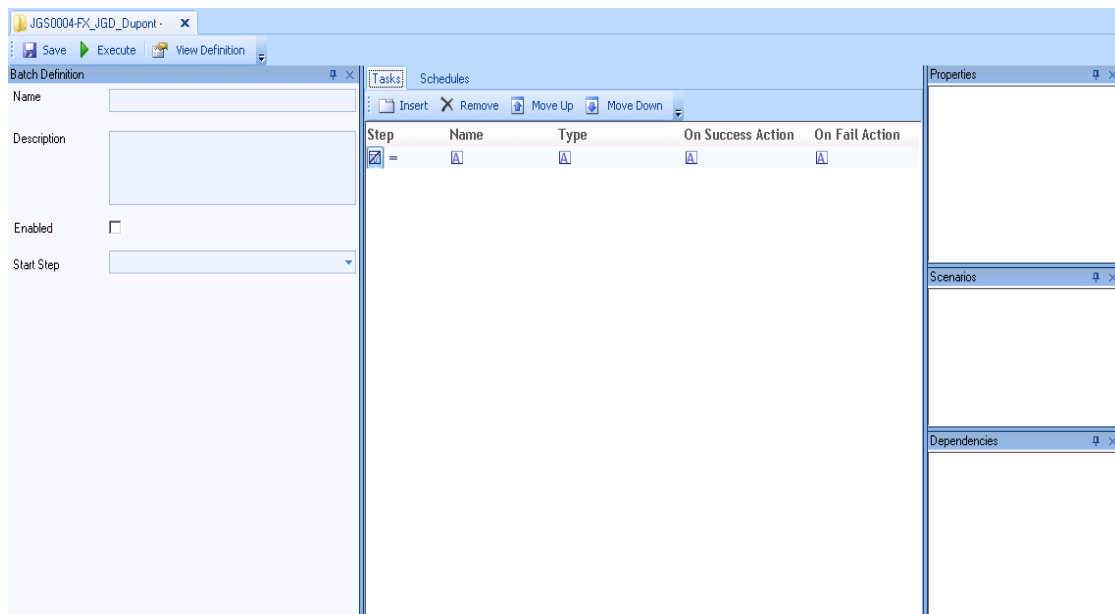
Add a Batch

This section describes how to add a new batch using the Batch Scheduler Manager:

- 1 Right-click on the **Batches** option of your database in the server explorer pane and select the **New** option. You can also add a new batch from the Batches list:



- 2 A new tab is opened with the batch definition:



The following fields are associated with creating a new batch:

Option	Description
Name	The name of the batch
Description	A general description of the batch.
Enabled	Specifies if a batch is enabled or not. If this option is not selected, a batch is disabled and will not be executed at the scheduled time.

Option	Description
Start Step	Specifies which of the existing steps will run first when the batch is executed. You will only be able to specify this field once you have inserted at least one task for the batch.
Tasks	In order to create a valid batch you must add at least one task. Each task you add will be a separate step. Once you have inserted all the tasks you need to be a part of your batch, you must define the execution flow for the batch. The concept of the execution flow is how the steps in a batch will be executed. In the simplest case they can run one after another in sequence, but this can be configured to be more complex.

Use the **Insert** button to add new tasks as a step, the **Delete** button to remove a step, and the **Move Up** or **Move Down** buttons to change the step number for a task. When a batch is run, the order in which the tasks are executed depends on the step number of the task and the actions to be taken once the step has finished. Use the Move Up or Move Down buttons to change the step number.

The following fields must be configured for each step:

On Success Action and On Failure Action

These fields specify what action should be taken once a step has finished successfully or when it has failed. The following options are available:

- **Go To Next Step** - After the step has finished, it will run the next step in the list. This option should not be used for the last step in a batch or it will always fail since there is no next step.
- **Quit With Failure** - After the step has finished, it will halt the batch execution. None of the steps after it will be executed and the batch will report it failed.
- **Quit With Success** - After the step has finished, it will halt the batch execution. None of the steps after it will be executed and the batch will report it succeeded.
- **Go To Step** - The list will also include a different option for every other step other than the one you are configuring right now. You can divert the execution of a batch to a specific step.

Schedules	In order to create a valid batch you must add at least one schedule. Each schedule you add will be a different specific time or recurring time at which the batch is executed.

Once you have inserted all the tasks you need to be a part of your batch, you must define the execution flow for the batch. The concept of the execution flow is to set how the steps in a batch will be executed. In the simplest case, they can run one after another in sequence, but this can be configured to be more complex.

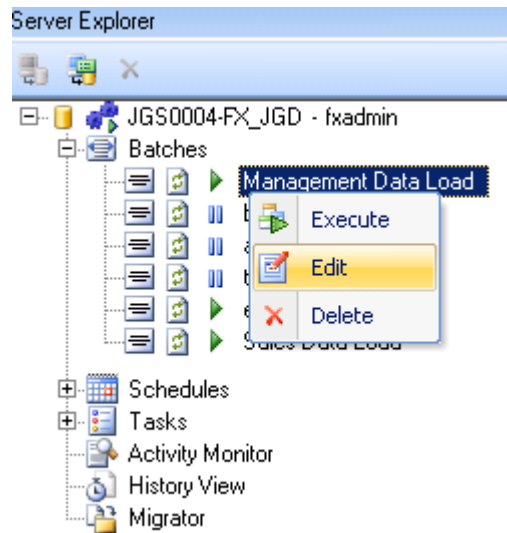
- 3 After you have finished completing all necessary fields, click the  **Save** button to save your changes. The batch will be available in the batches list and if it was set to be enabled and any of the schedules is enabled it will be executed as scheduled.

Note Batches will be executed only if SQL Server Agent is running on the database server that contains the database and the Batch Scheduler Server component. For more information see [Server Status](#).

Edit a Batch

This section describes how to edit an existing batch using the Batch Scheduler Manager:

- 1 Right-click on the **Batches** element under your server in the server explorer and select the **Edit** option. You can also edit a schedule from the Schedules List using the Edit button.:

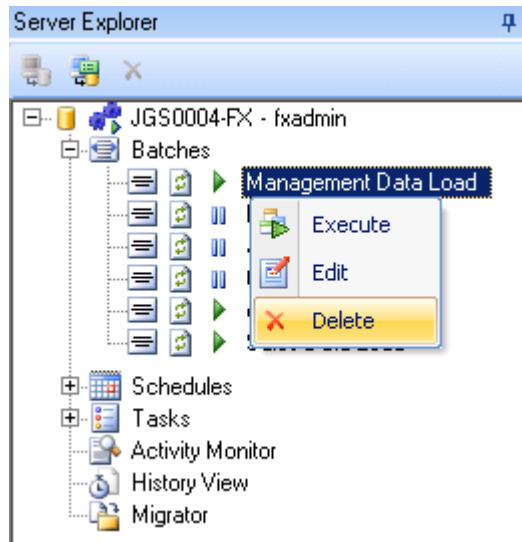


- 2 After the new batch tab has opened you can edit any fields in the batch. For more information on each of the fields you can edit see [Add a Batch](#).

Delete a Batch

This section describes how to delete an existing schedule using the Batch Scheduler Manager.

- When you delete a batch, the tasks and schedules that were associated with the batch will not be deleted.
- 1 Right-click on the Batches and select the **Delete** option. You can also delete a batch from the Batches List using the Delete button.



Activity Monitor

This section of the Batch Scheduler Manager will help you view the status of all the batches created in the system. You will be able to see when batches are scheduled to run and if they are currently running among other information.

- You will not be able to create new batches until you have defined at least one valid Task and one valid Schedule. See [Add a Task](#) and [Add a Schedule](#) for more information.

Activity Monitor - vm01-winxp-FX_JGD									
Refresh ☒ Auto Refresh 2 Seconds									
Drag a column header here to group by that column.									
Name	Enabled	Status	Current Step	Last Run Outcome	Last Run	Next Run	Runnable	Scheduled	
Monthly cycle	yes	Idle	0 (unknown)	Succeeded	10/26/2009 4:16	not scheduled	yes	yes	yes

The list below detail all the information displayed in the activity monitor window.

Column	Description
Name	The batch name.
Enabled	Indicates whether or not a batch is enabled. Batches that are not enabled will not be executed even if they have been assigned a valid schedule.
Status	The current status of a batch, such as Idle or Executing.
Current Step	Batches can have any specific number of steps. Displays the step that is currently being executed when a batch is being executed.

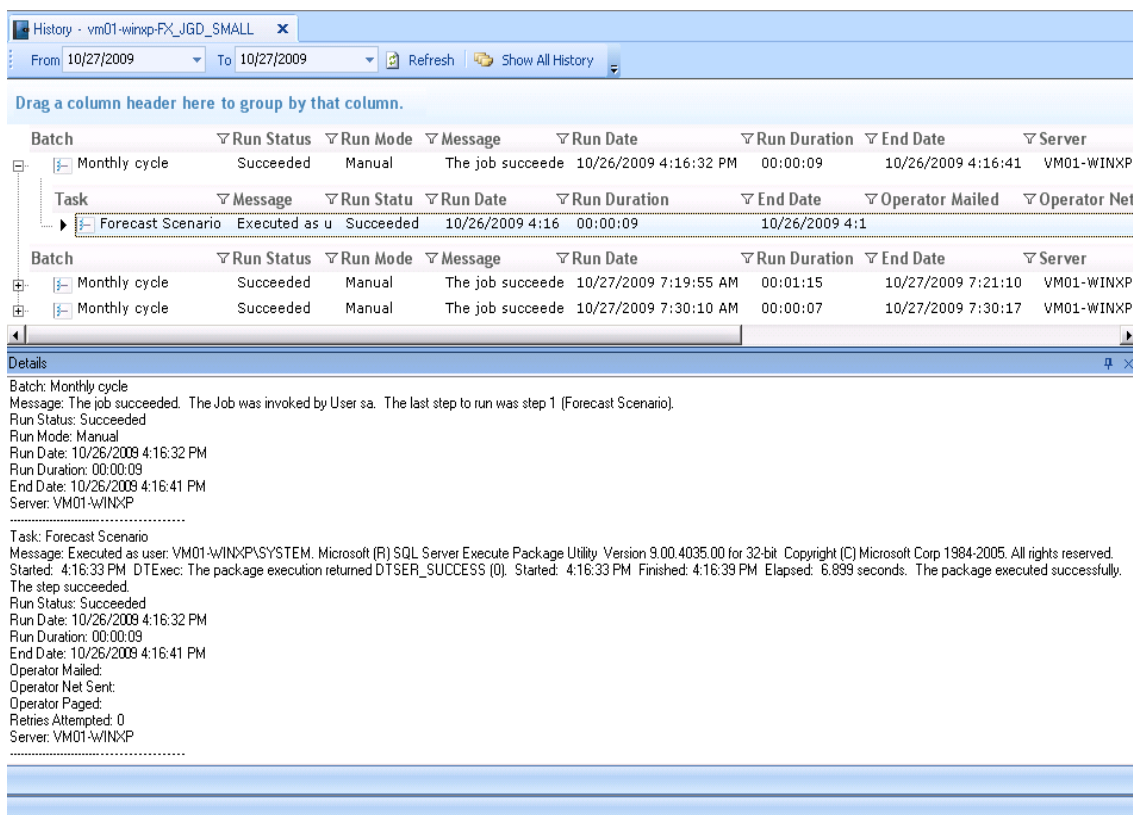
Column	Description
Last Run Outcome	Displays the result of the last run of a batch and indicates if the batch ran successfully last time.
Last Run	The last date and time a batch was executed.
Next Run	The next time the batch is scheduled to run.
Runnable	Indicates whether or not a batch is eligible for running.

The Activity monitor can be refreshed manually by clicking on the  Refresh button on the toolbar or you can use the auto refresh feature that is also available in the toolbar.

History View

This section of the Batch Scheduler Manager will help you view the status of all the batches created in the system. You will be able to see when batches are scheduled to run and if they are currently running among other information.

- You will not be able to create new batches until you have defined at least one valid Task and one valid Schedule. See [Add a Task](#) and [Add a Schedule](#) for more information.



History - vm01-winxp-FX_JGD_SMALL

From: 10/27/2009 To: 10/27/2009 Refresh Show All History

Drag a column header here to group by that column.

Batch	Run Status	Run Mode	Message	Run Date	Run Duration	End Date	Server
Monthly cycle	Succeeded	Manual	The job succeeded	10/26/2009 4:16:32 PM	00:00:09	10/26/2009 4:16:41	VM01-WINXP

Task	Message	Run Status	Run Date	Run Duration	End Date	Operator Mailed	Operator Net
Forecast Scenario	Executed as u	Succeeded	10/26/2009 4:16	00:00:09	10/26/2009 4:16		

Batch	Run Status	Run Mode	Message	Run Date	Run Duration	End Date	Server
Monthly cycle	Succeeded	Manual	The job succeeded	10/27/2009 7:19:55 AM	00:01:15	10/27/2009 7:21:10	VM01-WINXP
Monthly cycle	Succeeded	Manual	The job succeeded	10/27/2009 7:30:10 AM	00:00:07	10/27/2009 7:30:17	VM01-WINXP

Details

Batch: Monthly cycle
 Message: The job succeeded. The Job was invoked by User sa. The last step to run was step 1 (Forecast Scenario).
 Run Status: Succeeded
 Run Mode: Manual
 Run Date: 10/26/2009 4:16:32 PM
 Run Duration: 00:00:09
 End Date: 10/26/2009 4:16:41 PM
 Server: VM01-WINXP

Task: Forecast Scenario
 Message: Executed as user: VM01-WINXP\SYSTEM. Microsoft (R) SQL Server Execute Package Utility Version 9.00.4035.00 for 32-bit Copyright (C) Microsoft Corp 1984-2005. All rights reserved. Started: 4:16:33 PM DTExec: The package execution returned DTSEXP_SUCCESS (0). Started: 4:16:33 PM Finished: 4:16:39 PM Elapsed: 6.899 seconds. The package executed successfully. The step succeeded.
 Run Status: Succeeded
 Run Date: 10/26/2009 4:16:32 PM
 Run Duration: 00:00:09
 End Date: 10/26/2009 4:16:41 PM
 Operator Mailed:
 Operator Net Sent:
 Operator Paged:
 Retries Attempted: 0
 Server: VM01-WINXP

The list below details the information in all the columns at the batch level, as well as the task level. To get to the task level, you must expand a particular batch execution.

Batch Level Columns

Column	Description
Batch	Displays the batch name that was executed
Runs Status	Displays the overall status of the batch run.
Run Mode	Displays how the batch was executed. Set to Manual to indicate that the batch execution was triggered manually. Set to Automatic to indicate the batch was executed by the system when the batch was scheduled to run.
Message	Displays any messages pertinent to the execution of the batch. This field can be read without expanding the column by using the Details pane just below the batch execution list in the History View tab. If errors in execution exist at the task level as well as the batch level, you might see that all tasks in a batch run successfully but the batch still failed. In this scenario, this field may give you more information.
Run Date	Displays the date and time at which the batch started running.
Run Duration	Displays the time it took for the batch to finish.
End Date	Displays the date and time at which the batch finished running.
Server	Displays the server name in which the batch was executed.

Task Level Columns

Column	Description
Task	Displays the task name.
Message	Displays messages pertinent to the execution of the task. This field can be read without expanding this column by using the Details pane below the batch execution list in the History View tab. If errors in execution exist at the task level as well as the batch level, you might see that all tasks in a batch run successfully but the batch still failed. In this scenario, this field may provide more information.
Run Status	Displays the status of the task run.
Run Date	The date and time at which the task began running.
Run Duration	The time it took for the task to finish.
End Date	Displays the date and time at which the task finished running.
Operator Mailed	Reserved for future use.
Operator Net Sent	Reserved for future use.
Operator Paged	Reserved for future use.
Retries Attempted	Displays the number of times the task was attempted.
Server	The server on which the task was executed.

The Activity monitor can be refreshed manually by clicking on the  Refresh button on the toolbar.

You can choose to see all the history available by clicking the  Show All History button or you can use the From and To date fields to only view the execution of batches in a particular period of time.

Migration View

The Migration view will help you if you had batches created in an previous version of the Batch Scheduler. It will export batches created with versions prior to version 6.0 and export them as tasks or batches

Note To export existing batches to the new batch scheduler the batches must have been created with a Batch Scheduler version 5.0 or higher.

Id	Name	Type	Frequency Type	Next Run	After Batch Id	Express Mode	Reload Data	Use Filter	Whole Tree	Migration Status As Task	Migration Status
1	New Batch	MOU	Once	08/18/2010	=	☒	☒	☒	☒	Not Migrated	Failure

To start migrating, click the button to load any existing batches. You will have the option to **Migrate as Batch** or **Migrate as Task**. To see the difference between a task and a Batch, read the following sections: [“Tasks” on page 289](#) and [“Batches” on page 315](#).

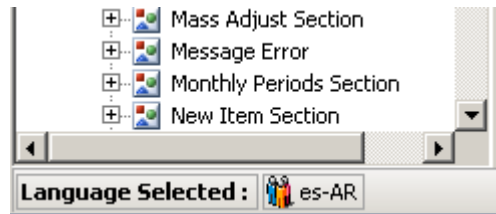
These are all the available columns of information:

Column	Description
Id	Displays the batch id.
Name	Displays the batch name
Type	Displays the type of batch.
Frequency Type	Displays the frequency with which the batch was executed.
Next Run	Displays the next scheduled run was for the batch.
After Batch Id	Displays the Id of the batch that was scheduled to run after executing this batch.
Express Mode	Indicates if the express mode feature was enabled for the batch.
Reload Data	Indicates if the batch was reloaded from the source data.
User Filter	Indicates if the batch used a filter.
Whole Tree	Displays if the batch was run against the whole tree of a hierarchy.
Migration Status As Task	Displays the status of a batch being migrated to a task.
Migration Status As Batch	Displays the status of a batch migrating from the old version to the new version.
Migration Message	Displays any error messages encountered while migrating batches.

Localization Editor

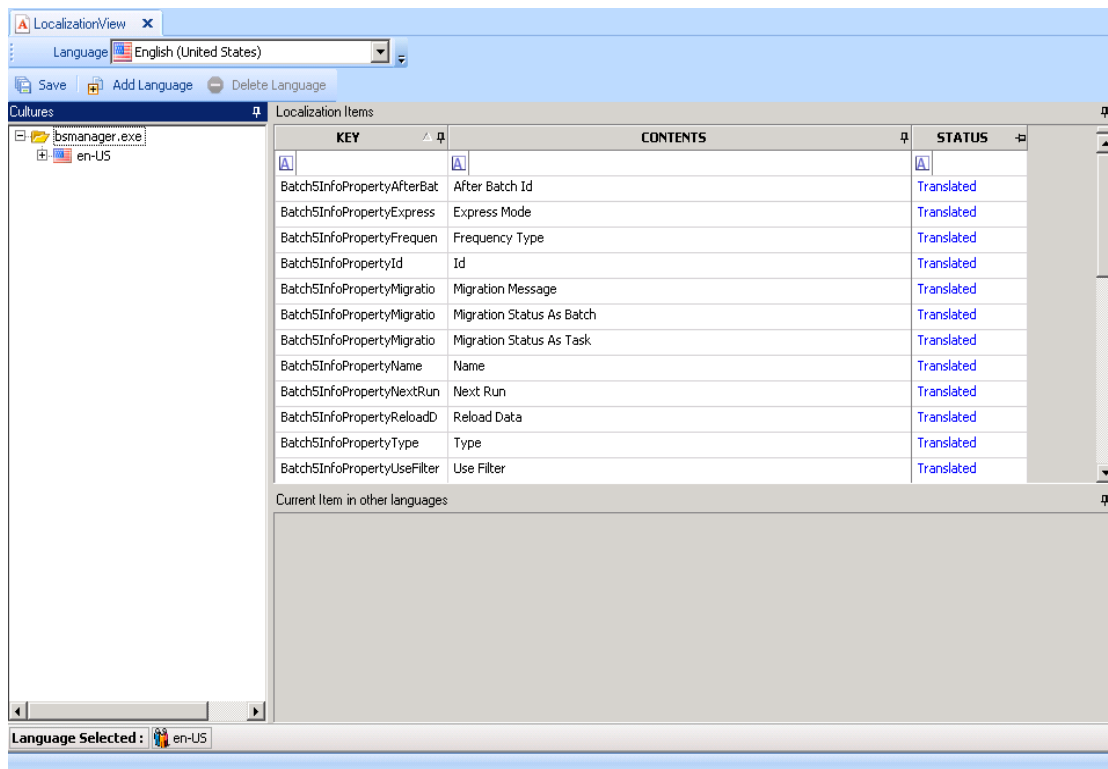
The Localization Editor feature enables you to configure any localization setting for the Batch Scheduler Manager. You will be able to configure any label within the applications, images, and symbols within the tool. It includes support for non-English characters from another language for labels, dates, currency symbols and more.

When working with the locale configuration window you can tell which language you are working on by looking at the indicator in the lower left corner of the pane:



- Before making any changes to the localization configuration for the Batch Scheduler, please make sure no one else is using the application.

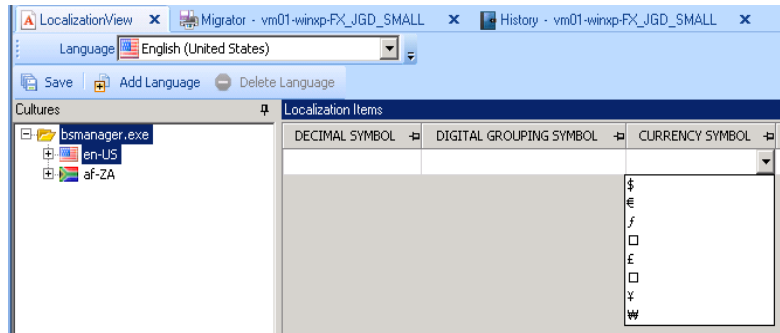
If you are having problems viewing certain characters, such as currency symbols in foreign languages, you might need to install the MUI (Multilingual User Interface) pack. You can find more information here: <http://msdn.microsoft.com/ene-us/goglobal/bb688178.aspx>



Editing Existing Languages

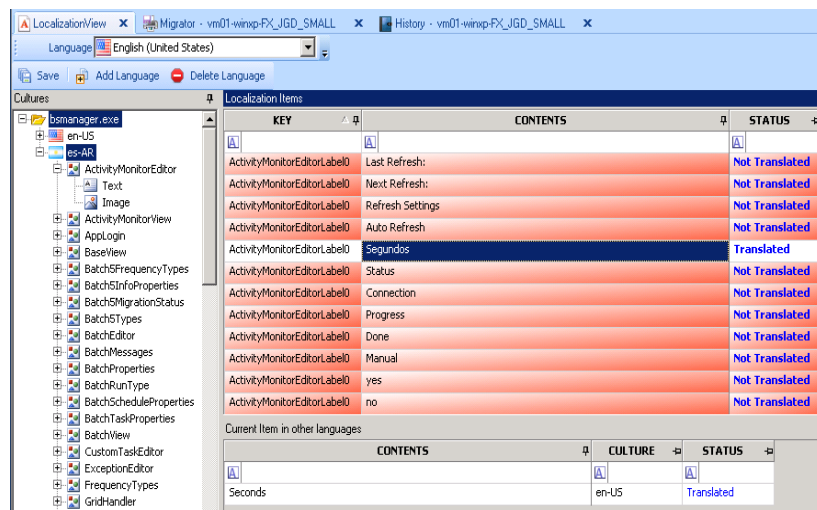
You can edit an existing language by clicking on its name. Make sure you choose the correct tool and select the appropriate language.

- 1 Select the Language name to edit miscellaneous settings such as the decimal and currency symbol.



- 2 You can also change all labels by expanding the language you wish to edit and selecting the section for which you wish to change the Labels.

You can change a label by editing the “Contents” column. After doing so, the Status column will change to “Translated” to indicate you have already translated that element. You can change the status of a whole tree section by right-clicking on the “Text” section under the tree and selecting “Change Status Translated”. This will set all keys in this group as translated.

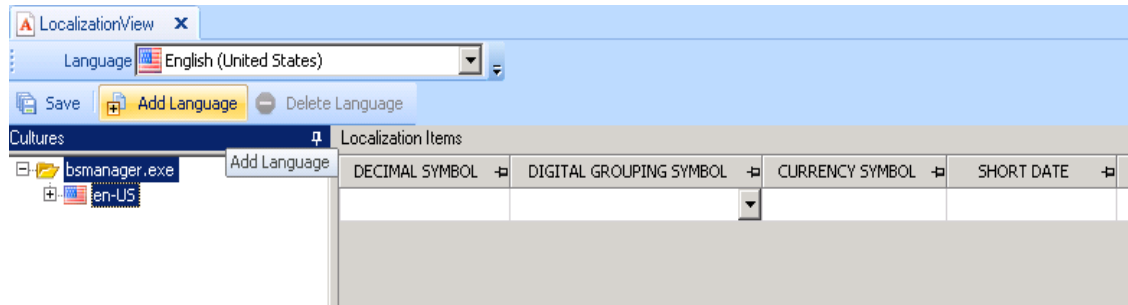


- 3 After making all the necessary changes, click the  button. After restarting IIS, those changes will affect the Planning Portal.

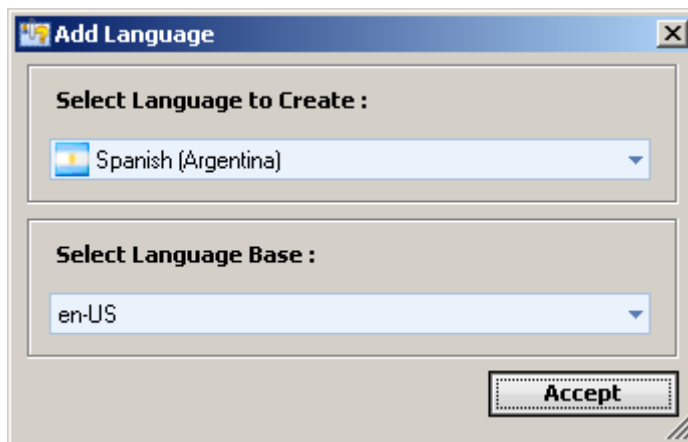
Adding a New Language

This section describes how to add a new language definition so the Batch Scheduler UI can be used with a language different than the default one.

- 1 Click the  Add Language button



- 2 You will see the **Add Language** window display. Select the language you wish to add and then select which language you wish to use as the base to create the new one
- 3 Click the “**Accept**” button.



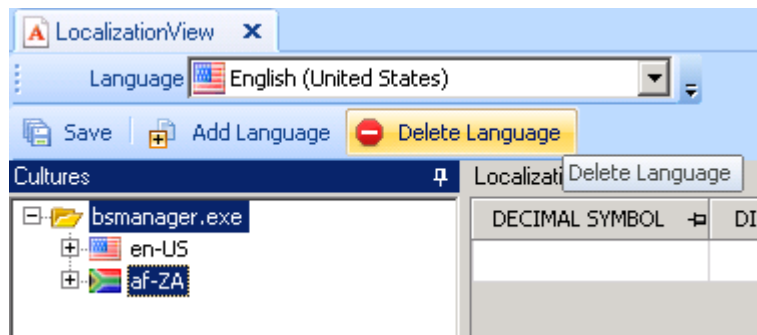
- 4 After adding a new language, it will display in the list under the application for which you added the new language and you can start configuring your new language. For more information, see [“Editing Existing Languages” on page 324](#).

Remove an Existing Language

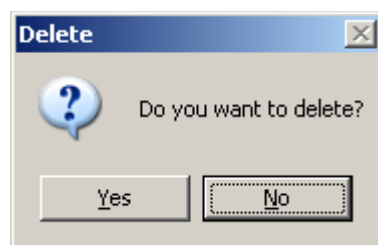
If you wish to edit any labels or images for the Planning Portal, select the appropriate language under the Planning Portal.

Note The language en-US (English - United States) cannot be deleted for both the Admin Tool and the Planning Portal.

- 1 Select the language you wish to remove and click the  Delete Language button. You can also right-click on the folder for the appropriate application and select “Add Language option”.



- 2 A confirmation message will be displayed, click Yes to delete the currently selected language.



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