



Adobe

Using Business Activity Monitoring Dashboard

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Adobe® LiveCycle® ES

Update 1

Adobe LiveCycle ES Update 1 Using Business Activity Monitoring Dashboard

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Adobe® LiveCycle® ES (Enterprise Suite) Update 1 (8.2) Business Activity Monitoring provides a central location for viewing and responding to the information critical to your business. Key to this tool are *dashboards*: the customizable presentations of information specific to your business tasks and interests. Within each dashboard are one or more objects that display metrics about your business. You can view the objects together to get the big picture of what is happening, or *drill down* into any object to reveal more detailed information. Dashboards can list the alert notifications that you have received about exceptional business events, and they can list tasks in which you are participating as they are associated with some exceptional event.

BAM Dashboard is an easy-to-use interface to the information provided by Business Activity Monitoring. The server receives data about the activities in your business and looks for exceptional events, as defined by your application developers and rule managers. The server also produces aggregated information that is always current to the latest event and available for presentation on a dashboard in BAM Dashboard.

What's in this Manual?

This manual describes how to use BAM Dashboard, and how to create and configure the interface to display the information critical to you. Specifically, this manual describes:

- *Common Features* ([page 36](#)) that are used throughout BAM Dashboard.
- *Dashboards* ([page 46](#)) that are the principal interface that collect and display your business metrics, alerts, and tasks.
- *Dashboard Objects* ([page 60](#)) that are the individual presentations of specific metrics.
- *Charts* ([page 65](#)) that are graphical presentations for comparing similar data.
- *Indicators* ([page 101](#)) that are graphical presentations for a number's position on a scale of numbers.
- *Tables* ([page 109](#)) that are tabular presentations of numbers.
- *Plans* ([page 120](#)) that are visual elements that allow you to see where a value is in relation to some target or range of values.
- *Reports* ([page 125](#)) .
- *Process Diagrams* ([page 132](#)) that graphically show the steps or actions that accomplish a task, and present statistics about the process instances.
- *Alert Messages* ([page 138](#)) that are notifications about exceptional business events.
- *Tasks* ([page 145](#)) that allow you and another user to track and manage an event identified by an alert notification.
- *Business Rules* ([page 135](#)) that monitor events looking for exceptional business conditions, and produce alert messages that describe the conditions when they exist.
- *Watchpoints* ([page 151](#)) that send an alert when a value is at or near a target value.

Starting BAM Dashboard

Before starting BAM Dashboard, the following requirements must be met:

- BAM Server must be running.
- Your browser must be compatible with Microsoft® Internet Explorer 6.0 or newer, have JavaScript enabled, and Adobe Flash® 7 installed.
- You must have a user account created by your Business Activity Monitoring administrator.

Note: Before starting BAM Dashboard, turn off any pop-up blockers in your Web browser.

Note: Systems with Single Sign-On enabled bypass the log in screen. Consult with your administrator to enable this feature. For more information, see "[Working with Single Sign-on Settings](#)" in the document *Using Business Activity Monitoring Workbench*.

➤ **To start BAM Dashboard:**

- In your browser, open BAM Dashboard from the application server that manages the BAM Server. For example:

```
http://hostname:port/bam/dashboard
```

After logging in, you will see your default dashboard.

Note: To change the default, see "[Setting a Default Dashboard](#)" on page 51.

2

Business Activity Monitoring

LiveCycle ES Business Activity Monitoring tracks the execution of business processes in LiveCycle ES. Powered by technology from Celequest Corp., Business Activity Monitoring employs user-configurable graphical dashboards to display the progress of process activities and reveal interesting performance statistics for process instances in both realtime (for example, the last twelve hours) and historical (for example, the last six months) contexts.

LiveCycle ES communicates with Business Activity Monitoring periodically, enabling the dashboards to dynamically populate in real time.

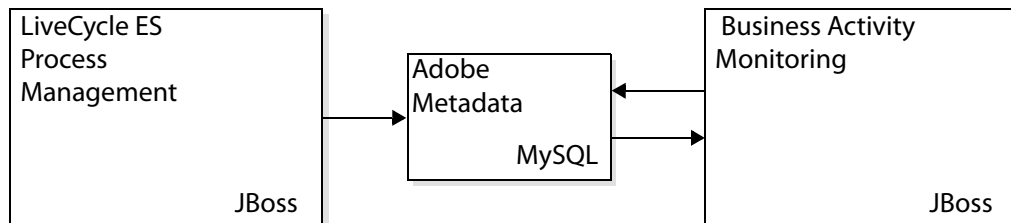
This document describes:

- [“Architecture” on page 9](#) describes how LiveCycle ES integrates with Business Activity Monitoring.
- [“Introduction to the BAM Dashboards” on page 10](#) describes the six basic dashboards and their contents.

Architecture

Business Activity Monitoring resides on either a separate or the same J2EE application server as LiveCycle ES. More specifically:

- LiveCycle ES posts updates to its database.
- The AdobeEvent polls the LiveCycle ES database to recognize new or updated processes and passes the new or updated process information to AdobeView.
- The AdobeView contains a custom UDF that obtains information from the LiveCycle ES database. This custom UDF creates new views, dashboard objects, and dashboards in Business Activity Monitoring.
- Business Activity Monitoring polls the LiveCycle ES database for process instance information, which provides the data for the Dashboard Objects.



Note: The next section describes the dashboards in greater detail.

Introduction to the BAM Dashboards

Business Activity Monitoring features six dashboards, two of which display data for all process instances. The remaining four are specific to a process instance and are automatically generated when that process instance is started.

The two main dashboards which display data for all process instances are:

- [Holistic Dashboard](#)
The Holistic dashboard aggregates realtime and historical data, including running processes, queue duration, timing, and more.
- [Drilldown Dashboard](#)
The drilldown dashboard provides data about the volume of activities and processes and their completion time statistics, such as minimum, maximum, and averages. On these dashboards, you can “drill down” to more detail for a specific day or hour by clicking on the chart. You can access this dashboard by clicking on “Drilldown on Timing and Volume” in the Navigation tree.

The four dashboards that are generated each time a new process is created are:

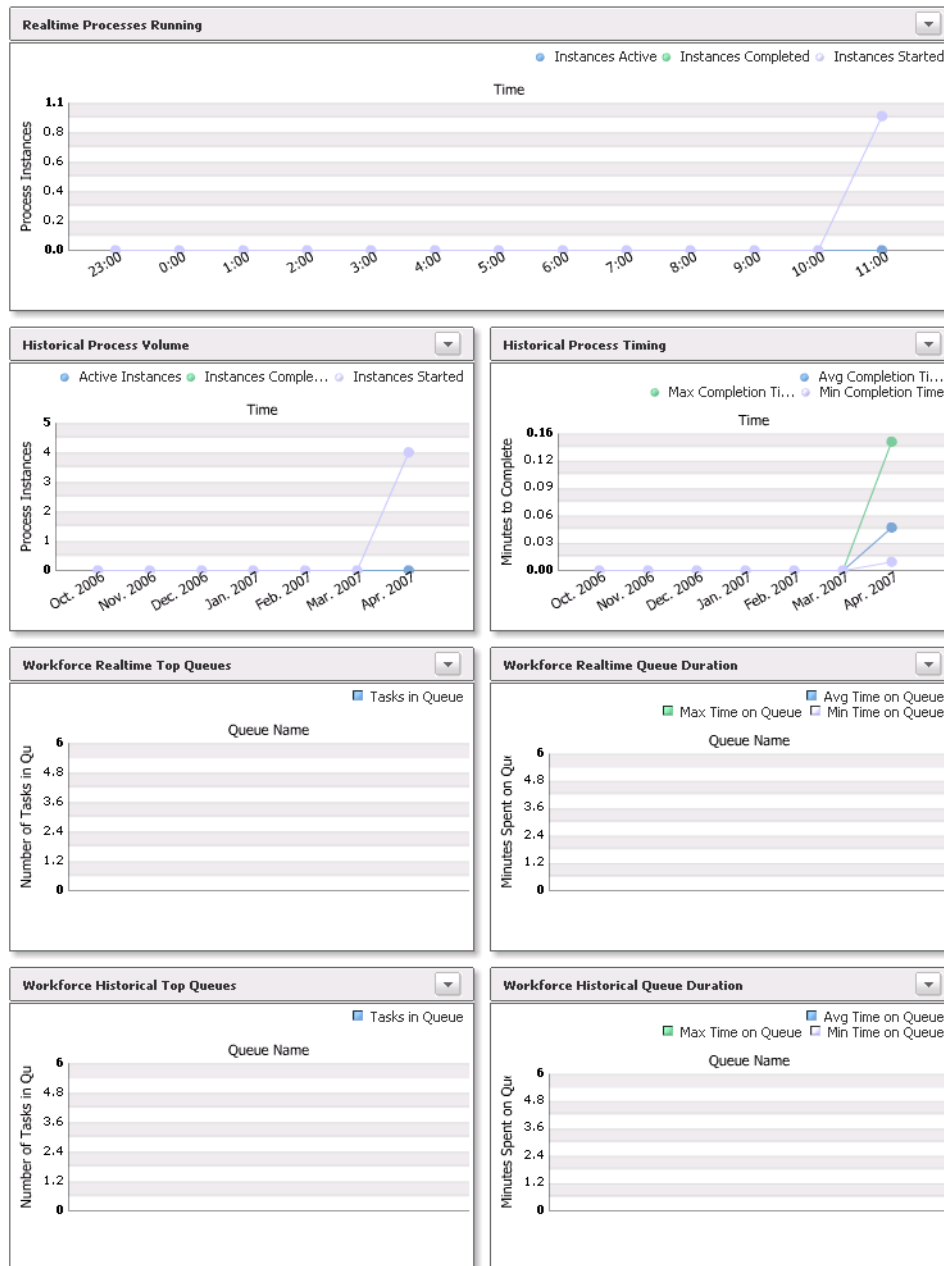
- [Historical Dashboard](#)
The Historical dashboard tracks interesting statistics over the last six months. (Six months represents the default; the historical period is user-configurable.)
- [Realtime Process Dashboard](#)
The Realtime dashboard tracks interesting process statistics about the process instance and its activities over the last twelve hours. (Twelve hours represents the default; the realtime period is user-configurable.)
- [System Dashboard](#)
The System dashboard tracks information from the other three dashboards but tracks only system activities.
- [Workforce Dashboard](#)
The Workforce dashboard tracks statistics pertaining to queues and queue assignments of activities for this process.

Each dashboard and their dashboard object components are described in greater detail below.

Note: Business Activity Monitoring also features alerts, which notifies you of exceptional events in process activities, and a task manager that enables you to examine those events in detail.

Holistic Dashboard

The holistic dashboard displays seven dashboard objects with historical and real-time data for all processes. aggregated from the Historical and Realtime dashboards. For example, the Realtime Processes Running object shows the number of instances started and completed in each of the last twelve hours, which is an aggregate of the data shown in the processes running dashboard objects in the Realtime dashboard.



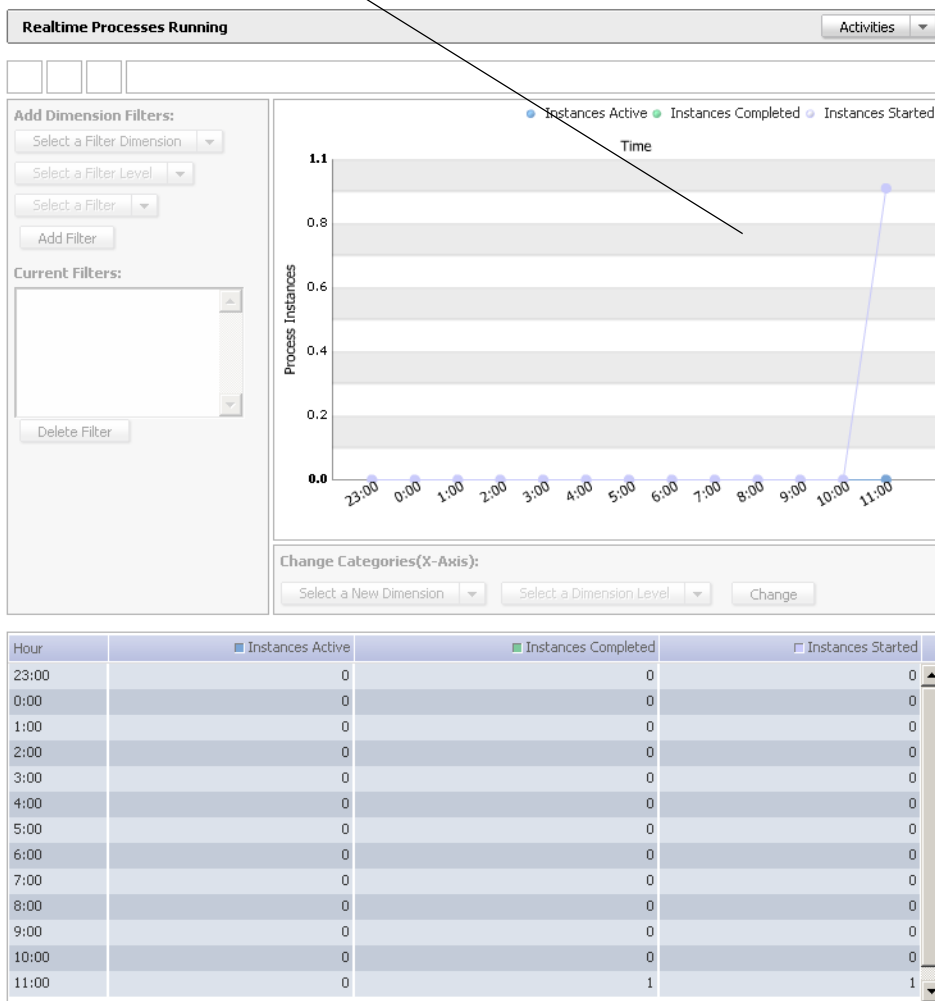
Realtime Processes Running

This dashboard object displays the following hourly statistics for all processes active during the realtime timeframe:

- Processes started
- Processes completed
- Average number of processes active

By placing the mouse cursor over a node in the chart line, you can view the number of process instances represented by that node.

Detailed information on mouseover



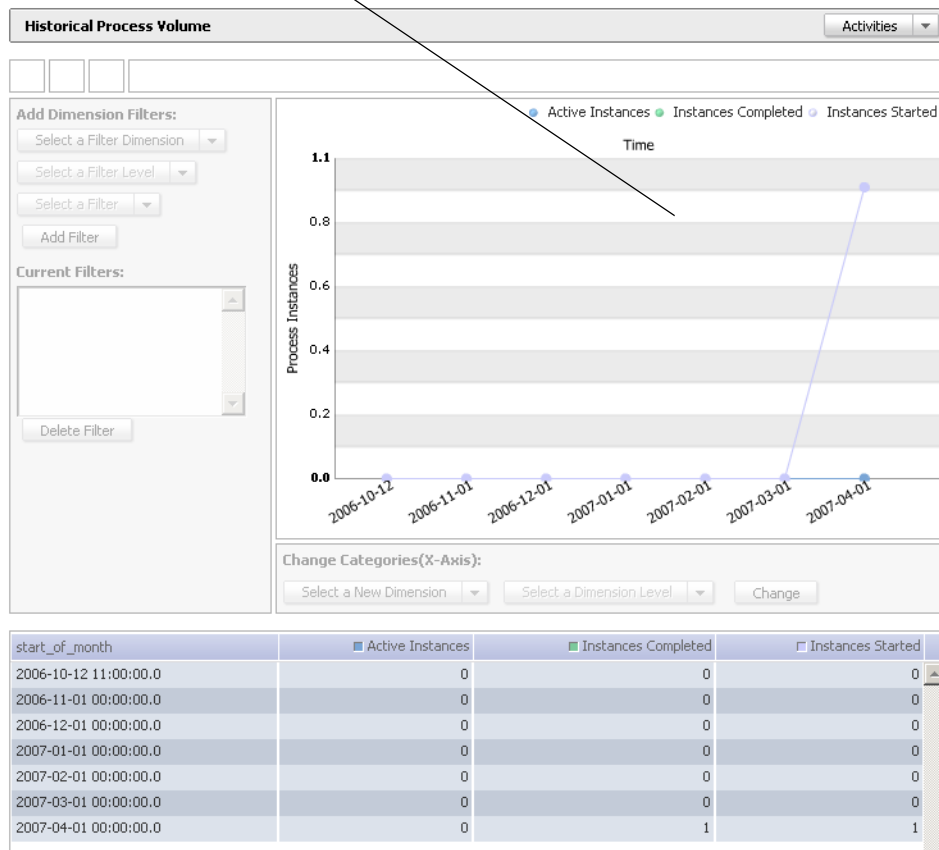
Historical Process Volume

This dashboard object displays the monthly statistics for process instances, including the following:

- Number of instances completed
- Number of instances started
- Average number of process instances active during the month

By placing the mouse cursor over a node in the chart line, you can view the number of process instances represented by that node.

Detailed information on mouseover



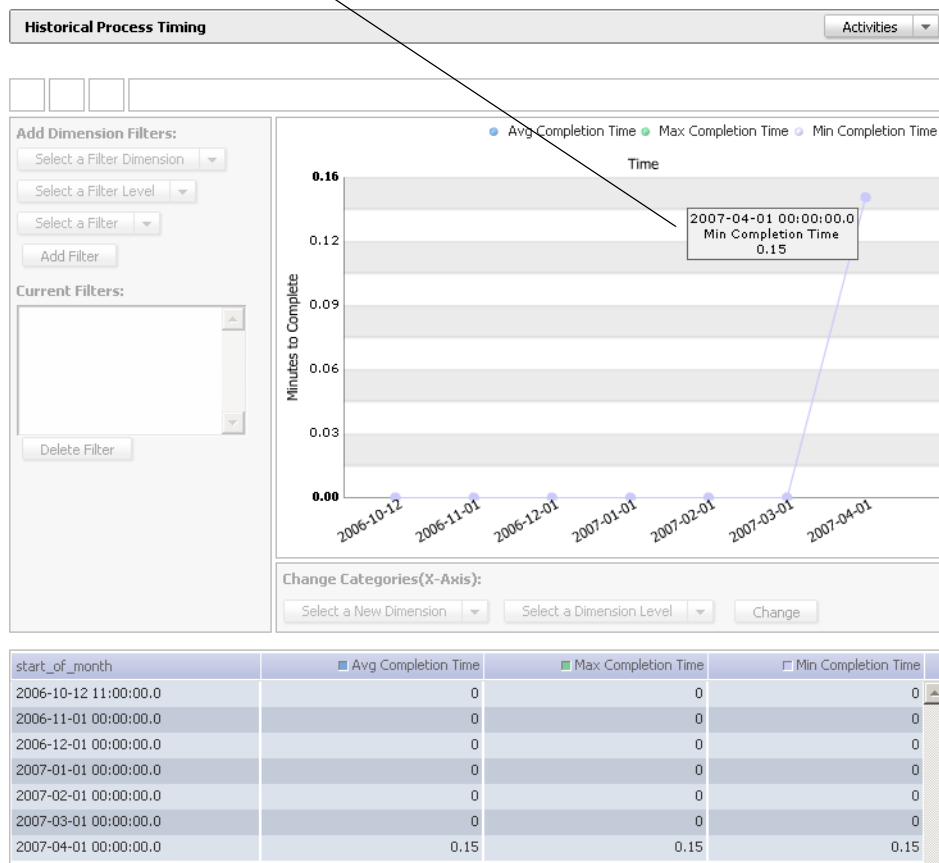
Historical Process Timing

This dashboard object displays the monthly statistics for process instances, including the following:

- Average completion time
- Maximum completion time
- Minimum completion time

By placing the mouse cursor over a node in the chart line, you can view the number of process instances represented by that node.

Detailed information on mouseover

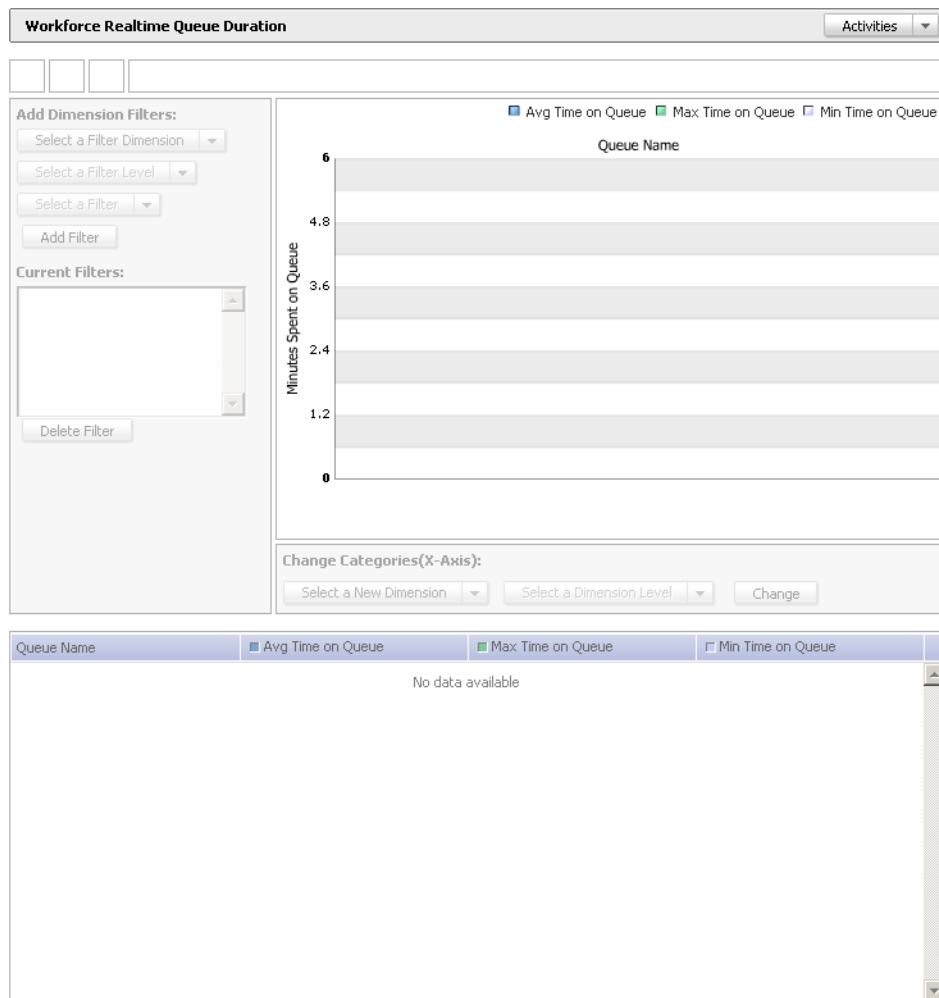


Realtime Queue Duration

This dashboard object displays the statistics for the duration of tasks (top fifty or as many that can fit in the graph) on each queue within the realtime timeframe, including the following:

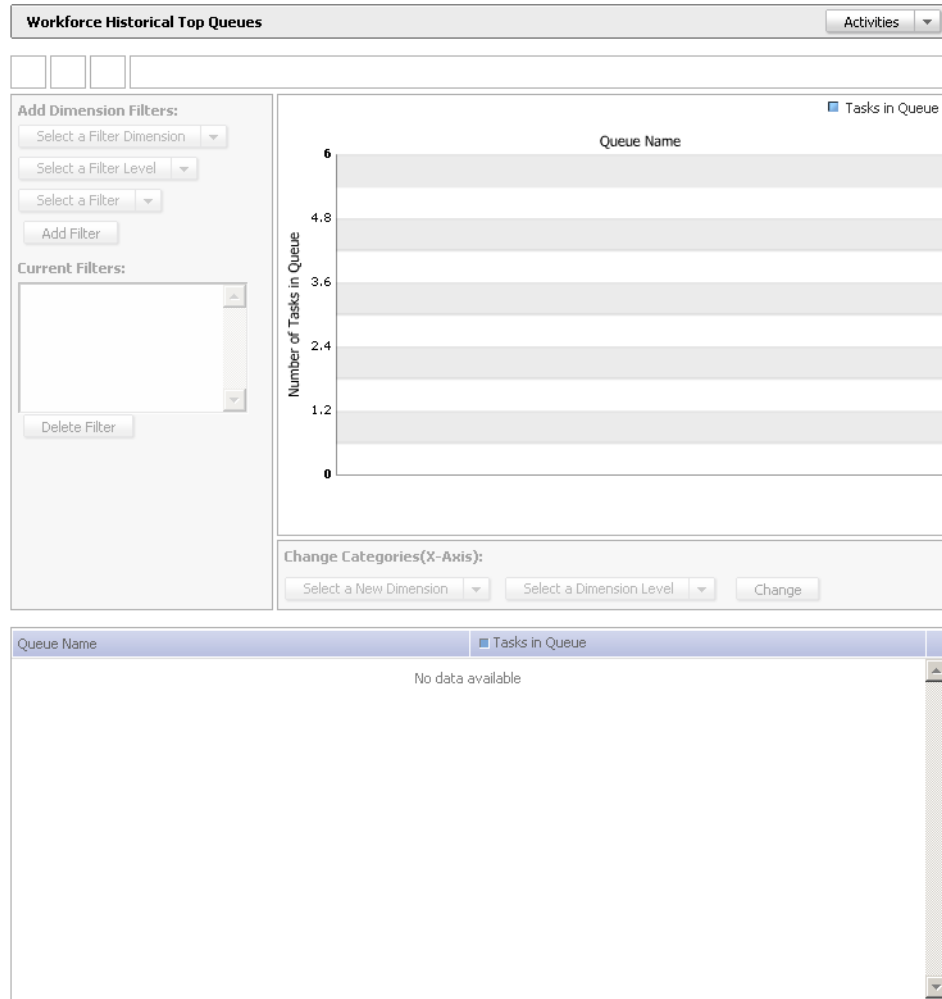
- Average time
- Maximum time
- Minimum time

By placing the mouse cursor on a bar in the chart, you can view the value represented by that bar.



Realtime Top Queues

This dashboard object displays the number of tasks that are currently active in the top fifty queues (or as many as can fit in the graph).

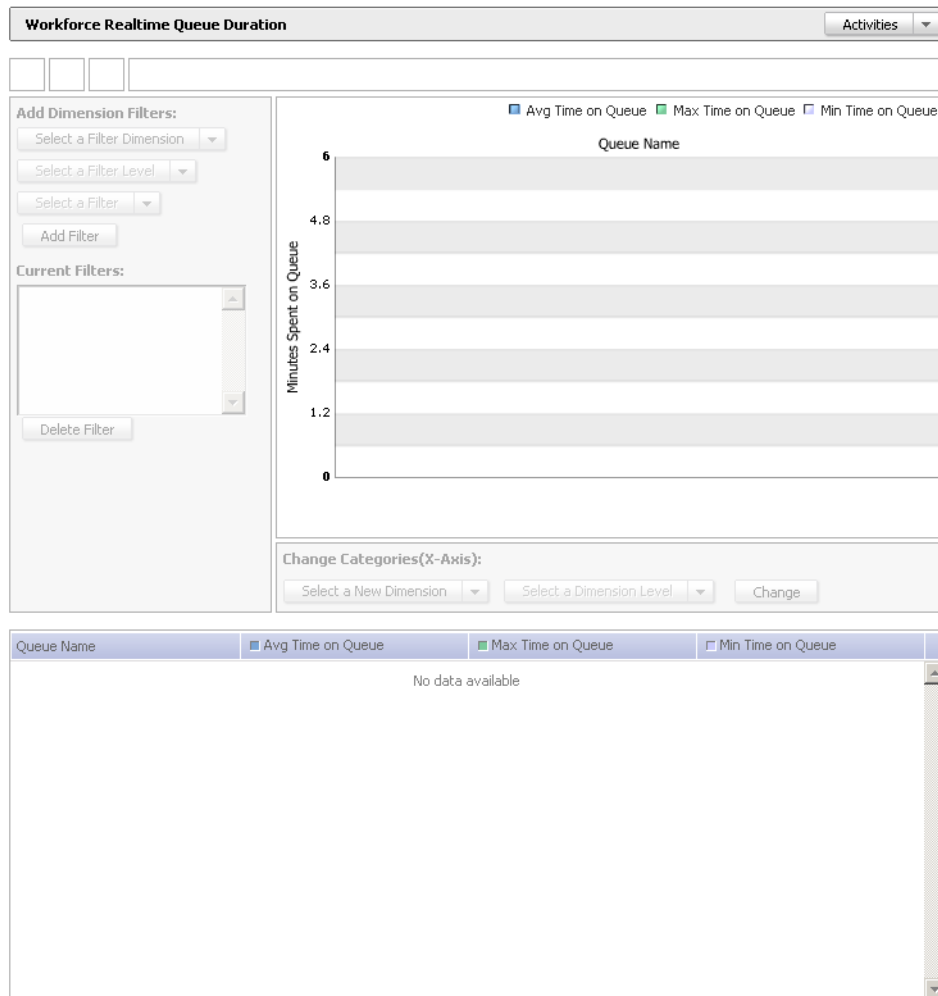


Historical Queue Duration

This dashboard object displays the statistics for the duration of tasks (top fifty or as many that can fit in the graph) on each queue within the historical timeframe, including the following:

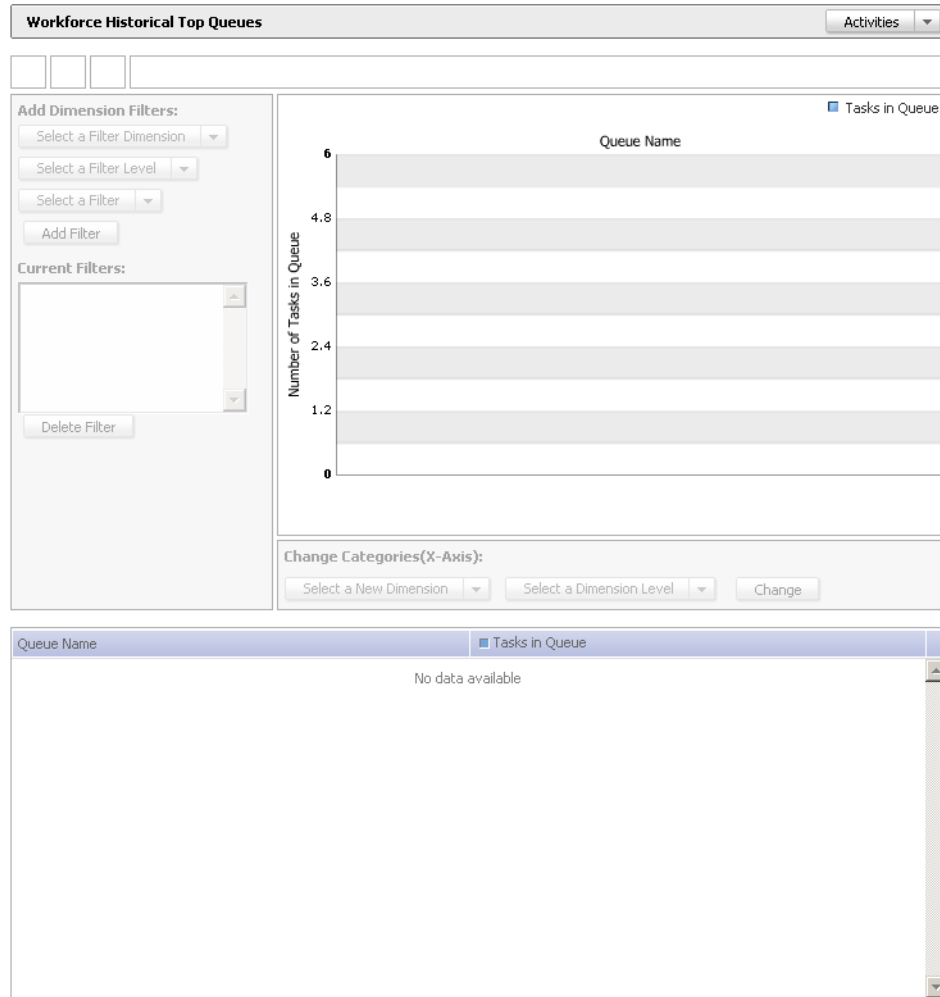
- Average time
- Maximum time
- Minimum time

By placing the mouse cursor on a bar in the chart, you can view the value represented by that bar.



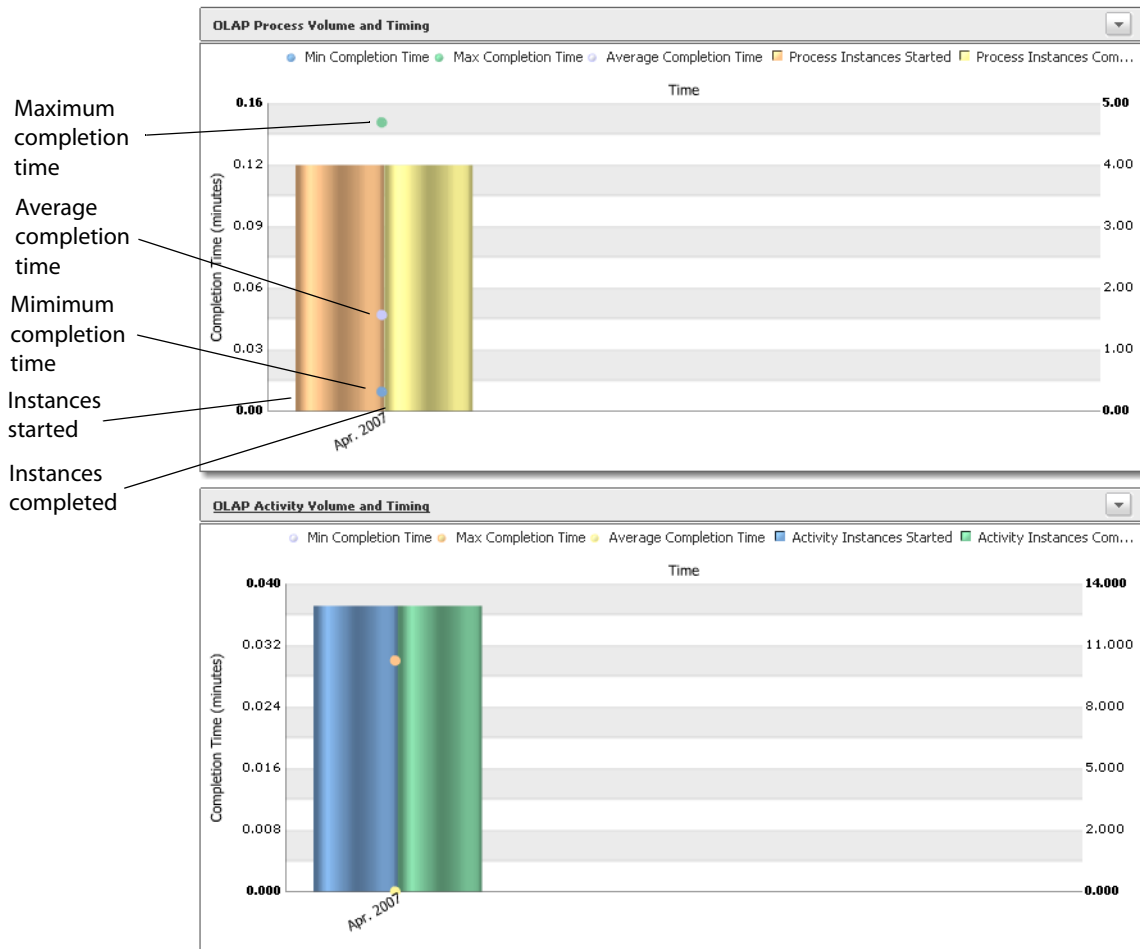
Historical Top Queues

This dashboard object displays the number of tasks in the top fifty queues (or as many as can fit in the graph) within the historical timeframe.



Drilldown Dashboard

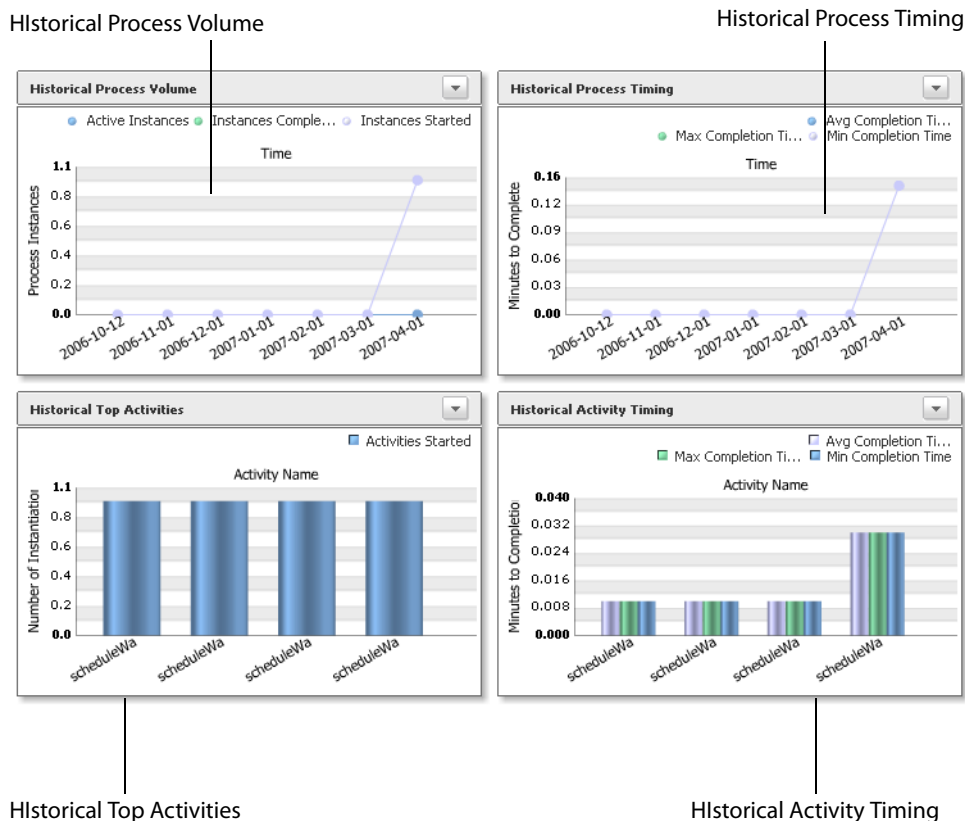
The drilldown dashboard displays two dashboard objects with On Line Analytical Processing (OLAP) data for the volume and timing of processes and activities. Both dashboard objects allow you to drill down to more detail about start and completion volume processes and activities at a specific time. The dashboard objects show the start and completion volume of instanced and the maximum, minimum, and average completions times at a specific time. By clicking on the chart, you can "drill down" to more specific times. For example, by clicking on a month (for example Jan. 2007), you can see the same information for a specific day. Clicking on the day can take you to the hours in the day.



Historical Dashboard

The Historical dashboard displays historical data based on user-defined limits (e.g., data older than twelve hours but more recent than six months). Data displayed includes process volume and timing history, as well as top activity and activity timing.

This dashboard contains four dashboard objects, as shown below.



Each dashboard object is interactive and will display detailed information on mouseover. You can also open a more detailed view of a dashboard object by clicking on its title bar.

Each detailed view is described below.

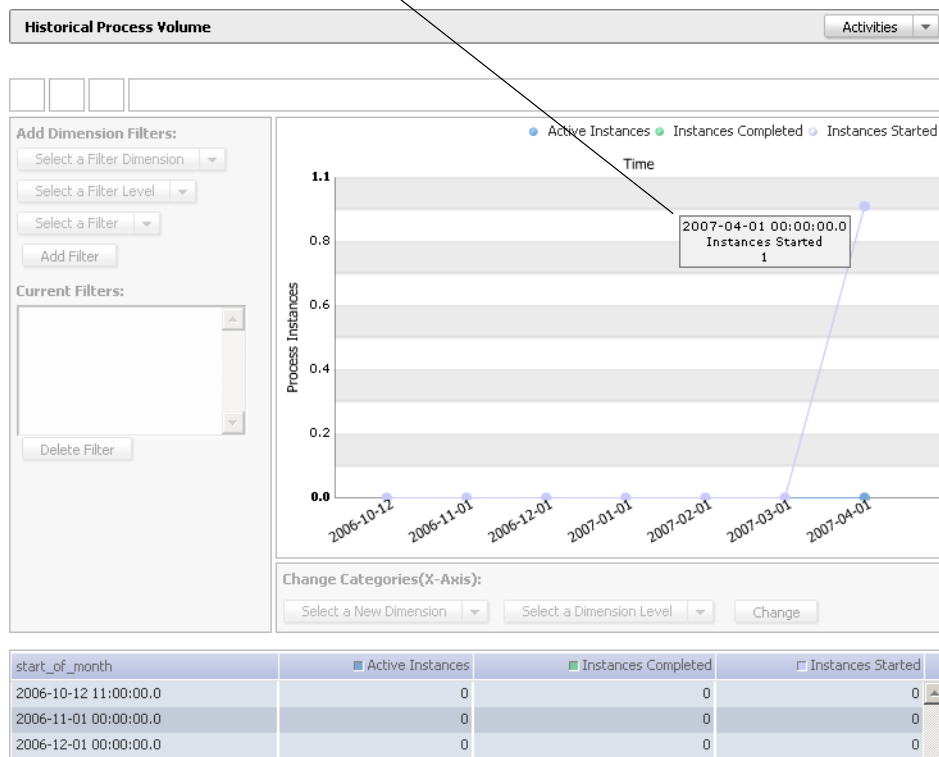
Process Volume

This dashboard object lists process volume statistics for each month within the user-defined historical period, including the following:

- Active instances
- Instances completed
- Instances started

By placing the mouse cursor over a node in the line chart, you can view the statistics for that month.

Detailed information on mouseover



Detailed information for each month in historical period

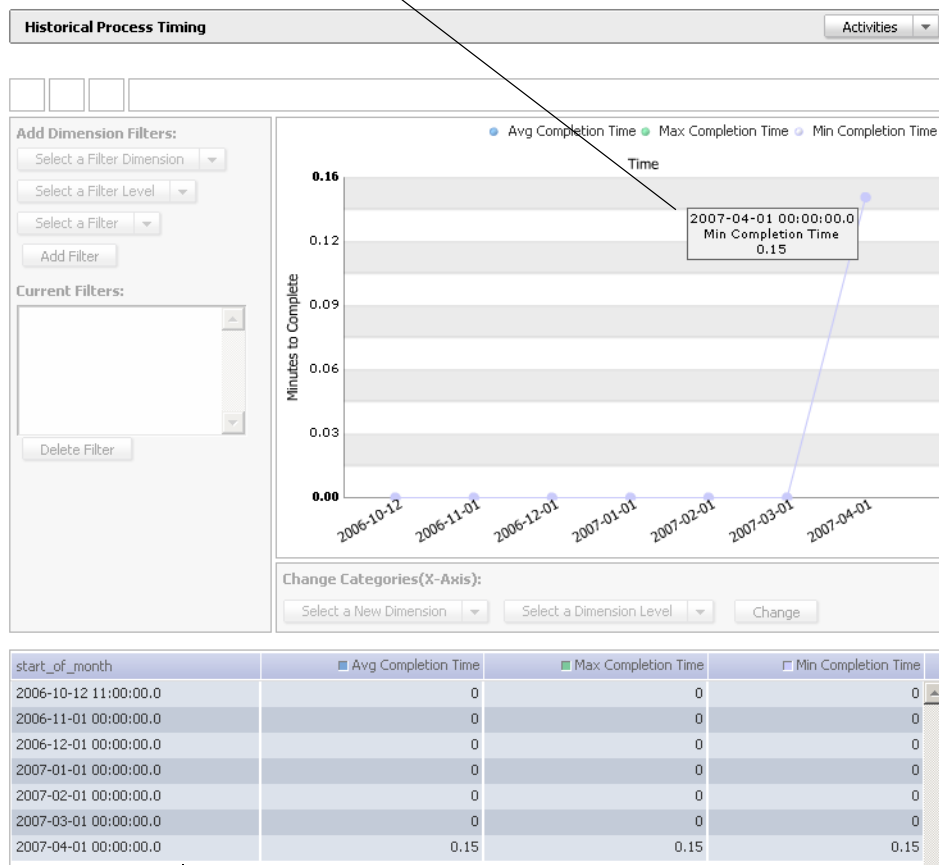
Process Timing

This dashboard object lists process timing statistics for each month within the user-defined historical period, including the following:

- Average completion time
- Maximum completion time
- Minimum completion time

By placing the mouse cursor over a node in the line chart, you can view the statistics for that month.

Detailed information on mouseover



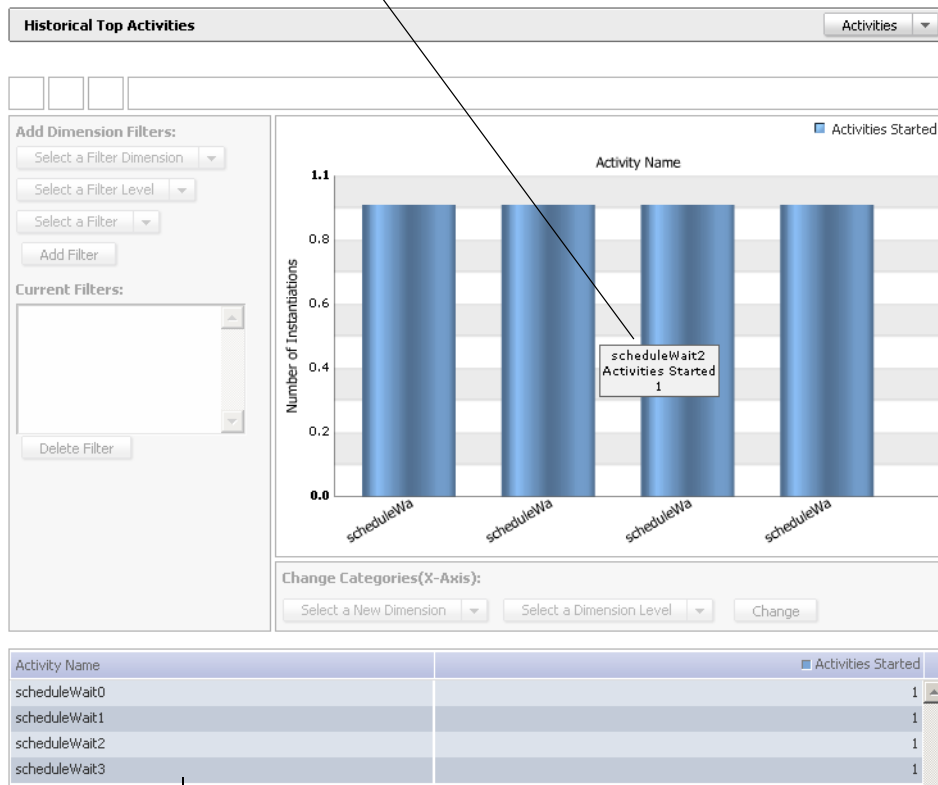
Detailed information for each month in historical period

Top Activities

This dashboard object lists the number of activity instances started for the top ten activities in the selected process diagram within the user-defined historical period.

By placing the mouse cursor over a bar in graph, you can view the statistics for the top activity represented by that bar.

Detailed information on mouseover



Detailed information for each top ten process activities in historical period

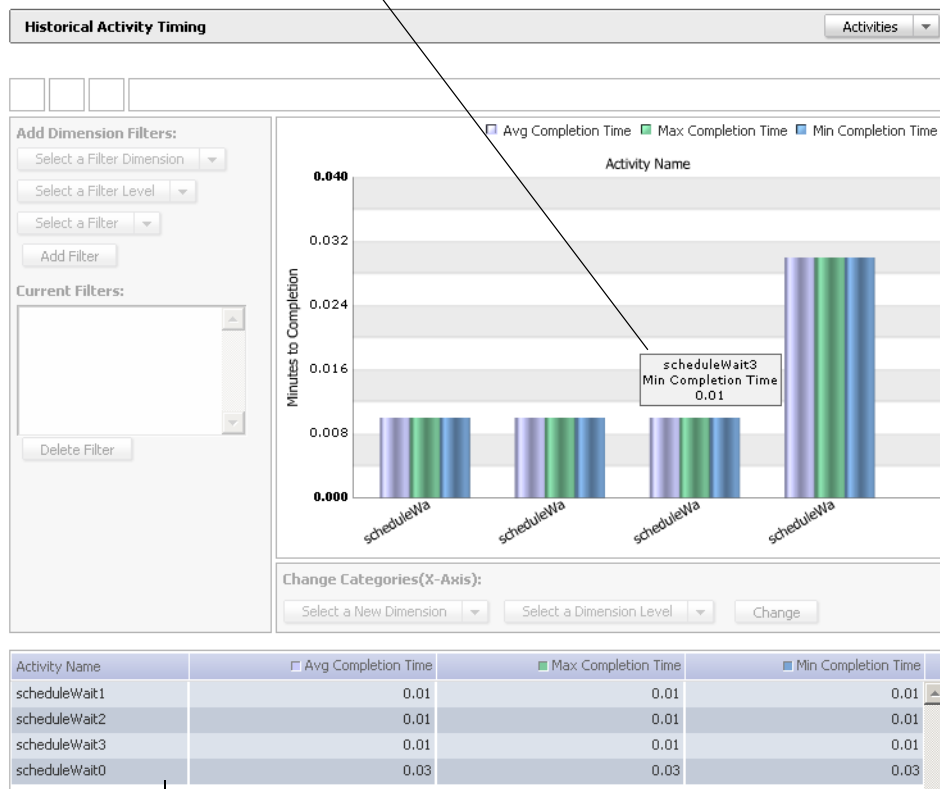
Activity Timing

This dashboard object lists activity timing statistics for each month within the user-defined historical period, including the following:

- Average completion time
- Maximum completion time
- Minimum completion time

By placing the mouse cursor over a bar in graph, you can view the statistics for the activity represented by that bar.

Detailed information on mouseover

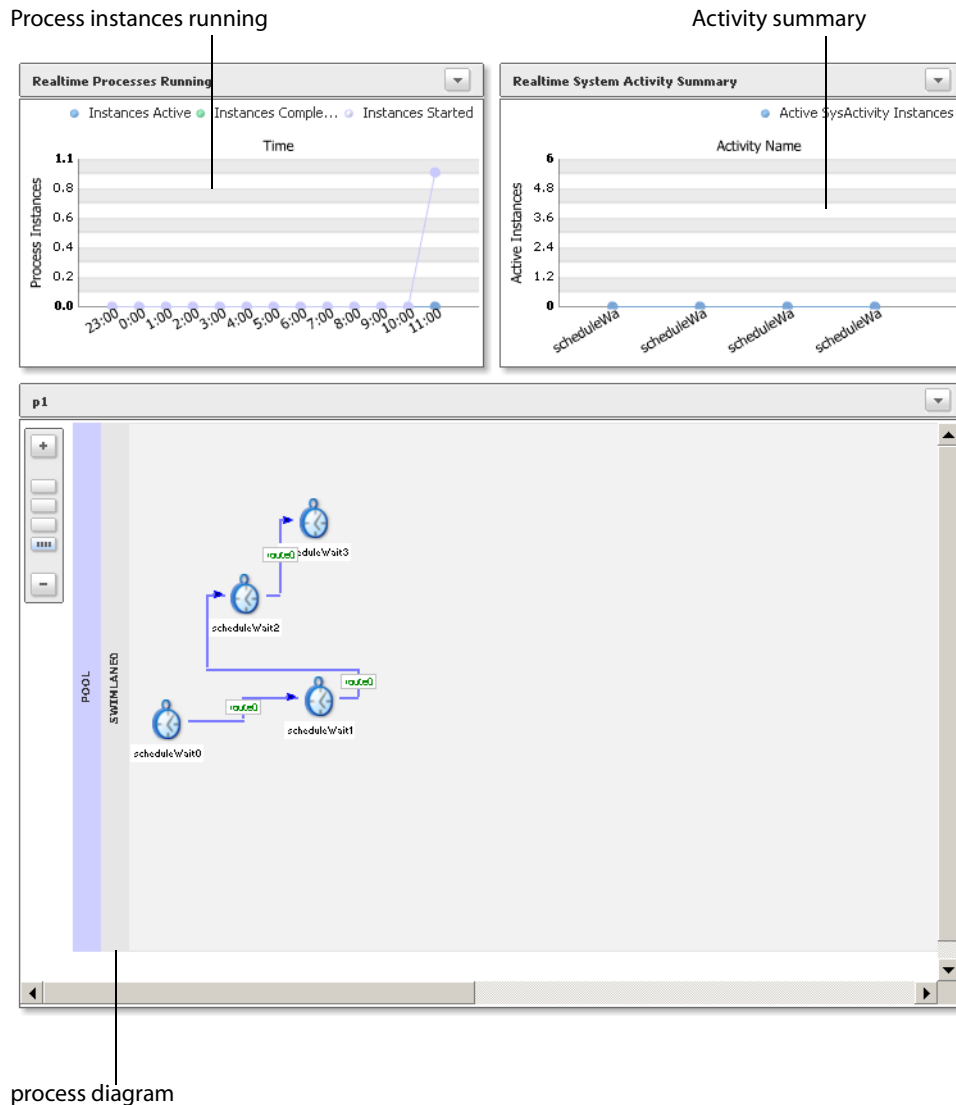


Detailed information for each process activity in historical period

Realtime Process Dashboard

The Realtime Process dashboard shows realtime (for example, within the last twelve hours) data for a specific process. Data displayed includes process instances currently running, a summary of activities currently active, and a process chart showing completion statistics.

This dashboard contains three dashboard objects, as shown below.



Each dashboard object is interactive and will display detailed information on mouseover. You can also open a more detailed view of a dashboard object by clicking on its title bar.

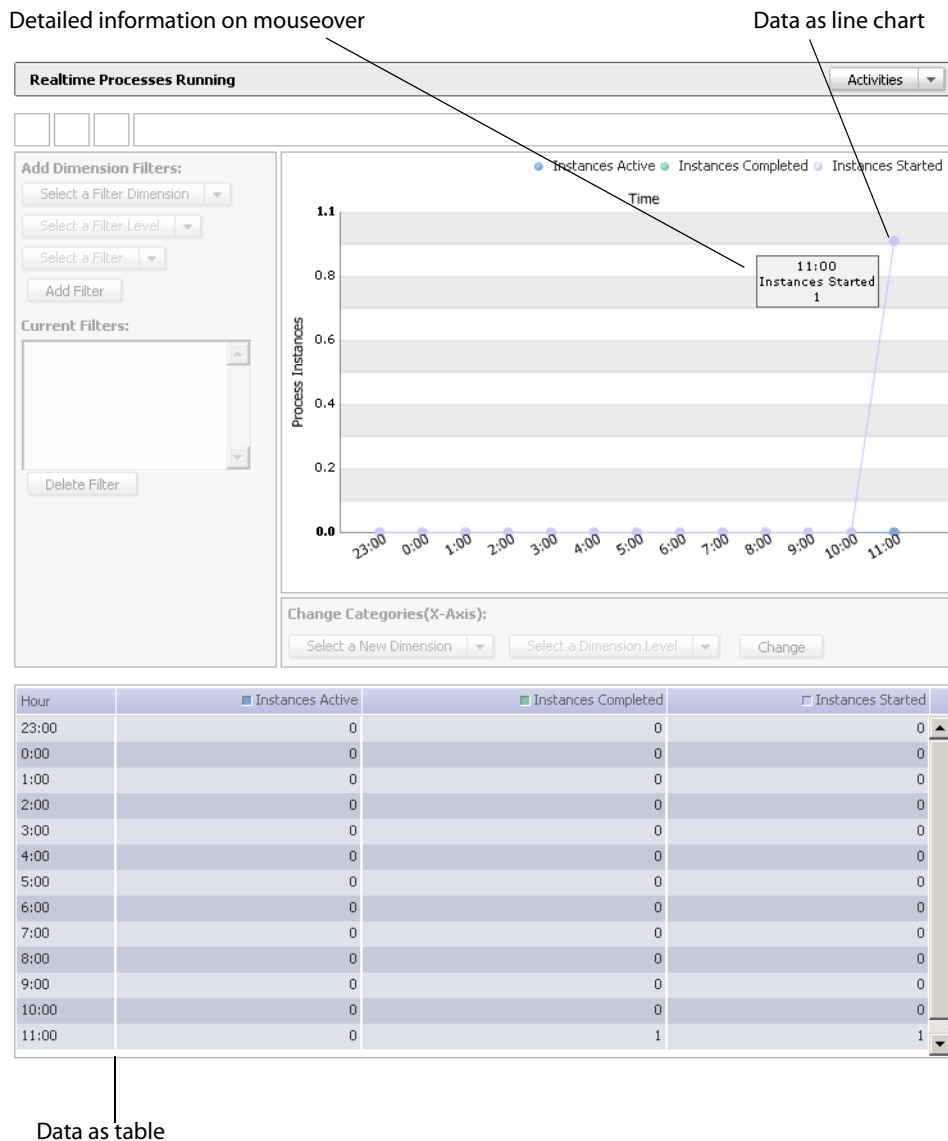
Each detailed view is described below.

Processes Running

This dashboard object displays the number of instances for a specific process, graphically indicating the following:

- Instances Active
- Instances Completed
- Instances Started

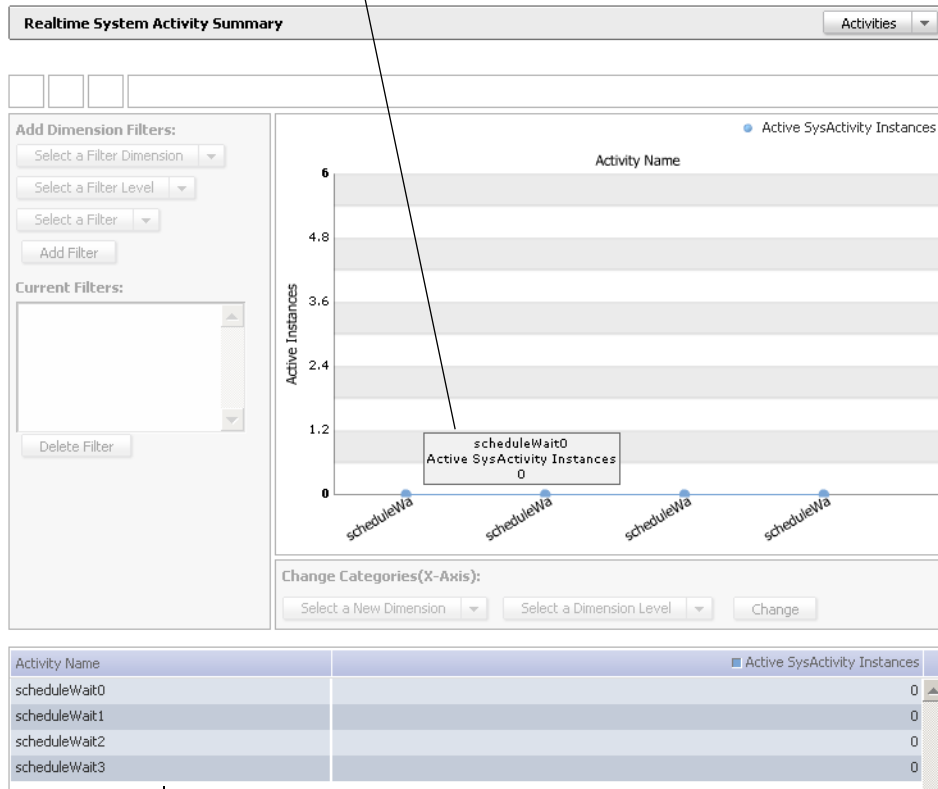
By placing the mouse cursor over a node in the chart line, you can view detailed data about the process instances.



Activity Summary

This dashboard object shows the number of instances of each activity that are currently active. By placing the mouse cursor over the bar for a specific activity, you can view more detailed data.

Detailed information on mouseover



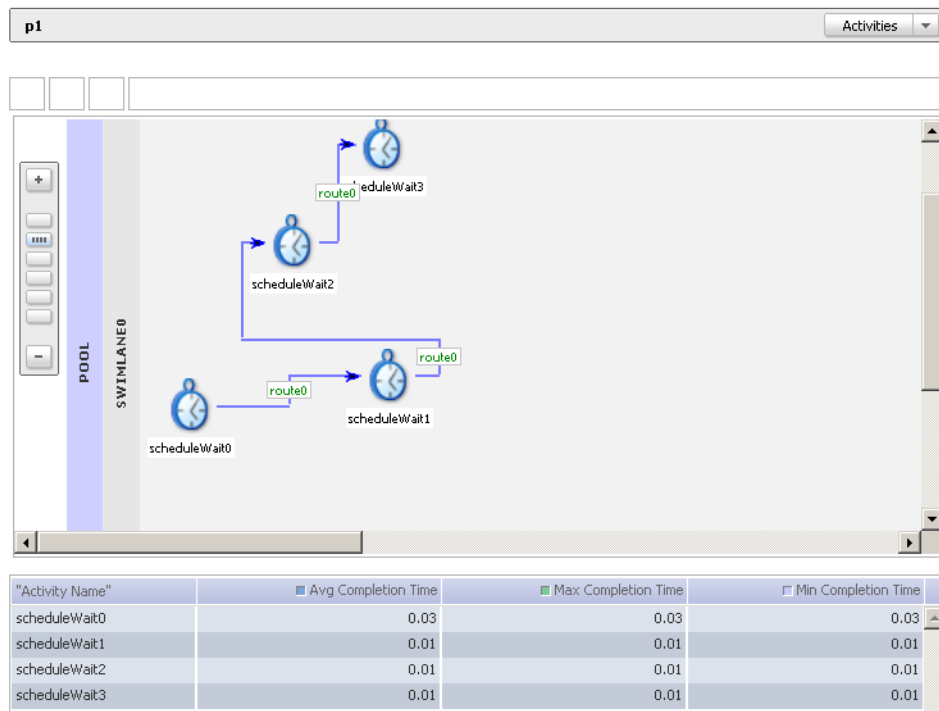
List of activities in process diagram and number of instances

Process Chart

This dashboard object shows the process diagram for the process being instantiated and includes a table that shows the following information for each activity in the process diagram:

- Activity name
- Average completion time
- Maximum completion time
- Minimum completion time

By placing the mouse cursor over an activity in process diagram, you can view detailed data about instances of that activity.



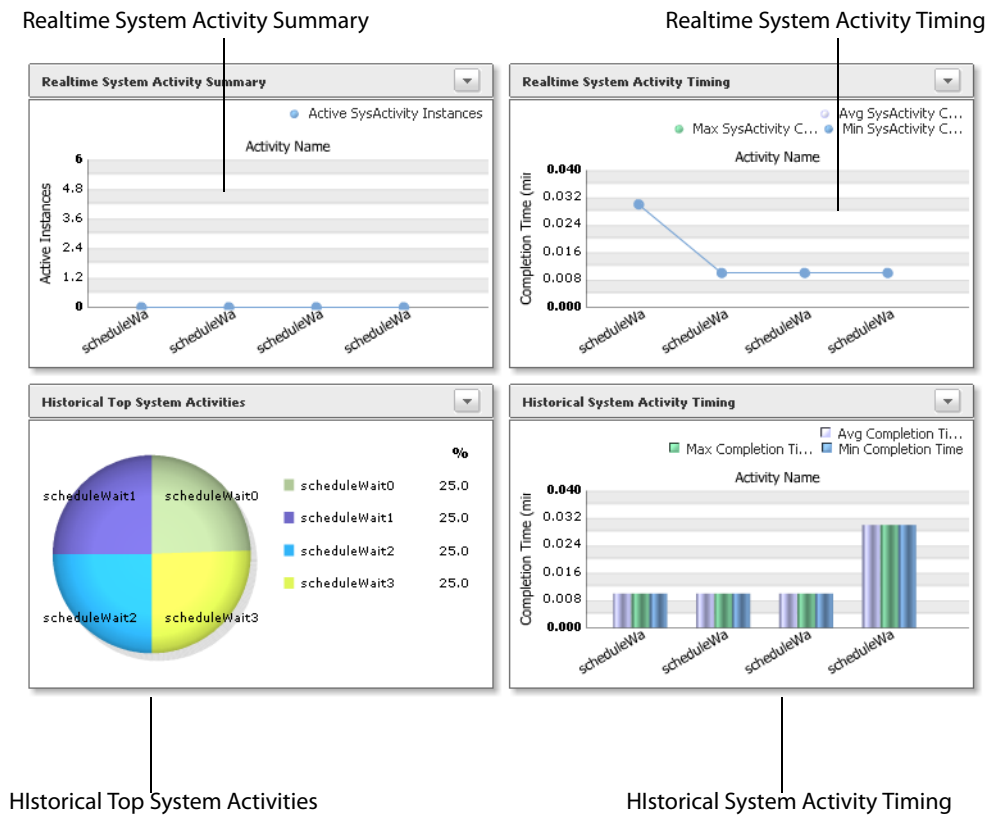
Detailed information for each activity in process

System Dashboard

The System dashboard displays both historical and realtime (based on user-defined limits) data pertaining to activities in a specific process, including the following:

- Active activity instances
- Completion statistics for activity instances (realtime and historical)
- Top activity instances

This dashboard contains four dashboard objects, as shown below.



Each dashboard object is interactive and will display detailed information on mouseover. You can also open a more detailed view of a dashboard object by clicking on its title bar.

Each detailed view is described below.

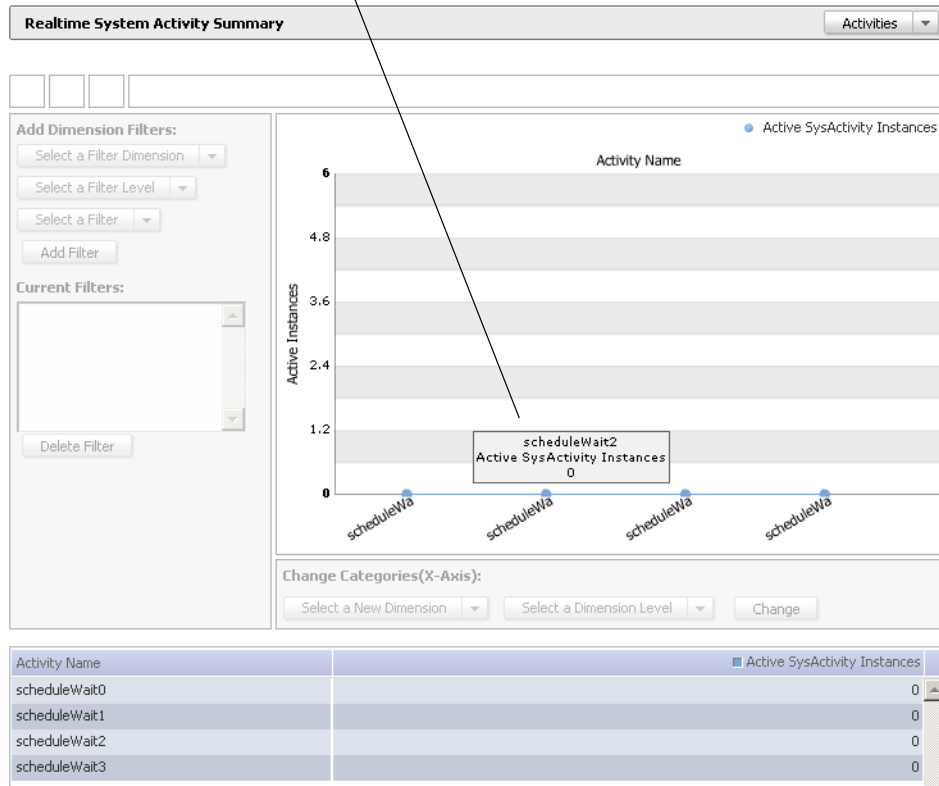
Realtime System Activity Summary

This dashboard object lists the number of instances currently active for each activity in a specific process.

Note: This portlet excludes instances of Wait and User activity.

By placing the mouse cursor over a bar in the bar graph, you can view the statistics for the activity represented by that bar.

Detailed information on mouseover



Detailed information for each active activity instance

Realtime System Activity Timing

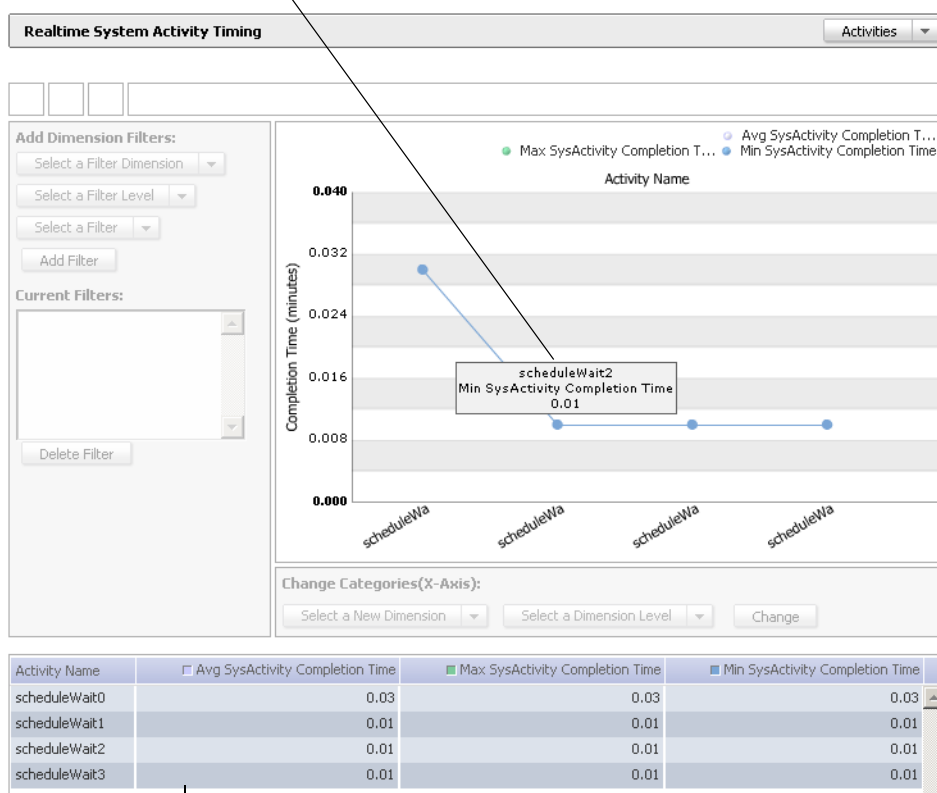
This dashboard object displays timing for activity instances for a specific process, including the following:

- Average System Completion Time
- Maximum System Completion Time
- Minimum System Completion Time

Note: This portlet excludes instances of Wait and User activity.

By placing the mouse cursor over a bar in the graph, you can view the statistics for the activity represented by that bar.

Detailed information on mouseover



Detailed information for each activity instance for the process

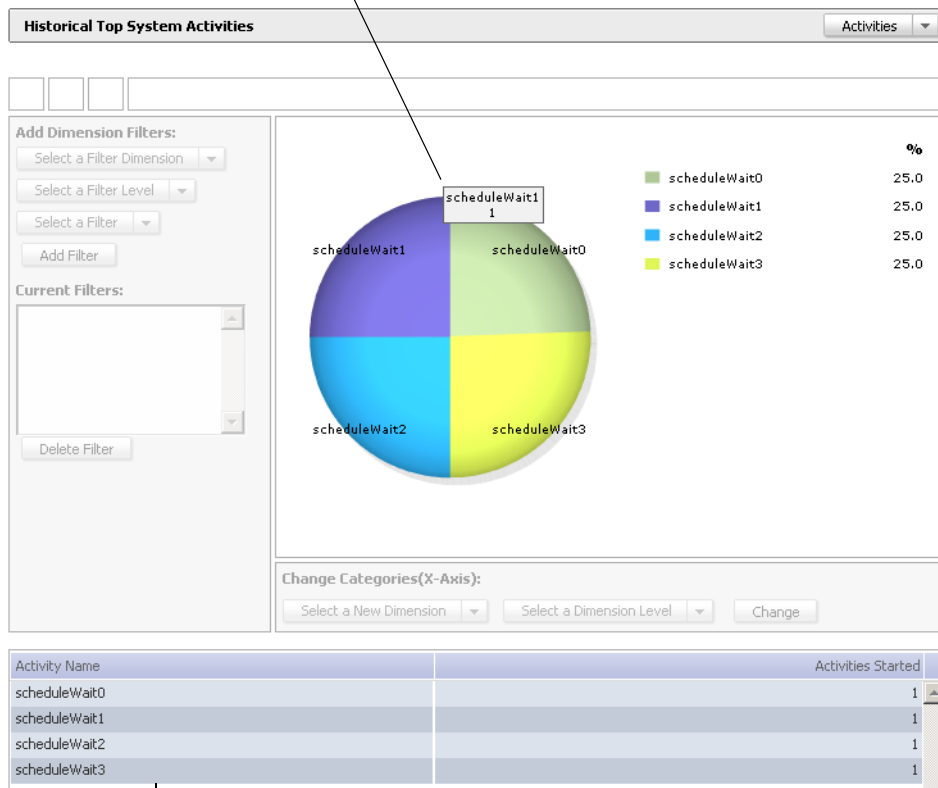
Historical Top System Activities

This dashboard object lists the number of instances within the historical timeframe for each activity in a specific process.

Note: This portlet excludes instances of Wait and User activity.

By placing the mouse cursor over a portion in the pie chart, you can view the statistics for the activity represented by that portion.

Detailed information on mouseover



Detailed information for each activity started

Historical System Activity Timing

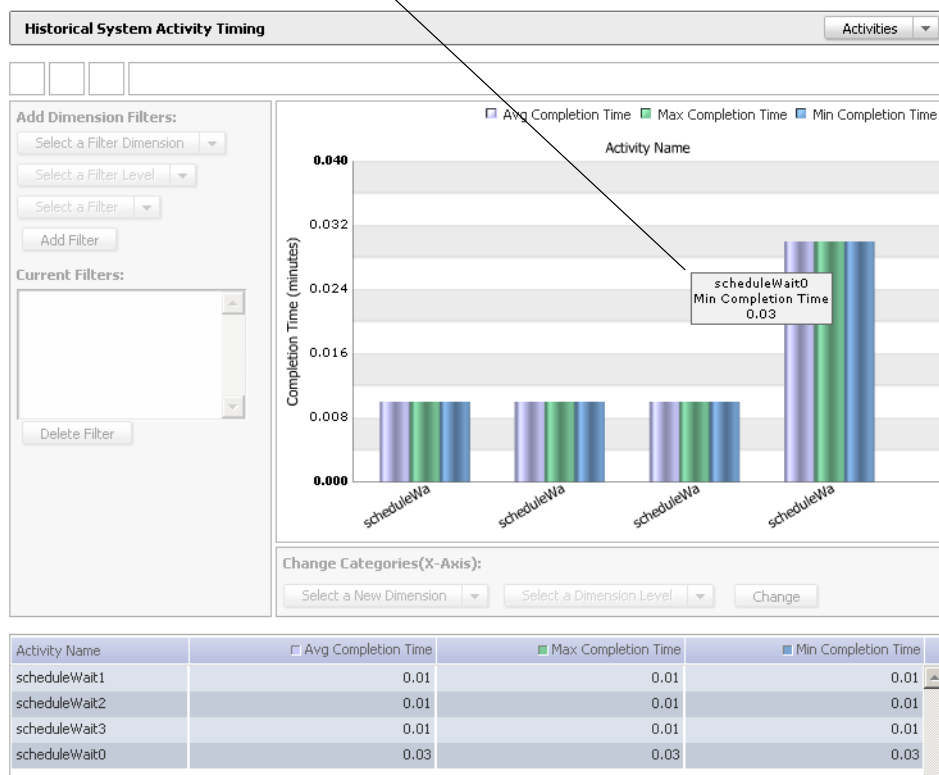
This dashboard object displays timing for activity instances for a specific process within the historical timeframe, including the following:

- Average System Completion Time
- Maximum System Completion Time
- Minimum System Completion Time

Note: This portlet excludes instances of Wait and User activity.

By placing the mouse cursor over a bar in the graph, you can view the statistics for the activity represented by that bar.

Detailed information on mouseover

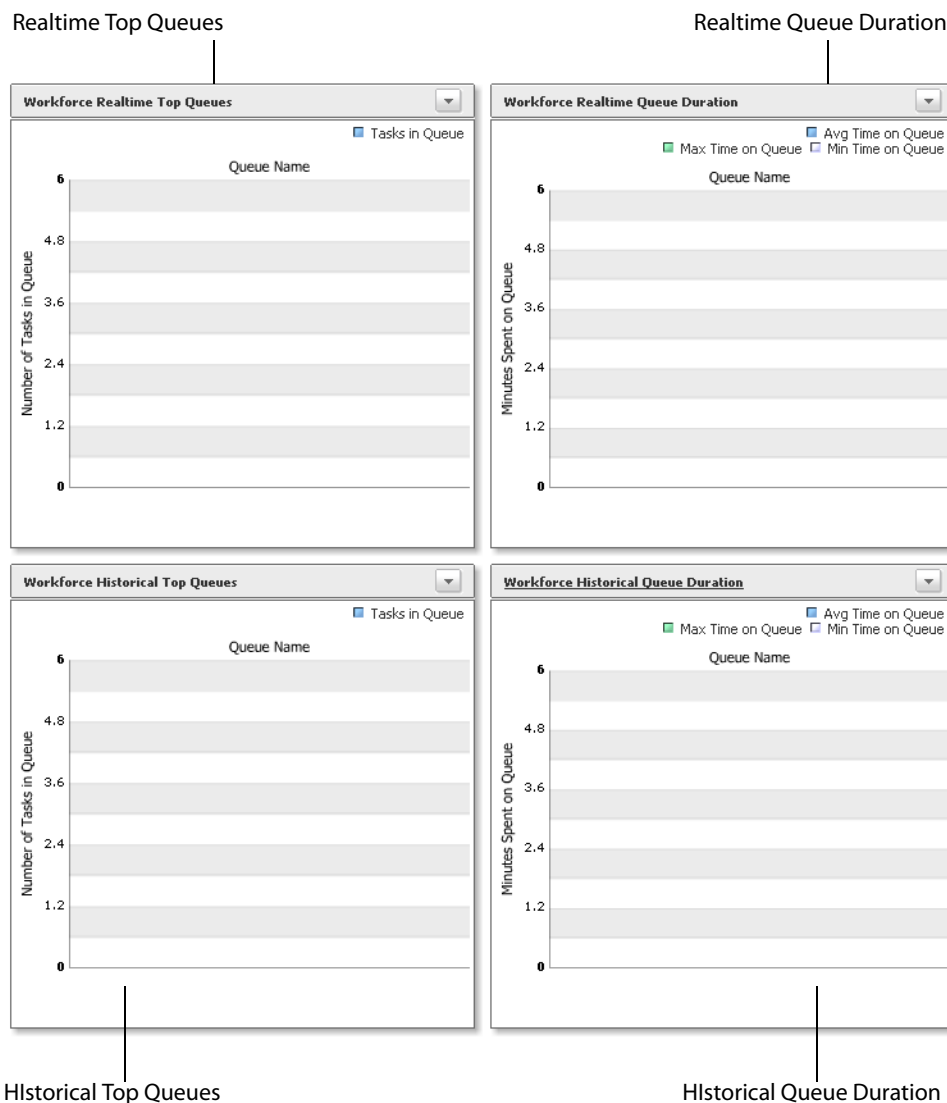


Detailed information for each process activity in historical period

Workforce Dashboard

The Workforce dashboard displays both historical and realtime data pertaining to queues in process instances. Data displayed includes top queues and queue duration.

This dashboard contains four dashboard objects, as shown below.



Each dashboard object is interactive and will display detailed information on mouseover. You can also open a more detailed view of a dashboard object by clicking on its title bar.

Each detailed view is further described below.

Realtime Top Queues

This dashboard object lists the number of active tasks currently in the top fifty queues for the selected process.

Realtime Queue Duration

This dashboard object displays the amount of that all tasks spent on a particular queue during the realtime timeframe, including the following statistics:

- Average time
- Minimum time
- Maximum time

Note: This dashboard focuses on the top fifty queues (or whatever fits on the screen).

Historical Queue Duration

This dashboard object displays the amount of that all tasks spent on a particular queue within the historical timeframe, including the following statistics:

- Average time
- Minimum time
- Maximum time

Note: This dashboard focuses on the top fifty queues (or whatever fits on the screen).

Historical Top Queues

This dashboard object lists the number of active tasks completed within the historical timeframe in the top fifty queues for the selected process.

Note: This shows only tasks complete in a queue. Thus, if a task was reassigned from one queue to another, the statistic would reference only the queue in which the task was ultimately completed.

3

Common Features

This chapter describes the common features you will encounter as you use BAM Dashboard.

► **In this Chapter:**

- [“Account Settings” on page 37](#)
- [“Delivery Profiles List” on page 38](#)
- [“Permissions” on page 39](#)
- [“Navigation tree” on page 42](#)
- [“Associated Dashboards” on page 43](#)
- [“Initiating Processes” on page 44](#)
- [“Message Center” on page 45](#)

Account Settings

The Account Settings page controls your default settings and delivery profiles, as well as your log in password.

Setting	Description
Refresh interval for Alerts and Tasks	How frequently your dashboards look for new or updated Alerts and Tasks. Do not set this frequency unnecessarily fast because it will impact overall performance. For most situations, every 10 minutes is sufficient.
Password	Changes your log-in password. A password may contain any alpha-numeric text or punctuation characters. Note: Your log-in password is the same for BAM Dashboard and for Business Activity Monitoring.
Minimize Alert List at log in	Whether or not the Alert messages list appears on your dashboards when you log in. Select Yes to include the list; select No to minimize the list to an icon. For information about the list, see “Alert Messages List” on page 140 .
Minimize Task List at log in	Whether or not the task list appears on your dashboards when you log in. Select Yes to include the list; select No to minimize the list to an icon. Note: For information about the list, see “Viewing the Task List” on page 147 .
Default dashboard	Whether or not to have a default dashboard, and if so, which dashboard to load as the default. If you have a default it is displayed immediately when you log in; otherwise, you see the list of dashboards available to you. See “Setting a Default Dashboard” on page 51 for more details.
Delivery profiles list	Described in the next section “Delivery Profiles List.”

Delivery Profiles List

The Delivery Profiles List shows your profiles, notes which are the ones that are automatically assigned to your new alert subscriptions, and is where you create and manage your profiles. Delivery profiles are destinations that can receive alert notifications sent to you. The Dashboard Profile directs notifications to the Alert Manager. Additional profiles identify external systems (such as e-mail or text messaging).

You can assign specific profiles to use on a per alert basis, see [“Assigning Delivery Profile for Notification” on page 144](#) for details.

► **To create a delivery profile:**

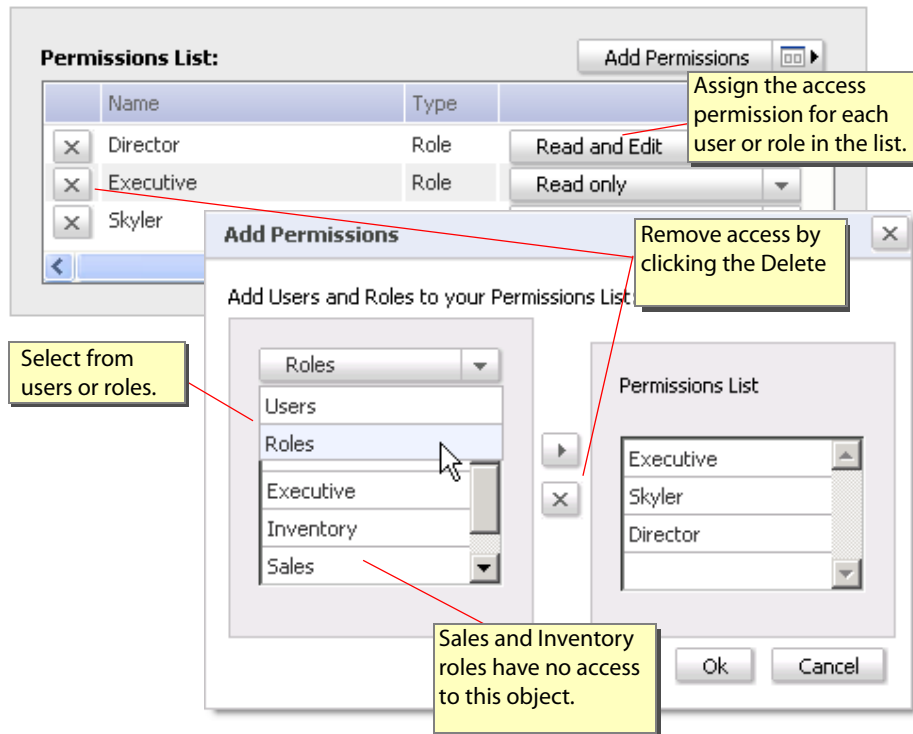
1. In the BAM Dashboard, select Account Settings.
2. In the Delivery Profiles list, click **Create New Profile**.
3. Assign the name and destination properties on the Delivery Profile Properties dialog.
Optionally, select to assign this as one of the profiles to automatically assign to new alert subscriptions.
4. Save the profile.

The profile appears in the Delivery Profiles List and is immediately available for alert subscriptions.

Note: Your system administrator can create additional delivery profiles for you in BAM Workbench.

Permissions

Permissions identify who may see or edit *specific objects* (dashboards, charts, indicators, and tables). When editing an object's properties in Advanced Mode, you see a list of the users and roles that have access to the object. If they appear in the list, they have at least Read access to the object; if they are not in the list they do not have *explicit* access.



Users who belong to a role are not listed individually, so you cannot assume that a specific user does not have access to the object unless you know that user does not also belong to a role in the list. System administrators define roles and role memberships in BAM Workbench.

Note: The "system" user has full access to all objects and does not appear in any list.

In addition to permission to the Dashboard Object, the user must also have Read permission on the data source on which the object is defined. When a user does not have permission to see the data in a source view or cube, they cannot see the data in the Dashboard Object. When a user does have permission to see a Dashboard Object but not the data source, they see either the "Data source is restricted" error message instead of the usual object presentation.

Removing Permissions

You can remove users or roles from the list or demote their permissions provided that you do not lower their permission below the class permissions defined in BAM Workbench for that user or role. For example, if a user or role has Read permission on all dashboards (as defined in BAM Workbench), *you cannot deny them access* to a specific dashboard. Though you can demote them from Read and Edit permission to just Read.

Note: When you attempt to demote a permission below a user's or role's permission, you can save the change without receiving an error, but when you return to the list, you will again see the user or role in the list.

Understanding Permissions

In Business Activity Monitoring, permissions can be granted to users and roles on:

- Specific objects in BAM Dashboard
- Classes of objects in BAM Workbench

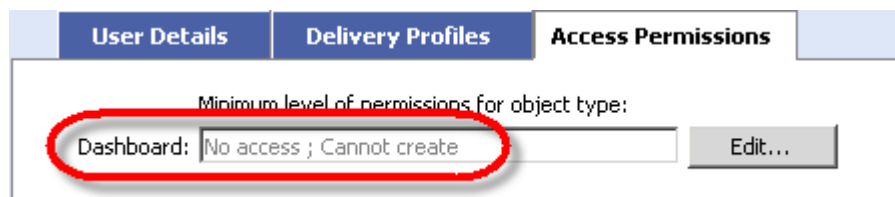
Further, users may belong to one or more roles which may have permissions different from those specifically assigned to the user.

To determine a user's permission on any object, the system uses the greatest permission:

- Assigned to the user
- All roles to which the user is assigned
- The user's permission for the class of objects
- The user's specific object permission

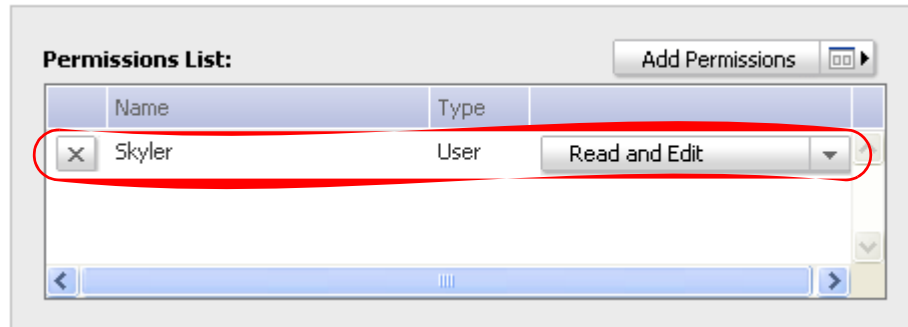
Example for a User

For example, consider a user named Skyler. By default in BAM Workbench, Skyler's access permission to the Dashboard Objects class is No Access. If Skyler belongs to no roles and has no permission to any specific dashboards, then Skyler cannot see any dashboards.



In BAM Dashboard, you can grant permissions to Skyler on any specific dashboard. For example, you can grant Read and Edit permission to the *Total Sales* dashboard, and he will immediately be able to see and edit that dashboard.

Determine who will have access to this dashboard:



Subsequently, you can demote Skyler's permission on the Total Sales dashboard to Read, or you can restrict all access by removing him from that dashboard's permission list. However, if Skyler's access permission to the dashboard class was raised to Read-Only, you would never be able to deny his access to any specific dashboard.

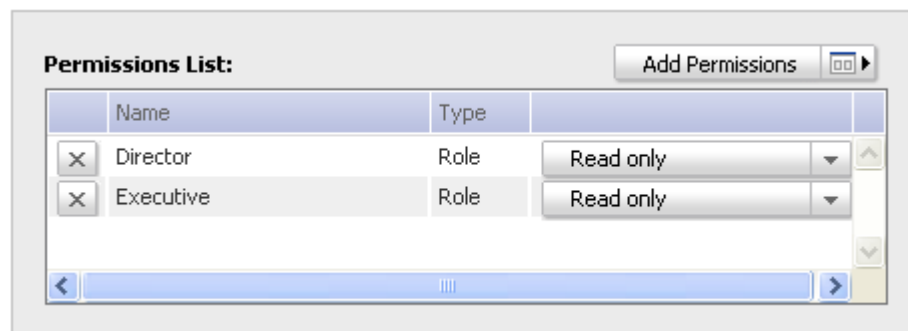
Note: Remember too that Skyler additionally needs Read access on the source views or cubes, or Skyler will not see the metrics that the dashboard objects present.

Example with Roles

Consider the two following roles:

- Director with Read permission to the Dashboard class
- Executive with Read and Edit permission to the class

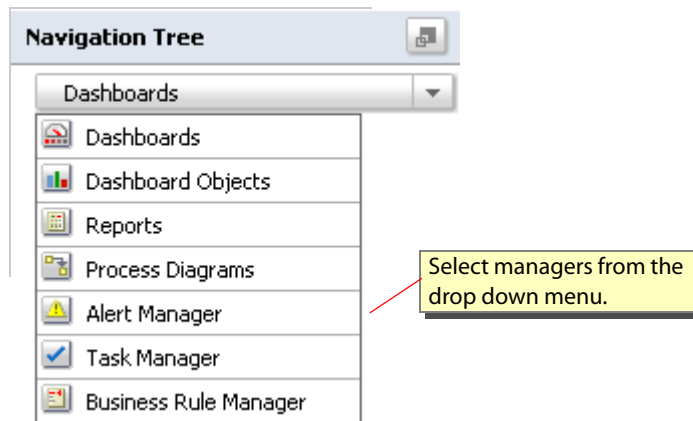
If you add Skyler to the Director role, he can see *all dashboards*. Further, adding Skyler to the Executive role allows him to see and edit *all dashboards* because the Executive's role has the highest permission. At this point, there is nothing you can do in BAM Dashboard to deny Skyler's ability to see and edit dashboards. Further, if you edit a specific dashboard's permissions, you will not see Skyler listed, though you will see the Director and Executive roles.



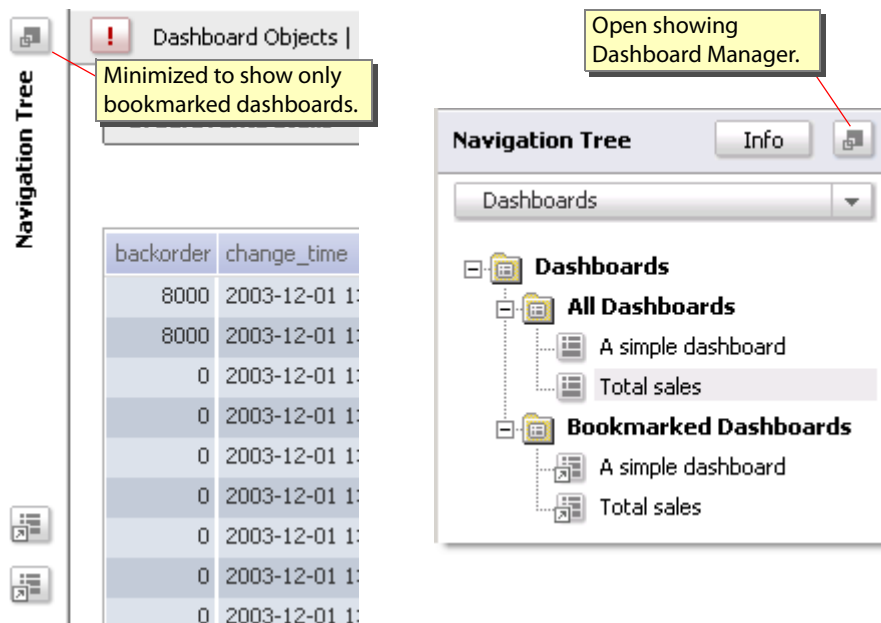
You can edit the list and remove either or both of those roles, and receive no errors or warnings when you save the change. However, when you return to the list you will again see both of those roles listed because you may not restrict a user or role from an object to which their class permission is greater than No Access.

Navigation tree

The navigation tree on the left side of all pages controls which managers or objects you see in the contents on the right side of the page. Switch between the managers by choosing them from the drop down menu.



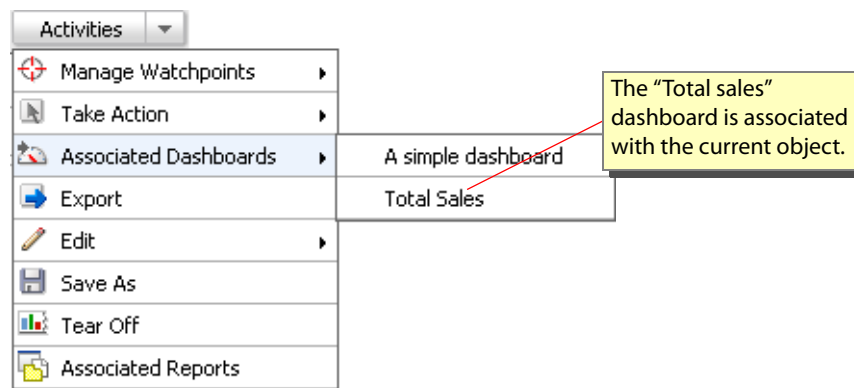
When minimized, the navigation tree shows only icons of the dashboards that you have bookmarked as being of interest to you. For more information, see ["Bookmarking a Dashboard" on page 55](#).



Associated Dashboards

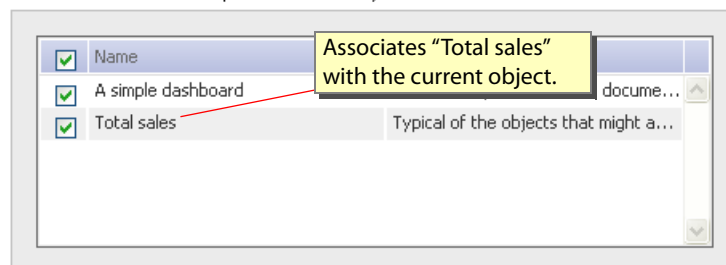
Associated dashboards present metrics related to the ones that the object presents. Such relationships are arbitrary and do not mean that the object appears on an associated dashboard. Rather, the relationship means that someone has identified the dashboard as having related information.

When viewing an object click **Activities > Associated Dashboards** to see the list. Select a dashboard from that list to open that dashboard.



Users with Read and Edit permission on an object can associate dashboards when in Advanced Mode in the object's Edit Object Properties page.

Associate Dashboards with your Dashboard Object



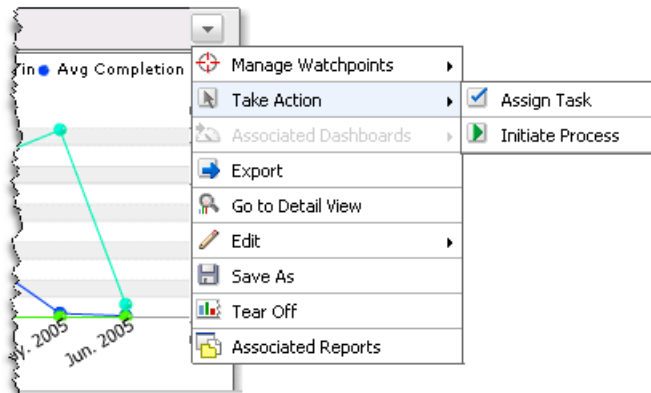
Initiating Processes

When viewing an alert message or dashboard object, you can send the item to an external process for handling. For example, the process might distribute the message to other external systems, archive it, or work to correct the condition.

► **To send the item to an external process:**

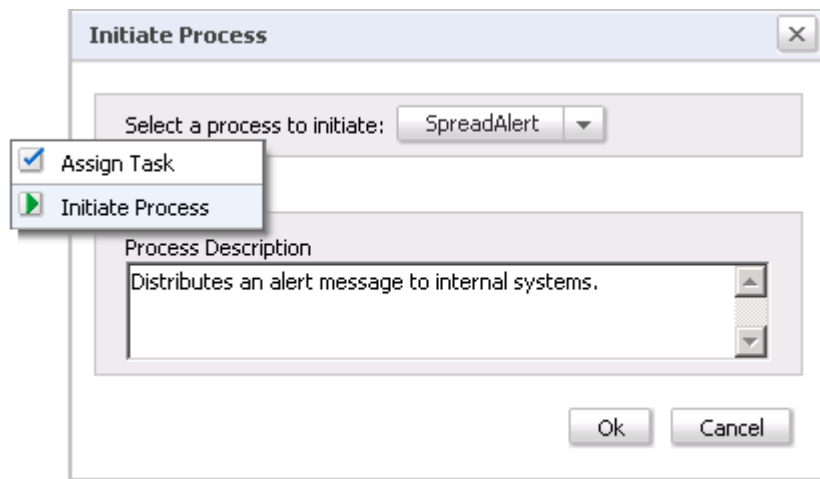
1. In the dashboard object, click the arrow icon in the upper right corner.
2. From the drop down menu, select **Take Action > Initiate Process**.

The Initiate Process dialog box displays.



3. Select the process to receive the item.

The available processes are those to which you have Read permission.

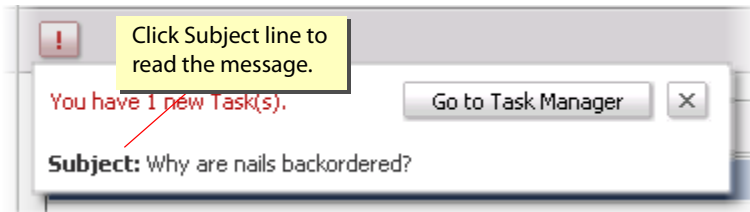


4. Define external processes.
5. Assign permissions to them in BAM Workbench as described in the Getting Started.

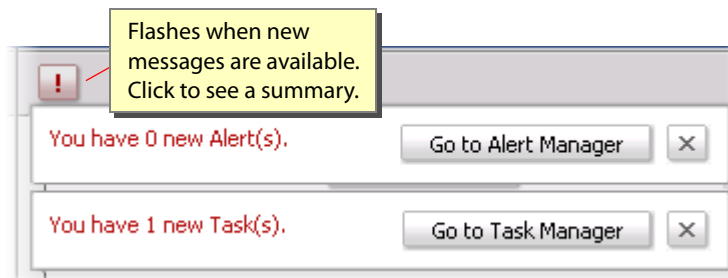
Note: For detailed information about external processes, including the information sent to the external process, see Web service external processes.

Message Center

The Message Center tells you when you have new alert or task messages. When new messages are available, the Message Center briefly displays a summary of up to five messages and provides a link to the associated manager. Click on any subject line to read the message, or click the “Go to Task Manager” button to open the associated manager.



After four seconds, the automatic summary fades away, and the Message Center icon continues to slowly flash. At any time you can see which managers have new messages by clicking the Message Center icon.



The automatic summary appears only when there are new messages *since the automatic summary last appeared*. Control how often the Message Center looks for new messages and shows the automatic summary with the Refresh interval for Alerts and Tasks setting. See [“Account Settings” on page 37](#) for details.

4

Dashboards

A dashboard is a group of dashboard objects and a central location for presenting multiple bits of business information that are of specific interest. You can have one or more dashboards, each customized to your preference. Further, you can declare one of the dashboards to be your *default dashboard*: the one that you see when you log in, as described in [“Setting a Default Dashboard” on page 51](#).

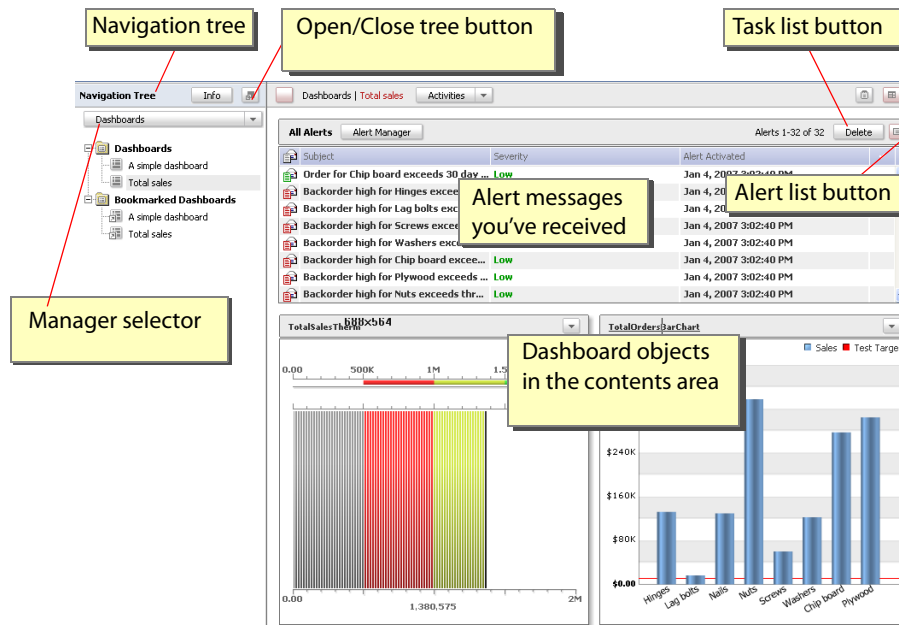
► **In this Chapter:**

- [“Dashboards at a Glance” on page 47](#)
- [“Viewing Dashboard Information” on page 48](#)
- [“Viewing and Editing Dashboard Properties” on page 49](#)
- [“Setting a Default Dashboard” on page 51](#)
- [“Defining Dashboard Content and Layout” on page 52](#)
- [“Creating a Dashboard” on page 54](#)
- [“Bookmarking a Dashboard” on page 55](#)
- [“Tearing off a Dashboard Object” on page 56](#)
- [“Using Folders” on page 57](#)

Dashboards at a Glance

A dashboard is a group of dashboard objects, such as charts, indicators, or tables. (See [“Dashboard Objects” on page 60](#) for more information about dashboard objects.) When viewing a dashboard, you can access more detailed information about any of the items as described in [“Viewing Dashboard Information” on page 48](#).

At the top of the page, every dashboard can list the alert messages that you have received, and the tasks that are assigned to you. Open or hide a list with the associated list button.



Note: If you do not see an alert-list or task-list button, change the configuration with your Account Settings (see [“Account Settings” on page 37](#)).

Viewing and Editing Dashboard Properties

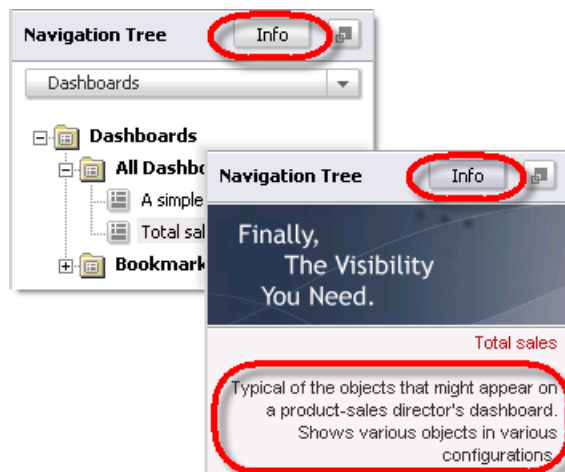
The dashboard Info button opens a description of the current dashboard. You can edit this description and other dashboard properties, as listed in the following table:

Component	Description
Name	Identifies the dashboard. The name can contain letters and numerals only and must be unique among all dashboards.
Folder	Creates a subfolder underneath the All Dashboards folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that appears in the dashboard's Info panel. This the description for the dashboard when its name appears in a list.
Refresh interval	How frequently to check for new data and to update the contents with any new information. Note: The faster the refresh, the greater the negative impact on overall performance.
Permission list	Identifies which users or roles have explicit permission to see or edit the dashboard. Any user or role in the list can see the dashboard. Furthermore, those with Edit permission can alter the dashboard.

➤ **To view and/or modify dashboard info:**

1. In the navigation tree, select the dashboard whose description you wish to access.
2. (Optional) Click the **Info** button.

The left panel redisplay to show the description of the selected dashboard.



3. At the top of the dashboard, click on **Activities**.

4. Select **Edit>Edit Properties** from the pop-up menu.

The Edit Dashboard Properties page displays. It contains the description of the selected dashboard.

Step Two: Edit Dashboard Properties

Enter a name for your new dashboard: Total Sales

Store in: / Choose Folder...

Enter a description for your new dashboard: (Optional)

Typical of the objects that might appear in a product-sale director's dashboard.
Shows various objects in various configurations.

Enter a refresh interval for this dashboard: 20 Seconds

5. Modify the text as desired.
6. Modify additional properties as desired.
7. When finished, click **Save**.

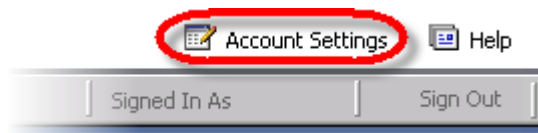
The dashboard page redisplay.

Setting a Default Dashboard

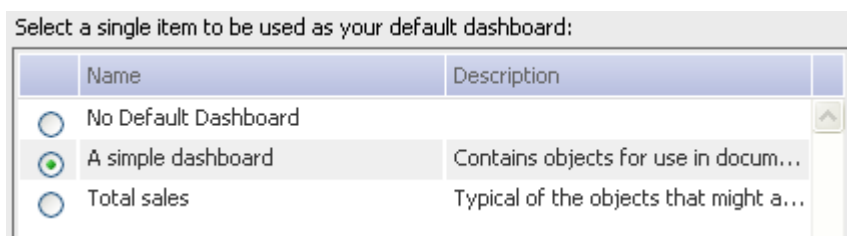
You can specify a specific dashboard to display as the default view when you log in to BAM Dashboard.

► **To specify a dashboard as your default:**

1. Open the Account settings page.



2. Select the dashboard you want.



3. Save the settings.

When you next log in, the default dashboard will be the first page you see.

Defining Dashboard Content and Layout

What makes a dashboard unique is the metrics it provides as its content. You can define the objects to include on your dashboard through the Select Dashboard Content page.

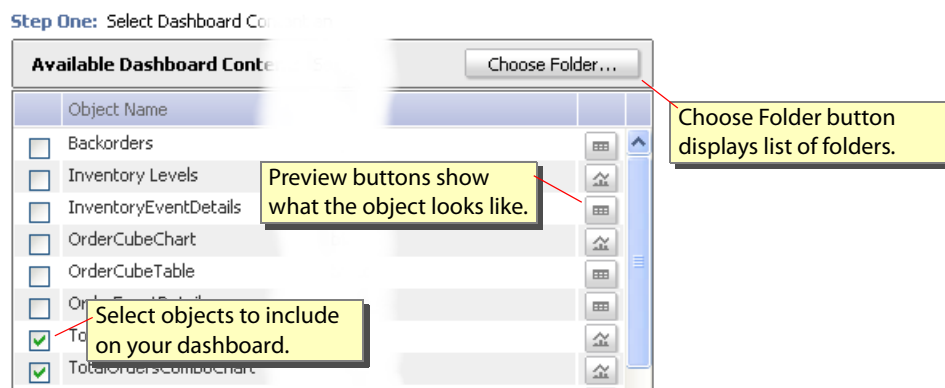
► **To define the objects to include on your dashboard:**

1. In the navigation tree, select the dashboard whose content or layout you wish to modify.
2. At the top of the dashboard, click on **Activities**.
3. Select **Edit>Edit Dashboard Content** from the pop-up menu.

The Edit Dashboard Content and Layout page display, listing all of the objects that you may place on a dashboard. These are the objects to which you have Read permission.

4. Select the objects to include on your dashboard. If you have objects in folders, click the Choose Folder button to select them. (See [“Using Folders” on page 57](#) for information about folders.)

Note: You can see what an object looks like by clicking its preview button to the right of the object’s description.

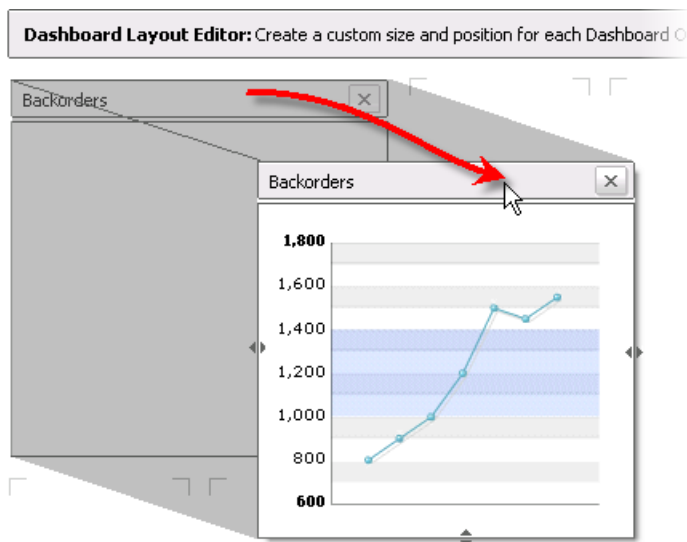


5. Use the Dashboard Layout Editor, which is located directly below the object list, to determine the position and size of the objects on your dashboard:
 - Position objects by dragging the object’s title bar to the new location.
 - Size objects by dragging an edge or corner.

Note: Objects have a minimum size of 2 by 2.

6. Release the object.

The object snaps into place with the new position or size. If the change does not fit at the location, the object snaps back to its original location and size.



7. To remove objects from the Layout Editor:

- Deselect them in the Content List
- OR
- Click the close button in the upper-right corner of the object.

8. When finished, click **Continue**.

The Edit Dashboard Properties window displays.

9. Save or modify the properties, as described in ["Viewing and Editing Dashboard Properties" on page 49](#).

Creating a Dashboard

You can create a new dashboard from scratch, or copy an existing dashboard and modify the parameters and save it as a new dashboard.

Before creating a dashboard, the user must have the following permissions:

- Create permission for the dashboard class of objects, and that is defined in BAM Workbench.
- Read permission for all the Dashboard Objects you want to include on the page.

► **To create a new dashboard from scratch:**

1. In the navigation tree, select the **All Dashboards** node.
2. In the right panel, click the **Create Dashboard** button at the top of the page.
The Select Dashboard Content and Layout page displays.
3. Select the desired objects from the list.
The selected objects display in the grid of the Dashboard Layout Editor below the objects list.
4. Position and resize the objects on the grid as desired.
For more information, see [“Defining Dashboard Content and Layout” on page 52](#).
5. Define the dashboard’s name, description, refresh rate, and access permissions.
For more information, see [“Viewing and Editing Dashboard Properties” on page 49](#).
6. When finished, click **Continue**.
The Edit Dashboard Properties window displays.
7. Set and save the properties as described in [“Viewing and Editing Dashboard Properties” on page 49](#).

Note: If you assigned access to other users, this dashboard will appear in their All Dashboards folder the next time they access their list of dashboards.

► **To create a new dashboard from an existing dashboard:**

1. In the navigation tree, select the dashboard that will serve as the starting point for the new dashboard.
2. In the right panel, click the **Activities** button at the top of the page.
3. Select **Save As** from the pop-up menu.
The Save as New Dashboard page displays.
4. Complete the following:
 - Enter a name for the new dashboard.
 - Enter a description for the new dashboard.
 - Add permissions by clicking the appropriate button and using the resulting dialog box.
5. When finished, click **Save as New**.
The new dashboard displays in the navigation tree.
6. Modify the dashboard as desired.

For more information, see [“Defining Dashboard Content and Layout” on page 52](#).

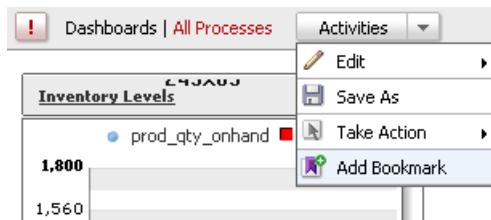
Note: If you assigned access to other users, this dashboard will appear in their All Dashboards folder the next time they access their list of dashboards.

Bookmarking a Dashboard

For quick access, you can bookmark dashboards of special interest to you.

► **To bookmark a dashboard:**

1. Open the dashboard you wish to bookmark.
2. At the top of the window, select **Activities > Add Bookmark** to add it to the bookmark folder.



Tearing off a Dashboard Object

To better view a dashboard object, you can use the tear-off feature to open the object in a new window that can be resized and scaled.

Tear-off windows update automatically with the original or parent object. For example, if you drill down in the parent object, the tear-off window also drills down. Similarly, if you close the parent, the tear-off window automatically closes as well.

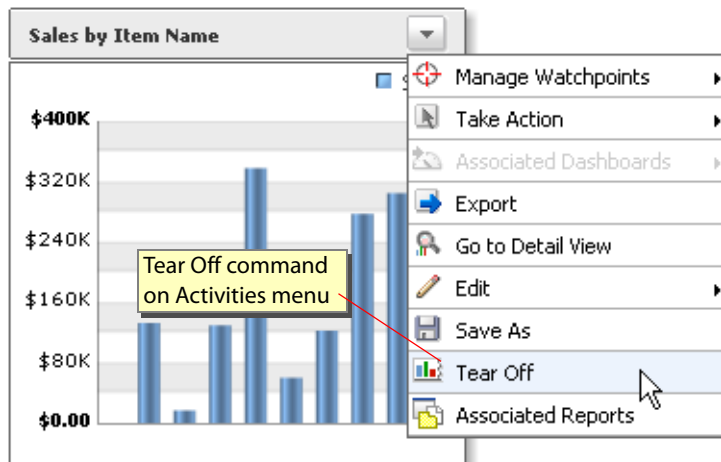
Note: Tear-off windows do not permit user interaction; interaction is limited to the parent object.

► **To tear off a dashboard object:**

1. Open a dashboard or detail view.
2. Use one of the following methods:
 - From the **Activities** menu of the dashboard object or the detail view, select the **Tear off** command.
 - Click the dashboard object or process diagram title bar and drag sideways.

After a moment the object displays in a second window.

Note: The click-drag method works only from the dashboard. For detail views, you must use the **Tear off** command on the **Activities** menu.

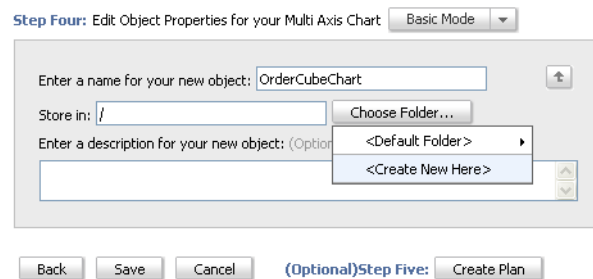


Using Folders

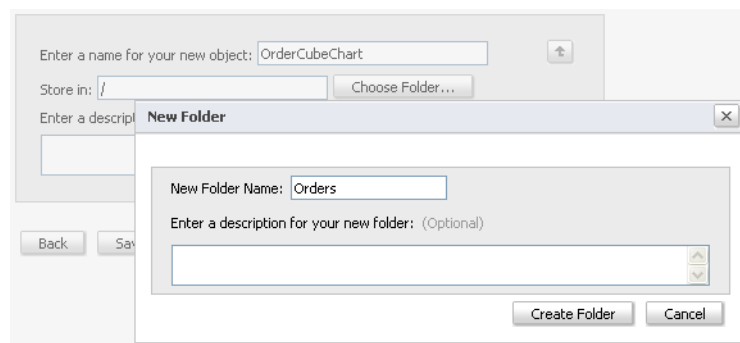
You can organize dashboards, dashboard objects, reports, and process diagrams into custom folders within the Navigation Tree. Use the following procedures to create your own folders or move objects into existing your custom folders.

► **To create new folders for dashboard objects:**

1. Select **Dashboards, Dashboard Objects, Reports, or Process Diagrams** from the Navigation Tree.
2. Open the Dashboard Objects navigation tree and select the **Dashboard Objects** folder.
3. Select an item from the detail list you want to store in a folder.
4. Select **Edit > Edit Properties**.
5. Click the Choose Folder... button and select <Create New Here>.

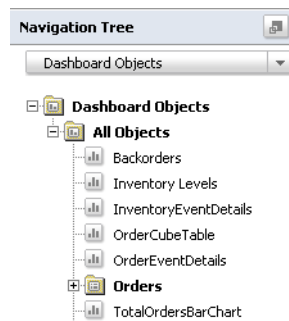


6. On the New Folder window, enter a name for the new folder and optionally a description, then click Create Folder.

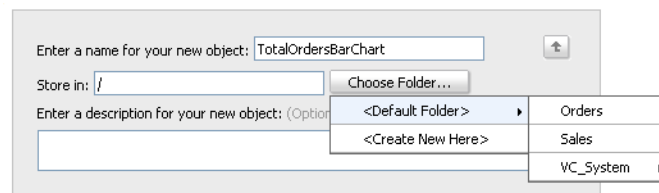


7. Click Save.

The new folder displays in the navigation tree.

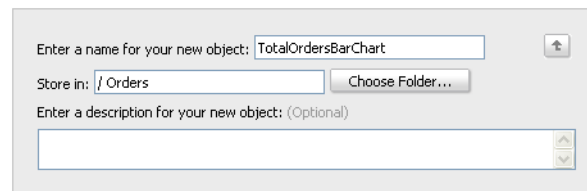


Each time you create a new folder, it is added to the list of folders displayed when <Default Folders> is selected.



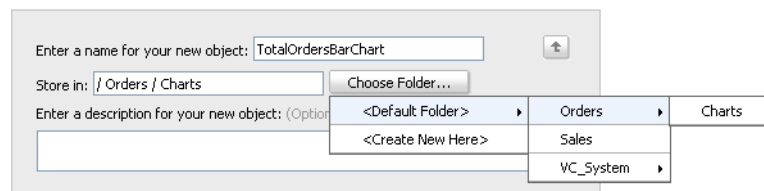
► **To create a subfolder:**

1. Perform Step 1 through Step 4 of the procedure [“To create new folders for dashboard objects.”](#)
2. If the dashboard object is not already stored in a folder, select a folder name from the <Default Folder> list; otherwise, proceed to the next step.



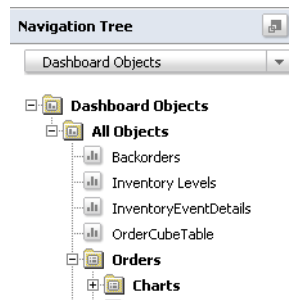
3. Click the Choose Folder... button and select <Create New Here>.
4. Enter a name for the subfolder and optionally a description, then click Create Folder.

The “Store in:” field now shows the folder and subfolder names. Also, when you select the <Default Folder> list, the subfolders are shown when you select a folder name.



5. Click Save.

The new folder displays in the navigation tree beneath its parent folder.



► **To move an item to an existing folder:**

1. Select the item to move to an existing folder with **Edit > Edit Properties**.
2. At Step Four: Edit Object Properties..., click the Choose Folder... button.
3. Select <Default Folder>. The list of available folders displays.
4. Select the folder in which to store the dashboard object.
5. Click Save.

This chapter describes dashboard objects, which visually represent data in the form of charts and indicators.

► **In this Chapter:**

- [“About Dashboard Objects” on page 61](#)
- [“Object Manager” on page 62](#)
- [“Object Activities” on page 63](#)
- [“Object Error Messages” on page 64](#)

About Dashboard Objects

Dashboard Objects present business metrics graphically as charts or indicators, or as numbers in a table as follows:

- Charts, which are visual presentations of a series of related data values, are useful for quickly seeing comparisons, patterns, and trends in data. See [“Charts” on page 65](#) for details.
- Indicators, which are visual presentations of a number’s position on a scale of numbers, are useful for identifying progress towards a target and for quantity levels within a range. See [“Indicators” on page 101](#) for details.
- Tables, which are columnar arrangements of the current contents of a business view, show all the numbers related to an event, or of the latest aggregation. See [“Tables” on page 109](#) for details.

Each object presents the information stored in a source business view or cube. As data changes in the source, all dependent objects update their presentations to reflect the change. Depending on the type of object, the presentation can represent data from the following:

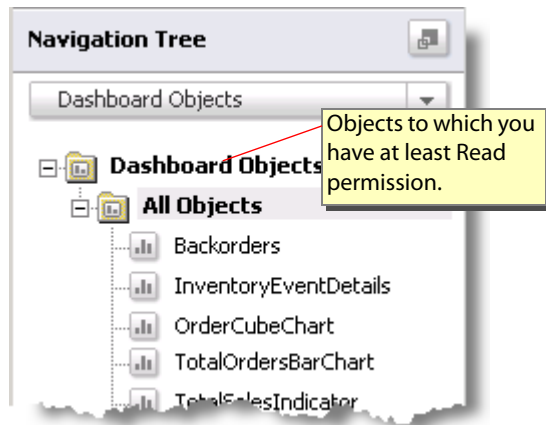
- One cell only, represented as indicators
- Several cells in the row, represented as bar and line charts
- Several rows in a column, represented as pie charts
- Multiple rows and columns, represented as tables

For detailed information about each of the object types, see the pages noted above. The following sections covers topics general to all Dashboard Objects, including:

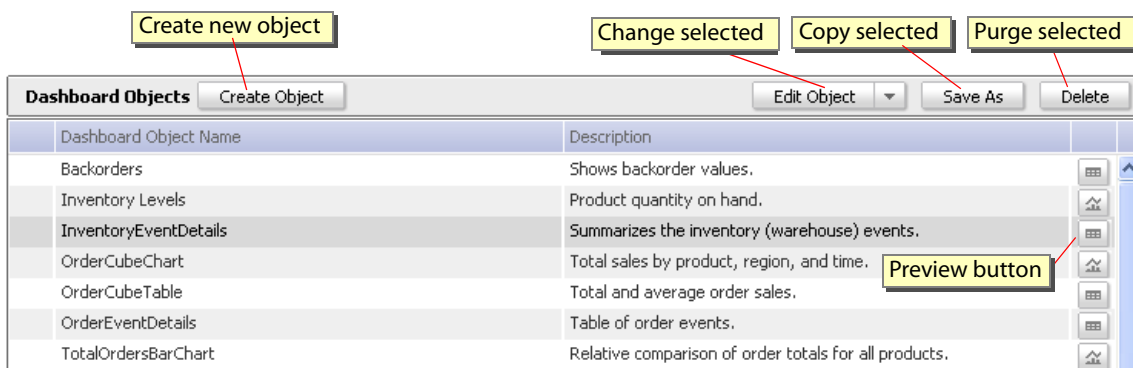
- [“Object Manager” on page 62](#)
- [“Object Activities” on page 63](#)
- [“Object Error Messages” on page 64](#)

Object Manager

The Dashboard Objects manager provides a navigation tree that lists all of the objects available to you (any object to which you have at least Read permission). Open a folder to see the list. Click an object to open it and see its presentation.

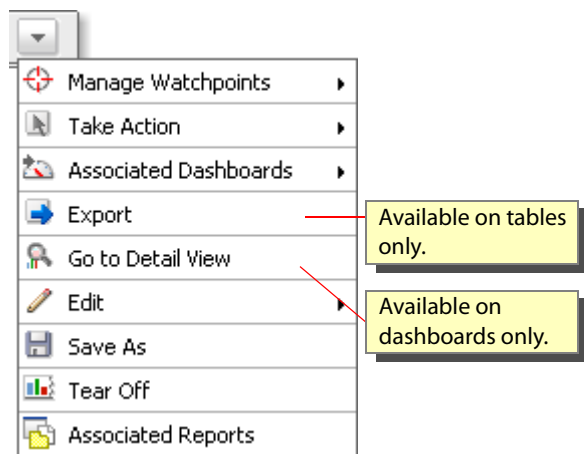


The detailed list shows all of the objects available to you. From this list you can create a new object, alter or purge an existing one, make a copy of the selected object, or see a preview of the object.



Object Activities

The **Activities** menu provides actions for objects.



The activities available depend on the type of object, and your access permissions to the object. Among the activities are those described in the following table.

Action	Description
Manage Watchpoints	Opens the Watchpoint Manager. See "Watchpoints" on page 151 for details.
Create Watchpoint	Creates a new watchpoint. See "Creating and Editing Watchpoints" on page 154 for details.
Take Action	Opens the Take Action menu. Assign Task creates a task See "Creating Tasks" on page 149 for details. Initiate Process sends the item to an external system. See "Initiating Processes" on page 44 for details.
Associated Dashboards	Lists any associated dashboard. See "Associated Dashboards" on page 43 for details.
Export	<i>(Table objects only)</i> Copies the contents of the current table to the Microsoft Windows clipboard as tab-separated text. This format is suitable for pasting into a Microsoft Excel spreadsheet.
Go to Detail View	<i>(Dashboard only)</i> Enlarges the presentation to show just the object. You can also click on the object's name to open the detail view.
Edit	<i>(Object specific)</i> Opens the editor for the object to the specified editor page. This option is available only when you have edit permission on this object or class of objects.
Save As	Makes a copy of the object.
Tear Off	Opens the dashboard object in a new window.
Associated Reports	Opens a third party report using data from the dashboard object.

Object Error Messages

If the object cannot present its usual display, the object will display one of the following messages:

Setting	Description
Deleted or Restricted	<p>The object is not available to you because it was either deleted, and the dashboard still references it, or you do not have permission so see it.</p> <p>You need to have Read permission on the object to see it. Having Read permission to the dashboard does not grant you permission to see its objects.</p> <p>Note: See “Permissions” on page 39 for more information about this permission.</p>
Data source is invalid	<p>The source data object is invalid, possibly because another object that it depends on is invalid or deleted. Use BAM Workbench to validate the source.</p>
Data source is not available	<p>The source data object is disabled or not receiving data. Use BAM Workbench to re-enable the source.</p>
Invalid due to change in data source	<p>The dashboard object is referencing a column that is no longer in the source. Edit the object to correct the reference.</p> <p>Note: This requires Edit permission on the object.</p>
Data source is restricted	<p>You do not have Read permission to the source view or cube; though you do have access to the dashboard object.</p> <p>Note: See “Permissions” on page 39 for more information about this.</p>
No data available	<p>In tables, the source view or cube is empty.</p> <p>This might be the result of an access filter that restricts you from seeing the data.</p>

Dashboard charts are visual presentations of a series of related data values. They help you to quickly see comparisons, patterns, and trends in data. Dashboard charts retrieve the metrics from an underlying business view, where the chart data is in one or more columns in the view, and each row is an element of the chart series.

► **In this Chapter:**

- [“Types of Charts in Business Activity Monitoring” on page 66](#)
- [“Viewing Charts” on page 71](#)
- [“Working with Pie Charts” on page 76](#)
- [“Working with Combination Charts” on page 79](#)
- [“Working with Distribution Charts” on page 86](#)
- [“Working with Pivot Combination Charts” on page 90](#)
- [“Working with Geography Charts” on page 95](#)
- [“Editing Charts” on page 100](#)

Types of Charts in Business Activity Monitoring

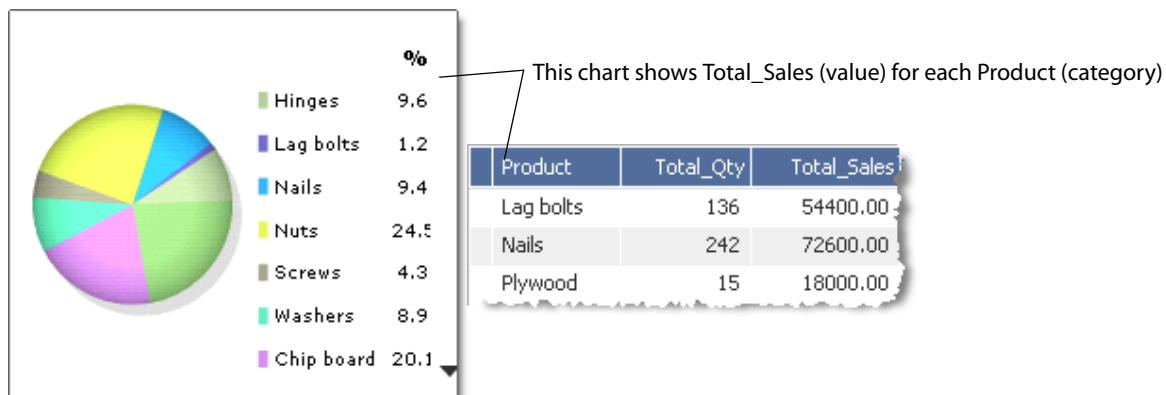
There are three types of charts you can create when designing dashboard objects:

- [Pie Charts](#)
- [Combination Charts](#)
- [Distribution Charts](#)
- [Pivot Combination Charts](#)
- [Geography Map Charts](#)

Each type of chart is described below in greater detail.

Pie Charts

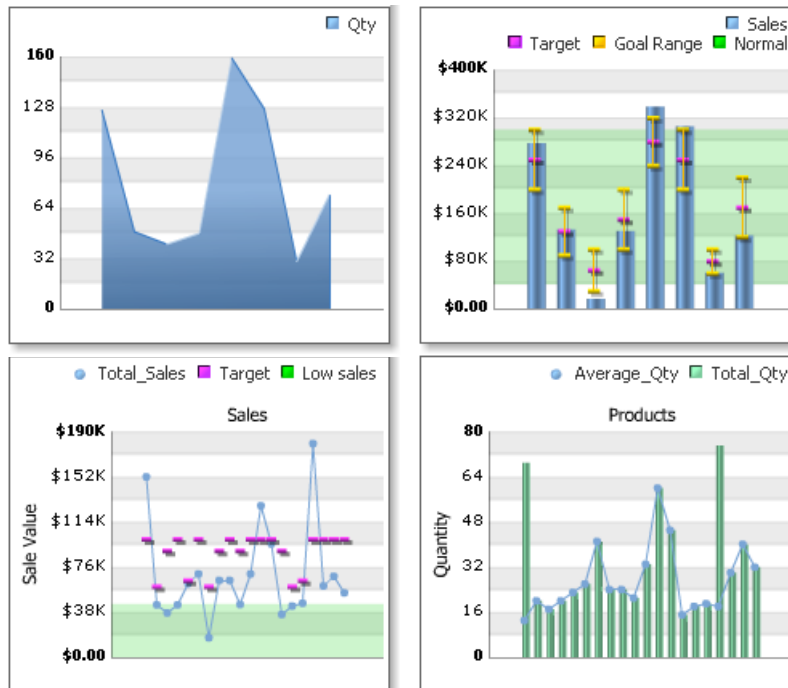
Pie charts present a single column's data as a filled-in circle, where each row in the *values* column is a slice in the circle proportional to its percentage of the sum of whole column. When you create a pie chart you first identify the values column, and then identify the category column that contains the labels for each slice.



Note: For more information about pie charts, see [“Working with Pie Charts” on page 76](#).

Combination Charts

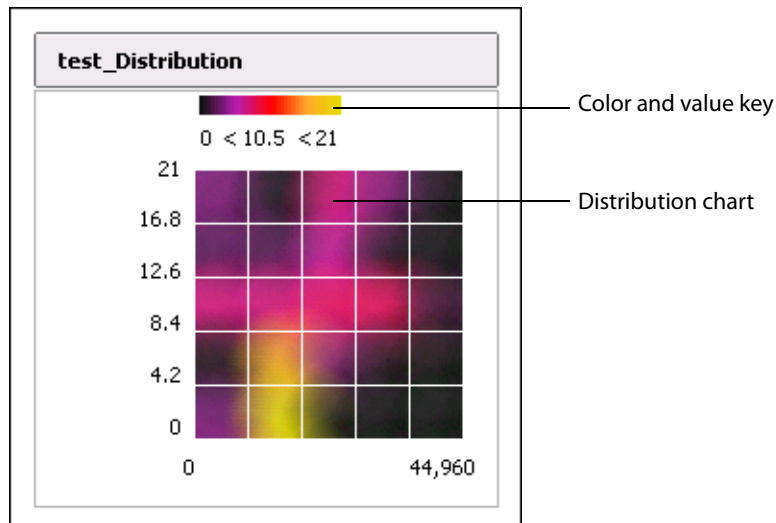
Combination charts map their presentation onto a rectangular area using a horizontal and vertical axis, where a column's data (a category) is a series of data points or columns along the horizontal axis, and where the height of the point or column is representative of the category item's value. Combination charts are either area charts, line charts, bar charts, dot charts, or any combination. Combination charts may plot data on a single axis, or on dual axes.



Distribution Charts

Distribution charts are based on plot point distributions on a grid. The grid squares are then colored based on the density of points that fall within them.

Note: You can only create distribution charts when the specified data source is a view with two measures and a category. For more information, see ["Working with Distribution Charts" on page 86.](#)

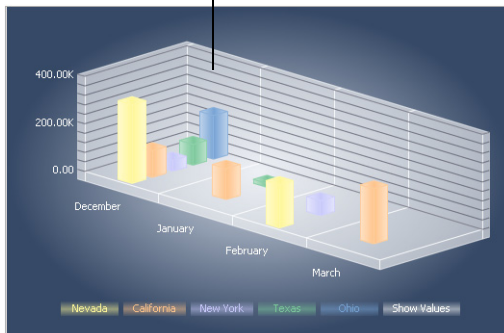


Pivot Combination Charts

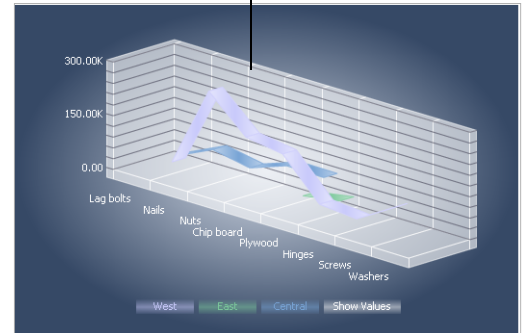
Pivot combination charts map their presentation as a three dimensional figure with a series of data points or columns displayed as values along all three axes. Pivot combination charts can be area charts, line charts or bar charts.

Note: You can only create pivot combination charts when the specified data source is a cube with two dimensions and a category. For more information, see [“Working with Pivot Combination Charts” on page 90.](#)

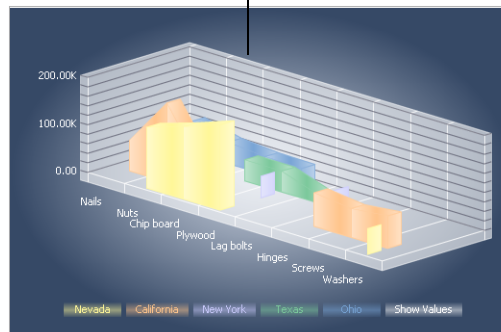
Pivot combination bar chart



Pivot combination area chart



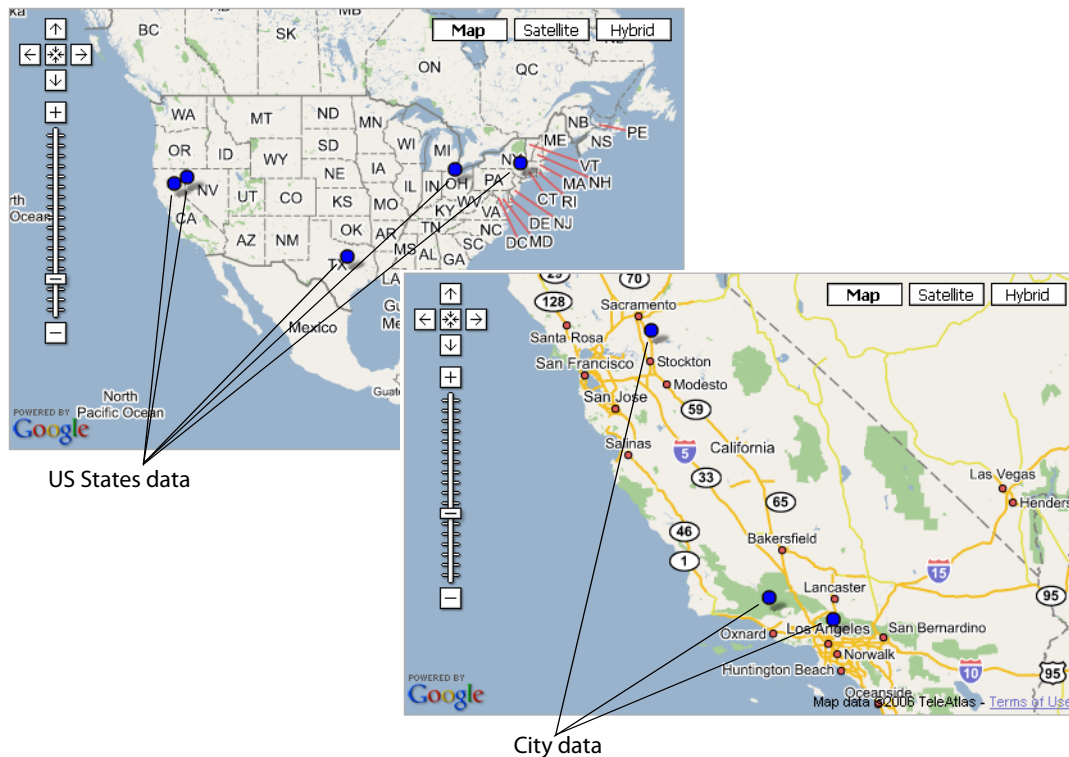
Pivot combination line chart



Geography Map Charts

Geography Map charts map their presentation onto a geographic map. Locations on the map that have data associated with them are indicated with blue bubbles at lower levels of accuracy (such as state or province, city, and address) and with a red bubble at higher accuracy levels, such as the exact address of a warehouse.

Note: You can only create geography map charts when the specified data source is a cube with exactly one dimension where geo categories have been enabled. For more information, see [“Working with Geography Charts” on page 95](#).



Viewing Charts

You have numerous options for viewing charts and chart data details. When you first open a dashboard, all charts are reduced to fit the allotted space in the dashboard. However, from this default view, you can open more detailed views and access more details about the data represented in the chart.

This section describes:

- [Default, Tear-off, and Detail Views](#)
- [Viewing Chart Data Details](#)
- [Example: Detail of a Cube Chart](#)
- [Category Controls](#)
- [Filter Controls](#)
- [Drill Back to Detail](#)

Default, Tear-off, and Detail Views

- Default view

When first displayed in a selected dashboard, charts are reduced to fit in the proscribed area of the dashboard.

- Tear-off view

As described in [“Tearing off a Dashboard Object” on page 56](#), you can open a chart in a separate browser where you can enlarge or reduce the chart size by directly scaling the browser window itself.

Average_Qty	Family	Product	Region	Target_Prod_Income	Target_Sales	Total_Qty	Total_Sales
40	Hardware	Washers	5	170000	100000	40	68000
33	Hardware	Nuts	6	280000	100000	33	70125
23	Hardware	Hinges	3	130000	65000	23	62100
26	Hardware	Hinges	6	130000	100000	26	70200
21	Hardware	Nuts	4	280000	90000	21	44625
41	Hardware	Lag bolts	2	65000	60000	41	16400
45	Hardware	Nuts	7	280000	100000	45	95625
24	Hardware	Nails	4	150000	90000	24	64800
32	Hardware	Washers	1	170000	100000	32	54400
24	Hardware	Nails	5	150000	100000	24	64800
60	Hardware	Nuts	1	280000	100000	60	127500
30	Hardware	Screws	5	80000	100000	30	60000
18	Lumber	Plywood	2	250000	60000	18	43200
15	Lumber	Plywood	4	250000	90000	15	36000
18	Lumber	Plywood	1	250000	100000	75	180000
20	Lumber	Chip board	2	250000	60000	20	44000

- Detail view

For detailed information about chart details, see the next section, [“Viewing Chart Data Details.”](#)

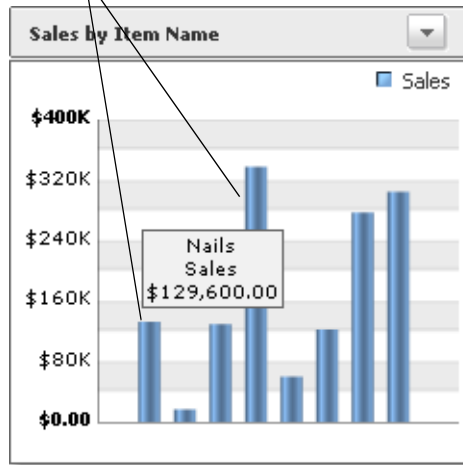
Viewing Chart Data Details

You can view detailed information directly from the dashboard as it displays when selected or drill down to a more detailed view.

When you define a chart, you identify a source view or cube that sources the data that will appear in the chart and the column that contains the value or values to represent on the chart. You also identify a “category” column for views or dimensions for cubes that identifies what to chart. In the illustration below, the values come from the Total_Sales column and the category columns is Products. The pointer is over a product named “Nails” whose value is \$129,600.

You can view data details by simply positioning the mouse cursor over a data point and pausing. As shown in the illustration below, a text box displays with the data.

Point to a chart element to see the value it represents.



You can also open a more detailed view that shows, in addition to the dashboard itself, a table that displays the data in the view on which the chart is sourced. Both chart and table update to show new data with a frequency defined by the refresh rate.

Note: You can force an update by reselecting the chart in the dashboard or navigation tree.

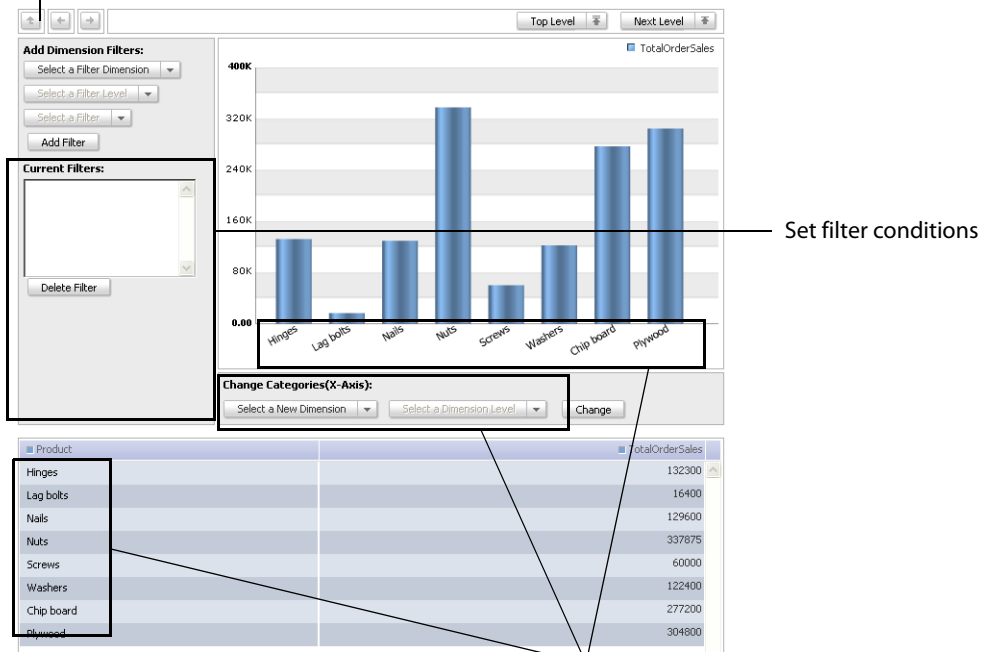
► **To open the more detailed view:**

- Click the chart name.
- OR
- Click the arrow in the title bar and select **Go to Detail View** from the pop-up menu.

Example: Detail of a Cube Chart

When viewing the detailed view of a cube chart, additional controls allow you to select the dimensions and levels to present. Filter controls permit you to limit the set of items presented.

Reset dimension and filters to default settings.

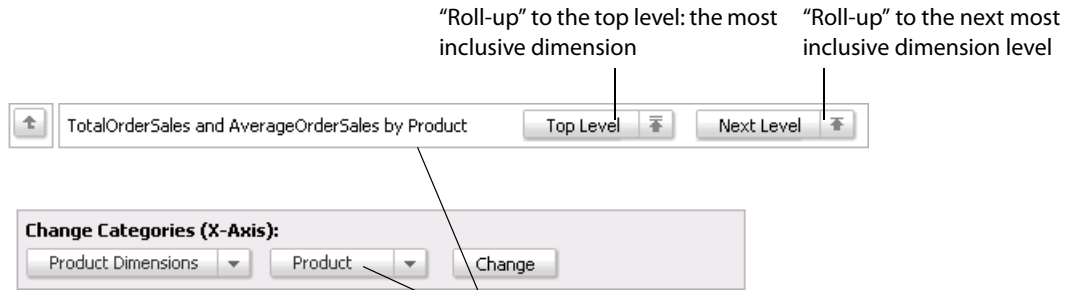


Dimension levels set the categories (row values) to chart.

Category Controls

Categories are used to select the level at which the dimension is displayed. For example, if the category is location, the levels may be region, state, county, and city.

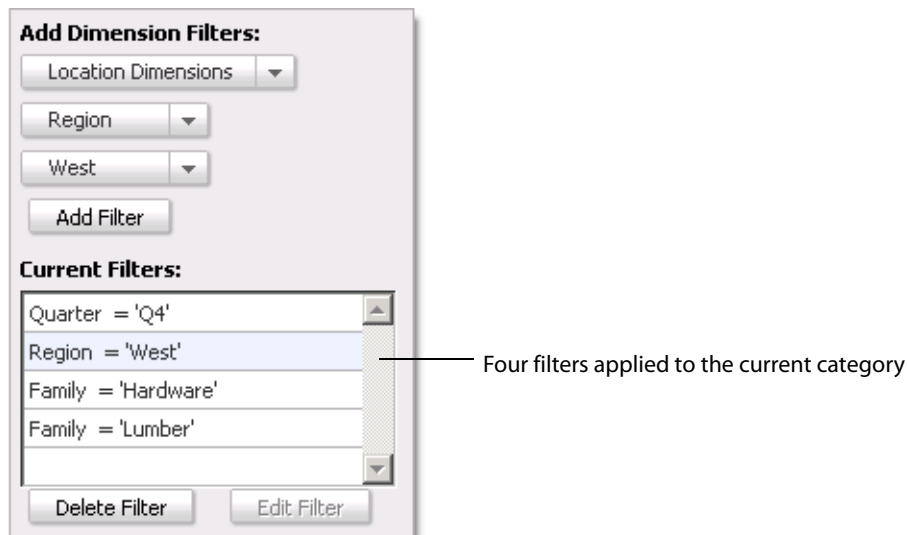
Categories identify what to display, and are determined by the selected dimension level. When you create a cube chart, you select the dimension level to display as the default category. See [“Creating a Combination Chart” on page 83](#) for more details. On the chart, you select the category to display, or you “roll-up” to a higher dimension level in the category with the controls. You can “drill-down” to a lower level by clicking the chart element.



The title shows the chosen category: the dimension level

Filter Controls

Filters further limit the categories by showing only the result for items matching the filter conditions. For example, the filters in this illustration limit the results to those that occurred during the fourth fiscal quarter, in the West business region, and for Hardware and Lumber products only:

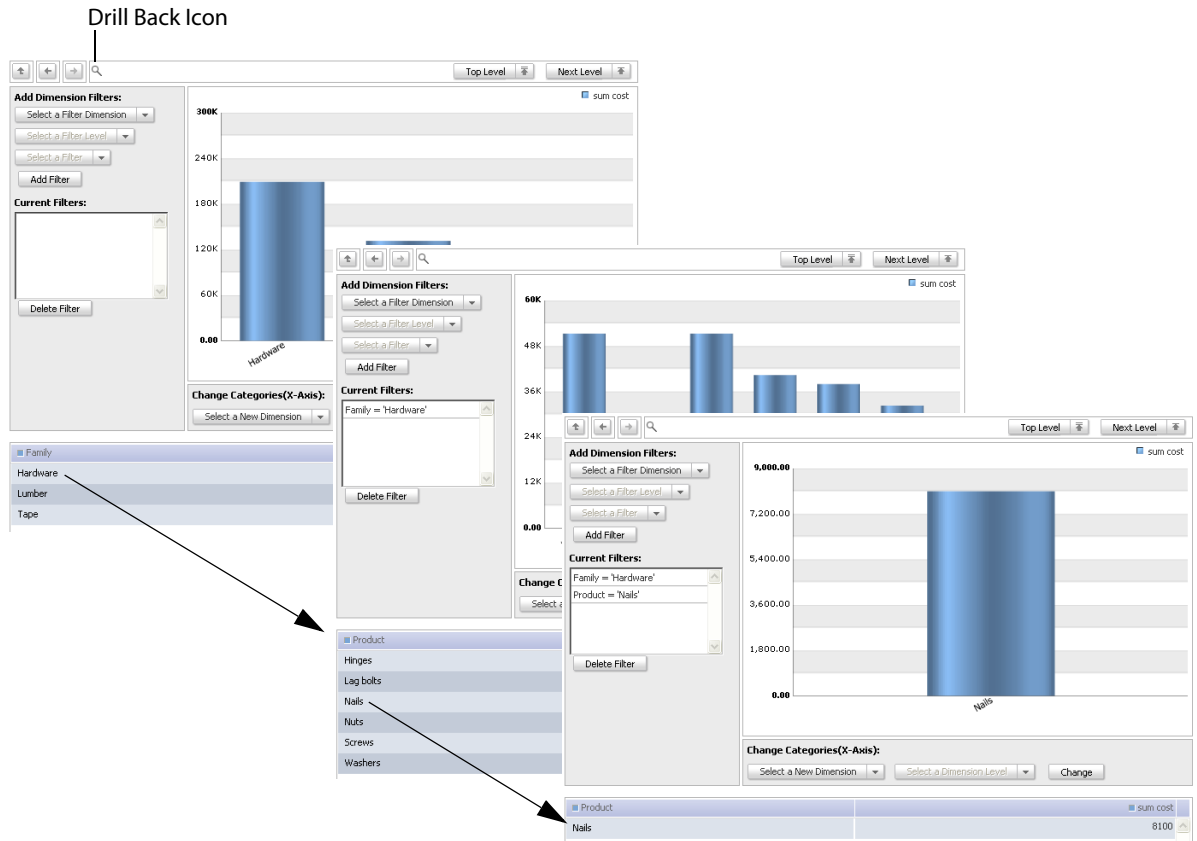


Four filters applied to the current category

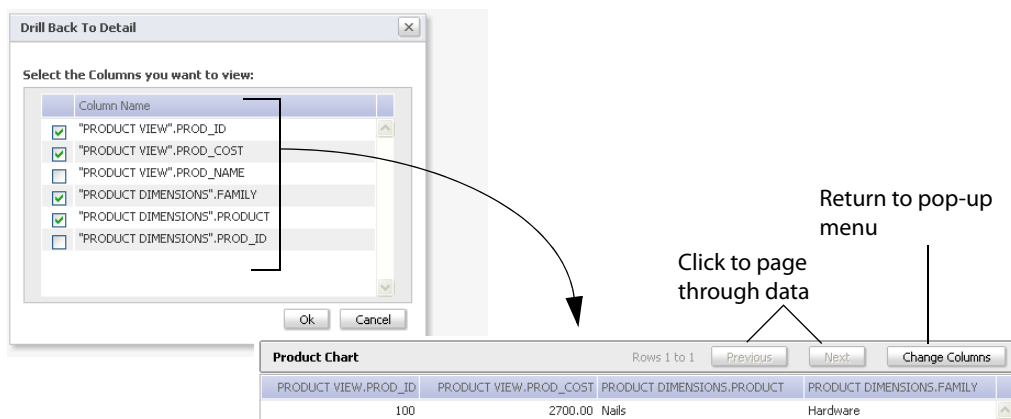
Drill Back to Detail

When the Drill Back icon is displayed on a chart, this indicates that you can access the columns in the fact table of a cube and all the levels of that cube’s dimensions. You access this information by clicking a

category either on the chart or the data grid until you reach the lowest level. For example, you could select a hardware product family, then the nails product as shown in the illustration below.



Once you have “drilled down” to the lowest level and clicked on that category, the dashboard displays a “Drill Back to Detail” pop-up. On this window you can select the columns and dimensions whose detail you want to see. Once you click the OK button, the columns you selected are displayed.



Working with Pie Charts

This section describes the following:

- [Pie Chart Properties](#)
- [Custom Pie Chart Properties \(Advanced Mode\)](#)
- [Creating a Pie Chart](#)

Pie Chart Properties

Pie charts have the following object properties:

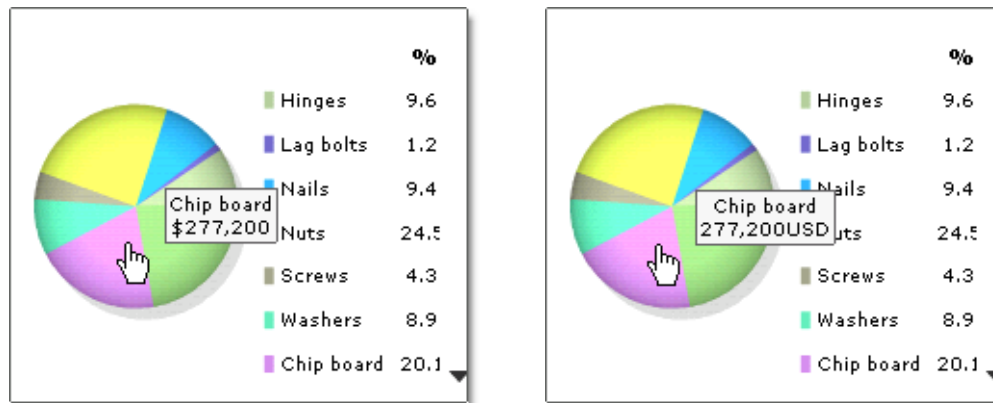
Property	Description
Name	Identifies the Dashboard Object. The name must be unique among all Dashboard Objects.
Folder	Creates a subfolder underneath the All Objects folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that may contain any text characters. This description appears at the top of the Object Details page when users view the details.
Display type	Always Chart for this object type.
Display sub-type	Always Pie for this type of object.

Custom Pie Chart Properties (Advanced Mode)

Pie charts have the following custom properties:

Property	Description
Permission list	Identifies which users or role have explicit access permission to the object. See "Permissions" on page 39 for a complete discussion of permissions.
Associated dashboards	Dashboards that present metrics related to the object. See "Associated Dashboards" on page 43 for details.
Include labels	Whether or not to include category labels on the chart next to the associated wedge in the pie.
Numeric prefix	Text to appear immediately before mouse-over numbers on the chart. Useful for currency notations.
Numeric suffix	Text to appear immediately after mouse-over numbers on the chart. Useful for currency notations.

The prefix and suffix for numbers are text labels to place before or after the mouse-over numbers on the chart. This illustration shows one chart with a dollar sign (\$) for a prefix, and another indicator with "USD" as the suffix.



Creating a Pie Chart

This topic describes how to create a dashboard chart. Charts represent information from one of two types of columns:

- Value columns, which contain the numbers to represent, such as the total sales or average quantity.
- Category columns, which contain the "names" associated with each row in the source, such as product names, months of sales, or business regions.

Basis	Result
A view	The category name comes from a column in the view.
A cube	The category is a dimension in the cube, and the default value is a level in the dimension. Note: See "Example: Detail of a Cube Chart" on page 73 for more information. For cubes, you can also define filters to apply by default to the data. For more information, see "Filter Controls" on page 74 .

Before creating a dashboard chart, you must have:

- Create permission for Dashboard Objects
- Read-Only permission on the view or cube that you want to chart

► **To create a dashboard chart:**

1. Open the Dashboard Objects navigation tree and select the **Dashboard Objects** folder.
2. Click **Create Object** and select "Create Dashboard Object."
3. Select the view or cube that contains the data this chart will report on.
Note: You can see the data currently in the source by clicking the preview button to the right of the view's description.
4. Click **Continue** to move to the next step.
5. Select **Chart** as the display type and Pie as the sub-type for the object.
6. Click **Continue** to move to the next step.
7. Select the columns from the view that contains the data to chart.
8. Click **Continue** to move to the next step.
9. Assign a name and optional description.
10. (Optionally, using Advanced Mode) Define:
 - Associations
Associations are dashboards that contain related metrics. For more information, see ["Associated Dashboards" on page 43](#).
 - Permissions
Permissions determine who can see the indicator and to what extent they can access it. For more information, see ["Permissions" on page 39](#).
11. Optionally, using Advanced Mode, define the appearance of the chart by choosing Customize.
For more information, see ["Custom Pie Chart Properties \(Advanced Mode\)" on page 76](#).
12. Save the chart.
The chart is immediately available for use in dashboards.

Working with Combination Charts

Combination charts map their presentation onto a rectangular area using a horizontal and vertical axis, where a column's data (a category) is a series of data points or columns along the horizontal axis, and where the height of the point or column is representative of the category item's value. Combination charts are either area charts, line charts, bar charts, dot charts, or any combination. Combination charts may plot data on a single axis, or on dual axes.



When viewing a chart, place your mouse over the data point to see the value it represents. On a dashboard, to see a more detailed presentation, click the object name, the chart, or select **Go to Detail View** on the dashboard object's **Activities** menu.

Combination Chart Properties

Combination charts have the following object properties:

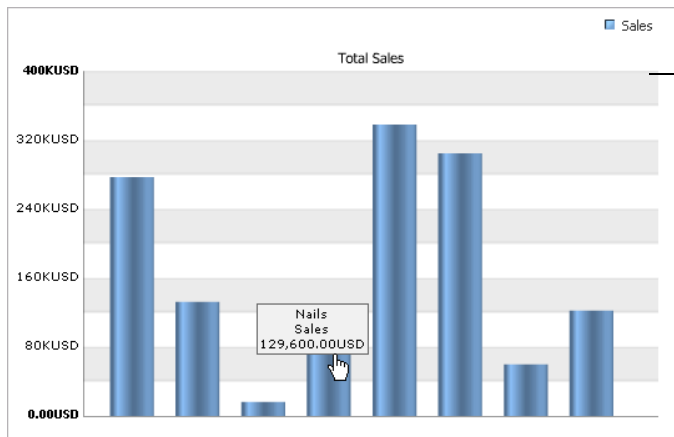
Property	Description
Name	Identifies the Dashboard Object. The name must be unique among all Dashboard Objects.
Folder	Creates a subfolder underneath the All Objects folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that may contain any text characters. This description appears at the top of the Object Details page when users view the details.
Display type	Always Chart for this object type.
Display sub-type	Always Combination Chart for this object type

Custom Combination Chart Properties (Advanced Mode)

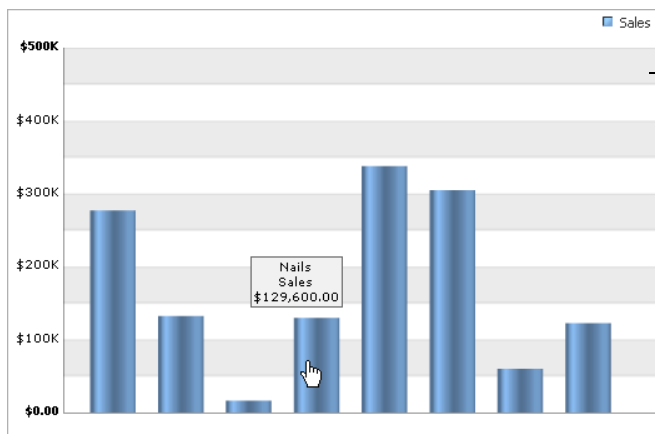
Combination charts have the following custom properties:

Property	Description
Permission list	Identifies which users or roles have explicit access permission to the chart. See “Permissions” on page 39 for a complete discussion of permissions.
Associated dashboards	Dashboards that present metrics related to the object. See “Associated Dashboards” on page 43 for details.
Include labels	Displays the labels for each item below the horizontal axis. The label values come from the category column definition.
Numeric prefix	Text to appear immediately before all numbers on the chart. Useful for currency notations.
Numeric suffix	Text to appear immediately after all numbers on the chart. Useful for currency notations.
Horizontal combination lines	Count of horizontal combination lines to display between the bottom and top of the chart, and behind the bars or lines. The default is 4.
Axis labels	Labels to identify the horizontal (X-axis) and vertical (Y-axis) axes. Omit the value to leave the label display blank.
Y-axis minimum and maximum values	Upper and lower range limits of the vertical scale. When references are defined for the chart, they may exceed these limits and thereby force a larger range on the scale. Omitting limits and references uses “best-fit” values, with zero (0) as the base line.

The following illustration demonstrates some of the custom chart properties:



No category labels
Suffix is "USD"
Horizontal grid lines is 3
Axis labels are "Total Sales"
and "Products"



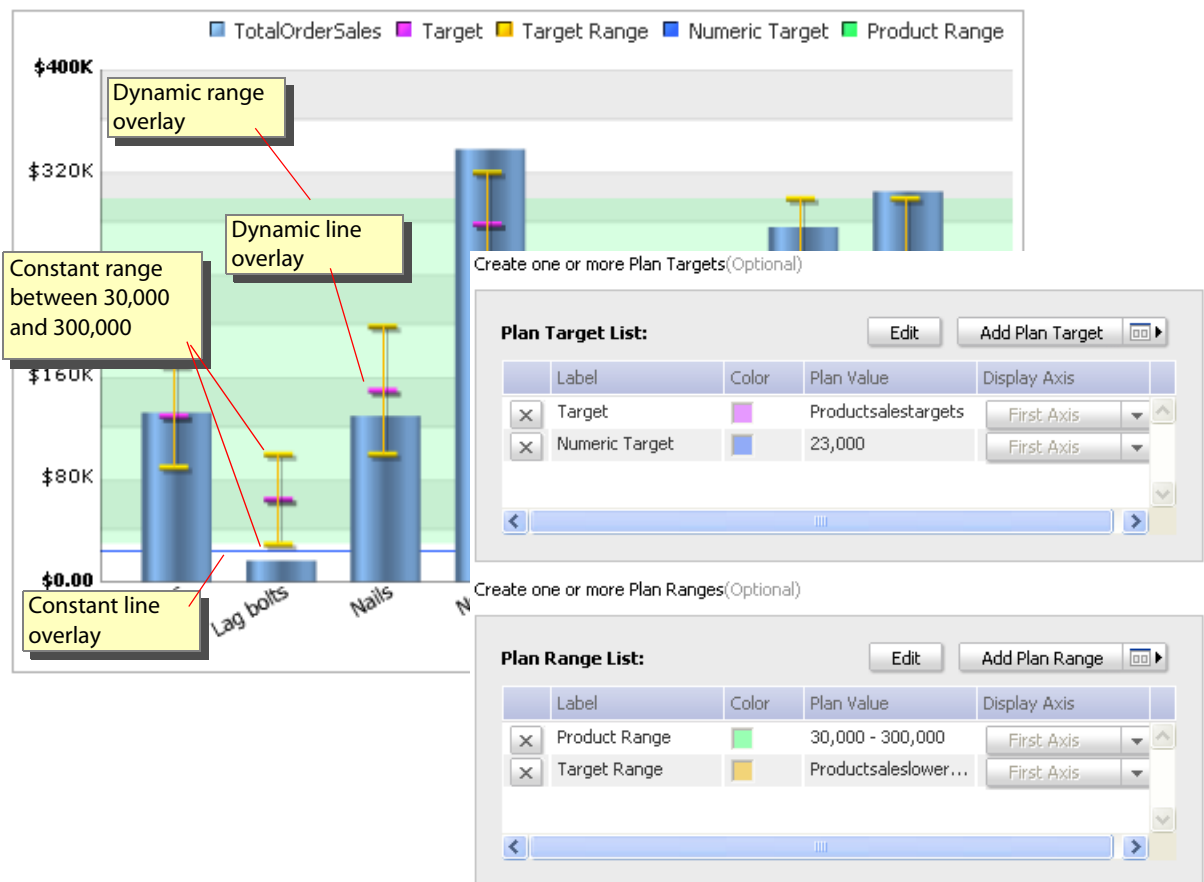
Category labels included
Prefix is "\$"
Horizontal grid lines is 4
No axis labels
Maximum value is 500,000

Combination Chart Plans

Plans are visual elements on charts that allow you to quickly see where the presented value is in relation to some “target” or range of values. See [“Plans” on page 120](#) for a detailed discussion. Define combination chart plans in Step Five: Create Plan of the chart’s editor.

Plans have these appearances on combination charts:

- **Line Overlays:** Horizontal lines in entire chart (constant value) or just the columns of the category item being plotted (dynamic values).
- **Range Overlays:** Two reference lines and the area between them. When the reference values are dynamic (data-driven), the lines are connected by a vertical line to present an “I-beam” on top of the category column. When the values are constant, the lines are behind the columns and fill the width of the chart.



Note: When a reference value exceeds either of the [Y-axis minimum and maximum values](#), the chart size automatically adjusts to accommodate the reference.

Creating a Combination Chart

When you create a combination chart you first identify the values column (or columns for combined charts), then identify the category column that contains the labels for each point or bar.

Before creating a combination chart:

- You need create permission for Dashboard Objects.
- You need at least Read-Only permission on the view or cube that you want to chart.

► **To create a combination chart:**

1. Open the **Dashboard Objects** navigation tree, select the **Dashboard Objects** folder, and click **Create Object**.
2. Select a data source by selecting the view or cube that contains the data this chart will report on.

Note: You can see the data currently in the source by clicking the preview button to the right of view's description.

3. Click **Continue**.
4. Select **Chart** as the display type.
5. Select **Combination Chart** as the display sub-type.
6. Click **Continue** to move to the next step.
7. Select the columns from the view or cube that contains the data to chart. You must select one or more values to chart. Optionally, you may select one or more values to chart on the second y-axis.
 - Value (Y-axis) columns contain the numbers to represent, such as the total sales or average quantity. Additionally:
 - Identify the chart type to display for each value:
 - Area
 - Line
 - Dot
 - Bar
 - Column Stack

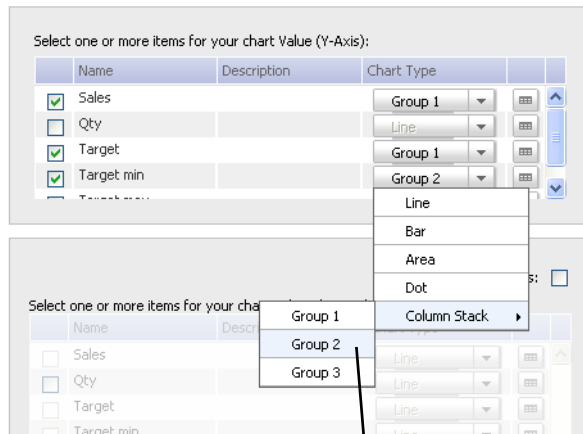
A column stack is the same as a bar, but you can select values to be stacked by selecting **Column Stack>Group [#]**.

Items with the same group number will be stacked together. To create multiple stacks, simply select a different group number. Each time a group number is selected, the group numbers

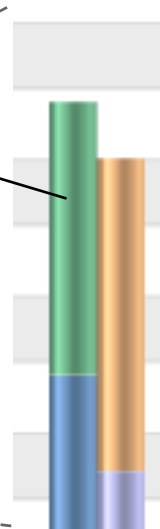
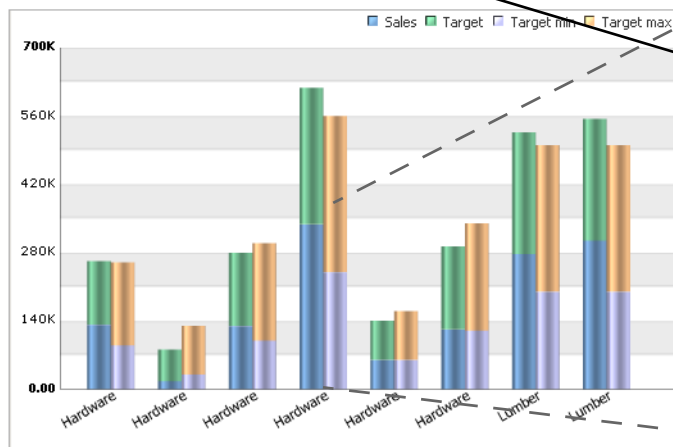
available increase by one. For example, as soon as you select Group 1, Group 2 will be available the next time you access the submenu.

Note: Group numbers will automatically adjust downward. For example, if you assign some values to Group 1 and others to Group 4, but none are assigned to Group 2 or Group 3, the Group 4 assignments will display as Group 2 assignments if you go to edit the data settings.

Step Three: Edit Data for your Combination Chart



Columns stacked in groups of two



- Category (X-axis) columns contain the “names” associated with each row in the source, such as product names, months of sales, or business regions.

Note: When the chart is based on a view, the category name comes from a column in the view. When the chart is based on a cube, the category is a dimension in the cube, and the default value is a level in the dimension. See [“Example: Detail of a Cube Chart” on page 73](#) for more information.

Optional for cubes: Define any filters to apply by default to the data. See [“Filter Controls” on page 74](#) for more information.

8. Click **Continue** to move to the next step.
9. Define the chart’s name and properties.
10. Optionally, define the following properties:

- Description
Description to appear in the Dashboard Objects list.
 - Associations
Associations are dashboards that contain related metrics. For more information, see [“Associated Dashboards” on page 43](#).
 - Permissions
Permissions determine who can see the indicator and to what extent they can access it. For more information, see [“Permissions” on page 39](#).
 - Appearance
See [“Custom Combination Chart Properties \(Advanced Mode\)” on page 80](#) for details.
11. Optionally, define a plan to appear on the indicator. See [“Combination Chart Plans” on page 82](#) for examples. Continue to the next step.
 12. Save the chart.

The chart is immediately available for use in dashboards.

Working with Distribution Charts

This section describes the following:

- [Distribution Chart Properties](#)
- [Custom Distribution Chart Properties \(Advanced Mode\)](#)
- [Creating a Distribution Chart](#)

Distribution Chart Properties

Distribution charts have the following object properties:

Property	Description
Name	Identifies the Dashboard Object. The name must be unique among all Dashboard Objects.
Folder	Creates a subfolder underneath the All Objects folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that may contain any text characters. This description appears at the top of the Object Details page when users view the details.
Display type	Always select Chart for this object type.
Display sub-type	Always select Distribution Chart for this type of object. Note: If this option is not available, check the data source you selected. This option is only available when the data source is a view with two measures and a category. It is not available for cubes.

Custom Distribution Chart Properties (Advanced Mode)

Distribution charts have the following custom properties:

Property	Description
Permission list	Identifies which users or roles have explicit access permission to the object. See "Permissions" on page 39 for a complete discussion of permissions.
Associated dashboards	Dashboards that present metrics related to the object. See "Associated Dashboards" on page 43 for details.
Custom label	This property enables you to create a label to appear in place of the column value.

Creating a Distribution Chart

This section describes how to create a distribution chart. Before creating a distribution chart, you must have:

- Create permission for Dashboard Objects
- Read-Only permission on the view that you want to chart

► **To create a distribution chart:**

1. Open the Dashboard Objects navigation tree and select the **Dashboard Objects** folder.

2. Click **Create Object**.

This action opens the Step One: Select a Data Source page, listing the available data sources configured in BAM Workbench.

3. Select the view that contains the data this chart will report on.

Note: For a distribution chart you must choose a view data source. You cannot create a distribution chart based on a cube data source.

4. Click **Continue**.

This action opens the Step Two: Select Display Type... page.

5. In the top panel, select the following:

- Select **Chart** as the display type.
- Select **Distribution Chart** as the sub-type.

The bottom panel updates to show a sample display based on the above selections.

6. Click **Continue**.

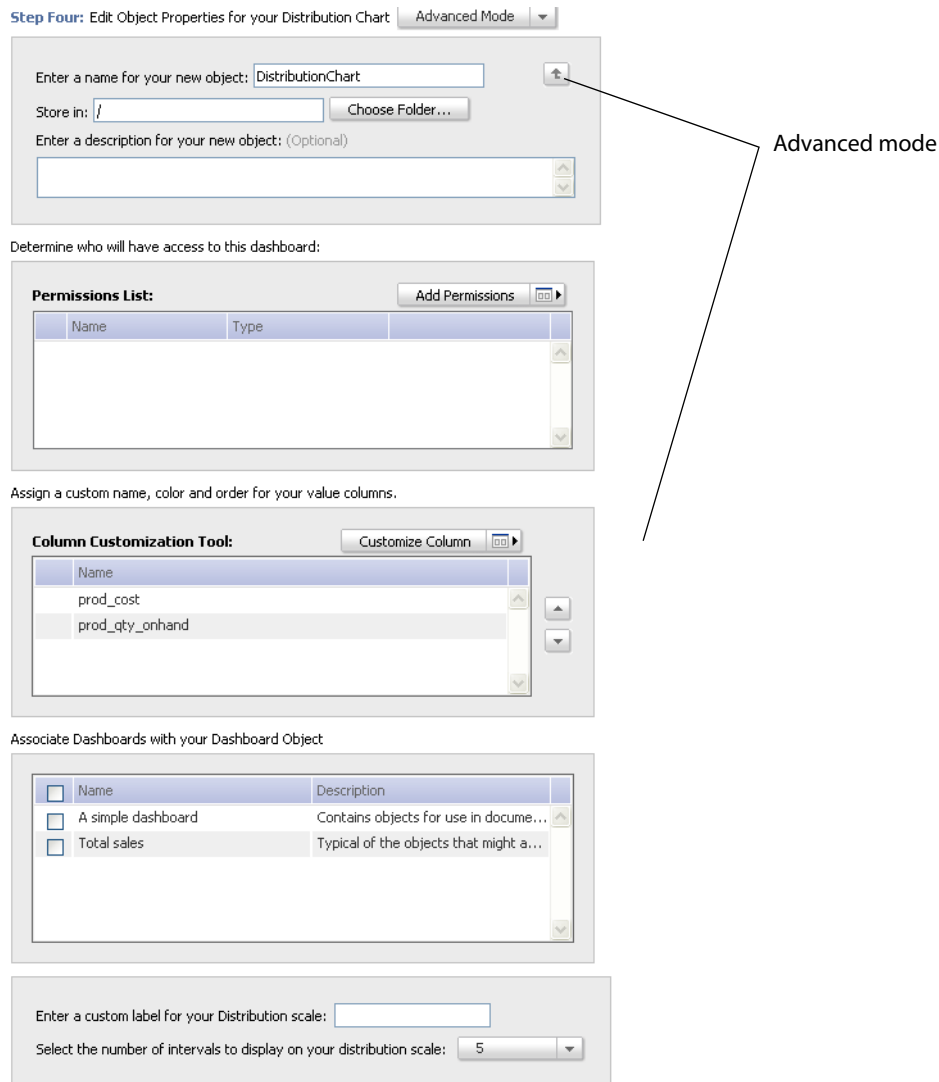
This action opens the Step Three: Select Data... page. The contents of this page are read from the data source selected in the preceding step.

7. Select items for the horizontal and vertical axes for the chart.

8. Select an item for the chart categories.

9. Click **Continue**.

This action opens the Step Four: Select Object Properties... page. This page can be viewed in two modes: Basic and Advanced. To select either option, use the dropdown list adjacent to the page title.



10. Assign a name and optional description.

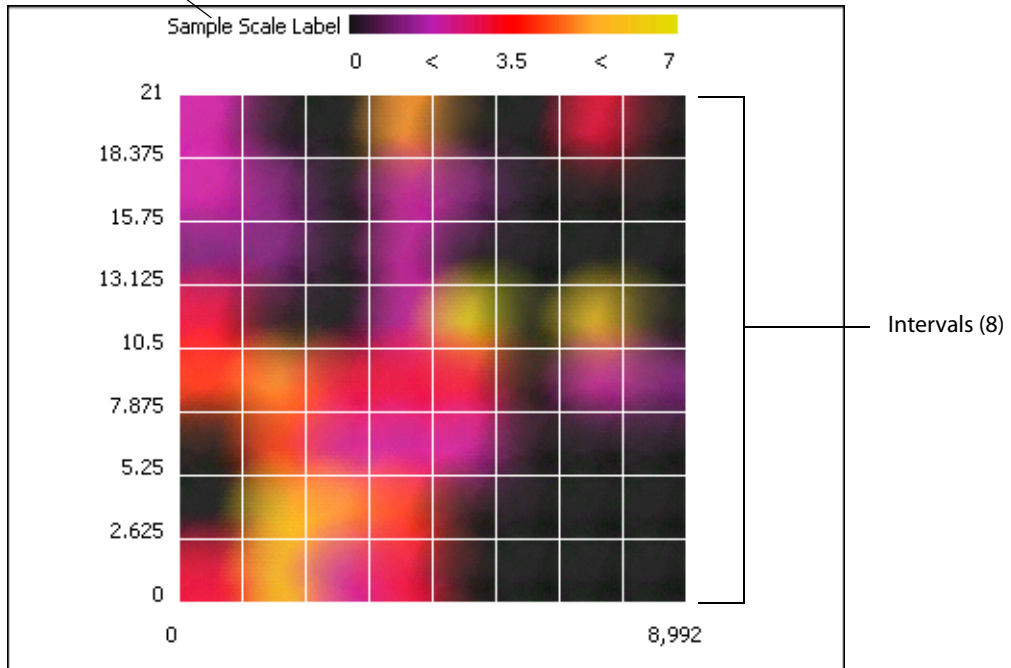
11. (Optional) Define the following:

- Permissions
Permissions determine who can see the indicator and to what extent they can access it. For more information, see ["Permissions" on page 39](#).
- Customized column settings
Column settings are described in ["Custom Pie Chart Properties \(Advanced Mode\)" on page 76](#).
- Associated dashboards
Associated dashboards are dashboards that contain related metrics. For more information, see ["Associated Dashboards" on page 43](#).

- Enter a custom label for the distribution scale key that appears above the chart.
- Select the number intervals to appear on the chart.

The default is 5.

Optional label



12. Click **Save** when finished.

The new chart is immediately available for use in dashboards.

Working with Pivot Combination Charts

This section describes the following:

- [Pivot Combination Chart Properties](#)
- [Custom Pivot Combination Chart Properties \(Advanced Mode\)](#)
- [Creating a Pivot Combination Chart](#)

Pivot Combination Chart Properties

Pivot combination charts have the following object properties:

Property	Description
Name	Identifies the Dashboard Object. The name must be unique among all Dashboard Objects.
Folder	Creates a subfolder underneath the All Objects folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that may contain any text characters. This description appears at the top of the Object Details page when users view the details.
Display type	Always Chart for this object type.
Display subtype	Always Pivot Combination Chart for this object type.

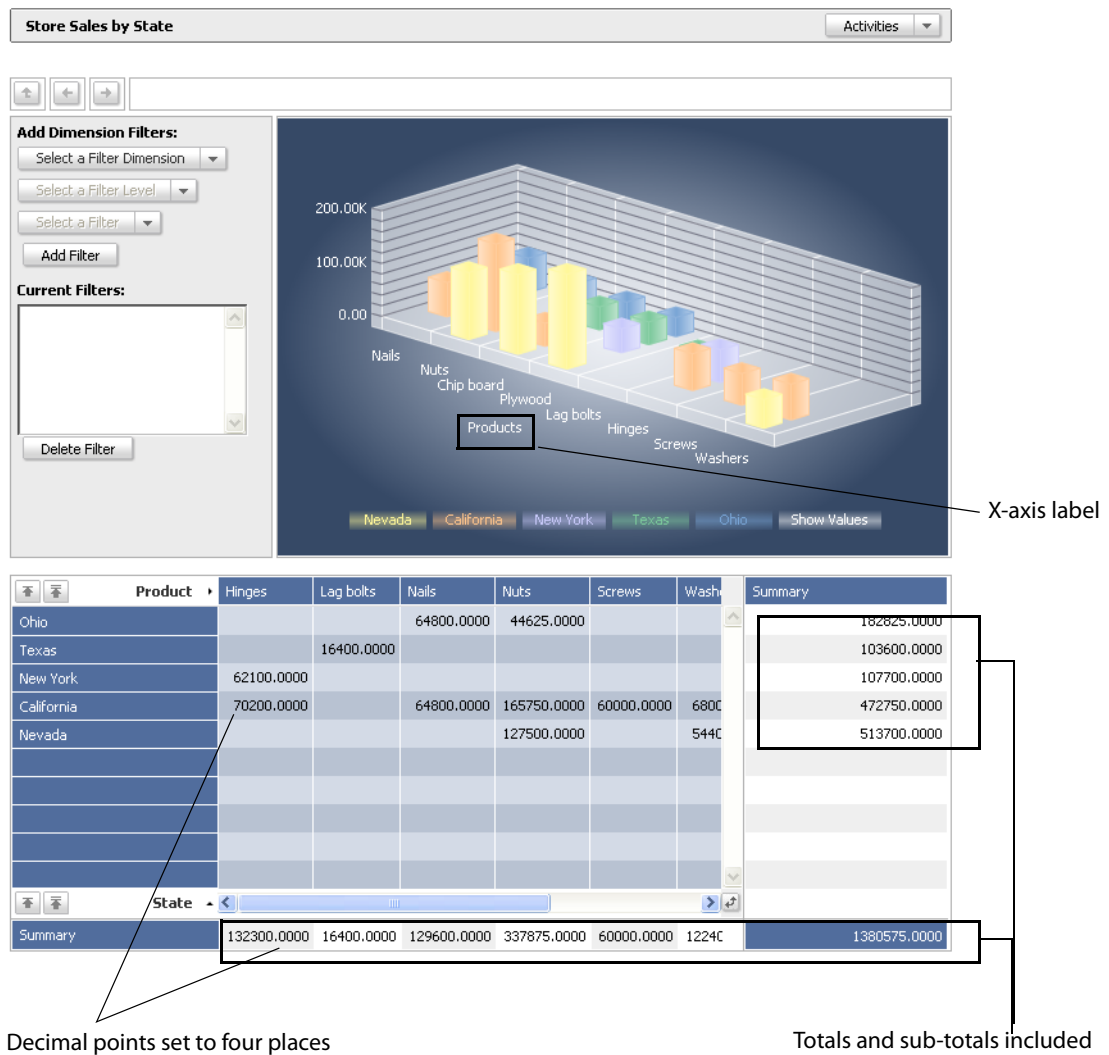
Custom Pivot Combination Chart Properties (Advanced Mode)

Pivot combination charts have the following custom properties:

Property	Description
Permission list	Identifies which users or roles have explicit access permission to the chart. See "Permissions" on page 39 for a complete discussion of permissions.
Associated dashboards	Dashboards that present metrics related to the object. See "Associated Dashboards" on page 43 for details.
Include labels	Indicates whether or not to displays the labels for each item below the horizontal axis. The label values come from the category column definition.
Numeric prefix	Enter text to appear immediately before all numbers on the chart. Useful for currency notations, such as "US\$."
Numeric suffix	Enter text to appear immediately after all numbers on the chart. Useful for currency notations, such as "USD."
Horizontal pivot combination lines	Count of horizontal pivot combination lines to display between the bottom and top of the chart, and behind the bars or lines. The default is 4.
Axis label	Label to identify the horizontal (X-axis) axis. Omit the value to leave the label display blank.

Property	Description
Totals and sub-totals	Indicates whether or not to display totals and subtotals.
Custom label (for selected column)	This property enables you to create a label to appear in place of the column value.
Comma separator (for selected column)	Indicate whether to use commas for values in the thousands (150,000 vs. 150000)
Decimal places (for selected column)	Sets the number of decimal places to display.

The following illustration demonstrates some of the custom chart properties:



Creating a Pivot Combination Chart

Before creating a pivot combination chart:

- You need Create permissions for Dashboard Objects.
- You need at least Read-Only permission on the view or cube that you want to chart.

► **To create a pivot combination chart:**

1. Open the Dashboard Objects navigation tree and select the **Dashboard Objects** folder.

2. Click **Create Object**.

This action opens the Step One: Select a Data Source page, listing the available data sources configured in BAM Workbench.

3. Select the cube that contains the data this chart will report on.

Note: For a pivot combination chart you must choose a cube data source. You cannot create a pivot combination chart based on a view data source.

Note: You can see the data currently in the source by clicking the preview button to the right of the cube's description.

4. Click **Continue**.

This action opens the Step Two: Select Display Type... page.

5. In the top panel, select the following:

- Select **Chart** as the display type.
- Select **Pivot Combination Chart** as the sub-type.

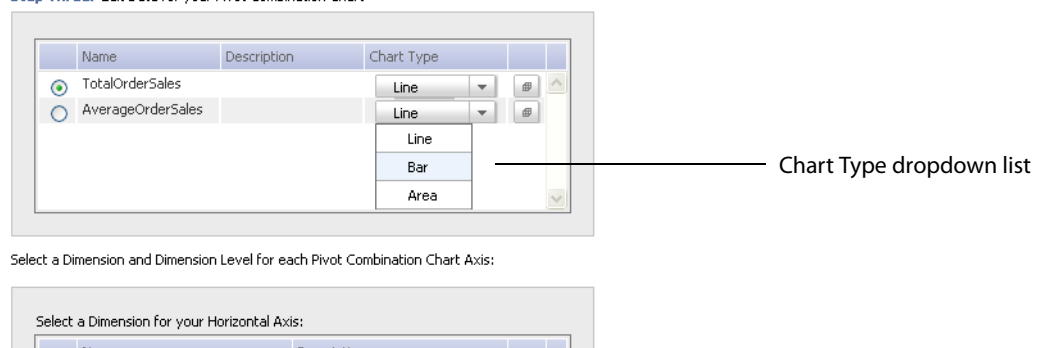
The bottom panel updates to show a sample display based on the above selections.

6. Click **Continue**.

This action opens the Step Three: Select Data... page. The contents of this page are read from the data source selected in the preceding step.

7. In the top panel, select the category, then **Area** or **Line** or **Bar** as the Chart Type value for the object.

Step Three: Edit Data for your Pivot Combination Chart



8. Select a dimension from the source cube for the horizontal axis.

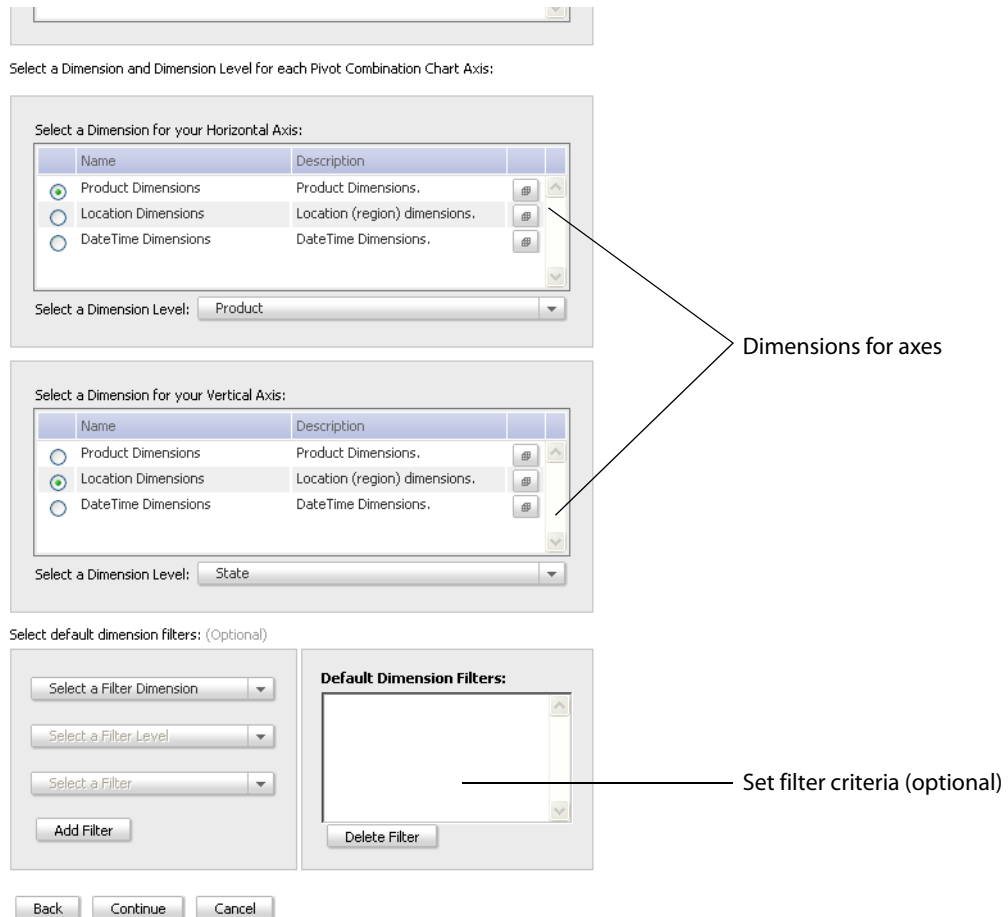
The list shows all available dimensions defined in the specified data source. You can only choose one dimension.

9. Select a dimension from the source cube for the vertical axis.

Note: You cannot choose the same dimension as selected for the horizontal axis.

10. Optionally you can define any filters to apply by default to the data.

Note: For more information, see [“Filter Controls” on page 74.](#)



11. Click **Continue**.

This action opens the Step Four: Select Object Properties... page. This page can be viewed in two modes: Basic and Advanced. To select either option, use the dropdown list adjacent to the page title.

12. Assign a name and optional description.

13. (Optionally, in Advanced Mode) Define the following:

- Permissions

Permissions determine who can see the indicator and to what extent they can access it. For more information, see [“Permissions” on page 39.](#)

- Customized column settings

Column settings are described in [“Custom Pivot Combination Chart Properties \(Advanced Mode\)” on page 90.](#)

- Associated dashboards
Associated dashboards are dashboards that contain related metrics. For more information, see [“Associated Dashboards” on page 43](#).
- Select the desired, custom display options as described in [“Custom Pivot Combination Chart Properties \(Advanced Mode\)” on page 90](#) and shown in the illustration below.

Would you like to include labels in this chart? Yes No

Would you like to include legend in this chart? Yes No

Enter a prefix for your numerical values:

Enter a suffix for your numerical values:

Define number of horizontal grid lines to display:

Enter a custom label for your X-Axis:

Would you like to display totals and subtotals in this Pivot Table? Yes No

Back Save Cancel

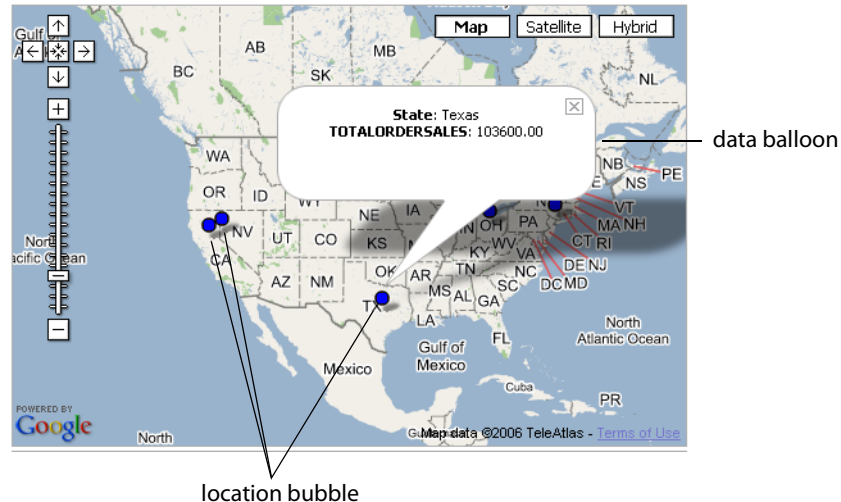
Custom display properties

14. Click **Save** when finished.

The new chart is immediately available for use in dashboards.

Working with Geography Charts

Geography charts map their presentation onto a geographic map using location information, where a column's data (a category) is displayed on the map according to the geographic location with which the data are associated. Geography charts can display the geographic information at several levels of accuracy; that is, country, state or province, city, and address. Locations with data are indicated by blue or red bubbles on the map. Lower levels of geographic accuracy are indicated by blue bubbles. Higher levels are indicated by red bubbles. Placing the pointer over a bubble displays a balloon with the data for that geographic location inside it.



This section describes the following:

- [Geography Chart Properties](#)
- [Custom Geography Chart Properties \(Advanced Mode\)](#)
- [Creating a Geography Chart](#)

Geography Chart Properties

Geography charts have the following object properties:

Property	Description
Name	Identifies the Dashboard Object. The name must be unique among all Dashboard Objects.
Folder	Creates a subfolder underneath the All Objects folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that may contain any text characters. This description appears at the top of the Object Details page when users view the details.
Display type	Always Chart for this object type.
Display subtype	Always Geography Chart for this object type.

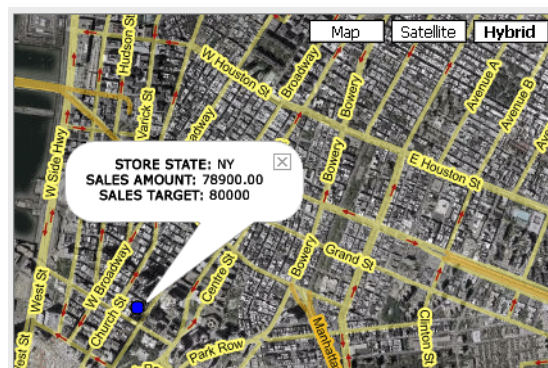
Custom Geography Chart Properties (Advanced Mode)

Geography charts have the following custom properties:

Property	Description
Permission list	Identifies which users or roles have explicit access permission to the chart. See “Permissions” on page 39 for a complete discussion of permissions.
Associated dashboards	Dashboards that present metrics related to the object. See “Associated Dashboards” on page 43 for details.
Include percentages	Indicates whether or not to display percentages for each item in the chart legend.
Include labels	Indicates whether or not to displays the labels for each item below the horizontal axis. The label values come from the category column definition.
Numeric prefix	Enter text to appear immediately before all numbers on the chart. Useful for currency notations, such as “US\$.”
Numeric suffix	Enter text to appear immediately after all numbers on the chart. Useful for currency notations, such as “USD.”
Custom label (for selected column)	This property enables you to create a label to appear in place of the column value.
Comma separator (for selected column)	Indicate whether to use commas for values in the thousands (150,000 vs. 150000)
Decimal places (for selected column)	Sets the number of decimal places to display.

Geography Chart Plans

Plans are visual elements on charts that allow you to quickly see where the presented value is in relation to some “target” or range of values. See [“Plans” on page 120](#) for a detailed discussion. Define geography map chart plans in Step Five: Create Plans of the chart’s editor. The plan information is displayed in the balloon when a location bubble is selected.



Creating a Geography Chart

Before creating a geography chart:

- You need Create permissions for Dashboard Objects.
- You need at least Read-Only permission on the view or cube that you want to chart.
- You must have an available data source that is a cube.
- You must have a cube with exactly one geo mapped dimension.

A geo mappable dimension is a dimension that has been enabled for Geography Charts and has at least one geo category that is set to a category other than “Not Used”, such as Country, State/Province, City, Street, or Postal Code. The geo categories are configured in BAM Workbench.

► **To create a geography chart:**

1. Open the Dashboard Objects navigation tree and select the **Dashboard Objects** folder.

2. Click **Create Object**.

This action opens the Step One: Select a Data Source page, listing the available data sources configured in BAM Workbench.

3. Select the cube that contains the data this chart will report on.

Note: For a geography chart you must choose a cube data source. You cannot create a geography chart based on a view data source.

Step One: Select a Data Source

Available Data Sources: Select a single data source from the list below:

Data Source Name	Description	
<input type="radio"/> 30DayOrders	Tracks order averages for 30 days.	
<input type="radio"/> 8WeekOrders	Tracks orders totals for each of the previous 8 weeks.	
<input type="radio"/> 8WeekOrdersAvg	Averages orders for the previous 8 weeks, by week.	
<input type="radio"/> InventoryChangeDetails	Detailed information about a product quantity change.	
<input type="radio"/> OrderChangeDetails	Wrap-up of an order event and associated context.	
<input checked="" type="radio"/> OrderCube	Aggregates sales orders over product, location, and time.	
<input type="radio"/> OrderProductTotals	Total sales by product.	

Cube data source selected

4. Click **Continue**.

This action opens the Step Two: Select Display Type... page.

5. In the top panel, select the following:

- Select **Chart** as the display type.
- Select **Geography Chart** as the subtype.

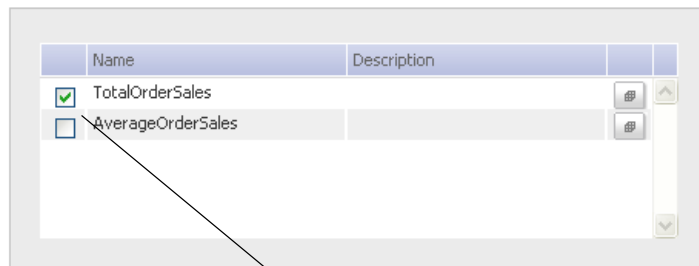
The bottom panel updates to show a sample display based on the above selections.

6. Click **Continue**.

This action opens the Step Three: Select Data... page. The contents of this page are read from the data source selected in the preceding step.

7. In the top panel, select the data for the chart.

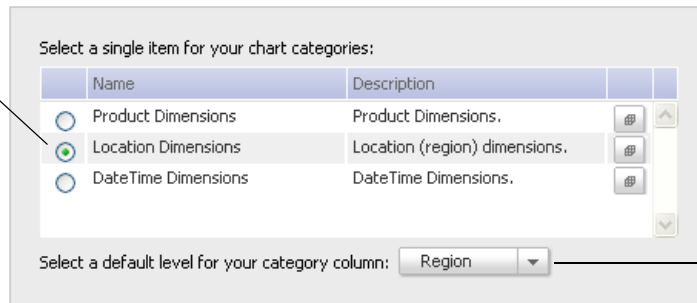
Step Three: Select Data for your Geography Chart



Data for geography chart

8. Select a dimension from the source cube and a default level (such as region, city, or state). The dimension must be a dimension with geo mapping.

Dimension with
geo mapping



Default level

9. Optionally you can define any filters to apply by default to the data.

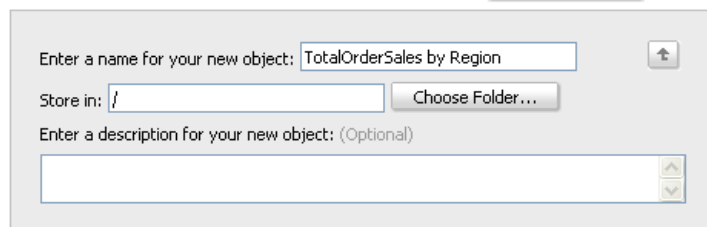
Note: For more information, see [“Filter Controls” on page 74](#).

10. Click **Continue**.

This action opens the Step Three: Select Object Properties... page. The contents of this page are read from the data source selected in the preceding step.

11. Assign a name. You can also optionally choose a folder in which to store the object and a description. See [“Using Folders” on page 57](#) for information about how to create folders.

Step Four: Select Object Properties for your Geography Chart Basic Mode



12. (Optionally, in Advanced Mode) Define the following:

- Permissions
Permissions determine who can see the indicator and to what extent they can access it. For more information, see [“Permissions” on page 39](#).
- Customized Columnization Tool
Column settings are described in [“Custom Geography Chart Properties \(Advanced Mode\)” on page 96](#).
- Associated dashboards
Associated dashboards are dashboards that contain related metrics. For more information, see [“Associated Dashboards” on page 43](#).
- Select the desired, custom display options as described in [“Custom Geography Chart Properties \(Advanced Mode\)” on page 96](#) and shown in the illustration below.

Would you like to include percentages in the chart legend? Yes No

Would you like to include labels in this chart? Yes No

Enter a prefix for your numerical values:

Enter a suffix for your numerical values:

Back Save Cancel Create Plan

Custom display properties

13. Optionally, define a plan to appear on the chart. See [“Combination Chart Plans” on page 82](#) for examples. Continue to the next step.
14. Click **Save** when finished.
The new chart is immediately available with geo mapping for use in dashboards.

Editing Charts

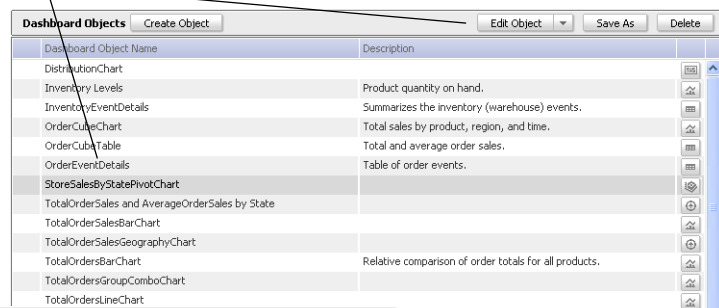
You can edit an existing chart at any time if you have update permissions on it.

► **To edit a chart:**

1. Open the Dashboard Objects navigation tree and select the **Dashboard Objects** folder.
2. How you access the properties depends on how the chart is accessed:
 - If the chart is currently displayed in Detail View, click **Activities** then select **Edit>[Type of setting]** from the dropdown menu.
 - If the chart is currently displayed in a dashboard, click the object's **Activities menu** then select **Edit>[Type of setting]** from the dropdown menu.
 - If the All Dashboard Objects view is displayed in the main panel, select the chart name, click **Edit Object** then select **[Type of setting]** from the dropdown menu.

Each method returns you to the same "Step" screen that was used to define the chart.

Select chart from list and click Edit Object



Display chart and select

Product	Hinges	Lag bolts	Nails	Nuts	Screws	Washers	Chip board	Ply	Summary
Ohio			64800	44625			37400		182825

3. Modify the settings as desired.
4. Click through to the last Step screen and click **Save**.

A dashboard indicator is a visual representation of a number's position on a scale. Indicators are useful for identifying progress towards a target and quantity levels within a range.

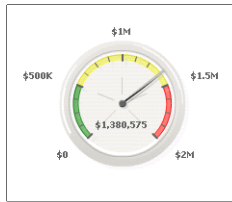
► **In this Chapter:**

- ["Viewing Indicators" on page 102](#)
- ["Indicator Properties" on page 103](#)
- ["Custom Indicator Properties \(Advanced Mode\)" on page 103](#)
- ["Indicator Plans" on page 106](#)
- ["Creating an Indicator" on page 107](#)

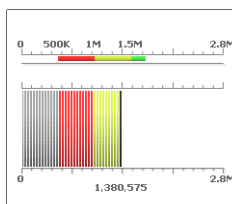
Viewing Indicators

BAM Dashboard provides the following indicators:

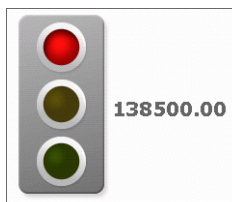
- Speedometers present a radial scale



- Thermometers present a horizontal linear scale



- Traffic Lights present a vertical three-state scale



► To view indicator details:

With the dashboard in view, select the object's **Activities menu and select Go to Detail View.**

This displays a larger presentation and a table showing the value in the source that the indicator is built on. The value represented is a single cell in the source view or cube.

Note: In views, when there are multiple rows in the source, the value is the latest (most recently added) in the column. In cubes, the indicator applies to the face of the cube on which the indicator is defined.

Indicator Properties

Indicators have the following object properties:

Property	Description
Name	Identifies the indicator. The name must be unique among all Dashboard Objects.
Folder	Creates a subfolder underneath the All Objects folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that may contain any text characters. This description appears at the top of the Object Details page when users view the details.

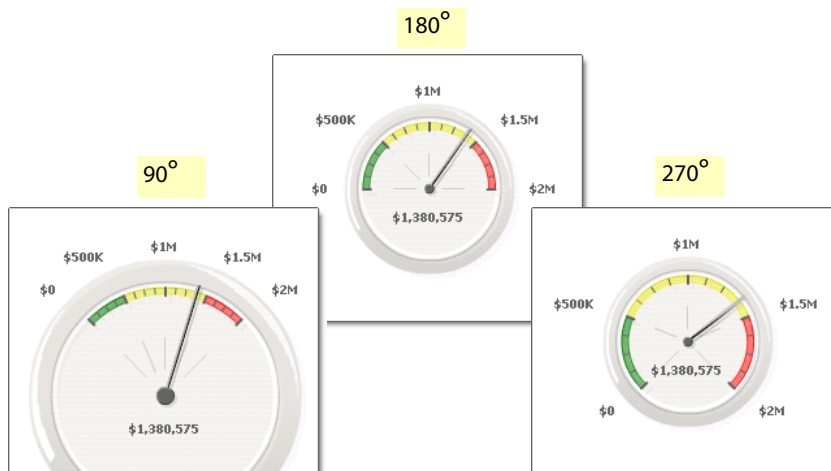
Custom Indicator Properties (Advanced Mode)

Indicators have the following custom properties:

Property	Description
Permission list	Identifies which users or role have explicit access permission to the indicator. See "Permissions" on page 39 for a complete discussion of permissions.
Associated dashboards	Dashboards that present metrics related to the object. See "Associated Dashboards" on page 43 for details.
Scale angle	(Speedometers only) Angle of the arc of the indicator's display. See "Scale Angle" below for examples.
Intervals	(Speedometers and thermometers only) Count of major steps in the scale. Intervals include a numeric value describing the value of the step on the scale. See "Intervals and Marks" below for examples.
Marks	(Speedometers and thermometers only) Count of minor steps between interval steps on the scale. See "Intervals and Marks" below for examples.
Numeric prefix	Text to appear immediately before numbers on the indicator. Useful for currency notations. See "Numeric Prefixes and Suffixes" below for examples.
Numeric suffix	Text to appear immediately after numbers on the indicator. Useful for currency notations. See "Numeric Prefixes and Suffixes" below for examples.
Range labels	(Speedometers and thermometers only) Text describing the lower and upper range limits. Omit the labels to display the numeric values of the limits. See "Range Labels" below for examples.
Range limits	(Speedometers and thermometers only) Upper and lower range limits of the scale. See "Range Limits" below for examples.

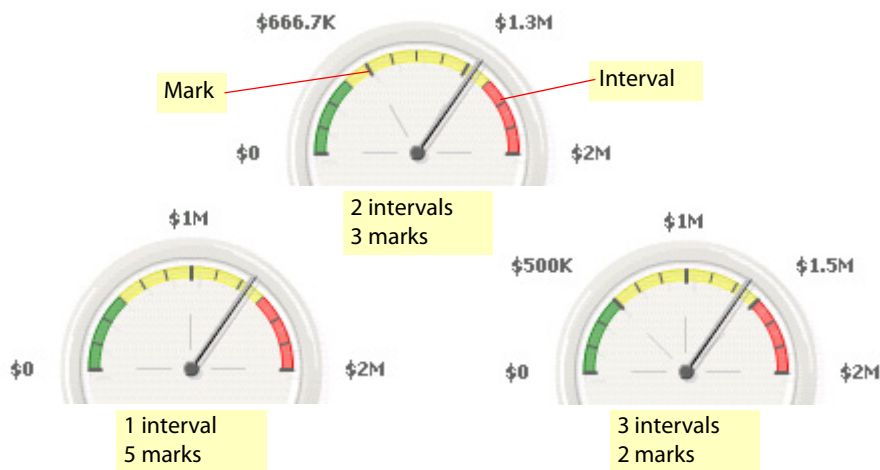
Scale Angle

(For speedometers only.) The scale angle defines the angle of the arc of the indicator's display. The options are 90, 180, and 270 degrees of arc.



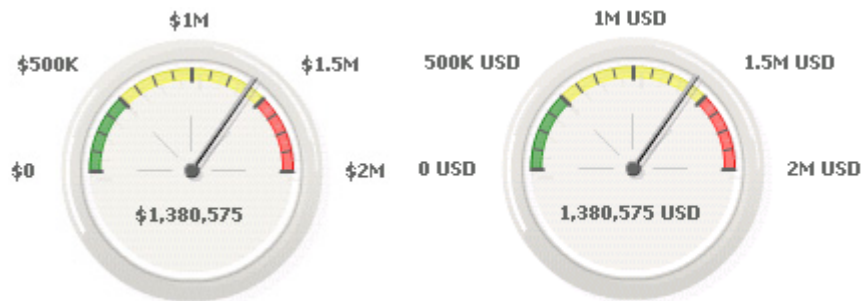
Intervals and Marks

(For speedometers and thermometers only.) Interval and marks are the notches that reveal steps in the scale. An interval is a bold notch that includes a the numeric value of the step, while a mark is a small notch showing the small steps between the intervals.



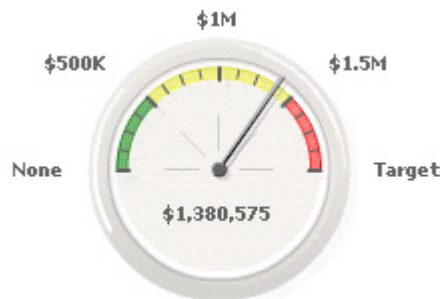
Numeric Prefixes and Suffixes

The prefix and suffix for numbers are text labels to place before or after the numbers on the indicator. The illustration below shows a one indicator with a dollar sign (\$) for a prefix, and another indicator with " USD" as the suffix.



Range Labels

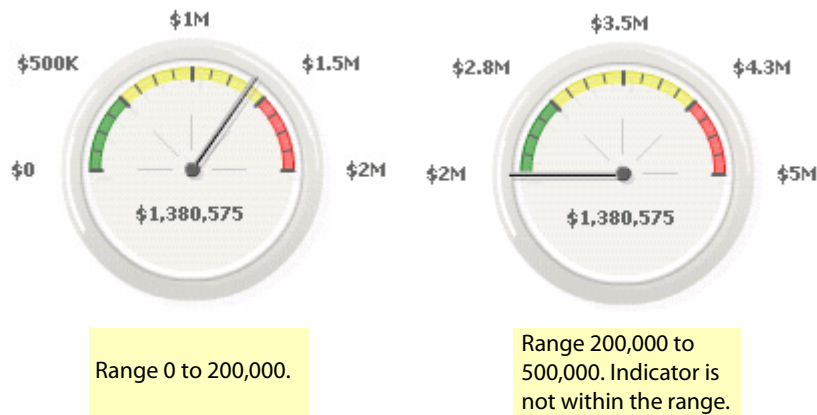
(For speedometers and thermometers only.) Assigns labels to replace the numbers for the lower and upper range limits. By default, the indicator shows the numbers of the range limits. These options replace the numbers with the text you specify. The illustration shown below uses "None" as the minimum label and "Target" as the maximum



Range Limits

(For speedometers and thermometers only.) Sets the lower and upper limits for the range of the scale. By default, the indicator uses zero (0) and one (1) as the lower and upper limits.

Note: When you have defined both a reference and a defined limit, the scale adjusts to accommodate the reference. When the value to indicate is outside the range, the indicator appears on the limit. The display value, however, shows the actual number.



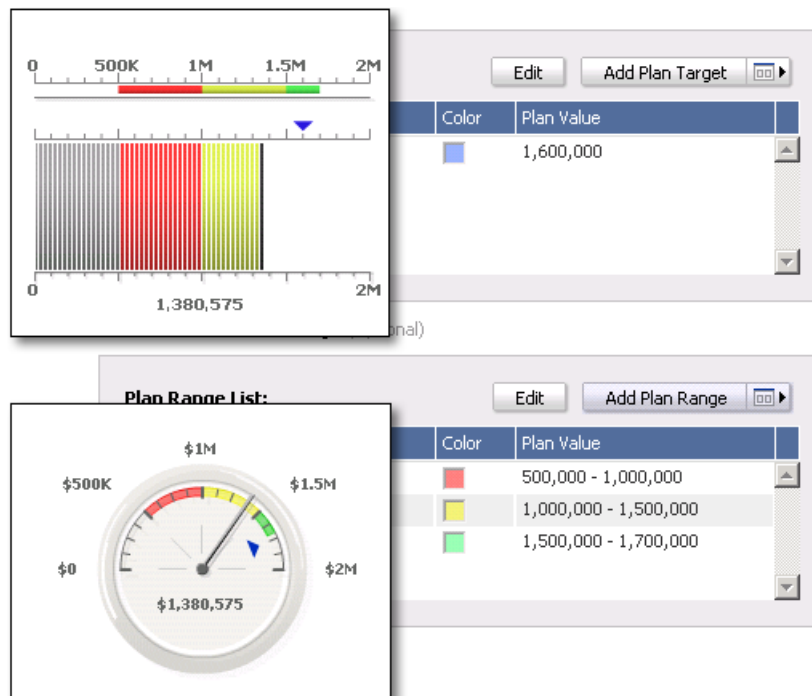
Indicator Plans

Plans are visual elements that allow you to quickly see where the presented value is in relation to some “target” or range of values. On indicators, plans have these appearances:

Indicator	Plan Targets	Plan Ranges
Speedometers and thermometers	Marks in the scale.	Filled areas between upper- and lower-limits, or to the extent of the scale.
Traffic light	Turn on the associated lamp when the data value <i>exactly</i> matches the target.	Turn on the associated lamp when its data value is <i>within</i> the range, inclusive.

Define indicator plans in Step Five: Create Plans of the indicator’s editor. See [“Plans” on page 120](#) for a detailed discussion about plans and their behaviors.

These two indicators have the plan target and plan range definitions:



Creating an Indicator

To create an indicator you must have create permission for Dashboard Objects and Read access permission on the view or cube that will be the source data for the indicator.

► **To create an indicator:**

1. Open the Dashboard Objects navigation tree and select the **Dashboard Objects** folder, click **Create Object**, and select "Create Dashboard Object."

2. Select a data source:

- Select a view or cube that contains the data this indicator will report on.
- Click **Continue**.

Note: You can see the data currently in the source by clicking the preview button to the right side of view's description.

3. Select **Indicator** as the display type for the object, selecting **Speedometer**, **Thermometer**, or **Traffic Light** as the sub-type.

4. Click **Continue**.

5. Select the column from the view that contains the data value to chart, and click **Continue**

6. Assign a name and optional description.

7. Optionally, using Advanced Mode, you can define the following:

- Associations: Associations refer to dashboards that contain related metrics. See [“Associated Dashboards” on page 43](#) for details.
 - Permissions: Permissions determine who can see the indicator and to what extent they can access it. See [“Permissions” on page 39](#) for details.
 - Properties: Properties determine the appearance of the indicator. See [“Indicator Properties” on page 103](#) for details.
8. Optionally, select **Create Plan** to define plans to control the appearance of the indicator. See [“Indicator Plans” on page 106](#) for examples.
 9. Click **Save** to save the indicator.

The indicator is immediately available for use in dashboards.

This chapter describes tables, which are used to display the contents of a business view or a the dimension level of a cube.

► **In this Chapter:**

- [“About Tables” on page 110](#)
- [“Table Properties” on page 110](#)
- [“Table Custom Properties \(Advanced Mode\)” on page 110](#)
- [“Working with Tables” on page 111](#)
- [“Creating a Basic Table” on page 113](#)
- [“Creating a Pivot Table” on page 115](#)
- [“Exporting Tables” on page 116](#)

About Tables

A table shows the contents of a business view or cube dimension level. As data in the view or cube changes, the table updates to reflect the new values.

For views, the table shows each row of the current view. By default, a view shows only the rows associated with the most recent event. However, you can change the count of events to maintain in the view's definition in BAM Workbench.

For cubes, the table shows one row for each category (element in the current dimension level) as defined in the cube. For details about working with tables based on cubes, see ["Cube Tables" on page 111](#).

When you create a table, you first identify the underlying business view, and then select which columns from the table to include in the display.

Table Properties

Property	Description
Name	Identifies the table. The name must be unique among all Dashboard Objects.
Folder	Creates a subfolder underneath the All Objects folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that may contain any text characters. This description appears at the top of the Object Details page when users view the details.
Display type	Always Table for this object type.
Display sub-type	Always Basic Table for this type of object.
Permission list	Identifies which users or role have explicit access permission to the table. See "Permissions" on page 39 for a complete discussion of permissions.
Associate dashboards	Dashboards that present metrics related to the object. See "Associated Dashboards" on page 43 for details.

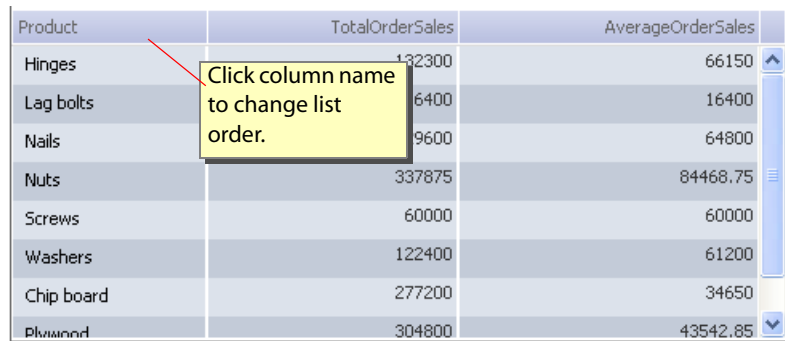
Table Custom Properties (Advanced Mode)

Tables have the following custom properties:

Property	Description
Permission list	Identifies which users or roles have explicit access permission to the table. See "Permissions" on page 39 for a complete discussion of permissions.
Associated dashboards	Dashboards that present metrics related to the object. See "Associated Dashboards" on page 43 for details.
Column arrangement	The order that the columns appear in the table. By default, the order is the same as the data source.

Working with Tables

When viewing a table, you can change the order of the items in the list by clicking the column heading. Further, if you have permission to create Dashboard Objects, you can copy the table with the **Save As** button. If you have Read-Write permission on the table, you can alter it with the **Edit Object** button.

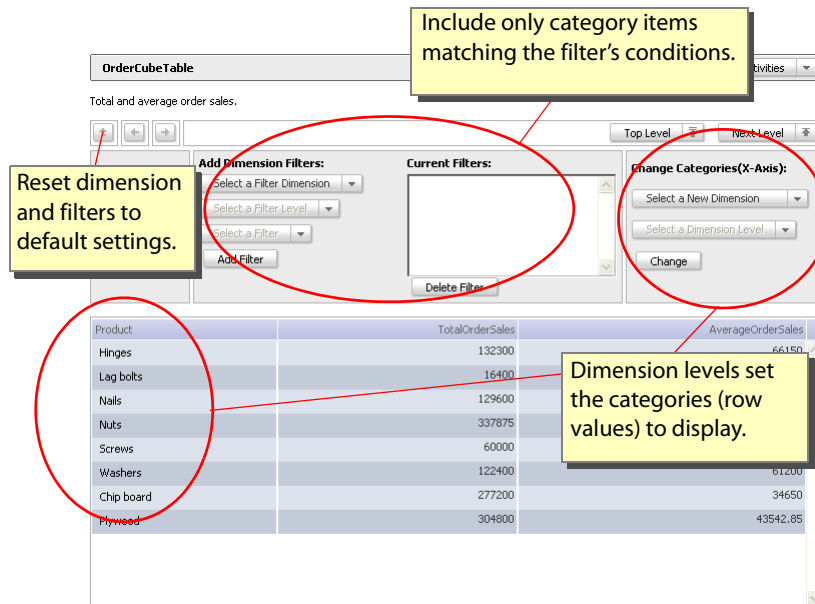


Click column name to change list order.

Product	TotalOrderSales	AverageOrderSales
Hinges	132300	66150
Lag bolts	16400	16400
Nails	9600	64800
Nuts	337875	84468.75
Screws	60000	60000
Washers	122400	61200
Chip board	277200	34650
Plywood	304800	43542.85

Cube Tables

When viewing a table of a cube, additional controls allow you to select the dimensions and levels to present. Filter controls permit you to limit the set of items presented. (If you are creating a pivot table, you must use a cube.)



Include only category items matching the filter's conditions.

Reset dimension and filters to default settings.

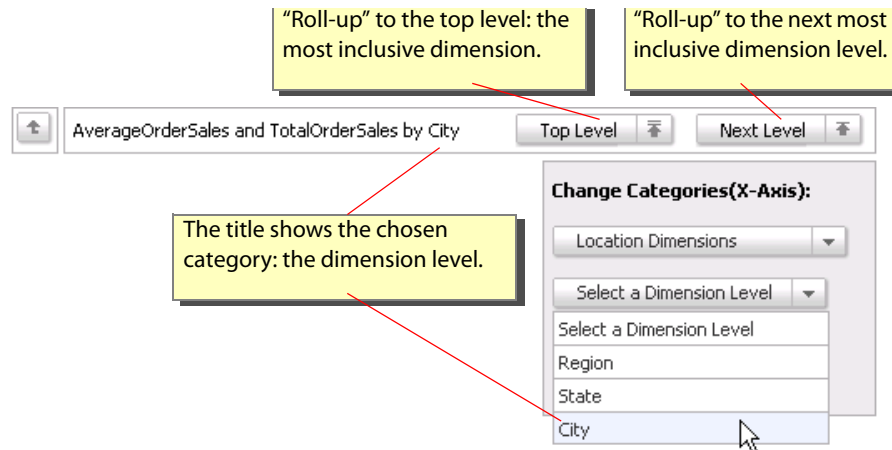
Dimension levels set the categories (row values) to display.

Change Categories(X-Axis):

Product	TotalOrderSales	AverageOrderSales
Hinges	132300	66150
Lag bolts	16400	16400
Nails	129600	64800
Nuts	337875	84468.75
Screws	60000	60000
Washers	122400	61200
Chip board	277200	34650
Plywood	304800	43542.85

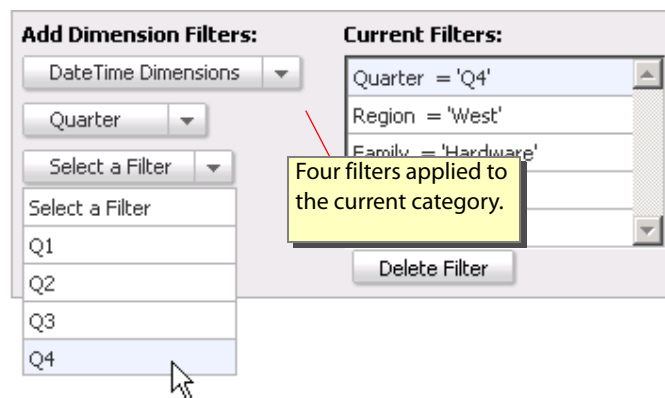
Category Controls

Categories are the general values to report on. They are determined by the selected dimension level. When you create a dashboard table, you select the dimension level to display as the default category. See [“Creating a Basic Table” on page 113](#) for more details.



Filter Controls

Filters further limit the categories by showing only the result for items matching the filter conditions. For example, the filters in the illustration shown below limit the results to those that occurred during the fourth fiscal quarter, in the West business region, and for Hardware and Lumber products only:



Creating a Basic Table

Before you can create a table, you must have Create permission for Dashboard Objects as well as Read-Only permission for the view or cube that you want to chart.

► **To create a basic table:**

1. Open the **Dashboard Objects** navigation tree and select the **Dashboard Objects** folder.
2. Click **Create Object** and select "Create Dashboard Object."
3. Select a data source:
Select a view or cube that contains the data this table will report on.

Note: You can see the data currently in the source by clicking the preview button to the right view or cube's description.

4. Click **Continue**.
5. Click on the **Select a display type...** button and specify **Table** for the object.
6. Click on the **Select a display sub-type...** button and specify **Basic Table**.
7. Click **Continue** at the bottom of the page.
The "Step Three: Select Data for your Table" page displays.

8. Select the columns to include in the table.
9. For cubes, do the following:
 - Select the dimension and level to use for the categories (rows).
There will be one row for each element in the level.

Select a single item for your table category column:

Name	Description	Level
<input checked="" type="radio"/> Product	Product Dimensions.	Product
<input type="radio"/> Location	Location (region) dimensions.	Location
<input type="radio"/> DateTime Dimensions	DateTime Dimensions.	DateTime

Select a default level for your table category column: Product

Product	TotalOrderSales	AverageOrderSales
Hinges	132300	66150
Lag bolts	400	16400
Nails	129600	64800
Nuts	337875	84468.75
Screws	60000	60000
Washers	122400	61200
Chip board	277200	34650
plywood	304800	43542.85

- Optionally select any default filters. See [“Filter Controls” on page 112](#) for more information.

Note: References and plans are not available to tables at this time.

10. Click **Continue**.
11. Assign a name and optional description for the table.
12. Optionally define the following properties using Advanced Mode:
 - Associations: Dashboards that contain related metrics. See [“Associated Dashboards” on page 43](#) for details.
 - Permissions: Specifies who can see the table and with what permission they can access it. See [“Permissions” on page 39](#) for details.
13. Optionally, click **Customize Column** to define the order that the columns appear in the table and to declare the width to use when showing the table in thumbnail view on a dashboard.
14. Save the table.

The table is immediately available for use in dashboards.

Creating a Pivot Table

Before you can create a table, you must have Create permission for Dashboard Objects as well as Read-Only permission for the cube that you want to chart.

Note: For pivot tables, you must use a cube as a data source.

► **To create a pivot table:**

1. Open the **Dashboard Objects** navigation tree and select the **Dashboard Objects** folder.
2. Click **Create Object** and select "Create Dashboard Object."
3. Select a cube as a data source.

Note: You can see the data currently in the source by clicking the preview button to the right view or cube's description.

4. Click **Continue**.
5. Click on the **Select a display type...** button and specify **Table** for the object.
6. Click on the **Select a display sub-type...** button and specify **Pivot Table**.
7. Click **Continue** at the bottom of the page.

The "Step Three: Select Data for your Table" page displays.

8. Complete the following three settings:
 - Select an item for the table values, which displays as the measure.
 - Select the horizontal dimension.
 - Select the vertical dimension.

Note: You must select different dimensions for the vertical and horizontal dimensions.

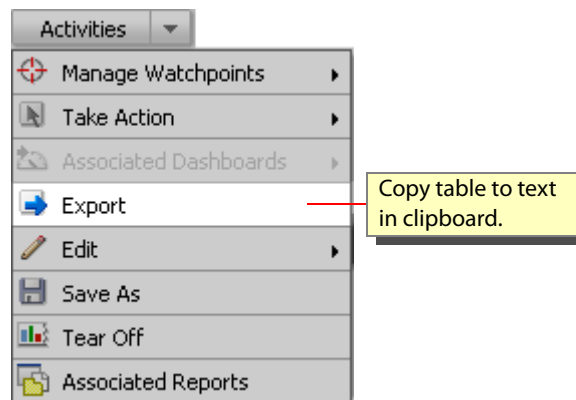
Quarter	Q1	Q1	Summary
Ohio	182825		182825
Texas	87200	16400	103600
New York	45600	62100	107700
California	112000	360750	472750
Nevada	331800	181900	513700
State			
Summary	759425	621150	1380575

9. Optionally select any default filters.
See [“Filter Controls” on page 112](#) for more information.
10. Click **Continue**.
11. Assign a name and optional description for the table.
12. Optionally, select Advanced Mode to access and define the following properties:
 - Associations: Dashboards that contain related metrics. See [“Associated Dashboards” on page 43](#) for details.
 - Permissions: Specifies who can see the table and with what permission they can access it. See [“Permissions” on page 39](#) for details.
13. Optionally, click **Customize Column** to define order that the columns appear in the table, and to declare the width to use when showing the table in thumbnail view on a dashboard.
14. Save the table.

The table is immediately available for use in dashboards.

Exporting Tables

When viewing a table, the **Activities** menu includes an **Export** option to copy the values in the table to the Microsoft Windows clipboard as tab-separated text.



9

External Portlets

External portlets are objects external to Business Activity Monitoring. In BAM Dashboard, you can provide a link to these objects so that they can be displayed in your dashboards.

► **In this Chapter:**

- [“External Portlet Properties” on page 118](#)
- [“Custom External Portlet Properties \(Advanced Mode\)” on page 118](#)
- [“Creating an External Portlet” on page 118](#)

External Portlet Properties

External portlets have the following object properties:

Property	Description
Name	Identifies the external portlet. The name must be unique among all Dashboard Objects.
Folder	Creates a subfolder underneath the All Objects folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that may contain any text characters. This description appears at the top of the Object Details page when users view the details.
External Portlet URL	URL that specifies the location of the external portlet you want to access from BAM Dashboard. Note: In some cases, the location specified by the URL may occupy the entire frame of your browser. This depends on the scripts that the location might be running.
Single sign-on	Passes dashboard log-in information to the external portlet for single sign-on.

Custom External Portlet Properties (Advanced Mode)

External portlets have the following custom properties:

Property	Description
Permission list	Identifies which users or role have explicit access permission to the external portlet. See "Permissions" on page 39 for a complete discussion of permissions.
Associated dashboards	Dashboards that present metrics related to the object. See "Associated Dashboards" on page 43 for details.

Creating an External Portlet

To create an external portlet you must have create permission for Dashboard Objects.

► **To create an external portlet:**

1. Open the Dashboard Objects navigation tree and select the **Dashboard Objects** folder, click **Create Object**, and select "Create External Portlet."
2. Assign a name and optional description.
3. Enter the URL for the external portlet.
4. Optionally, check "Pass my credential for single sign-on" to pass log-in information to the external portlet.
5. Optionally, using Advanced Mode, you can define the following:

- Permissions: Permissions determine who can see the indicator and to what extent they can access it. See [“Permissions” on page 39](#) for details.
- Associations: Associations refer to dashboards that contain related metrics. See [“Associated Dashboards” on page 43](#) for details.

6. Click **Save** to save the external portlet.

The external portlet is immediately available for use in dashboards.

Note: External portlets do not refresh automatically. They refresh each time a dashboard object is requested.

10 Plans

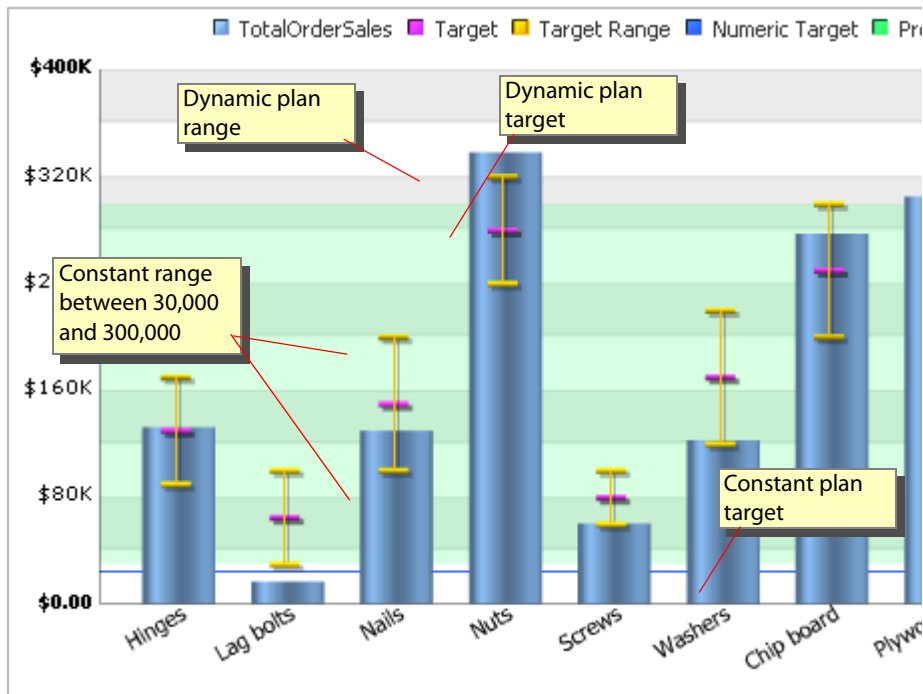
This chapter describes plans, which are visual elements and indicators on charts.

► **In this Chapter:**

- [“About Plans” on page 121](#)
- [“Plan Values” on page 121](#)
- [“Dynamic Plan Values” on page 122](#)
- [“Creating Plans” on page 123](#)

About Plans

Plans are visual elements on charts and indicators that allow you to quickly see where the presented value is in relation to some target or range of values. For example, this bar chart shows dynamic plan lines and ranges for each bar, and shows a target line and a target range, each applying to the entire chart.



Note: Plans are not available for all dashboard object types. For tables, consider using watchpoints. See [“Watchpoints” on page 151](#) for details.

Plan Values

Plan values are numbers that are either the same (constant) for all categories on the chart or dynamic (data driven) to the categories being presented:

- Constants

A constant plan value is the same for all presentations, regardless of the values of the category items. For example, on a grid chart a constant region or line appears behind the bars and applies to the entire chart.

- Dynamic

A dynamic value is specific to the category item being presented, and the value is retrieved from a data source when the item is drawn. To use a dynamic value, you first must have *plan relationships* associated with the source cube or view in BAM Workbench. See the [“Dynamic Plan Values” on page 122](#) for details about creating plan relationships.

The following table summarizes the differences between the two types of values.

Object	Constant value	Referenced value
Grid charts	All lines appear on the same horizontal level of the chart's Y-axis. When used in a range, the value is the top or bottom of a range.	Line-segment locations adjust to positions specified in the plan values.
Speedometers/ Thermometers	The line or range appears at a fixed location on the scale.	The location adjusts to the position specified in the plan value.
Traffic Lights	Lights the associated traffic lamp when the value exactly matches the plan.	Lights the associated traffic lamp when the value is within the plan range.

Note: If a plan value falls outside the defined minimum and maximum scale for the chart or indicator, the plan does not appear on the presentation. For example, if a chart maximum scale limit is 100, but a plan target for the chart is 110, the chart does not display the target.

Dynamic Plan Values

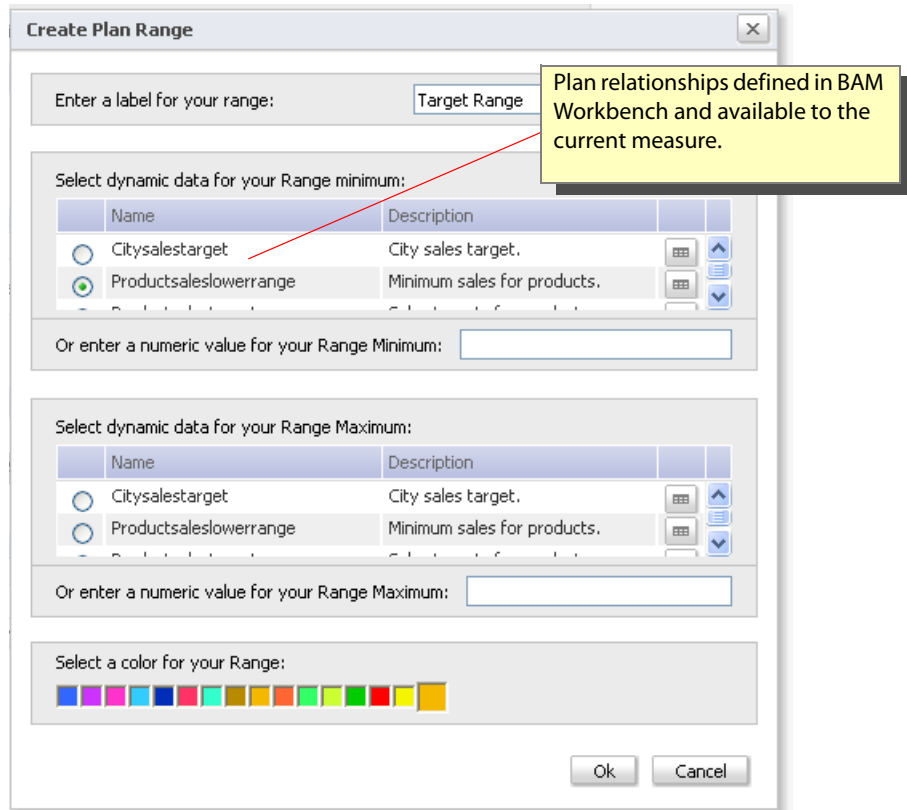
Dynamic values allow plans to be specific to the category item being presented, unlike constant values which are applied to the entire set of category items. When the dashboard draws the chart or indicator it retrieves the value of each item to display. Further, when the item has an associated dynamic plan, the plan value is retrieved and presented as well.

For example, when charting the total sales for a set of products, you can also show the sales targets for each product as a plan target. When the dashboard draws the chart, the plan values for each product are presented as well.

Note: To use a dynamic value, you first must have a *plan relationship* associated with the measure to chart. Associate plan relationships with measures to chart by creating them in the source cube or view in BAM Workbench. See "[Getting Started](#)" in for details about creating relationships. Specifically, for view sources, see "[Viewing Plan Relationships](#)" and for cube sources, see "[Cube Plan Relationships](#)."

When you create a dashboard object, you select the data source (the view or cube) and select the data to present, such as the values to chart. If the values to chart have associated plan data, those plans appear in

the Edit Plans page of the object editor. To include a data driven plan, create a plan target or range and select the plan from the dynamic data list.



Creating Plans

This section shows you how to create plans in the BAM Dashboard. Before creating a plan, you must have the following permissions:

- Read and Edit permission for the Dashboard Object
- Read access permission on the view or cube that will be the source data for the indicator

Optionally, to create a dynamic plan, you need an existing plan relationship defined with the source view or cube. For more information, see [“Dynamic Plan Values” on page 122](#).

► To create a plan:

1. Open the plan editor for the object.
 - When creating or editing the object, go to **Step Five: Create Plans**.
 - When viewing the object, select **Activities > Edit > Edit Plan**.
 - When viewing the object name in the Dashboard Objects list, select the object and select **Edit Object > Edit Plan**.
2. Select either **Add A Plan Target** or **Add A Plan Range**.
3. Assign a label that identifies the plan within the object.

4. Identify the plan data:
 - For constant values, enter the numeric value.
 - For dynamic values, select from the list.
 - For ranges, you must specify both the minimum and maximum values.

5. Select the color for the plan on the object's presentation.

Note: For traffic lights, the three colors correspond to the lamps in the light: red, yellow, or green.

6. Save the plan, and optionally create additional plans for the object.

7. Save the Create Plans changes.

The plan is immediately applied to the object.

Dashboard reports present a series of related data values. They help you to quickly see comparisons, patterns, and trends in data. Dashboard reports, like charts, retrieve the metrics from an underlying business view, where the report data is in one or more columns in the view, and each row is an element of the report series.

► **In this Chapter:**

- [“Report Properties” on page 126](#)
- [“Table custom properties \(Advanced Mode\)” on page 126](#)
- [“Creating a Report” on page 128](#)

About Reports

A reports shows the contents of a business view or cube dimension level.

For views, the reports shows each row of the current view. By default, a view shows only the rows associated with the most recent event. However, you can change the count of events to maintain in the view's definition in BAM Workbench. When you create a report, you first identify the underlying business view, and select items for your report values and a category for your report.

For cubes, the report shows the rows for a selected category (element in the current dimension level), as defined in the cube. You can also specify the levels in the category that you want displayed in the report. Interactiver reports allow you to expand and collapse the levels.

Note: When selecting levels for your report, make sure to select a level lower than the default category. If you select a level that is higher than the default, the higher level is used as the top level in the report.

Report Properties

Reports have the following object properties:

Property	Description
Name	Identifies the table. The name can contain letters and numerals only. The name must be unique among all Dashboard Objects.
Folder	Creates a subfolder underneath the All Objects folder in the Navigation Tree. For more information, see "Using Folders" on page 57 .
Description	Optional description that may contain any text characters. This description appears at the top of the Object Details page when users view the details.
Template	Always Classic for this object type.
Report Header	Title that is displayed at the top of the report.

Table custom properties (Advanced Mode)

Tables have the following custom properties:

Property	Description
Permission List	Identifies which users or roles have explicit access permission to the table. See "Permissions" on page 39 for a complete discussion of permissions.
Associated dashboards	Dashboards that present metrics related to the object. See "Associated Dashboards" on page 43 for details.
Interactive	Allows you to expand and collapse sections of the table.

Property	Description
Logo	Adds a graphic to the report header. Must be a .gif, .jpg, or .png file. The maximum size is 200 pixels wide by 80 pixels high. (A size larger than 200 by 80 will be truncated.)
Data timestamp	Includes a timestamp in the report header. The timestamp is the current date and time.

Creating a Report

Using the same data sources upon which charts are based, you can also create reports.

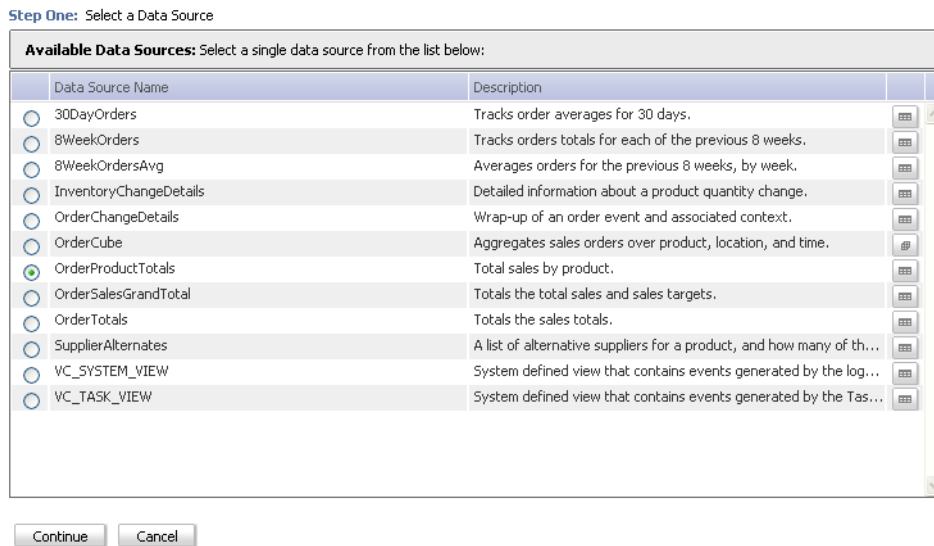
► **To create a report:**

1. Open the Reports navigation tree and click **Reports**.

The main panel lists any existing reports.

2. Click **Create Report**.

The Step One screen displays, listing the available view and cube data sources.



3. Select the view or cube that contains the data this chart will report on, and click **Continue**.

The Step Two screen displays.

4. Select a template for the report from the dropdown list.

An example of how the report will look is shown below the dropdown list.

5. Click **Continue**.

The Step Three screen displays. This screen displays the data options available in the selected data source and will vary depending on the type of data source selected (view or cube):

- **View data source**— A view data source provides the data you for the report. The report values are the columns from the view that you want to include in the report. The report category is the column from the view that you want to use as the focus of the report. The data for the report category will be displayed in the left-most column of the report.

Step Three: Select Data for your Report

Select one or more items for your report values:

Name	Description		
<input checked="" type="checkbox"/> Sales			↑
<input checked="" type="checkbox"/> Qty			↑
<input checked="" type="checkbox"/> Target			↑
<input type="checkbox"/> Target min			↓

Select a single item for your report category:

Name	Description		
<input type="radio"/> Family			↑
<input checked="" type="radio"/> Product			↑
<input type="radio"/> Sales			↑
<input type="radio"/> Qty			↓

Back Continue Cancel

- Cube data source— A cube data source enables you to select multiple levels for the report, in addition to columns and categories. If no levels of the cube are chosen, then each level of the cube will be shown starting at the target level, rolling up to the top level. If levels are chosen, only those levels, including the default level, will be displayed as a separate region in the report. If you choose levels for your report, you should choose a level that is lower than the default level for the category. Also, if you choose only one level, the report will display the levels between the category and the lowest level you selected. For example, if your category column is “region” and levels within the

category are region, state, and city and you select state, the report will display rows for region and state, but city will not be included in the report.

Step Three: Select Data for your Report

Select one or more items for your report values:

Name	Description	
<input checked="" type="checkbox"/> TotalOrderSales		
<input type="checkbox"/> AverageOrderSales		

Select a single item for your report category:

Name	Description	
<input type="radio"/> Product Dimensions	Product Dimensions.	
<input checked="" type="radio"/> Location Dimensions	Location (region) dimensions.	
<input type="radio"/> DateTime Dimensions	DateTime Dimensions.	

Select a default level for your category column: Region

Select the levels you want for your report. (Optional)

Level
<input type="checkbox"/> Region
<input checked="" type="checkbox"/> State
<input type="checkbox"/> City

Select default dimension filters: (Optional)

Select a Filter Dimension

Select a Filter Level

Select a Filter

Add Filter

Default Dimension Filters:

Delete Filter

Back Continue Cancel

6. Click **Continue**.

The Step Four screen displays, providing input fields where you can specify the report name and create a header that will display on the report.

7. For additional options, select **Advanced Mode**.

Additional options include:

- Interactivity: Would you like to be able to expand and collapse sections
- Logo: You can upload a small custom logo (approximately 200 by 100 pixels) into the report suitable for printing,
- Timestamp: You may display the date and time the report was generated in the header of the report.

Would you like to make this report interactive? Yes No

Would you like to insert a logo into this report? Yes No

Would you like to include a data timestamp in this report Yes No

- Enter the name and header information as desired and click **Save**. You can also optionally store the report in a folder by clicking the Choose Folder... button.

The completed report displays, and like other dashboard objects, can now be included as part of any dashboard. To make any changes, use the appropriate commands in the **Activities** dropdown menu.

Sales Report by Location		
Average and previous sales amounts		
August 15, 2006 7:13:12 PM		
STORE_COUNTRY	AVG AMT	PREV AMT
[-] Canada		
STORE_STATE	AVG AMT	PREV AMT
[-] BC		
STORE_CITY	AVG AMT	PREV AMT
Vancouver	9420.00	28260.00
Victoria	21920.00	28260.00
Summary	15670.00	28260.00
Summary	15670.00	28260.00
+ Mexico	13594.88	7065.00
[-] USA		
STORE_STATE	AVG AMT	PREV AMT
[-] CA		
STORE_CITY	AVG AMT	PREV AMT
Alameda	7536.00	
Beverly Hills	12400.00	40455.00
Los Angeles	12400.00	40455.00
San Francisco	8680.00	7065.00
Summary	11255.36	7065.00
[-] OR		
STORE_CITY	AVG AMT	PREV AMT
Portland	18542.80	7065.00
Salem	17240.00	28260.00
Summary	18152.00	7065.00
[-] WA		
STORE_CITY	AVG AMT	PREV AMT
Bellingham	10961.60	21195.00
Bremerton	10961.60	21195.00
Seattle	15072.00	
Spokane	8680.00	7065.00
Tacoma	15072.00	
Summary	11053.28	
Summary	12946.00	7065.00
Summary	13421.36	28260.00

12

Process Diagrams

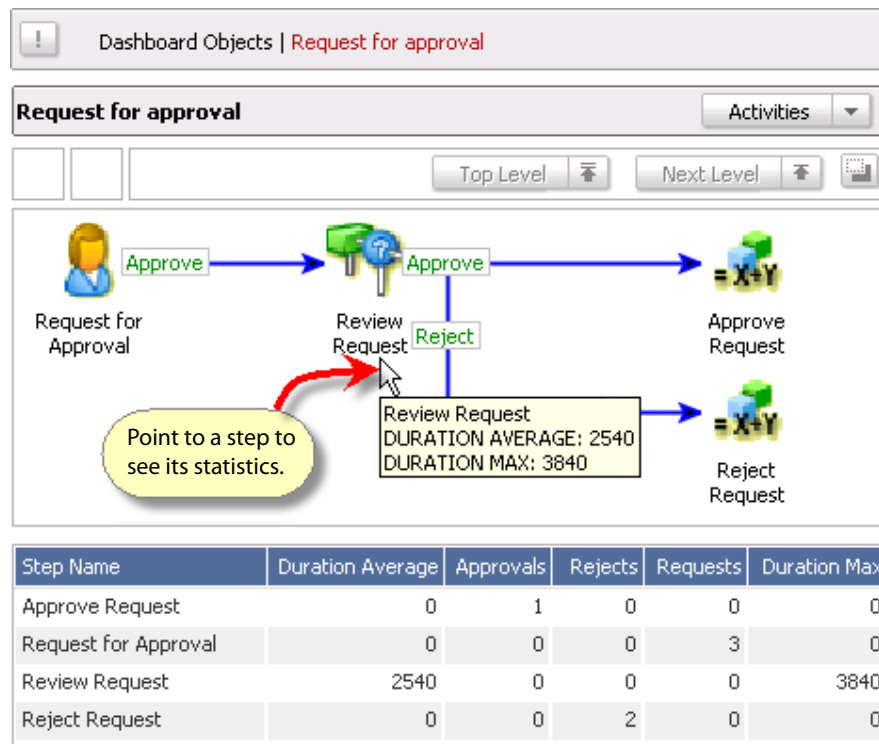
This chapter describes process diagrams that show steps or action that accomplish a task.

► **In this Chapter:**

- [“About Process Diagrams” on page 133](#)
- [“Creating a Process Diagram” on page 134](#)
- [“Querying a Process Status” on page 134](#)

About Process Diagrams

Process diagrams graphically show the steps or actions that accomplish a task, such as in the diagram below that shows a four-step process for making an approval request. Below each diagram is a table of statistics about each step in the process. You can also view the statistics for a specific task by pointing to it in the diagram.



A real transaction through a process is called a *process instance*, such as a specific request for approval. To query the status of a specific process instance, see [“Querying a Process Status” on page 134](#).

Note: For a complete discussion about processes and how they work in Business Activity Monitoring, see “Processes” in the *.Business Activity Monitoring Server Reference*.

Creating a Process Diagram

You create process diagrams for Business Activity Monitoring in the Process Diagram Manager.

The following prerequisites apply:

- Process definitions must already be defined in BAM Workbench. A process definition tells BAM Dashboard what steps to diagram and associates the diagram with the source view or cube that provides the process statistics.
- You need at least Read permission on the view or cube that determines the process instance statistics.

► **To create a process diagram:**

1. Open the Process Diagram Manager and click **Create Diagram**.
2. Select the process definition to use.
3. Identify the columns from the source view or column to include in the statistics table and in the individual step-statistics in the diagram.
4. Name the diagram, and optionally, provide a description.
5. Save the process diagram.

The new diagram immediately appears, and the statistics update as process instance details arrive in the system.

Querying a Process Status

When enabled, you can query the status of a specific process instance.

► **To query the status of a specific process instance:**

1. At the top of the process diagram detail view, click **Activities**
2. From the pop-up menu, select **Search for Process Instance**.

13 Business Rules

This chapter describes business rules for monitoring events and producing messages that describe alert conditions.

► **In this Chapter:**

- [“About Business Rules” on page 136](#)
- [“Creating a Business Rule” on page 137](#)

About Business Rules

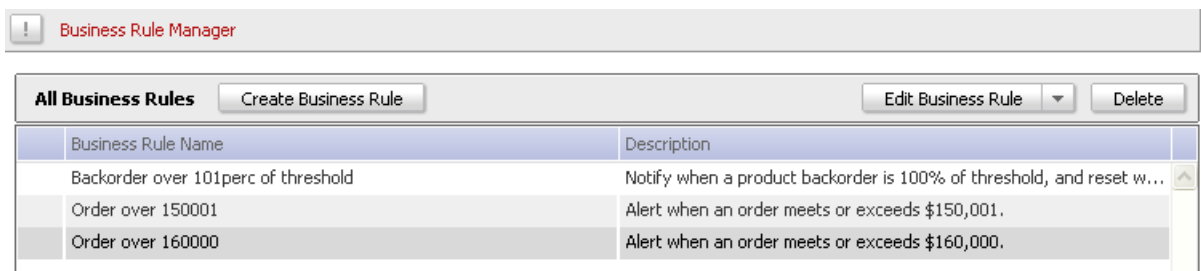
Business rules monitor events looking for exceptional business conditions and produce [alert messages](#) that describe the conditions when they exist. Further, rules can monitor a found condition and identify when it no longer exists.

In BAM Dashboard, you can create business rules from templates that predefine conditional logic. You pick the rule condition and identify the values to test. The system notifies you whenever the condition is met. For example, with the rule *“When order total is greater than [amount]”* you identify the value of *amount*, then receive notifications every time an order is larger than the amount you chose.

This section covers creating business rules from templates and managing the rules in BAM Dashboard. Business rules templates are created in BAM Workbench. For details, see the section [“Working with Rule Templates”](#) in the guide *Using Business Activity Monitoring Workbench*.

Note: Business Activity Monitoring supports another kind of business rule: rules defined and managed entirely by the Scenario Modeler in BAM Workbench. For details, see [“Working with Rules and Alerts”](#) in *Using Business Activity Monitoring Workbench*.

The Business Rules Manager lists the rules available to you, and is where you create, manage, and delete them.



The screenshot shows the Business Rule Manager interface. At the top, there is a title bar with a warning icon and the text "Business Rule Manager". Below this is a header section with "All Business Rules" on the left, a "Create Business Rule" button in the center, and "Edit Business Rule" (with a dropdown arrow) and "Delete" buttons on the right. The main area contains a table with two columns: "Business Rule Name" and "Description".

Business Rule Name	Description
Backorder over 101perc of threshold	Notify when a product backorder is 100% of threshold, and reset w...
Order over 150001	Alert when an order meets or exceeds \$150,001.
Order over 160000	Alert when an order meets or exceeds \$160,000.

Deleting a business rule does not affect alert messages in the Alert Manager. Any messages in the Alert Manager generated from a business rule remain in the Alert Manager until removed.

Creating a Business Rule

You create business rules in the Business Rules Manager.

You need at least Read permission to the business activity in the Scenario Modeler where the rule template is defined.

► **To create a template-based rule:**

1. Open the Business Rule Manager and click **Create Business Rule**.
2. Select the rule template to use.
3. Identify the parameter values for the rule.
4. Name the rule, and optionally provide a description.
5. Save the new rule.

The new rule appears in the Business Rule Manager, and the new rule immediately starts looking for new exceptional conditions.

Note: Business rules are based on the definition of the rule-template at the time of creation. Any subsequent changes to the template (including its alert message or reportlet) do not affect the existing business rules created from that template.

14

Alert Messages

Alert messages are notifications of exceptional events in your business' activities. They can be a simple message indicating that an event has occurred, or they can be detailed with contextual information that describes why the event happened or provide options for responding to the exception.

► **In this Chapter:**

- ["Interacting with Alerts" on page 139](#)
- ["Alert Messages List" on page 140](#)
- ["Viewing Notification Details" on page 142](#)
- ["Setting Notification Properties" on page 143](#)

Interacting with Alerts

BAM Dashboard provides two places for interacting with alerts:

- Every dashboard can list the alert notifications that you have received. Hide or open the list by clicking the alert list icon. When the list is open, double-click a notification to read its message in a new window.

You can specify whether to show or hide the list by default when you log in with your Account Settings. See [“Account Settings” on page 37](#) for details.

- The Alert Message Manager lists and displays messages and is where you change your notification profiles and define each alert’s external delivery options. Click a notification in the navigation tree to list just the messages received for that alert, or click All Alerts to list all of the messages that you have received.

The screenshot displays the Alert Message Manager interface. A yellow callout box points to the 'Alert Activated' column in the alert list, stating: 'The Alert Message Manager shows the message of the selected alert.' Another yellow callout box points to the 'Alert Activated' column header, stating: 'Hides alerts on this dashboard.' The alert list contains the following data:

Subject	Severity	Alert Activated
Another large order for Chip board	Normal	08/02/2004 11:36:30
Order for Chip board exceeds 30 day a...	Low	08/02/2004 11:36:28
Received a large order for Plywood	High	08/02/2004 11:36:27
Another large order for Plywood	Normal	08/02/2004 11:36:25

Below the alert list are two charts: 'TotalSalesTherm' and 'TotalOrdersBarChart'. The 'TotalSalesTherm' chart shows a horizontal bar chart with a scale from 0.00 to 2M. The 'TotalOrdersBarChart' shows a vertical bar chart with a scale from \$0.00 to \$400K, comparing Sales, Target, Goal Range, and Normal values.

When viewing a message, you can open a task to manage the exception, delete the message, and if available, acknowledge it. See [“Viewing Notification Details” on page 142](#) for information about how to respond to an alert notification.

Alert Messages List

The Alert Messages List on dashboards and on the Alert Message Manager shows the alert notifications that you have received. Unread messages appear in a **bold** face font. Icons in the first column identify the state and type of the alert as either raised, lowered, or fired. The last column indicates notifications that need to be or have been acknowledged.

As shown in the illustration below, there are three types of alerts messages:

- *Raised alert:* Indicates when a threshold is crossed. Subsequent alert messages will not be sent until this specific alert is reset or lowered.
- *Lowered alert:* Resets a raised alert condition that may or may not be the same threshold as the raised alert defined.
- *Fired alert:* Triggers when a threshold is crossed, and is automatically reset on each trigger. Thus if further conditions exist which continues to exceed the threshold condition, further alerts will be generated on each event update. Remove all references to "One-time." In Note, simply state "Fired alerts are always marked as acknowledged..."

Note: Fired alerts are always marked as acknowledged upon receipt. Also, the number of alert instances that are displayed is configurable, as described in the BAM Workbench documentation. The default is to display only the first 200 messages.

The screenshot shows a table titled "All Alerts" with columns for Subject, Severity, and Alert Activated. The table contains several rows of alert messages. Callouts provide additional information:

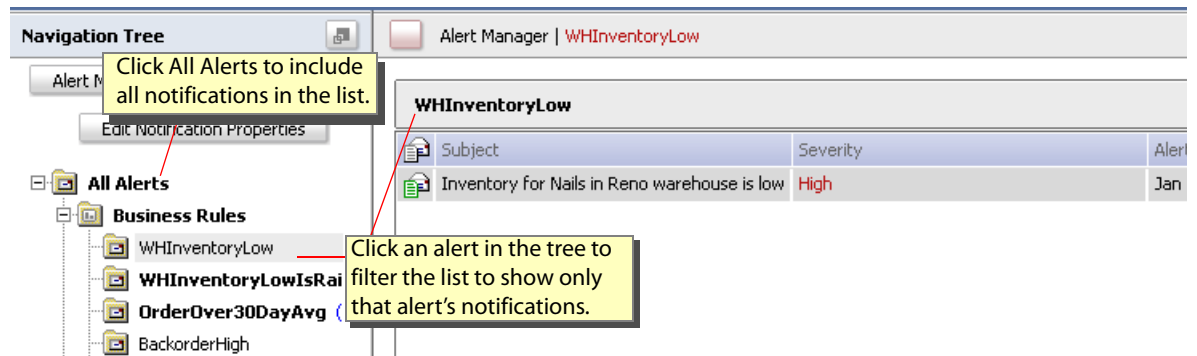
- Raised alert:** Points to a message with a raised alert icon.
- Lowered or fired alert (same icon):** Points to a message with a lowered/fired alert icon.
- Alert that tracks "for specific" category:** Points to a message with a specific category icon.
- Needs to be acknowledged:** Points to a checkmark icon in the right column.
- Permanently purge the message:** Points to a "Delete" button.

Subject	Severity	Alert Activated	
Board exceeds...	Low	Dec 20, 2006 2:52:30 PM	✓
Backorder high for Plywood exceeds thres...	Low	Dec 20, 2006 2:46:40 PM	
Backorder high for Washers exceeds...	Low	Dec 20, 2006 2:46:40 PM	
Chip board exce...	Low	Dec 20, 2006 2:46:40 PM	
Nuts exceeds thr...	Low	Dec 20, 2006 2:46:40 PM	
Low-Inventor...	Low	Dec 20, 2006 2:37:54 PM	✓
Low-Inventor...	Low	Dec 20, 2006 2:29:49 PM	✓
Inventory for Nails in Reno warehous...	Low	Dec 20, 2006 2:29:48 PM	✓

➤ **To respond to a raised alert, take one of the following actions:**

- Open the message and click the link in the message body.
- Select **Activities > Acknowledge** when viewing the notification.
- Click **Needs Acknowledgement** in the list.

In the Alert Message Manager, you can filter the list to show only the notifications that belong to a specific alert by clicking the alert in the navigation tree. Further, selecting a notification in the list displays its message below the list.



► **To display the notification details in a new window:**

- In either a dashboard or the Alert Message Manager, double-click the notification.

Viewing Notification Details

The notification details window displays the alert notification message and provides options for responding to the alert. From this window, you can:

- View the message when it is activated (or, for a lowered alert, when it was reset).
- Permanently delete the message.
- Assign a task to the message. Tasks allow you and another user to track and manage an event identified by an alert notification. See [“Tasks” on page 145](#) for details.
- Initiate a process by sending the message to an external Web service method for handling. See [“Initiating Processes” on page 44](#) for details.
- Acknowledge a message requiring acknowledgement. See [“Alert Messages List” on page 140](#) for details.

Subject: Inventory for Nails in Reno warehouse is low **Severity:** Low

Activities ▾

Inventory for **Nails** in the **Reno** warehouse is low as of **2003-12-01 13:10:00.0**.

The **Reno** warehouse has **800 Nails**, but minimum threshold is **2000**. Here are the suppliers for this product.

SUPPLIER	"QTY AVAILABLE"	PREFERRED
Steel Works	20000	Preferred
Acme Iron	100000	
Metals Are Us	1000	

Alert: WHInventoryLow
Rule: WHInventoryLow

Note: Deleting a message permanently removes it from your list. If you do not delete the message, the system will eventually purge it based on the limit of days defined by your system administrator. See *Viewing User Interface* in the Workbench documentation for details.

Setting Notification Properties

The Notification Properties page lists the business rules and alerts available to you, which of them you are currently subscribed to, and identifies where their notifications are sent.

Notification Properties

The following list contains all Notifications that are available to you.

Available Alerts and Business Rules			Edit Delivery Profiles
Notification Name	Description	Delivery Profiles	
Backorder over 101perc of threshold		Work e-mail	
BackorderHigh	Identifies a product whose backorder amou...	Dashboard Profile, Work e-mail, SystemDef...	
Low Inventory and Backordered Sales	Raised when a product is backordered AND I...	Dashboard Profile, Work e-mail, SystemDef...	
Order over 150001		Work e-mail	
Order over 160000		Work e-mail	
OrderOver30DayAvg	Notifies of an order for a product whose qu...	Dashboard Profile, Work e-mail, SystemDef...	
OrdersOver8WeekAverage	Notifies when orders exceed an average.	Dashboard Profile, Work e-mail, SystemDef...	
ProdOrdExcdsInven	Notifies when an inventory change is greate...	Dashboard Profile, Work e-mail, SystemDef...	
WHInventoryLow	Notifies of low inventory in a warehouse.	Dashboard Profile, Work e-mail, SystemDef...	
WHInventoryLowIsRaised	Raised when WHInventoryLow is raised.	Dashboard Profile, Work e-mail, SystemDef...	

There are two kinds of notifications:

- **Mandatory**

You always receive mandatory notifications.

- **Optional**

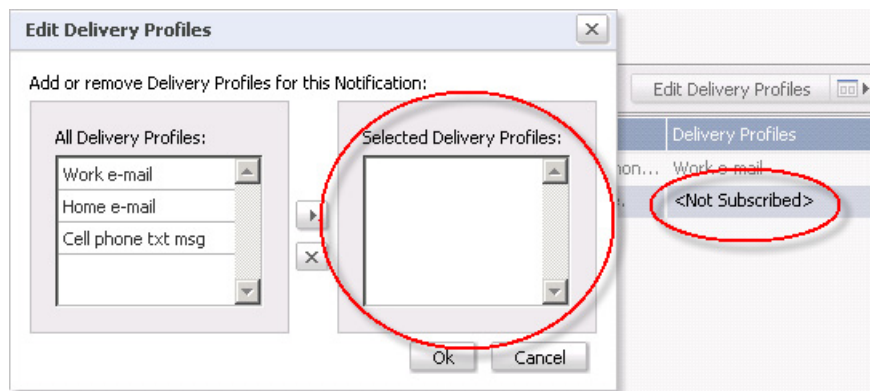
You can unsubscribe and not receive these notifications.

► **To edit the list of mandatory subscribers to a notification:**

- Edit the associated alert using the Scenario Modeler in BAM Workbench.

► **To subscribe or unsubscribe:**

1. In Alert Manager, click **Edit Notification Properties**
2. **Select a Notification then click Edit Delivery Profiles.**
3. Remove all profiles from the Selected Deliveries Profiles column.



Assigning Delivery Profile for Notification

Notifications are always sent to at least one of your delivery profiles (such as the Dashboard, e-mail, or text messaging), and can be sent to multiple profiles.

► **To assign delivery profiles:**

1. In Alert Manager, click **Edit Notification Properties**.
2. **Select a Notification then click Edit Delivery Profiles.**
3. Assign one or more Selected Delivery Profiles.
4. Save the change.

Note: Define your delivery profiles from the Account Settings page (see [“Delivery Profiles List” on page 38](#) for details).

Suspending External Notification Delivery

You can temporarily suspend delivery of one or more optional alerts. This is useful if you are going to be away from your message system for a length of time.

Note: Notifications are always delivered to the dashboard.

► **To suspend delivery:**

1. In Alert Manager, click **Edit Notification Properties**.
2. **Select a notification then click Edit Delivery Profiles.**
3. Delete all Selected Delivery Profiles.
4. Save the change.

When you are ready to receive alerts again, reassign delivery profiles to the alerts.

Unsubscribing from an Optional Alert

► **To unsubscribe from an optional alert:**

1. In Alert Manager, click **Edit Notification Properties**.
2. **Select a Notification then click Edit Delivery Profiles.**
3. Delete all Selected Delivery Profiles.
4. Save the change.

Note: Use the Alert Editor in BAM Workbench to restore users to an alert’s subscription list.

15 | Tasks

This chapter describes tasks for tracking and managing events.



► **In this Chapter:**

- [“About Tasks” on page 146](#)
- [“Viewing the Task List” on page 147](#)
- [“Viewing Task Details” on page 148](#)
- [“Creating Tasks” on page 149](#)
- [“Managing Tasks” on page 150](#)

About Tasks

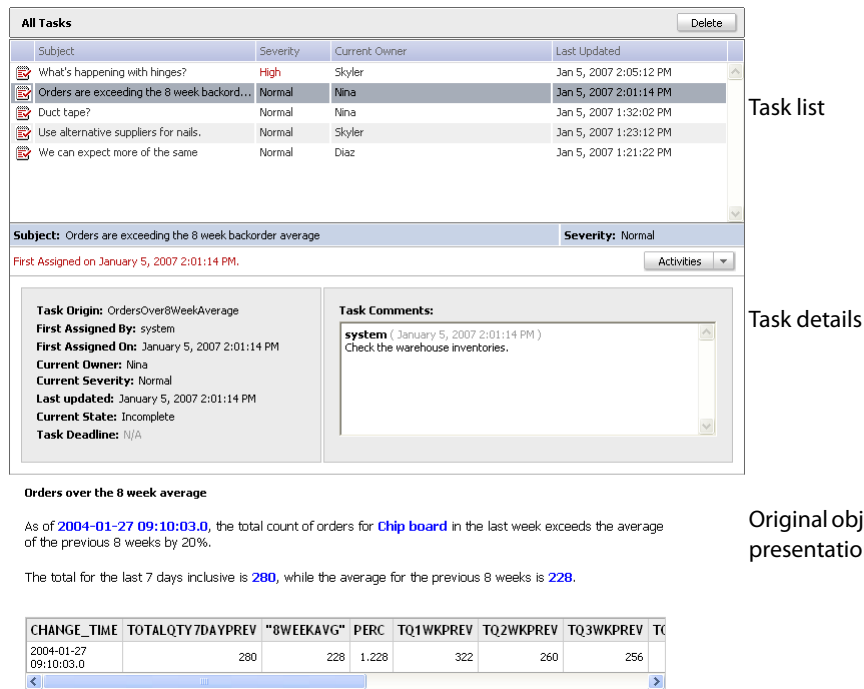
Tasks allow you and other users to track and manage an event identified by either an alert notification or a dashboard object. This collaboration allows you to work on a resolution to the event and to track the status of that resolution.

BAM Dashboard provides two places for interacting with tasks:

- Every dashboard can list the incomplete tasks that you are tracking. Hide or open the list by clicking the task list icon (the icon is red  when you have unread tasks and green  when they have all been reviewed). When the list is open, double-click an task to read its details in a new window.

You can specify whether to show or hide the list by default when you log in with your Account Settings. See [“Account Settings” on page 37](#) for details.

- The Task Manager lists and displays tasks. Click a task in the navigation tree to select the task in the Task List and to display the task’s details below the list. Click a folder to see just the complete or incomplete tasks, or click **All tasks** to see all of the tasks you are tracking.



The screenshot shows the 'All Tasks' window. At the top is a 'Delete' button. Below is a table with columns: Subject, Severity, Current Owner, and Last Updated. The selected task is 'Orders are exceeding the 8 week backorder...' with Severity: Normal, Current Owner: Nina, and Last Updated: Jan 5, 2007 2:01:14 PM. Below the table, the task details are shown, including the subject, severity, and first assigned date. A 'Task Comments' section contains a comment from 'system' dated January 5, 2007 2:01:14 PM: 'Check the warehouse inventories.' Below the details is a section titled 'Orders over the 8 week average' with a paragraph of text and a table.

Task list

Task details

Original object presentation

Orders over the 8 week average

As of 2004-01-27 09:10:03.0, the total count of orders for **Chip board** in the last week exceeds the average of the previous 8 weeks by 20%.

The total for the last 7 days inclusive is 280, while the average for the previous 8 weeks is 228.







CHANGE_TIME	TOTALQTY7DAYPREV	"8WEEKAVG"	PERC	TQ1WKPREV	TQ2WKPREV	TQ3WKPREV	TC
2004-01-27 09:10:03.0	280	228	1,228	322	260	256	

The rest of this topic discusses:

- [“Viewing the Task List” on page 147](#)
- [“Viewing Task Details” on page 148](#)
- [“Creating Tasks” on page 149](#)
- [“Managing Tasks” on page 150](#)

Viewing the Task List

The task list on dashboards and on the Task Manager shows the tasks that you are tracking. Updated tasks (ones with new messages or status changes) appear in bold. Completed tasks have a green icon, while incomplete ones are red. Filter the list to see only the tasks that are complete or incomplete by clicking the appropriate folder in the navigation tree.

All Tasks Delete				
Subject	Severity	Current Owner	Last Updated	
 What's happening with hinges?	High	Skyler	Jan 5, 2007 2:41:52 PM	
 We can expect more of the same	Normal	Diaz	Jan 5, 2007 2:41:10 PM	
 Check the	Low	Becka	Jan 5, 2007 2:23:17 PM	
 Orders of	Low	Nina	Jan 5, 2007 2:17:59 PM	
 Duct tape	Normal	Nina	Jan 5, 2007 1:32:02 PM	

Green are complete, red are incomplete.

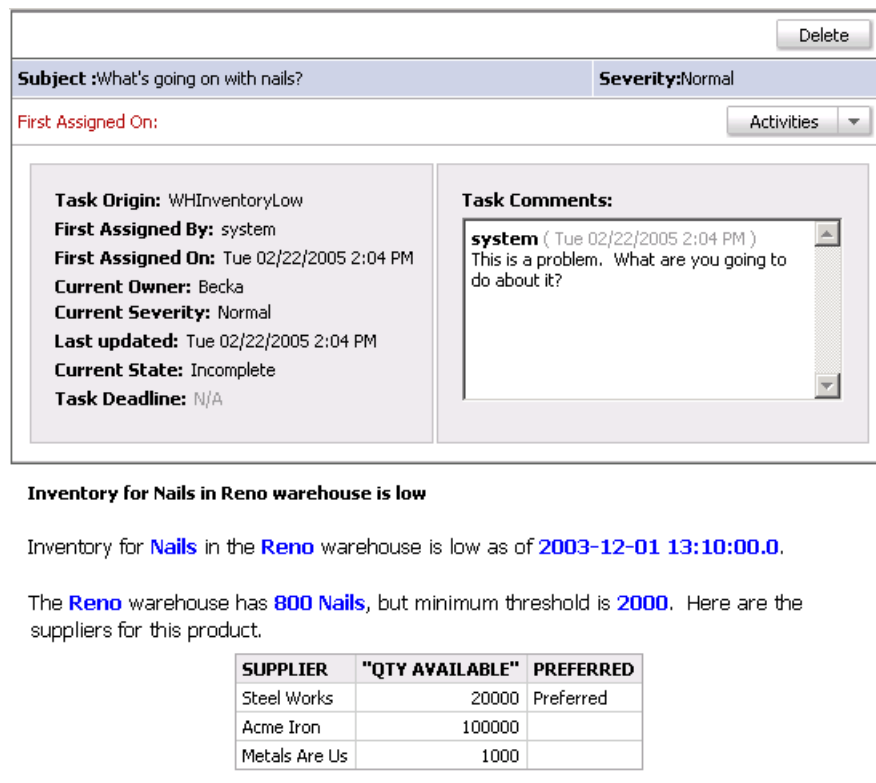
Select a task in the list to display its details below the list, or double-click the task to display the details in a new window.

Viewing Task Details

The task details window displays information about the task and shows the original alert message or dashboard object presentation from which the user initiated the task. From this window you can:

- View the task, its follow-up messages, when it was created and who owns it, its status and severity, and when it was last changed.
- Change task details including the severity, ownership, status, and additional users to include, all from the **Activities** menu.
- Permanently delete the task from your lists.

Note: Deleting a task does not remove the task from the list of the other user also tracking the task. As such, if they subsequently add comments or change the severity, you will not see the change in the list— though you will continued to receive notifications of changes.



Task Origin: WHInventoryLow
First Assigned By: system
First Assigned On: Tue 02/22/2005 2:04 PM
Current Owner: Becka
Current Severity: Normal
Last updated: Tue 02/22/2005 2:04 PM
Current State: Incomplete
Task Deadline: N/A

Task Comments:

system (Tue 02/22/2005 2:04 PM)
This is a problem. What are you going to do about it?

Inventory for Nails in Reno warehouse is low

Inventory for **Nails** in the **Reno** warehouse is low as of **2003-12-01 13:10:00.0**.

The **Reno** warehouse has **800 Nails**, but minimum threshold is **2000**. Here are the suppliers for this product.

SUPPLIER	"QTY AVAILABLE"	PREFERRED
Steel Works	20000	Preferred
Acme Iron	100000	
Metals Are Us	1000	

Creating Tasks

Tasks track and manage an event identified by an alert message or dashboard object.

► **To create a task:**

1. When viewing a dashboard object or alert message, click **Take Action > Assign Task**.

2. Identify the user to own the task and any additional users who will track it.
All recipients receive update notifications to their default delivery profiles.
Note: When the user's default profile is a Web service (such as when the "user" is an application receiving messages through the service) the message is sent with data from the alert and the task. Further, when the service acknowledges receipt of the message, *the task is marked as complete* and the creator receives that notification.
3. Assign a Severity of Low, Normal, or High.
4. Provide a brief description of the task in the Subject field and enter the first comment associated with the task.
5. (Optional) Identify a deadline for when the task should be completed.
6. Save the task to immediately put it into your list and the other users' Task List.

To subsequently change a task, follow the instructions in "[Managing Tasks](#)."

Managing Tasks

As more information about the event being tracked becomes available, use the Task Details page to modify the task's severity and status, add a comment, or delete the task.

► **To manage a task:**

- Select the task in a Task List or double-click the task in the Task List.
- Choose **Update Task** from the Activities menu.
- Make changes in the Task Details dialog.
- Click **OK** to save your changes.

When you add a comment, change severity, or change status to complete, the change appears in the other user's session when that user opens the task, or when the user's Task List refreshes. See ["Account Settings" on page 37](#) for details about changing the refresh rate.

When you delete a task, it is permanently purged from your Task List. It is not removed from the other users' list. As such, if they subsequently add comments or change the severity, you will not see the change in the Task list — though you will continue to receive notifications of changes.

Watchpoints are business rules associated with dashboard objects that send an alert message, color a cell in a data grid, or both, when a value in the object is at or near a “target” value.

► **In this Chapter:**

- [“About Watchpoints” on page 152](#)
- [“Viewing Watchpoints” on page 153](#)
- [“Watchpoint Conditions” on page 154](#)
- [“Creating and Editing Watchpoints” on page 154](#)

About Watchpoints

Watchpoints monitor the *measure* of a *specific category item* of a dashboard object, such as the Sales measure of the Nails item in the Product category. The category and measure are always ones that the dashboard object presents.

The screenshot shows the configuration interface for a watchpoint rule. It is divided into two main sections: "Complete Rule" and "Required Parameters".

Complete Rule: A text field contains the rule definition: "Notify Me When: Nails Sales is Greater Than 120000." A callout box labeled "Watchpoint Rule." points to this text.

Required Parameters: This section contains four input fields:

- "Select the Product you are interested in:" with a dropdown menu set to "Nails". A callout box labeled "Watchpoint rule parameters" points to this dropdown.
- "Select the measure you are interested in:" with a dropdown menu set to "Sales".
- "Select an operator for your rule:" with a dropdown menu set to ">".
- "Select a threshold for your rule:" with a text input field containing "120000".

Below the configuration fields, an alert message is displayed:

Your rule for **Nails at or above \$120,000** was activated.

Cause:
Nails Sales is 129600.00.

Watchpoint Description:
Nails at or above \$120,000

Watchpoint Rule:
Nails Sales is Greater Than 120000

Watchpoint Location:
TotalOrdersPieChart

A callout box labeled "Watchpoint alert message." points to the alert text.

Watchpoints can also optionally highlight table cells identified by the rule when the condition exists. (Every dashboard object has a table when shown in detailed view.)

The screenshot shows a table with the following data:

TotalOrderSales
132300
16400
129600
100000
227075

Callouts explain the highlights:

- A cell with a solid-line border (132300) has a watchpoint, but the rule condition has not been met.
- A colored cell (129600) is an active watchpoint.
- Mouse over the cell to see the watchpoint's name. (The name "Nails at or above" is shown in a tooltip over the 129600 cell.)

Note: Watchpoints created on cubes monitor the default face of the cube only.

Viewing Watchpoints

Every dashboard object that can have watchpoints has a Watchpoint Manager where you can create, edit, or delete the watchpoints associated with that object. Some dashboard objects, such as pivot tables, pivot combination charts, and distribution charts cannot have watchpoints.

► **To access the Watchpoint Manager:**

1. In the navigation tree, open the Dashboard Objects view.
2. Select the desired dashboard object.
3. At the top of the panel on the right, click **Activities**.
4. Select **Manage Watchpoints>Manage Existing Watchpoints** from the pop-up menu.
The Watchpoint Manager page displays.

Note: To create watchpoints, see [“Creating and Editing Watchpoints” on page 154.](#)

Watchpoint Manager:

The following list contains your Watchpoints for TotalOrderSalesBarChart.

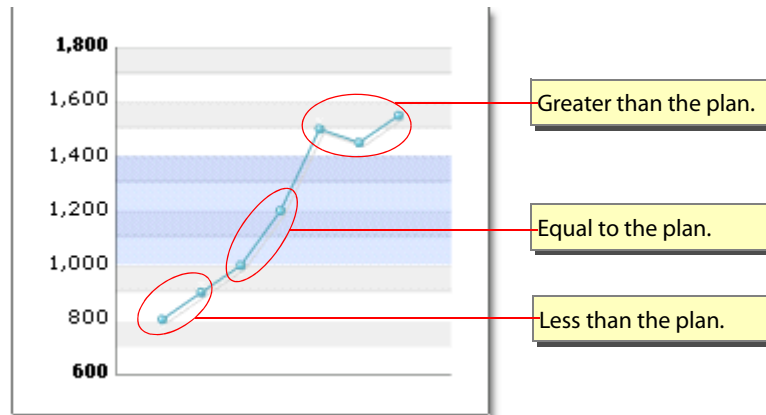
Watchpoints				
Create Watchpoint		Edit Watchpoint		Delete
Watchpoint Name	Availability	Description		
Hinge sales at or over \$140,000	Private	Hinge sales at or over \$140,000.		
Nails at or above \$120,000	Private	Nail sales at or over above \$120,000.		
Nuts at or above target	Public	Nuts sales at or above sales target.		
Plywood is at or above target	Public	Plvwood sales at or above sales target.		

Activities	▼
Manage Watchpoints	►
Take Action	►
Associated Dashboards	►
Export	
Edit	►
Save As	
Tear Off	
Associated Reports	

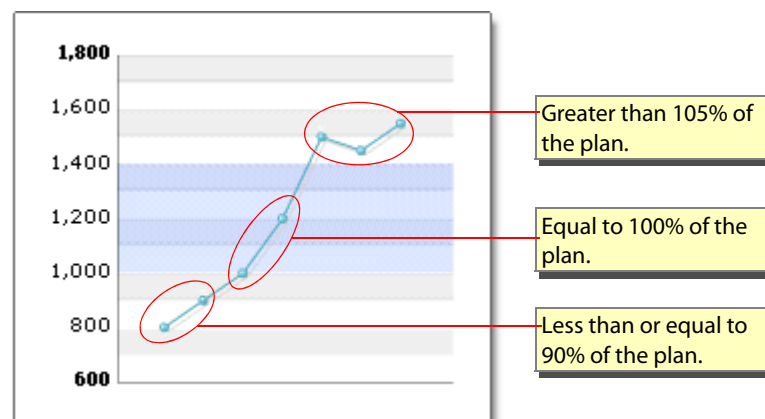
Create Watchpoint
Manage Existing Watchpoints

Watchpoint Conditions

Watchpoint conditions look for values that are at, above, or below some target value — the *threshold* — which is either a plan for the category or a constant value you select. When the threshold is a plan range, a value matches the threshold whenever it is equal to the minimum or maximum values, or between them.



A threshold can also be a percentage of the target. Targets less than 100% are always below the threshold. Targets greater than 100% are always above.



Creating and Editing Watchpoints

Watchpoints are associated with individual dashboard objects and have the following attributes:

Attribute	Description
Rule parameters	Defines the watchpoint condition. See "Watchpoint Conditions" on page 154 for details.
Name	Name of the watchpoint as it will appear in the Alert Manager list and when you move the mouse over an active watchpoint in a table.

Attribute	Description
Availability (Advanced Mode)	Watchpoints can be either private or public. Private watchpoints are only visible to the user that saved the watchpoint. Public watchpoints are visible to all users that can see the dashboard object. By default, watchpoints are private. To make a watchpoint public, select Advanced Mode in Step Two and check "Apply this Watchpoint to all users." You must have read/write permissions on the dashboard object to create a public watchpoint. If you only have read-only access to the dashboard object, you can only create private watchpoints. Also, notification is set to "Do not send me notification" when the watchpoint is public. Note: You cannot change the availability of a watchpoint after you have saved it.
Description	(Optional) Description of the watchpoint that appears in the optional alert message.
Color	Color to display behind the table cell when the watchpoint condition exits.
Alert parameters (Advanced mode)	How often to generate an alert message for the condition. The options are: <ul style="list-style-type: none">• Apply this Watchpoint to all users — When selected, the watchpoint is public; otherwise, it is private.• Do not send me notification — No notification will be sent.• For each event — Every time the watchpoint condition is met.• Once for consecutive events — When a condition is met in consecutive events, only notify once until the condition is no longer met. Then notify with the next event that is true. Note: An alert cannot be sent from a public watchpoint. If you check "Apply this Watchpoint to all users", "Do not send me notification" is selected.

➤ **To create a new watchpoint:**

1. Identify the dashboard object that contains the category item to watch.
2. At the top of the panel on the right, click **Activities**.
3. Select **Manage Watchpoints>Create Watchpoint** from the pop-up menu.
The Create Watchpoint page displays.
4. Define the watchpoint rule condition parameters.
5. Define the watchpoint name and optional description, and optional color to use when the watchpoint is active.

Note: To control how often to send alert messages or set availability, select **Advanced Mode** and select the frequency.

6. Save the watchpoint.

The watchpoint immediately begins monitoring the source data.

► **To edit an existing watchpoint:**

1. Identify the dashboard object that contains the category item to watch.
2. At the top of the panel on the right, click **Activities**.
3. Select **Manage Watchpoints > Manage Existing Watchpoints** from the pop-up menu.
The Watchpoint Manager page displays.
4. Select the watchpoint you want to modify.
5. Click **Edit Watchpoint**.
6. Modify the attributes as desired.

Note: You cannot change the setting of “Apply this Watchpoint to all users” checkbox on an existing watchpoint. You can only change the availability of a watchpoint by deleting and then creating a new watchpoint.

7. Save the watchpoint.
The watchpoint immediately begins monitoring the source data.

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