User Guide

Operations Center 5.0

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Novell

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About This Guide

The Novell® Operations Center *User Guide* provides information on using basic features of the Operations Center console. It provides an overview of the different views available in the Operations Center console and the various types of data accessible from them.

Audience

This guide is intended for all Operations Center console users, especially those users without Administrator privileges.

Guide Sections

- Chapter 1, "Accessing the Operations Center Console," on page 9
- Chapter 2, "Understanding the Operations Center Console," on page 13
- Chapter 3, "Customizing the Console Views," on page 29
- Chapter 4, "Monitoring Elements and Element State," on page 43
- Chapter 5, "Using Find to Search for Elements," on page 61
- Chapter 6, "Filtering and Managing Alarms," on page 67
- Chapter 7, "Charting Performance Data," on page 97
- Appendix A, "Main Menu Options," on page 117
- Appendix B, "Element and Alarm Options," on page 123

Additional Documentation

Review the following guides before using the Operations Center console:

- *Novell Operations Center 5.0 Getting Started Guide*

  Before installing any Operations Center tools, we recommend you read the *Getting Started Guide*, which provides both an overview of all the functionality and components of the Operations Center solution as well as guidance on installing it in your environment.

- *Novell Operations Center 5.0 Server Installation Guide*

  Use the *Server Configuration Guide* to install Operations Center before configuring the Operations Center Server.

- *Novell Operations Center 5.0 Server Configuration Guide*

  Prior to installation, you might want to read the *Server Configuration Guide*, which explains in detail how to configure Operations Center. You should follow the instructions in this guide prior to beginning to use Operations Center.

Documentation Updates

In general, Operations Center provides two main sources of information to help you configure and use Operations Center tools:

- **Online help:** The help is part of each product and available from multiple locations depending upon the product; look for help in the upper right of a window or dialog box as a drop-down menu option, a help button, or a question mark symbol (?).
- **Guides:** Available as PDF files on the installation CD, as well as both PDF and HTML on the documentation Web site, the guides provide an overview of how to solve a problem, complete a task, or use a specific Operations Center tool.

For the most recent version of the *Console Guide*, visit the Operations Center 5.0 Web site. A password is required for access to the Operations Center documentation.

Documentation Conventions

In Novell documentation, a greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path. The > symbol is also used to connect consecutive links in an element tree structure where you can either click a plus symbol (+) or double-click the elements to expand them.

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When a single pathname can be written with a bslash for some platforms or a forward slash for other platforms, the pathname is presented with a forward slash to preserve case considerations in the UNIX* or Linux* operating systems.

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We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to www.novell.com/documentation/feedb.html and enter your comments there.

1 Accessing the Operations Center Console

The Operations Center console acts as a business service control center for exploring, navigating, and managing various business-related elements and views. The following sections explain the different ways to log in to and out of the Operations Center console:

- Section 1.1, "Logging In," on page 9
- Section 1.2, "Troubleshooting Java Web Start," on page 11
- Section 1.3, "Logging Out," on page 11

1.1 Logging In

Operations Center software is a Web-based application that provides a console as the user interface.

The requirements for logging in to the Operations Center console:

- A valid user name obtained from the administrator
- The Operations Center server, which is the workstation that stores the Operations Center application, must be up and running

You can access Operations Center through:

- The Web using Java Web Start
- A command line for remote access

To log in to Operations Center, select the applicable method:

- Section 1.1.1, "Logging In through the Web," on page 9
- Section 1.1.2, "Starting from a Command Line," on page 11

1.1.1 Logging In through the Web

Operations Center uses Java Web Start technology to allow users to access the Operations Center console via the Web. Java Web Start is an application-deployment technology that enables users to download and launch applications from the Web without having to first complete a separate installation procedure.

Launch the Operations Center application by navigating in your Web browser to the Operations Center URL (or link) provided by your Operations Center Administrator. If the application does not exist on the computer, Java Web Start automatically downloads all necessary files. It then caches the files on the computer. Re-launch the application at any time, using a desktop icon or a browser link.

Each time you access Operations Center, Java Web Starts automatically updates the application, thus always loading the most recent version.

For additional information, refer to the Oracle Java Web Start Web site.

To access the Operations Center via the Web:

1 Start a Java-enabled Web browser.

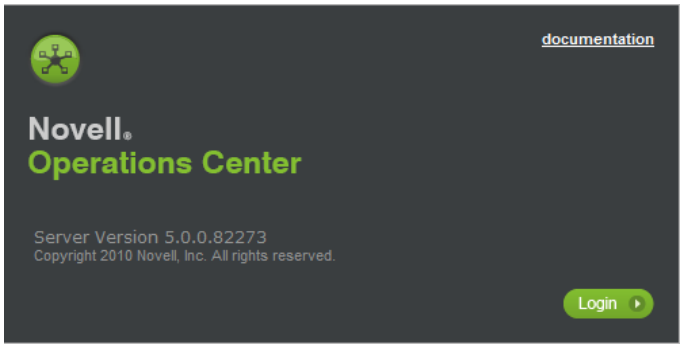
2 In the *Location/Address* field, enter the following Uniform Resource Locator (URL) address:

`http://server_name:80`

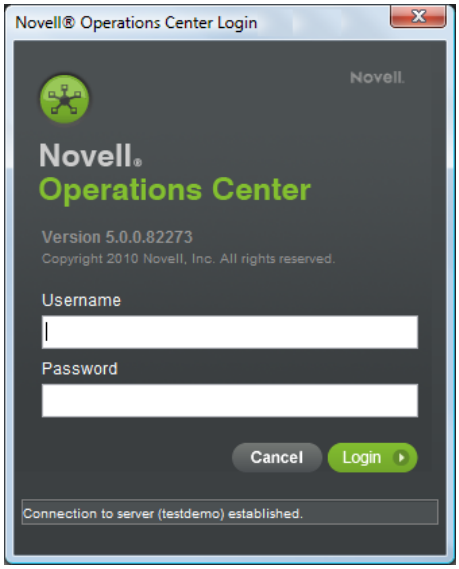
where *server_name* is the Transmission Control Protocol/Internet Protocol (TCP/IP) host name of the server that is running Operations Center and `80` is the default port setting on Windows. On UNIX, the default server port is `8080`.

Your administrator might provide a different URL depending on port settings or additional parameters. For more information about browser defaults, console configuration, and URL parameters, see the *Novell Operations Center 5.0 Server Installation Guide*.

The Operations Center server login page displays:



3 Click the *Login* button to open the Login dialog box:



4 Specify the Username and Password.

Both the user name and password are case-sensitive. If necessary, verify the case and spelling created by the administrator.

5 Confirm login to the appropriate server by checking the server name displayed at the top of the Login dialog box.
6 Click *OK* to open the Operations Center console.

1.1.2 Starting from a Command Line

Remote users can start Operations Center from the command line. However, a prerequisite is installing the console with the Java Web Start technology.

To log in remotely:

1 enter the following line at the command prompt:

```
start http://server_name/client
```

where *server_name* is the name of the server where Operations Center is installed and running.

1.2 Troubleshooting Java Web Start

If problems occur when accessing Operations Center using Java Web Start, try clearing the cache.

To clear the Java Web Start cache:

1 Start Java Web Start.
2 From the *File* menu, select *Preferences*.
3 Click the *Advanced* tab to display the *Advanced* tab.
4 Click *OK*.

This forces the download of the entire `.jar` file containing the code necessary to run the console.

5 Try logging in to Operations Center.

1.3 Logging Out

To log out of the Operations Center console:

1 Do one of the following:
- From the *File* menu, select *Logoff* to log out of Operations Center without exiting.
- From the *File* menu, select *Logoff and Exit* to log out and exit Operations Center.

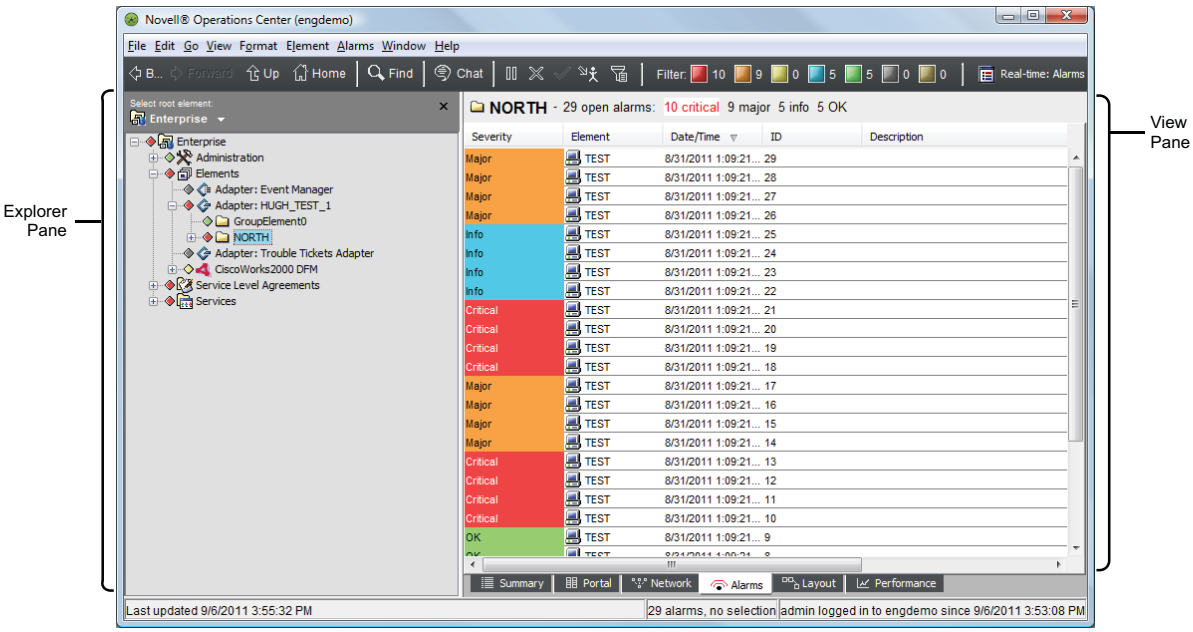
2 Click *Yes* to log out.

The Operations Center console closes. The Login dialog displays if not exiting Operations Center.

2 Understanding the Operations Center Console

The Operations Center console acts as a business service control center for exploring, navigating, and managing various business-related elements and views. It provides a hierarchical tree view of system objects as well as a type of Service Dashboard consisting of six different views.

Figure 2-1 *The Operations Center Console*



The console provides an interface for viewing, navigating, and managing network organizations. It consists of two main panes:

- **Explorer (left pane):** Lists system elements in a hierarchical tree. The Explorer pane functions as one of the main controllers for the console by allowing you to navigate element hierarchies, view element information and perform operations.

  For details on the Explorer pane, see Section 2.4, "Navigating Element Hierarchies," on page 25

- **View (right pane):** Depending on the selected view, the console displays various types of information about the selected element or the element's children.

  For details on the Explorer pane, see Section 2.1, "Console Views," on page 14 and Section 2.2, "Navigating Console Views," on page 24.

The type of information displayed in the *View* pane varies depending on the selected tab:

- **Summary:** View a listing of first-level child elements with status information including current condition, alarm totals, and last reported date/time.

- **Portal:** Administrators can perform multiple functions from this view that contains multiple panels, similar to what is found in the Properties dialog. Actual panels/options vary depending on the type of element selected.
- **Network:** Use this spider tool to see the relationship of elements and explore the various levels of your environment.
- **Alarms:** View and manage alarms for the selected element. Client-side and server-side alarm filters can be created to refine the data seen here.

  For instructions on configurations for alarm suppression, server-side alarm filters and other configurations that affect the display of alarms; see "Customizing Monitored Elements and Alarms" the *Novell Operations Center 5.0 Server Configuration Guide*.
- **Layout:** View a hiearchical diagram of the element and its children or view custom drawings as created by your Administrator. Layout diagrams provide a visual analysis of critical relationships and conditions across multiple branches of an element hierarchy.

  For instructions on creating custom drawings in the Layout View, see the *Novell Operations Center 5.0 Custom Drawing and Layout Guide*.
- **Performance:** Chart real-time performance information or historical information such as alarm history to provide an indication of how an element is performing.

  For instructions on capturing alarm history and performance metrics, see "Capturing Alarm and Performance History" the *Novell Operations Center 5.0 Server Configuration Guide*.

Review the following sections to understand the different views, elements, and how to navigate the console:

- Section 2.1, "Console Views," on page 14
- Section 2.2, "Navigating Console Views," on page 24
- Section 2.3, "Using Menus and Toolbar Options," on page 24
- Section 2.4, "Navigating Element Hierarchies," on page 25
- Section 2.5, "Root Elements," on page 26
- Section 2.6, "Working with Multiple Console Windows," on page 27
- Section 2.7, "Verifying the Server Name," on page 28

2.1 Console Views

The console provides a hierarchical tree of network organizations, including six different views that are accessed through tabs at the bottom of the window: *Summary*, *Portal*, *Network*, *Alarms*, *Layout*, and *Performance*.

The information displayed depends on the selected view, and is filtered for the element selected in the Explorer pane. The level of detail displayed depends on the permissions set by the administrator. For more information on permissions, see the *Novell Operations Center 5.0 Security Management Guide*.

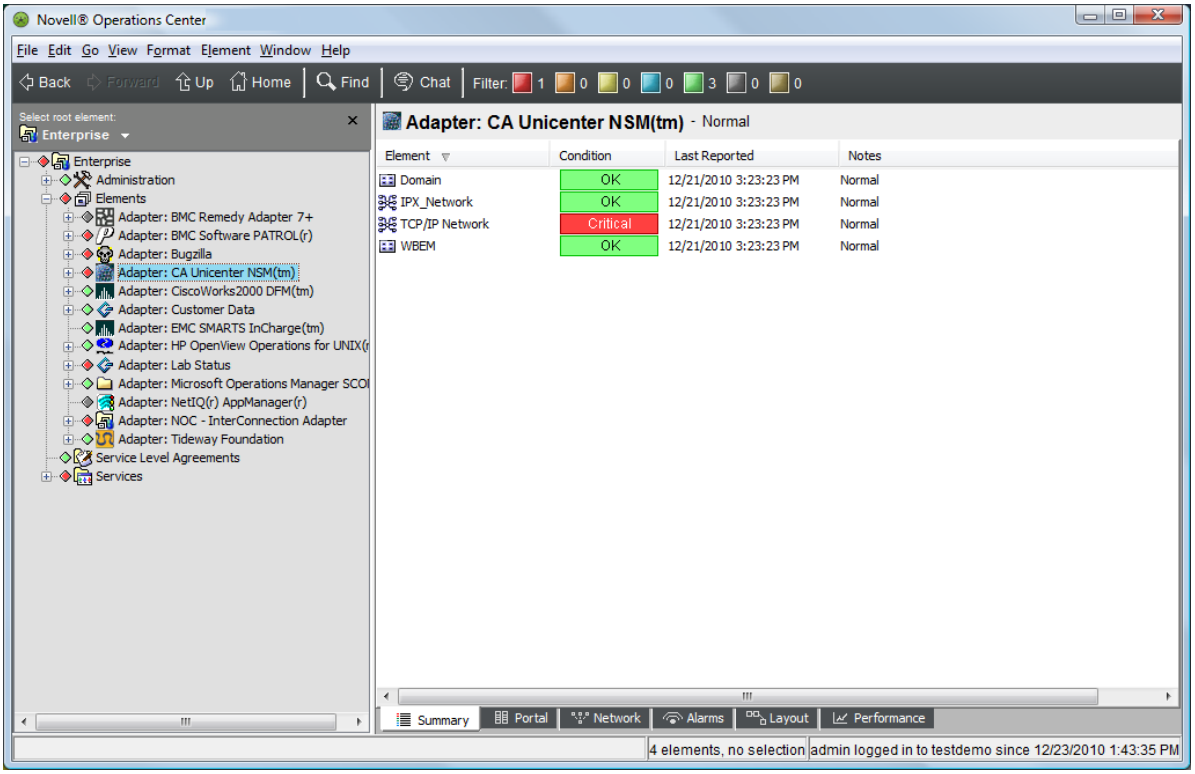
The following sections contain illustrations of the six different views:

- Section 2.1.1, "Summary View," on page 15
- Section 2.1.2, "Network View," on page 16
- Section 2.1.3, "Alarms View," on page 17
- Section 2.1.4, "Layout View," on page 18
- Section 2.1.5, "Portal View," on page 20
- Section 2.1.6, "Performance View," on page 23

2.1.1 Summary View

The *Summary* view displays the first-level child elements of the element selected in the *Explorer* pane. Use the *Summary* view to view condition and summary information about the elements in a heirarchy.

Figure 2-2 *Console Summary View*



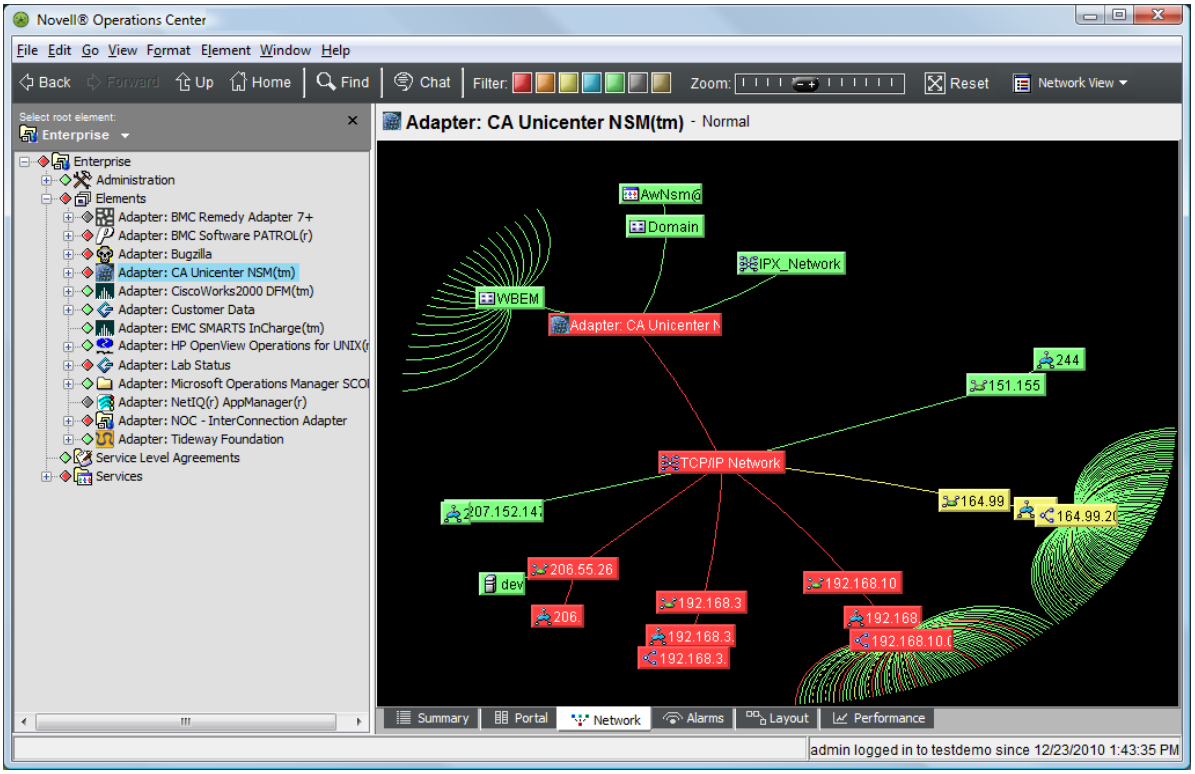
The bottom status bar displays the total number of elements in the *Summary* view and the number of elements currently selected.

For instructions on using the Summary view to manage element status, see Chapter 4, "Monitoring Elements and Element State," on page 43.

2.1.2 Network View

The *Network* view provides a graphical view of elements and their relationship to other elements within the larger infrastructure. It presents the selected element at the center of the view, with lines connected to first-level child elements. The line colors identify the condition of the child element:

Figure 2-3 *Network View*



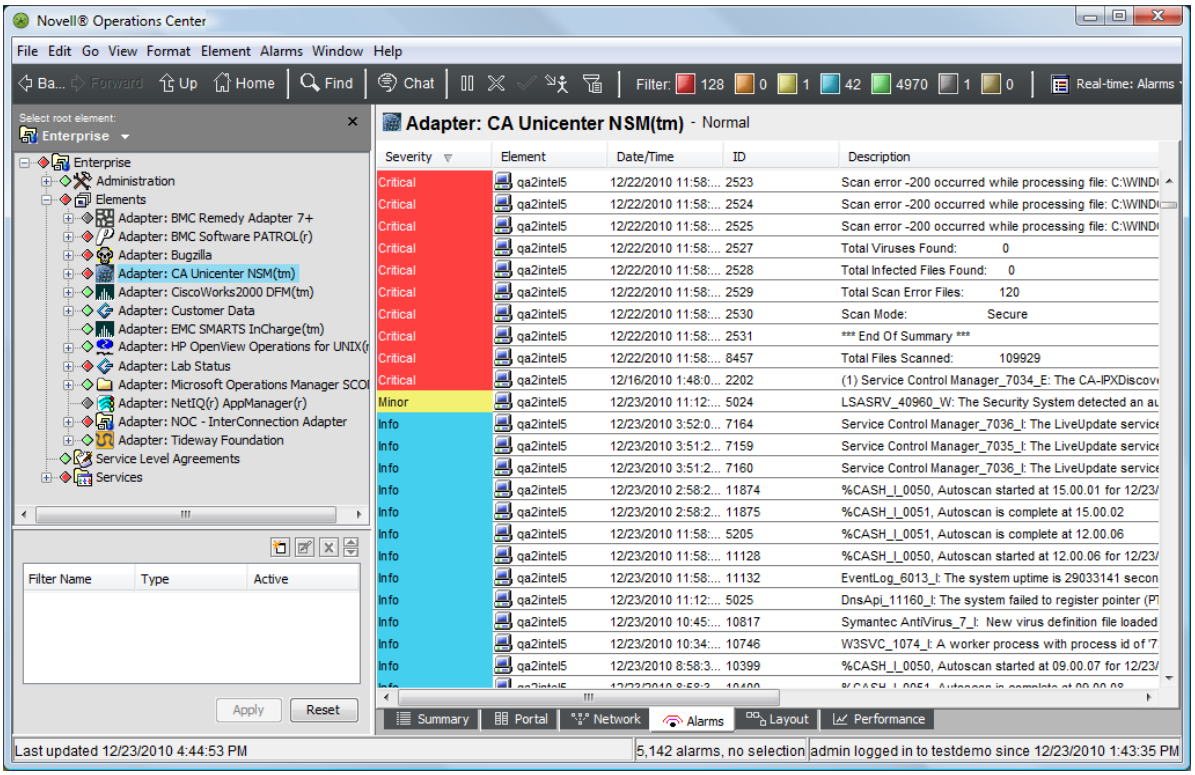
User access privileges determine which elements display in the *Network* view. The currently selected level of the element hierarchy in the *Explorer* pane determines whether the entire network displays, or only a portion of it.

For instructions on using the Network view to navigate and monitor elements, see Section 4.4, "Exploring Hierarchies Using the Network View," on page 51.

2.1.3 Alarms View

The Alarm View displays information about alarms associated with the elements, allowing you to gain insight into the state and activity of your technology components and business services.

Figure 2-4 *Alarms View*



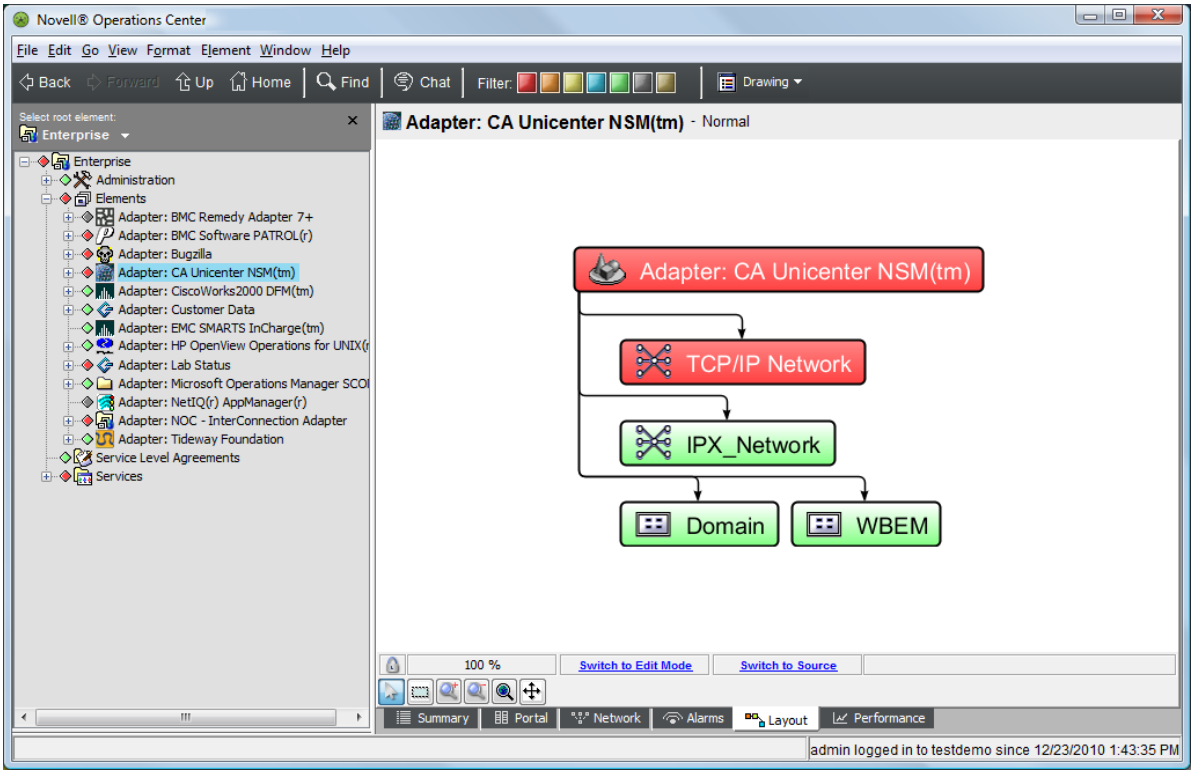
Create one or more alarm filters to manage and filter alarms.

For instructions on using the Alarms view to manage and filter alarms, see Chapter 6, "Filtering and Managing Alarms," on page 67.

2.1.4 Layout View

The Layout view allows you to manage and monitor services using a graphical representation that focuses on the relationships among the elements. Figure 2-5 shows the default bubble layout used by the Layout view.

Figure 2-5 *Layout View*

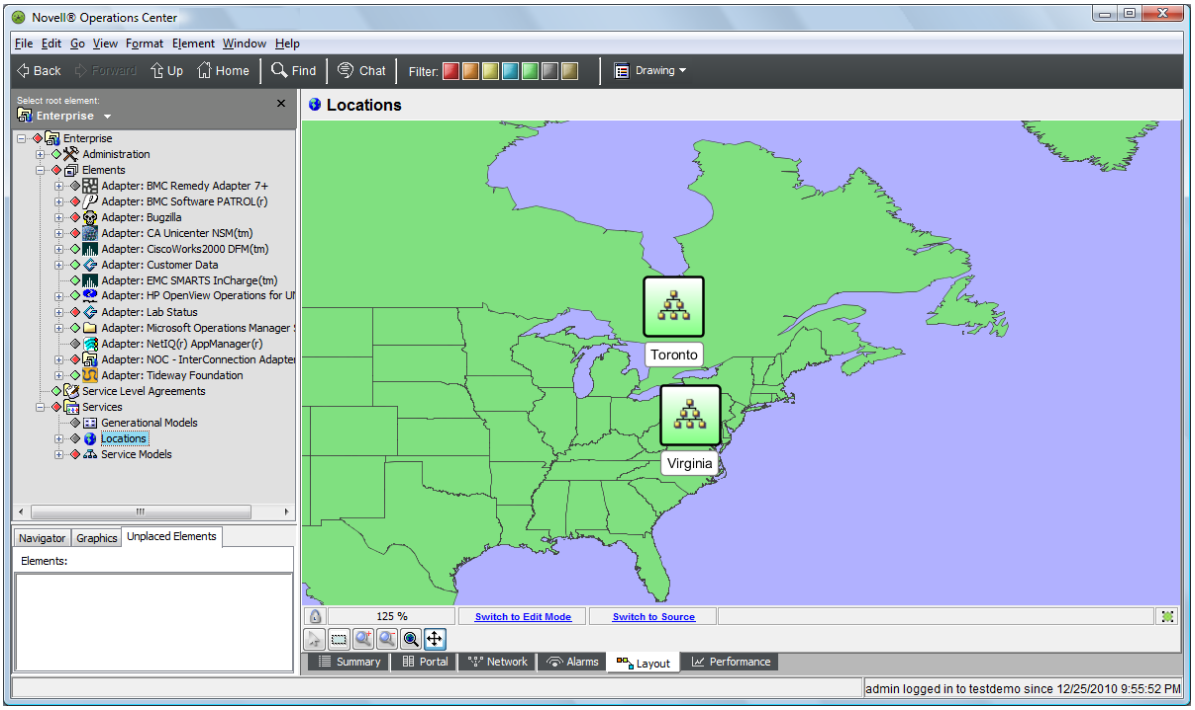


The *Layout* view is available for all elements, including:

- **Services > Locations:** Displays a global map. Each color-coded geographical site identifies the most severe condition among its child elements.
- **Services > Service Models:** Displays icons representing any element and type of relationship among elements, such as functional organizations or processes. Customize the view using drawing tools.

Your Administrator can customize the Layout view by creating custom drawings. The type and level of drawing is only limited by your creativity. For example, *Layout* views for elements under *Services* > *Locations* show element nodes positioned on a geographical map:

Figure 2-6 *Example of a Location Layout View*



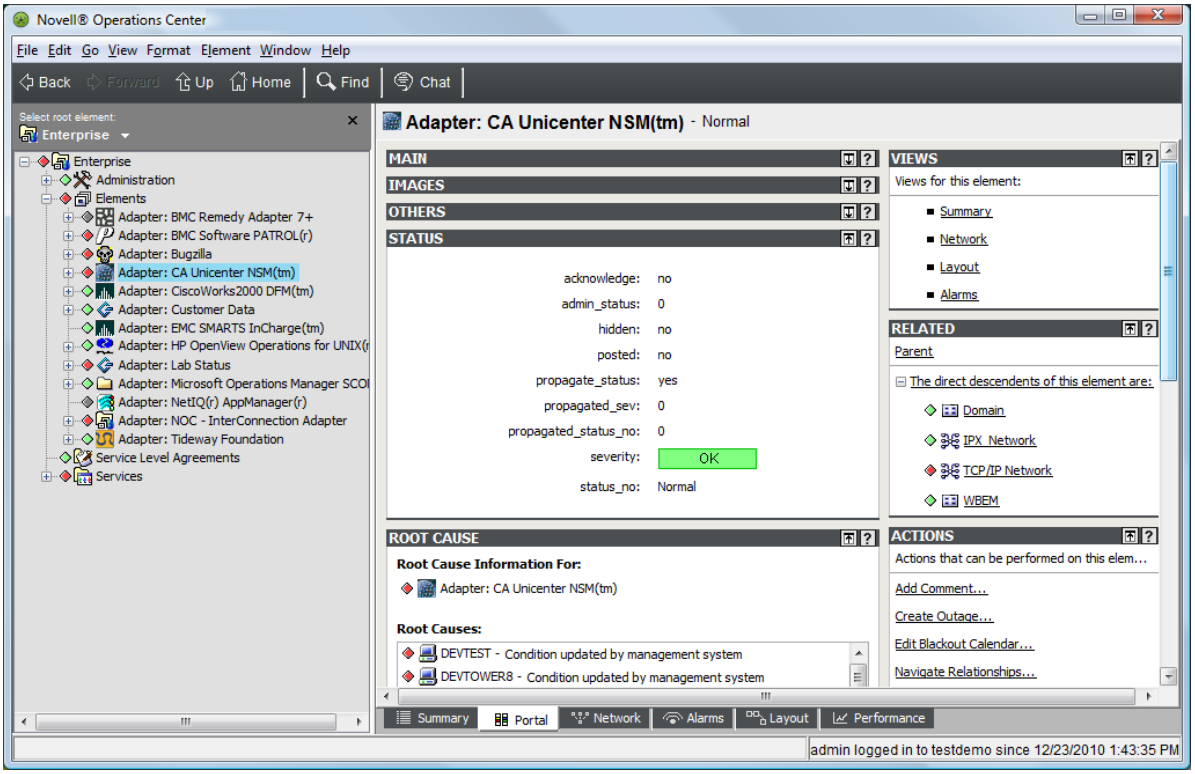
For instructions on creating custom drawings in the Layout View, see the *Novell Operations Center 5.0 Custom Drawing and Layout Guide*.

2.1.5 Portal View

The *Portal* view provides a comprehensive view and management gateway for each system element. It also contains sections for links to other views or related elements, element actions, and element notes. Because options on elements vary depending on the type of element, the number and names of Portal sections vary among adapters and elements.

The following is a typical view for an adapter under the *Elements* root:

Figure 2-7 *Portal View*



Access to options depends on the user's access privileges. Some administrative tasks are easiest when performed in the *Portal* view. For example:

- Defining users and groups

  For information on assigning permissions to users and groups, see the *Novell Operations Center 5.0 Security Management Guide*.

- Defining automation events

  For information on defining automation events, see "Defining and Managing Automation Events" in the *Novell Operations Center 5.0 Server Configuration Guide*.

- Setting up calendars and schedules

  For information on setting up time management objects, see "Time Categories, Calendars, and Schedules" in the *Novell Operations Center 5.0 Server Configuration Guide*.

By default, the *Portal* view displays with its sections collapsed. Table 2-1 shows the sections commonly found in the *Portal* view.

As you work, the *Portal* view "remembers" the expanded and collapsed settings for each section. Therefore, as you click from element to element, only the sections you were working in stay open. Taking the same actions on more than one element is especially convenient through the *Portal* view and saves the time of opening and closing the Property pages for each element.

Table 2-1 describes some of the various options, which vary depending on the type of element selected.

Table 2-1 *Standard Portal View Sections*

Name	Description
ACCESS CONTROL	Enables administrators to view and define access privileges for an element. For information, see "Assigning Privileges to Elements" in the *Novell Operations Center 5.0 Security Management Guide*.
ACTIONS	Performs specific actions on the selected element. For example: *Acknowledge*, *Manage*, *Ping*, *Trace Route*, *Unmanage*. If you have purchased the SLM and the element has performance data, select the *Analyze* action to open a Performance Analysis window.
AUDIT	Enable audit events available for administrative elements. For information, see "Auditing" in the *Novell Operations Center 5.0 Security Management Guide*.
AUTOMATION	Enables administrators to define a list of automated events and actions for an element. For information, see "Defining and Managing Automation Events" in the *Novell Operations Center 5.0 Server Configuration Guide*.
BLACKOUT CALENDAR	Identifies any blackout calendars as defined for the element. For information, see "Time Categories, Calendars, and Schedules" in the *Novell Operations Center 5.0 Server Configuration Guide*.
COMMENTS	You can enter comments about the element, and view comment histories.
CONDITION	Enables administrators to specify the algorithm to use to calculate an element's condition. The *Condition* tab is available for elements created using event-based adapters only. It is not available for elements created using object-based adapters such as NetIQ, HP OpenView, the Intercommunication adapter, and Spectrum. For information, see "Using Algorithms to Calculate Element State" in the *Novell Operations Center 5.0 Server Configuration Guide*.
CONTACT	Enables administrators to specify contact information for elements in the *Services* hierarchy.
DEFINITION	Displays the XML code used to generate the element.
ELEMENTS	Enables administrators to specify the elements that drive the element's alarms and condition. The *Elements* tab is available for elements under *Service Models*. For information on Service Models, see the *Novell Operations Center 5.0 Service Modeling Guide*.

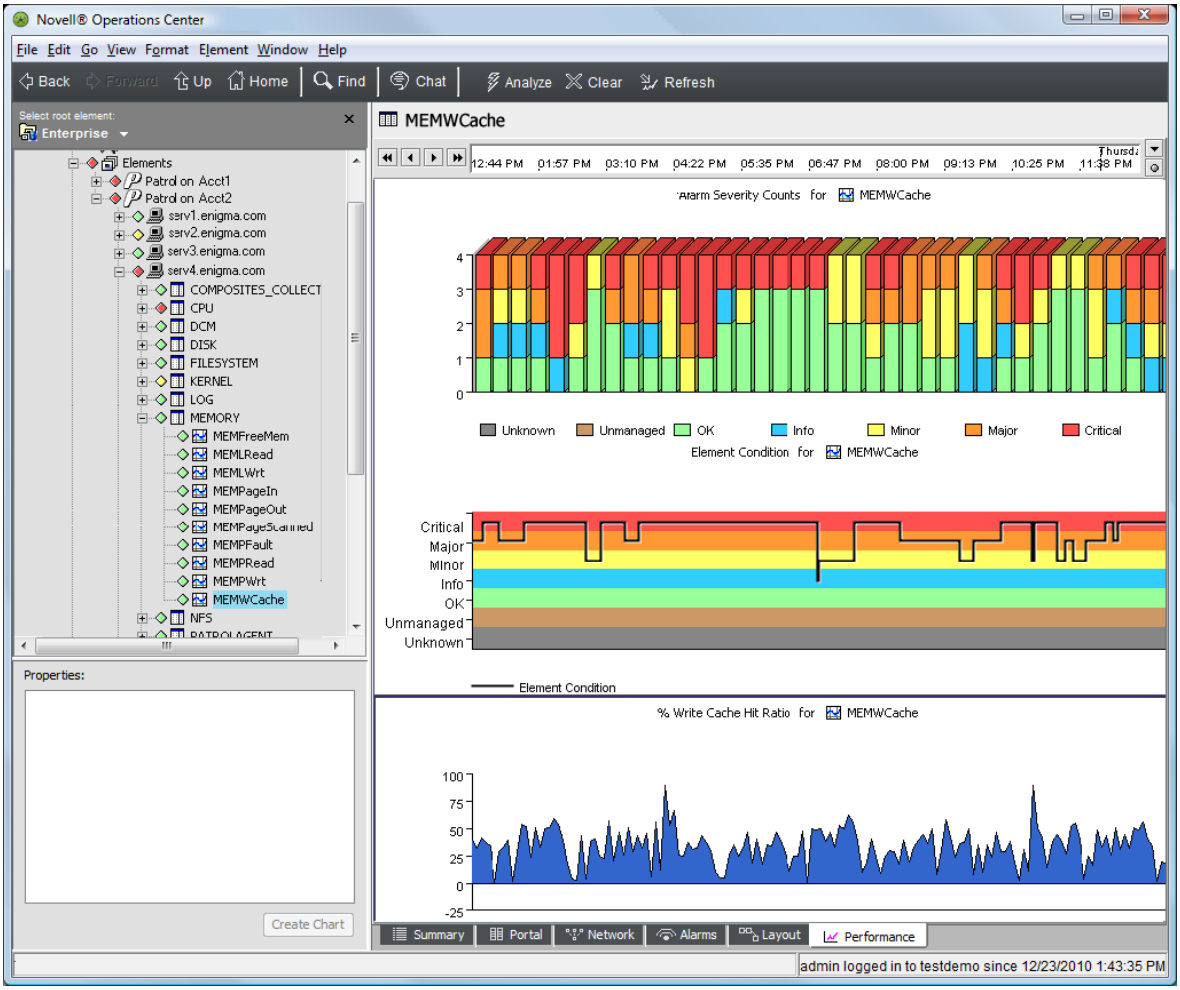
Name	Description
IMPACTED	Shows all objects that are affected by the element's state. For information, see Section 4.6, "Viewing Root Cause and Impacted Elements," on page 55.
OBSERVATIONS	Displays comments about the element and its descendents. For example, the number and type of alarms.
PERFORMANCE	A list of all available performance profiles showing those where the element is a member. Select a profile's check box to add or remove it from the profile. The Data Warehouse uses profiles to select the elements for which alarm history is collected. For information on creating profiles, see "Capturing Alarm and Performance History" in the *Novell Operations Center 5.0 Server Configuration Guide*.
PROPERTIES	Displays a list of properties for the selected element, including the current condition level and most recent update time. Depending on the element type, other properties can be displayed, including the port number, number of timeouts, heartbeat, reconnected poll, connect mode, filter, and worst application instance. For information on adapter properties, see "Adapter Property Reference" in the *Novell Operations Center 5.0 Adapter and Integration Guide*.
RELATED	Provides links to the parent and descendents of an element using the provided links.
ROOT CAUSE	Identifies the objects that affects the selected element's state. The *Details* pane identifies the hierarchy of the elements involved. For information, see Section 4.6, "Viewing Root Cause and Impacted Elements," on page 55.
SERVICE LEVEL AGREEMENTS	Identifies any service level settings or objectives that are defined for the element. To learn more about Service Level Agreements, see the *Novell Operations Center 5.0 Service Level Agreement Guide*.
STATUS	View basic status information for the element.
VIEWS	Provides links to open views (*Summary*, *Network*, *Layout*, and *Alarms*) using the provided links.

TIP: Right-click the background of any section in the *Portal* view (except the view's gray background) to display a menu for the selected element.

2.1.6 Performance View

The Performance view charts system performance in real time, including historical performance data for elements associated with specific management systems or with the Service Level Manager (SLM), which is a product of Operations Center for managing service level agreements (SLAs).

Figure 2-8 *Performance View*



For information on charting performance data, see Chapter 7, "Charting Performance Data," on page 97.

For details on configurations for capturing historical data or default chart settings, see "Capturing Alarm and Performance History" in the *Novell Operations Center 5.0 Server Configuration Guide*.

For information on using the *Performance* view in connection with SLM and SLAs, see the *Novell Operations Center 5.0 Service Level Agreement Guide*.

2.2 Navigating Console Views

The *View* pane displays details about the element or children of the element selected in the *Explorer* pane. There are six view tabs (*Summary*, *Portal*, *Network*, *Alarms*, *Layout*, and *Performance*) along the bottom of the *View* pane.

The *View* title bar displays the name of the element currently selected in the *Explorer* pane. Information about the element's children displays in the *View* pane. The level of detail displayed depends on the permissions set by the administrator. For more information on permissions, see the *Novell Operations Center 5.0 Security Management Guide*.

To access a view:

1. Click the desired tab at the bottom of the *View* pane. Table 2-2 list the console views.

Table 2-2 *Console Views*

View Name	Keyboard Shortcut	Description
Summary	Ctrl+1	Lists the condition of all subelements as well as the last reported date and time and notes about specific elements.
Portal	Ctrl+2	Provides a gateway into different areas that contain information about a selected element. Administrators use this view to modify the profile of a group, start or stop an adapter, and so on, from a single screen.
Network	Ctrl+3	Displays a graphical representation of the selected element in relation to all connected elements in the network.
Alarms	Ctrl+4	Displays a list of alarms associated with the selected element.
Layout	Ctrl+6	Displays a graphical representation of element relationships.
Performance	Ctrl+7	Graphs performance data for specified elements if historical data is available.

The selected view displays.

2.3 Using Menus and Toolbar Options

Console menu options provide navigating the element hierarchy, console window, and different views. Other options perform tasks such as finding an element, opening new console windows, and changing user passwords. Menu options can vary depending on the type of element and view selected.

The toolbar provides buttons for navigating windows and element hierarchies. The other buttons allow you to locate specific elements and perform routine tasks. The buttons vary depending on the selected view. For example, the *Alarms* view provides additional toolbar buttons for managing alarm data. The *Performance* view provides additional buttons to assist with charting performance data.

Table 2-3 lists the available buttons.

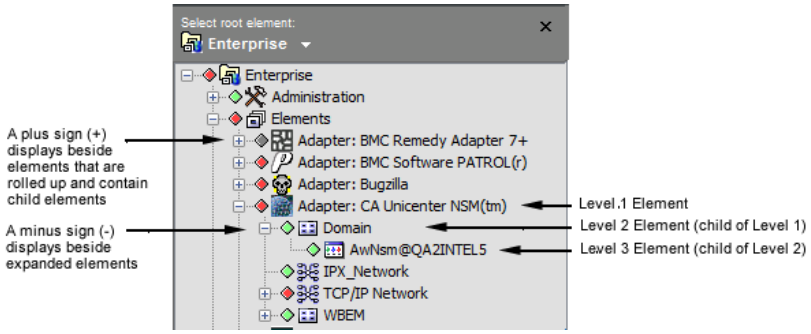
Table 2-3 *Console Toolbar Buttons*

Button	Description
B	Displays the previous view.
Forward	Displays the next view.
	Used with B to retrace steps during the current session. Invalid when viewing the most recent view.
Up	Navigates up one level in the hierarchy displayed in the Explorer.
Home	Displays the top level of the selected element's branch.
Find	Searches for elements based on specified criteria.
Chat	Opens a dialog box for communicating with other console users. Note that console users are not able to chat with dashboard users.
Filter	Suppresses the display of alarms or elements based on severity or condition.

2.4 Navigating Element Hierarchies

The *Explorer* pane consists of a hierarchy tree that enables drilling down to detailed levels of the objects in a managed organization. The selected root element is the top-level of the hierarchy. The first level beneath the root element consists of the major components defined for the root element. The second level consists of the children of the first level elements. Subsequent levels display the child elements of the previous level. For example:

Figure 2-9 *Explorer Pane Hierarchy*



A icon displays next to rolled-up elements that have child elements.

Before displaying elements in the *Explorer* pane, some management systems must discover elements from the Object Request Broker (ORB), or another program that controls the communication between a client and an object on a server, such as the Simple Network Management Protocol (SNMP). In such a situation, `discovering`... displays next to an element to indicate the communication protocol is performing the discovery process. The word `retrieving`... displays next to elements being retrieved in the console. The communication protocol previously discovered these elements, and they reside on the server.

To expand or collapse an element level:

- Section 2.4.1, “Expanding an Element Level,” on page 26
- Section 2.4.2, “Collapsing an Element Level,” on page 26

2.4.1 Expanding an Element Level

To expand an element level, do one of the following:

- Double-click an element.
- Click ⊞ next to the element.

A ⊟ displays next to expanded elements.

In the documentation, we use the verb “expand” instead of “double-click” or “click the ⊞ icon” and we sequentially list the elements to be expanded, separated by the > character. For example:

In the *Explorer* pane, expand the *Administration* root element > *Server*.

This means to click the ⊞ for *Administration* to expand its children, then click the ⊞ for *Server* to expand its children. Or, you can double-click *Administration* and *Server* to get the same effect.

2.4.2 Collapsing an Element Level

To collapse (roll-up) an element level, do one of the following:

- Double-click an element.
- Click ⊟ next to the element.

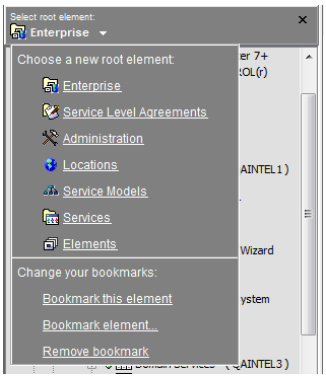
A ⊞ displays next to collapsed elements.

In the documentation, we use the verb “collapse” instead of “double-click” or “click the ⊟ icon”.

2.5 Root Elements

The *Explorer* pane provides a hierarchical view of elements that represent technology resources, organizational resources, or tasks. The *Explorer* pane groups all elements under standard root elements. The ability to view individual root elements and their hierarchies depends on assigned permissions.

Figure 2-10 *Root Element Drop-Down List*



Select a new root element by using the root element drop-down list, as shown in Figure 2-10. Add new root elements by using the Bookmark feature. For instructions on creating bookmarks, see Section 3.2, "Bookmarking Elements," on page 31.

To select a root element:

1. Click the arrow next to the current root element and then select a root element from the drop-down list:
   - **Enterprise:** The topmost element that contains all other root elements as its children.
   - **Administration:** Intended for administrators to perform administrative and maintenance tasks.

     Only users with administrator permissions can access these elements.
   - **Elements:** A detailed hierarchy of system and network components with multiple levels of elements defined for adapters.
   - **Service Level Agreements:** A hierarchy of Service Levels for a service.

     Provides a view of objectives and affected elements.

     For details on using SLAs, see the *Novell Operations Center 5.0 Service Level Agreement Guide*.
   - **Services:** Groups information into containers defined by the administrator to visualize related elements, such as a corporate organizational hierarchy or geographical sites.
     - **Locations:** A branch of the *Services* hierarchy. *Location* elements typically pertain to geographic sites.
     - **Service Models:** A branch of the *Services* hierarchy. *Service Model* elements define how a set of enterprise resources impacts a business function.

   For details on creating elements in the *Services* hierarchy, see the *Novell Operations Center 5.0 Service Modeling Guide*.

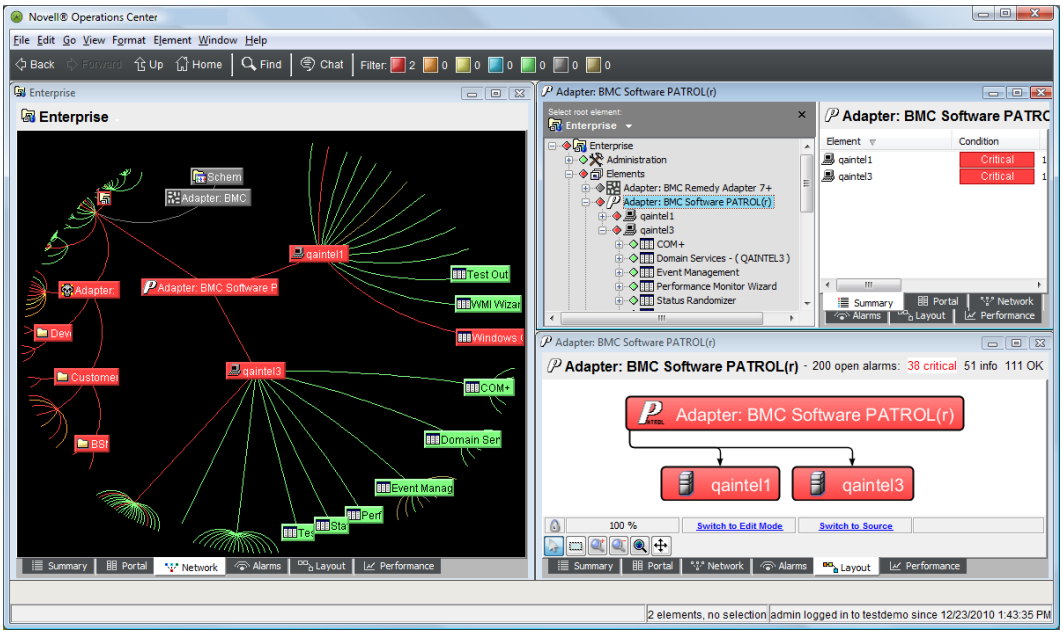
TIP: The child elements, which are the elements grouped under a root element, display in the *Explorer* pane.

2.6 Working with Multiple Console Windows

The Operations Center console allows you to open and work from multiple windows. Open a new window by selecting *Window* > *New Window* from the menu bar.

Add new windows and drag them to a new position or resize to create the desired workspace.

Figure 2-11 *Windows can be resized and arranged in the console.*



After maximizing a window, reopen all windows by selecting *Window* > *Tile*, or *Window* > *Cascade* from the menu bar.

2.7 Verifying the Server Name

When multiple Operations Center consoles are open, there are a few ways to identify the server associated with a particular client:

- View the title bar of the console window, which displays the server name:

- When you select *File* > *Logoff*, the server name displays in the confirmation dialog box title bar.
- When running under Microsoft Windows, the server name displays in the Operations Center taskbar icon.
- From the *Help* menu, select *About*.

  The server name displays in the About dialog box title bar.
- If you stop and restart the server, the server name displays in the dialog box that offers the option to try reconnecting to the server.

3 Customizing the Console Views

Customize the console views by minimizing the Explorer pane, changing the condition/severity colors, changing fonts or setting background colors, and adding element bookmarks. Operations Center saves these customizations as user settings, so that changes made by one user do not affect other users.

- Section 3.1, “Customizing the Explorer Pane,” on page 29
- Section 3.2, “Bookmarking Elements,” on page 31
- Section 3.3, “Setting the Default View,” on page 33
- Section 3.4, “Working with Tabular Data,” on page 33
- Section 3.5, “Customizing View “Look & Feel”,” on page 37
- Section 3.6, “Managing Condition/Severity Colors,” on page 40

3.1 Customizing the Explorer Pane

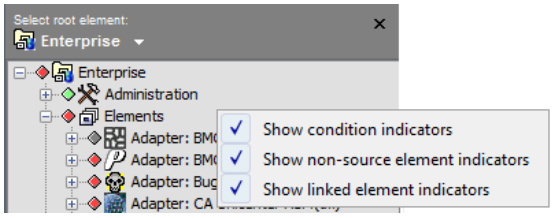
It is possible to configure the Explorer pane in various ways. Some configurations are related to the icon indicators next to the element objects in the hierarchy tree. Other options are related to the size and state of the Explorer pane.

- Section 3.1.1, “Hiding or Displaying Condition Indicators,” on page 29
- Section 3.1.2, “Displaying Linked Element Indicators,” on page 30
- Section 3.1.3, “Displaying Nonsource Element Indicators,” on page 30
- Section 3.1.4, “Changing the Explorer Pane Width,” on page 31
- Section 3.1.5, “Hiding and Restoring the Explorer Pane,” on page 31
- Section 3.1.6, “Selecting a Root Element When the Explorer Pane Is Hidden,” on page 31

3.1.1 Hiding or Displaying Condition Indicators

To hide or display the condition indicators in the *Explorer* pane:

1 In the *Explorer* pane, right-click the background, then select *Show Condition Indicators*:

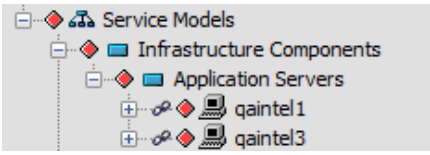


When selected, condition indicators display.

3.1.2 Displaying Linked Element Indicators

A linked element icon displayed in the *Services* hierarchy indicates that the element was created elsewhere in the hierarchy and later linked to this parent using the *Link* option.

Figure 3-1 *Linked Element Indicator*



Linked elements contribute to the state of the parent unless the link has been severed. For more information, see Section 3.1.3, "Displaying Nonsource Element Indicators," on page 30

To hide or display linked element indicators:

1 In the *Explorer* pane, right-click the background, then select *Show Linked Element Indicators*.

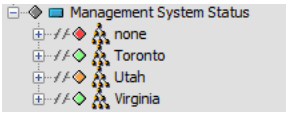
When selected, the linked element indicators display next to elements that are linked from another hierarchy.

3.1.3 Displaying Nonsource Element Indicators

Broken connector lines that display in the *Services* hierarchy indicate that a child element does not contribute to the state of its parent. This symbol is known as a nonsource contributing link.

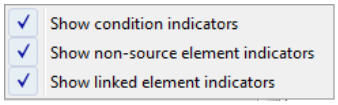
The *Link* option is used to link a *Services* element as a child of another *Services* element. In this case, the child to contribute to the condition of the new parent. Removing the link allows the child to still display in that part of the hierarchy, but with its condition no longer affects the parent, as symbolized by the nonsource element link icon:

Figure 3-2 *Nonsource Element Indicator*



To hide or display nonsource element indicators:

1 In the *Explorer* pane, right-click the background, then select *Show Non-source Element Indicators*:



When selected, the non-source element indicators display next to elements.

3.1.4 Changing the Explorer Pane Width

To expand or reduce the width of the *Explorer* pane:

1 Click the right border of the pane and drag the mouse to the left or right when a horizontal arrow appears.

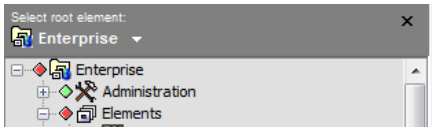
3.1.5 Hiding and Restoring the Explorer Pane

- "Hiding the Explorer Pane" on page 31
- "Restoring the Explorer Pane" on page 31

Hiding the Explorer Pane

To hide the Explorer pane:

1 Click the x in the top right corner of the *Explorer* pane.



The *Explorer* pane disappears and the *View* pane maximizes to fill the console. The current the root element name displays in the *View* pane title bar, under the toolbar menu.

Restoring the Explorer Pane

To restore the Explorer pane:

1 From the *View* menu, select *Explorer Pane* to display the *Explorer* pane.

3.1.6 Selecting a Root Element When the Explorer Pane Is Hidden

To select a new root element when the Explorer pane is hidden:

1 In the *View* pane title bar, click the root element name to display the *Explorer* pane.

2 Click the *Root Element* drop-down list, then select a different root element.

The title bar and *View* pane update. The *Explorer* pane disappears.

3.2 Bookmarking Elements

The root element menu is available at the top of the Explorer pane and allows bookmarks to be created for more custom and easier navigation. It provides a way to access an element, perhaps a child element that is several levels beneath the root, using a single click. Create bookmarks for frequently accessed elements.

- Section 3.2.1, "Understanding Bookmarking in Operations Center," on page 32
- Section 3.2.2, "Bookmarking the Current Element," on page 32
- Section 3.2.3, "Bookmarking an Element from a List," on page 33

- Section 3.2.4, “Accessing a Bookmark,” on page 33
- Section 3.2.5, “Removing a Bookmark,” on page 33

3.2.1 Understanding Bookmarking in Operations Center

Figure 3-3 shows the *Source Data* bookmark displayed in the list of root elements:

Figure 3-3 *Root Element Drop-Down List*

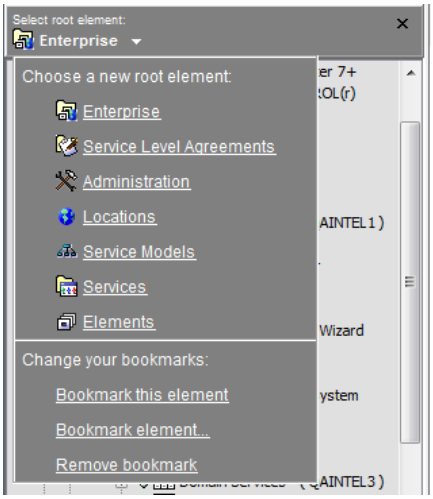


Table 3-1 summarizes the *Bookmark* menu options.

Table 3-1 *Bookmark Options*

Option	Function
Bookmark This Element	Adds the current element currently to the root element selection list.
Bookmark Element	Opens a dialog box displaying all root element hierarchies to select an element to bookmark.
Remove Bookmark	Deletes the bookmark that is currently selected as the root element.

3.2.2 Bookmarking the Current Element

To bookmark the current element:

1. Select the desired element in the Explorer pane.
2. Click the root element drop-down list, then select *Bookmark This Element*.

   A link to the element displays in the root element drop-down list.

3.2.3 Bookmarking an Element from a List

To bookmark any element:

1. Click the root element drop-down list, then select *Bookmark Element*.

   A drop-down list displays the hierarchy for each root element.
2. Select an element at any level, then click *OK* to add it to the root element selection list.

3.2.4 Accessing a Bookmark

To access a bookmark:

1. Click the root element drop-down list and then select the bookmark.

3.2.5 Removing a Bookmark

To delete a bookmark:

1. Click the root element drop-down list and then select *Remove Bookmark*.

3.3 Setting the Default View

The *Summary* view is the default view. The default view opens immediately after selecting any element in the *Explorer* pane.

To change the default view:

1. From the *View* menu, click *Default View*, then select a view type:

   None: The view type does not change after selecting an element in the *Explorer* pane.

   Auto-Select: Operations Center selects a view that corresponds to the type of selected element.

   For example, if the selected element under the *Administration* root is a folder, such as *Adapters* or *Automation/Repository*, the *Summary* view is the default view.

   Summary: The view changes to *Summary*.

   Portal: The view changes to *Portal*.

   Network: The view changes to *Network*.

   Layout: The view changes to *Layout*.

The selected view displays immediately after selecting any element in the *Explorer* pane.

3.4 Working with Tabular Data

You can customize tabular data in the Summary and Alarms views in the following ways:

- Sort the elements (Summary view) or alarms (Alarms view) by different columns
- Rearrange the order of data columns
- Hide or show columns
- Resize columns

The following sections describe:

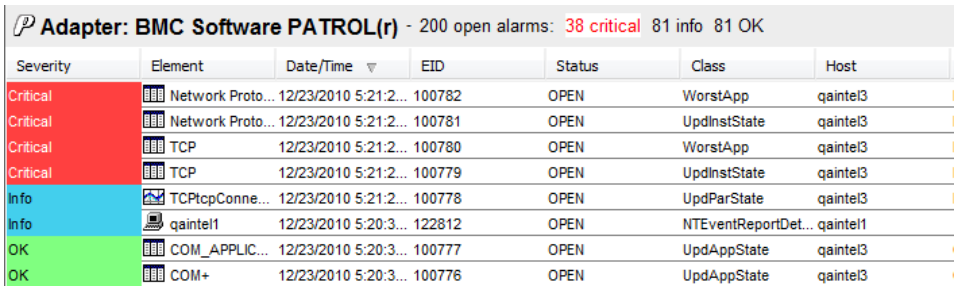
- Section 3.4.1, “Sorting Data,” on page 34
- Section 3.4.2, “Hiding, Displaying, and Selecting Columns,” on page 34
- Section 3.4.3, “Sizing Columns,” on page 36

3.4.1 Sorting Data

Some analyses might require sorting elements or alarms in the *Summary* or *Alarms* view by a specific data column. When you sort the display of alarms based on any column other than the common columns (*Severity*, *Element*, *Date/Time*, *ID*), sorting is performed using a string sort, so numeric data values might not sort properly.

To sort elements or alarms by a specific column:

1. In the *Summary* or *Alarms* view, click a column heading:



Adapter: BMC Software PATROL(r) - 200 open alarms: 38 critical 81 info 81 OK

Severity	Element	Date/Time	EID	Status	Class	Host
Critical	Network Proto...	12/23/2010 5:21:2...	100782	OPEN	WorstApp	qaintel3
Critical	Network Proto...	12/23/2010 5:21:2...	100781	OPEN	UpdInstState	qaintel3
Critical	TCP	12/23/2010 5:21:2...	100780	OPEN	WorstApp	qaintel3
Critical	TCP	12/23/2010 5:21:2...	100779	OPEN	UpdInstState	qaintel3
Info	TCPtcpConne...	12/23/2010 5:21:2...	100778	OPEN	UpdParState	qaintel3
Info	qaintel1	12/23/2010 5:20:3...	122812	OPEN	NTEventReportDet...	qaintel1
OK	COM_APPLIC...	12/23/2010 5:20:3...	100777	OPEN	UpdAppState	qaintel3
OK	COM+	12/23/2010 5:20:3...	100776	OPEN	UpdAppState	qaintel3

   The items in the column sort in descending order, as represented by the down arrow icon.

2. Click the heading a second time to sort in ascending order. The up arrow icon displays in the column.
3. Rearrange the order in which the columns display by clicking and dragging a column to a new location.

3.4.2 Hiding, Displaying, and Selecting Columns

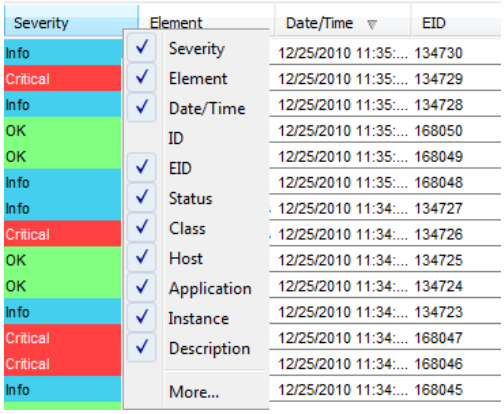
- “Hiding Columns” on page 35
- “Displaying a Hidden Column” on page 35
- “Selecting Multiple Columns” on page 35

Hiding Columns

To hide a column:

1 Right-click a column heading.

A drop-down list of available column headings displays:



A check mark identifies the columns currently displayed. The column names vary among adapters associated with the alarms.

2 Click *More* to view additional columns.

3 Click to remove the check mark next to a column name.

The column disappears from the *Alarms* view.

4 To rearrange the order in which the columns display, click and drag a column to its new location.

Displaying a Hidden Column

To display a column:

1 Right-click a column heading.

A drop-down list of column headings displays.

2 Select a column name.

A check mark displays next to the column and the column displays in the view.

Selecting Multiple Columns

To select multiple columns:

1 Right-click a column heading to display a drop-down list.

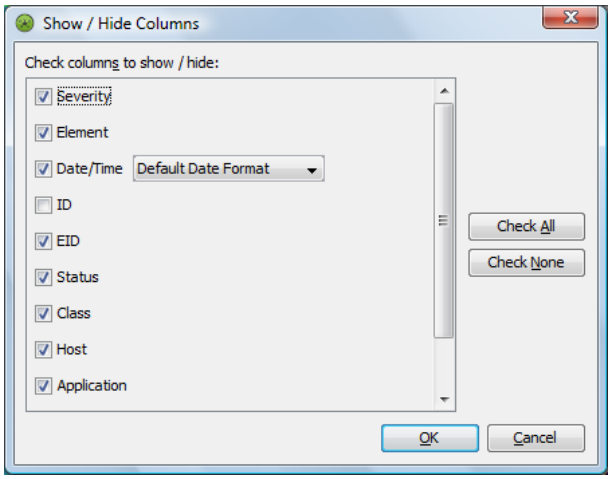
2 From the drop-down list, select *More* to open the Show/Hide Columns dialog box.

3 Do one of the following:

- Select individual check boxes, or click *Check All* to select all check boxes.
- To deselect all columns at the same time, click *Check None*.

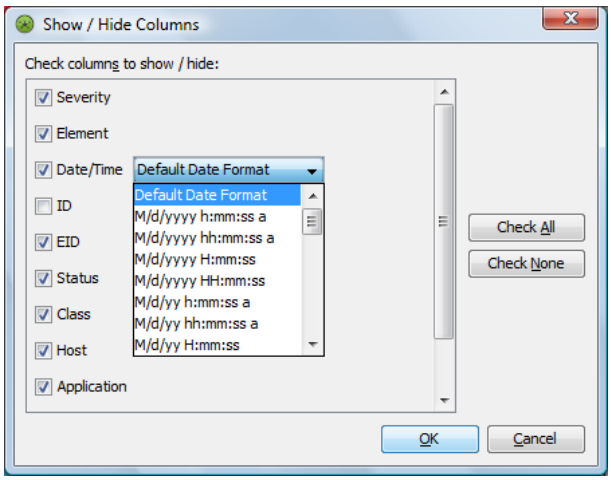
4 Click *OK*.

The selected columns display in the view and the deselected columns disappear from the view:



The *Date/Time* column has multiple display options. In addition to the standard mm/dd/yy format, you can specify only a 24-hour clock display without the date, as well as other date/time display combinations.

5 Click the drop-down to view, then select a date and time format:



3.4.3 Sizing Columns

The default column size might make it difficult to read values in specific columns. Use the *Fit Columns* option to expand specific columns to accommodate the longest text strings that they contain.

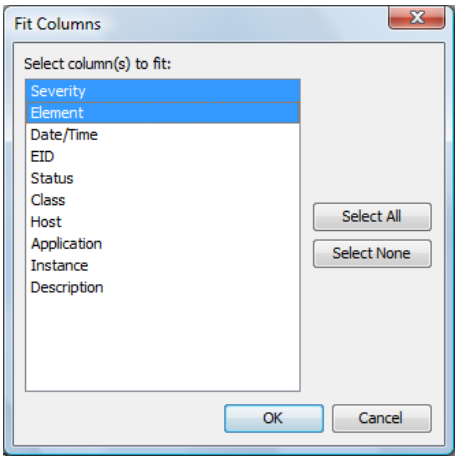
To resize columns based on the length of text strings:

1 From the *Format* menu, select *Fit Columns* to open its dialog box.

By default, all columns are selected.

2 Do one of the following:

- Deselect individual column names.



- Click *Select All* or *Select None* to select all or none of the columns at the same time.

3 Click *OK* to resize each selected column to accommodate the longest text string in it:

3.5 Customizing View "Look & Feel"

You can customize the view display in the following ways:

- Change the display font (Summary, Network, and Alarms view)
- Change the background color of the *Network* view
- Select a specific view as the default

To customize a view display:

- Section 3.5.1, "Changing the Display Font (Summary, Network, and Alarms Views)," on page 37
- Section 3.5.2, "Hiding or Displaying Text Labels (Network View)," on page 38
- Section 3.5.3, "Changing Background Color (Network and Layout Views)," on page 38

3.5.1 Changing the Display Font (Summary, Network, and Alarms Views)

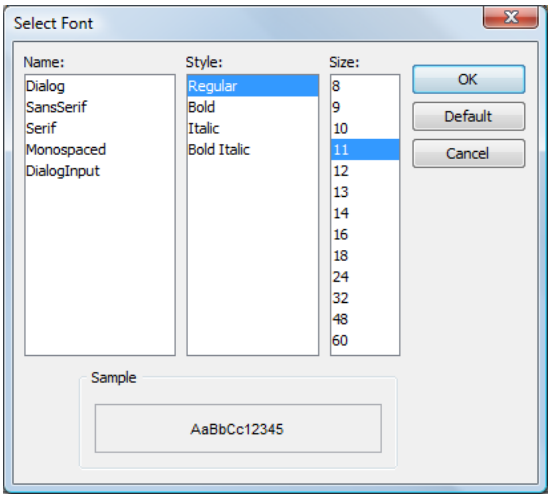
To change the font displayed in the *Summary*, *Network*, or *Alarms* view:

1 In the *View* pane, select the *Summary*, *Network*, or *Alarms* tab.

2 Click *Format*, and select one of the following:

- **Enlarge Font:** Displays the font in the next largest size. Applies to Network view only.
- **Shrink Font:** Displays the font in the next smallest size. Applies to Network view only.
- **Set Font:** to change the font type, style or size.

The Select Font dialog box opens:



Select the font's name, style, and size.

(Optional) To return to the system default 12 point *Dialog* font, click *Default*.

Click *OK*.

The selected font displays in the view.

3.5.2 Hiding or Displaying Text Labels (Network View)

To change the font displayed in the *Network* view:

1. Select *Display Text* in the *Format* menu.

   When selected, the text labels display. When deselected, all text representing each element disappears and only icons representing the different kinds of elements display.

3.5.3 Changing Background Color (Network and Layout Views)

It is possible to change the background color of the *Network* and *Layout* views.

To change the background color:

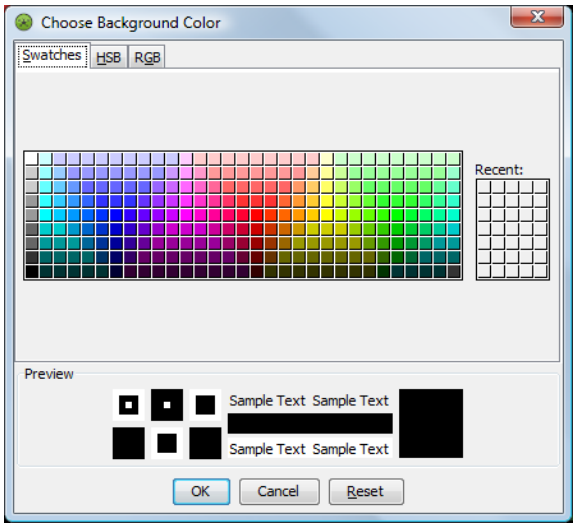
1. In the *View* pane, select the *Network* or *Layout* tab.
2. Click *Format*, then select *Choose Background Color* to open the Choose Background Color dialog box.

TIP: This option is also available from the right-click menu on the view background.

---

3 In the Choose Background Color dialog box, click a tab to open the color selector:

- In the *Swatches* tab, point, then select a new background color:



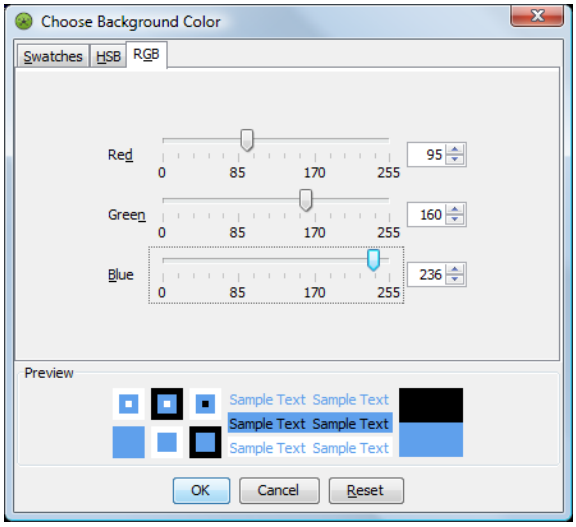
- In the *HSB* tab, select a hue and saturation.

  Use the scroll bar to select a hue.

  Click the color in the palette. The selected color appears in the *Preview* section.

- In the *RGB* tab, create a new color by specifying red, green, and blue values.

  Move the *Red*, *Green*, and *Blue* sliders to adjust the RGB values. The selected color appears in the Preview dialog box:



4 Click *OK*.

The new background color displays in the *Network* view.

3.6 Managing Condition/Severity Colors

Filtering features in the Operations Center console can hide some elements and their information from a view. You can use the filtering feature in the *Summary*, *Network*, *Alarms*, and *Layout* views. The condition/severity filter buttons (located on the toolbar) select events using color codes that represent degrees of criticality. The colored buttons display from left to right in order of most critical to least critical. In general, condition refers to elements and severity refers to alarms:

Figure 3-4 *Condition/Severity Filter Buttons*

Table 3-2 describes the standard condition/severity color codes and their default definitions from most critical to least critical.

Table 3-2 *Default Color Codes*

Color	Description
Red	CRITICAL
Orange	MAJOR
Yellow	MINOR
Blue	INFORMATIONAL
Green	OK
Gray	UNKNOWN
Brown	UNMANAGED

The color codes help prioritize alarms and events to sort or filter based on condition or severity. For example, sort elements from most critical to least critical, or filter out elements having an OK or INFORMATIONAL condition, to focus on problem areas.

The following sections explain how to modify color themes:

- Section 3.6.1, "Selecting a New Color Theme," on page 40
- Section 3.6.2, "Modifying Colors in a Scheme," on page 41
- Section 3.6.3, "Creating a Custom Color Scheme," on page 42

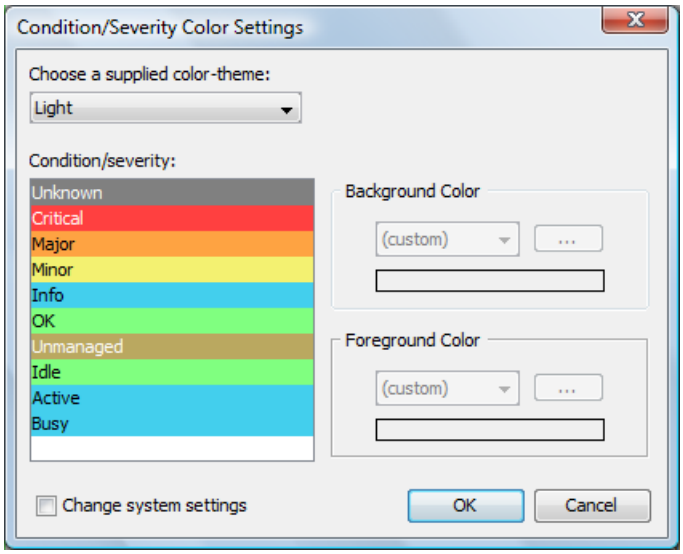
3.6.1 Selecting a New Color Theme

To select a color from the six default color themes:

1. From the *Format* menu, select *Condition/Severity Colors* to open the Condition/Severity Color Settings dialog box.
2. Click the *Choose a Supplied Color Theme* drop-down list, then select a color theme.
3. Select the *Change System Settings* check box to set the theme as the default for all users.

4 Click *OK*.

The condition/severity codes display using the selected color theme:



3.6.2 Modifying Colors in a Scheme

To modify one or more colors in a color scheme:

1 From the *Format* menu, select *Condition/Severity Colors* to open the Condition/Severity Color Settings dialog box.

2 In the *Condition/Severity* section, select a condition color to change. The *Background* and *Foreground Color* drop-down lists activate.

3 Click the *Background* and *Foreground Color* drop-down lists, then select new colors.

4 Select the *Change System Settings* check box to change the theme for all users.

5 Click *OK*.

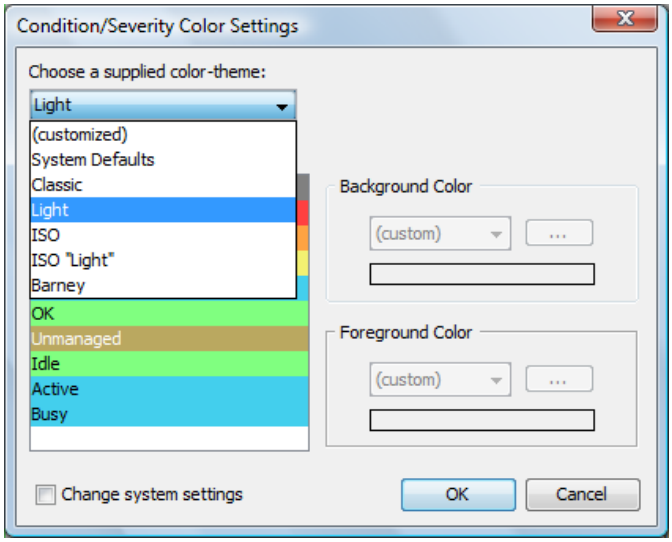
The selected condition/severity code displays using the new color.

3.6.3 Creating a Custom Color Scheme

It is possible to customize the colors that represent condition/severity levels. There are six default color themes.

To create an additional color theme using the color selector:

1. From the *Format* menu, select *Condition/Severity Colors* to open the Condition/Severity Color Settings dialog box.
2. Click the *Choose a Supplied Color Theme* drop-down list, then select *(Customized)*.



3. Select a color condition to change.

   This activates the *Background* and *Foreground Color* drop-down lists.
4. Click the *Background* and *Foreground Color* drop-down lists, then select new colors.
5. Continue selecting condition/severity codes and changing their background and foreground colors.
6. Select the *Change System Settings* check box to add the theme for all users.
7. Click *OK* to apply the new color theme.

4 Monitoring Elements and Element State

Both alarms and algorithms can contribute to the state (condition) of an element.

Alarms are events associated with specific elements. Each alarm has a severity level. Monitoring an element's state often involves analyzing the alarms associated with the element. For more information on alarms, see Chapter 6, "Filtering and Managing Alarms," on page 67.

An algorithm is a sequence of actions that an element can use to change the calculation of its own state. The default method of calculating the state of an element is to use the state of the most critical child element. For details on algorithms, see "Using Algorithms to Calculate Element State" in the *Novell Operations Center 5.0 Server Configuration Guide*.

The following sections describe using the Operations Center console to monitor elements and element state:

- Section 4.1, "Monitoring Elements," on page 43
- Section 4.2, "Viewing Element Properties," on page 48
- Section 4.3, "Filtering Elements by Condition," on page 50
- Section 4.4, "Exploring Hierarchies Using the Network View," on page 51
- Section 4.5, "Managing and Unmanaging Elements," on page 54
- Section 4.6, "Viewing Root Cause and Impacted Elements," on page 55

4.1 Monitoring Elements

The elements available to monitor depend on your access permissions.

The following topics are related to the basic monitoring of elements:

- Section 4.1.1, "Understanding Adapter and Service Model Elements," on page 43
- Section 4.1.2, "Understanding Element Condition," on page 44
- Section 4.1.3, "Reviewing Element Information," on page 45

4.1.1 Understanding Adapter and Service Model Elements

In the *Explorer* pane, you are likely to have access to the following types of elements:

- **Adapter Elements:** Elements displayed under the *Elements* root element originate from adapters and are referred to as adapter elements. These elements can be linked to from the *Services* hierarchy.
- **Service Model Elements:** Administrators can create or import elements in the *Services* > *Service Models* hierarchy. These *Service Model* elements can have custom property pages.

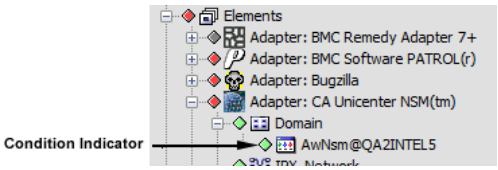
  For more information about Service Model elements, see the *Novell Operations Center 5.0 Service Modeling Guide*.

For information about various display options in the *Explorer* pane, see Chapter 3, "Customizing the Console Views," on page 29.

4.1.2 Understanding Element Condition

In the console, color-coded element conditions help identify critical system events. These condition indicators display for each element in the *Explorer* and *View* panes. Condition indicators display as colored diamonds next to each element:

Figure 4-1 *Condition Indicators in the Explorer Pane*



For instructions on hiding or showing the diamond condition indicators in the *Explorer* pane, see Section 3.1.1, "Hiding or Displaying Condition Indicators," on page 29.

Condition indicators also display in:

- The *Condition/Severity* column of the *View* pane
- The element property pages (see Section 4.2, "Viewing Element Properties," on page 48)

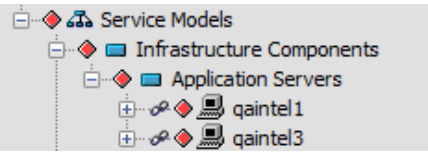
Table 4-1 describes the standard element condition colors and their default definitions from most critical to least critical.

Table 4-1 *Default Element Condition Colors*

Color	Element Status
Red	CRITICAL
Orange	MAJOR
Yellow	MINOR
Blue	INFORMATIONAL
Green	OK
Gray	UNKNOWN
Brown	UNMANAGED

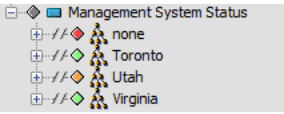
In many cases, Administrators link an *Elements* element or *Services* element as a child of another *Services* element. In this case, the child to contribute to the condition of the new parent. In the *Explorer* pane, a linked element icon displays by these elements, indicating that the element was created elsewhere in the hierarchy and later linked to this parent using the *Link* option.

Figure 4-2 *Linked Element Indicators in the Explorer Pane*



Removing the link allows the child to still display in that part of the hierarchy, but with its condition no longer affects the parent, as symbolized by the nonsource element link icon in the *Explorer* pane:

Figure 4-3 *Nonsource Element Indicator*



For more information about hiding and showing linked element indicators, see Section 3.1.2, "Displaying Linked Element Indicators," on page 30

For more information about hiding and showing nonsource elements indicators, see Section 3.1.3, "Displaying Nonsource Element Indicators," on page 30.

4.1.3 Reviewing Element Information

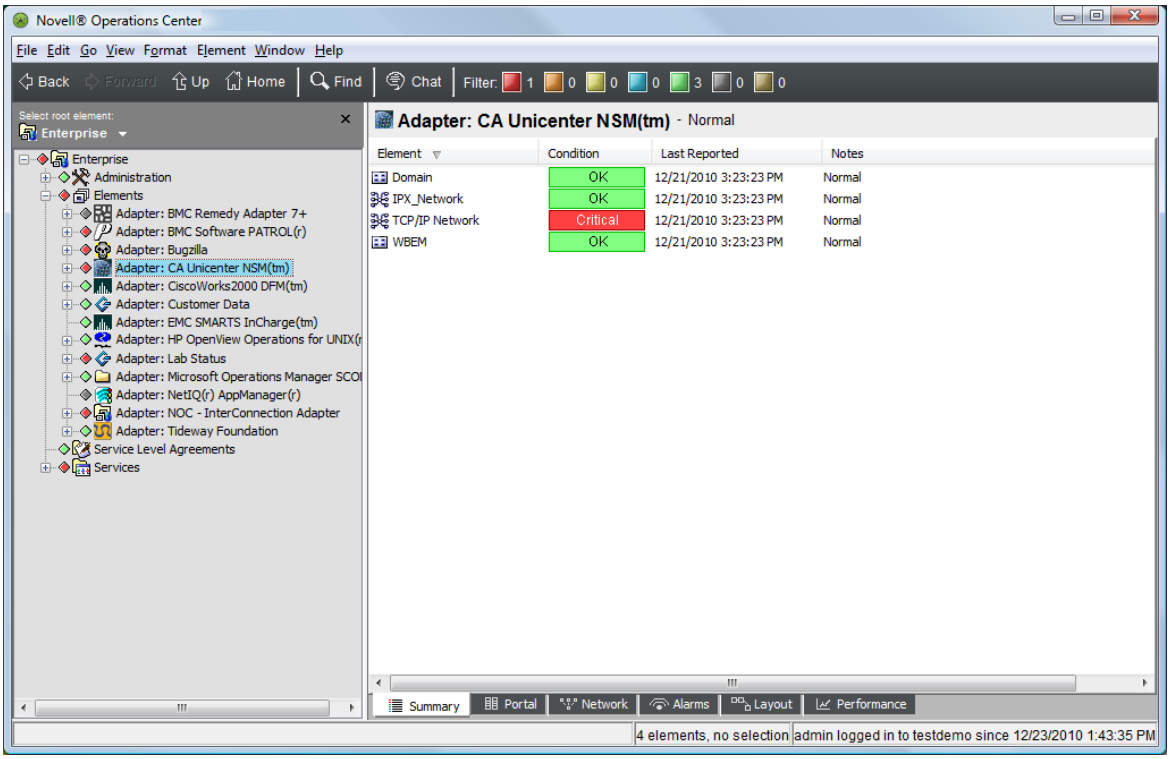
After selecting an element in the *Explorer* pane, the *View* pane updates to display information about the selected element's children. The information varies among views:

- "Understanding the Summary View" on page 46
- "Understanding the Network View" on page 47
- "Understanding the Layout View" on page 48

Understanding the Summary View

The *Summary* view displays the first-level child elements of the element selected in the *Explorer* pane.

Figure 4-4 *Summary View*



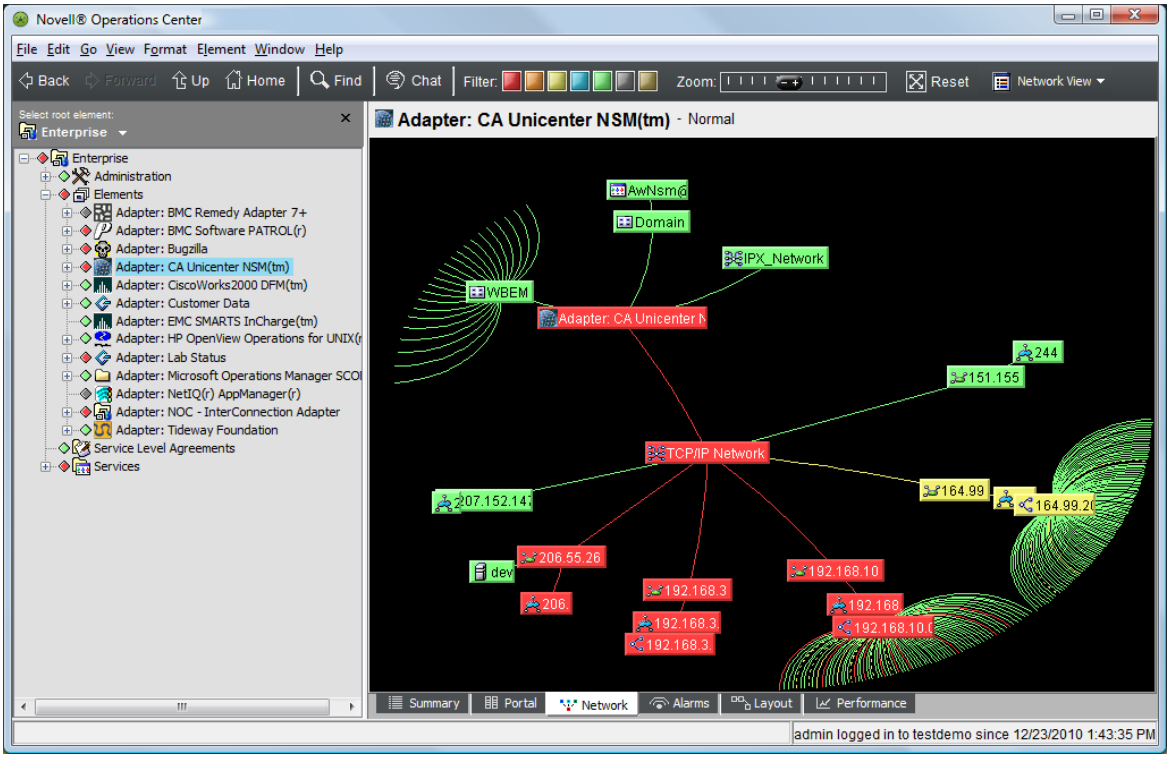
By default, it displays four informational columns, summarized in the following:

- **Element:** Displays the element name.
- **Condition:** Identifies the element's current condition.
- **Last Reported:** Displays the time of the most recent element condition update.
- **Notes:** Provides a brief remark regarding the element's condition.

Understanding the Network View

The *Network* view provides a graphical view of elements and their relationship to other elements within the larger infrastructure. It presents the selected element at the center of the view, with lines connected to first-level child elements. The line colors identify the condition of the child element:

Figure 4-5 *Network View*

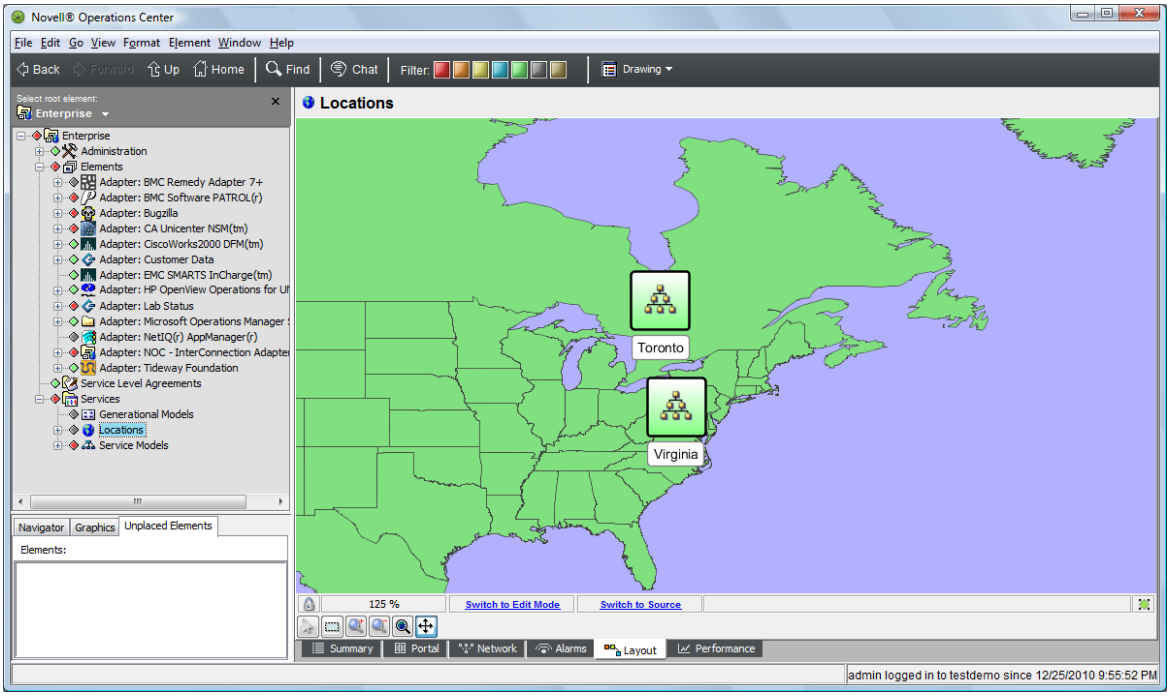


User access privileges determine which elements display in the *Network* view. The currently selected level of the element hierarchy in the *Explorer* pane determines whether the entire network displays, or only a portion of it.

Understanding the Layout View

The *Layout* view uses icons to represent system elements and how they relate to each other:

Figure 4-6 *Layout View*



The *Layout* view is available for all elements, including:

- **Services > Locations:** Displays a global map. Each color-coded geographical site identifies the most severe condition among its child elements.
- **Services > Service Models:** Displays icons representing any element and type of relationship among elements, such as functional organizations or processes. Customize the view using drawing tools.

For more information, see the *Novell Operations Center 5.0 Custom Drawing and Layout Guide*.

4.2 Viewing Element Properties

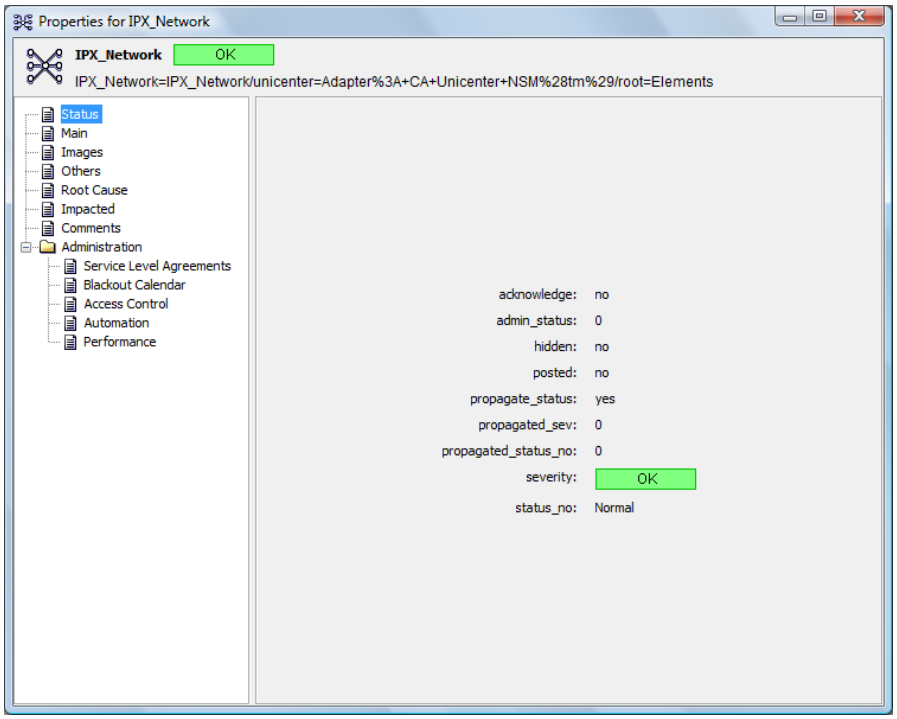
Property pages display detailed information about an element: Information displayed and the various pages available depend on the type of element. *Administration* property pages are found under an *Administration* folder.

- Section 4.2.1, "Viewing Element Properties and Property Pages," on page 49
- Section 4.2.2, "Copying Element Properties," on page 49

4.2.1 Viewing Element Properties and Property Pages

To view element properties:

1 Right-click an element in the *View* pane, then select *Properties* to open the *Status* property page.



The left pane displays the names of available property pages to display the current property page in the right pane.

The title displays the element's short name, condition, and Distinguished Name (DName). Each element has a unique, fully qualified, internal DName, which defines the element's place in the hierarchy. The DName is read-only, but can be selected and copied to the Clipboard. The DName can be difficult to read, so the element name displays everyplace the DName displays.

2 Click a page name in the left pane to view the selected property page.

Administration property pages are under an *Administration* folder. Click ⊞ next to the property page name to expand the property page list.

Users with appropriate access rights can edit the *Access Control* and *Automation* property pages.

4.2.2 Copying Element Properties

Text-based element property values can be copied to the Clipboard for pasting in other applications:

- "Copying a Single Text Property" on page 50
- "Copying All Text Properties" on page 50

Copying a Single Text Property

To copy a text property on the page:

1. Right-click a property, then select *Copy* to place the text on the Clipboard.
2. Paste the text in any other application.

Copying All Text Properties

To copy all text properties on the page:

1. Right-click the right side of the page background, then select *Copy All*.

   The *Copy* and *Copy All* options are also available for text-based alarm properties.

4.3 Filtering Elements by Condition

In the *Summary*, *Network*, and default *Layout* views; all elements display by default.

In the top toolbar, *Filter* toolbar buttons represent the different condition levels (Critical, Major, Minor, and so on) by showing the associated color. In the *Summary* view, the number of elements for each condition displays next to button.

Use these *Filter* toolbar buttons to display or hide elements in the view based on condition.

For more information, see Chapter 6, "Filtering and Managing Alarms," on page 67.

You can perform the following actions using the *Filter* section of the toolbar:

- Section 4.3.1, "Displaying All Elements," on page 50
- Section 4.3.2, "Hiding Elements," on page 50
- Section 4.3.3, "Displaying Elements of a Selected Condition," on page 51
- Section 4.3.4, "Displaying Elements of a Specified Severity," on page 51

4.3.1 Displaying All Elements

To display all elements:

1. Right-click any location in the *Filter* section of the toolbar, then select *Reset Filter Settings.*

4.3.2 Hiding Elements

To hide elements:

1. Click a colored icon to hide elements having that condition:

4.3.3 Displaying Elements of a Selected Condition

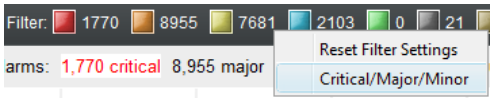
To display elements of a selected condition:

1 Select or deselect the filter buttons:
   - Elements with the selected condition display.
   - Elements with the deselected condition disappear from the view.

4.3.4 Displaying Elements of a Specified Severity

To display elements od a specified severity:

1 Right-click any location in the *Filter* section of the toolbar, then select *Critical/Major/Minor*:



Only the elements with CRITICAL, MAJOR, or MINOR severity display.

4.4 Exploring Hierarchies Using the Network View

The *Network* view provides a dynamic graphical interface that enables moving across the entire enterprise, managing applications, servers, and network components.

The *Network* view displays relationships among system components within a large infrastructure. The *Network* view displays the selected element at the center, with spokes connecting to first-level child elements. Additional lines connect the first level elements to their children. The line colors identify the conditions of the child elements.

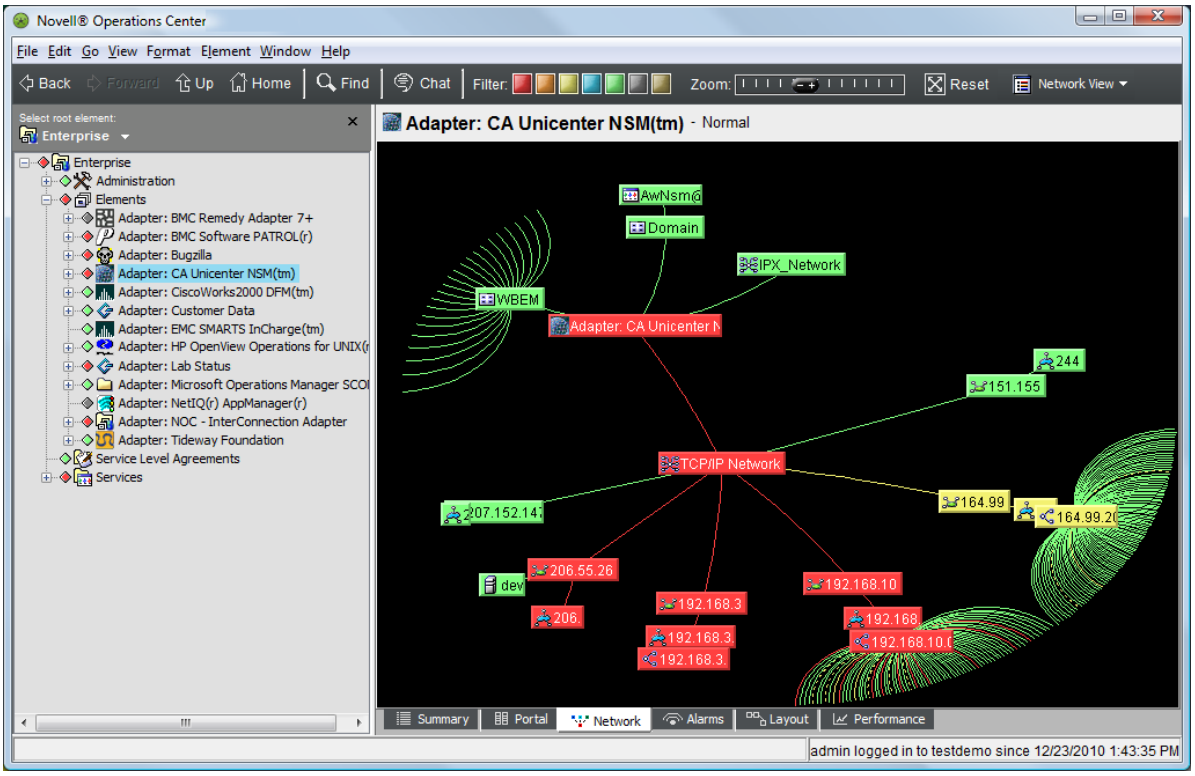
The *Network* view might not be available to users who are not in the administrators group if it was disabled. For more information, see "Disabling the Network and Layout Views" in the *Novell Operations Center 5.0 Server Configuration Guide*.

The element selected in the *Explorer* pane determines which elements display in the *Network* view and whether the entire network displays or only a portion of it. The elements displayed in the *Network* view also depend on user access privileges.

There are various ways to move around the *Network* view. Use menu options and toolbar buttons to view different levels of detail.

Initially, the element selected in the *Explorer* pane displays in the center of the *Network* view:

Figure 4-7 *Network View*



The following sections describe how to use the various features of the *Network* view:

- Section 4.4.1, "Changing the Viewing Level of the Elements," on page 52
- Section 4.4.2, "Selecting the Magnification Level," on page 53
- Section 4.4.3, "Shifting the View to Follow Condition Changes," on page 53
- Section 4.4.4, "Changing the Network Orientation," on page 54

4.4.1 Changing the Viewing Level of the Elements

You can view elements at a higher or lower level than the selected element. Table 4-2 provides some examples.

Table 4-2 *Network View Actions*

Action	Result
On the toolbar, click the *Up* button.	The selected element's parent moves to the center of the *Network* view.
On the toolbar, click the *Home* button.	The top-level view displays. The *Elements* element displays at the center of the *Network* view with lines connecting to the first level elements.

Action	Result
Click and drag the network to center a different section on the screen.	A new section displays at the center of the *Network* view.
Click an element once.	The element moves to the center of the *Network* view. The network diagram shifts accordingly, bringing into view the elements connected to the selected element.
Double-click an element.	The selected element moves to the center of the network and its child elements display.
Click anyplace on the network background in the direction in which the network should move. For example, to scroll to the right, click anyplace in the right side of the network background.	The *Network* view shifts in the selected direction. It brings into view elements that were not previously visible.

4.4.2 Selecting the Magnification Level

Use the *Zoom* slider to increase or decrease the level of detail displayed in the *Network* view:

Figure 4-8 *Zoom Slider*

Table 4-3 provides some examples of how to use the slider.

Table 4-3 *Zoom Slider Actions*

Action	Result
Move the slider to the right.	Magnifies (zooms in) the *Network* view. Fewer elements display, and the lines connecting them enlarge.
Move the slider to the left.	Shrinks (zooms out) the *Network* view. More elements display and the lines connecting them shrink.
On the toolbar, click the *Reset* button.	Returns to the default magnification level. The default view displays.

4.4.3 Shifting the View to Follow Condition Changes

You can enable the *Follow Condition Changes* menu option to immediately move any elements that experience condition changes to the center of the *Network* view:

- "Automatically Shifting the View to Follow Condition Changes" on page 54
- "Causing Elements to Blink When Condition Changes Occur" on page 54

Automatically Shifting the View to Follow Condition Changes

To shift the view to follow element condition changes:

1 Click *Format*, then select *Follow Condition Changes*.

Enable the *Highlight Condition Changes* feature to cause elements to blink when their conditions change. However, the *Network* view does not move these elements to the center of the screen.

Causing Elements to Blink When Condition Changes Occur

To blink elements when element condition changes:

1 Click *Format*, then select *Highlight Condition Changes*.

In the *Network* view, elements whose condition change blink.

4.4.4 Changing the Network Orientation

Use the *Format* menu options in the console's menu bar to change the orientation of elements displayed in the *Network* view.

To change the orientation of displayed elements:

1 From the *Format* menu, click *Orientation*, then select one of the following:

Radial: The selected element displays in the center of the screen, with lines connecting it to other elements in a circle.

Top-Down, Bottom-Up: The selected element displays at the top or bottom of a vertical hierarchy, with lines connecting it to other elements.

Left-to-Right, Right-to-Left: The selected element displays in the far left or right of the screen in a horizontal hierarchy, with lines connecting it to other elements.

4.5 Managing and Unmanaging Elements

For some management systems, conditions are not tred for unmanaged elements. Eliminating the conditions for some elements reduces the bandwidth and processing time required. You can identify elements as managed using the *Manage* right-click option, which displays regularly updated condition information.

The managing and unmanaging of elements applies to the following enterprise management systems:

- Computer Associates' Unicenter (any version) running on a supported platform
- Hewlett Pard OpenView Network Node Manager (version 6.0) running on supported platforms
- Tivoli NetView (versions 5.0) running only on UNIX integrations (the AIX and Solaris platforms)

  Using this option requires the Manage permission.

To manage or unmanage an element:

- Section 4.5.1, "Managing an Element," on page 55
- Section 4.5.2, "Unmanaging an Element," on page 55

4.5.1 Managing an Element

To start managing an element:

1. Right-click the element, select *Manage*, and then select *Start Monitoring*.

   The element's condition changes from UNMANAGED to an updated condition.

4.5.2 Unmanaging an Element

To stop managing an element:

1. Right-click an element, select *Manage*, and then select *Stop Monitoring*.

   The unmanaged element and its children display, but Operations Center does not update their conditions. Their conditions change to UNMANAGED.

4.6 Viewing Root Cause and Impacted Elements

Operations Center provides features for identifying the root cause of a service failure as well as the impact of an element's failure:

- **Show Root Cause:** Provides a quick way to identify elements that caused a change in the condition of a higher-level element.

  This option is not available for the *Enterprise*, *Administration*, and *Elements* root elements.
- **Show Impacted:** Helps to identify the business services impacted by the failure of lower-level services.

Use these features together to identify dependencies among service objects and to manage the impact of an object on overall service delivery:

- Section 4.6.1, "Identifying Service Root Causes," on page 56
- Section 4.6.2, "Identifying Impacted Services," on page 57
- Section 4.6.3, "Navigating Impacted or Root Cause Elements," on page 59
- Section 4.6.4, "Restricting the Show Impacted Feature," on page 60

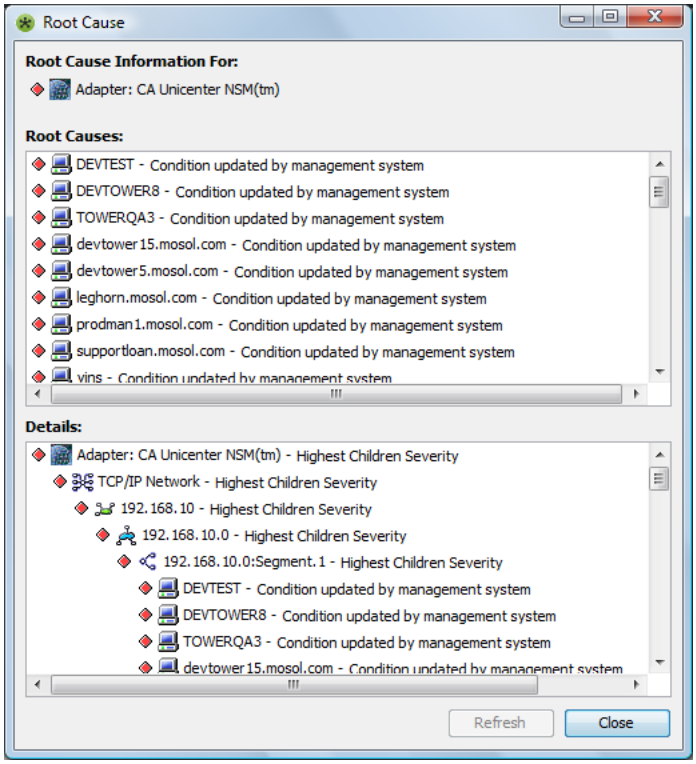
4.6.1 Identifying Service Root Causes

Use the Root Cause feature to identify lower-level objects that caused a change in the condition of a higher-level object.

Element hierarchies display in their entirety. The Root Cause feature ignores the Display Elements as Children setting for all objects in a hierarchy.

To view *Root Cause* information:

1 Right-click an element in the *Explorer* pane, then select *Show Root Cause* to open its dialog box:



The Root Cause dialog box consists of the *Root Causes* and *Details* sections.

2 Use the information in the dialog box to identify lower-level elements that affected the change in the higher-level element's condition:

Root Causes: Identifies the elements that affected the selected element's state. In the previous illustration, New York Center is down because Port 5 is down and Port 8 is malfunctioning.

Details: Identifies the hierarchy of the elements involved. Users who do not have the appropriate security permissions to view an element that is the root cause cannot view the root cause tree that is normally displayed in the *Details* pane.

3 Click *Refresh* to update the following information:

- The state of the selected element and the root cause of the selected element's state
- The service hierarchy definitions in which the selected element participates (Hierarchy files are described in the *Novell Operations Center 5.0 Adapter and Integration Guide*)
- The state of the root cause element in the service hierarchy definition that impacts the selected element's state
- The state of any element in the service hierarchy definition in which the selected element participates

4 Perform any of the following actions on elements displayed in the Root Cause dialog box:

- Double-click an element.

  The view updates to display information for the element.

- Position the cursor over the element.

  Tooltip information displays for the element.

- Right-click an element, then select a menu option.

  For descriptions of the menu options, see Appendix B, "Element and Alarm Options," on page 123.

5 In the *Layout* view, display information about an element that is a root cause, perform management operations on the element, then redisplay information about the high-level object to determine if its condition changed.

4.6.2 Identifying Impacted Services

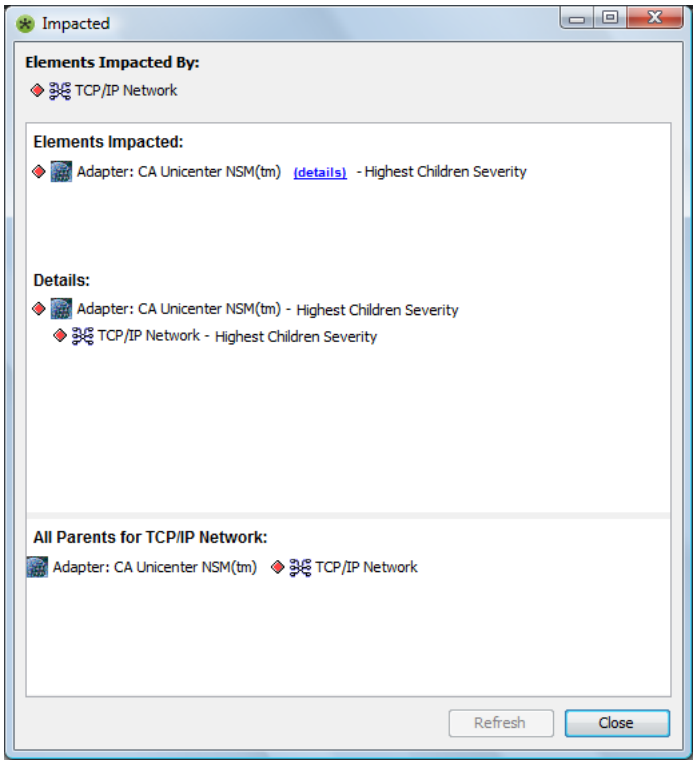
The Show Impacted feature identifies higher-level objects that are affected by the condition of a selected element. Use the Impacted dialog box to change the view to any of the impacted objects. Perform operations on them, then return to the originally selected object. Drill up the hierarchy to determine if the selected element impacts multiple services.

Elements in the *Elements* hierarchy are created using adapters, which are the integration points between Operations Center and third-party management systems. For event-based adapters or adapters where the condition is set by a network management system, no elements display as root causes unless algorithms are set to determine the condition. For more information about algorithms, see the *Novell Operations Center 5.0 Service Modeling Guide*.

Impacted information recognizes security settings and displays only the elements that the user is authorized to view.

To view higher-level objects impacted by a specific element:

1 Right-click an element in the *Explorer* pane, then select *Show Impacted* to open the Impacted dialog box:



In this figure, *Tools* is the selected element. It affects one element at the highest-level. Next to each element is a description of the algorithm that was applied to determine its state.

2 Identify objects impacted by the element by reviewing the Impacted dialog box, which consists of three main sections:

Elements Impacted: Displays the highest-level objects affected by the state of the selected element and the application of algorithms.

Details: Traverses the element hierarchy beginning with the selected object and finishing with the top parent just below the *Enterprise* node. Information about the selected element displays in a shaded block.

All Parents: Displays all potential services impacted by the selected element. Because every element, including Enterprise, has a parent, at least one entry always displays in this section.

NOTE: If no objects are impacted, if the impacted objects are not accessible based on security settings, or if the parent object is *Enterprise*, both the *Details* and *Elements Impacted* sections display `None`.

---

3 Click *Refresh* to update the following information:

- Changes in the state of the selected element and in the impacted services based on the selected element's state
- Changes in the service hierarchy definitions in which the selected element participates
- Changes in the state of any element in the service hierarchy definition in which the selected element participates

4 Perform any of the following actions on elements displayed in the Impacted dialog box:

- In the *Elements Impacted* section, click the *[details]* link next to an element.

  The *Details* section displays the detailed hierarchy between the selected element and the highest-level element displayed in the *Elements Impacted* section.
- Double-click an element.

  The view updates to display the element's information.
- Position the cursor over an element.

  Tooltip status information displays for the element.
- Right-click an element, then select a menu option.

  For details on these options, see Appendix B, "Element and Alarm Options," on page 123.

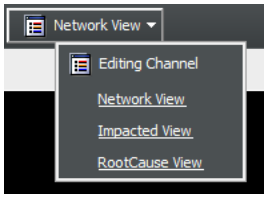
4.6.3 Navigating Impacted or Root Cause Elements

In addition to viewing the relationships between elements in the *Network* view, you can also view the elements that are affected by the current element (such as the *Impacted* view), and the elements that are affecting the current element (such as the *Root Cause* view).

To view impacted or root cause elements in the *Network* view:

1 Right-click the Network View drop-down list on the toolbar, and select one of the following:

- **Network:** Shows standard default view of an element and all its relationships
- **Impacted:** Shows the elements that are impacted by the selected element
- **Root Cause:** Shows what elements are causing the current state of the selected element



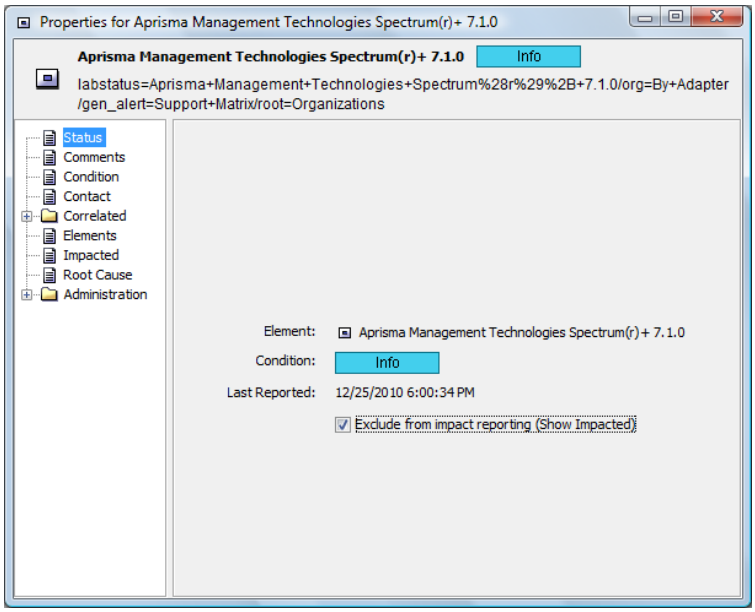
Elements in the view are filtered based on the selection.

4.6.4 Restricting the Show Impacted Feature

In some situations, you might want to exclude some *Service* elements from impact reporting. For example, if you use BSCM to generate automated tree views of elements that are used as building blocks for higher-level views (applications, services, and so on), the same element can display in the Show Impacted or Root Cause dialog box for multiple trees.

To exclude an element branch from impact reporting:

1. Right-click an element in the *Services* hierarchy, then select *Properties* to open the *Status* property page:



2. Select the *Exclude from Impact Reporting* check box.
3. Close the property page.
4. Click *Yes* when asked to save changes.

5 Using Find to Search for Elements

The Find feature allows you to search for elements in the Operations Center console. This functionality is also available when performing other tasks, such as creating behavior models or selecting a group of elements.

By default, search results are limited to 1,000 items for performance reasons. If you are getting a result set that is this large or greater, we recommend narrowing the search criteria. If you are not able to refine the search, we suggest setting up a Service View. For information about building a custom view, see the *Novell Operations Center 5.0 Custom Drawing and Layout Guide* and the *Novell Operations Center 5.0 Service Modeling Guide*.

The following sections explain in detail how to use various Find features to search for elements. Enhanced searching by metamodel classes and properties is explained in Section 5.3, "Using Metamodel Classes or Properties as Search Criteria," on page 65.

- Section 5.1, "Conducting a Simple Find," on page 61
- Section 5.2, "Using the Advanced Tab," on page 63
- Section 5.3, "Using Metamodel Classes or Properties as Search Criteria," on page 65

5.1 Conducting a Simple Find

Use the *Basic* tab to match an element's name, class, condition (such as `CRITICAL` and `OK`), and property. The more information that you supply in the *Basic* tab, the more restrictive the search.

To search for elements using the *Basic* tab:

1. On the console toolbar, click

Find to open its dialog box, displaying the *Basic* tab.
2. Click *Browse* to open the Browse for Element dialog box.
3. In the left pane of the Browse for Element dialog box, select the root element that contains the element, which is the target of the search.
4. Click *OK* to close the Browse for Element dialog box
5. In the Find dialog box, select the *Include Sub-Elements* check box to search all elements in the hierarchy.
6. Specify any combination of the following criteria for matching elements:

   Name: Specify the name of the element to match:

   - Specify the complete element name to search for an exact match.
   - Use an asterisk to represent any number of characters as a wildcard for part of the element's name. For example, typing green* finds green1, greenfield, and greenhouse.

   Class: The class name to match.

   Condition: Click the drop-down list, then select a condition.

Property: Specify the element property name.

Select *Equals* or *Not Equals* to search for an exact match. Select *Contains* or *Not Contains* to search for a partial match.

Specify the property value.

Matching elements have or contain (or do not have or do not contain) the specified property value.

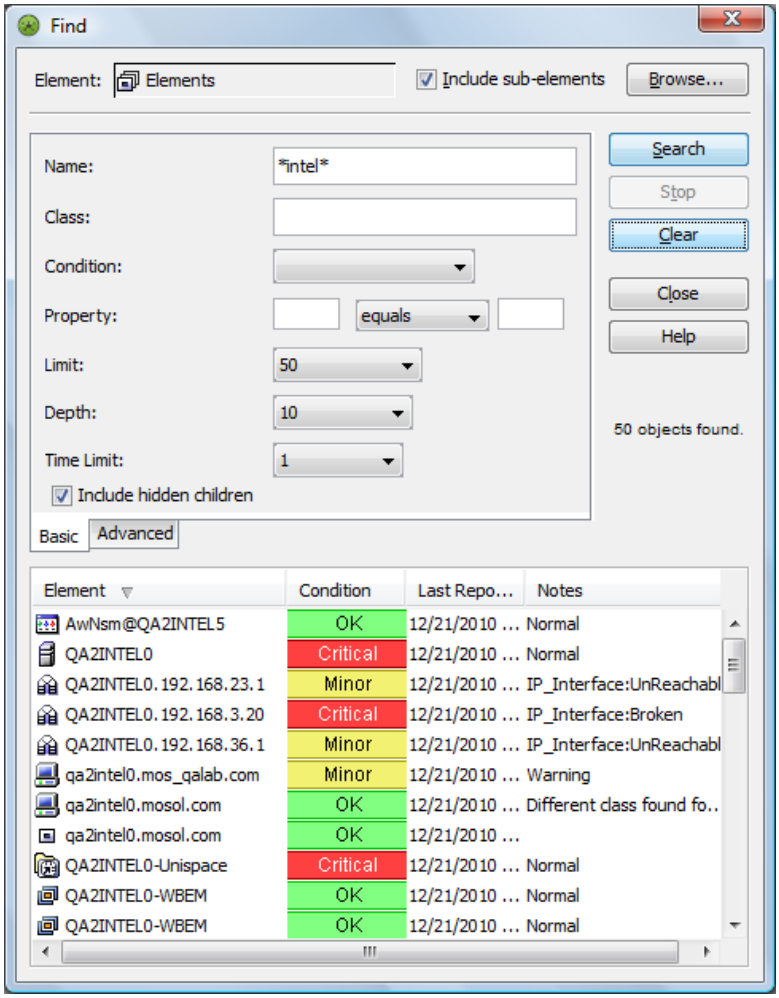
Limit: To limit the number of found elements, click the *Limit* drop-down list, then select a value. For example, if the limit is 50, the search displays only the first 50 elements found.

Depth: To limit the levels of child elements searched, click the *Depth* drop-down list, then select a value.

Time Limit: If the scope of the search is unknown, limit the search time to a specific number of minutes. Click the drop-down list, then select a value.

7 Click *Search* to start the search.

Search results display:



8 Perform any of the following actions:

- Double-click an element in the search results.

  The *Explorer* pane updates to display the element.

- Position the cursor over an element in the search results.

  Display status information and the entire path of where the element is located.
- Drag an element from the Find dialog box search results and drop it in the *Layout* view.

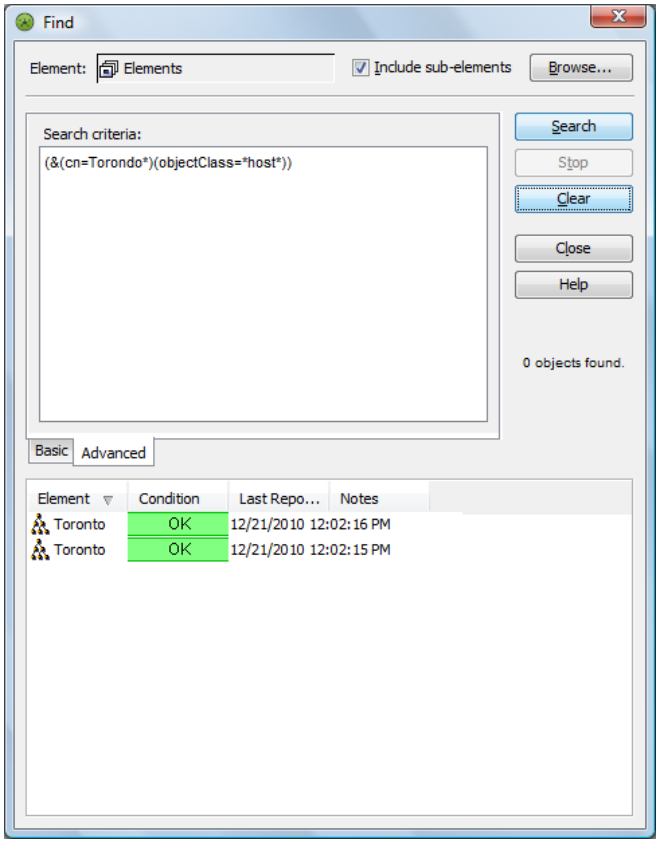
  Adds the element to a business service view.

5.2 Using the Advanced Tab

The *Advanced* tab provides a text area for entering a search query. Operations Center adheres to the standard search syntax defined in RFC 2254, The String Representation of LDAP Search Filters. For a comprehensive description of search syntax, see http://tools.ietf.org/rfcmarkup?rfc=2254.

To search for elements using the *Advanced* tab:

1 In the Find dialog box, click the *Advanced* tab to display it:



The *Advanced* tab allows more complex searches.

2 Click *Browse* to open the Browse for Element dialog box, then:

  2a In the left pane of the Browse for Element dialog box, select the root element that contains the element which is the target of the search.

  2b Click *OK* to close the Browse for Element dialog box.

3 In the Find dialog box, select the *Include Sub-Elements* check box to include all subelements in the search.

4 In the Search criteria text area, specify the search criteria using any of the following operators:

=

<

>

<=

>=

The syntax allows entering one or more attribute/value pairs, surrounded by parentheses, and logically combined with "&" (AND) or "|" (OR) operators. For example:

To find…	Do this….
All objects starting with the same letters.	Specify wildcards using one or more asterisks (*). For example, to find all objects that begin with `server`, enter the query as: `(cn=server*)`
All host objects.	Specify `(objectClass=*host*)` to find all host name objects, all ServerHosts, and so on.
All hosts whose names begin with the letters server.	Combine two `(attr=value)` clauses using the logical AND (&) operator: `(&(cn=server*)(objectClass=*host*))` Notice how the logical operator appears before the two clauses; this is called prefix notation.
All hosts whose names begin with the letters server and are in a CRITICAL state.	Enter: `(&(&(cn=server*)(objectClass=*host*))(condition=CRITICAL))`
All hosts whose names begin with the letters server and are in either a CRITICAL or WARNING state.	Enter: `(&(&(cn=server*)(objectClass=*host*))(|(condition=CRITICAL)(condition=WARNING)))`
Host names that begin with specific letters and are members of a specific object class.	Enter: `&(objectClass=Router)(hostname>B*)`
Elements that are members of a specific class and have a response time greater than or equal to a specified threshold value.	Enter: `&(objectClass=server)(responseTime>=3.4)`

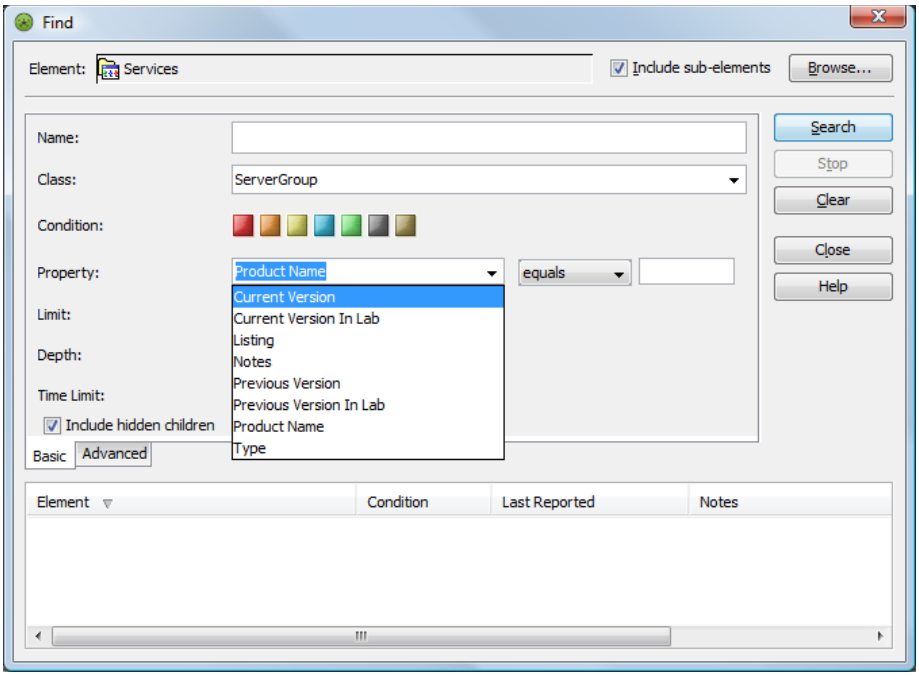
5 Click *Search* to start the search to display the Search results.

6 Sort the found elements by clicking any column heading.

5.3 Using Metamodel Classes or Properties as Search Criteria

If the Administrator has enabled enhanced features to find elements based on specific metamodel classes or custom properties, an enhanced *Basic* tab displays, as shown in Figure 5-1:

Figure 5-1 *Enhanced Basic Tab for Find Feature*



You can specify search criteria for classes and properties, or click the arrow button, then select predefined custom class or property.

When typing search criteria in the *Class* or *Property* fields, standard * wildcard can be applied. For example, `*Class* matches MyClassName and YourclassName`.

In addition, you can filter elements based on multiple condition levels. By default, all conditions are included. Click a condition color to exclude elements that have that condition from the "found" list.

Instructions for enabling these enhanced Find features are in "Using Classes and Properties to Enhance Finding Elements" in *Novell Operations Center 5.0 Service Modeling Guide*.

6 Filtering and Managing Alarms

The *Alarms* view displays a list of all alarms that occurred for an element selected in the *Explorer* pane and that element's children. Customize the *Alarms* view using display modification and filtering features. Alarm filtering is discussed in a separate section.

After analyzing alarms, select from several options to indicate the next course of action. The last section of this section explains how to view historical information about an alarm.

WARNING: If alarms are enabled for *Enterprise*, *Administration*, *Elements*, or *Services* nodes, verify there is sufficient memory to process a large number of alarms before trying to view them.

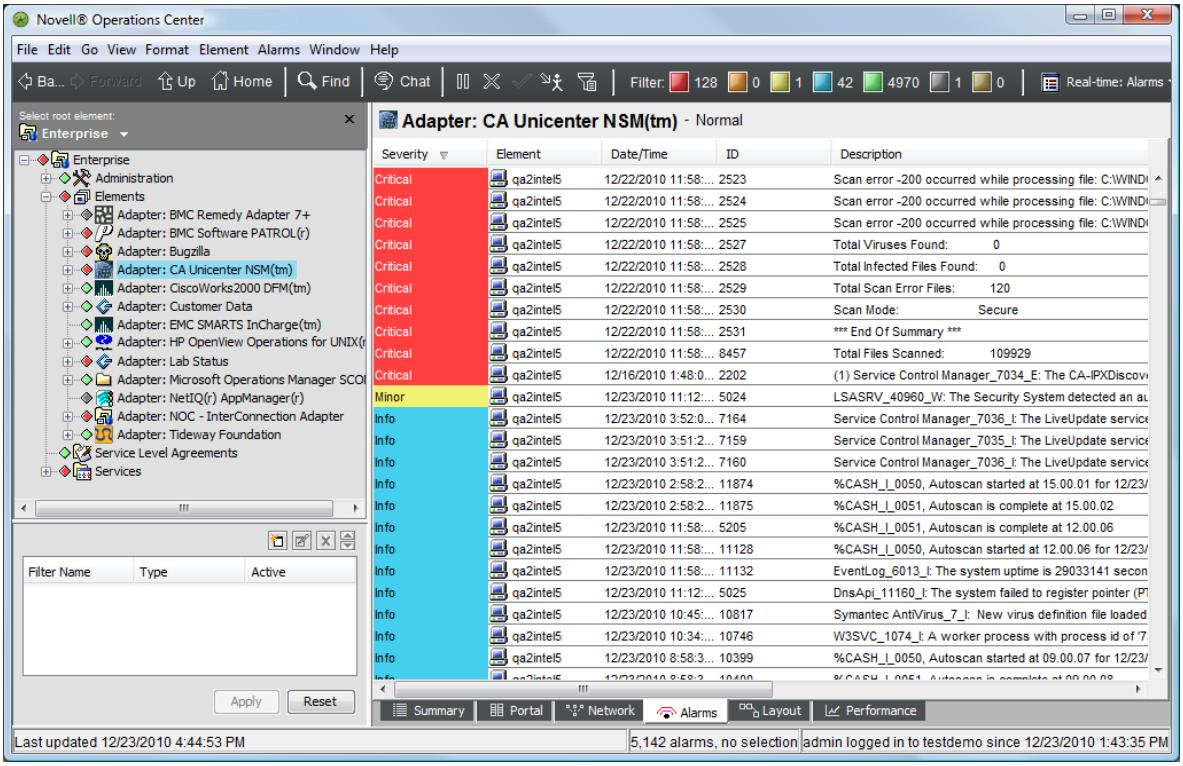
- Section 6.1, "Understanding the Alarms View and Alarm Types," on page 68
- Section 6.2, "Viewing a Summary of Alarms," on page 70
- Section 6.3, "Viewing Alarm Severity," on page 71
- Section 6.4, "Performing a Simple Filtering of Alarms by Severity," on page 72
- Section 6.5, "Filtering Alarms," on page 73
- Section 6.6, "Normalizing Time across Computers," on page 84
- Section 6.7, "Performing Alarm Operations," on page 84
- Section 6.8, "Using Alarm Properties," on page 89
- Section 6.9, "Viewing and Managing the Alarm History," on page 91

6.1 Understanding the Alarms View and Alarm Types

Alarms are events associated with specific elements. Each alarm has a severity level. Alarms contribute to the condition of an element. Thus, monitoring an element's state often involves analyzing the alarms associated with the element.

The *Alarms* view displays a list of all alarms that occurred for an element selected in the *Explorer* pane and for the element's children:

Figure 6-1 *Alarms View*



The administrator defines the events and conditions that trigger an alarm.

Each alarm entry is color coded to identify its severity level. The severity filter buttons (located on the toolbar) identify the colors representing, from left to right, the most critical to the least critical alarms.

The *Alarms* view filters alarms based on the alarm type. The following information displays for both *Real-Time* and *Historical* alarms:

- Alarms
- Audit Events
- Outages (available for Historical only)
- Change events (Historical only)

  For more information, see the *Novell Operations Center 5.0 Version Tracking Guide*.
- Service Level Breaches
- Service Level Metrics
- Text comments for an element

If the Service Warehouse database is unavailable, *Historical* alarms do not display in the *Alarms* view. However, it is possible to add new comments for these alarms. The new comments are added to the Service Warehouse database after it becomes available. An informational log message in the `formula.trc` file indicates that Operations Center could not retrieve the alarms because the database was unavailable. Additionally, no outages are created when the database is unavailable.

By default, *Real-Time* alarms display in descending order by the date and the time that the most recently reported alarms occurred. Service level breaches, outages dates, and times indicate when the breaches or outages occurred. The *Alarms* view provides information in the columns described in Table 6-1.

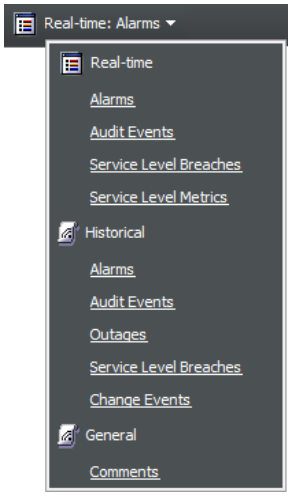
Table 6-1 *Standard Alarms View Columns*

Column	Description
Severity	Color codes indicate the severity of the alarm.
Element	Identifies the element that generated the alarm.
Date/Time	Identifies the date and time when the alarm was reported.
ID	Unique identifier that Operations Center generates for alarms.

It is possible to display other columns in the *Alarms* view. The column names vary, depending on the management system associated with the alarm. For more information, see Section 3.4.2, "Hiding, Displaying, and Selecting Columns," on page 34.

To change the type of alarms displayed in the *Alarms* view:

1. In the *Explorer* pane, select an element.
2. Click the *Alarms* tab to display the *Alarms* view.
3. On the toolbar, click the alarms drop-down, then select an alarm type.



The *Alarms* view updates to display alarms of the selected type

6.2 Viewing a Summary of Alarms

Alarm totals display in the title bar for all elements showing alarms. The alarms are listed under the title bar. When an element contains only one alarm, the summary displays the actual alarm.

Figure 6-2 *Title Bar: Alarm Totals by Condition*

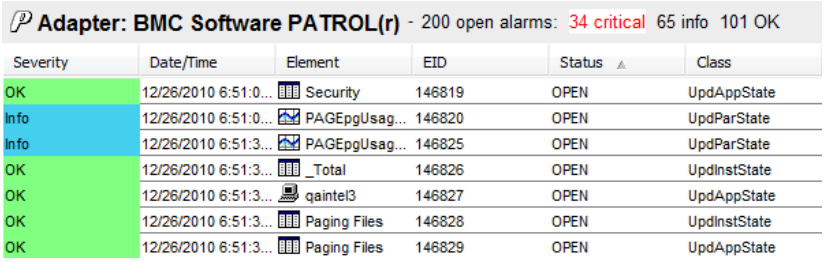
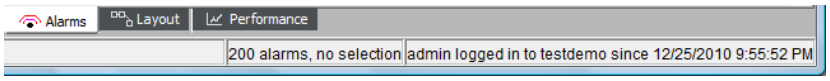
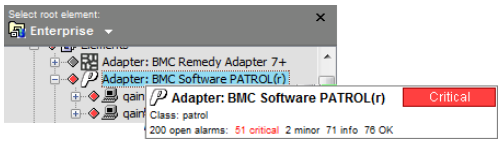
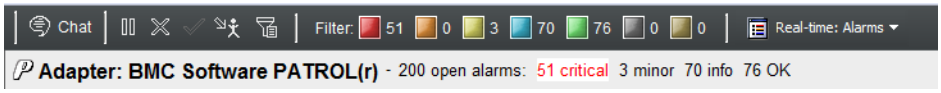


Table 6-2 lists the areas of the console where you can view alarm summaries for an element.

Table 6-2 *Alarm Summary Viewing Areas*

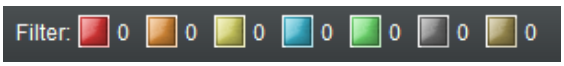
Area	Explanation and Example
Status Bar	The status bar located at the bottom of the console displays the total number of alarms and the number of alarms currently selected: 

Area	Explanation and Example
Element Tooltip	When you position the cursor over an element in the *Explorer* pane, a tooltip displays the most severe condition of all the element's children and the total number of open alarms with the subtotals of each alarm severity level: 
Alarms View Filter Buttons	Alarm totals display next to the filter buttons:  These include all alarms with any status type (Open, Acknowledged, and so on).

6.3 Viewing Alarm Severity

By default, all alarms display in the *Alarms* view. Use the *Filter* toolbar buttons to display or hide alarms based on severity level. For more information, see Filtering Elements and Alarms.

Figure 6-3 *Alarm Severity Filter Buttons*



To manage shading and view alarm severity colors:

- Section 6.3.1, "Shading or Removing Shading from All Rows," on page 71
- Section 6.3.2, "Viewing Alarm Severity Colors," on page 71

6.3.1 Shading or Removing Shading from All Rows

By default, only the *Severity* column is shaded to match the alarm's severity level. It is possible to shade all other columns with the alarm's severity level color.

To highlight or remove severity highlighting of alarm rows:

1. From the *Format* menu, select or deselect *Show Severity Colors*.

Another option is displaying the alarm totals by severity in a dialog box that opens over the console.

6.3.2 Viewing Alarm Severity Colors

To view the alarm severity colors and the total number of alarms for each level:

1. From the *Format* menu, select *Show Alarm Summary*.

   A dialog box opens, displaying the total number of alarms for each severity level.
2. Close the dialog box when finished viewing the alarm totals.

6.4 Performing a Simple Filtering of Alarms by Severity

In the *Alarms* views, all alarms display by default.

In the top toolbar, *Filter* toolbar buttons represent the different severity levels (Critical, Major, Minor, and so on) by showing the associated color. The number of alarms for each severity displays next to button.

Use these *Filter* toolbar buttons to display or hide alarms in the view based on severity only.

For more information about creating more advanced alarm filters, see Chapter 6, "Filtering and Managing Alarms," on page 67.

You can perform the following actions using the *Filter* section of the toolbar:

- Section 6.4.1, "Displaying All alarms," on page 72
- Section 6.4.2, "Hiding Alarms," on page 72
- Section 6.4.3, "Displaying Alarms of a Selected Severity," on page 72
- Section 6.4.4, "Displaying Elements of a Specified Severity," on page 73

6.4.1 Displaying All alarms

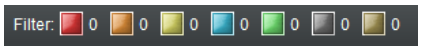
To display all alarms:

1. Right-click any location in the *Filter* section of the toolbar, then select *Reset Filter Settings.*

6.4.2 Hiding Alarms

To hide alarms of a specified severity:

1. Click a colored icon to hide alarms having that severity:



6.4.3 Displaying Alarms of a Selected Severity

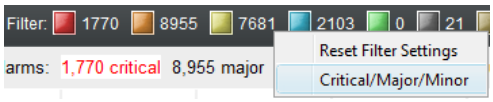
To display alarms of a selected severity:

1. Select or deselect the filter buttons:
   - Alarms with the selected condition display.
   - Alarms with the deselected condition disappear from the view.

6.4.4 Displaying Elements of a Specified Severity

To display elements of a specified severity:

1 Right-click any location in the *Filter* section of the toolbar, then select *Critical/Major/Minor*:



Only the alarms with CRITICAL, MAJOR, or MINOR severity display.

6.5 Filtering Alarms

The *Alarm Filter* pane in the Operations Center console is available only for elements that can display alarms.

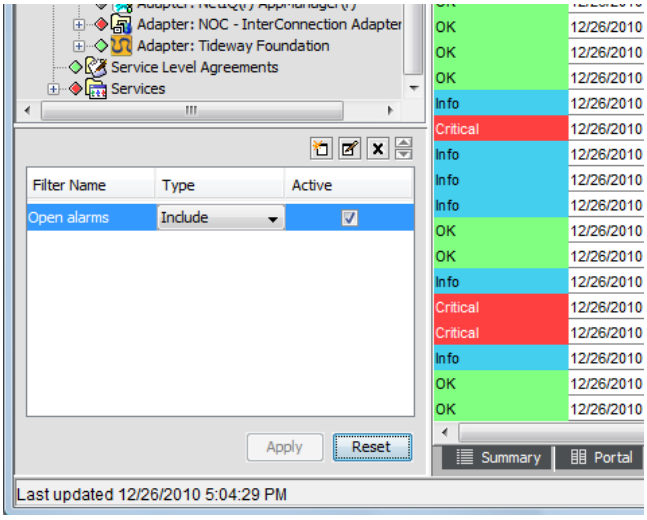
Alarms can be filtered using criteria based on one or more alarm properties, such as severity, element name, ID, or dates and times. Filtering is useful when you want to see a subset of alarms. For example, you can apply a filter to display only those alarms with a specified severity level and a time stamp within a specified date range.

Both administrators and users can create and apply alarm filters. Administrators can create alarm filters and apply them to service models or metamodel classes to select a subset of alarms. This provides a way to control the alarms seen by users when they open the *Alarms* view. Service model and class filters can be applied in the console, or through scripts.

Users can create and apply alarm filters in their own *Alarm* views. These filters do not affect other users' view of alarms.

Users can define their own alarm filters using the *Alarm Filter* pane, which is located in the bottom left corner of the *Alarms* view:

Figure 6-4 *Alarms View*



Applying an alarm filter displays a subset of alarms in the *Alarms* view. For example, apply a filter to display only those alarms with a specific severity message or class, or alarms within a specific date and time range. Combine the filter criteria using AND or ANY logic, as explained in subsequent subsections.

Applying an alarm filter does not change the total number of alarms displayed next to each filter button at the top of the console. For example, if there are 100 CRITICAL alarms, but an applied filter removes these alarms from the Alarms view, 100 still displays next to the red filter button in the console tool bar.

TIP: Click and drag up the top border of the *Alarm Filter* pane to view many filters. Click and drag between column headings to resize filter columns.

To filter alarms, review the following sections:

- Section 6.5.1, "Displaying or Hiding the Alarm Filter Pane," on page 74
- Section 6.5.2, "Creating an Alarm Filter," on page 74
- Section 6.5.3, "Applying Filters," on page 81
- Section 6.5.4, "Changing Filter Order," on page 82
- Section 6.5.5, "Editing and Deleting Filters," on page 82
- Section 6.5.6, "Reapplying Filters to Update the Alarms View," on page 83
- Section 6.5.7, "Disabling Filters," on page 83
- Section 6.5.8, "Resolving Filters with No Data in Alarms View," on page 83

6.5.1 Displaying or Hiding the Alarm Filter Pane

To hide or show the Alarm Filter pane:

1. From the *Format* menu, select *Show Alarm Filters*.

   When selected, the *Alarm Filter* pane displays.
2. To hide the Alarm Filters pane, deselect *Show Alarm Filters* from the *Format* menu.

6.5.2 Creating an Alarm Filter

The options available for a filter depend on the adapter associated with the currently selected element.

To create an alarm filter:

1. In the *Explorer* pane, select an element.
2. Click *Create* in the *Alarm Filter* pane to open its dialog box.
3. In the *Filter Name* field, specify a name for the filter.

   The name can contain between 1-50 alphanumeric or space characters only.
4. Do one of the following to determine the type of match: Select the *Match All* radio button to determine if an alarm must match any or all of the condition statements in order to be selected.
   - Select the *Match any of the following* radio button to match one or more condition expressions. Selecting this option joins more than one statement with an OR operator.

- Select the *Match all of the following* radio button to match all of the condition expressions. Selecting this option joins more than one statement with an AND operator.
- Select the *Custom boolean expression* radio button to specify a boolean expression to match.

For more information, see the table in Step 8.

5 To determine how the condition statements are applied in the filter, do one of the following: or *Match all of the following* radio button to determine if an alarm must match any or all of the condition statements in order to be selected.

- Select the *Match any of the following* radio button to match one or more alarm expressions. Selecting this option joins the statements with an OR operator.
- Select the *Match all of the following* radio button to match all alarm expressions. Selecting this option joins statements with an AND operator.

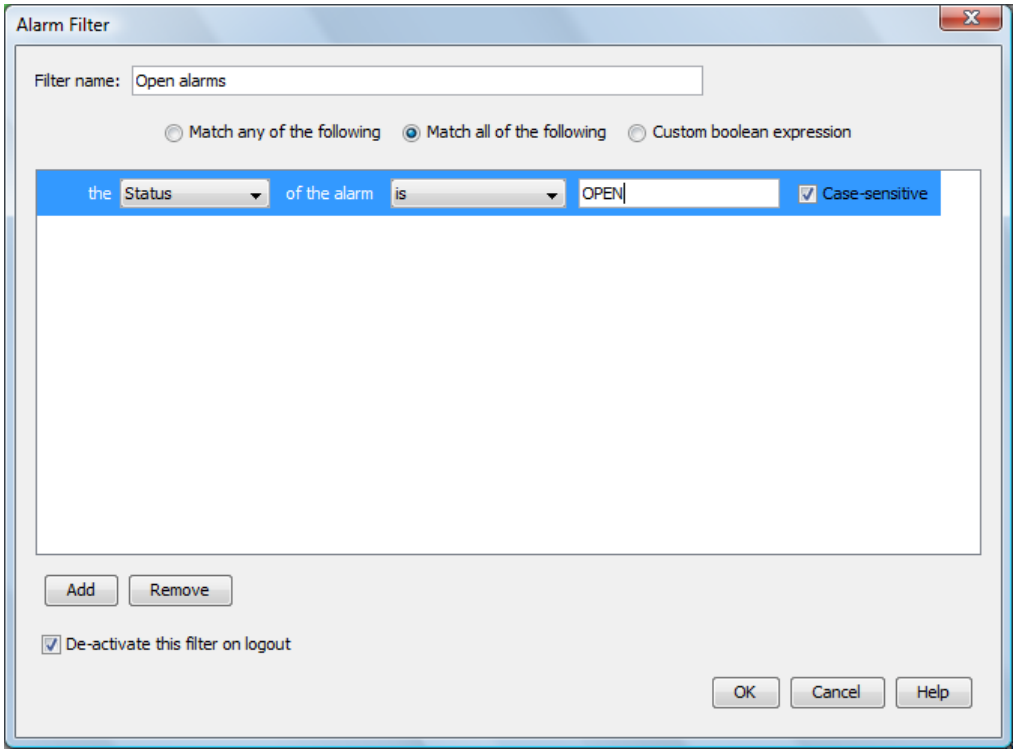
  For example, to view alarms that have a specific severity and ID prefix, create two filter statements, then select the *Match All* radio button to join the statements with an AND operator. This is seen as "and" at the beginning of the filter row for the second filter. If you select *Match Any*, "or" begins each subsequent filter row.
- Select the *Custom boolean expression* radio button to join the statements using a custom boolean expression.

6 Click *Add*.

A blank row displays for defining a filter statement.

7 Click the first drop-down list, then select the alarm column name to match in the filter.

The list varies among adapters and also depends on the currently selected element. For example, select *Date/Time* for the filter to search alarms based on the date and time they were received:



Depending on which filter you select, other fields are displayed.

8 Select comparison operators and specify match criteria using the other fields in the row.

When defining the alarm filters, refer to Table 6-3 to understand the relationships among the fields.

Table 6-3 *Alarm Filters - Parameters*

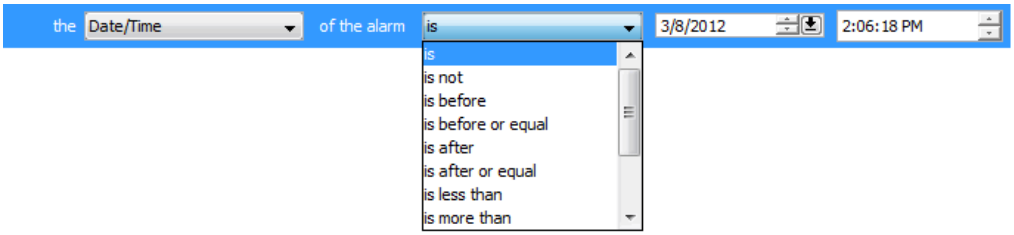
Alarm Column Type	Operators	Match Criteria	Notes
Text-based (such as Element, Class, Status, Description)	contains does not contain is is not begins with ends with	Specify an appropriate value based on the selected alarm column.	◆ For exact matches, use *is* or *is not*. ◆ For partial matches anywhere in an alarm value, use *contains* or *does not contain*. ◆ For partial matches using the first or last characters, use *begins with* or *ends with*. ◆ For partial matches using the first or last characters, use *begins with* or *ends with*.
	is greater than is greater than or equal is less than is lss than or equal	Specify an appropriate value to compare to the alarm column value.	These are lexicographical comparisons.
	matches regex	Specify a regular expression to perform on the alarm column value.	In regular expressions, standard wildcards (?) and (*) are allowed, as well as standard operators such as OR, AND, or BETWEEN.

Alarm Column Type	Operators	Match Criteria	Notes
Date, Time	is is not is before is before or equal is after is after or equal	Specify a date and time.	To select a date range, create a *before* and an *after* statement, joined by selecting *Match All*; or use *is between*.
	is less than is more than	Specify a date/time interval to compare with the alarm date/ time.	These are relative date/time comparisons. For example, to match dates that are within 30 days earlier than the current date, use the criteria: date/time is less than 30 days before the current date.
	is within the last	Specify an aligned interval based on a number of minutes, hours, days, weeks, months, or months.	This is a comparison within an aligned interval that is inclusive to the current time interval. For example, to match dates that are within the current month and previous month, select *is within the last 2 months*. In this case, if the current date is July 15, the filter searches for dates between June 1 to July 31, but will any alarms from June 1 to July 15.
	is today was yesterday		These are comparisons based on the current date.
	is between	Specify beginning and ending dates to compare with the alarm date.	This is a comparison based on a date range.
Severity	is is not is higher than is lower than	Select from severity levels appropriate to the adapter.	Use *is not* to exclude all but one severity code. To select a contiguous range of severity codes, create two statements using *higher than* and *lower than*, joined by selecting *Match All*.

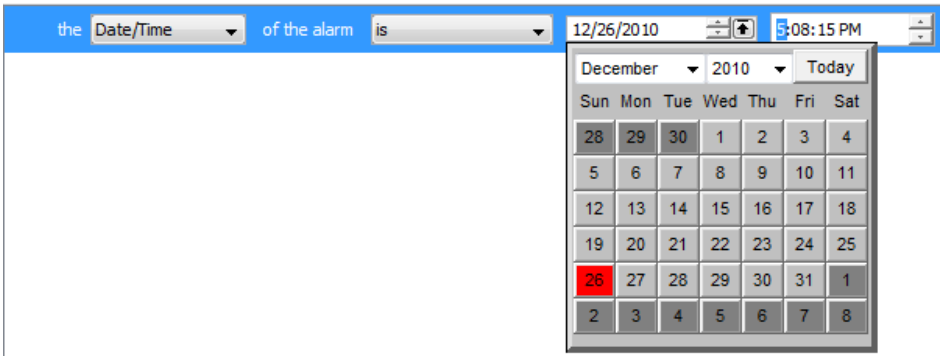
Alarm Column Type	Operators	Match Criteria	Notes
Numeric (such as ID)	contains does not contain is is not begins with ends with is greater than is greater than or equal is less than is less than or equal is between	Specify the number.	◆ For exact matches, use *is* or *is not*. ◆ For partial matches anywhere in an alarm value, use *contains* or *does not contain*. ◆ For partial matches using the first or last characters, use *begins with* or *ends with*. ◆ For a relative match, use *is greater than* or *is less than*. ◆ To select a contiguous range of values, create two statements using *greater than* and *less than*, joined by selecting *Match All*; or use *is between*. After placing the cursor in the filter value column (the last column in the row), specify a value, or an error message prompts for a numeric value. It is not possible to edit the other columns or close the Alarm Filter dialog box without first specifying a value.

Some examples of alarm filters:

- **Matching Alarm Dates and Times:** If you select *Date/Time* in the first drop-down list, you can select *Is Before* in the second drop-down list:

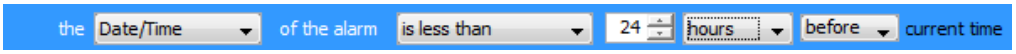


Then, if the comparison involves a specific date and time, use the calendar selector to select a date:



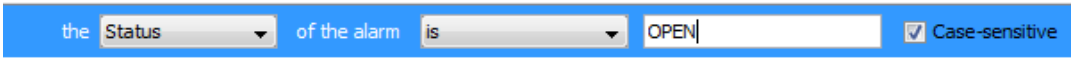
In some cases, a relative "rolling" date/time comparison is necessary. For example, a filter could select alarms that are within 30 days of the current date and time. Use the *is less than* or *is more than* operator to specify the time interval for comparing the current date and time. Also specify whether the filter should pull alarms that are before or after the current date and time.

The following example filters alarms whose date/time stamp is within 24 hours before the current date/time:



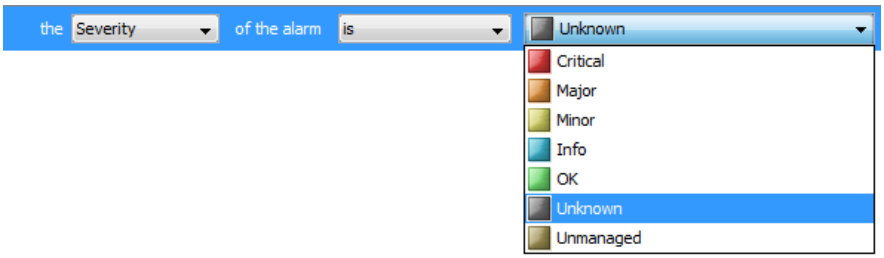
- **Matching Exact Cases:** Case-sensitive matching in alarm filters is optional. When a text type alarm column is used in a filter, the *Case-Sensitive* check box is selected by default. This means that when searching for a specific text string, a match occurs only if each letter in the string matches exactly the string entered in the third field of the alarm filter.

  For example, if the *Status* alarm column values are all capitalized, such as `OPEN`, use all capital letters to enter the value for the alarm filter:



  If case matching is irrelevant in the search, then deselect the *Case-Sensitive* check box.

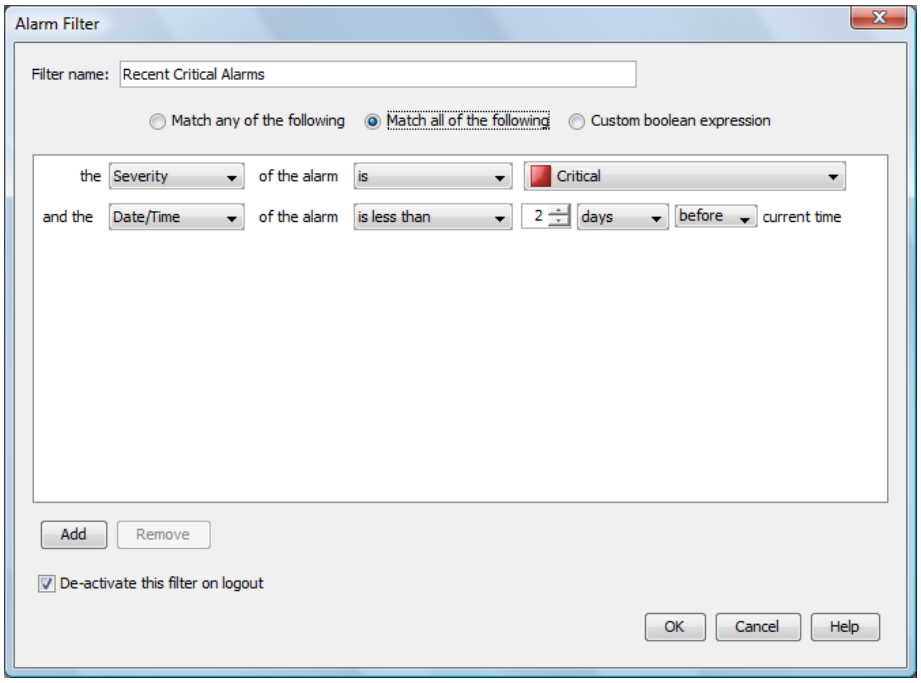
- **Matching Alarm Severity Codes:** When *Severity* is the selected alarm column, a drop-down list of severity codes and colors displays in the right column:



  The codes vary among adapters.

9 (Optional) Click *Add* to create another alarm filter.

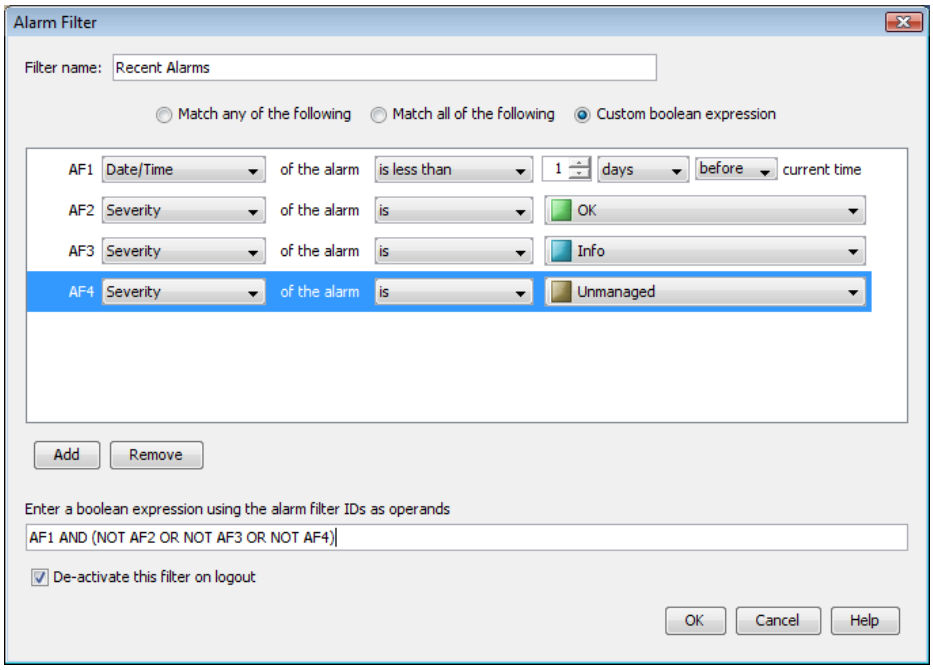
The following example shows a filter with two statements:



The filter matches alarms with a date and time stamp before the specified date and time and a CRITICAL severity.

10 If the *Custom boolean expression* radio button was selected in Step 4, specify a boolean expression using alarm expression ids to indicate how the condition statements are to be applied:

- Expression ids display in the front of each condition statement.
- Use AND to join two expressions.
- Use OR to match any of two expressions.
- Use NOT to not match an expression.
- The boolean expression is not case-sensitive. Not all alarm expressions must be applied as boolean expressions can be formed in a way that ignores an expression. For example, if the following expression is used, `(AF1 OR AF2) AND (NOT AF4)`, then AF3 would be ignored.
- In the figure below, the filter allows alarms no older than 24 hours with a severity of CRITICAL, MAJOR, MINOR and UNKNOWN.



11 (Conditional) To automatically deactivate the filter upon logout from the console, select the *Deactivate This Filter on Logout* check box.

To leave the filter activated from session to session, leave the check box deselected.

Deactivating filters upon logout ensures that all alarms display after the next login.

If filters remain active upon logout, the active filters apply automatically upon login and only the selected alarms display in the *Alarms* view. Problems might arise from not realizing that all alarms are not displayed.

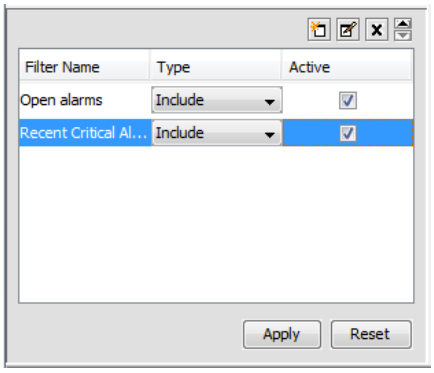
12 Click *OK* to create the filter.

The new filter displays in the *Alarm Filter* pane.

6.5.3 Applying Filters

After creating filters, you can apply them to the *Alarms* view using the *Alarm Filter* pane. Multiple filters are applied using the AND operator, meaning the resulting alarm set must match all the active filters. The Figure 6-5 example selects and includes alarms whose IDs begin with 443 and have a MAJOR or CRITICAL severity:

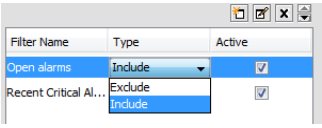
Figure 6-5 *Alarm Filter Pane: Apply multiple filters at the same time.*



After applying a filter, the status bar at the bottom of the *Alarms* view displays the total number of alarms selected by the active filters, and identifies in red the number of alarms that are not displayed because of the filter.

To apply an alarm filter:

1 Do one of the following:
   - To include alarms selected by the filter in the *Alarms* view, click the *Type* drop-down list, then select *Include*.
   - To exclude alarms selected by the filter from the *Alarms* view, click the *Type* drop-down list, then select *Exclude*.



2 Select the *Active* check box to apply the filter.

   It is possible to apply more than one filter at the same time.

   Alarms must match all active filters in order to be selected.

3 Click *Apply*.

   Alarms are selected based on the active filters and the "included" option. The selected alarms display in the *Alarms* view.

6.5.4 Changing Filter Order

Filters apply in the order in which they display in the *Alarm Filter* pane.

To change the order in which filters apply:

1 Select the filter in the *Alarm Filter* pane.

2 Click (the up or down scroll arrow button) to move the filter.

6.5.5 Editing and Deleting Filters

- "Editing a Filter" on page 82
- "Deleting a Filter" on page 83

Editing a Filter

To edit a filter:

1 Select the filter, then click *Edit* to open the Alarm Filter dialog box.

2 Edit the filter.

3 Click *OK* to save changes to the filter.

Deleting a Filter

To delete a filter:

1. Select the filter, then click *Delete* to open the Delete Confirmation dialog box.
2. Click *OK* to confirm the deletion.

   The filter disappears from the *Alarm Filter* pane.

6.5.6 Reapplying Filters to Update the Alarms View

Alarm filters are reapplied and the *Alarms* view is updated when alarm activity occurs, such as when a new alarm is received, a condition filter is selected in the console toolbar, or the *Apply* button is clicked. However, it is possible to set a timer to reapply all alarm filters at a specified interval. This requires editing the `/OperationsCenter_install_path/html/applet_params.xml` file.

To specify a time interval for reapplying all alarm filters and updating the *Alarms* view:

1. Open the `/OperationsCenter_install_path/html/applet_params.xml` file.
2. Set the following parameter:

   ```
   param name="AlarmPanel.AlarmFilterTimerFrequency" value="900000"
   ```

   The time interval is in milliseconds. 900000 equals 15 minutes:

6.5.7 Disabling Filters

To disable alarm filters and display all alarms in the *Alarms* view:

1. In the *Alarm Filter* pane, click *Reset* to clear all *Active* check boxes.
2. Click *Apply*.

   All alarms display in the *Alarms* view.

6.5.8 Resolving Filters with No Data in Alarms View

In some situations, applying a filter results in no matching alarms; the *Alarms* view is blank. Attempting to edit a filter results in being unable to select a different alarm column value in the Alarm Filter dialog box.

For example, if *Severity* is the selected alarm column, it is the only option in the drop-down list.The reason for this behavior is there are no alarm columns currently available for editing (or creating) alarm filters.

To restore alarm data:

1. Deactivate the alarm filter by clicking to clear the *Active* check boxes in the *Alarm Filter* pane.
2. Click *Apply*.

   The *Alarms* view updates to display one or more alarms.

   It is now possible to edit the alarm filters.

6.6 Normalizing Time across Computers

In the *Alarms* view, new alarms that originate from servers in different times zones are converted to display a time stamp using the local time zone. For example, a new alarm arriving on a computer in New York displays a time stamp of 12 noon, but the same alarm displays as 9 a.m. in San Diego.

A timeskew is the difference between the current time on the server and client, regardless of their time zones. For example, the current time on the server is 8:05 a.m. while the current time on the client in the same time zone displays 8:07 a.m. By default, Operations Center automatically detects timeskews and adjusts the displayed time stamp to be the time of the client. The overall effect is to adjust new alarms so they display using the local current time of the client, adjusting for differences in time zones and absolute time differences between the server and client. The time skew occurs for both real-time and historical alarms displayed in the Operations Center console and dashboard.

In some situations, you might want to disable timeskewing. When you disable timeskewing, the time stamp is based on the time on the server, both for local time and time zone conversions.

By default, timeskewing in enabled.

To disable timeskewing:

1. From the *console* toolbar, select *Format* > *Use Timeskew*.

   The check mark next to the option disappears.
2. After selecting this option, either to enable or disable timeskewing, restart the console in order to see changes in all places.

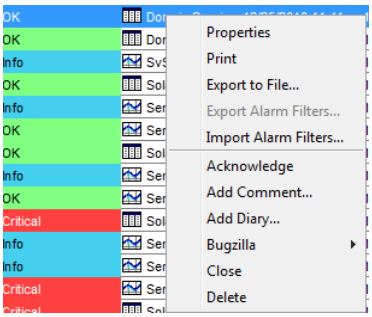
6.7 Performing Alarm Operations

Alarm options vary by adapter and management system and are available only after selecting one or more alarms in the *Alarms* view. For a list of alarm options by adapter type, see Section B.2, "Understanding Alarm View Menus," on page 128.

Some options have shortcut buttons listed on the *Alarms* menu. Also, the appropriate user access privileges are required for the ability to access some alarm operations.

Figure 6-6 depicts an example of the right-click menu for an alarm:

Figure 6-6 *Alarm Element Right-Click Menu*



This section discusses the following common alarm operations:

- Section 6.7.1, "Accessing Alarm Options," on page 85
- Section 6.7.2, "Selecting Alarms," on page 85
- Section 6.7.3, "Pausing and Resuming Alarm Updates," on page 86

- Section 6.7.4, “Acknowledging Alarms,” on page 86
- Section 6.7.5, “Assigning Alarms,” on page 86
- Section 6.7.6, “Clearing Alarms,” on page 88
- Section 6.7.7, “Printing Alarms,” on page 88
- Section 6.7.8, “Exporting Alarm Data,” on page 89

6.7.1 Accessing Alarm Options

To select alarm options:

1. In the *Alarms* view, right-click an alarm, then select an option.

6.7.2 Selecting Alarms

There are several ways to select alarms in the *Alarms* view:

- “Selecting One Alarm” on page 85
- “Selecting Multiple Alarms” on page 85
- “Selecting Multiple Adjacent Alarms” on page 85
- “Selecting or Deselecting All Alarms” on page 85

Selecting One Alarm

To select an alarm:

1. Click the alarm in the *Alarms* view.

   The selected alarm is highlighted.

Selecting Multiple Alarms

To select non-contiguous alarms:

1. Press the Ctrl key while clicking each alarm.

   The selected alarms are highlighted.

Selecting Multiple Adjacent Alarms

To select multiple contiguous alarms:

1. Press the Shift key, then click the first and last alarms.

   This also selects all alarms in between the first and last alarms.

Selecting or Deselecting All Alarms

To select/deselect alarms:

1. From the *Edit* menu, select *Select All*.

   or

   Select *Deselect All* to deselect all alarms.

6.7.3 Pausing and Resuming Alarm Updates

After alarm selection occurs in the *Alarms* view, the server automatically pauses all updates to the *Alarms* view. On the toolbar, a blinking *Resume* button replaces the *Pause* button. The status bar in the bottom left of the console displays a PAUSED message with the date and time.

To resume continuous updating of alarms:

1. On the toolbar, click the *Resume* button to update the *Alarms* view.

   On the toolbar, the *Pause* button replaces the *Resume* button.
2. To resume alarm updates, press the ESC (Escape) key on the keyboard.

6.7.4 Acknowledging Alarms

The Acknowledge operation is useful for technicians who need to indicate that they reviewed, but did not solve the problem, and perhaps escalated it to the next level.

If another user deletes a paused alarm, the alarm continues to display in the *Paused* view.

To acknowledge alarms:

1. On the *Alarms* view toolbar, click the *Acknowledge* button to change the alarm status to ACK (ACKNOWLEDGED).

   Acknowledgements are designed to be short term in duration. Therefore, after the alarm server completes a cycle, the acknowledged alarm status is lost.

IMPORTANT: T/EC users' accounts must have Manage permission in order to acknowledge an alarm.

6.7.5 Assigning Alarms

When supported by the management system, alarms can be assigned to any user who is a member of the same user group. The ability to assign alarms requires Manage permissions assigned by the administrator.

NOTE: The following functionality is only available when integrating to management systems – such as HP OpenView, IBM Tivoli NetView, HP ServiceCenter, and HP Service Manager – that support the assigning of alarms.

When available, leverage the following functionality to assign alarms:

- "Assigning Alarms to Another User" on page 87
- "Viewing Users to Whom Alarms Are Assigned" on page 87
- "Assigning Alarms to Yourself" on page 87

IMPORTANT: NetView and OpenView users should note that an operation could be unavailable based on the current state of the element. If unavailable, the operation cannot be selected from the menu because it is dimmed.

Assigning Alarms to Another User

To assign an alarm to another user:

1. In the *Alarms* view, select the alarms to assign.
2. On the toolbar, click the *Assign* button.

   The Browse for User dialog box opens and displays the names of all users in the system to whom alarms can be assigned.
3. Select the user's name.
4. Click *OK* to close the Browse for User dialog box.

   In the *Alarms* view, an additional column, *Assigned To*, displays and identifies the users to whom alarms are assigned.

Viewing Users to Whom Alarms Are Assigned

To view alarm assignments:

1. Do one of the following:
   - In the Alarms view, review the *Assigned To* column for the alarms.
   - Double-click an alarm to open the alarm's *Properties* page. The user to whom the alarm is assigned is listed.

Assigning Alarms to Yourself

The ability to assign alarms to yourself depends on the adapter type. Some adapters provide the *Assign (or Claim) Responsibility* option on the alarm right-click menu or from the *Alarms* menu.

Depending on the adapter and which alarm columns display, an *Assigned* column could be available in the *Alarms* view. Also view the assignment in the alarm's *Properties* page. For more information, see Section 6.8, "Using Alarm Properties," on page 89.

You have the following options in assigning alarms to yourself:

- "Assigning an Alarm to Yourself and Closing It" on page 88
- "Removing the Assignment and Leaving the Alarm Open" on page 88
- "Rejecting Responsibility for an Alarm" on page 88

Assigning an Alarm to Yourself and Closing It

To assign and close an alarm:

1 Right-click the alarm and then select *Assign and Close*.

Removing the Assignment and Leaving the Alarm Open

To deassign an alarm while leaving it open:

1 Do one of the following depending on the adapter:
   - Right-click the alarm, then select *Deassign*.
   - Right-click the alarm, then select *Accept Responsibility*.

     This option is not available for all adapters.

     Accepting responsibility indicates to other users that you are working on resolving the alarm and will close or clear it. Depending on the adapter and which columns display, a check mark displays in the *Acpt* column.

Rejecting Responsibility for an Alarm

To reject an alarm:

1 Right-click the alarm and select *Deassign (reject) Responsibility*.

6.7.6 Clearing Alarms

Clear alarms assigned to you after resolving the problem. The *Clear* option is unavailable for Audit alarms.

To clear alarms:

1 Select one or more alarms in the *Alarms* view, then click the *Clear Selected Alarms* button on the toolbar.

   The alarm disappears from the *Alarms* view.

6.7.7 Printing Alarms

Selecting the *Print* option gives you the option of printing either the selected alarms or all the alarms in the *Alarms* view. It is necessary to pause alarm updates before accessing the *Print* option.

To print all alarms in the *Alarms* view:

1 Right-click one or more alarms, then select *Print*.

   A message opens with the following question:

   `Would you like to print just the selected alarms?`

2 Click *Yes* to print just the selected alarms.

   or

   Click *No* to print all the Alarms currently showing in the *Alarms* view to open the Print dialog box.

3 Select a printer, then click *Print*.

   Additional dialog box options are available, such as the number of copies to print and landscape, portrait, or reverse landscape orientation.

6.7.8 Exporting Alarm Data

Use the *Export Data* option to export selected alarm data to a comma-delimited file, for further analysis or printing. First configure the alarm columns using the options listed in Section 3.4, "Working with Tabular Data," on page 33. Only the alarms columns displayed in the *Alarms* view are exported.

To export alarm data:

1 Right-click an alarm, then select *Export Data* to open the Save dialog box.

2 Specify a file name, then click *Save*.

   The file format is `.csv` (Comma Separated Value).

   A dialog box opens, informing you that the export process can take considerable time depending on the number of rows exported.

3 Click *Yes* to proceed.

   A dialog box confirms completion of the export.

6.8 Using Alarm Properties

Open the alarm property pages to view information such as the elements affected by the alarm, the alarm's owner, and the initial and most recent dates and times. The content of the dialog box varies among the adapters associated with the selected elements.

- Section 6.8.1, "Vewing Alarm Properties," on page 89
- Section 6.8.2, "Displaying a Different Alarm," on page 90
- Section 6.8.3, "Printing Alarm Properties," on page 91
- Section 6.8.4, "Copying Alarm Properties," on page 91

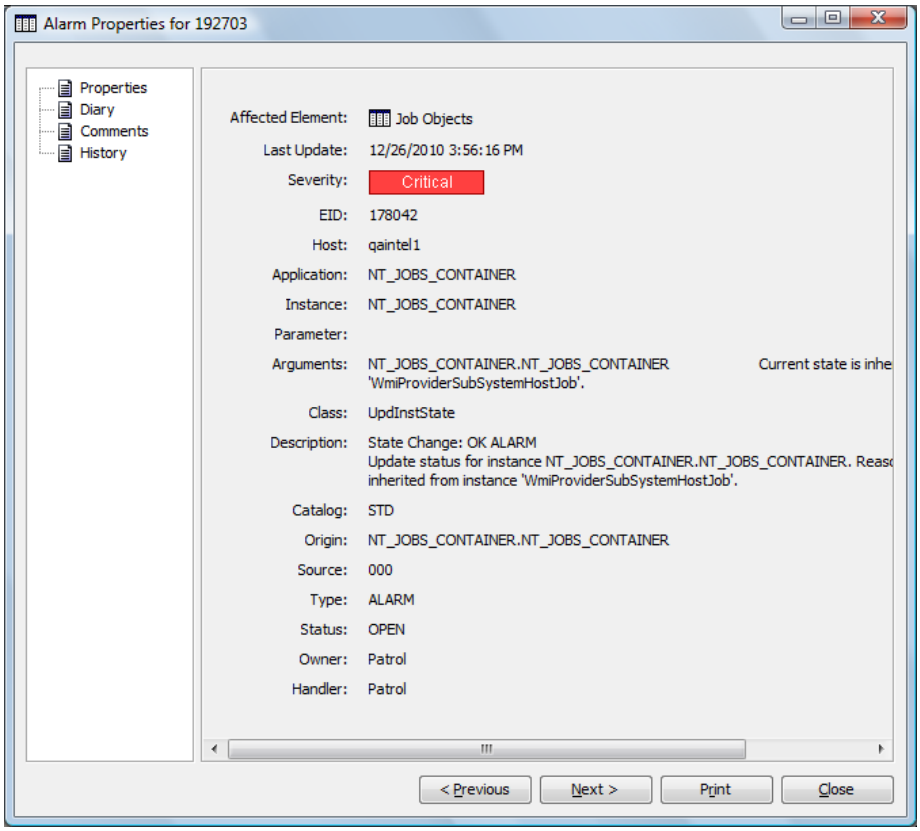
6.8.1 Vewing Alarm Properties

To view an alarm properties:

1 Do one of the following:

   - Double-click an alarm in the *Alarms* view.
   - Right-click an alarm, then select *Properties*.

   The *Properties* page opens by default.



2 To open another property page, click a property page name in the left pane to display the page in the right pane.

6.8.2 Displaying a Different Alarm

To view the next or previous alarm:

1 Do one of the following:

- Click *Next* to display the next alarm.
- Click *Previous* to display the previous alarm.

6.8.3 Printing Alarm Properties

To print the alarm properties for the current alarm:

1 Click *Print* on the property page.

6.8.4 Copying Alarm Properties

Text-based alarm property values can be copied to the Clipboard for pasting in other applications.

To copy a single text property to the Clipboard:

1 Right-click the property, then select *Copy* to place the text on the Clipboard.
2 Paste the text in any other application.
3 To copy all text properties on the page, right-click the right side of the page background, then select *Copy All*.

   The *Copy* and *Copy All* options are also available for text-based element properties.

6.9 Viewing and Managing the Alarm History

If the Data Warehouse is set up to store alarm history, the *Alarms* view can display the history of an alarm for a defined time period. Alarm history displays only if the administrator created a profile that has an associated Alarms expression and also started the profile.

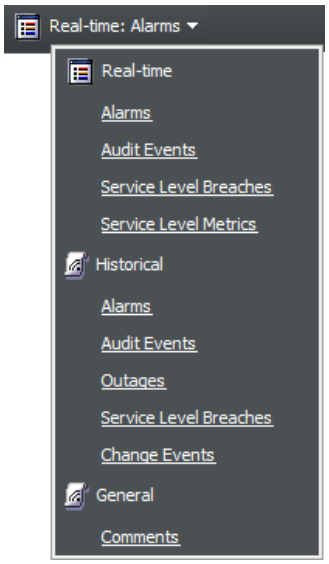
- Section 6.9.1, "Viewing the Alarm History for Elements," on page 92
- Section 6.9.2, "Changing the Dates for Displaying Historical Alarms," on page 93
- Section 6.9.3, "Sorting Alarms," on page 94
- Section 6.9.4, "Changing the Maximum Number of Alarms Displayed," on page 94
- Section 6.9.5, "Displaying Record Time," on page 94
- Section 6.9.6, "Viewing Deleted Alarms in Historical Alarms," on page 94
- Section 6.9.7, "Adjusting the Timeline between Real-Time and Alarm History Views," on page 95
- Section 6.9.8, "Viewing the Alarm History Property Page," on page 95

For configuration settings regarding alarm history data collection, see "Monitoring Alarm History Collection" in the *Novell Operations Center 5.0 Server Configuration Guide*.

6.9.1 Viewing the Alarm History for Elements

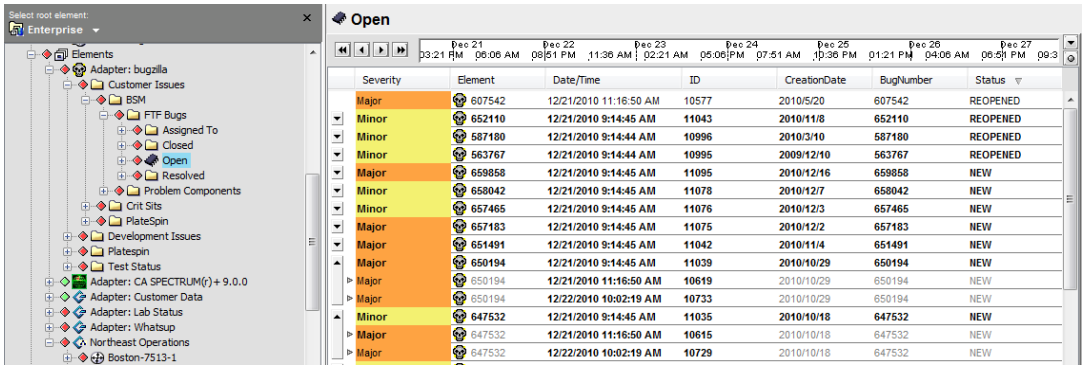
To view the alarm history for elements:

1 In the *Alarms* view, select the *Historical: Alarms* option:



In this example, select *Historical Alarms* to change the *Alarms* View display.

2 Click *Retrieve* to retrieve historical alarms, which shows historical alarms in the *Alarms* view:



Historical alarms display for a specified time period.

The following describes this view:

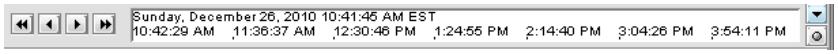
- When an event occurs that triggers an alarm, a new row containing alarm information displays in the *Alarms* view.
- When the status of an alarm changes, a new row containing alarm information displays in the *Alarms* view.
- Alarms that contain historical data display in bold.
- An arrow button to the left of the *Severity* column indicates that the alarm has more information.

- You can do the following in this view:
  - Click the button to expand and view all entries for the alarm and the various times that the alarm information was received.
  - Click the ▹ symbol to expand the view and display additional historical alarms.
  - Click the button to collapse the alarm history and display only the most recent entry.

6.9.2 Changing the Dates for Displaying Historical Alarms

To update the date range for historical alarms:

1 Use the timeline buttons to adjust the time range for alarms:



The timeline buttons:

Button	Name	Description
	Display Setup	Displays the time frame defined by a user-defined *Start* and *End* time or the selection of a saved bookmark.
	Bookmark	Displays the time frame based on a selected bookmark. For more information about bookmarks, see Section 7.7, "Navigating with Charting Bookmarks," on page 111.
	Page Back	Moves the timeline backwards by an entire view.
	Unit Back	Moves the timeline backwards by one unit of time.
	Page Forward	Moves the timeline forwards by an entire view.
	Unit Forward	Moves the timeline forwards by one unit of time.

2 Make adjustments by clicking and dragging the timeline to a new position using the following mouse actions:

Mouse Click Action	Function
Click and drag left.	Navigates forward.
Click and drag right.	Navigates back.
Shift+click or Shift+click .	Seeks the next occurrence of information forward or backward on the timeline.
Ctrl+click and drag left.	Zooms out on chart data.
Ctrl+click and drag right.	Zooms in to chart data.
Double-click.	Opens the Display Setup dialog box.

6.9.3 Sorting Alarms

By default, the *Alarms History* view lists alarms in chronological, ascending order. This means using the received time for the alarms to display the oldest alarms first, followed by the most recent alarms. Sorting service level breaches and outages uses the date and time when the breaches or outages occurred.

To reverse the alarm history sort order:

1. From the *Format* menu, select *Reverse Alarm History Sort*.

   When selected, the sort order is chronological, descending. When deselected, the sort order is chronological, ascending.

   The sort order is persistent across client sessions and is unique for each user.

6.9.4 Changing the Maximum Number of Alarms Displayed

- "Changing the Maximum Number of Historical Alarms Displayed" on page 94

Changing the Maximum Number of Historical Alarms Displayed

By default, a maximum of 1,000 historical alarms can display.

To change the maximum number of alarms displayed, in the *Format* menu, click *Alarm History Query Limit*, then select a value.

The possible values are 500, 1000, 2500, 5000, and 10,000.

6.9.5 Displaying Record Time

Some network management systems do not issue a new time/date stamp for each change or update to an alarm. However, it is possible to display and sort historical alarm changes using the date and time that Operations Center recorded changes for an alarm, called the Record Time.

To display or hide the *Record Time* column:

1. From the *Format* menu, select *Query by Recorded Date*.

   When selected, the *Record Time* column lists the dates and times that Operations Center recorded each modified alarm.

6.9.6 Viewing Deleted Alarms in Historical Alarms

After deleting a historical alarm, a red x displays in the far left column and a red line strikes through the alarm column data.

Deleted alarms display data for six columns only: *Severity*, *Element*, *Date/Time*, *ID*, *Source Element*, and *Record Time*.

In Figure 6-7, a red strikeout line identifies deleted historical alarms:

Figure 6-7 *Alarm History View*

6.9.7 Adjusting the Timeline between Real-Time and Alarm History Views

For alarms retrieved in the *Alarm History* view, the end time displayed in the timeline corresponds to the date and time when the timeline first displayed.

To view the most recent changes in the *Alarm History* view:

1. On the toolbar, click the alarms drop-down list, then select *Real-Time Alarms* to update the *Alarms* view.
2. Click *Retrieve* to update the *Alarms* view.
3. Make changes to one or more real-time alarms, such as by performing operations on them.
4. Click the alarms drop-down list, then select *Historical - Alarms* to update the *Alarms* view.
5. Click *Retrieve*.

   The most recent changes do not display because the end time is still set to the previous request's end time.
6. Advance the timeline to see the most recent alarm changes.

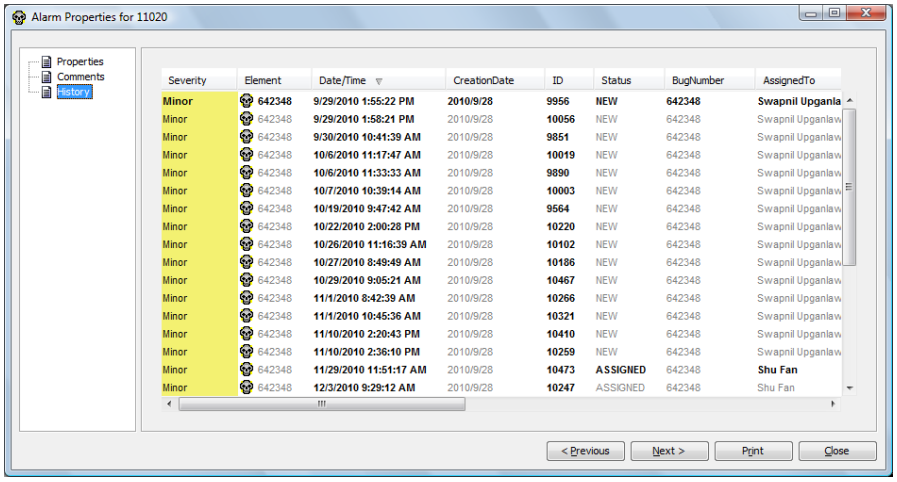
6.9.8 Viewing the Alarm History Property Page

The alarm *History* property page displays historical alarm information for a specific alarm.

To view the history of a specific alarm:

1. Do one of the following:
   - In the *Alarms* view, double-click an alarm.
   - Right-click an alarm, then select *Properties*.
2. In the left pane, click *History*.

   The *History* property page displays all available history for the selected alarm:



3. To view a different alarm, do one of the following:
   - Click *Next* to view the next alarm.
   - Click *Previous* to view the previous alarm.

7 Charting Performance Data

The *Performance* view graphs historical performance data for elements associated with specific management systems or with the Service Level Manager (SLM), which is a product of Operations Center for managing service level agreements (SLAs).

- Section 7.1, "Understanding the Performance View," on page 97
- Section 7.2, "Understanding the Chart Types," on page 98
- Section 7.3, "Charting Performance Data," on page 102
- Section 7.4, "Viewing and Editing Chart Properties," on page 107
- Section 7.5, "Setting Thresholds on Charts," on page 108
- Section 7.6, "Navigating Performance Charts," on page 110
- Section 7.7, "Navigating with Charting Bookmarks," on page 111
- Section 7.8, "Adjusting Time Intervals," on page 113
- Section 7.9, "Automatically Refreshing Chart Data," on page 115
- Section 7.10, "Using Guidelines," on page 115
- Section 7.11, "Saving the Performance Chart Group to a Graphics File," on page 116
- Section 7.12, "Exporting Data," on page 116

For details on customizing default chart settings, see "Customizing Default Performance Chart Settings" in *Novell Operations Center 5.0 Server Configuration Guide*.

For information on using the Performance view in connection with SLM and SLAs, see "Analyzing Performance" in the *Novell Operations Center 5.0 Service Level Agreement Guide*.

7.1 Understanding the Performance View

Performance data is available for elements associated with:

- Some network management systems, such as BMC PATROL

  This data is automatically available for display in the *Performance* view for the elements associated with the management system.
- The Operations Center Service Level Manager (SLM), which is an optional feature

  SLM enables viewing historical performance data saved for elements. Ask your administrator if the company has purchased and configured SLM.

The key components of the *Performance* view are:

- **Explorer pane:** Lists elements. Select an element by clicking it. If performance information is available for a selected element, the associated properties display in the *Chart Properties* pane.
- **Chart Properties pane:** Lists the types of performance data that can be charted for the selected element.

- **Timeline:** Identifies the dates and times associated with the charted performance data. Provides tools for easy navigation of the Performance charts.
- **Chart pane:** Displays performance data for a selected element using a line chart, sted bar chart, or condition line chart.

7.2 Understanding the Chart Types

Each chart property displays in one of the chart types described in Table 7-1.

Table 7-1 *Performance Chart Properties and Associated Chart Types*

Chart Property	Associated Chart Type
Alarm Column	Varies by data type. A Line chart is created for most columns, except for *Severity*, which creates a Condition Line chart.
Alarm Severity Counts	Stacked Bar
Child Condition Counts	Stacked Bar
Element Condition	Condition (Line or Pie)
Element Condition Change	Condition (Line or Pie)
Element Property	Varies by data type. A Line chart is created for most properties, and a Condition Line or Pie chart is created for some properties.
Performance Series	Line
Script	Varies by data type.

Other properties are also available to chart, depending on the properties captured, or if a Service Level Agreement is defined. For example, when a Service Level Agreement is applied with an availability objective, `Availability` and `Outage Count` properties are often available to chart.

Table 7-2 *SLA Property Types and Corresponding Chart Types*

Property Type	Chart Type
Availability	Line
Outage Count	Stacked Bar

When charting SLA metrics, it can take up to several minutes before a refreshed or new chart registers an update, while updates for other property types are received and charted in near-real-time. In this case, the server has not yet recorded update data for `Availability` and `Outage Count` properties.

When charting performance and SLA metrics, if there is no data for the time range selected, the chart displays with no data.

The following sections explain the four chart types:

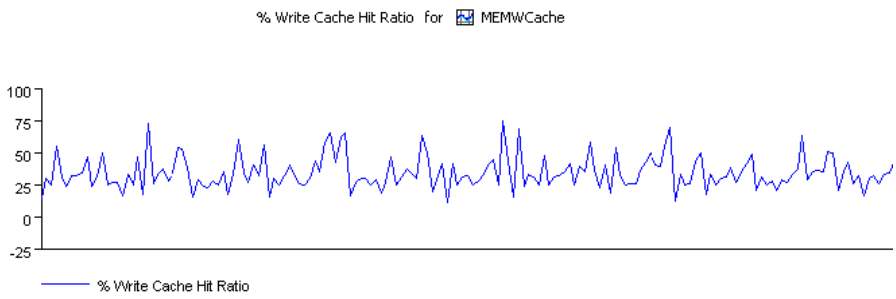
- Section 7.2.1, “Line Charts,” on page 99
- Section 7.2.2, “Sted Bar Chart,” on page 100
- Section 7.2.3, “Condition Line Chart,” on page 101
- Section 7.2.4, “Condition Pie Chart,” on page 101

7.2.1 Line Charts

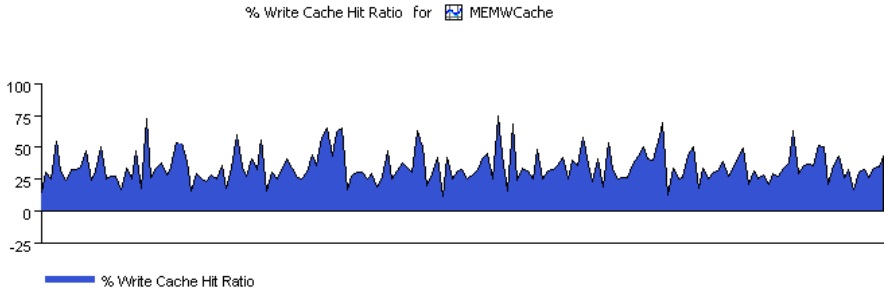
Line charts display property values (other than alarms and condition) for an element. For more information, see “Creating an Area Line Chart” on page 104.

There are two types of Line charts:

- The standard Line chart tracks values using a line on the Y-axis:

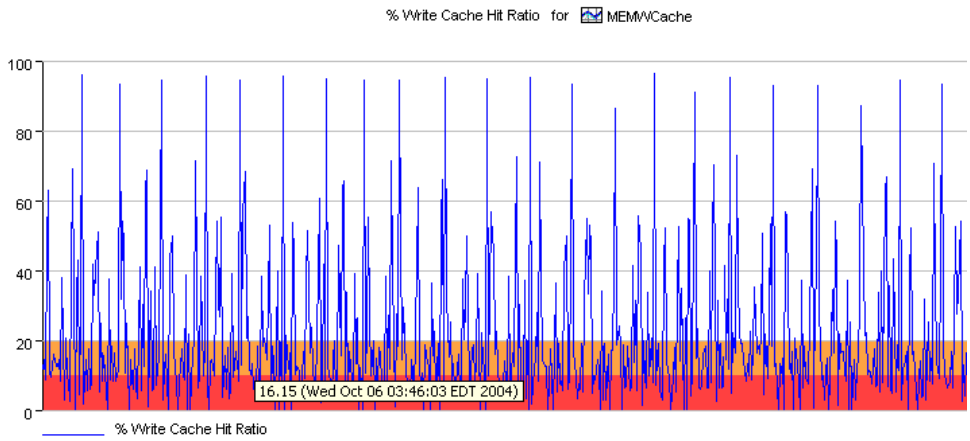


- The Area Line chart fills in the range between zero and the line value:



The Line chart can render both warning and alarm thresholds for some elements (such as *Event Manager* and *PATROL*). In Figure 7-1, when the Write Cache Hit Ratio falls below 20, it issues a WARNING level (orange) violation. When it falls below 10, it issues a CRITICAL (red) violation.

Figure 7-1 *Line Chart: Some Performance Charts Include a Warning and CRITICAL Thresholds*

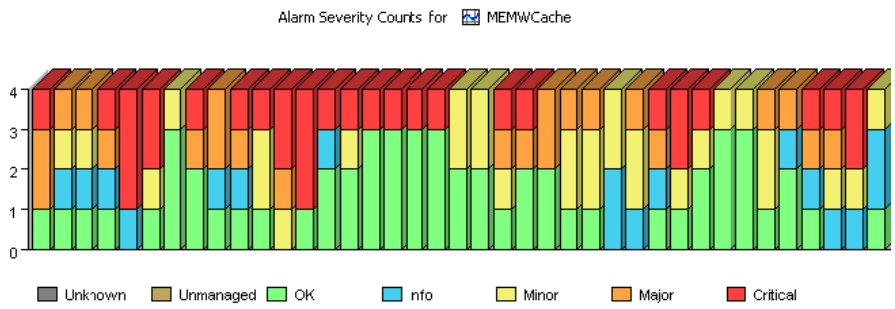


7.2.2 Sted Bar Chart

The Sted Bar chart displays segmented values sted in a single bar for each time point.

In Figure 7-2, each sted bar shows the total number of alarms and segments each type of alarm condition (CRITICAL, MAJOR, MINOR, and so on) by color:

Figure 7-2 *Sted Bar Chart*



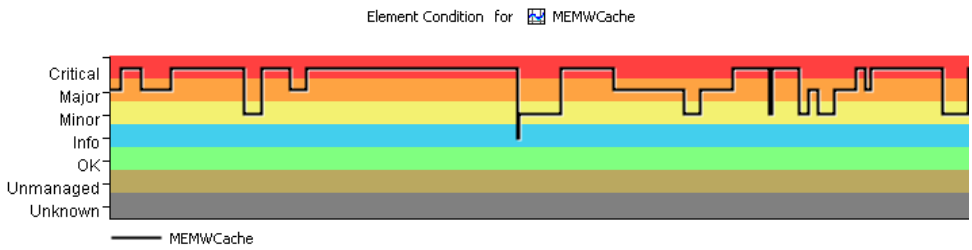
You can identify the changes in the ratio of CRITICAL (red) versus OK (green) alarms over time.

7.2.3 Condition Line Chart

The Condition Line chart uses a line to tr values over time.

Figure 7-3 shows that the element condition fluctuates mostly between CRITICAL and MAJOR during the displayed time period:

Figure 7-3 *Condition Line Chart*



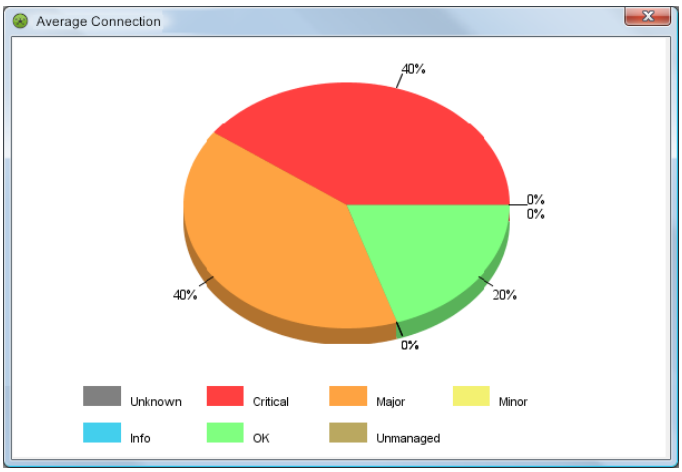
The background band of colors helps identify the changes in conditions over time.

7.2.4 Condition Pie Chart

A Condition Pie chart is related to the Condition Line chart.

Figure 7-4 shows the element was in CRITICAL and MAJOR condition for equal percentages of time, and in OK condition for the remaining 20 percent of the time:

Figure 7-4 *Average Condition Pie Chart*



The Pie chart identifies the percentage of time that the element was in each condition (CRITICAL, MAJOR, MINOR, and so on) within a specific time period.

For more information, see "Creating a Pie Chart of Condition Values" on page 104.

7.3 Charting Performance Data

The following sections describe the steps for selecting elements and properties to create performance charts:

- Section 7.3.1, "Creating Charts," on page 102
- Section 7.3.2, "Refining the Displayed Chart," on page 105
- Section 7.3.3, "Updating a Chart Group," on page 105
- Section 7.3.4, "Refreshing Performance Data," on page 106
- Section 7.3.5, "Removing Charts," on page 106

7.3.1 Creating Charts

In the *Performance* view, the *Chart Properties* pane lists the types of performance information that has been gathered for an element, such as the number of alarms for each severity type (*Alarm Severity Counts*) and tring the changes in condition for an element (*Element Condition*).

The following topics are related to creating charts:

- "Creating a Chart in the Performance View" on page 102
- "Adding a Single Chart Quickly" on page 104
- "Creating an Area Line Chart" on page 104
- "Creating a Pie Chart of Condition Values" on page 104

Creating a Chart in the Performance View

To create a chart:

1. In the *Explorer* pane, select an element.
2. Click the *Performance* tab.

   The *Performance* view updates. A timeline selector displays at the top of the view pane.
3. To adjust the timeline to display a specific time frame, do one of the following:

   3a Table 7-3 describes the timeline icons you can use to adjust the timeline.

Table 7-3 *Timeline Icons*

Timeline Icons	Function
Display Setup	Displays the time frame defined by a user-defined Start and End time or the selection of a saved bookmark.
Bookmark	Displays the time frame based on a selected bookmark. For more information, see Section 7.7, "Navigating with Charting Bookmarks," on page 111.
Page B	Moves the timeline bwards by an entire view.
Unit B	Moves the timeline bwards by one unit of time.
Page Forward	Moves the timeline forwards by an entire view.
Unit Forward	Moves the timeline forwards by one unit of time.

3b Click and drag the timeline to a position using the actions described in Table 7-4.

Table 7-4 *Mouse Click Actions*

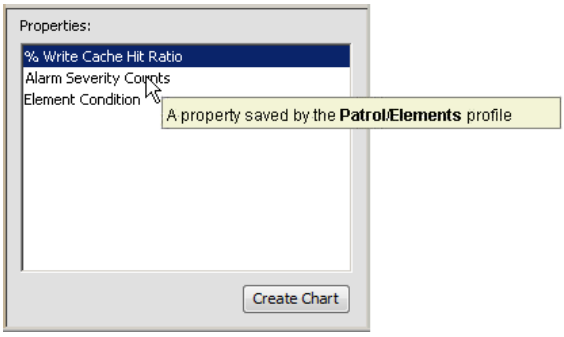
Mouse Click Action	Function
Click and drag left	Navigates forward in time.
Click and drag right	Navigates b in time.
Shift+click or Shift+click	Seeks the next occurrence of information forward or bward in time.
Ctrl+click and drag left	Zooms out on chart data.
Ctrl+click and drag right	Zooms in to chart data.
Double-click	Opens the Display Setup dialog box.

Duplicate property names can exist. Two or more properties attached to an element can gather properties with the same name. If duplicate properties display in the *Chart Properties* pane, the associated profile name displays in parentheses.

4 To automatically display properties in the *Chart Properties* pane for the element selected in the *Explorer* pane, do any of the following:

- Select one or more properties in the *Chart Properties* pane.
- To select multiple properties, press the Ctrl key, then click the properties.
- To view chart profile information in a tooltip format, position the mouse over a property name.

  The tooltip lists the profile associated with the property:



Consider the following concerning the properties:

- Properties originate from either an external management system, such as PATROL, or from profiles created by the administrator.
- If many properties are available, expand the *Chart Properties* pane by dragging up its top border.
- If performance data is unavailable for the selected element, the *Chart Properties* pane is empty, meaning a chart cannot be created.

5 Click *Create Chart*.

The charts display as a chart group in the *Performance* view.

Depending on the number of selected chart properties, more than one chart might display. All charts created at the same time are considered in the same chart group. To understand the relevance of chart groups, see Section 7.3.3, "Updating a Chart Group," on page 105.

When charting SLA metrics (`Availability` and `Outage Count`), it can take up to several minutes before a chart registers an update, while updates for other property types are charted in near-real-time. In this case, the server has not yet recorded update data for these properties.

6 To create additional charts, repeat Step 1 through Step 5.

   Clicking the *Create Chart* button creates a new chart beneath the most recent chart in the *Performance* view. It is considered a separate chart group.

Adding a Single Chart Quickly

To add a chart quickly:

1 Double-click a property in the *Chart Properties* pane.

   The new chart displays in the *Performance* view. It displays with existing charts, but is a separate chart group.

Creating an Area Line Chart

The standard Line chart tracks values using a line on the Y-axis. The Area Line chart fills in the range between zero and the line value.

To create an Area Line chart:

1 Create a standard Line chart.

   For instructions, see the steps listed earlier in this section.

2 In the *Performance* view, right-click the chart, then select *Filled*.

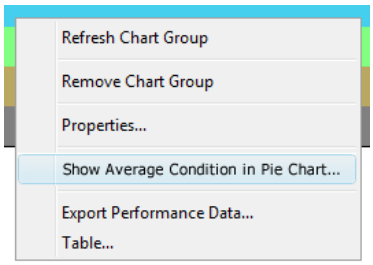
   When selected, the Area Line chart displays. When deselected, the standard Line chart displays.

Creating a Pie Chart of Condition Values

To show average condition values in a pie chart:

1 Create a Condition Line chart. For instructions, see the steps listed earlier in this section.

2 In the *Performance* view, right-click the *Condition Line* chart, then select *Show Average in Pie Chart*:



   A Pie chart opens in a separate dialog box.

7.3.2 Refining the Displayed Chart

Selecting too many data points can create an illegible chart. Also, all data points might not display in the chart. Magnify one area of the chart for a better view of data points. Other chart refinements include hiding profile names in the *Chart Properties* pane, to make it easier to see when numerous properties exist.

- "Magnifying an Area of a Chart" on page 105
- "Displaying or Hiding Profile Names in the Chart Properties Pane" on page 105

Magnifying an Area of a Chart

To zoom and magnify a chart:

1. Use the Zoom feature to magnify the display and refresh the data.

   For more information, see Navigating Performance Charts and Navigating with Bookmarks.

Displaying or Hiding Profile Names in the Chart Properties Pane

To hide or show profile names in chart properties:

1. Right-click the background of the *Chart Properties* pane, then select *Show Profile*.

   When selected, the profile names display.

7.3.3 Updating a Chart Group

Charts display in chart groups in the *Performance* view. Clicking the *Create Chart* button creates a new chart group. A chart group can contain one or more charts, depending on the number of chart properties selected.

After creating a chart group, update charts in the group by making additional property selections or selecting a different element to chart.

TIP: Position the cursor over a data point to view a tooltip with relevant data for that point in time. For Condition charts, position the cursor over the actual data point (not the connector line).

To update a chart group:

1. In the *Performance* view, select the chart group.

   The element and properties used to create the charts appear highlighted in the *Explorer* pane and *Chart Properties* pane, respectively.
2. To chart a different set of properties for an element, select or deselect properties in the *Chart Properties* pane.
3. To create a chart for a different element:
   - Select a different element in the *Explorer* pane.
   - Then select properties in the *Chart Properties* pane.
4. Click *Apply Changes* to update the current chart group with the changes.

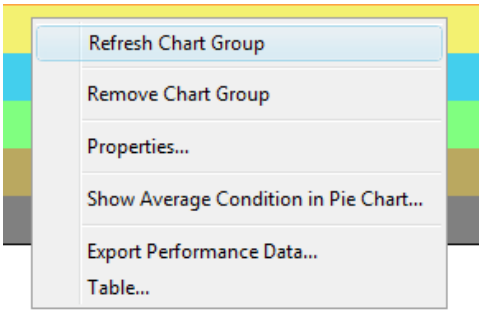
   For example, select three properties and create three charts, deselect a property, then click *Apply Changes*. The chart group redisplays using the last two selected properties, displaying only two charts.

7.3.4 Refreshing Performance Data

Data used to create a chart originates from the time the *Performance* view initially displayed. As time passes, it is necessary to refresh the chart with the most recent data from the native management system associated with the charted elements.

To refresh chart data:

1. Do one of the following in the *Performance* view:
   - Click a chart and then click *Refresh* on the toolbar.
   - Right-click a chart, then select *Refresh Chart Group* to refresh all charts in the group.



7.3.5 Removing Charts

To remove a single chart or the entire chart group:

1. Do one of the following:
   - Right-click a chart, then select *Remove Chart*.

     The chart disappears from the *Performance* view.
   - Right-click a chart, then select *Remove Chart Group*.

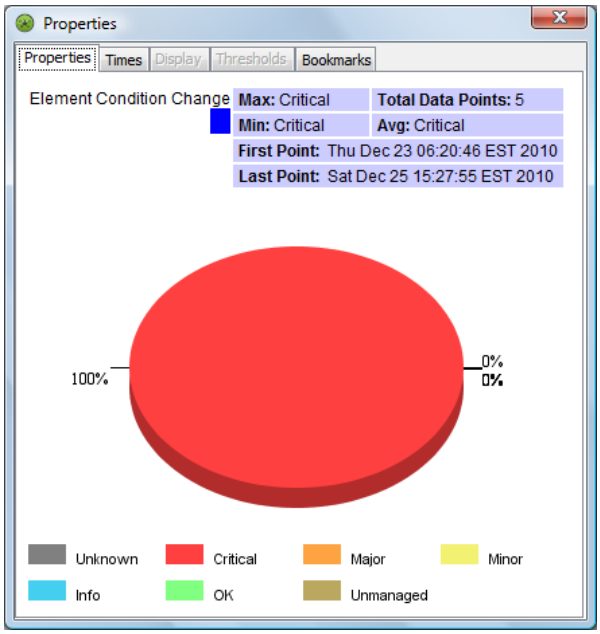
     All charts in the current chart group disappear from the *Performance* view.

7.4 Viewing and Editing Chart Properties

Access chart statistics through the chart's property pages.

To view or edit the properties of a chart:

1. In the *Performance* view, right-click a chart, then select *Properties* to open the Properties dialog.
2. The Properties tab displays summary information about the chart:



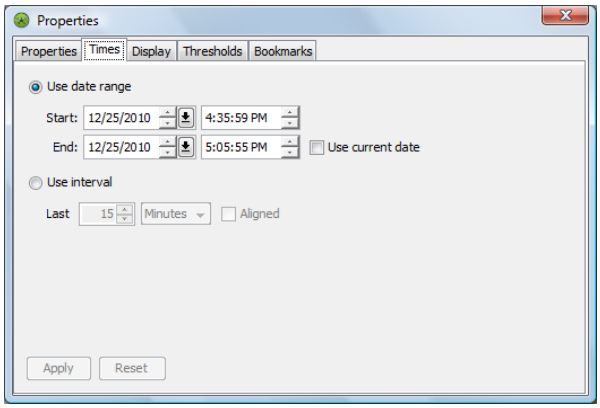
For Condition charts, the Properties tab also displays the Pie chart described in Section 7.2.3, "Condition Line Chart," on page 101. The minimum and maximum chart values display, along with total data points and dates and times of the first and last charted values.

3. In the left pane, click *Times*.

   The Times tab displays the current time interval. Change the date range or time interval, if necessary. For details on editing the Times tab, see Section 7.8, "Adjusting Time Intervals," on page 113.

4. Click *Apply*.

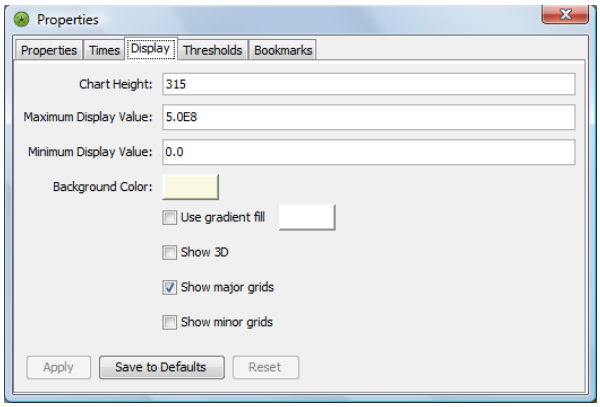
   The chart updates using the specified date and time range:



5 In the left pane, click *Display*.

The Display tab in the Properties page displays options that enhance the chart display as described in Figure 7-5.

Figure 7-5 *Properties Page - Display Tab*



6 Specify the following in the fields provided:

Chart Height: Determines the height of the displayed chart.

Minimum and Maximum Display Values: Determines the range of values displayed on the chart's Y-axis.

Background Color: The color that displays behind the chart data.

Gradient Fill: Used in combination with the background color.

Show 3D: Select the check box to display three-dimensional shapes.

Show Major and/or Minor Grids: Adds Y-axis lines that improve chart readability when there are many data points.

7 To apply the current settings to all charts that are subsequently created (except Y-axis minimum and maximum values), click *Save to Defaults*.

8 Click *Apply* to refresh the chart using the changed settings.

or

To cancel changes before clicking the *Apply* button, click the *Reset* button to revert to the previously saved settings.

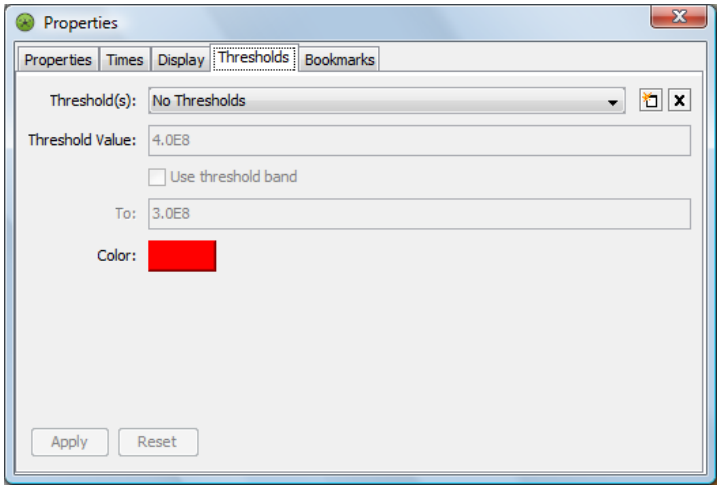
7.5 Setting Thresholds on Charts

- Section 7.5.1, "Specifying a Horizontal Line on the Chart that Represents a Threshold Value," on page 109
- Section 7.5.2, "Selecting a Threshold when Multiple Thresholds Have Been Set," on page 109
- Section 7.5.3, "Drawing a Thicker Threshold Band," on page 109
- Section 7.5.4, "Deleting the Current Threshold," on page 110

7.5.1 Specifying a Horizontal Line on the Chart that Represents a Threshold Value

To setup a threshold line on a chart:

1. In the *Performance* view, right-click a chart, then select *Properties* to open the Properties page.
2. In the left pane, click *Thresholds* to display the Thresholds property page:



3. Click *Add New Threshold*.
4. Specify a value in the *Threshold Value* field.

   The line is drawn at this value on the Y-axis.
5. Click the colored rectangle, then select a color from the palette.
6. Click *Apply*.

   A horizontal line in the selected color displays across the chart along the specified threshold value on the Y-axis.

7.5.2 Selecting a Threshold when Multiple Thresholds Have Been Set

To select a threshold:

1. In the chart's Thresholds property page, click the *Threshold* drop-down list, then select a threshold.

7.5.3 Drawing a Thicker Threshold Band

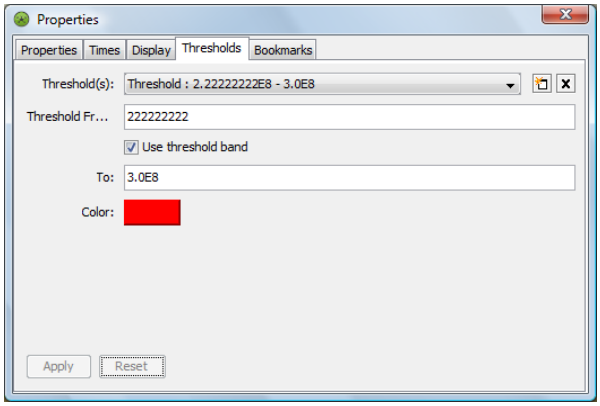
To expand the width of the threshold band:

1. In the chart's Thresholds property page, select the *Use Threshold Band* check box.
2. Specify a second value in the *To* number box to draw the threshold band between the values specified in the To and Threshold Value number boxes.

7.5.4 Deleting the Current Threshold

To delete a threshold:

1 In the chart's Thresholds property page, select the desired threshold in the Threshold drop-down list, then click *Delete*.



The threshold setting disappears from the *Threshold* drop-down list.

7.6 Navigating Performance Charts

- Section 7.6.1, "Zooming In," on page 110
- Section 7.6.2, "Scrolling," on page 110

7.6.1 Zooming In

To zoom in to view increased levels of detail:

1 Click and drag a rectangle over a portion of the performance chart.

The view zooms in to the selected area. This decreases the number of time intervals displayed, but increases the number of data points displayed.

2 Double-click the chart to return to the previous display level.

7.6.2 Scrolling

To scroll to display a different area of a chart:

1 Press the Shift key while clicking and dragging the chart.

2 Scroll right or left to view additional data along the X-axis.

3 Scroll up or down to view additional data along the Y-axis.

4 Double-click the chart to return to the previous display.

7.7 Navigating with Charting Bookmarks

Use bookmarks to move to a specific date and time in the timeline. Think of them as shortcuts to specific areas of a chart. This section explains how to add a bookmark, access a bookmark, manage existing bookmarks, and open a list for selection of bookmarks.

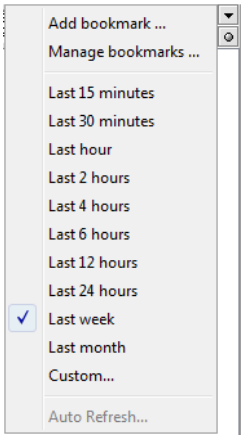
- Section 7.7.1, "Accessing Bookmarks," on page 111
- Section 7.7.2, "Bookmarking the Current View," on page 111
- Section 7.7.3, "Editing a Bookmark," on page 112
- Section 7.7.4, "Deleting a Bookmark," on page 112
- Section 7.7.5, "Displaying the Date and Time in the Performance View," on page 113

7.7.1 Accessing Bookmarks

To access chart bookmarks:

1 Click the *Bookmarks* button in the top right corner of the *Performance* view.

A menu and list of bookmarks display to the left, as shown in the following:

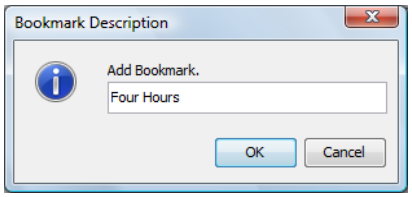


7.7.2 Bookmarking the Current View

To bookmark the current view:

1 In the *Performance* view, click the *Bookmarks* button, then select *Add Bookmark* from the *Bookmarks* drop-down list to open the Bookmark Description dialog box.

2 Specify a name for the bookmark, then click *OK*.

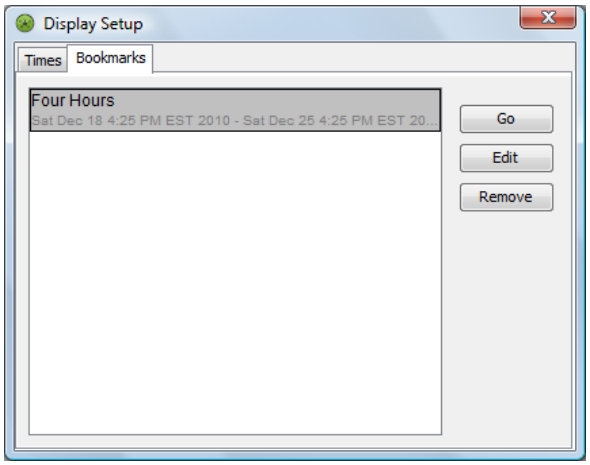


3 The new bookmark for the current timeline selection displays in the *Bookmarks* drop-down list.

7.7.3 Editing a Bookmark

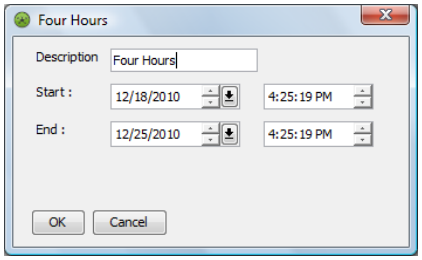
To edit a bookmark:

1. In the *Performance* view, double-click the timeline or click *Display Setup* to open the Display Setup dialog box.
2. Click the *Bookmarks* tab:



3. To edit a bookmark, select it, then click *Edit*.

   A dialog box with the bookmark's name displays:



4. Edit the bookmark name in the *Description* field or change the start and/or end date and times.
5. Click *OK* to save the changes to the bookmark.

7.7.4 Deleting a Bookmark

To delete a bookmark:

1. In the *Performance* view, double-click the timeline or click *Display Setup* to open the Display Setup dialog box.
2. Click the *Bookmarks* tab.
3. Select a bookmark.
4. Click *Remove*.

   A confirmation dialog box displays.
5. Click *Yes* to remove the bookmark from the list.

7.7.5 Displaying the Date and Time in the Performance View

To display in the *Performance* view the date and time specified by a bookmark:

1. Double-click the timeline or click *Display Setup* to open the Display Setup dialog box.
2. Click the *Bookmarks* tab.
3. Select a bookmark.
4. Click *Go*.

   The *Performance* view updates to display data matching date and time specified by the bookmark.

7.8 Adjusting Time Intervals

- Section 7.8.1, "Changing the Chart Time Interval Using a Bookmark," on page 113
- Section 7.8.2, "Changing the Start and End Dates Used in a Chart," on page 113
- Section 7.8.3, "Changing the Time Interval Used in a Chart," on page 114

7.8.1 Changing the Chart Time Interval Using a Bookmark

To change the chart time interval using a bookmark:

1. In the *Performance* view, click *Bookmark*.

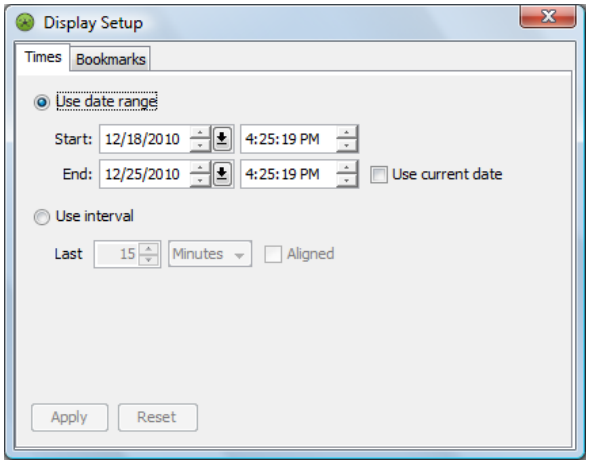
   A list of commonly used time intervals (such as last *x* minutes or hours) displays in the drop-down list.
2. Select a time interval.

   The chart updates to display data for the selected interval.

7.8.2 Changing the Start and End Dates Used in a Chart

To change start and end dates on a chart:

1. In the *Performance* view, double-click the timeline or click *Display Setup* to open the Display Setup dialog box:
2. Click the *Times* tab:



3 To select new starting or ending dates, do the following:

- Select the *Use Date Range* radio button and enter a start and end date/time.
- Select the *Use Current Date* check box to use the current date as the default end date.

4 Click *Apply*.

The *Performance* view timeline updates to display the specified dates.

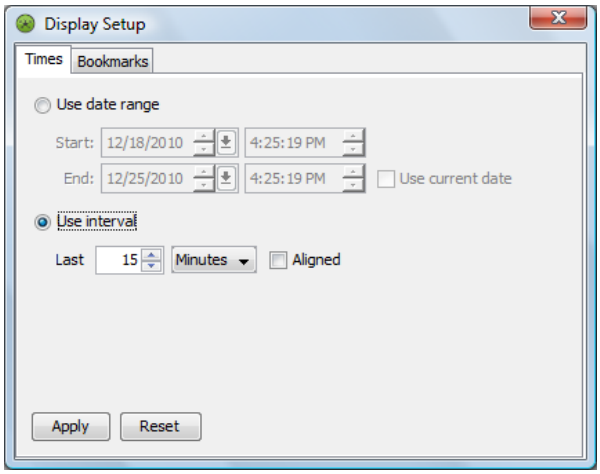
5 Click to close the dialog box.

7.8.3 Changing the Time Interval Used in a Chart

To change the time interval:

1 In the *Performance* view, double-click the timeline or click *Display Setup* to open the Display Setup dialog box.

2 In the Display Setup dialog box, select the *Use Interval* radio button.



3 Click the drop-down list, then select the time interval: *Minutes*, *Hours*, *Days*, *Weeks*, or *Months*.

4 Use the Last spinner to select the numeric increment.

5 Do one of the following:

- To use a rolling time interval display, leave the *Aligned* check box deselected.
- To use an aligned display, select the *Aligned* check box.

6 The *Performance* view timeline updates to display the specified time interval.

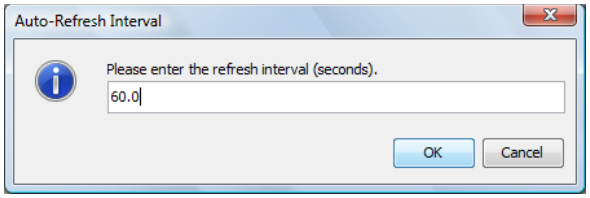
Click *Apply*.

7 Click to close the dialog box.

7.9 Automatically Refreshing Chart Data

To refresh chart data at a specific time interval:

1 In the *Performance* view, click *Bookmark*, then select *Auto Refresh* to open the Auto-Refresh dialog box.



2 Specify the time interval (in seconds).

The minimum interval is 30 seconds.

3 Click *OK*.

The chart data updates continuously at the specified time interval:

7.10 Using Guidelines

Guidelines provide visual cues to help compare data from multiple charts at the same point in time.

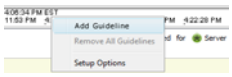
- Section 7.10.1, “Creating a Guideline,” on page 115
- Section 7.10.2, “Moving a Guideline to a New Position,” on page 116
- Section 7.10.3, “Removing One or All Guidelines,” on page 116

7.10.1 Creating a Guideline

To create a guideline:

1 Right-click a point on the timeline at which to compare data, then select *Add Guideline*.

A vertical guideline displays at the selected point:



7.10.2 Moving a Guideline to a New Position

To move the guideline:

1. Hover the cursor at the top of the guideline until the cursor changes to a hand symbol and drag to a new position on the timeline.

7.10.3 Removing One or All Guidelines

To delete the guideline:

1. Do one of the following:
   - Right-click the guideline, then select *Remove Guideline*.
   - To remove all guidelines, select *Remove All Guidelines*.

7.11 Saving the Performance Chart Group to a Graphics File

Save the performance chart group currently displayed as a `.gif` image.

To save the current chart group as a `.gif` file:

1. Select the chart group.
2. From the *File* menu, select *Save Graphic* to open the Save dialog box.
3. Specify a file name with the `.gif` extension.
4. Click *Save* to open a confirmation dialog box.
5. Click *OK*.

   All charts in the current chart group are saved in the single `.gif` file.

7.12 Exporting Data

It is possible to save performance data as a comma-separated text file. Appropriate access privileges are required to save the performance data. Inadequate privileges results in the message "`Failed to save data. The privilege to do so may have been denied.`" when attempting to save performance data. Contact the administrator to request the permission to export the performance data.

To export performance data from a chart:

1. Do one of the following:
   - Right-click a chart, then select *Export Performance Data*.
   - From the *File* menu, select *Export Performance Data* to open the Save Data dialog box.
2. Specify a file name with a `.txt` extension.
3. Click *Save* to open a confirmation dialog box.
4. Click *OK*.

A Main Menu Options

Menu options appear throughout the console. Some options display on the menu bar. Options vary depending on the current view. Right-clicking an element accesses many element-related options. This section lists and defines the available options.

- Section A.1, "Main Menus," on page 117
- Section A.2, "Network View Menus," on page 120

A.1 Main Menus

Table A-1 summarizes the options available from the main menu bar for most views.

Table A-1 *Standard Menu Options*

Menu	Options
File	◆ **New Browser:** Opens a new browser. ◆ **Change Password:** Changes the logon password. ◆ **Logoff:** Logs out of Operations Center and ends the current session. ◆ **Logoff and Exit:** Logs out of Operations Center and completely exits the program.

Edit	◆ **Find:** Searches for an element based on specified criteria.
	◆ For the *Alarms* view, the *Edit* option menu includes the following additional options:
	  ◆ **Select All:** Selects all alarms.
	  ◆ **Deselect All:** Deselects all alarms.
	  ◆ **Pause:** Pauses all alarms.

Menu	Options
Go	◆ **B:** Displays the previous view. ◆ **Forward:** Displays the next view. Used with B to retrace steps during the current session. Cannot be used when viewing the most recent window. ◆ **Up One Level:** Moves up one level in the hierarchy displayed in the *Explorer* pane. ◆ **Home:** Selects the top level of the current element's branch in the *Explorer* pane. ◆ **Summary:** Changes the view to *Summary* and displays the child elements of the element selected in the *Explorer* pane. ◆ **Portal:** Changes the view to *Portal* and provides a gateway into different areas of information about the selected element. Useful for administrators. ◆ **Network:** Changes the view to *Network* and displays a graphical representation of the selected element in relation to other elements in the network. ◆ **Alarms:** Changes the view to *Alarms* and displays a list of alarms for the selected element. ◆ **Layout:** Changes the view to *Layout*. ◆ **Performance:** Changes the view to *Performance* and displays graphs of performance data, if available, for the selected element. ◆ **Chat:** Opens a dialog box for communicating with other console users. Console chat is not available for communication with dashboard users. ◆ **Alarm Window:** Opens an independent alarm window for the selected element. ◆ **Go To Element:** Changes the focus of the view to the associated element.

View	◆ **Toolbars/Standard Buttons:** Displays or hides the standard window buttons.
	◆ **Status Bar:** Displays or hides the status bar at the bottom of the console.
	◆ **Explorer Pane:** Displays or hides the *Explorer* pane.
	◆ **Default View:** Sets the default view that is opened whenever an element is selected in the *Explorer* pane. Contains the following suboptions:
	  ◆ **Specific view name:** Aways displays this view by default.
	  ◆ **Auto-select:** Selects a view based on the element type.
	  ◆ **None:** Disables the default view. The view does not change after selecting an element in the *Explorer* pane.

Menu	Options
Format	The *Format* options vary depending on the selected view. The *Layout* view has an extensive set of exclusive options. For more information, see the *Novell Operations Center 5.0 Custom Drawing and Layout Guide*. ◆ **Background Color:** (*Network* and *Layout* views) Provides a color palette for selecting a different background color. ◆ **Condition/Severity Color:** Provides a color palette for assignment to the condition or severity buttons. ◆ **Display Text:** (*Network* view) Displays the text associated with objects. ◆ **Enlarge Font, or Shrink Font:** (*Network* view) Adjusts the size of the font. ◆ **Filter Removing Tree Structure:** (*Network* view) Used in conjunction with the *Filter* buttons on the toolbar to remove a filtered element from the tree structure. For example, click the green filter button. This darkens OK objects, but still displays them in the *Network* view. Select this option to remove the filtered objects from the display. ◆ **Fit Columns:** (*Alarms* view) Resizes the *Alarms* columns based on the longest text string in each column. ◆ **Follow Condition Changes:** (*Network* view) Refocuses the view to follow elements whose status/condition change. ◆ **Orientation:** (*Network* view) Sets the view to use a radial, top-down, bottom-up, left-to-right, or right-to-left display. ◆ **Query by Recorded Date:** (*Alarms* view) Sorts and displays historical alarm changes using the dates and times when Operations Center recorded the alarm changes. Displays these dates and times in the *Record Time* column. Available only when alarm history displays in the *Alarms* view. ◆ **Restore Defaults:** (*Network* and *Alarms* views) Resets the view to system defaults. ◆ **Reverse Alarm History Sort:** (*Alarms* view) Sorts alarm history entries in chronological, descending order (most recent to oldest). The sort order is persistent across client sessions and is unique for each user. When this option is deselected, the default sort order is used: chronological ascending order (oldest to most recent.) Available only when alarm history displays in the *Alarms* view. ◆ **Set Font:** (*Summary* and *Alarms* views) Sets the font size and style for the text displayed. ◆ **Show Alarm Summary:** (*Alarms* view) Opens a small window displaying the alarm severity colors and the number of alarm totals for each. ◆ **Show Severity Colors:** (*Alarms* view) Displays severity colors across the row of data. ◆ **Show/Hide Columns:** (*Alarms* view) Displays or removes columns.
Element	For *Element* menu options, see Section B.1, “Understanding Element Menus,” on page 123.
Alarms	These dynamic menu options display when the *Alarms* view is selected. The options vary depending on the adapter type associated with the alarm For more information, see Section B.2, “Understanding Alarm View Menus,” on page 128.
Window	◆ **New Window:** Creates an additional View window. ◆ **Close Window:** Closes the current window. ◆ **Tile:** Arranges open View windows in a side-by-side format to fit within the console. ◆ **Cascade:** Sts open View windows behind the current window.

Menu	Options
Help	◆ **Open Online Help:** Displays the table of contents for the Operations Center online help. ◆ **Administrative Tasks:** Displays the *Novell Operations Center 5.0 Server Configuration Guide* in online help. ◆ **Service Configuration Manager:** Displays the "Introduction to the Service Configuration Manager (SCM)" section in the *Novell Operations Center 5.0 Service Modeling Guide* in online help. ◆ **Service Level Manager (SLM):** Displays the *Novell Operations Center 5.0 Service Level Agreement Guide* in online help. ◆ **Data Integrator:** Displays the *Novell Operations Center 5.0 Data Integrator Guide* in online help. ◆ **Event Manager:** Displays the *Novell Operations Center 5.0 Event Manager Guide* in online help. ◆ **Dashboard:** Displays the *Novell Operations Center 5.0 Dashboard Guide* in online help. ◆ **Configuring Adapters:** Displays the *Novell Operations Center 5.0 Adapter and Integration Guide* in online help. ◆ **Cool Solutions Web Community:** Displays the Cool Solutions Web Community for BSM on the Novell Web site. ◆ **Novell Operations Center Home Page:** Opens the Operations Center product page on the Novell Web site. ◆ **About Operations Center:** Displays the current version and client and JAR information.

A.2 Network View Menus

The menu options in the *Network* view help navigate the network elements and provide formatting options. In the *Network* view, access menu options using the *Format* menu or by right-clicking the *Network* view background. Table A-2 summarizes the menu options.

Table A-2 *Network View Right-Click Menu Options*

Option	Description
Home	Centers the top level of the network in the *Network* view. When selected from the toolbar or from the *Go* menu, *Home* displays the top level of the entire network. When selected from the right-click menu in the *Network* view pane and only a portion of the network is currently displayed, *Home* centers the top level of the portion that displays. For example, select a level 3 element in the *Explorer* pane, then select *Home* to center the level 3 element in the *Network* view.
Display Parent	Moves up one level in the hierarchy and centers the parent of the currently selected element. Available as a right-click menu option or as the *Up* button on the toolbar.

Option	Description
Zoom In	Magnifies an area of the *Network* view. Available as a right-click menu option, under *View* on the menu bar, and as a button on the toolbar. Shortcut keys are Ctrl+plus(+).
Zoom Out	Shrinks the *Network* view to display more elements. Available as a right-click menu option, under *View* on the menu bar, and as a button on the toolbar. Shortcut keys are Ctrl+plus(+).
Reset Zoom	Returns to the default magnification level. Available as a right-click menu option, under *View* on the menu bar, and as a *Reset* button on the toolbar. Clicking the *Reset* button on the toolbar also resets the displayed elements, to center the top level elements. Shortcut keys are Ctrl+minus(–).
Format	Displays options for changing the font and background color, and for changing the display format of the network. Formatting options are available as right-click menu options and under *Format* on the menu bar. ◆ **Restore Defaults:** Returns the view to the default settings. ◆ **Select Font:** Displays the font menu. ◆ **Enlarge Font or Shrink Font:** Changes the font size. ◆ **Choose Background Color:** Displays a color palette for changing the network background. ◆ **Follow Condition Changes:** Shifts the network display to center the element that experiences the most recent condition change. ◆ **Highlight Condition Changes:** Displays blinking elements when their conditions change. ◆ **Filter Removing Tree Structure:** Removes filtered elements from the *Network* view; used in conjunction with the *Filter* buttons on the toolbar. For example, click the red filter button to darken the *CRITICAL* elements in the *Network* view. Then select *Filter Removing Tree Structure* to remove the *CRITICAL* elements from the *Network* view. ◆ **Orientation:** Sets the network display type. Select from any of the following: ◆ **Radial:** Elements fan out from the center. ◆ **Top-Down:** Selected element appears at the top. ◆ **Bottom-Up:** Selected element appears at the bottom. ◆ **Left to Right:** Shifts the selected element to the right. ◆ **Right to Left:** Shifts the selected element to the left. ◆ **Display Text:** Displays or hides element names on the screen.

B Element and Alarm Options

This appendix provides an overview of all element and alarm options. While your Administrator can create custom options, this gives you a description of standard Operations Center options available for elements and alarms:

- Section B.1, “Understanding Element Menus,” on page 123
- Section B.2, “Understanding Alarm View Menus,” on page 128

B.1 Understanding Element Menus

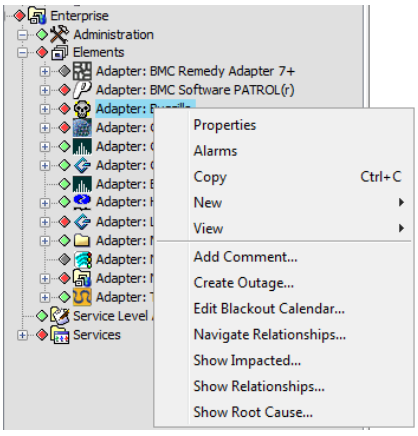
Element menu options vary depending on the adapter type associated with the selected element. Access element menus from the *Explorer* pane and the *Summary*, *Network*, and *Layout* views. To access element menus, right-click an element.

- Section B.1.1, “Right-Click Element Menu Options,” on page 123
- Section B.1.2, “Element Menu Options,” on page 124
- Section B.1.3, “Additional Menu Options in the Services Hierarchy,” on page 125
- Section B.1.4, “Additional Menu Options for Service Elements,” on page 125
- Section B.1.5, “Additional Administrative Menu Options for Elements with Specific Adapters,” on page 126

B.1.1 Right-Click Element Menu Options

Figure B-1 shows the right-click element menu for an element in the *Elements* hierarchy in the *Explorer* pane:

Figure B-1 *Element Right-Click Menu*



B.1.2 Element Menu Options

Table B-1 summarizes the element menu options.

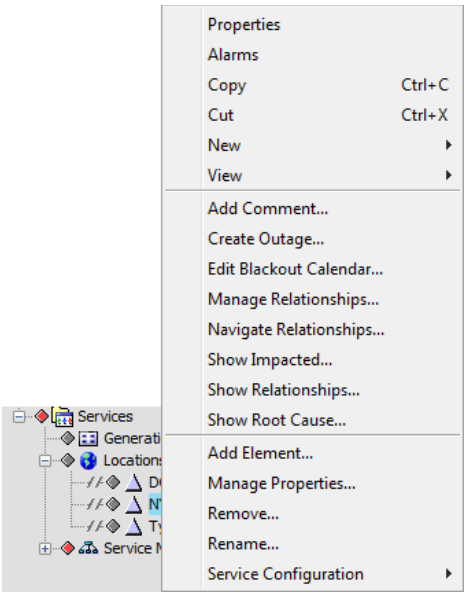
Table B-1 *Element Menu Options*

Option	Description
Properties	Opens the element property pages, which display detailed information about each element.
Alarms	Displays the *Alarms* view.
New	Opens a new Alarms dialog box for the selected element.
View	Changes the view to *Summary*, *Portal*, *Network*, *Layout*, or *Alarms*.
Add Comment	Enables creating annotations for the selected element. View comments in the element's *Comments* property page.
Create Outage	Defines a manual outage for an element. For more information, see the *Novell Operations Center 5.0 Service Level Agreement Guide*.
Edit Blackout Calendar	Defines a blackout calendar requirement which halts data capture at times when the element has planned or unplanned maintenance, or down time that does not affect any other elements in the hierarchy. Available for *Elements* and *Services* root elements only.
Show Impacted	Identifies higher-level objects that are affected by the condition of the selected object. For details on Show Impacted, see the Section 4.6, "Viewing Root Cause and Impacted Elements," on page 55.
Show Relationships	Opens the Relationship Browser, which provides advanced layout features that enhance visualization and navigation of element relationships. For information on the Relationship Browser, see the *Novell Operations Center 5.0 Service Modeling Guide*.
Show Root Cause	Identifies objects that affect the condition change in a higher-level object. For details on Show Root Cause, see the Section 4.6, "Viewing Root Cause and Impacted Elements," on page 55.

B.1.3 Additional Menu Options in the Services Hierarchy

Additional menu options exist for elements in the *Services* hierarchy, as shown in Figure B-2:

Figure B-2 *Right-Click Menu for Services Elements*



B.1.4 Additional Menu Options for Service Elements

Table B-2 describes the additional menu options for *Services* elements.

Table B-2 *Services Element Menu Options*

Option	Description
Copy	Copies the element and its children. Use Paste to place a copy of the element elsewhere in the *Explorer* pane.
Cut	Cuts the element and its children. Use Paste to place a copy of the element elsewhere in the *Explorer* pane.
Paste	Pastes a copy of an element (and its children) as a child of the selected element. Pastes an element that was copied or cut from a different branch of the *Services* hierarchy. No link exists between a pasted element and the element from which it was copied or cut.
Add Element	Creates a new element under Locations or Service Models. For details on adding new elements, see the *Novell Operations Center 5.0 Service Modeling Guide*.
Manage Properties	Creates and manages custom property pages for an element in the *Services* hierarchy. These property pages apply to one element only. For more information, see the *Novell Operations Center 5.0 Service Modeling Guide*.

Option	Description
Remove	Its function is context sensitive. A confirmation dialog box lists the elements to remove, so you have the chance to review and if necessary, cancel the action. ◆ For most elements, *Remove* deletes the selected element and its children. ◆ For a source element that has linked elements created using the *Link Here* option, *Remove* deletes the source element and all its linked elements. For details on the *Link* option, see Section 3.1.3, "Displaying Nonsource Element Indicators," on page 30. ◆ For an element created using the *Link Here* option, *Remove* deletes only the linked element.
Remove All Occurrences	Available only for an element that is linked to another *Services* element. Deletes the current element, the original element and all other linked copies of the element.
Rename	Renames the selected element. Allows the selection of a new class.

B.1.5 Additional Administrative Menu Options for Elements with Specific Adapters

Table B-3 lists additional administrative menu options for elements using specific adapters.

Table B-3 *Adapter Element Menu Options*

Option	Description	Adapters
nowledge	Indicates that the selected alarms has been reviewed. Changes the *Status* column value to (nowledged). Used by technicians to indicate that they reviewed, but did not solve the problem, and perhaps escalated it to another level.	◆ BMC PATROL ◆ Tivoli NetView
Administration	Allows monitoring the element's current status (*Manage* option), or stop monitoring an unimportant element to save bandwidth (*Unmanage* option). For details on managing and unmanaging elements, see Section 4.5, "Managing and Unmanaging Elements," on page 54.	◆ Computer Associates Unicenter NSM

Option	Description	Adapters
Console	Runs a script that executes a console connection, allowing direct communication with a managed element. Console capability is available for specific element types associated with a specific adapter. This means for a specific adapter, the *Console* option can be available for some elements, but not available for other elements. For information on console parameters for each adapter, see the *Novell Operations Center 5.0 Adapter and Integration Guide*.	◆ BMC MAX/Enterprise ◆ BMC PATROL ◆ BMC Patrol Enterprise Manager (PEM) ◆ Computer Associates Spectrum ◆ Computer Associates Unicenter NSM ◆ Cisco Info Center ◆ ConnectPoint LinkXChange ◆ HP OpenView IT/O ◆ HP OpenView NNM ◆ IBM Micromuse Netcool/OMNIBUS ◆ Operations Center Event Manager ◆ Tivoli NetView ◆ Tivoli T/EC ◆ Tivoli T/EC+
Jobs	Opens the console for interacting with Jobs. A job is a Knowledge Script that has been configured and scheduled to run once, at regular intervals, or at specific times on a given set of managed computers. The Knowledge Script contains a set of functions defined to manage some aspect of a system or application. Jobs are organized as parents and children, with only one level of children for any parent.	◆ NetIQ
Knowledge Module (KM)	PATROL agents receive information about the computers and applications in the environment from KMs. A KM contains information to identify objects and the actions to perform when monitored objects change status. The list of KMs displayed in the element menu varies, depending on whether existing KMs or custom KMs are used.	◆ BMC PATROL
Manage or Unmanage	Allows monitoring the element's current status (Manage), or stop monitoring an unimportant element to save bandwidth (Unmanage). For details on managing and unmanaging elements, see Section 4.5, "Managing and Unmanaging Elements," on page 54.	◆ OpenView ◆ Tivoli NetView (only running on AIX and Solaris)
Ping	Opens a dialog box and attempts to contact or "ping" the selected element to test its network connection. The dialog box displays the number of bytes received and how long the message took. Click *Stop* to stop pinging the element.	◆ Computer Associates Unicenter NSM
Propagate	Enables or disables the Propagate flag setting for WorldView objects within the NSM 2-D map. If you are using the Unicenter adapter, for more information see the *Novell Operations Center 5.0 Adapter and Integration Guide*.	◆ Computer Associates Unicenter NSM

Option	Description	Adapters
Query Alert History	Enables users to query historical alarms in the PEM persistent store. Users can specify start and stop date/time boundaries for displaying historical alarms. Historical alarms are displayed for the length of time specified using the PEM adapter properties. For more information, see the *Novell Operations Center 5.0 Adapter and Integration Guide*.	◆ BMC Software PATROL Enterprise Manager (PEM)
Severity	Enables setting an alarm severity by selecting a submenu option (*CRITICAL*, *MAJOR*, *MINOR*, and so on).	◆ Computer Associates Unicenter NSM
Trace Route	Displays the routing information through the network to the selected element. Displays the IP address for each hop, as well as the amount of time taken to connect to each segment.	◆ Computer Associates Unicenter NSM

B.2 Understanding Alarm View Menus

In the *Alarms* view, access menu options using the menu bar or by right-click an alarm. The menu options vary, depending on the adapter associated with the alarm. Table B-4 summarizes the menu options and lists the adapters for which the options are available.

Table B-4 *Alarm View Menus*

Option	Description	Adapters
Accept Responsibility	Assigns responsibility for the alarm to you. For information on assigning alarms, see Section 6.7.5, “Assigning Alarms,” on page 86.	◆ BMC PATROL Enterprise Manager (PEM)
nowledge	Indicates that the alarm has been reviewed. For more information, see Section 6.7.4, “Acknowledging Alarms,” on page 86.	◆ BMC PATROL ◆ HP OpenView Network Node Manager ◆ HP OpenView IT/ Operations (ITO) ◆ IBM Micromuse Netcool/OMNIBUS ◆ NetIQ AppManager ◆ Tivoli Enterprise Console (T/EC) and T/ EC+ ◆ Tivoli NetView
Add Annotation	Provides a field for entering information about the alarm. Used to document actions and read through previous actions.	◆ HP OpenView IT/ Operations (ITO)
Add Comment	Provides a field for entering information about the alarm. Used to document actions and read through previous actions. To view diary comments, open the *Comments* property page.	◆ BMC PATROL Enterprise Manager (PEM) ◆ NetIQ AppManager

Option	Description	Adapters
Add Diary	Provides a field for entering information about the alarm. Document actions and read through previous actions. To view diary entries, open the *Diary* property page.	◆ BMC PATROL
Assign	Assigns responsibility for the alarm to a selected user. For more information, see Section 6.7.5, "Assigning Alarms," on page 86.	◆ BMC PATROL Enterprise Manager (PEM) ◆ IBM Micromuse Netcool/OMNIBUS ◆ Operations Center Event Manager
Assign and Close	Assigns the alarm to you, then closes it.	◆ BMC PATROL Enterprise Manager (PEM)
Claim Responsibility	Assigns responsibility for the alarm to you. For information on assigning alarms, see Section 6.7.5, "Assigning Alarms," on page 86.	◆ Operations Center Event Manager
Clear	Removes the alarm from the *Alarms* view. For more information, see Section 6.7.6, "Clearing Alarms," on page 88.	◆ BMC PATROL Enterprise Manager (PEM) ◆ Computer Associates Spectrum ◆ HP OpenView Network Node Manager ◆ IBM Micromuse Netcool/OMNIBUS ◆ Operations Center Event Manager ◆ Tivoli NetView
Close	Changes the alarm status from Open or nowledged to Close, then removes it from the *Alarms* view.	◆ BMC PATROL ◆ NetIQ AppManager ◆ Tivoli Enterprise Console (T/EC) and T/EC+
DeAssign (reject) Responsibility	Removes the alarm assignment from the user selected by the *Assign* or *Accept Responsibility* option. The alarm can be reassigned.	◆ BMC PATROL Enterprise Manager (PEM)
Decrease Severity	Changes the alarm status to next lowest severity level. For example, a MAJOR alarm changes to a MINOR alarm. There is no change for an element in an OK state.	◆ HP OpenView Network Node Manager ◆ Tivoli NetView
Delete	Permanently removes the alarm from Operations Center.	◆ BMC PATROL
Disown	Removes ownership from the alarm.	◆ HP OpenView IT/Operations (ITO)

Option	Description	Adapters
Escalate	Forwards the alarm to the ITO escalation server.	◆ HP OpenView IT/ Operations (ITO)
Group Assign	Assigns the alarm to the Public or System group.	◆ IBM Micromuse Netcool/OMNIBUS
Increase Severity	Changes the alarm status to the next highest severity level. For example, a MAJOR alarm changes to a CRITICAL alarm. There is no change for an in CRITICAL condition.	◆ HP OpenView Network Node Manager ◆ Tivoli NetView
Journal	Provides a field for entering information about the alarm. Document actions and read through previous actions. To view the journal, open the alarm *Journal* property page.	◆ IBM Micromuse Netcool/OMNIBUS
Own	Claims ownership of the alarm.	◆ HP OpenView IT/ Operations (ITO)
Print	Prints all alarms in the *Alarms* view.	◆ BMC PATROL ◆ BMC PATROL Enterprise Manager (PEM) ◆ Computer Associates Spectrum ◆ Computer Associates Unicenter NSM ◆ HP OpenView Network Node Manager ◆ HP OpenView IT/ Operations (ITO) ◆ IBM Micromuse Netcool/OMNIBUS ◆ Operations Center Event Manager ◆ NetIQ AppManager ◆ Tivoli Enterprise Console (T/EC) and T/ EC+ ◆ Tivoli NetView
Prioritize	Clears the alarm or changes its severity.	◆ IBM Micromuse Netcool/OMNIBUS

Option	Description	Adapters
Properties	Opens the alarm property pages.	◆ BMC PATROL ◆ BMC PATROL Enterprise Manager (PEM) ◆ Computer Associates Spectrum ◆ Computer Associates Unicenter NSM ◆ HP OpenView Network Node Manager ◆ HP OpenView IT/ Operations (ITO) ◆ IBM Micromuse Netcool/OMNIBUS ◆ Operations Center Event Manager ◆ NetIQ AppManager ◆ Tivoli Enterprise Console (T/EC) and T/ EC+ ◆ Tivoli NetView
Show Annotation	Displays text added using the *Add Annotation* option.	◆ HP OpenView IT/ Operations (ITO)
Show Assignee Info	Displays information about the user to whom the alarm is assigned.	◆ BMC MAX/Enterprise
Start Automatic Action	Starts an action if an automatic action was configured for an alarm.	◆ HP OpenView IT/ Operations (ITO)
Start Operator Action	Initiates an action to resolve an event that triggered an alarm. The *Start Operator Action* option displays in the menu only after configuring an operatorinitiated action for the alarm.	◆ HP OpenView IT/ Operations (ITO)
Supervisor	Provides a submenu of options for users with Supervisor privileges: ◆ **nowledge:** Indicates that the alarm has been reviewed. For more information, see Section 6.7.4, "Acknowledging Alarms," on page 86. ◆ **Close:** Changes the alarm status from Open or nowledged to Close, then removes it from the *Alarms* view. ◆ **Denowledge:** *Reverses* the *nowledge* option. ◆ **Deassign:** Removes alarm assignment from the user selected by the *Assign* or *Accept Responsibility* option. Leaves the alarm status `Open`. The alarm can be reassigned.	◆ BMC PATROL Enterprise Manager (PEM)

Option	Description	Adapters
Suppress	Changes the alarm status to Suppressed and does not use the alarm severity to populate elements higher in the hierarchy. Often used by administrators who need additional time to troubleshoot issues related to an alarm. Alarms stay Suppressed until (a) the operator closes the alarm, (b) the alarm severity changes to OK, (c) the timer expires (see the *Novell Operations Center 5.0 Adapter and Integration Guide*), or (d) the operator unsuppresses the alarm with the *Unsuppress Alarm* right-click menu option.	◆ Tivoli Enterprise Console (T/EC) and T/EC+
Take Ownership	Assigns responsibility for the alarm to you. For more information, see Section 6.7.5, “Assigning Alarms,” on page 86.	◆ IBM Micromuse Netcool/OMNIBUS
Unnowledge	Reverses the *nowledge* option.	◆ HP OpenView Network Node Manager ◆ Tivoli NetView

C Documentation Updates

This section contains information on documentation content changes that were made in the *User Guide* after the initial release of Operations Center 5.0. The changes are listed according to the date they were published.

If you need to know where a copy of the PDF documentation you are using is the most recent, the PDF document includes a publication date on the title page.

- Section C.1, "September 2013 Patch Release," on page 133
- Section C.2, "April 2013 Patch Release," on page 133
- Section C.3, "December 2012 Patch Release," on page 134
- Section C.4, "June 2012 Patch Release," on page 134
- Section C.5, "September 2011 Patch Release," on page 134

C.1 September 2013 Patch Release

The following updates were made in the patch release:

Location	Update
Section 6.5.2, "Creating an Alarm Filter," on page 74	Us the is `within the last` operator when defining alarm filters to filter alarms for the specified aligned interval which is inclusive to the current time interval. For example, to match dates that are within the current month and previous month, select *is within the last 2 months*.

C.2 April 2013 Patch Release

Global updates were made to installation and file path references for Operations Center and Operations Center features, as follows:

- **Operations Center:** The location of the main Operations Center installation is shown as *`OperationsCenter_install_path`*
- **Operations Center Dashboard:** The location of the Dashboard is shown as *`OperationsCenter_Dashboard_install_path`*
- **Operations Center Configuration Management System (CMS):** The location of the CMS is shown as *`OperationsCenter_CMS_install_path`*
- **Operations Center Experience Manager:** The location of the Experience Manager is shown as *`OperationsCenter_ExperienceManager_install_path`*

In addition, updates were made to the following sections:

Location	Update
Section 7.2, “Understanding the Chart Types,” on page 98 and Section 7.3.1, “Creating Charts,” on page 102	When charting SLA metrics, it can take up to several minutes before a refreshed or new chart registers an update, if the server has not yet recorded update data for `Availability` and `Outage Count` properties.

C.3 December 2012 Patch Release

The following updates were made in the patch release:

Location	Update
Section 2.1.5, “Portal View,” on page 20	Added reference links to various topics mentioned.
Section 6.5.2, “Creating an Alarm Filter,” on page 74	Alarm filter names must be no longer than 50 characters.

C.4 June 2012 Patch Release

The following updates were made in the patch release:

Location	Update
Section 6.5.2, “Creating an Alarm Filter,” on page 74	New comparison operators have been added to the Alarm Filter configurations for *Date/time* type alarm columns.

C.5 September 2011 Patch Release

The *Console Guide* has been renamed to the *User Guide*. Configuration topics that require Administrator access privileges have been moved to “Customizing the Implementation” in the *Novell Operations Center 5.0 Server Configuration Guide*.

The following topics were migrated from the *Monitoring Guide*:

Location	Update
Chapter 4, “Monitoring Elements and Element State,” on page 43 Chapter 6, “Filtering and Managing Alarms,” on page 67 Appendix B, “Element and Alarm Options,” on page 123	These topics were previously contained in the *Monitoring Guide*.

The following updates were made in the patch release:

Location	Update
Section 6.5.2, “Creating an Alarm Filter,” on page 74	New comparison operators have been added to the Alarm Filter configurations for *Text*, *Numeric* and *Date* type alarm columns.