Spotlight®on Exchange 5.5

User Guide

Version 5.0.1

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SOFTWARE**

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Overview

This document has been prepared to assist you in becoming familiar with Spotlight on Exchange, an integral component of Spotlight Suite. The User Guide contains the information required to install and use Spotlight on Exchange. It is intended for network administrators, consultants, analysts, and any other IT professionals using the product.

Conventions

In order to help you get the most out of this guide, we have used specific formatting conventions. These conventions apply to procedures, icons, keystrokes and cross-references.

ELEMENT	CONVENTION
Select	This word refers to actions such as choosing or highlighting various interface elements, such as files and radio buttons.
Bolded text	Interface elements that appear in Quest products, such as menus and commands.
Italic text	Used for comments.
Bold Italic text	Used for emphasis.
Blue text	Indicates a cross-reference. When viewed in Adobe Acrobat, this format can be used as a hyperlink.
	Used to highlight additional information pertinent to the process being described.
	Used to provide Best Practice information. A best practice details the recommended course of action for the best result.
	Used to highlight processes that should be performed with care.
+	A plus sign between two keystrokes means that you must press them at the same time.
|	A pipe sign between elements means that you must select the elements in that particular sequence.

About Quest Software, Inc.

Quest Software, Inc. provides software to simplify IT management for 18,000 customers worldwide, including 75 percent of the Fortune 500. Quest products for application, database and Windows management help customers develop, deploy, manage and maintain the IT enterprise without expensive downtime or business interruption. Headquartered in Irvine, Calif., Quest Software can be found in offices around the globe at www.quest.com <http://www.quest.com>.

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Contacting Customer Support

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You can use SupportLink to do the following:

- Create, update, or view support requests
- Search the knowledge base
- Access FAQs
- Download patches

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Introducing Spotlight Basics

- Spotlight Concepts and Features
- Metrics, Thresholds, and Severities

Spotlight Concepts and Features

Spotlight applications use metrics, thresholds, and severities to determine the performance statistics of a system. Icons, flows, and labels graphically display this information in the main Spotlight window, alerting you to system bottlenecks. Spotlight updates these flows in real time so that you can see how quickly data is moving through the system.

This chapter explains the main Spotlight window and other visual features of Spotlight including menus, toolbars, windows, and editors. This chapter also explains the concepts and features that you must understand to use Spotlight. It explains the relationship between metrics, thresholds, and severities, and how they affect what is displayed on the main Spotlight window.

The Spotlight Console

One of the major features of Spotlight is its user interface - the Spotlight console, the framework where the details for all Spotlight connections are displayed.

It contains standard features such as a menu bar, status bar, and one or more toolbars. The Spotlight console also allows you to tell the status of a connected system at a glance, either in that system's home page, or in a drilldown accessible from the home page.

The Spotlight Home Page

When you connect to a system using Spotlight, the displayed Spotlight home page shows an overview of the system (see example below).

The icons in the home page represent the components of the system that you are connected to. Related components are grouped together in panels.

Each panel is connected by dataflows that illustrate the rate at which the system is performing. The groupings reflect how your system works. Spotlight updates the statistics and flows in real time.

The main elements of a Spotlight home page are:

- Panels
- Components (including dataflows)
- Labels
- Menus

- Toolbar

- Connection identifier

- Connections list

An Example of a Spotlight Home Page
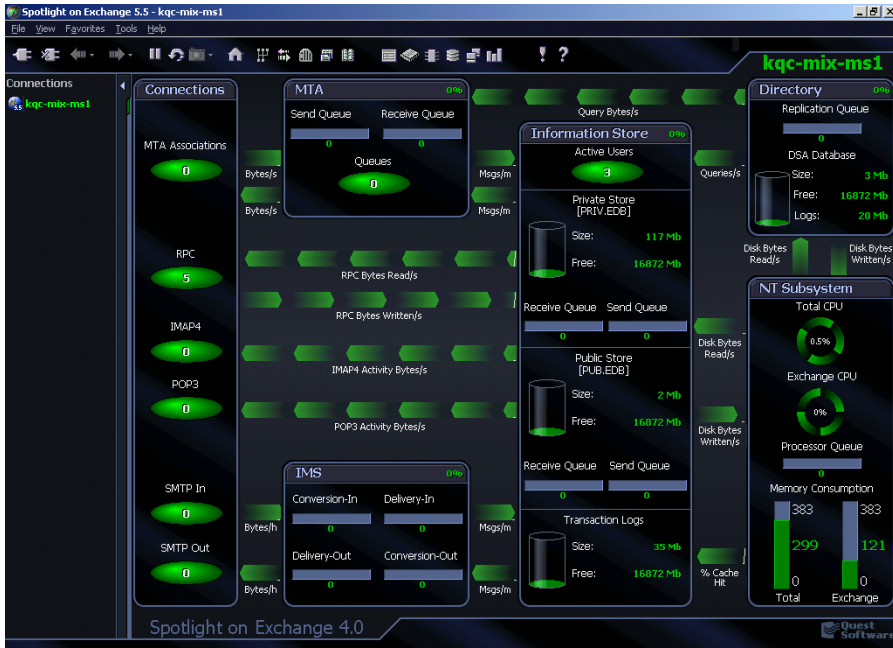
You can change the appearance and behavior of a Spotlight home page from the Console Options window.

Elements in a Spotlight Home Page

A standard Spotlight home page contains some or all of the following visual elements:

Connection Identifier

This label identifies the system you are currently connected to, and is located at the upper right corner of the Spotlight console.

The connection identifier changes color to match the color of the Spotlight component that registers the highest alarm severity.

Connections List

You can show or hide the Connections list window using the Connection Browser option on the **View** menu. You can also open and close the Connections list by clicking on the arrow contained in the frame of the window itself.

Use the Connections list to view the details of a system that has an open Spotlight connection. Click on an item in the list to display details of the corresponding server. Items in the Connections list alert you to any bottlenecks that may be occurring in the systems by changing color. Items in the Connections list take on the color of the most urgent severity now active on the systems being analyzed.

Spotlight Toolbar

The Spotlight toolbar is located at the top of the main window. The toolbar provides you with quick access to commonly used commands and functions.

Click a button on the toolbar to carry out the command. If a button appears dimmed, it is unavailable. You can see a description of each button if rest your mouse pointer over the button.

The buttons used to access drilldowns are specific to individual Spotlight applications. For more information on Spotlight on Exchange drilldown buttons, see

The following are common Spotlight buttons:

CLICK THIS...	TO...
	Open a Spotlight connection to a system.
	Close an open connection.
	Return to the previous window or drilldown. Go to the next window or drilldown. This option is only available if you are viewing a previous window or drilldown.
	Go to the next window or drilldown. This option is only available if you are viewing a previous window or drilldown.
	Pause the current display. Spotlight does not retrieve data from the system. Details on the windows or drilldowns are not updated until you click the Pause button again or select **File** | **Resume**.
	Return to the main Spotlight window for the current system.
	Refresh the current window. This is equivalent to choosing **File** | **Refresh**.
	Take an historical snapshot of the current connection. Click the down-arrow to choose a snapshot option.
	View the alarm log for the current connection. This is equivalent to choosing **View** | **Alarm Log**.
	Displays context-sensitive online Help for Spotlight. For more information, see "Viewing Context-sensitive Help" on page 115.

Panel

A panel is a visual feature that groups related components on the Spotlight home page. Components change color as alarms are raised for the metrics they contain.
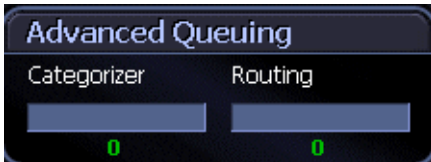
Dataflow

Each panel in the Spotlight home page is connected to other panels by dataflows that show the rate at which data is moving through a system. As the rate increases, so does the speed of the flow.

Button

Sometimes called a process icon, a button is a Spotlight component that contains a single value that represents the state or existence of a process.

Container

A container is a cylindrical component that fills up as the value it measures increases. It is normally used to indicate file size or disk usage.

Gauge

A gauge is a Spotlight component that shows a measurement as a continuous range of possible values.
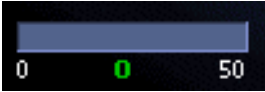
Queue

A queue is a Spotlight component that shows a measurement as a range of discrete values. The globe at the end of the queue is an alarm indicator.

Spinner

A spinner is a Spotlight component that shows a measurement as a rotating wheel. The higher the value, the faster the speed of rotation.

Console Options

You can set a number of options that affect the behavior and display of the Spotlight console by using the Console Options window.

To open the Console Options window

1. Select **View | Options | Spotlight Console**.
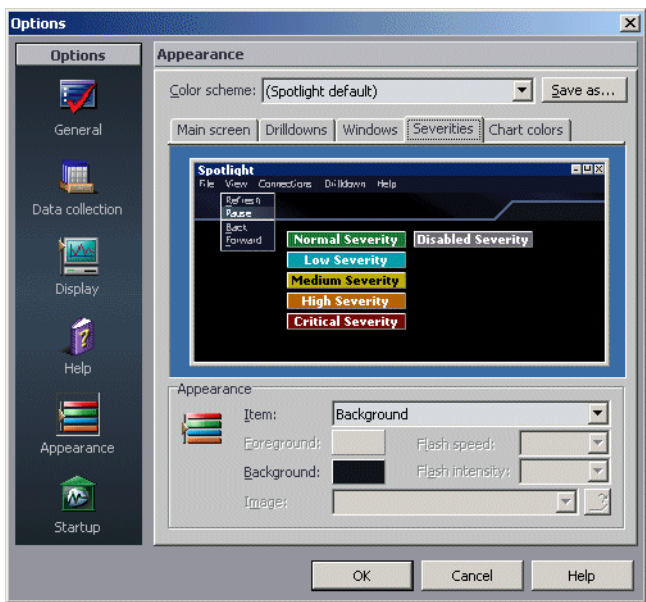
Each of the pages within the Console Options window - General, Data collection, Display, Help, Appearance, Startup, and Notifications- covers one aspect of console behavior, and can be opened by clicking the corresponding icon on the Options bar.

2. In the Options bar, click to choose the category of Spotlight console options that you want to view or edit.

OPTION CATEGORY	DESCRIPTION
General options	These options govern the general behavior of the Spotlight console and the location of template and connection files.

OPTION CATEGORY	DESCRIPTION
Data collection	These options govern how often data is collected, how it is processed, and whether it is saved for historical purposes.
Display	These options govern various display settings for the Spotlight console.
Help	These options govern the behavior of Spotlight's context-sensitive Help system.
Appearance	These options govern the visual appearance of Spotlight features.
Startup	These options govern the behavior of Spotlight at startup.
	These options govern the notification of Spotlight alerts.

*For more information on changing settings within the Options window, see *

Components and Drilldowns

The hierarchical design of Spotlight makes it possible for you to observe your system at different levels of detail. At its highest level (that is, the Spotlight home page) Spotlight components display visual representations of the status of the major features in the current system.

When you have isolated a problem, you can display a breakdown of its underlying statistics in a Spotlight page called a drilldown. The statistics that are available help you identify and anticipate performance problems.

Components

The components in the Spotlight home page (the main Spotlight window) are visual objects that correspond to important features of the system to which Spotlight is currently connected. Components can be of many different types, including buttons, gauges, dataflows, queues, spinners, and containers. Spotlight components have the following features:

- Components are labeled according to the performance measure they represent.

- They display the numerical value of a metric associated with them.

- They change color to alert you to performance bottlenecks.

- You can access information about the status of a component by moving the mouse over the component, or by clicking or right-clicking on it.

- The Spotlight drilldown pages for each component contain a detailed breakdown of the statistics used to diagnose it.

Drilldowns

Each drilldown contains a series of reports and graphs that provide you with specific information about the components of your system. Drilldown pages can contain two different types of displays - tables and charts. Spotlight drilldowns have the following features:

- There is more than one way to view a specified drilldown.

- They can be configured to display all or some of the metrics associated with components.

- You can access further information about displays in drilldowns by moving the mouse over the displays, or by clicking or right-clicking on them.

- You can copy the data shown in drilldowns to other applications or save it to a file.

You can change the appearance and behavior of Spotlight components and drilldowns in the Properties editor window.

Drilldown Elements

Charts

A chart is a component in some Spotlight drilldowns that shows historical data as a graph. Multiple series of the same graph from different data sources can be superimposed on the same set of axes.
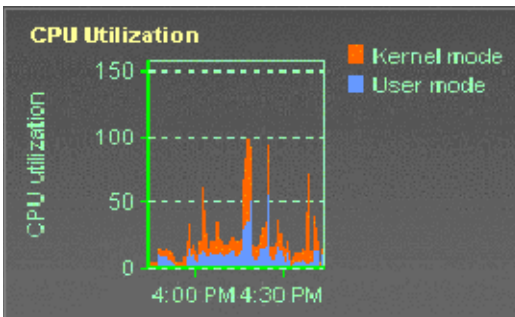
You can zoom any chart to look at a section of the chart in greater detail. The maximum magnification factor is 100. You can also maximize a chart to view the entire chart in greater detail.

Tables

A table (or grid) is a component in some Spotlight drilldowns (for example, the alarm log) that shows current values of metrics in tabular form.

The Properties Editor

You can set a number of options that affect the behavior and display of Spotlight components and drilldowns using the Properties editor.

To open the Properties editor

- • Right-click on the component (or drilldown) and choose **Properties**.
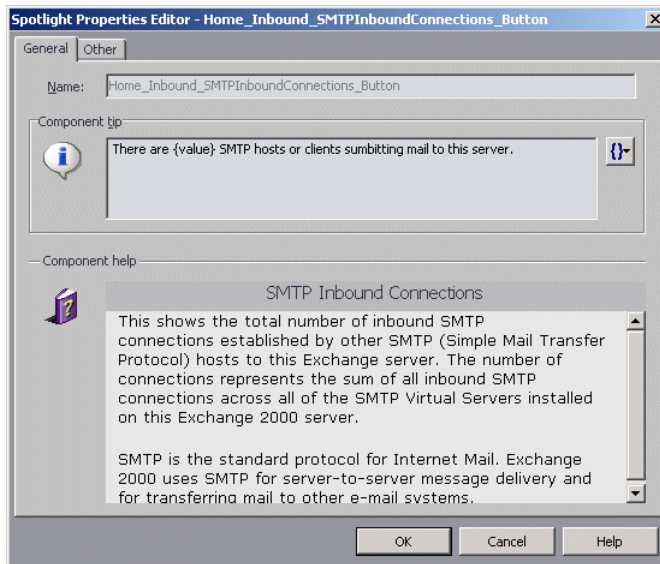
Each of the pages within the Properties editor window - General, Options, Chart, and Other - covers one aspect of component behavior, and can be opened by clicking the corresponding tab at the top of the window.

For components on a Spotlight home page, the Properties editor contains only the General, Options, and Other pages.
In drilldowns, the Properties editor for graphs contains three pages, General, Options, and Chart, that allow you to change the properties of a graph.
The Properties editor for tables contains only General and Options pages.

For more information on changing settings within the Properties editor, see "Viewing and Editing Component Properties" on page 80.

Metrics, Thresholds, and Severities

Spotlight applications use metrics, thresholds, and severities to determine the performance statistics of a system. Before you start using Spotlight it is important to understand:

- What metrics are,
- Where metrics come from and
- What is the relationship between metrics, thresholds, and severities.

What is a Metric?

A metric is an individual piece of information that Spotlight has collected about the performance of a system. The information may be a numeric value (a number or percentage), a string of text, or some other piece of data.

Every time that the Spotlight window is refreshed, Spotlight retrieves the latest value of the metric, which can then be displayed in a drilldown or on the home page.

What are Thresholds and Severities?

For each numeric metric, you can define a number of thresholds - ranges of values - which indicate levels of severity for that metric. A severity can be used to specify whether the information returned in the metric represents normal or abnormal behavior for the system under diagnosis. Within Spotlight, there can be at most the following types of severity:

- Normal
- Low
- Medium
- High
- Critical

"Normal" indicates that the system is performing within acceptable limits. If a metric returns a value with any other severity, Spotlight raises an alarm that indicates that the system is behaving outside acceptable limits. (A "disabled" status means that the system is not responding, and that no information is being returned.)

The severity controls what action Spotlight is to take when the value returned by a metric falls into the range controlled by a threshold.

For example, you may set the severity to display a color, flash the color, trigger a sound, or perform an action.

You can change the properties of metrics and their associated thresholds and severities using the Metric editor window.

The Metric Editor

The Metric editor is a window where you can view and edit the properties of Spotlight metrics, including their thresholds and severities.
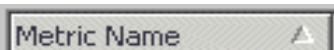
To open the Metric editor for a component or drilldown element

- • Right-click the component and choose **Metrics**.
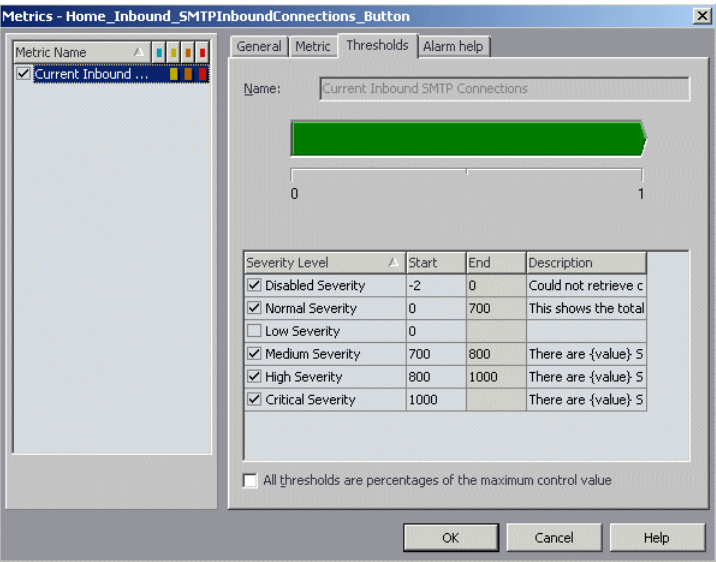
Each page within the Metric editor window - General, Metric, Thresholds, Alarm Help, and (for drilldown graphs) Data source and Series - covers one aspect of metric behavior, and can be opened by clicking the corresponding tab in the Metric editor window.

*In addition, the **Metric Name** area on the left allows you to manage other metric behavior and display.The following table displays the features of the Metric editor:*

METRIC NAME FEATURE	DESCRIPTION
Metric Name △	Select the header to sort the metrics in ascending or descending name order.
▪ ▪ ▪ ▪	Select a threshold header to sort the metrics according to the chosen severity.
Check boxes	Select a check box to get Spotlight to collect the corresponding metric. Clear the check box to stop collecting the metric.
List of metrics	The metrics defined for the current component. Select a metric to highlight it and display its details.
⬆	Move the chosen metric higher in the list of metrics.
⬇	Move the chosen metric lower in the list of metrics.

For more information on changing settings within the Metric editor window, see "Viewing and Editing Metrics" on page 84.

Alarms and the Alarm Log

Alarms are the warnings that Spotlight raises when a metric falls outside its "normal" range of values, which is defined by setting thresholds and severities for the metric within the Metric editor.

A new alarm is raised when the severity for a metric changes. When the severity returns to normal, the alarm is cancelled.

Spotlight uses two methods for displaying alarms:

- The relevant component on the Spotlight console changes color to indicate that an alarm has been raised. The color used depends on the severity of the alarm.

- The alarm is logged as a new entry in the Alarm log drilldown.
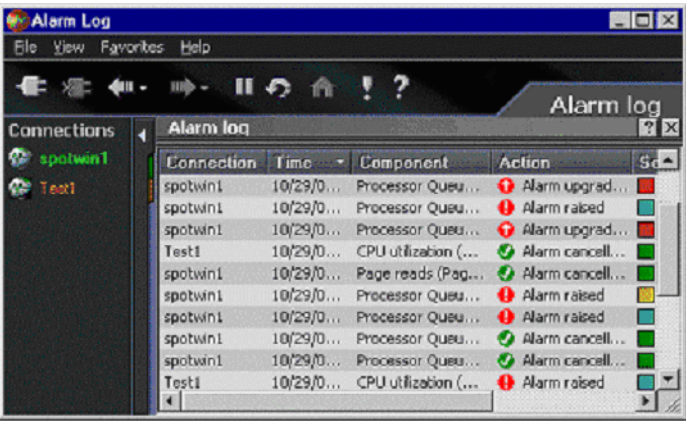
The Alarm log drilldown shows alarms according to the filtering options set up in the Alarm Log Options window. The number of alarms displayed in the Alarm log can be reduced by changing filtering options in the Options window. You can also use the Alarm log to view historical snapshots for alarms (provided the Record and Playback feature has been activated).

Columns in the Alarm Log

COLUMN	DESCRIPTION
Connection	The name of the Spotlight connection that raised the alarm.
Time	The time at which the alarm was raised or cancelled.
Component	The component on the home page that displays the alarm.
Action	The alarm action that was performed (alarm raised or cancelled or upgraded or downgraded).
Severity	The degree of urgency of the alarm.
Value	The value of the metric that caused the alarm.
Details	A brief description of the cause of the alarm.
Help	Click the ? button associated with the alarm to view more information about the alarm.

Alarm Log Options

You can set a number of options that affect the behavior and display of the Alarm log in the Alarm Log Options window.

To open the Alarm Log Options window

- Select **View | Options | Alarm Log**.
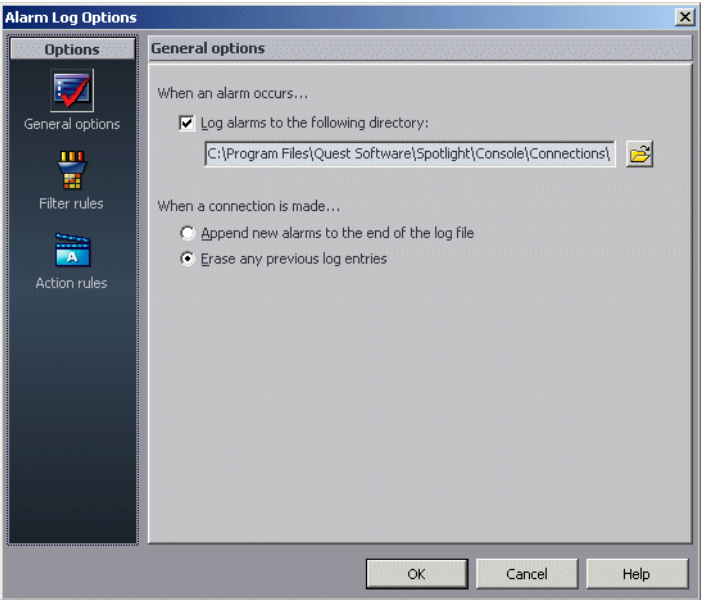
*Each of the pages within the Alarm Log Options window - General
options, Filter rules, and Action rules - covers one aspect of alarm log
behavior, and can be opened by clicking the corresponding icon on the
Options bar.*

OPTION CATEGORY	DESCRIPTION
General Options	These options govern where and how the alarm log file is stored.
Filter Rules	These options govern which alarms are displayed when you view the alarm log.
Action Rules	These options govern what Spotlight does when specified alarms are raised.

*For more information on changing settings within the Alarm Log
Options window, see *

Using Alarm Log Rules

There are two types of rules that can be applied to Spotlight alarms displayed in
the Alarm Log:

- Filter rules, which govern whether alarms are shown in the Alarm Log.
- Action rules, which dictate the action Spotlight takes when alarms are
  triggered.

  You can create, modify, apply, and delete rules.

To manage Alarm Log rules

1. Select **View | Options | Alarm Log**.
2. Click **Filter Rules** in the Options bar to open the Filter rules page,
   which lists all the current filter rules and displays the details of the
   rule that is currently highlighted.

   – OR –

   Click **Action Rules** in the Options bar to open the Action rules page,
   which lists all the current action rules and displays the details of the
   rule that is currently highlighted.
3. Click one of the following function buttons:

   New to add a new filter rule or action rule using the separate Alarm
   Log Filter window.

   Modify to change the highlighted filter rule or action rule using the
   separate Alarm Log Filter window. **Modify** is enabled only when an
   existing rule has been selected.

   Delete to delete the highlighted filter rule or action rule. **Delete** is
   enabled only when an existing rule has been selected.

   Rename to rename the highlighted filter rule or action rule. **Rename**
   is enabled only when an existing rule has been selected.

   Move Down to move the highlighted rule lower down in the list, and
   so be applied later. Filter rules and action rules are applied in the order
   in which they occur in the list. **Move Down** is enabled only when an
   existing rule has been selected.

cont'd…

Move Up to move the highlighted rule higher up in the list, and so be applied earlier. **Move Up** is enabled only when an existing rule has been selected.

The **New** and **Modify** buttons open the Alarm Log Filter window, where you can create new filter rules and action rules, and edit existing filter rules and action rules. For more detailed information, see the section "Viewing and Editing Alarms" on page 91, and in particular the topics:

- To create filter rules
- To modify filter rules for alarms
- To create action rules
- To modify action rules for alarms

When you have finished creating or editing these rules (and have closed the Alarm Log Filter window), you can activate any rule in the Filter Rules or Action Rules pages of the Alarm Log Options window by selecting the check box associated with it. If you do not do so, the rule is inactive.

4. Click **OK** to close the Alarm Log Options window and apply the changes you have made.

Record and Playback

An important feature within Spotlight applications is "Record and Playback" - the ability to collect and replay the behavior of a Spotlight connection at a given point in time (such as when an important alarm was raised).

The method used to implement Playback is to record "snapshots" of the connection at regular intervals, or when important events occur (for example, when an alarm is raised or cancelled).

You can set the preferences and options that affect the behavior and display of Record and Playback using the History Options window.

To open the History Options window

- Select **View | Options | History**.
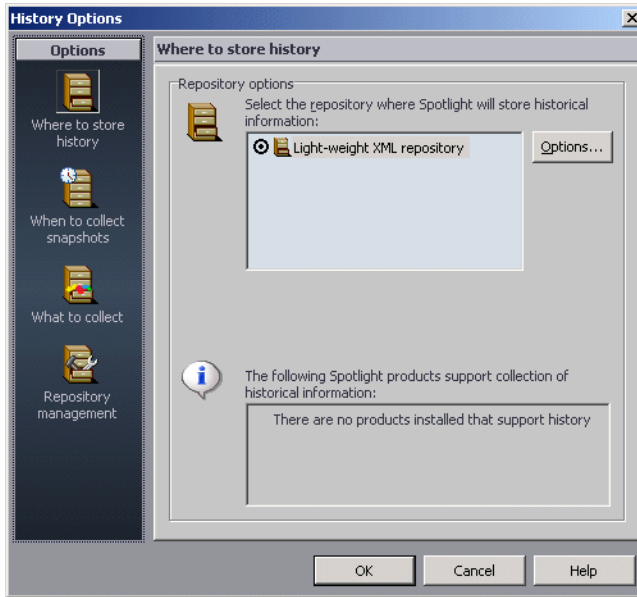
Each page within the History Options window - Where to store history, When to collect snapshots, What to collect, and Repository management - covers one aspect of history behavior, and can be opened by clicking the corresponding icon on the Options bar.

For more information about changing settings within the History Options window, see"Viewing and Recording Historical Snapshots" on page 63.

You can play back the "snapshots" created using Record and Playback in Spotlight's History browser. The Record and Playback feature is independent of Spotlight's popup history viewer, which displays the recent history of current Spotlight connections. For more information on this, see "Viewing Historical Data" on page 61.

The History browser

Because the details captured by Spotlight's Record and Playback feature are identical in format to those displayed by Spotlight in its "live" state, you can view record and playback data in a "History browser" mode that is similar to the console where you would view a live connection.

In History browser mode, the Spotlight console changes its appearance in these ways:

- It replaces the Connections list by a History browser that lists alarms and snapshots in chronological order together with some basic navigation controls.

- The console's status bar indicates that History browser mode is active.

- The connection identifier at the top right of the window includes the date and time when the displayed snapshot was taken.

To open the History browser

- Select **View | History Browser**.
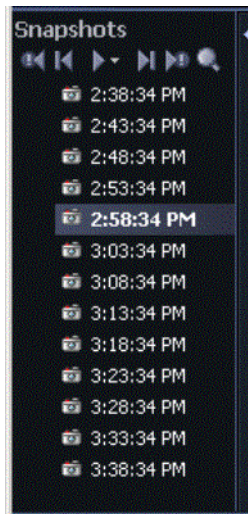
You can open the History browser from the main menu, from the Connection manager window, or from the Alarm log.

In History browser mode, the Connections list is replaced by a list showing alarms and snapshots in chronological order, together with some basic navigation controls. Use the navigation controls, or click on an individual item in the list to display details of that snapshot in the Spotlight console.

CONTROL	DESCRIPTION
Previous alarm	Click this to show the snapshot corresponding to the alarm before the one currently displayed.
Previous snapshot	Click this to show the snapshot immediately before the one currently displayed.
Play (plus Playback speed)	This is the button that activates Playback mode, which automatically steps through the snapshots in sequence.To choose the playback speed, click the down-arrow and choose a speed from the list. If you choose Custom, Spotlight opens the Interval Snapshots window, where you can set your own playback speed.
Next snapshot	Click this to show the snapshot immediately after the one currently displayed.
Next alarm	Click this to show the snapshot corresponding to the next alarm after the one currently displayed.
Select date/time	Find the snapshot that is nearest in time to a specified date and time.Click this button to display the Snapshot search window, where you can enter the date and time whose snapshot you want to view.

When in History browser mode, you can view snapshot information by using navigation buttons, choosing events directly from the snapshot list, or by using "playback" mode to step through snapshots in sequence.

For more information on using the History browser, see "Viewing and Recording Historical Snapshots" on page 63.

When Record and playback is set up to collect snapshots of detailed information, you can view the collected information within drilldowns.However, if detailed information is NOT collected, the corresponding drilldowns contain no data.

Spotlight Help

The online Help for Spotlight applications provides information at several different levels:

HELP LEVEL	DESCRIPTION
Browser Help	The online user manual for Spotlight, complete with table of contents and index. To view this Help, choose **Help	Contents**.
Window Help	Overview Help for the current Spotlight window. Click F1 at any time to view for this menu, or choose Context Help from the Help menu.
Component Help and What's this? Help	Help for individual components on the Spotlight home page, or for individual items in drilldowns. There are several ways in which this Help can be invoked: from the toolbar button; by clicking on a component; by right-clicking on a component and choosing What's this? from the shortcut menu; or from the Metric editor or Properties editor windows.
	The Help items displayed are further context-sensitive in that the Help displayed for a component in an alarm state may be different from the Help for the same component in its normal state.
Tooltip Help	Spotlight allows you to write your own tooltips for individual components in the Metric editor and Properties editor windows.
Drilldown Help	Help for individual drilldown pages is available from the ? button at the top right of drilldown windows within the Spotlight console.

For more information on Spotlight's online Help, see .

Spotlight Menus

You can use menus to access the functions of Spotlight. There are two types of menus in Spotlight:

- Standard menus accessed from the menu bar on the Spotlight console. The menus common to all Spotlights are:

    - File menu
    - View menu
    - Favorites menu
    - Tools menu
    - Help menu

- Shortcut menus. These menus display when you right-click an object in the Spotlight home page or in a drilldown.

To open a menu

- You can access a standard menu by clicking on it with the mouse.

    – OR –

    Press and hold down the ALT key and then press the underlined letter in the name of the menu.

    *The list of commands available from the menu appears. For example, to display the File menu you can click on **File** in the menu bar or press **ALT+F**.*

To access shortcut menus

- Right-click an item in the Spotlight window.

    Shortcut menus contain a list of commands that are relevant to the area of the window where the cursor is positioned. For example, if you click the right mouse button over a dataflow, dataflow-specific commands display.

You can select a command from the menu by typing the letter that is underlined in the command name. For example, to connect to a system, press the letter C when the File menu is displayed. If the menu is not visible you can type the File access key (ALT+F) and then press C.
Some commands also have a shortcut key. If you use shortcut keys you do not have to display the menu first.

Standard Menus

File Menu

The File menu is accessed from the main menu bar. The following table lists the commands on the File menu and their uses:

COMMAND	USE
Connect	Establishes a Spotlight connection to a system.
Recent connections	Re-establishes a Spotlight connection to a recently connected system.
Disconnect	Disconnects Spotlight from the system that is currently displayed.
Disconnect all	Disconnects Spotlight from all systems that are being analyzed.
Save	Saves the settings for the system you are currently diagnosing. This command stores the metrics and thresholds for the current system in a connection-name.scx file.
Save all	Saves the settings for all the systems you are connected to. A separate .scx file is saved for each system.
Save as template	Creates a new connection based on the full configuration of the current system. Details are saved in a .stx file.
Calibration	Starts, stops, cancels, or changes calibration.
Page Setup	Sets up how Spotlight will print the Spotlight home page or current drilldown.
Print Preview	Previews the appearance of a Spotlight page before printing.
Print	Prints the Spotlight home page or current drilldown.
Exit	Closes Spotlight.

View Menu

The View menu is accessed from the main menu bar. The following table lists the commands on the View menu and their uses:

COMMAND	USE
Refresh	Updates the data in the current window.
Pause / Resume	Stops Spotlight collecting data. Any actions in progress when you choose this command are allowed to complete. If Spotlight is currently paused, this option is displayed as Resume.
Show All Alarms	Shows all the metrics and the thresholds specified for them for the current connection.
Alarm Log	Shows the list of all alarms triggered by Spotlight in the current session.
Live View	Shows current data for the current connection.
History Browser	Shows historical snapshots for the current connection.
Back	Moves to the previous window in the current browse sequence.
Forward	Moves to the next window in the current browse sequence.
Close Drilldown	Closes the current drilldown and returns to the Spotlight home page.
Go To	Moves to the window or drilldown chosen in the invoked submenu.
Tool Bar	Shows or hides the Spotlight toolbar.
Status Bar	Shows or hides the Spotlight status bar.
Connection Browser OR Snapshot Browser	Shows or hides the browser pane at the left of the console that contains either the Connections List or History browser.
Connection status bar	Shows or hides a floating status bar that contains a Spotlight icon for each active connection. The color of an icon represents the current status of the corresponding connection.
Options	Opens the Options window chosen in the invoked submenu (Spotlight Console, Alarm Log, or connection type) for the current connection.

Favorites Menu

The Favorites menu is accessed from the main menu bar. It allows you to create and manage shortcuts to specified pages or drilldowns. The following table lists the commands on the Favorites menu and their uses:

COMMAND	USE
Add to Favorites	Adds the current page to the list of Favorites.
Organize Favorites	Allows you rename favorite pages, create folders to contain them, and move favorites between folders. The arrangement of folders and favorites is displayed in the List of favorite pages.
List of favorite pages	Contains shortcuts to pages in the Favorites list.

Tools Menu

The Tools menu is accessed from the main menu bar. The following table lists the commands on the Tools menu and their uses.

Individual Spotlight applications may have additional options on this menu. For more information, see "Menus" on page 127.

COMMAND	USE
Enable Historical Snapshots	Click this option to enable/disable the collection of historical snapshots.When there is a check mark next to the option, collection is enabled.
Take Snapshot	Click this option to take an historical snapshot of the Spotlight connection in its current state.

Help Menu

The Help menu is accessed from the main menu bar. The following table lists the commands on the Help menu and their uses:

COMMAND	USE
Contents	Opens the online Help at the Contents page.

cont'd…

COMMAND	USE
Context Help	Displays context-sensitive Help. Opens the online Help at a location that relates to the information currently displayed in the Spotlight window.
Help Options	Opens a subset of the Spotlight console options that allows you to customize Help behavior.
Support Bundle	Creates a file called SpotlightSupport.zip in Spotlight's console directory. The file contains a snapshot of your Spotlight installation at the time you selected this option. System information is not included in the support bundle.
	Email this file to Quest Software with any request for assistance. Always save the page before selecting this option. This ensures that the support bundle contains the latest settings.
	Support bundles contain information for the active instance only. If you are using Spotlight to diagnose multiple instances, ensure that the correct instance is displayed before creating the support bundle.
Contact Support	Allows you to contact Quest Software's technical support team by email.
About Spotlight	Displays useful information about the Spotlight version installed on your system.

Notification

You will not always have the Spotlight console open in front of you while Spotlight is diagnosing the performance of one or more connections.

In this situation, you can use Spotlight's Notification feature to continuously oversee the status of all your connections, and to alert you whenever important alarms require your attention. There are two mechanisms for doing so:

- A Spotlight icon in the System Tray of your Windows task bar.

    You can control the behavior of this icon in the Notifications page of the Console Options window. For more information on the icon, and a full description of its behavior, see "Choosing Notification Options" on page 79.

- A floating Connection status bar that displays the status of all current Spotlight connections. For more information, see "The Connection status bar" on page 38.

The Connection status bar

You can show or hide the Connection status bar via the Connection status bar option on the **View** menu.

The Connection status bar is a floating bar that contains a Spotlight icon for each active connection. The color of an icon represents the current status of the corresponding connection.

- Click on an icon to display the corresponding connection in the Spotlight console.

- Click and drag on the checkered handle on the left to resize the bar.

- Right-click on the bar to display its shortcut menu. The options on the menu include:

OPTION	DESCRIPTION
Transparent	Choose this option to "fade" the bar when the mouse pointer is not placed over it.
Text labels	Choose this option to display the name of current connections in the bar.
Automatic resize	Choose this option to automatically resize the bar and activate a scroll arrow.
Sort by	Choose between the **Name** and **Severity** sub-options to sort the icons in the bar.

The size of the Connection status bar is designed to fit in the title bar of the Spotlight console.

Keyboard Shortcuts

Some of the main functions in Spotlight have an associated shortcut to activate the function.

To activate a function using a keyboard shortcut

- Type the shortcut keys anywhere in Spotlight.

  *Shortcut keys are shown on menus, after the name of the command (for example, **F5** for **Refresh** on the **View** menu).*

This is the list of the Spotlight shortcut keys:

TO...	USE THIS KEY
Move to the previous view in the current browse sequence.	ALT+LEFT ARROW
Move to the next view in the current browse sequence.	ALT+RIGHT ARROW
Open the Alarm Log.	ALT+L
Display context-sensitive online Help relating to the screen or drilldown you are currently viewing.	F1
Refresh the current window.	F5
Close Spotlight.	ALT+F4

Individual drilldowns may also have keyboard shortcuts associated with them. To check this, move the mouse pointer over the toolbar button that represents a drilldown, and view the button's tooltip.

2

Configuring and Using Spotlight

- Handling General Tasks

- Navigating within Spotlight

- Viewing Historical Data

- Viewing and Editing Console Options

- Viewing and Editing Component Properties

- Viewing and Editing Metrics

- Saving Configurations

- Help Features

Overview

This chapter explains how to configure the way in which Spotlight collects and displays information. It also describes how to use features that are common to all Spotlight applications, and how to manage Spotlight features such as metrics, thresholds, severities, and alarms.

All Spotlight applications have a similar appearance, and use similar methods for performing basic tasks. The topics in this section fall into one of the following categories:

- **General tasks**

  This section details some of the "housekeeping" tasks associated with Spotlight applications, such as how to open and close applications, how to hide various window elements, and how to print from Spotlight applications.

- **Connecting and disconnecting**

  This section contains the basic information that you need to begin collecting performance data from various systems. It covers topics such as opening existing connections, creating new connections, viewing connections, and choosing startup options.

- **Calibrating Spotlight connections**

  The details of a connection need to be calibrated so that the Spotlight window can display metric data in its most readable form.

- **Navigation within Spotlight**

  This section covers how to move through the Spotlight system of windows and drilldowns.

- **Viewing performance details via drilldowns**

  Spotlight drilldowns have a number of important features that can be used for viewing detailed performance data.

- **Viewing historical data**

  This section shows how to view the recent history of metrics within specified components, and how to change the collection of historical data.

- **Viewing and recording historical snapshots**

  This section shows how to record historical snapshots of Spotlight data at specified times or events, and how to view those snapshots at a later time.

- **Viewing and editing console options**

  This section covers how to change the behavior of the Spotlight console in areas such as the collection, display and retention of metric data, and the visual behavior of the console itself.

- **Viewing and editing component properties**

  This section allows you to change certain features of the components and drilldowns that show performance data, including display properties, Help properties, and history settings.

- **Viewing and editing metrics**

  This section shows how to change properties of the performance data that is displayed in Spotlight windows, including data averaging, and thresholds and severities.

- **Viewing and editing alarms**

  Alarms are Spotlight's warning system for performance problems. This section shows how to view alarm details and modify alarm settings.

- **Pausing and resuming**

  This section covers how to pause and resume the collection of Spotlight data from connected systems.

- **Saving configurations**

  After you have calibrated Spotlight connections, and chosen appropriate display settings for the Spotlight console, components, and metrics, you can save the changes you have made for use in later sessions.

- **Help features**

  This section describes the various ways to view online Help about Spotlight and the systems it analyzes.

Handling General Tasks

Topics in this section show how to perform a number of general tasks within Spotlight, including:

- Starting and closing Spotlight.

- Changing a variety of display options.

- Setting print options, and previewing and printing the contents of a Spotlight window.

To start Spotlight

- Select **Start | Programs | Quest Software | Spotlight | Spotlight**.

To close Spotlight

- Select **File | Exit**.

To refresh the current window

- Select **View | Refresh**.

You can also press F5.

To hide or show the Spotlight toolbar

You can choose to hide or show the toolbar for any Spotlight program. (The default preference is to show the toolbar.)

- To hide the toolbar, clear the checked Tool Bar option on the View menu.

  – OR –

  To show the toolbar, select the unchecked Tool Bar option on the View menu.

To hide or show the status bar

You can choose to hide or show the status bar for any Spotlight program. (The default preference is to show the status bar.)

- To hide the status bar, clear the checked Status Bar option on the View menu.

  – OR –

  To show the status bar, select the unchecked Status Bar option on the View menu.

To hide or show the Connections list

You can choose to hide or show the Connections list that displays all the systems currently connected to Spotlight.

- To hide the Connections list, clear the checked Connections Browser option on the View menu.

  – OR –

  To show the Connections list, select the unchecked Connections Browser option on the View menu. You can also open and close the Connections list by clicking on the arrow contained in the frame of the window itself.

When you view historical snapshots, the Connections list is replaced by the History browser, and View menu's Connection Browser option is replaced by the Snapshot Browser option.

To set print options

1. Select **File | Page Setup**.
2. Choose options in the Page Setup window to set how Spotlight windows are to be printed.
   The results of the choices you make are shown in the Preview pane of the window.

3. If required, click **Printer** to choose which printer to use when printing Spotlight pages.
4. Click **OK** to save the setup.

To view how a Spotlight window will appear when printed

1. Select **File | Print Preview**.

2. Preview the appearance of the printed page, and use the toolbar at the top of the Print Preview window to change any of the display settings required.

TOOLBAR BUTTON	DESCRIPTION
Print	Send the current page to the printer.
Page Setup	Choose how you want to print the contents of the page.
Show one page Show multiple pages	Choose how to view the preview.
Zoom	Choose how much you want to magnify the print preview to get a clear look at page details. Alternatively, move the mouse pointer over the print image, and click to magnify the image.
Close	Close the Print Preview window.

3. When you have finished previewing the page, click **Print** to print the page, or choose **Close** to end the page preview.

Printing a Spotlight Window

You can choose to print the contents of a Spotlight home page, or of the drilldown currently displayed.

To print a Spotlight window

1. Select **File | Print**.

    The print preview page that appears shows you what the appearance of the current page would be if it were printed now.

2. Use the magnifying glass toolbar buttons, or the associated drop-down list, to view the preview in greater or less detail.

3. If the current preview is appropriate, click **Print** to print the page. If not, click **Close** to cancel the print.

Connecting and Disconnecting

This section contains the basic information that you need to begin collecting performance data from various systems. It covers topics such as opening existing connections, creating new connections, viewing connections, and choosing startup options.

Spotlight supports simultaneous connections to multiple systems. Use this section to find out how to:

- Connect to, and disconnect from, existing systems.
- Add new connections.
- View historical snapshots for existing connections.

The Connections list (if displayed) shows all the systems that Spotlight is currently connected to. Use this section to find out how to:

- View the Connections list.
- Order items in the Connections list.

Spotlight allows you to configure and view startup and other connection options. Use this section to find out how to:

- Choose a startup page.
- Connect to a home page.

To connect to systems

1. Select **File | Connect**.
2. Click the type of connection you want to choose in the Connections bar:

CONNECTION TYPE	DESCRIPTION
All connections	Click to display all the Spotlight connections currently defined.
Recent connections	Click to display the connections that have been opened recently.

cont'd…

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CONNECTION TYPE	DESCRIPTION
Specified connection type	Click to display all the defined Spotlight connections for the chosen type. (For example, all Spotlight on Windows connections.)

3. For the specified type, choose the connection you want to open by clicking an item in the list on the right.

    *To connect to a system that is not currently on the list, click **New Connection** and follow the required procedure.*

4. Click **Connect** to open the chosen connection.

Click **Tools** to delete, rename, or view the properties of the chosen Spotlight connection.

*You can also connect to different Spotlight systems from the **Go To** menu item, or Spotlight toolbar.*

Adding New Connections

Before you can use Spotlight to analyze a target system, you need to connect to the system. If you have not connected to that system before, you first need to add a new connection to that system.

To add new connections

1. Select **File | Connect**.
2. Click **All Connections** to display all the Spotlight connections currently defined.
3. Click **New Connection** in the All Connections pane on the right.
4. Enter the required information.

REQUIRED INFORMATION	DESCRIPTION
Select connection type	Click on the box, and from the drop-down list choose the type of connection you want to add.
New connection name	Enter the (unique) name you want to use for the new connection.

5. Click **OK** to open a Properties window for the new connection.

6. Enter the information needed to complete the Spotlight connection.

> For more details on the required information, see the online Help for the specified Spotlight application.

7. Click **OK** to add the new connection to the list of existing connections in the Connection Manager.

> In the Connection Manager, you can at any time click **Tools** to delete, rename, or view the properties of a chosen Spotlight connection.

To disconnect from the current system

- Select **File | Disconnect**.

To disconnect from all open connections

- Select **File | Disconnect All**.

  You can also disconnect from different Spotlight systems via the Spotlight toolbar.

For information on viewing the Connections list, see .

To order items in the Connections list

1. Right-click anywhere in the Connections list and move the mouse pointer over **Order**.

2. Click on one of the options displayed in the sub-menu.

OPTION	RESULT
By Name	Orders the list of current connections alphabetically.
By Severity	Orders the list of current connections according to the severity of alarms currently set for each connection.

Viewing Historical Snapshots for a Spotlight Connection

An important feature within Spotlight applications is "Record and Playback" which is the ability to collect and replay the behavior of a Spotlight connection at a given point in time (such as when an important alarm was raised). This is done by using Spotlight's Record and Playback feature to create snapshots of current connections.

To view all historical snapshots for a specified connection

1. Select **File | Connect**.
2. In the Connections bar at the left, click on the type of connection you want to open.
3. Right-click on the connection to view the snapshots for that connection.
4. Select **Browse History** from the shortcut menu.

    Spotlight then opens the connection in History browser mode.

Choosing a Startup Page

The startup page is the page displayed when you first start a Spotlight application. It can be chosen from one of three alternatives: the current page, the Connection Manager window, or a blank page.

To choose the startup page

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **Startup** in the Options bar.
3. Choose one of the available options to specify the page that Spotlight uses as its startup location.

OPTION	DESCRIPTION
Current page	Click **Current page** to automatically resume the current connection on startup, and to open the page now displayed in the Spotlight window.
Connection manager	Click **Connection manager** to use the Connection manager window as the startup page. This allows you to choose which of the available connections you want to open.

OPTION	DESCRIPTION
Blank	Click **Blank** to open a blank Spotlight window with no open connections and no startup page.

4.   Click **OK** to save the setting.

To connect to a home page

AT STARTUP OR CONNECTION…	WHEN ALREADY CONNECTED…
The home page for a Spotlight connection is the main window for that connection. It is also the first page displayed when you start that connection, unless you have specifically chosen a different startup page.	To go to a system's Spotlight home page from any other page in that system click Home on the Spotlight toolbar or select **View	Go To	Home**.

Calibrating Spotlight Connections

The calibration of Spotlight connections concerns the display of dataflows - the components that show the rate of data transfer over time. The speed of the dataflow varies based on the volume of data being transferred. The greater the traffic, the faster the dataflow.

For dataflows to be an accurate representation of system activity, it is important that Spotlight knows the normal range of values for your system. For example, if the normal range of values for your system is from 0 to 100, a value of 8 is low. However, if the range of values for your system is from 0 to 10, a value of 8 is high and the dataflow moves much faster.

Spotlight comes with a calibration tool that calculates the normal range of values for your system. You must place Spotlight in calibration mode for a set period of time. While in calibration mode, Spotlight measures the flow of data throughout the system. It uses this data to set the upper limit of each dataflow. You can accept the results or adjust them if necessary. Spotlight always uses zero as the lowest value when calculating the normal range of values for your system.

When you connect to a system for the first time, Spotlight automatically calibrates that system and a window opens that allows you to alter certain calibration settings.

SETTING	DESCRIPTION
Calibrate this connection for...	From the drop-down list, choose how long you want to calibrate this new connection.
Always calibrate new connections using this setting.	Select this option to use the specified calibration period for all new connections.If you select the Always calibrate... option, this Calibration window will not appear for future connections. (You can reset this option via the Spotlight Console Options window.)

While calibration is in progress, the word **Calibrating** appears in the status bar at the bottom of the Spotlight console. This section contains the information you need to begin calibrating the display of data from a connected system. It shows you how to:

- Calibrate connections.
- Stop calibration.
- Save calibration data in templates.

To Calibrate Connections

- New Spotlight connections are automatically calibrated the first time that they are opened.

To re-calibrate a connection at any other time

1. Select **File | Calibration**.
2. Set the Calibration period by choosing a period of time from the drop-down list.
3. Click **Start** to begin calibration.

To stop calibration of a system at any time

1. Select **File | Calibration**.
2. Click **Stop** to end calibration.

Saving Calibrations

You can set Spotlight to save calibration data when saving configuration data in a Spotlight template.

To save calibration data in templates

1. Select **File | Save as Template**.
2. Enter information into the **File name**, **Save as type**, and **Description** boxes to specify where and in what format to save the Spotlight template.
3. Select the **Save calibration** check box to save calibration data in the template.
4. Click **Save**.

    When the check box is selected, Spotlight will include calibration data whenever it saves a configuration as a template.

Navigating within Spotlight

Within Spotlight applications, you can view performance data for a system in its Spotlight home page, and in a number of drilldown pages that can be accessed from the home page and from other drilldowns.

There are a number of ways to view drilldowns, including browser techniques - such as Back and Forward - that are familiar to any Internet user. You can also define individual Spotlight pages as Favorites, and view them via the **Favorites** menu.

Viewing Drilldowns

There is more than one way to access a specified drilldown within Spotlight.

To view drilldowns

*   Click the relevant drilldown button on the Spotlight toolbar

    – OR –

    Select **View | Go To** and choose the relevant drilldown.

    – OR –

    Right-click a component on a Spotlight home page and choose **Show Details**.

    – OR –

cont'd…

Click a component on the Spotlight home page (customizable using the Spotlight Console window).

To return to the previous page or drilldown in your current browse sequence

- Select **View | Back**.

  – OR –

  Click **Back** on the Spotlight toolbar.

  This option is disabled if you are at the start of the browse sequence.

To view the next page or drilldown in your current browse sequence

- Select **View | Forward**.

  – OR –

  Click **Forward** on the Spotlight toolbar.

  This option is disabled if you are at the end of the browse sequence.

Viewing Favorites

When you have added a Spotlight page to the Favorites list, you can go directly to that page via the **Favorites** menu.

To view favorites

1. Select **Favorites** in the main menu.

   At the bottom of the menu is the list of page names (and folders that contain page names) that have been added previously to your list of Favorites.

2. Click on one of the named pages to open it.

To add a Spotlight page to the Favorites list

1. Use Spotlight to navigate to the page that you want to add.
2. Select **Favorites | Add to Favorites**.
3. Choose how you want the page to appear in the Favorites list.

CONTROL	DESCRIPTION
Name	Enter the name that you want to use to display the new favorite.
Save the current connection as part of the favorite	Select this option if you have chosen the same display name for favorite pages in two different connections.
Create in	Choose where you want to place the new page in the current Favorites setup.
New folder	Create a new folder in which to save the favorite.

4. Click **OK**.

To organize the Favorites list

1. Select **Favorites | Organize Favorites**.
2. Choose how you want to organize the Favorites list.

CONTROL	DESCRIPTION
Favorites	Click and drag to rearrange entries in the current list. Alternatively, click on an item to choose it, and then use the buttons on the right to rearrange it.
New folder	Create a new folder in which to save the favorite.
Rename	Rename the chosen favorite or folder.
Delete	Delete the chosen favorite or folder.

cont'd…

CONTROL	DESCRIPTION
Move to	Move the chosen favorite or folder to another location.

3. Click **Close**.

Viewing Performance Details in Drilldowns

Drilldown pages contain detailed information about the performance of systems that Spotlight is connected to. Individually, each drilldown page displays the metrics of a single performance category.

This section shows you how to:

- View drilldowns, and how to change table and graph displays within them.
- View the details of metrics in drilldowns.
- Save data from drilldowns.

For more information on viewing drilldowns, see .

Showing Columns in a Drilldown Table

Where a drilldown (including the alarm log) contains a table, you can choose to hide or show individual columns in the table.

To show columns in a drilldown table

1. Right-click the header row at the top of the table.

    This invokes a shortcut menu with options that represent all the columns available for display in the table.

    Checked items represent the columns currently displayed. Cleared items represent the columns currently hidden.

2. Click an item to check or clear it, and change the visible contents of the table.

Sorting Columns in a Table

You can sort the contents of a Spotlight table in the order represented by any of the columns in the table.

To sort columns in a table

1. Look at the headers of the columns in the table.

   If none of the headers contain an up or down arrow, the table is in its default sort order.

   If a column contains an up arrow, the table is sorted according to the contents of that column in ascending order.

   If the column contains a down arrow, the table is sorted according to the contents of that column in descending order.

2. Click the header of the column that you want to use when sorting the table.

   If the column was previously unsorted, or sorted in descending order, it is now sorted in ascending order. If the column was previously sorted in ascending order, it is now sorted in descending order.

Freezing the First Column in a Table

The large number of columns in some Spotlight tables often make those tables too wide to display in a drilldown window, forcing you to scroll the window if you want to see ALL the information in a table. When you scroll, the first column in the table (usually vital for identifying what you are looking at) can disappear off the left side of the window.

You can configure each table so that this important first column is "frozen" in place and does not scroll when you scroll a window.

To freeze the first column in a table

1. Click on the header bar of the table to display the shortcut menu.
2. Select **Freeze First Column**.

   This option may not be available for all tables.

Zooming in on a Drilldown Graph

Where a drilldown displays one or more graphs, you can choose to zoom in on a section of a graph.

To zoom a drilldown graph

1. Move the mouse pointer over the graph.

   The pointer changes to a magnifying glass.

2. Click and drag the pointer (down and right) to create a selection region around the area that you want to magnify.

3. Release the mouse button.

To return the graph to its default size

• Click the magnifying glass button at the top right of the drilldown.

The maximum magnification factor is 100.

Maximizing and Restoring a Drilldown Graph

Where a drilldown displays several graphs, you can choose to maximize a displayed graph so that it occupies the whole drilldown. When a graph is maximized, you can restore the graph to its default size.

To maximize a graph

• Right-click the graph, and select **Maximize**.

To restore the graph

• Right-click the graph, and select **Restore**.

All graphs are automatically restored when you view a different drilldown.

Viewing Multiple Series in a Drilldown Graph

The graphs that Spotlight displays in some drilldowns are shown within components called charts.

Each of these charts may contain series of the same graph from different data sources superimposed on the same set of axes. For example, a "disk usage" chart for a system that has multiple disks may contain several series of graphs, one for each disk.

You can use the Metric editor to specify the series that Spotlight displays within each chart.

To view multiple series in drilldown graphs

1. Right-click the chart that displays the graph whose display you want to change.
2. Select **Metrics**.
3. Click the **Series** tab.

   *The Series page contains two areas: the read-only **Name** field, which shows the name of the current metric, and Multi series display options, which contains several mutually exclusive controls:*

CONTROL	DESCRIPTION
Show all series	Select this option to display all series of the current graph in the chart. For example, if a system has the multiple disks C:, D:, E:, and F:, the relevant "disk usage" chart displays the disk usage metric for all four disks.
Show only the top N series	Select this option to display only the N most significant series of graphs.The value of N is set by entering a value in the numeric field associated with the option.
Show the following items	Select this option, and then choose items from the associated list by selecting the corresponding check boxes, or by using the Select all or Clear all buttons. Spotlight displays a graph for each item chosen.

   In the top right of every chart that can display multiple series of graphs, there is a legend that lists all the series associated with the chart. You can use the legend to do the following:

   - *Click an item in the legend to highlight its series in the chart. (Click a second time to return the series to its normal appearance.)*

   - *Move the mouse pointer over an item in the legend to view the current value for that series within the chart.*

Re-scaling Graphs Manually in Drilldowns

Some Spotlight drilldown pages display metric data as a set of graphs, each of which shows the historical behavior of the metrics in question. You can choose either to accept Spotlight's default scaling of these graphs, or to choose your own scaling.

To re-scale a graph manually

1. Open the drilldown that contains the graph.
2. Move the mouse pointer over the graph, right-click, and select **Properties**.
3. Click the **Chart** tab.
4. Select the **Manual scaling** check box to enable manual scaling.
5. Enter the minimum and maximum values you want to display on the graph.
6. Click **OK** to save the setting.

Viewing Metric Details from Drilldowns

There are several different types of data displayed in drilldowns. Some drilldowns graph the behavior of a single item over time, and its details are available at a glance. For example, a drilldown of CPU utilization will display only the behavior of that item over a specified period.

Others present a list of metrics within a data table (or a set of data tables), and the drilldown displays only a part of all the data collected. For example, a drilldown may display the current processes running on a server, but not the details of those processes.

To check for further details in a drilldown

1. Right-click on an item to display its shortcut menu.
2. Move the mouse pointer over the **Show Details** option in the menu.
   If the option is not dimmed (disabled), a sub-menu appears.
3. Click on an item in the sub-menu to display the Details window.

To view the default set of details for a row in a data table, simply click on the row.

Saving Drilldown Data

You can choose either to copy data from a Spotlight drilldown to another application, or to save that data into a separate file.

To copy data

1. Right-click the item (image, table, or text) that you want to copy and select **Copy to Clipboard**.
2. Open the document where you want to save the item.
3. Paste the copied item into the document.

To save data

1. Right-click the item (image, table, or text) that you want to copy and select **Save As**.
2. Choose how you want to save the item (file name and file type).
3. Click **Save**.

To close drilldowns

- Select **View | Close Drilldown**.

   *You can also move from the current drilldown to other Spotlight pages using toolbar buttons, the **View** menu, and the **Favorites** list.*

Viewing Historical Data

Spotlight uses historical data to show how individual metrics within components vary over time. This section shows you how to:

- View historical data for a component.
- Choose whether to store historical data for a component.
- Choose whether to use data from a component in historical snapshots.
- Set the period of time for which historical data is stored.

As well as storing historical data for individual metrics, you can also take historical snapshots of the behavior of Spotlight connections at specified times. For more information, see "Viewing and Recording Historical Snapshots" on page 63.

To view the recent history for a component's default metric

- In the Spotlight home page, right-click the component that contains the metric and select **Show History**.

   The invoked popup window displays a chart of the recent history of the metric. You can click-and-drag on a corner of the chart to change its size, and you can also choose to zoom in on a section of the chart.

To view the history of any metric within a component

- In the Spotlight home page, right-click the component and choose an item from the **Show Details** sub-menu to display the corresponding drilldown.

   *The drilldown may itself contain the chart(s) you want to view, or it may lead to additional drilldowns that do. In the second case, right-click on a metric in the drilldown, and again choose an item from the **Show Details** sub-menu.*

Choosing to Store Historical Data

You can choose whether to store historical data for a specified component from the Properties editor. You can set how long to keep historical data in the Console Options window.

To enable the collection of historical data for a component

1. Right-click the component and select **Properties**.
2. Click the **Other** tab.
3. Select **Show history for this component**.
4. Click **OK** to save the setting.

> You can set how long to keep historical data in the Console Options window.

Choosing Whether to Contribute Data to Historical Snapshots

You can choose whether to enable the collection of data for inclusion in historical snapshots.

To include data in historical snapshots

1.   Right-click on the component.
2.   From the shortcut menu, choose **Properties**.
3.   Click the **Options** tab.
4.   Select the **Allow this component to contribute to historical snapshots** check box.
5.   Click **OK** to save the setting.

> You can set how long to keep historical data in the Console Options window.

Setting the Time Scale for Historical Data

Spotlight applications are designed to retain the data they collect for a fixed period of time, during which the data can be displayed in historical charts.

To set how long to keep historical data

1.   Select **View** | **Options** | **Spotlight Console**.
2.   Click **Data Collection**.
3.   You can set the time scale for historical data by selecting **Keep history for the last:** and choosing a period of time from the drop-down list.
4.   Click **OK** to save the settings.

Viewing and Recording Historical Snapshots

Spotlight provides two mechanisms for recording the past behavior of a Spotlight connection.

•   A popup **History** viewer that displays charts of the continuous history of Spotlight metrics over a specified duration. (For more information, see "Viewing Historical Data" on page 61.)

•   A **Record and Playback** feature that takes snapshots of the Spotlight connection at pre-determined intervals.

This section shows you how to use Record and Playback, including how to:

- Choose when to record historical snapshots.
- Choose where to save snapshot data.
- Choose what to record in snapshots.
- Manage the storage of snapshot data.
- View snapshot data.

Choosing When to Record Historical Snapshots

You can choose when to record historical snapshots of Spotlight data using the History Options window, the **Tools** menu, or the Spotlight toolbar.

To choose when to record historical snapshots using the History Options window

1. Select **View | Options | History**.
2. On the Options bar, click **When to collect snapshots** to open the relevant page.

   Use the displayed options to edit the behavior of Spotlight snapshots.

CONTROL	DESCRIPTION
Take snapshot every...	Select the option to enable Spotlight to collect snapshot data. Use the associated numeric and unit boxes to enter how often you want Spotlight to take a snapshot.Clear the option to disable the collection of snapshot data.
	Note: Spotlight will NOT record snapshot data at a rate faster than the refresh rate for the connection.
Take snapshot when the following alarms are raised	Select the option to enable Spotlight to collect snapshot data when alarms are raised.
	Clear the option to disable the collection of snapshot data when alarms are raised.

3. Click **OK** to save the settings.

Check the settings in the other pages of the History Options window before enabling the collection of snapshot data.

To choose when to record historical snapshots using the Tools menu

*   Select **Tools | Enable/Disable Historical Snapshots**.

    – OR –

    Select **Tools | Take Snapshot**.

You can also use the **camera** icon on the Spotlight toolbar to take a snapshot manually.

Choosing Where to Save Historical Snapshots

You can choose where to save historical snapshots of Spotlight data using the History Options window.

To choose where to save historical snapshots using the History Options window

1. Select **View | Options | History**.
2. On the Options bar, click **Where to collect snapshots** to open the relevant page.

    Use the displayed options to edit the behavior of Spotlight snapshots.

CONTROL	DESCRIPTION
Select the repository…	Select an option to save snapshot information to the corresponding database repository. Currently, the only available option is: **Lightweight XML repository**. Choose this option to store snapshot data as a set of Spotlight-generated XML files.

cont'd…

CONTROL	DESCRIPTION
Options… button	Click this button to choose the **Save options available for the option chosen in the Select the repository…** control. The available options include: • The maximum disk space to use (in megabytes). • The maximum duration of history to store (hours/days/weeks/months). • Base snapshot path. (Where to save the data.)
The following Spotlight products…	This read-only control displays the list of installed Spotlight applications that support the collection of snapshot data.

3.   Click **OK** to save the settings.

Choosing What to Record in Historical Snapshots

You can choose what to record in historical snapshots of Spotlight data using the History Options window.

To choose what to record in historical snapshots using the History Options window

1.   Select **View | Options | History**.
2.   On the Options bar, click **What to collect** to open the relevant page.

Use the displayed options to edit the behavior of Spotlight snapshots.

CONTROL	DESCRIPTION
Include history in each snapshot	Within Spotlight, **Record and Playback** and **History** are two independent features:
	1.Record and Playback takes data snapshots of a Spotlight connection at pre-determined intervals.
	2.History records the continuous history of specified metrics over a specified duration.
	Select the check box to add continuous History data to your Record and Playback historical snapshots, and then use the associated drop-down list of times to choose how much history data to include in each snapshot. (Possible values range from 5 minutes to all available data.)
	When you do so, every recorded snapshot will contain historical details of the Spotlight connection for the specified period immediately before the snapshot was taken. You will be able to view that history during Playback.
	Note: If you want to collect history data for specified components only, you can reduce the size of historical snapshots (and reduce the load on the diagnosed system) by "turning off" history collection for all unwanted components.
	For more information, see "Choosing to Store Historical Data" on page 62.

CONTROL	DESCRIPTION
Collect extra information if required	How much information do you want in your recorded snapshots? A number of factors may influence this decision, including the frequency of snapshots and the amount of space available to contain them.
	Use the **Collect extra information...** controls to choose how much data to collect.
	• Choose **Collect only basic information** to record only the information that Spotlight normally collects.
	• Choose **Collect details relating to current alarms** to record basic information PLUS all drilldown information that is relevant to alarms that are current at the time that snapshots are taken.
	• Choose **Collect all possible information** to include all available information in each snapshot.
	This setting is not usually recommended, as it may result in the collection of a very large amount of data, and may also put a heavy load on the system under diagnosis.

3.   Click **OK** to save the settings.

Managing the storage of snapshot data

You can manage the storage of snapshot data using the History Options window.

To manage the storage of historical snapshots using the History Options window

1.   Select **View | Options | History**.
2.   On the Options bar, click **Repository management** to open the relevant page.

Use the displayed options to manage the storage of snapshot data.

CONTROL	DESCRIPTION
{repository list}	This is the list of all repositories currently defined for the Spotlight applications installed on your system. Every Spotlight connection can have at most one repository. Click on an item in this list to choose that repository.
Clear	Delete ALL snapshots for the chosen repository. (You cannot delete snapshots for an open Spotlight connection.)
Clear all	Delete ALL snapshots for ALL repositories.

3. Click **OK** to save the settings.

Viewing Snapshot Data

There are two ways to view the history of a Spotlight connection.

The first is the popup History window, which provides a continuous recent history of a specified Spotlight metric. For more information, see the section on "Viewing Historical Data" on page 61.

The second is Spotlight's Record and Playback feature, a mechanism for taking snapshots of a Spotlight connection at pre-determined intervals, or when alarms are raised. You can use Spotlight's History browser to view these recorded snapshots.

To access the History Browser from the View menu

•   Select **View | History Browser**.

To access the History Browser from the Connection Manager

1. Right-click an icon in the connections list.
2. Select **History Browser** from the shortcut menu.

To access the History Browser from the Alarm Log

•   Right-click on an alarm and choose the **View in History Browser** option.

    This automatically opens the appropriate snapshot.

Viewing a Snapshot in the Spotlight Console

When viewed in the Spotlight console, a recorded snapshot resembles a "live" display, but the Connections list has been replaced by the History browser.

To view snapshot information from the History Browser

1. Click on an event in the snapshot list.
2. Use the navigation buttons in the History browser to move through the snapshot list. Alternatively, use **Playback** mode, which automatically steps through the snapshots in sequence.

To return to viewing "live" data for the current connection, simply choose the **Live View** option on the **View** menu.

Viewing and Editing Console Options

You can customize the appearance and behavior of the Spotlight console from the Console Options window.

*   The **General** page allows you to change the behavior of a number of background actions within Spotlight, including the locations that contain important files.

*   The **Data Collection** page allows you to set refresh rates and time scales for historical data.

*   The **Display** page allows you to change the visual properties of Spotlight, and of its graphs and dataflows.

*   The **Help** page allows you to choose how to display component-related Help.

*   The **Appearance** page allows you to change the visual appearance of Spotlight windows.

*   The **Startup** page allows you to change the startup behavior of Spotlight.

*   The **Notifications** page allows you to choose how you want Spotlight to notify you when an alarm is raised on a current connection.

Viewing Console Options

You can choose how Spotlight looks and behaves from the Console Options window.

To view the Console Options window

1. Select **View** | **Options** | **Spotlight Console**.
2. Click an item in the Options bar (General, Data Collection, Display, Help, Appearance, Startup or Notifications) to view the relevant options.

    You can use these options to add, edit, and delete the options that govern the behavior and appearance of the Spotlight console.

To play alarm sounds

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **General** in the Options bar.
3. Select **Enable alarm sounds for Action Rules** if you want Spotlight to play the sound specified in the relevant action rule when an alarm is raised. If no sound is specified, no sound is played.
4. Click **OK** to save the setting.

To show or hide confirmation messages

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **General** in the Options bar.
3. Select or clear **Confirm before deleting items**, **Confirm before closing connections**, and **Confirm before reopening connections when navigating** to set the desired behavior.
4. Click **OK** to save the settings.

Showing and Hiding Calibration Messages

Spotlight provides two types of notification for use during calibration:

*   Auto-calibration messages for new connections.
*   "Too short" calibration warnings when a calibration is ended prematurely.

To enable auto-calibration messages

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **General** in the Options bar.
3. Select or clear **Show auto-calibration message for new connections**.
4. Click **OK** to save the setting.

To enable "Too Short" calibration messages

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **General** in the Options bar.
3. Select or clear **Warn when calibration period is too short**.
4. Click **OK** to save the setting.

   For more information on calibration data in templates, see

To set template locations for connections

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **General** in the Options bar.

   You can set the location for two connection-related files from the displayed text boxes.

OPTION	DESCRIPTION
Template path	New Spotlight connections base their settings on templates. Enter the pathname that specifies where connection templates (.stx files) are stored. You can enter a shared network path.
Connection file path	Connection configuration (.scx) files are stored in the location specified in this text box. These files can include calibration data.

3. Click **OK** to save the settings.

Setting Refresh Rates

Refresh rates indicate how often Spotlight collects data from the system(s) it is currently connected to.

To set refresh rates

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **Data Collection** in the Options bar.

    You can set refresh rates from the Foreground information and Background information options.

OPTION	DESCRIPTION
Foreground information	Enter a value in the text box to specify the rate at which foreground information will be collected, or use the arrow buttons to the right of the text box to increment or decrement the value. Foreground information about a connection is the information currently collected by Spotlight and displayed in the open Spotlight window.
Background information	Enter a value in the text box to specify the rate at which background information will be collected, or use the arrow buttons to the right of the text box to increment or decrement the value. Background information about a connection is the information currently collected by Spotlight but not displayed in the open Spotlight window.

3. Click **OK** to save the settings.

    For more information on setting the time scale for historical data, see "Viewing Historical Data" on page 61.

Choosing the Default Value for Metric Smoothing

Metric smoothing (averaging) is used to prevent the generation of spurious alarms. It does not affect the graphs or tables that display metric values; these continue to display metrics as they are reported.

You can smooth the peaks and troughs in a Spotlight component by choosing to average the information that Spotlight collects over a specified number of data points.

To change the default value

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **Data Collection** in the Options bar.
3. Set how incoming data is averaged by clicking the **Default setting:** and choosing the number of data points over which the current metric will be averaged.
4. Click **OK** to save the settings.

   You can override this default setting for individual metrics from the Metric editor window.

If you make a change to the metric smoothing setting, the change is effective from the next refresh.

Adjusting Display Quality and Performance

You can choose to balance display quality within the Spotlight home page and drilldowns against the speed at which the application delivers information.

To adjust the display

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **Display** in the Options bar.
3. Click and drag the Performance slider to a position that marks an acceptable balance between display quality and display speed.
4. Click **OK** to save the setting.

Choosing Display Options for Graphs

Spotlight makes extensive use of graphs (historical and otherwise) in its drilldown windows. You can choose the line style that is used to display those graphs.

To choose display options

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **Display** in the Options bar.

You can set display options for graphs from the Graph settings controls.

CONTROL	DESCRIPTION
Graph line style	Click on the box, and from the drop-down list choose a style that can be used when displaying graphs. The preview graph above the control demonstrates how graphs will appear under the chosen line style.

3.   Click **OK** to save the setting.

Resizing Graphs in Dataflows

The graphs superimposed on dataflows in a Spotlight home page normally show the highest and lowest values that have been encountered in each dataflow. When a spike or trough appears in the graph, the graph is automatically resized to show the top of the spike or the bottom of the trough. For example, if your normal dataflow is in the range 100 to 250 and the spike is at 1000, automatic resizing ensures that the vertical component of the graph is compressed so the spike can be displayed.

However, if values in the graph usually vary only in the range between 100 to 250, then a graph resized to show values as high as 1000 may cause important but smaller variations to be ignored. Spotlight overcomes this problem by reducing the vertical scale of the graph over time.

This reduction in scale continues until a new spike or trough exceeds the displayed range. When this occurs, the graph is resized again, and the process starts over.

To allow Spotlight to resize graphs in dataflows

1.   Select **View** | **Options** | **Spotlight Console**.
2.   Click **Display** in the Options bar.

You can set resizing options for dataflows from the Flow settings controls.

CONTROL	DESCRIPTION
Check box	Select the **Reduce the flow graph vertical scale over time** check box to enable Spotlight to reduce the vertical scale.
Slider	Click and drag the slider below the check box to specify how fast the vertical scale is reduced after a spike.

3. Click **OK** to save the settings.

Choosing How Help is Displayed

By default, Spotlight displays a context-sensitive Help window whenever you click on an individual component in a Spotlight home page. One of two kinds of Help is displayed, component Help or alarm Help.

To select how Help is displayed

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **Help** in the Options bar.

    Select an option on the Help page that specifies how Spotlight behaves when you click on a control in the home page.

OPTION	DESCRIPTION
Always show balloon help	View the related component Help or alarm Help when you click on a component. Component Help is shown when no alarm is raised for the component; alarm Help is shown when an alarm is raised.
Only show help if an alarm is being raised	If no alarm is raised for the component, view the related drilldown. If an alarm is raised, view the alarm Help for the component.
Always jump directly to the related drilldown	Always view the related drilldown whether an alarm is raised or not.

3. Click **OK** to save the settings.

A third type of context-sensitive Help, metric Help, is available only via the Metric Editor's General page. (Its behavior cannot be modified.) Additional online Help is available by using the F1 key and the Help menu.

Changing the Appearance of Spotlight

You can change the appearance of the Spotlight console from the Console Options window by using a simple point-and-click method.

In particular, you can choose to create and save your own color scheme for Spotlight, and switch between various color schemes, including the supplied Default and Classic schemes.

To change the appearance of the Spotlight console

1. Select **View** | **Options** | **Spotlight Console**.
2. Click **Appearance** in the Options bar.

   Use the controls on the Appearance page to set display options for the Spotlight window:

CONTROL	DESCRIPTION
Color scheme	Allows you to save the settings you have chosen as an identified color scheme.
	Click the text box and choose a name from the drop-down list, or click **Save as** to choose a new name for the color scheme.
Main screen	Select the **Main screen** tab to view the current display settings for the Spotlight console.
	Click anywhere on the sample image to choose that feature for editing, or choose a feature from the Item list.
	Select the available (enabled) controls in the Appearance group Foreground, Background, and Image to edit the associated feature.
Drilldowns	Select the **Drilldowns** tab to view the current display settings for drilldown pages, and then follow the same procedure as described for the Main screen control.

cont'd…

CONTROL	DESCRIPTION
Windows	Select the **Windows** tab to view the current display settings for objects such as the Spotlight Console Options window itself, and then follow the same procedure as described for the Main screen control.
Severities	Select the **Severities** tab to view the current methods used to display severity levels for alarms. Click anywhere on the sample image to choose that feature for editing, or choose a feature from the Item list. Select the available controls in the Appearance group Foreground, Background, Image, Flash speed, or Flash intensity to edit the associated feature.
Chart colors	Select the **Chart colors** tab to view the current display settings for the charts contained in drilldowns, and then follow the same procedure as described for the Main screen control.
Item	Click the **Item** box to display a list of the features whose appearance you can change. Click on the available controls in the Appearance group Foreground, Background, or Image to edit the associated feature.
Foreground	When you have chosen a feature whose appearance you want to change, click **Foreground** to display a color chart. Select a color on the chart to use it as the foreground color for the current feature, or click **More colors** to display a wider range of colors to choose from.
Background	Use the **Background** control to repeat the procedure described immediately above, but this time for the background color of the feature.
Image	When you have chosen a feature that has a bitmap image associated with it, click **Image** to choose an alternative image from a drop-down list. The Default image and No image alternatives are self-evident; use Custom image to choose a different bitmap in place of the default image.
Flash speed	Click a severity bar on the sample image. Click **Flash speed** to display the drop-down list of possible alternatives for the chosen severity. Choose an option (None, Slow, Medium, or Fast) from the list.

CONTROL	DESCRIPTION
Flash intensity	Click a severity bar on the sample image.
	Click **Flash intensity** to display the drop-down list of possible alternatives for the chosen severity.
	Choose an option (Low, Medium, or High) from the list.

3.   Click **OK** to save the settings.

> For more information about choosing the Start up page, see the topic To choose the startup page in the section on "Connecting and Disconnecting" on page 47.

Choosing Notification Options

You can set up Spotlight to notify you when an alarm is notified on a current connection.

To choose the type of notification

1.   Select **View** | **Options** | **Spotlight Console**.
2.   Click **Notifications** in the Options bar.
3.   Change the available options to specify Spotlight's notification behavior.

CONTROL	DESCRIPTION
Show the Spotlight icon in the task bar notification area.	Select this option to display a Spotlight icon in the System Tray area of your Windows task bar. The icon has the following properties:
	• Its color reflects the highest-severity alarm raised by a current connection.
	• Double-clicking the icon restores the Spotlight console (if minimized).
	• Right-clicking the icon displays a shortcut menu.

cont'd…

CONTROL	DESCRIPTION
Pop up an alert where the severity is…	Select this option to enable the Spotlight icon to display an appropriate text message when the status of a current Spotlight connection reaches or exceeds the severity chosen in the associated drop-down list. Use the drop-down list to choose the threshold that will trigger the message. **Note:** Multiple alerts are displayed one at a time in chronological order.
Do not show alerts if Spotlight is the active window.	Select this option if you are currently using Spotlight, and do not want to be notified of new alarms that may already be visible.

4. Click **OK** to save the setting.

Viewing and Editing Component Properties

You can view and change the properties of Spotlight components, and of tables and graphs in drilldowns, from the Properties editor window.

- The **General** page allows you to view the context-sensitive Help that is displayed for the component in its normal state, and to edit the component tip displayed when the mouse pointer hovers over the component.

- The **Options** page allows you to choose whether to contribute data from the component to historical snapshots.

- The **Other** page (where available) allows you to choose whether or not to store historical data for the component.

- The **Chart** page (where available) allows you to manually re-scale drilldown graphs, to choose maximum and minimum display values for graphs, and to choose how graphs are displayed.

To view component properties

1. Right-click on the component and choose **Properties**.
2. Click a tab (General, Options, Chart, or Other) to view the relevant component properties.

   You can edit many of these properties.

Viewing Component Help

When a component in a Spotlight home page is in its normal state (that is, no alarm has been raised):

- The component Help explains what the component represents.
- The drilldowns associated with the component show the details of the information collected.

How you view the alarm Help depends on Spotlight's current configuration, which can be changed via the Console Options window. The three relevant options are described in detail in the topic "Choosing How Help is Displayed" on page 76.

For one of the three options - **Always show balloon help** - you can view the component Help directly when you click on a component.

For the other two options - **Only show help if an alarm is being raised** and **Always jump directly to the related drilldown** - clicking on the component takes you directly to the default drilldown associated with it. To view the component Help, you need to right-click on the component and invoke the Properties editor from the shortcut menu.

To view component Help in the Properties editor

1. Right-click on the component and choose **Properties**.
2. Click the **General** tab.

You can also view Help for individual metrics from the Metric editor's General page, and Help for individual alarms from the Metric editor's Alarm Help page.

Viewing and Editing Component Tips

Component tips are popup reminders that appear when:

- You place the mouse pointer over a component on the Spotlight home page (or drilldown window).
- The component is in a normal state.
- The component is in an alarm state and no metric tip exists for the component.

You can use component tips to find out more about components before you view the relevant drilldown.

To add, edit, or delete a component tip

1. Right-click on a component or other item in the current window, and choose **Properties**.
2. If the Properties editor is not already open at the General page, click the **General** tab.
3. Click the **Component tip** box.
4. Enter the text that you want to appear on the component tip. If required, include system-related information by clicking **Insert field** and choosing an item from the drop-down list. Available items include:

FIELD	DESCRIPTION
Component name	Choose this to include the name of the current component.
Connection name	Choose this to include the name of the current connection.
Start of range	Choose this to display the start value of the severity range that includes the current value of the metric displayed in the Spotlight home page, or of an individual metric in a drilldown table.
Value	Choose this to display the current value of the metric displayed in the Spotlight home page, or of an individual metric in a drilldown table.

5. Click **OK** to save the tip.

When an alarm has been raised, the component tip is superseded by the corresponding metric tip, if one exists. When no component tip is associated with a specified metric, the component tip popup is disabled.

For more information about choosing whether to store historical data, see To choose whether to store historical data in the section on "Viewing Historical Data" on page 61.

For more information about choosing whether to contribute data to historical snapshots, see "Choosing to Store Historical Data" on page 62.

Viewing Graphs as Line Graphs or Area Graphs

Within drilldowns that contain graphs, you can choose to display graphs as either line graphs or area graphs.

To choose the display method

1. Open the drilldown that contains the graph.
2. Right-click the graph, and choose **Properties**.
3. Click the **Chart** tab.
4. Select an item from the Chart style list to choose whether to display the graph as a line graph or area graph. All the series of graphs that are displayed on the current set of axes will use this style.

    If you choose to display an Area graph, you can then choose whether to stack the different series of graphs.

5. Select **Series are stacked** to plot the cumulative values of the different series. Clear the check box to superimpose the different series on the same set of axes.
6. Click **OK** to save the setting.

Choosing Maximum Display Values for Components

Some components on a Spotlight home page display metric data as positions on a bar or graph. You can choose how much of this bar or graph to display.

To select the display values

1. Right-click the component and choose **Properties**.
2. Click the **Other** tab.

   The Maximum Value box displays the maximum value displayed in the specified bar or graph.

   To change the maximum value displayed, click the ... button, and enter a new maximum value in the invoked editor.

3. Click **OK** to save the setting.

   For components that do not display metrics as a position in a range, the Maximum value is set to zero by default.

Viewing and Editing Metrics

You can view and change the properties of Spotlight metrics, and their thresholds and severities, from the Metric editor window.

The left pane of the Metric editor window lists the series, metrics, and thresholds for the component. The right pane displays (in several tabbed pages) the properties for the item selected in the left pane.

Metrics and thresholds are unique to each component. For this reason, the mouse must be positioned over a component before you can view metrics in the Metric editor window.

Within the Metric editor you can choose to enable or disable the collection of individual metrics. In addition:

- The **General** page allows you to view the context-sensitive Help that is displayed for a metric, and to edit the metric tip displayed when the mouse pointer hovers over the component in an alarm state.

- The **Metric** page allows you to change the averaging methods used when collecting performance data from a system.

- The **Thresholds** page allows you to define the thresholds and severities used to indicate when a metric enters an alarm state.

- The **Alarm Help** page allows you to view the context-sensitive Help that is displayed for a metric in an alarm state.

- The **Data source** page (available for drilldown graphs) allows you to change the display properties of the data source from which a metric is derived.

- The **Series** page (available for drilldown graphs) allows you to choose which series of data points are displayed in a graph.

Viewing Metrics

Every component on a Spotlight home page has its own set of one or more metrics, and you can view the metrics for a specified component only via the component itself.

To view the metrics for a component

- Right-click the component in the Spotlight home page and choose **Metrics**.

  The Metric editor displays all the metrics currently defined for that component. You can then view or edit a number of properties for each metric.

Enabling the Collection of Metrics

You can use the Metric editor window to choose whether to collect individual metrics for Spotlight components.

To enable collection

1. Right-click a component in a Spotlight home page and choose **Metrics**.

   The left pane in the window shows a list of check boxes, each representing one of the metrics available for collection for the component. The check boxes for all collected metrics are checked; the check boxes for disabled metrics are cleared.

2. Select a check box to collect the corresponding metric; clear the check box to stop collecting the metric.

To view metric Help

1. Right-click on the component in the Spotlight home page and choose **Metrics**.

2. If the Metric editor is not already open at the General page, click the **General** tab.

3. If the Metric Name pane on the left contains more than one metric, click on the metric whose Help you want to view.

    The Help topic is displayed in the Metric Help window on the right.

    Similar Help is available also for components and alarms.

Viewing and Editing Metric Tips

Metric tips are popup reminders that appear when:

*   You place the mouse pointer over a component on a Spotlight home page (or drilldown window).

*   An alarm has been raised for that component.

You can use metric tips to find out more about alarms before you view the alarm log or a relevant drilldown.

To add, edit, or delete a metric tip

1. Right-click a component or other item in the current window and choose **Metrics**.

2. If the Metric editor is not already open at the General page, click the **General** tab.

3. Click in the **Metric tip** box.

4. Enter the text that you want to appear on the metric tip.

5. If required, include system-related information by clicking **Insert field**, and choosing an item from the drop-down list. Available items include:

FIELD	DESCRIPTION
Component name	Choose this to include the name of the current component.

FIELD	DESCRIPTION
Connection name	Choose this to include the name of the current connection.
Start of range	Choose this to display the start value of the severity range that includes the current value of the metric.
Value	Choose this to display the current value of the metric.

6.   Click **OK** to save the tip.

If no metric tip is associated with a specified component, the relevant component tip is displayed, if it exists. Otherwise no popup is displayed. Metric tips are also displayed in the Details column of the Alarm Log.

Choosing How Metrics are Averaged

Averaging is a technique that Spotlight uses to smooth out the anomalies and spikes that may appear momentarily in the metric values for a component. The purpose of averaging is to prevent Spotlight from reporting alarms for such spikes if they do not persist.

Averaging is used only to prevent the generation of spurious alarms. It does NOT affect the graphs or tables that display metric values; these continue to display metrics as they are reported.

To select how averaging is applied

1.   Right-click the component in the Spotlight home page and choose **Metrics**.
2.   Click the **Metric** tab.

cont'd…

3. Click one of the available Averaging options:

OPTION	DESCRIPTION
Use default	Every value used to calculate a metric's alarm status is obtained by averaging the metric over its N most recent data points. To do so, Spotlight adds the values of the latest N data points together and divides the total by N.A new value is generated every time the metric is refreshed. The default setting (N=3) can be changed in Spotlight's Console Options window.
Don't average this metric	Use the raw data retrieved from the current system anomalies and spikes included.
Use custom averaging	Use a moving average, but not the default setting. When you choose this option, use the mouse or arrow keys to move the slider and so choose the number of data points that are used to generate the moving average. The higher the number of data points, the fewer the peaks and troughs. Spikes and other anomalies are smoothed. Do not to use too many data points to calculate the moving average. This may prevent the reporting of valid alarms. The maximum moving average in Spotlight is 10.

4. Click **OK**.

For more information about choosing the default value for metric smoothing, see To choose the value for metric smoothing in the section on "Viewing and Editing Console Options" on page 70.

Setting Thresholds and Severities

A metric is an individual piece of information that Spotlight has collected about the performance of a system. The information may be a numeric value (a number or percentage), a string of text, or some other piece of data.

For each numeric metric, you can define a number of thresholds - ranges of values - which indicate levels of severity for that metric.

A severity can be used to specify whether the information returned in the metric represents normal or abnormal behavior for the system under diagnosis. Within Spotlight, there can be these types of severity:

- Disabled
- Normal
- Low
- Medium
- High
- Critical

"Disabled" means that the system is not responding, and that no information is being returned. Normal indicates that the system is performing within acceptable limits. If a metric returns a value with any other severity, Spotlight raises an alarm that indicates that the system is behaving outside acceptable limits.

Since acceptable limits is a subjective measure, Spotlight allows you to define your own thresholds and severities for a metric.

To define a threshold

1. Right-click the component in a Spotlight home page and choose **Metrics**.
2. Click the **Thresholds** tab.

   On the left of the Thresholds page, the Metric Name window shows all the available metrics for the current component. On the right, the editor displays the thresholds and severities defined for the metric highlighted in the Metric Name window.

3. Click a metric in the Metric Name window, and ensure that the associated check box is selected.
4. Select all the check boxes that correspond to the severities that you want to use with the current metric.

   *If you want to specify that all thresholds be specified in terms of the maximum value of the current metric, select the check box **All thresholds are percentages of the maximum control value**.*

5. Set the threshold range for every severity you have selected. There are two ways to do this:

METHOD	ACTION
Enter values in the table.	Click the **Start** cell for each chosen severity, and enter the lower value for a required threshold range. Ensure that the start value for a low-severity threshold is lower than that for a high-severity threshold. A failure to be consistent when doing this will cause problems when alarms are raised.
Move thresholds in the colored bar above the table.	The colored bar repeats the settings chosen in the table in graphical terms. To set thresholds, move the mouse pointer over the threshold between two severities until it appears as a split-bar pointer. Click and drag the mouse to move the threshold to a new position. When you have completed the move, the change also appears in the table of severities below the bar.

6. Click **OK**.

To view the alarm Help in the Metric editor

1. Right-click the component and choose **Metrics**.
2. Click the **Alarm Help** tab.

You can also view Help for individual metrics in the Metric editor's General page, and Help for individual components in the Properties editor's General page.

Changing Data Source Properties

When you open the Metric editor for graphs in drilldowns, the Metric editor window contains a Data source page, which can be used to change the data source properties for the graphs.

Currently, the only property you can change is the color used to display a specified metric.

To change the data source properties

1. Right-click a drilldown graph and choose **Metrics**.
2. Click the **Data source** tab.
3. Click on a metric in the Metric Name window, and ensure that the associated check box is selected.
4. Click the **Series color** box, and choose a display color from the drop-down list.
5. Click **OK**.

Viewing and Editing Alarms

An alarm is logged when an event reaches anything higher than a normal severity, as defined in the Metric editor window. If the event changes to a higher severity, another alarm is logged. If it changes to a severity that is lower than the minimum severity defined in the Metric editor, the alarm is cancelled.

The Alarm Log drilldown shows alarms according to the filtering options set up on the Alarms tab in the Options window. The number of alarms displayed in the Alarm Log drilldown can be reduced by changing the filtering options.

This section explains how to:

- View current alarms
- View the alarm log
- View historical snapshots for specified alarms.
- Control which alarm details are displayed
- Ignore individual alarms for a specified time
- Control where to log alarms
- Save the contents of the alarms log
- View alarm log options

cont'd…

- Control which alarms are logged

- Control what to do when alarms occur

For an overview on alarms, see "Alarms and the Alarm Log" on page 23.

To view all the Spotlight alarms defined for the components of the current page

- Select **View | Show All Alarms**.

  This invokes the Metric editor for all the alarms in the current page. You can use the Metric editor to view and edit the current settings associated with each alarm.

The list of all alarms defined for a connection is not the same as the list of alarms raised for that connection. To view the list of raised alarms, see the Alarm log.

Viewing the Alarm Log

The alarm log lists the alarms raised by Spotlight for the current connection. What is actually displayed in this log depends on a number of factors, including:

- The filter rules that specify what can be shown in the log.

- The action rules imposed when an alarm is raised.

- Whether the alarm log contains data from previous sessions.

To view the alarm log

- Select **View | Options | Alarm Log**.

  The list of all alarms raised for a connection is not the same as the list of alarms defined for that connection. To view the list of defined alarms, see "The Metric Editor" on page 22.

  For more information on showing columns in a drilldown table, see "Viewing Performance Details in Drilldowns" on page 56.

To view historical snapshots for alarms

1. Open the Alarm Log.
2. Right-click on an alarm in the list.

3. Choose **Show snapshot** from the shortcut menu. Spotlight opens the relevant snapshot in History browser mode.

For more information on using Record and Playback, see "Viewing and Recording Historical Snapshots" on page 63.

To delete alarms

1. View the Alarm log drilldown.
2. Right-click on the Alarm log grid (table) to invoke its shortcut menu.
3. Choose **Filter settings…** from the shortcut menu to open the Alarm Log Options window.
4. Click **Action Rules** to open the Action Rules page.
5. Click **New** to create a new action rule to delete alarms.
6. In the Alarm Log Filter window:
   • Click one or more check boxes to set the conditions under which alarms will be deleted.
   • Click one or more check boxes to choose the action required. (To delete alarms, this will be either Delete or Delete after….)
   • In the Rule Description area, change the values in the new rule by clicking the appropriate hyperlink.
7. Click **OK** when you are finished.

   To activate the new rule, ensure that its associated check box is selected.

When you set an action rule for alarms, note that the new rule will apply only to alarms raised AFTER the rule was created or modified.
Also, deleting an alarm is NOT the same as filtering an alarm. Deleting removes alarms permanently from memory, while filtering simply hides logged alarms.

Ignoring Alarms

You can choose to ignore (or "snooze") Spotlight alarms for individual components that have associated thresholds (usually on the Spotlight home page).

You may want to do this when:

• A temporary situation causes an expected alarm whose existence in that situation is unimportant.

- There is a known problem (a network problem, for example) that is beyond your control; and a continuing reminder of the problem is neither necessary nor desirable.

If the alarm for a component is ignored,

- Alarms on ALL metrics for the specified component are ignored for the specified period.

- Alarms that are being ignored still contribute to the alarm log.

- Alarms that are being ignored still trigger historical snapshots, and are shown in the History Browser.

- Alarms that are ignored do not fire alarm log rules or take any associated actions.

- An entry is written to the Alarm log when a snoozed alarm is "unsnoozed".

You can "snooze" alarms only on a component that is already in an alarm state.

To ignore alarms

1. Right-click on the component where the alarm is raised.
2. Select **Snooze Alarm** and then a period of time during which alarms on that component will be ignored. (The available period ranges from five minutes to the duration of the current Spotlight session.)

   For the specified period, the home-page component (and any corresponding alarm log entry) displays the bell symbol shown at left. At the same time, the **Snooze Alarm** option on the shortcut menu displays a check mark.

To restore a currently ignored alarm

1. Right-click on a component that displays the bell symbol.
2. Select **Snooze Alarm**.

   This removes the associated check mark.

To set the alarm log directory

1. Select **View** | **Options** | **Alarm Log**.
2. Click **General Options** in the Options bar.
3. Modify **Log alarms to the following directory**.

   Select the check box if you want Spotlight to create a log file for the alarms raised. When the box is checked, the alarm log will be saved to the connection.log file in the folder specified in the associated text box, whose contents can be edited.

4. Click **OK**.

To export alarm log details

1. Right-click in the Alarm log window and choose **Save as**.
2. Enter the location and name of the file where you want to save alarm log details.
3. Click **Save**.

Viewing Alarm Log Options

You can choose how alarms are notified, displayed, and logged in the Alarm Log Options window.

To view alarm log options

1. Select **View** | **Options** | **Alarm Log**.
2. Click one of the items in the Options bar (General options, Filter Rules, or Action Rules).

   You can use these options to add, edit, and delete the options that govern the behavior of the alarm log.

 You can also view alarm log options from the Alarm Log drilldown by right-clicking an alarm in the alarm log, and choosing Filter Settings.

To retain or erase alarm log data

1. Select **View** | **Options** | **Alarm Log**.
2. Click **General Options** in the Options bar.
3. Modify the **When a connection is made** option.

   *If you choose **Append new alarms to the end of the log file**, the existing file will be retained and new log entries will be added to it. If you choose **Erase any previous log entries**, the old log file will be deleted and a new file begun for the current session.*

4. Click **OK**.

Viewing Alarm Help

When a component on a Spotlight home page raises an alarm, the color of the component changes. When that happens:

- The alarm Help explains why the alarm has been raised.
- The drilldowns associated with the alarm show you what has happened.

How you view the alarm Help depends on Spotlight's current configuration, which can be changed in the Console Options window. For more information on the options, see "Console Options" on page 16.

For **Always show balloon help** and **Only show help if an alarm is being raised**, you can view the alarm Help directly when you click on a component.

For **Always jump directly to the related drilldown**, clicking on the component takes you directly to the default drilldown associated with it. To view the alarm Help, you need to right-click on the component and invoke the Metric editor from the shortcut menu.

To view alarm Help from the Alarm Log drilldown

1. Open the alarm log.

   Each row in the log represents an alarm, and has a Help button associated with it.

2. Click a Help button to display the Help for the corresponding alarm.

   For more information on viewing alarm Help, see "Viewing and Editing Metrics" on page 84.

Creating Filter Rules for Alarms

Filter rules allow you to choose the alarms that are displayed in the alarm log.

To create filter rules

1. Select **View** | **Options** | **Alarm Log**.
2. Click **Filter Rules** in the Options bar.

    This opens the Filter rules page, which lists all current filter rules and displays the details of the rule currently highlighted.

3. Click **New** to open the Alarm Log Filter window, which contains two panes:

PANE	PURPOSE
Select the conditions for the alarm log filter	Sets the type of condition to use in the filter. When one or more conditions are set, a rule that contains each condition is displayed in the Rule description pane.
Rule description	Displays the rule created when one or more conditions are set in the Select the conditions for the alarm log filter pane at the top of the window. Editable parts of the rule are underlined and hyperlinked.

4. Select one or more check boxes in the Select the conditions for the alarm log filter pane to choose the corresponding condition(s).

    - Where the severity is…
    - Where the component is…
    - Where the value is greater than…
    - Where the value is less than…
    - Where the value is equal to/not equal to…
    - Where the alarm has been raised…
    - Where the connection is…
    - For all alarms…

    For more details on individual conditions, see "Conditions for Alarm Log Filters" on page 103.

5. When you have selected one or more of these boxes, use the contents of the Rule description pane to modify the condition(s) you have chosen. Click an underlined phrase to view the values that can be used to modify the condition(s).

6. Select a value from the displayed list.

cont'd…

7. Repeat Steps 4, 5 and 6 until your new filter is complete, and then click **OK** to return to the Filter Rules page.

For more information on alarms and alarm log rules, see Alarms and the Alarm Log, Alarm Log Options, and Using Alarm Log Rules.

To modify filter rules for alarms

1. Select **View** | **Options** | **Alarm Log**.

2. Click the Filter Rules item in the Options bar to open the Filter rules page, which lists all the current filter rules, and displays the details of the rule that is currently highlighted.

3. Click on an existing rule to highlight it, and then click **Modify** to open the Alarm Log Filter window, which contains two panes:

PANE	DESCRIPTION
Select the conditions for the alarm log filter	Sets the type of condition to use in the filter. When one or more conditions are set, a rule that contains each condition is displayed in the Rule description pane.
Rule description	Displays the rule created when one or more conditions are set in the Select the conditions for the alarm log filter pane at the top of the window. Editable parts of the rule are underlined and hyperlinked.

4. Select one or more check boxes in the Select the conditions for the alarm log filter pane to choose the corresponding condition(s).

   • Where the severity is…
   • Where the component is…
   • Where the value is greater than…
   • Where the value is less than…
   • Where the value is equal to/not equal to…
   • Where the alarm has been raised…
   • Where the connection is…
   • For all alarms…

   For more details on individual conditions, see "Conditions for Alarm Log Filters" on page 103.

5. When you have selected one or more of these boxes, use the contents of the Rule description pane to modify the condition(s) you have chosen. Click an underlined phrase to view the values that can be used to modify the condition(s).

6. Select a value from the displayed list.

7. Repeat Steps 4, 5 and 6 until your filter is complete, and then click **OK** to return to the Filter Rules page.

For more information on alarms and alarm log rules, see Alarms and the Alarm Log, Alarm Log Options, and Using Alarm Log Rules.

Creating Action Rules for Alarms

Action rules determine what Spotlight does when a specified alarm is raised.

To create action rules

1. Select **View** | **Options** | **Alarm Log**.

2. Click **Action Rules** in the Options bar to open the Action rules page, which lists all the current action rules, and displays the details of the rule that is currently highlighted.

3. Click **New** to open the Alarm Log Filter window, which contains three panes:

PANE	PURPOSE
Select the conditions for the alarm log filter	Sets the type of condition to use in the filter. When one or more conditions are set, a rule that contains each condition is displayed in the Rule description pane.
Select the actions to perform	Sets the actions that Spotlight performs when the specified alarm is raised. When one or more actions are chosen, a rule that contains each action is displayed in the Rule description pane.

cont'd…

PANE	PURPOSE
Rule description	Displays the rule created when one or more conditions are set in the Select the conditions for the alarm log filter pane at the top of the window. Editable parts of the rule are underlined and hyperlinked.

4. In the Select the conditions for the alarm log filter pane, select one or more check boxes to choose the corresponding condition(s).

   - Where the severity is…
   - Where the alarm has (not) been active in the last n minutes
   - Where the component is…
   - Where the value is greater than…
   - Where the value is less than…
   - Where the value is equal to/not equal to…
   - Where the alarm has been raised…
   - Where the connection is…
   - For all alarms…

   For more details on individual conditions, see "Conditions for Alarm Log Filters" on page 103.

5. In the Select the actions to perform pane, select one or more check boxes to choose the corresponding action(s).

   - Play sound
   - Run program
   - Delete
   - Delete after … minutes
   - Don't log
   - Send message to
   - Send e-mail to
   - Stop processing more rules

   For more details on individual actions, see "Actions for Alarm Log filters" on page 108.

6. When you have selected one or more of the boxes in the Select the conditions… and Select the actions… panes, use the contents of the Rule description pane to modify the choices you have made. Click an underlined phrase to view the values that can be used to modify the condition(s) and action(s).

7. Select a value from the displayed list, and click **OK**.

8. Repeat steps 4, 5, 6, and 7 until your new filter is complete, and then click **OK** to return to the Action Rules page.

For more information on alarms and alarm log rules, see Alarms and the Alarm Log, Alarm Log Options, and Using Alarm Log Rules.

To modify action rules for alarms

1. Select **View | Options | Alarm Log**.
2. Click the Action Rules item in the Options bar to open the Action rules page, which lists all the current action rules, and displays the details of the rule that is currently highlighted.
3. Click on an existing rule to highlight it, and then click **Modify** to open the Alarm Log Filter window, which contains three panes:

PANE	PURPOSE
Select the conditions for the alarm log filter	Sets the type of condition to use in the filter. When one or more conditions are set, a rule that contains each condition is displayed in the Rule description pane.
Select the actions to perform	Sets the actions that Spotlight performs when the specified alarm is raised. When one or more actions are chosen, a rule that contains each action is displayed in the Rule description pane.
Rule description	Displays the rule created when one or more conditions are set in the Select the conditions for the alarm log filter pane at the top of the window. Editable parts of the rule are underlined and hyperlinked.

4. In the Select the conditions for the alarm log filter pane, select one or more check boxes to choose the corresponding condition(s).

    *   Where the severity is…
    *   Where the alarm has (not) been active in the last n minutes
    *   Where the component is…
    *   Where the value is greater than…
    *   Where the value is less than…
    *   Where the value is equal to/not equal to…
    *   Where the alarm has been raised…
    *   Where the connection is…
    *   For all alarms…

    For more details on individual conditions, see "Conditions for Alarm Log Filters" on page 103.

5. In the Select the actions to perform pane, select one or more check boxes to choose the corresponding action(s).

    *   Play sound
    *   Run program
    *   Delete
    *   Delete after … minutes
    *   Don't log
    *   Send message to
    *   Send e-mail to·
    *   Stop processing more rules

    For more details on individual actions, see "Actions for Alarm Log filters" on page 108.

6. When you have selected one or more of the boxes in the Select the conditions… and Select the actions… panes, use the contents of the Rule description pane to modify the choices you have made. Click an underlined phrase to view the values that can be used to modify the condition(s) and action(s).

7. Select a value from the displayed list, and then click **OK**.

8. Repeat Steps 4, 5, 6 and 7 until your modified filter is complete, and then click **OK** to return to the Action Rules page.

For more information on alarms and alarm log rules, see Alarms and the Alarm Log, Alarm Log Options, and Using Alarm Log Rules.

Conditions for Alarm Log Filters

You can choose one or more of the following conditions from the Alarm Log Filter window when creating or editing an Alarm Log filter:

Where the severity is...

Severity is the degree of urgency of an alarm. Select **Where the severity is...** and then view the corresponding item in the Rule Description pane:

Where the severity is equal to Disabled severity

To specify the severity used in the rule

1. Click the operator link to choose one of the following options:

    is equal to
    is greater than
    is less than
    is greater than or equal to
    is less than or equal to
    is not equal to
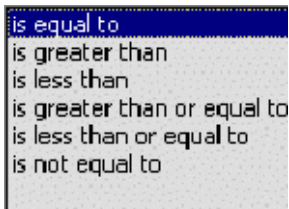
2. Click the Severity link to choose one of the following options:

    Disabled severity
    Normal severity
    Information
    Low severity
    Medium severity
    High severity
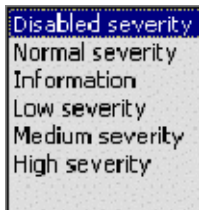
Where the alarm has (not) been active in the last n minutes

Spotlight alarms may be transient, lasting at most a few seconds, or they may persist for minutes or hours. You can use this condition to choose the length of time that an alarm must persist before Spotlight takes some kind of action. (You can choose the action to be taken in the Select the actions to perform pane.)

Select **Where the alarm has been active in the last 1 minutes** and then view the corresponding item in the Rule Description pane:

Where the alarm has been active in the last 1 minutes

To specify when you want the rule to apply

1. Click the **has been** link to choose an option from its list.

   has been
   has not been

2. Click the **1** link to open a numeric box where you can type or choose the desired time value.

   1

3. Click the minutes link to choose the desired time unit.

   minutes
   hours

Where the component is…

A component is the Spotlight object that represents an important feature of the system under investigation.

Select **Where the component is…** and then view the corresponding item in the Rule Description pane:

Where the component is {component name}

To specify the component that you want the rule to apply to

1. Click the **is** link to choose an option from its list.

2. Click the **{component name}** link to apply the rule to a chosen Spotlight component. This displays a Select control… window, where you can choose the component via its Spotlight application (plug-in), page (drilldown), and component name (control).
3. Click **OK** to confirm your choice.

Where the value is greater than…

This condition is often used in combination with other conditions. An example of this may be a rule with two conditions, as in:

"Where the component is… and   Where the value is greater than…"

Select **Where the value is greater than…** and then view the corresponding item in the Rule Description pane:

To specify how you want the rule to apply

1. Click the is greater than link to choose an option from its list.

2. Click the **1** link to open a text box where you can type the desired value.

3. Press **ENTER** to finish.

Where the value is less than…

This condition is often used in combination with other conditions. An example of this may be a rule with two conditions, as in:

"Where the component is… and   Where the value is less than…"

Select **Where the value is less than...** and then view the corresponding item in the Rule Description pane:

Where the value is less than 1

To specify how you want the rule to apply

1. Click the **is less than** link to choose an option from its list.

    is less than
    is less than or equal to

2. Click the **1** link to open a text box where you can type the desired value.

    1

3. Press **ENTER** to finish.

Where the value is equal to/not equal to...

This condition is often used in combination with other conditions. An example of this may be a rule with two conditions, as in:

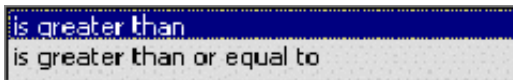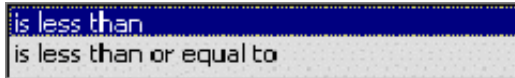"Where the component is... and   Where the value is equal to..."

Select **Where the value is equal to/not equal to...** and then view the corresponding item in the Rule Description pane:

Where the value is equal to 1

To specify how you want the rule to apply

1. Click the **is equal to** link to choose an option from its list.

    is equal to
    is not equal to

2. Click the **1** link to open a text box where you can type the desired value.

    1

3. Press **ENTER** to finish.

Where the alarm has been raised…

Alarms are raised when metric values exceed a minimum threshold. They are upgraded when they exceed a higher threshold. They are downgraded when they drop below a lower threshold. They are canceled when they drop below the minimum threshold.

Select **Where the alarm has been raised/canceled/upgraded/downgraded** and then view the corresponding item in the Rule Description pane:

Where the alarm has been raised

To specify the alarm condition that you want to apply

1. Click the **raised** link to choose an option from its list.

> raised
> cancelled
> upgraded
> downgraded
> raised or upgraded
> cancelled or downgraded

Where the connection is…

A Spotlight connection is the Spotlight view of a system under investigation. Connections have types (Spotlight on Exchange, for example) and names (chosen by the user, but initially the name of the host machine).

Select **Where the connection is…** and then view the corresponding item in the Rule Description pane:

Where the connection is {connection name}

To specify the connection that you want the rule to apply to

1. Click the **is** link to choose an option from its list.

> is
> is not

2. Click the **{connection name}** link to apply the rule to a chosen Spotlight connection. This displays a Select connection… window, where you can choose the connection via its type of connection (Connection filter) and name (Connection).
3. Click **OK** to confirm your choice.

For all alarms...

Use this option to choose a rule with NO conditions. All other conditions are disabled. The corresponding item in the Rule Description pane is **There is no rule selected**.

Actions for Alarm Log filters

You can choose one or more of the following actions from the Alarm Log Filter window when creating or editing an Alarm Log filter:

Play sound

The computer plays the specified sound when the alarm condition is met.

Select the **Play sound** option and then view the corresponding item in the Rule Description pane:

Play sound {Select sound file}

To specify the sound to play

1. Click the **{select sound file}** link to display an Open window, where you can browse for the required sound file.
2. When you find the file, click on it to choose it, and then click **Open** to confirm your choice.

Run program

The computer runs the specified executable (program) file when the alarm condition is met. Usually that program is one that you have written to perform a particular task. The task may be a simple action, or may be one that depends on a supplied Spotlight parameter a value or range of values, or the name of a component or connection.

Select the **Run program** option and then view the corresponding item in the Rule Description pane:

Run program {Select program} {optional command line parameters}

To specify the program to run

1. Click the **{select program}** link to display an Open window, where you can browse for the required program file.
2. When you find the file, click on it to choose it, and then click **Open** to confirm your choice.

3. If required, click the **{optional command line parameters}** link to choose any parameter(s) that may be needed when running the file.
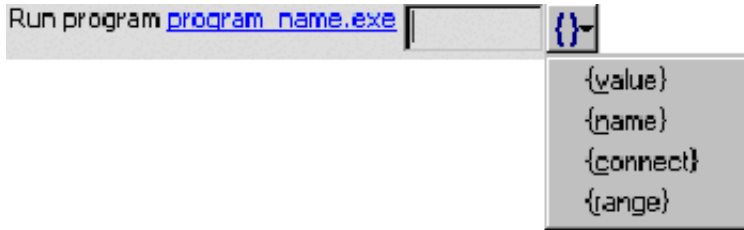
The parameters you can choose include individual values {value}, component names {name}, connection names {connect}, or ranges of values {range}. You can add multiple parameters of each type.

Delete

Delete the raised alarm from the Alarm Log drilldown. This does NOT delete the corresponding entry in the alarm log file, which is saved on disk.

Choose the **Delete** option to delete the alarm. The corresponding item in the Rule Description pane is **Delete the alarm**.

Delete after … minutes

Use this option to delete the raised alarm from the Alarm Log drilldown after the specified period of time. This does NOT delete the corresponding entry in the alarm log file, which is saved on disk.

Select the **Delete after…minutes** option and then view the corresponding item in the Rule Description pane:

To specify when to delete the alarm

1. Click the **1** link to open a numeric box where you can type or choose the desired time value.

2. Click the minutes link to choose the desired time unit.

Don't log

Don't write the alarm to the alarm log file. The alarm is still shown in the Alarm Log drilldown, but is not written to the alarm log file on disk.

Choose the **Don't log** option to delete the alarm. The corresponding item in the Rule Description pane is **Don't log the alarm**.

Send message to

Use this option to send a message to a specified machine on the network. The message contains the contents of the alarm that triggered the action.

Select the **Send message to...** option and then view the corresponding item in the Rule Description pane:

Send a message to {user name}

To specify the destination address

1. Click the **{user name}** link to open a text box.
2. Enter the name of the machine where you want to send the message.

Send email to

Use this option to send an email message to a specified destination. The message contains the contents of the alarm that triggered the action.

Select the **Send E-mail to...** option and then view the corresponding item in the Rule Description pane:

Send an email to {address}

To specify the destination address

1. Click the {address} link to open a text box.
2. Enter the email address where you want to send the message.

Stop processing more rules

Exit the current filter when the triggering condition is reached, and ignore subsequent commands.

Choose the **Stop processing more rules** option to end the current filter. The corresponding item in the Rule Description pane is **Stop processing more rules**.

Deleting Alarm Log Rules

Two types of rules can be applied to Spotlight alarms that can be displayed in the Alarm log:

- Filter rules, which govern whether alarms are shown in the Alarm log.
- Action rules, which dictate the action that Spotlight takes when alarms are triggered.

To delete an alarm log rule

1. Select **View | Options | Alarm Log**.
2. To delete a filter rule, click **Filter Rules** in the Options bar to open the Filter rules page.

   – OR –

   To delete an action rule, click **Action Rules** in the Options bar to open the Action rules page.

3. In the top pane, click the rule that you want to delete.
   The rule becomes highlighted.

4. Click **Delete**.
5. Click **Yes** to confirm that you want to delete the rule.
6. Click **OK** to close the Alarm Log Options window and apply the changes you have made.

For more information on alarms and alarm log rules, see Alarms and the Alarm Log, Alarm Log Options, andUsing Alarm Log Rules.

Renaming Alarm Log Rules

Two types of rules can be applied to Spotlight alarms that can be displayed in the Alarm log:

- Filter rules, which govern whether alarms are shown in the Alarm log.
- Action rules, which dictate the action that Spotlight takes when alarms are triggered.

To rename alarm log rules

1. Select **View | Options | Alarm Log**.
2. To rename a filter rule, click **Filter Rules** in the Options bar to open the Filter rules page.

   – OR –

   To rename an action rule, click **Action Rules** in the Options bar to open the Action rules page.

3. In the top pane, click the rule that you want to rename.
   The rule becomes highlighted.

4. Click **Rename**.
5. Enter the new name for the chosen rule and then click **OK**.
6. Click **OK** to close the Alarm Log Options window and apply the changes you have made.

For more information on alarms and alarm log rules, see Alarms and the Alarm Log, Alarm Log Options, and Using Alarm Log Rules.

Changing the Order of Alarm Log Rules

Two types of rules can be applied to Spotlight alarms that can be displayed in the Alarm log:

- Filter rules, which govern whether alarms are shown in the Alarm log.
- Action rules, which dictate the action that Spotlight takes when alarms are triggered.

The order in which alarm log rules are applied during a Spotlight session depends on where they appear in the lists contained in the Filter Rules and Action Rules pages of the Alarm Log Options window. Rules higher up in these lists are applied earlier; rules lower down are applied later.

To change the order in which an alarm log rule is applied

1. Select **View | Options | Alarm Log**.

2. To change the order for a filter rule, click **Filter Rules** in the Options bar to open the Filter rules page.

   – OR –

3. To change the order for an action rule, click **Action Rules** in the Options bar to open the Action rules page.

4. In the top pane, click the rule that you want to move. The rule becomes highlighted.

5. Click **Move up** to move the rule higher up in the list, and so be applied earlier. Click **Move down** to move the rule lower down in the list, and so be applied later.

6. Click **OK** to close the Alarm Log Options window and apply the changes you have made.

Pausing and Resuming

You can pause Spotlight so that the details you are viewing are not refreshed. Any actions that are in progress when you pause Spotlight are allowed to complete. No further actions are performed until you resume Spotlight's collection of data.

Note that pausing may affect:

• Calibration. If calibration is in progress when the Pause is started, it continues to run. The calibration finishes at the time it was originally set to finish. (It is not delayed by the Pause.)

• Drilldowns. Any drilldown that gathers information when pausing is started is affected by the Pause command.

To pause Spotlight

• Select **View | Pause**.

To resume Spotlight's collection of metric data

• Select **View | Resume**.

Saving Configurations

Once a Spotlight connection has been configured and calibrated, you can save the configuration you have chosen for re-use the next time that the same connection is made.

Alternatively you can save your configurations as templates for use with other similar systems.

To save the settings for the current connection

- Select **File | Save**.

  *To save the settings for all open connections, select **Save All**.*

  These options save the following data for the current system(s) :

  The metrics and related thresholds for each object.

  The maximum values of every dataflow graph.

  Zero is used as the minimum value for every dataflow.

To save the settings for the current connection as a template for use by other connections

- Select **File | Save as Template**.

  This option saves the Spotlight Page file for the current system as an .stx template file for use by other connections.

Help Features

Online Help within Spotlight can take a number of forms.

- The online user manual for Spotlight, complete with table of contents and index.
- Context-sensitive Help for windows and items within windows, including component Help, alarm Help, and metric Help.
- Customizable popup tooltips for components and metrics.

Online Help can be opened from both the Spotlight console and the Help menu.

Also available via the Help menu is the ability to build a support bundle, a zip file that you can send to Quest Software technical support when seeking additional Help for Spotlight problems.

To view the Contents page

- Select **Help | Contents**.

Viewing Context-sensitive Help

Spotlight's context-sensitive Help provides you with specialized information that is relevant to the task you are trying to complete. Spotlight provides three levels of context-sensitive Help:

HELP LEVEL	DESCRIPTION
Window level	Press F1 to view overview Help for the current Spotlight window.
What's this?	What's this? Help is field-level Help for individual items in the current window. There are three ways to view What's this? Help: • Toolbar Click Help (?) on the Spotlight toolbar, move the mouse Help pointer over a component, and click to display Help for the component. • Shortcut menu Right-click a component and choose What's this?. • Mouse (configurable) By default, Spotlight allows you to click on a component to view its component Help or alarm Help. However, Spotlight may have been configured to change this option. For more information, see "Viewing Alarm Help" on page 81 and "Viewing Alarm Help" on page 96.
Drilldown Help	Help for individual drilldown pages is available via a ? button at the top right of drilldown windows within the Spotlight console.

For more information on choosing how Help is displayed, see "Viewing and Editing Console Options" on page 70.

For more information on viewing alarm Help, "Viewing and Editing Alarms" on page 91.

For more information on viewing alarm Help in the Metric editor, see "Viewing and Editing Metrics" on page 84.

To view component Help

For more information on viewing component Help, see "Viewing and Editing Component Properties" on page 80.

For more information on viewing component Help in the Properties editor, see "Viewing and Editing Component Properties" on page 80.

For more information on viewing and editing component tips, see "Viewing and Editing Component Properties" on page 80.

For more information on viewing metric Help, see "Viewing and Editing Metrics" on page 84.

To build a support bundle when you want to submit a question to Quest Software

1. Select **Help | Support Bundle**.
2. Click on the displayed check boxes to select the Spotlight application(s) whose information you want to collect.
3. Click **Collect**.

   This creates a file called SpotlightSupport.zip in your Spotlight directory. This file contains a snapshot of your Spotlight installation. Send this file and your request for assistance to Quest Software (support@quest.com.)

3

Spotlight on Exchange 5.5

- Overview
- Key Features
- System Requirements
- How To Use This Guide

Overview

Spotlight on Exchange 5.5, part of Spotlight on Exchange Enterprise Edition 4.1, is a powerful diagnostic and problem resolution tool with a unique user interface that provides you with a real-time representation of the messaging system processes and components within your Microsoft Exchange 5.5 Server. Graphical flows illustrate the rate at which data is moving between server components. Colorful buttons, gauges, queues, spinners, and containers display the value of key statistics and metrics.

The power of Spotlight on Exchange 5.5 lies in its ability to provide visual and audible warnings if the performance metrics exceed acceptable thresholds. The buttons, gauges, queues, and other visual objects, collectively referred to as components, change color to show you the source of the problem. Warning messages are displayed well before the traffic levels of a server become critical.

A range of reports and graphs provide you with detailed information about a server. You can view this information on screen or you can print it.

You can find information about the following in the Spotlight on Exchange Enterprise Edition User Guide:

- Spotlight on Exchange Topology Viewer
- Exchange Server Diagnostic Tests
- Data Collection services and Notification
- Spotlight on Exchange Web Reports
- Spotlight on Exchange 2000/2003

Key Features

Spotlight on Exchange 5.5 has features that make your job as an Exchange administrator easier.

KEY FEATURE	DESCRIPTION
Real-time diagnostics	Spotlight on Exchange 5.5 provides visual representation of process flows within a Microsoft Exchange 5.5 Server so that you can observe actual server activity in real time.
Automatic calibration	Spotlight on Exchange 5.5 learns the normal range of values for your server and sets the visual indicators accordingly.
Effective warnings	Spotlight on Exchange 5.5 has visual and audible warnings that alert you when performance metrics exceed acceptable thresholds.
Rapid resolutions	Spotlight on Exchange 5.5 displays the details of problem areas, including user connections, MTA and Store activity, IMS queues, directory replication, and server resources for rapid problem resolution.
Detailed graphs	Spotlight on Exchange 5.5 has drilldown graphs and tables that provide detailed information allowing you to identify the source of each problem.
Multiple diagnostics	Spotlight on Exchange 5.5 simultaneously observes multiple servers.
Easy installation	Spotlight on Exchange 5.5 has a simple installation procedure that allows you to focus on the diagnostic information supplied.

System Requirements

Spotlight on Exchange 5.5 is installed as part of Spotlight on Exchange Enterprise Edition. Ensure that your system meets the following system requirements before attempting to install and run Spotlight on Exchange 5.5:

 Spotlight on Exchange 5.5 will not be installed if the graphics resolution is lower than 1024 X 768

Hardware Requirements

Before installing Spotlight on Exchange 5.5, review the following hardware requirements:

| TYPE	MINIMUM	RECOMMENDED
Processor	Pentium 3 or greater, running at a minimum speed of 800MHz	Pentium 4 running at a minimum speed of 1 GHz
RAM	256 MB	512 megabytes or more for computers running the Data Collection Engine or the SQL / MSDE Database
Disk	• 100 MB of free disk space for the application. • This space should exist on a local disk drive rather than a network drive. • The space requirement varies depending on the size of the database.	
Other	• Monitor capable of supporting a resolution of 1024 by 768 pixels or greater. Spotlight on Exchange is designed to run on a desktop area of 1024 by 768 pixels or greater. • Pointer device must be available to access all Spotlight on Exchange features.	

Software Requirements

Before installing Spotlight on Exchange 5.5 5.5, review the following minimum software requirements:

TYPE	MINIMUM
Operating System(s)	• Microsoft Windows 2000 (Server or Professional) SP3 – OR – • Microsoft Windows 2000 Advanced Server SP3 – OR – • Microsoft Windows XP Professional SP1 – OR – • Microsoft Windows 2003 Server
Web Server	• IIS 5.0 or 6.0(Windows 2003 Server only) • When you install Windows 2000 Server, IIS 5.0 is automatically installed. • If you use Windows 2000 Professional, or Windows XP Professional, you must manually add IIS 5.0 using the Add/Remove Programs facility. • You can install IIS on the same computer as Spotlight on Exchange or you can install IIS on a separate computer for enhanced performance and scalability.
Database Access	• MDAC (Microsoft Data Access Components) 2.6 or later
Database Server	• SQL Server 2000 SP3 – OR – • MSDE 2000 SP3
Browser	• Internet Explorer 5.5 – OR – • Internet Explorer 6.0
Email Client	Any of the following: • Microsoft Outlook 98 • Microsoft Outlook 2000 • Microsoft Outlook 2002 • Microsoft Outlook 2003

TYPE	MINIMUM
Other	• Local Windows Administrator privileges are required on the Spotlight on Exchange Console client.
	• Exchange Administrator 5.5 and Exchange System Manager privileges
	• For a distributed install, MDAC must be installed on the Console client , data collection engine computer, and IIS Server.

How To Use This Guide

Spotlight on Exchange is part of Quest Software's Spotlight suite of monitoring applications. Spotlight products share features that constitute the "Spotlight Basics". These menus, toolbars, windows, dialog boxes, and editors appear in the Spotlight console. All Spotlight applications become part of, and are launched from, the Spotlight console. See the following diagram:
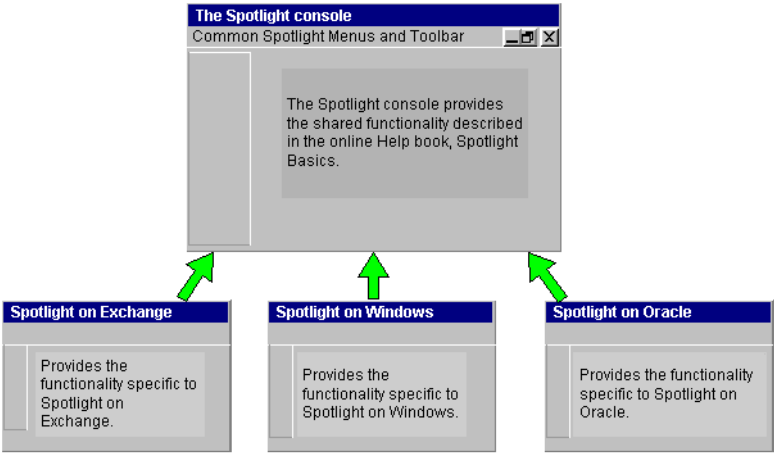
The following chapters of this User Guide provide explanations and instructions for the features specific to Spotlight on Exchange 5.5. To get the most out of this guide, read the documentation provided in Chapter One, "Introducing Spotlight Basics", and Chapter Two, "Configuring and Using Spotlight Basics".

The first chapter explains the main Spotlight window, metrics, thresholds, severities, and drilldowns. It also describes the main visual features of the Spotlight interface: menus, toolbars, windows, and editors.

The second chapter explains how to configure the way in which Spotlight collects and displays information. It also describes how to use features that are shared by all Spotlight applications, and how to manage Spotlight features such as metrics, thresholds, severities, and alarms.

4

Desktop Features

- Understanding the Home Page
- Menus
- Panels
- Drilldown Buttons

Understanding the Home Page

One of the major features of Spotlight on Exchange 5.5 is its user interface. The home page shows a quick and intuitive view of the activity and status of the server being analyzed, highlighting any problem areas with a dynamic visual display.

Although the home page displays one server at a time, Spotlight on Exchange 5.5 simultaneously analyzes multiple servers. The name of the server currently displayed appears in the Connection identifier at the upper right corner of the home page. A list of all of the servers to which Spotlight on Exchange 5.5 has formed a connection appears in the Connections list on the left side of the home page, as shown in the image below:

The main elements of Spotlight on Exchange 5.5 home page are:

- Menus
- Toolbar
- Connection identifier
- Connections list
- Components
- Panels

Menus

The four standard Spotlight menus are File, View, Favorites, and Help. Spotlight on Exchange 5.5 has an added standard menu feature. You can click the 3D Graphs option on the View menu to change the appearance of drilldown graphs.

As mentioned previously, the Spotlight products share common menus. For more information about the Spotlight menu items, see "Spotlight Menus" on page 33.
For information about the Spotlight toolbar, Connection identifier, Connections list, components, and panels, see "Elements in a Spotlight Home Page" on page 12.
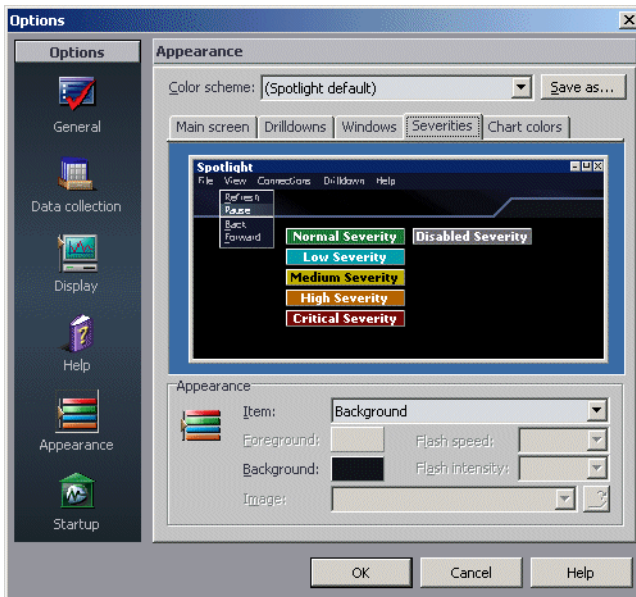
Spotlight on Exchange 5.5 Colors

The components in the home page display default colors that represent the severity levels of the thresholds set for the individual components. The severity colors for Spotlight on Exchange 5.5 are shown in this image. These colors have been preconfigured. Red represents a critical severity and green represents a normal severity.

You can change the default colors by using the Console Options window shown below:

To Access the Spotlight Console Options window

1. Select **View** | **Options**.
2. Select **Spotlight Console**.

Critical Thresholds

Spotlight on Exchange can have difficulty gathering data at certain times. This situation can occur if related counters are not available or are not functioning properly on the remote server. For more information about data gathering problems, see .

Panels

Related components are grouped together in panels. Each panel is connected by dataflows that illustrate the rate at which the server is performing tasks. The groupings reflect how the server works. Spotlight on Exchange updates the statistics and flows in real time.

Connections Panel

You can quickly scan the Connections panel to discover information about the activity of users. The number of active sessions established through remote procedure calls is indicated on the RPC (remote procedure call) component. A high number of active sessions is not in itself a problem unless other signs of bottlenecks appear.

If you are concerned about the numbers displayed, click the components to view detailed information displayed in drilldown graphs and tables.

All messages entering the Exchange server are received through one of the connections displayed on the Connections panel. The messages are then routed through the Exchange system before exiting through the same connections.

The dataflows on the home page indicate this flow of messages through the system.

cont'd…

The following table provides details about the Connection panel:

| COMPONENT	DESCRIPTION
MTA Associations	Indicates the number of currently active MTA (Message Transfer Agent) session connections to the server. These connections can be to other Exchange servers or MTAs from other foreign mail systems.
RPC	Shows the number of active sessions established through RPCs (Remote Procedure Calls). RPCs are generated by users running the Exchange or Outlook client and from other Exchange servers in the site.
IMAP4	Indicates the number of currently active Internet Message Access Protocol client connections. IMAP4 (Internet Mail Access Protocol 4) is an Internet messaging protocol that enables a client to access mail on a server rather than downloading it to the user's computer. IMAP4 is designed for an environment where users log on to the server from a variety of different workstations or across slow links.
POP3	Shows the number of currently active POP 3 (Post Office Protocol 3) client connections. POP3 is an Internet protocol that allows a client to download mail from an inbox on a server to the client computer where messages are managed. This protocol works well for computers that are unable to maintain a continuous connection to a server.
SMTP In	Displays the number of current SMTP (Simple Mail Transfer Protocol) connections to the Internet Mail Service established by other SMTP hosts. SMTP is the standard protocol for Internet mail. SMTP transfers mail from server to server and from mail system to mail system.
SMTP Out	Displays the number of current SMTP (Simple Mail Transfer Protocol) connections that the Internet Mail Service has established to other SMTP hosts.

MTA Panel
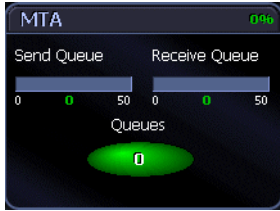
The MTA (Message Transfer Agent) panel displays information about email messages processed by the MTA. You can quickly see how many messages are in the Send Queues and the Receive Queues. If the numbers are high, you can click the components to view detailed information displayed in drilldown graphs and tables.

The following table provides details about the MTA panel:

COMPONENT	DESCRIPTION
	The percentage of elapsed time that all MTA process threads used to execute instructions.
Send Queue	The number of messages not yet transferred to a remote MTA.
Receive Queue	The number of messages not yet processed to completion by the MTA.
Queues	The maximum number of outstanding messages in any MTA Queue, which indicates the number of messages not yet processed to completion by the MTA.

IMS Panel
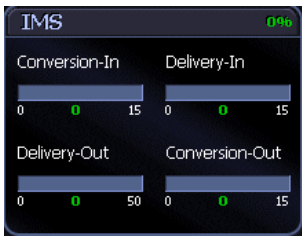
The components of the IMS (Internet Mail Service) panel display information about messages being transferred between remote SMTP servers and your server. You can quickly see how many messages are queued. If you are concerned about the numbers, click the components to view detailed information displayed in drilldown graphs and tables. The following table provides details about the IMS panel:

COMPONENT	DESCRIPTION
0%	Percentage of elapsed time that all IMS process threads used to execute instructions.
Conversion-In	Number of SMTP messages entering the Exchange server and needing to be converted to internal Exchange format.
Delivery-In	Number of messages that have been converted and are waiting for delivery to the Information Store.
Delivery-Out	Number of messages that have been converted and are waiting for delivery to remote Internet mail servers.
Conversion-Out	Number of SMTP messages leaving the Exchange server and needing to be converted to Internet mail format.

Information Store Panel

The Information Store panel displays information about email messages currently queued in the private and public information stores.

You can watch the dataflows as they move from the Connection panel to the Information Store panel and back to the Connection panel. This is a real-time display of the messaging activity within the Exchange server.

The three container components display the amount of disk space that has been used and that is available on the volumes containing:

•The Private database (Priv.EDB)

•The Public database (Pub.EDB)

•The Transaction logs

The Private Store component is configured to alarm on the size of the store and for the amount of free disk space remaining. There is a limit of 16 GB set for the Exchange 5.5 Standard Edition private store database.

You can click each component to view detailed information displayed in drilldown graphs and tables.

The following table provides details about the Information Store panel:

| COMPONENT	DESCRIPTION
0%	The percentage of elapsed time that all Information Store process threads used to execute instructions.
Active Users	The total number of active clients connecting to the Information Store that have not been timed out. This includes Outlook and Exchange clients plus IMAP, POP3, and Outlook Web Access clients.
Private Store [PRIV.EDB]	Size: The total disk space used by the Private Information Store database (PRIV.EDB). Exchange Server Standard edition has a limit of 16 GB. Once this limit is reached, the store process automatically shuts down.
	Free Disk: The total unused disk space on the volume containing the Private Information Store database. This value includes all Exchange-related files and all other files and programs that reside on this disk volume.
	Receive Queue: Shows the number of messages in the Receive Queue of the Private Information Store waiting to be processed by the Information Store.
	Send Queue: Shows the number of outgoing messages in the Send Queue of the Private Information Store.
Public Store [PUB.EDB]	Size: The total disk spaced used by the Public Information Store database (PUB.EDB). Exchange Server Standard edition has a limitation of 16 GB. Once this limit is reached, the store process automatically shuts down.
	Free Disk: The total unused disk space on the volume containing the Public Information Store database. This value includes all Exchange-related files and all other files and programs that reside on this disk volume.
	Receive Queue: The number of messages the Public Information Store has received and is processing. These messages are waiting to be processed by the Information Store.
	Send Queue: The number of messages in the send queue of the Public Information Store. This queue holds all outgoing messages from the Public Information Store.
Transaction Logs	Size: Space used by the Transaction Logs.
	Free Disk: The total disk space available on the transaction logs volume. The disk volume should always have enough free disk space to allow for normal mailbox activity. Performing full backups clears transaction logs.

Directory Panel
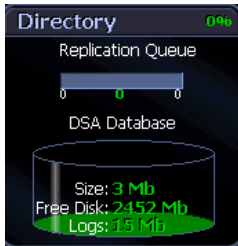
The Directory panel displays information about the directory database. The Replication Queue indicates the number of directory synchronizations the Directory Service Agent (DSA) needs to perform. The queue may be non-zero at peak directory replication times, but it should not stay there consistently.

The DSA Database disk component shows the total unused disk space on the volume containing the directory database. The disk volume should always have enough free disk space to allow for normal growth of the number of mailboxes, custom recipients, and distribution lists, and to perform database defragmentation. If you are concerned about the information displayed on the Directory panel, click the components to view detailed graphs and tables.

The following table provides details about the Directory panel:

COMPONENT	DESCRIPTION
	The percentage of elapsed time that all Directory process threads used to execute instructions.
Replication Queue	The number of directory synchronizations that are queued for this server, but not yet processed.
DSA Database	The total unused disk space on the volume that contains the directory database.

NT Subsystem Panel
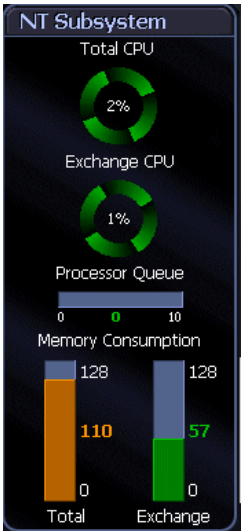
You can quickly scan the NT Subsystem panel to determine system and Exchange memory use. The numbers in the center of the spinner components indicate the percentage of CPU and Exchange CPU use. The Processor Queue tells you the number of threads in the processor queue.

If you are concerned about the numbers displayed on the NT Subsystem panel, click the components to view detailed graphs and tables.

The following table provides descriptions of the components found on the NT Subsystem panel:

COMPONENT	DESCRIPTION
0%	The percentage of elapsed time that all NT Subsystem process threads used to execute instructions.
Total CPU	The CPU utilization of all processes on the server. This value can be affected by any single process that consumes CPU cycles, such as paging or applications executing locally on the server.
Exchange CPU	The total CPU used by all Exchange processes.
Processor Queue	The number of threads in the processor queue. There is a single queue for processor time even on computers with multiple processors.
	Unlike the disk counters, this counter counts ready threads only, not threads that are running. A sustained processor queue with a value greater than two generally indicates processor congestion. This counter displays the last observed value only; it is not an average.

COMPONENT	DESCRIPTION
Memory Consumption-Total	Physical memory usage normally remains close to the total amount of physical memory installed on the system unless the amount of physical memory you have exceeds the amount of virtual memory that Windows is using.
	Windows normally keeps some physical memory available for immediate reuse.
Memory Consumption-Exchange	Exchange Memory Consumption is the total physical memory in use by all Exchange processes. High memory use is normal operating behavior for Exchange.
	Exchange Server 5.5 uses all available RAM for the best performance possible, unless memory usage is limited by using the Exchange Performance Optimizer. Exchange server will release memory to other applications as required.

Drilldown Buttons

The toolbar buttons used to access drilldowns are specific to each Spotlight application. The following table identifies the drilldown buttons in Spotlight on Exchange. For more information about using drilldowns, see "Understanding Drilldowns" on page 140.

CLICK THIS	TO OPEN THE FOLLOWING DRILLDOWN
	Protocols For more information about this drilldown, see see "Using the Protocols Drilldown" on page 141.
	Message Transfer Agent (MTA) For more information about the MTA drilldown, see see "Using the Message Transfer Agent (MTA) Drilldown" on page 142.
	Internet Mail Service (IMS) For more information about this drilldown, see see "Using the Internet Mail Service Drilldown" on page 145.
	Information Store (IS) For more information about this drilldown, see see "Using the Information Store (IS) Drilldown" on page 152.

cont'd…

CLICK THIS	TO OPEN THE FOLLOWING DRILLDOWN
	Directory For more information about this drilldown, see "Using the Directory Drilldown" on page 157.
	Processes For more information about this drilldown, see "Using the Processes Drilldown" on page 160.
	CPU For more information about this drilldown, see "Using the CPU drilldown" on page 168.
	Memory For more information about this drilldown, see "Using the Memory drilldown" on page 169.
	Disks For more information about this drilldown, see "Using the Disks drilldown" on page 173.
	Network For more information about this drilldown, see "Using the Network drilldown" on page 175.
	Activity Summary For more information about this drilldown, see "Using the Activity Summary Drilldown" on page 177.

5

Spotlight on Exchange Drilldowns

- Understanding Drilldowns
- Displaying Drilldowns

Understanding Drilldowns

The hierarchical design of Spotlight on Exchange makes it possible for you to analyze a server at different levels of detail.

At its highest level (the home page), Spotlight on Exchange displays a visual representation of the status of the major features of the current server. The detail at this level is designed to help you locate and identify bottlenecks quickly.

When a component displays a critical severity by turning red for example, you can display a detailed breakdown, called a drilldown, of the underlying statistics by clicking on the component.

Each drilldown contains a series of tables and graphs that provide you with specific information. The statistics that are available help you identify and anticipate performance problems.

Displaying Drilldowns

Drilldowns can be displayed by using the drilldown buttons on the toolbar or by clicking on a component on the home page. If you are unable to view the drilldown by clicking on the component, it is because the Always jump directly to the related drilldown option, as shown in the image below, has not been selected. You can select this option in the Spotlight Console Options window.
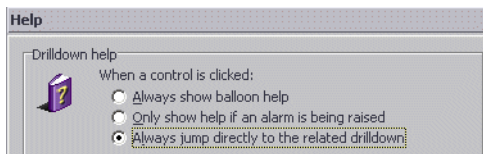
For information on how to access the Spotlight Options window, see "Console Options" on page 16.

For more information on drilldown buttons, see "Drilldown Buttons" on page 137.

Using the Protocols Drilldown

The Protocols drilldown displays two tabs:

- Connections tab
- Activity tab

The tabs, called drilldowns, show detailed information about current connections to the server that is being analyzed.

To view the Protocols drilldown

- Click the Protocols drilldown button on the toolbar.

Connections Tab

The Connections tab displays the following graphs detailing the types and numbers of connections to the server:

GRAPH	DESCRIPTION
RPC	The number of remote sessions established using remote procedure calls.
POP3	The number of currently active POP (Post Office Protocol) client connections.
LDAP	The number of current LDAP (Lightweight Directory Access Protocol) connections.
IMAP4	The number of clients using IMAP4 protocol.
NNTP	The number of users connected to newsgroups.
SMTP	The number of SMTP hosts connected to this server.
OWA	The number of current OWA (OutLook Web Access) connections on this server.

Activity Tab

The Activity tab displays the following graphs detailing the activity levels for connections to the server:

GRAPH	DESCRIPTION
RPC	The bytes per second consumed as a result of RPC calls sent and received.
POP3	The bytes per second used as a result of POP connections.
LDAP	The number of bytes per second used as a result of LDAP messages sent and received.
IMAP4	The number of bytes per second used as a result of IMAP4 connections.
NNTP	The number of bytes per second used as a result of NNTP activity.
SMTP	The number of bytes per second used as a result of SMTP connections.

Using the Message Transfer Agent (MTA) Drilldown

The Message Transfer Agent (MTA) drilldown includes five tabs:

- Activity tab
- Load tab
- Queues tab
- Disk tab
- Statistics tab

The tabs, called drilldowns, provide detailed information about recent MTA activity.

To display the Message Transfer Agent (MTA) drilldown

- Click the Message Transfer Agent drilldown button on the toolbar.

Activity Tab

The Activity tab displays the following graphs that provide detailed information about messages processed by the MTA:

GRAPH	DESCRIPTION
Messages Processed/sec	The number of messages that the MTA is processing per second.
MTA Bytes/sec	The amount of flow between this MTA and others within the organization.
Message Bytes Processed/sec	The number of bytes that the MTA is processing per second.
Adjacent MTA Connections	The number of connections between this MTA and others within the organization.

Load Tab

The Load tab displays graphs that provide details about the MTA such as the number of outstanding messages in the Work Queue or the number of free buffer elements in the MTA pool. The Load tab displays the following graphs:

GRAPH	DESCRIPTION
Work Queue Length	The number of outstanding messages in the Work Queue, which indicates the number of messages not yet processed to completion by the MTA.
Work Queue Recipients	The total number of recipients specified in all messages currently stored in the MTA.
Free Buffer Elements	The number of free buffer elements in the MTA pool.
Work Queue Length (KB)	The total volume of message content currently stored in the MTA, measured in kilobytes.
Threads in Use	The number of threads in use by the MTA (does not include RPC threads). This number can be used to determine whether additional processors could be of benefit.
Free Buffer Headers	The number of free buffer headers in the MTA pool.

Queues Tab

The Queues tab displays information, described in the following table, detailing the target MTA such as its home site and the number of messages queued for the target MTA:

COLUMN	DESCRIPTION
Queue Name	The queue for which this MTA has messages queued.
Destination Site	The home site of the target MTA.
Queue Size	The number of messages queued for the target MTA.
Network Status	The status of the target MTA as seen from this computer.
Average IP Ping Time	The average ping response time between this computer and the target MTA.
Min. IP Ping Time	The minimum ping response time between this computer and the target MTA.
Max. IP Ping Time	The maximum ping response time between this computer and the target MTA.

Disk Tab

The Disk tab displays the following graphs detailing the rate at which the MTA is processing files:

GRAPH	DESCRIPTION
Disk File Opens/sec	Indicates the rate at which the MTA is opening files on disk.
Disk File Reads/sec	Indicates the rate at which the MTA is reading from files on disk.
Disk File Deletes/sec	Indicates the rate at which the MTA is deleting files on disk.
Disk File Writes/sec	Indicates the rate at which the MTA is writing to files on disk.

Statistics Tab

The Statistics tab displays two graphs that provide current information about total volumes of data and recipients processed by the MTA:

GRAPH	DESCRIPTION
MTA Statistics	Indicates statistics for total volumes of data and recipients processed by the MTA since MTA start up.
Total Conversions	Indicates the total number of messages successfully converted from one form to another, as well as the total number of messages which failed to be converted from one form to another, since MTA start up.

Using the Internet Mail Service Drilldown

The Internet Mail Service drilldown includes eight tabs:

- Activity tab
- Load tab
- Queued In tab
- Queued Out tab
- Queued Contents In tab
- Queued Contents Out tab
- Queued SMTP Out Hosts tab
- Statistics tab

The tabs, called drilldowns, display information detailing the current IMS activity.

To display the Internet Mail Service drilldown

- Click the Internet Mail Service drilldown button on the toolbar.

Activity Tab

The Activity tab displays the following graphs that detail the activity of the IMS:

GRAPH	DESCRIPTION
Inbound Bytes/hr	The rate at which bytes transferred to the Exchange server.
Inbound Messages/min	The rate at which messages are transferred from the Internet to the Exchange server.
Inbound Connections/hr	The rate of inbound connections to the Exchange server.
Outbound Bytes/hr	The rate of bytes transferred from the Exchange server to the Internet.
Outbound Messages/min	The rate at which messages are transferred from the Exchange server to the Internet.
Outbound Connections/hr	The rate of outbound connections from the Exchange server.

Load Tab

The Load tab displays the following graphs that detail the current load on the IMS such as the percent of CPU time consumed by the IMS:

GRAPH	DESCRIPTION
% CPU Time	Indicates the percent of process time consumed by the IMS.
Memory Working Set	Indicates the amount of memory allocated to the IMS.

Queued In Tab

The Queued In tab displays the following graphs that detail the number of incoming messages in the queues at various stages of transit between the IMS and the Information Store (IS):

Graph	Description
Conversion-In: Number of Messages Awaiting Conversion from SMTP	The number of messages that are queued to disk in SMTP format.
	As incoming SMTP messages are received, they are spooled to disk before being converted to MDBEF format for transfer to Exchange.
Delivery-In: Number of Messages Awaiting Transfer to IS	The number of messages that have been converted to native Exchange format (MDBEF) but not yet picked up by the IS.

Queued Out Tab

The Queued Out tab displays the following graphs detailing the number of queued outgoing messages at various stages during the transfer from the IS to the IMS:

GRAPH	DESCRIPTION
Conversion-Out: Number of Messages Awaiting Conversion to SMTP	The number of messages waiting in the IS for delivery to the IMS.
	These messages have not yet been converted to SMTP.
Delivery-Out: Number of Messages Awaiting Delivery	The number of messages spooled on disk awaiting delivery to an SMTP host.
	These messages have been converted to SMTP format.

Queued Contents In Tab

The Queued Contents In tab displays a drilldown with two tables that list messages queued for inbound delivery by the IMS to the server.

You can set options that define a message view in the Internet Mail Services (IMS) Queued Contents tabs by using the Spotlight on Exchange 5.5 Options window.

To access the Spotlight on Exchange 5.5 Options window

- Click **Edit Constraints** on the Queued Contents In tab.

The Conversion-In table details messages queued on disk and waiting to be converted from Internet Mail format to Microsoft Exchange MAPI format:

CONVERSION-IN (ON DISK) COLUMN	DESCRIPTION
Arrival Date	Date and time the message was put into the IMS queue.
Originator	Internet Mail address of the originator.
To	Internet Mail address of one or more recipients.
Message Size (KB)	Size of the message in kilobytes.
Subject	Message subject.
File Name	Associated message file name (on disk).

The Delivery-In table provides information on messages queued in a MAPI store and waiting to be delivered to the Microsoft Exchange Private Store:

DELIVERY-IN (IN STORE) COLUMN	DESCRIPTION
Arrival Date	Date and time the message was put into the IMS queue.
Originator	Display name of the user who sent the message.
To	Display name(s) of the message recipient(s).
Message Size (KB)	Size of the message in kilobytes.
Subject	Message subject.
Priority	Priority (order and speed) at which the IMS will process the message.
IMS Importance	Importance of the message as set by the originator (sending user).
Message Class	Sender-defined MAPI message class. For example, IPM.note is a standard interpersonal message.

Queued Contents Out Tab

The Queued Contents Out tab displays two tables, the Conversion-Out table and the Deliver-Out table, detailing the queued messages bound for a remote Internet Mail destination.

You can set options that define a message view in the Internet Mail Services (IMS) Queued Contents tabs by using the Spotlight on Exchange 5.5 Options window.

To access the Spotlight on Exchange 5.5 Options window

- Click **Edit Constraints** on the Queued Contents In tab.

For more information on the Options window, see "" on page 137.

The Conversion-Out table gives information on messages queued in the Microsoft Exchange MAPI Store and waiting for conversion to Internet Mail format:

CONVERSION-OUT (IN STORE) COLUMN	DESCRIPTION
Arrival Date	Date and time the message was put into the IMS queue.
Originator	Display name of the user who sent the message.
To	Display name(s) of one or more message recipients.
Message Size (KB)	Size of the message in kilobytes.
Subject	Message subject.
Priority	Priority (order and speed) at which the IMS will process the message.
IMS Importance	Importance of the message as set by the originator (sending user).
Message Class	Sender-defined MAPI message class. For example, IPM.note is a standard interpersonal message.

The Delivery-Out table provides information about messages queued on disk, in Internet Mail format, and waiting for delivery to their remote destination using SMTP:

DELIVERY-OUT (ON DISK) COLUMN	DESCRIPTION
Arrival Date	Date and time the message was put into the IMS queue.
Originator	Internet Mail address of the originator.
To	Internet Mail address of one or more recipients.
Message Size (KB)	Size of the message in kilobytes.
Subject	Message subject.
File Name	Associated message file name (on disk).

Queued SMTP Out Hosts Tab

The SMTP Out Hosts tab displays the following table identifying messages queued by the host. Use this view to determine if a specific host is a bottleneck:

COLUMN	DESCRIPTION
Hosts	Indicates hosts for which there are queued messages.
Number of Messages	Indicates the number of messages queued to a given host.

Statistics Tab

The Statistics tab displays the following graphs detailing the IMS activity since start up:

GRAPH	DESCRIPTION
Connections	Indicates IMS connection counts since start up.
Undeliverable Messages	Indicates IMS undeliverable message counts since start up.
Recipients	Indicates the total number of IMS recipients since start up.
Messages	Indicates the total number of messages processed by the IMS since start up.
Data	Indicates the total volume of data processed by the IMS since start up.
Conversions	Indicates the total number of message conversions performed by the IMS since start up.

Using the Information Store (IS) Drilldown

The Information Store drilldown displays eight tabs:

- Store Activity tab
- Private Activity tab
- Public Activity tab
- Public Replication tab
- MAPI Users tab
- Database tab
- Database I/O tab
- Statistics tab

The tabs show detailed information about the current activity of the IS.

To display the Information Store drilldown

- Click the Information Store drilldown button on the toolbar.

Store Activity Tab

The Store Activity tab displays the following graphs detailing the activity levels of the store:

GRAPH	DESCRIPTION
Store CPU Time	The percentage of processor time consumed by the information store.
Activity Breakdown	The number of messages processed for both the private and public information store.
RPC Operations/sec	The rate at which RPC operations occur. RPC operations to the store are generated primarily by Exchange and Outlook client activity.
Active Client Logons	The number of user connections that have shown some activity in the last 10 minutes.
Push Notifications/sec	The rate at which notifications are being sent to clients that have registered for notifications of changes to tables in the information store.
Database Session Hit Rate	The percent hit rate on reusing database sessions.

Private Activity Tab

The Private Activity tab displays the following graphs detailing the activity levels for the private information store such as the rate at which messages are being sent to and received from the private store:

GRAPH	DESCRIPTION
Message Activity	The rate at which messages are being sent to and received from the private store.
Queues	The number of queued messages to and from the private store.
Messages Opened/sec	The rate at which requests to open messages are submitted to the information store.
Active Client Logons	The number of clients that performed any action within the last 10 minute time interval.
Average Delivery Time	The average time between the submission of a message to the information store and submission to the message transfer agent or to all local recipients for the last 10 messages.
Categorization Count	The number of categorizations that exist in the private information store.
	Categorizations are created when a user creates a filtered view or performs a search. When the information store must maintain an excessive number of categorizations, performance can be affected.

Public Activity Tab

The Public Activity tab displays the following graphs that detail the activity levels for the public information store, such as the rate at which messages are being sent to and received from the public store:

GRAPH	DESCRIPTION
Message Activity	The rate at which messages are being sent to and received from the public store.
Queues	The number of queued messages sent to and received from the public store.
Messages Opened/sec	The rate at which requests to open messages are submitted to the information store.

cont'd…

GRAPH	DESCRIPTION
Active Client Logons	The number of clients that performed any action within the last 10 minute time interval.
Average Delivery Time	The average time between the submission of a message to the information store and submission to the message transfer agent or to all local recipients for the last 10 messages.
Categorization Count	The number of categorizations that exist in the public information store. Categorizations are created when a user creates a filtered view or performs a search. When the information store must maintain an excessive number of categorizations, performance can be affected.

Public Replication Tab

The Public Replication tab displays the following graphs and a table detailing the public folder replication activity, such as the rate at which messages are sent from the information store to other NNTP servers by the Internet News Service:

GRAPH	DESCRIPTION
Replication Queue	The number of replication messages waiting to be processed.
News Feed Replication Rate	The rate at which messages are sent from the information store to other NNTP servers by the Internet News Service.

The following table details replication statistics since server start:

REPLICATION FUNCTION	DESCRIPTION
Backfill Data Messages	The number of replication messages sent or received in response to backfill requests from other servers since service start up.
Backfill Requests	The number of backfill request replication messages that have been sent to or received from other servers since service start up.
Folder Changes	The number of replication messages due to public folder hierarchy changes that have been sent to or received from other servers since service start up.
Folder Data Messages	The number of replication messages due to changes to items in public folders that have been sent to or received from other servers since service start up.

REPLICATION FUNCTION	DESCRIPTION
Folder Tree Messages	The number of replication messages due to public folder hierarchy changes that have been sent to or received from other servers since service start up.
Message Changes	The number of changes to items in public folders that have been sent to or received from other servers since service start up.
Messages	The total number of replication messages that have been sent to or received from other servers since service start up.

MAPI Users Tab

The MAPI Users tab displays information, described in the following table, that identifies the users connected to the IS:

COLUMN	DESCRIPTION
Mailbox	The name of the active mailbox.
Last Windows NT Logon	The Windows NT account used to authenticate against the connected mailbox.
Last Logon Time	The last time a user logged on to the mailbox.
Last Logoff Time	The last time a user logged off from the mailbox.
Connected	Whether or not a user is connected to the mailbox.
Connect Duration	The length of time the user has been connected.
Message Count	The number of messages in the mailbox.
Mailbox Size(KB)	The size of the mailbox.
Mailbox Quota Status	Whether or not the mailbox is exceeding store quota limits.

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Database Tab

The Database tab displays a graph that shows the consumed and remaining disk space for partitions containing the private and public information stores.

GRAPH	DESCRIPTION
Disk Space	Displays the used, free, and other disk space for partitions containing Priv.EDB and Pub.EDB as well as transaction logs.

Database I/O Tab

The Database I/O tab displays the following graphs that identify activity between the IS process and the private information store database:

GRAPH	DESCRIPTION
Cache Hit Ratio	The percentage of database file page requests that were fulfilled by the database cache without causing a file operation. If this percentage is too low, the database cache size may be too small.
File Operations Pending	The number of reads and writes issued by the database cache manager to the database file(s) that are currently being processed by the operating system. A large number of pending file operations can increase system throughput but will increase response time for individual operations. Typically, a larger number means that file operations to the database file(s) may be a bottleneck.
Log Writes/sec	The number of times the log buffers are written to the log file(s) per second. If this number approaches the maximum write rate for the media holding the log file(s), the log may be a bottleneck.
File Reads/Writes	The rate that bytes are transferred to or from the database file(s) into the database cache per second. If this rate is too high, the database cache size may be too small.
Log Record Stalls/sec	The number of log records that cannot be added to the log buffers per second because they are full. If this counter is non-zero most of the time, the log buffer size may be a bottleneck.
Log Threads Waiting	The number of threads waiting for their data to be written to the log in order to complete an update of the database. If this number is too high, the log may be a bottleneck.

Statistics Tab

The Statistics tab displays the following graphs that detail the messages sent to and received from the server since the start of service:

GRAPH	DESCRIPTION
Message Count	Message Count is the total number of messages processed by the private or public store since the service started.
Peak Activity	Peak Client Logons is the maximum number of concurrent client logons since the information store service started.
	The Push Notifications Cache Size is the current size of the cache.
	RPC Requests Peak is the maximum number of client requests that were processed simultaneously by the information store since it was started.
Recoverable Items	Recoverable Items is the total size in kilobytes and the number of items retained for Item Recovery in the public and private information store.
	Number of Messages Expired is the number of messages expired and then removed from public folders.
Protocols	Protocols is the number of standard Internet protocol-based messages and commands issued against the Exchange server. This graph also includes failed posts.
	These are newsgroup messages that have not successfully been delivered to the public folder.

Using the Directory Drilldown

The Directory drilldown displays five tabs:

- AB Activity tab
- LDAP Activity tab
- Other Activity tab
- Load tab
- Replication tab

The tabs display graphs detailing current Directory Service Agent activity.

To display the Directory drilldown

- Click the Directory drilldown button on the toolbar.

AB Activity Tab

The AB Activity tab displays the following graphs that detail current activities of users accessing the Directory through the Exchange address book:

GRAPH	DESCRIPTION
Client Sessions	The number of connected address book client sessions.
Reads/Sec	The rate at which address book clients perform read operations.
Browses/Sec	The rate at which address book clients perform browse operations.
Writes/Sec	The rate at which address book clients perform write operations.

LDAP Activity Tab

The LDAP Activity tab displays the following graphs that provide details on users accessing the directory using LDAP:

GRAPH	DESCRIPTION
Active Connections	The number of LDAP connections to the directory.
Searches	The rate at which LDAP clients perform search operations.
Incoming Queue Size	The number of bytes in the incoming queue.
Peak Connections	The maximum number of LDAP connections against this directory.
Bytes Sent/Bytes Received	The rate at which data is moving to and from LDAP clients and the server.
Outgoing Queue Size	The number of bytes in the outgoing queue.

Other Activity Tab

The Other Activity tab displays the following graphs that provide details on address book view activity:

GRAPH	DESCRIPTION
Address Book View Reads/Sec	The rate at which address book clients perform read operations.
System Reads / sec	The rate at which Extended Directory Service clients perform read operations. This represents reads by other Exchange components and the Exchange administrator program.
Address Book View Writes/Sec	Number of Address Book View containers created per second by the View Consistency Checker.
System Writes / sec	The rate at which Extended Directory Service clients perform write operations. This represents writes by other Exchange components and the Exchange administrator program.

Load Tab

The Load tab displays the following graphs that provide details on how well the directory service is handling demand:

GRAPH	DESCRIPTION
CPU Time	The % of CPU consumed by the directory service.
Threads	The number of threads currently active in the directory service process. An instruction is the basic unit of execution in a processor, and a thread is the object that executes instructions. Every running process has at least one thread.
Memory Working Set	The memory consumed by the directory service.
Threads in Use	The current number of threads in use by the directory service (different than the number of threads in the directory service process). Threads in Use is the number of RPC generated threads currently in API calls. This data indicates whether additional processors could be of benefit.

Replication Tab

The Replication tab displays the following graphs that provide details on directory replication activity such as the rate at which replication updates are applied by the local directory service:

GRAPH	DESCRIPTION
Replication	The rate at which replication updates are applied by the local directory service. This indicates how much replication activity is occurring on the server.
Pending Replication Synchronizations	The number of directory synchronizations that are queued for this server but not yet processed.
Objects Replicated Out/sec	The number of objects replicated out per second from this server to other directory servers.
Remaining Replication Updates	The number of object modifications received in the current directory replication update packet that have not yet been applied to the local server.

Using the Processes Drilldown

The Processes drilldown lists all processes currently running on the computer with Windows installed and includes three tabs:

- Exchange Processes tab
- Processes tab
- Services tab

These tabs show detailed information about each process.

To display the Processes drilldown

- Click the Processes drilldown button on the toolbar.

Exchange Processes Tab

The Exchange Processes tab displays details, described in the following table, about the processes running on the server:

COLUMN	DESCRIPTION
Program	The name of the processes currently running. This can be used as a parameter in system programs, such as the NT resource kit KILL.EXE program.
PID	Process ID. This is unique to each process running on the system. This can be used as a parameter in system programs, such as the NT resource kit KILL.EXE program.
Virtual Memory (MB)	The total amount of memory in use by the program. This includes physical memory and space in the paging file.
Physical Memory (MB)	The amount of RAM, or physical memory that is currently in use by the program.
Processor (%)	The percentage of processor time that the program is currently consuming. This is an instantaneous result.
User (%)	The percentage of processor time that the program is currently consuming in user mode. (User mode is a restricted processing mode designed for applications, environment subsystems, and integral subsystems.)
Kernel (%)	The percentage of processor time that the program is currently consuming in kernel mode. (Kernel mode is designed for operating system components and allows direct access to hardware and all memory.)
Elapsed Time	The length of time since the program was started.
Handles	The overall number of resources that the program currently has open. A handle is a value used to uniquely identify a resource so that a program can access it.
Threads	The number of active threads in the program. A thread is a program execution unit.
Priority	The priority of the program. Program priorities range from 1 to 31, and are dependent upon what the program is currently executing. Programs started in "Real Time" mode run with a priority of 16 to 31, whereas programs with "High", "Normal" or "Low" settings run in a priority range of 1 to 15.

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COLUMN	DESCRIPTION
Page Faults / Second	An instantaneous view of how many page faults are occurring for the program.
Reads / Second	The number of pages per second being swapped from disk to memory.
Writes / Second	The number of pages per second being written to disk from memory.
IO / Second	The rate of read and write operations on the disk.

Not all of these columns are visible by default. To view hidden columns, right-click the table heading and select the columns you want to see.

To display more detailed information

- Click on one of the programs listed in the Exchange Processes drilldown table or on the table heading to view the Details and Track Process tabs.

Details Tab

This drilldown shows the recent activity of the selected process:

COLUMN	DESCRIPTION
Instance Name	The name of the server.
Virtual Memory (MB)	The total amount of memory in use by the program. This includes physical memory and space in the paging file.
Physical Memory (MB)	The amount of RAM, or physical memory, that is currently in use by the program.
Processor (%)	The percentage of processor time that the program is currently consuming. This is an instantaneous result.

COLUMN	DESCRIPTION
CPU User Mode %	The percentage of elapsed time that the threads of the process have spent executing code in user mode. Applications, environment subsystems, and integral subsystems execute in user mode.
	Code executing in user mode cannot damage the integrity of the Windows NT Executive, Kernel, and device drivers. Unlike some early operating systems, Windows NT uses process boundaries for subsystem protection in addition to the traditional protection of user and privileged modes. These subsystem processes provide additional protection. Therefore, some work done by Windows NT on behalf of your application might appear in other subsystem processes in addition to the privileged time in your process.
CPU Kernel Mode %	The percentage of elapsed time that the threads of the process have spent executing code in privileged mode. When a Windows NT system service is called, the service will often run in privileged mode to gain access to system-private data.
	Such data is protected from access by threads executing in user mode. Calls to the system can be explicit or implicit, such as page faults or interrupts.
	Unlike some early operating systems, Windows NT uses process boundaries for subsystem protection in addition to the traditional protection of user and privileged modes. These subsystem processes provide additional protection. Therefore, some work done by Windows NT on behalf of your application might appear in other subsystem processes in addition to the privileged time in your process.
Elapsed Time	The total elapsed time this process has been running.
Handles	The total number of handles currently open by this process. This number is the sum of the handles currently open by each thread in this process.
Threads	The number of threads currently active in this process. An instruction is the basic unit of execution in a processor, and a thread is the object that executes instructions. Every running process has at least one thread.
Priority	The current base priority of this process. Threads within a process can raise and lower their own base priority relative to the base priority of the process.
Process ID	The unique identifier of this process. Process ID numbers are reused, so they only identify a process for the lifetime of that process.

COLUMN	DESCRIPTION
Page Faults/sec:	The rate Page Faults occur in the threads executing in this process. A page fault occurs when a thread refers to a virtual memory page that is not in its working set in main memory. This will not cause the page to be fetched from disk if it is on the standby list and hence already in main memory, or if it is in use by another process that shares the page.

Track Process Tab

This drilldown shows the recent activity of a process selected on the Exchange Processes tab and the Processes tab:

GRAPH	DESCRIPTION
Processor Time	Displays the total processor usage across all processors in the computer broken down into user time and privileged time. User time is the total time the processor(s) spends in user mode. This is a restricted processing mode designed for applications, environment subsystems, and integral subsystems. Privileged time is the time the processor(s) spends in privileged mode. This is designed for operating system components and allows direct access to hardware and all memory.
Handles/Threads	Shows the number of handles and threads in use by the program. Handles - Shows the overall number of resources that the program currently has open. A handle is a value used to uniquely identify a resource so that a program can access it. Threads - Shows the number of active threads in the program. A thread is a program execution unit.

GRAPH	DESCRIPTION
Memory Used	Shows how much physical memory (RAM) and virtual memory Windows is using. Physical memory usage normally remains close to the total amount of physical memory installed on the system unless the amount of physical memory you have exceeds the amount of virtual memory that Windows is using. Windows normally keeps some physical memory available (free) for immediate reuse. Virtual memory usage increases and decreases as Windows processes requests and gives up memory and as processes are started and stopped. A steady increase in virtual memory usage can indicate that a process on the system has a memory leak.
Page Faults	Shows the rate at which Windows is processing page faults. It compares the two types of page fault (soft and hard) and makes it easy to see the ratio between them. A page fault occurs when a process references a page that is not in that processes working set (the set of pages visible to that process in physical memory). When this happens, the process has to wait while the Windows Virtual Memory Manager retrieves the page from virtual memory. A soft page fault occurs when Windows finds the required page somewhere in physical memory. A hard page fault occurs when the page is not in physical memory and Windows has to read it from the page files. This is by far the more expensive of the two as it involves disk I/O. Hard page faults are the cause of paging and can degrade performance significantly.

Processes Tab

The Processes tab displays a table that lists all Windows processes (or programs) that are currently running on the system. A process is one instance of an application program that is currently executing on the Windows computer. For each process, you can view the following information:

COLUMN	DESCRIPTION
Program	The image name of the application. This can be used as a parameter in system programs, such as the NT resource kit KILL.EXE program.

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COLUMN	DESCRIPTION
PID	Process ID. This is unique to each process running on the system. This can be used as a parameter in system programs, such as the NT resource kit KILL.EXE program.
Virtual Memory (MB)	The total amount of memory in use by the program. This includes physical memory and space in the paging file.
Physical Memory (MB)	The amount of RAM, or physical memory that is currently in use by the program.
Processor (%)	The percentage of processor time that the program is currently consuming. This is an instantaneous result.
User (%)	The percentage of processor time that the program is currently consuming in user mode. (User mode is a restricted processing mode designed for applications, environment subsystems, and integral subsystems.)
Kernel (%)	The percentage of CPU time that the program is currently consuming in kernel mode. (Kernel mode is designed for operating system components and allows direct access to hardware and all memory.)
Elapsed Time	The amount of time that has passed since the program was started.
Handles	The overall number of resources that the program currently has open. A handle is a value used to uniquely identify a resource so that a program can access it.
Threads	The number of active threads in the program. A thread is a program execution unit.
Priority	The priority of the program. Program priorities range from 1 to 31, and are dependent upon what the program is currently executing. Programs started in "Real Time" mode run with a priority of 16 to 31, whereas programs with "High", "Normal" or "Low" settings run in a priority range of 1 to 15.
Page Faults / Second	An instantaneous view of how many page faults are occurring for the program.
Reads / Second	The number of pages per second being swapped from disk to memory.
Writes / Second	The number of pages per second being written to disk from memory.
IO / Second	The rate of read and write operations on the disk.

Not all of these columns are visible by default. To view hidden columns, right-click the table heading and select the columns you want to see.

To display more detailed information

- Click on one of the programs listed in the Processes drilldown table or on the table heading to view the Details and Track Process tabs.

Services Tab

The Services tab shows the following details of Windows services and devices:

COLUMN	DESCRIPTION
Service	Shows the name of the service or driver as reported to the system. The "tree bar" to the left of the name is a dependency tree, showing all services or drivers dependent upon the particular service.
Display Name	Shows the "friendly" name of the service or driver.
Start up	Shows how the service acts on Windows start:
	Automatic: Starts every time the system starts, after the Boot and System devices start.
	Manual: Requires manual startup or another service or device to request its startup.
	Disabled: Does not start and cannot be manually started.
	Boot: Starts every time the system starts, before any other devices start.
	Demand: Starts when the device is detected or needed for a specific event.
	System: Starts every time the system starts, after the Boot devices start.
Service Type	Shows what type of program this is.
Current State	Shows what the current status is of the service or driver. The status can be Running, Not Running or Paused.
Controls Accepted	Identifies what can be done with a service or driver. This information is only available for currently running or paused services.
Win32 Exit Code	Displays the program code associated with the last start or attempted start of the service or driver.

cont'd…

Not all of these columns are visible by default. To view hidden columns, right-click the table heading and select the columns you want to see.

Using the CPU drilldown

The CPU drilldown details recent processor activity as measured by Windows and includes two tabs:

- Exchange CPU tab
- OS CPU tab

To display the CPU drilldown

- Click the CPU drilldown button on the toolbar.

Exchange CPU Tab

The Exchange CPU tab displays details about Exchange CPU utilization and the status of processes and threads in graphs as described in the following table:

GRAPH	DESCRIPTION
CPU Time	Displays the percentage of Exchange CPU used by the servers listed.
Process and Thread	Shows the total number of Exchange processes and threads that exist.
	A process is one instance of an application program or system service that is currently executing on the system.
	Each process will have one or more threads which are the basic entity that can be scheduled. Sophisticated application processes such as SQL Server or Exchange can have dozens of threads running concurrently.

OS CPU Tab

The OS CPU tab displays the following graphs that show total OS CPU usage and the status of the Windows processes and threads:

GRAPH	DESCRIPTION
CPU Time	Displays the total OS CPU use across all processors in the server, broken down into user time and privileged time.
	User time is the total time the processor(s) spends in user mode. This is a restricted processing mode designed for applications, environment subsystems, and integral subsystems.
	Privileged time is the time the processor(s) spends in privileged mode. This is designed for operating system components and allows direct access to hardware and all memory.
Total Processes and Thread	Shows the total number of Windows processes and threads that exist.
	A process is one instance of an application program or system service that is currently executing on the system.
	Each process will have one or more threads which are the basic entity that can be scheduled. Sophisticated application processes such as SQL Server or Exchange can have dozens of threads running concurrently.
Processor Queue Length	Shows the number of threads (program execution units) that are waiting on all processors to be run. A sustained processor queue length greater than two can indicate processor congestion.
CPU Breakdown	Shows the CPU usage across all processors in the system.

Using the Memory drilldown

The Memory drilldown displays detailed information about recent physical and virtual memory usage and includes four tabs:

- Exchange Summary tab
- OS Summary tab
- OS Paging Activity tab
- OS Cache tab

To display the Memory drilldown

- Click the Memory drilldown button on the toolbar.

Exchange Summary Tab

The Exchange Summary tab displays the following graphs showing the memory consumed by each Exchange process:

GRAPH	DESCRIPTION
Exchange Memory Consumption	Displays the breakdown of the memory consumed by each Exchange process.
Exchange Used Virtual Memory	Shows the breakdown of the virtual memory consumed by each Exchange process.
Exchange Paging Faults	Displays all of the paging faults of each Exchange process.

OS Summary Tab

The OS Summary tab displays the following graphs summarizing recent memory usage:

GRAPH	DESCRIPTION
Used Physical Memory	Shows how much physical memory (RAM) Windows is using.
	Physical memory usage normally remains close to the total amount of physical memory installed on the system unless the amount of physical memory you have exceeds the amount of virtual memory that Windows is using.
	Windows normally keeps some physical memory available (free) for immediate reuse.
Used Virtual Memory	Shows the total amount of memory in use by the program. This includes physical memory and space in the paging file.
	A steady increase in virtual memory usage can indicate that a process on the system has a memory leak.

GRAPH	DESCRIPTION
Paging Rate	Shows the rate at which pages are being swapped in and out of memory. The Paging Rate (In) (or Page Reads) value includes hard pages (paging requests that have to go to the page file on disk) - not soft pages (requests for memory pages that are not in the program's working set, but still in memory). The Paging Rate (Out) (or Page Writes) value provides the number of write requests to the page file on disk. A sustained high rate of paging can cause problems with overall system degradation due to disk thrashing and CPU load.
Physical Memory Breakdown	Shows how Windows is using physical memory and displays the following: • Process shows memory being used by Windows processes. This is normally the largest area by a significant degree. • Kernel shows memory being used by the Windows kernel. • File Cache shows memory that Windows is using to cache disk files in order to speed reads and writes.

OS Paging Activity tab

The OS Paging Activity tab shows the following graphs that provide details of Windows paging activity and page files:

GRAPH	DESCRIPTION
Page to Disk Transfers	Shows recent Windows paging activity. It shows the number of pages read (in) and written (out) per second to and from the page files. Paging occurs when the Windows Virtual Memory Manager moves data or code between physical memory and disk. Sustained high paging rates can degrade system performance significantly.
Page Faults	Shows the number of page faults being generated by the program.

cont'd…

GRAPH	DESCRIPTION
Page File	Shows the page files in use by Windows. Page files are disk files that the Windows Virtual Memory Manager uses to support physical memory. Code and data is moved between physical memory and the page files as required, giving processes on the system the illusion that there is much more physical memory available than there really is. The process of moving data and code between memory and disk is called paging. The Page Files table shows: • Page File location (file name). • The page file size (MB). • The current used space (MB) in the page file. • The current used space as a percentage of the page file size.

OS Cache Tab

The OS Cache tab shows the following graphs that provide detailed information about system cache:

GRAPH	DESCRIPTION
Hit Rate	Shows a recent summary of the percentage of file requests that are satisfied by the file cache, and do not require a disk read.
Cache Size	Shows the recent history of memory allocated to the file cache. Memory allocated to the file cache is dynamic. This is controlled by the Disk Cache Manager, and will alter the level of memory based upon how much physical memory is being used by other applications and is available in the system.
Physical Cache IO	Shows the number of reads and writes being made to the file cache.

Using the Disks drilldown

The Disks drilldown displays detailed information about the logical and physical disks on the system and includes four tabs:

- Logical Disk Activity tab
- Physical Disk Activity tab
- Disk Space Usage tab
- Disk Free Space tab

To display the Disks drilldown

- Click the Disks drilldown button on the toolbar.

Logical Disk Activity Tab

The Logical Disk Activity tab displays the following graphs indicating information about the logical disks on this system. It includes I/O information, as well as disk space usage:

GRAPH	DESCRIPTION
Disk Read Rates	Shows a recent summary of the number of read requests that have been sent to each logical disk.
Disk Write Rates	Shows a recent summary of the number of write requests that have been sent to each logical disk.
Disk Rates	Shows a recent summary of the number of read and write requests that have been sent to each logical disk. This graph is the sum of the Disk Reads and Disk Writes.
Average Disk Queue Length	Shows the number of I/O requests that were queued for each logical disk. Disk queue length indicates how heavily loaded a disk subsystem is. High queue lengths mean the disks are struggling to process the I/O load being put on them.
Average Disk Transfer Time	Shows how long it is taking for data to be transferred between disk and memory, and includes both Disk Reads and Disk Writes. If disk transfers are taking consistently longer than 50 ms, a disk bottleneck may be developing.
Disk Utilization	Shows the overall activity of the individual logical disks.

Physical Disk Activity Tab

The Physical Disk Activity tab displays the following graphs that provide information about the physical disks on the server. It includes I/O information as well as disk space usage:

GRAPH	DESCRIPTION
Disk Read Rates	Shows a recent summary of the number of read requests that have been sent to each physical disk.
Disk Write Rates	Shows a recent summary of the number of write requests that have been sent to each physical disk.
Disk Rates	Shows a recent summary of the number of read and write requests that have been sent to each physical disk.
Average Disk Queue Length	Shows the number of I/O requests that were queued for each physical disk. Disk Queue Length indicates how heavily loaded a disk subsystem is. High queue lengths mean the disks are struggling to process the I/O load being put on them.
Average Disk Transfer Time	Shows how long it is taking for data to be transferred between disk and memory. This graph includes Disk Reads and Disk Writes. If disk transfers are taking consistently longer than 50 ms, a disk bottleneck may be developing.
Disk Utilization	Shows the overall activity of the individual physical disks.

Disk Space Usage Tab

The Disk Space Usage tab displays a graph showing the distribution of core Exchange storage components.

The core Exchange components, such as the private and public stores, are listed on the right side of the graph and are represented by color blocks. Yellow represents how much free disk space is available.
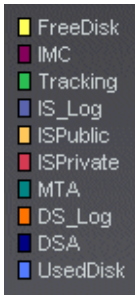
The logical disk instances, for example, C, D, and E, are located on the Y axis of the graph. You can quickly see how much free space remains on any logical disk instance by looking for yellow on the graph.

The Disk Free Space Tab

The Disk Free Space tab displays a graphical view of usage and available space on all logical drives.

The logical drives, for example, C, D, and E are located on the Y axis of the graph. The space in megabytes is indicated on the X axis. As indicated by the color blocks on the right side of the graph, yellow bars represent free space on the logical drive. Blue bars represent used space.

Using the Network drilldown

The Network drilldown displays detailed information about the network activity to and from the server being diagnosed and includes two tabs:

- Network tab
- NBT tab

To display the Network drilldown

- Click the Network drilldown button on the toolbar.

Network Tab

The Network tab displays the following graphs that detail recent network activity to and from the server being analyzed:

GRAPH	DESCRIPTION
Total Packets in/out	Shows the incoming and outgoing packet rates as an aggregate across all network cards in the system.
Packets by Network Card	Shows the total number of packets (incoming and outgoing), broken down by network card.
Bytes /sec	Shows the level of traffic being received and sent by the system in bytes.
Errors and Retries	Shows the number of errors and retries on the network subsystem. A consistent number of retries or errors usually means one of the following: • A network segment attached to the system is over used. • There are problems with a network card, cabling, or some other networking device on a network segment.

NBT Tab

This tab shows the computers that have a connection to the diagnosed server, and the corresponding level of traffic (in kilobytes) being generated between the connections.

The NBT tab displays the following table:

COLUMN	DESCRIPTION
Connection	The name of the computer connected to the server.
KB Received / Second	The number of kilobytes per second received by the computer.
KB Sent / Second	The number of kilobytes per second sent by the computer.
KB Total / Second	The total number of kilobytes per second sent and received by the computer.

This is only for NBT (NetBios over TCP/IP) connections, that is, only Microsoft Networking connection over TCP/IP.

Using the Activity Summary Drilldown

The Activity Summary drilldown displays summaries of recent server activity.

To display the Activity Summary drilldown

- Click the Activity Summary drilldown button on the toolbar.

The following graphs are displayed:

GRAPH	DESCRIPTION
Processor Time	Shows the percentage of privileged and user time. High privileged time means that the program is predominantly busy with accessing resources through operating system requests. High user time means that the program is predominantly CPU bound with the program code itself.
Paging Rate	Shows the rate at which pages are being swapped in and out of memory.
	The Paging Rate (In) (or Page Reads) value includes hard pages (paging requests that have to go to the paging file on disk) - not soft pages (requests for memory pages that are not in the program's working set, but still in memory).
	The Paging Rate (Out) (or Page Writes) value provides the number of write requests to the paging file on disk.
	A sustained high rate of paging can cause problems with overall system degradation due to disk thrashing and CPU load.
Network Packets	Shows the incoming and outgoing packet rates as an aggregate across all network cards in the system.
Processor Queue Length	Shows the number of threads (program execution units) that are waiting on all processors to be run. A sustained processor queue length greater than two can indicate processor congestion.
Average Disk Queue Length	Shows the number of I/O requests that were queued for each logical disk.
	Disk Queue Length indicates how heavily loaded a disk subsystem is. High queue lengths mean the disks are struggling to process the I/O load being put on them.
Memory Used	Shows how much physical and virtual memory is being used by the program.

Using the Event Log

The Event Log displays application or operating system information that has been written to the Windows NT Event Log. In order to view the Event Log, you must form a connection to the server with Spotlight on Windows.

To create a connection with Spotlight on Windows

1. Select **File | Connect**.
2. Click the Spotlight on Windows icon in the Connections bar.
3. Choose the connection you want to open by clicking an item in the list on the right.

   *To connect to a system that is not currently on the list, click **New Connection** and follow the required procedure.*

For more information about forming connections, see "Connecting and Disconnecting" on page 47.

Please see the online Help documentation supplied with Spotlight on Windows for information about the Event Log.

6

Troubleshooting

- Data Gathering Errors
- Display Problems
- Drilldown Problems
- Miscellaneous Problems
- Product Authorization Errors
- Contacting Spotlight on Exchange Support

Data Gathering Errors

At certain times, Spotlight on Exchange can have difficulty gathering data. The following sections list the possible reasons why this might occur and the error messages that appear. The Quest Support team is available to assist you and may ask you to send Data Gathering log files for analysis.

Counter Data Values Cannot be Retrieved

Spotlight on Exchange can have difficulty gathering data if one or more counter data values cannot be retrieved from the remote Exchange server to which you are connected. When this occurs, the following error message appears:
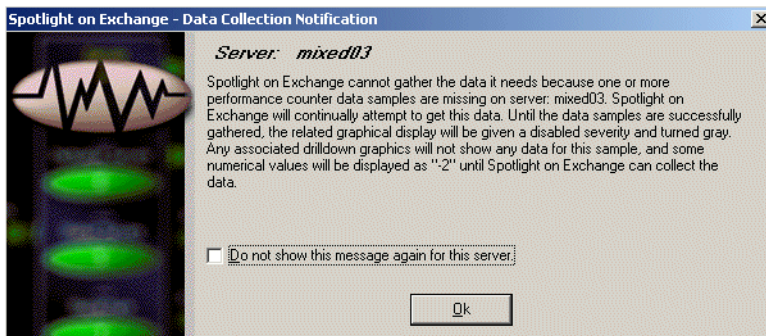
Exchange Server Counters are Disabled or Missing

Spotlight on Exchange 5.5 cannot retrieve data if one or more Exchange related counter values are disabled or missing on the Exchange server to which Spotlight on Exchange 5.5 is connected. In this case, the following error message appears:

Non-Exchange Counters are Disabled or Missing

Spotlight on Exchange cannot retrieve data if one or more non-Exchange related counter values are disabled or missing on the Exchange server to which Spotlight on Exchange 5.5 is connected. In this case, the following error message appears:
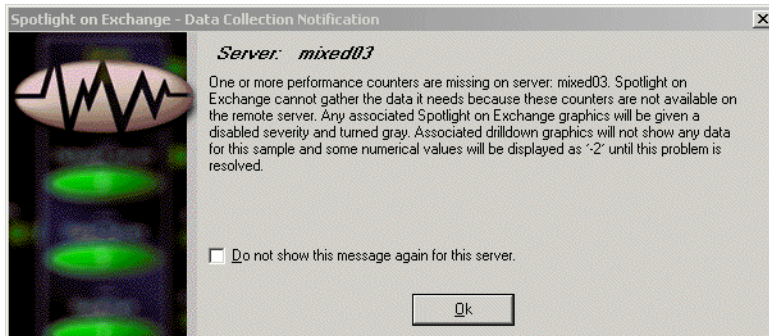
Logical Disk Counters are Missing

Spotlight on Exchange cannot retrieve data if one or more logical disk counters are missing on the remote server. In this case, the following error message appears:

You have the option to disable these error messages for an individual server. However, if the messages are disabled, you cannot view them again unless you reinstall Spotlight on Exchange.

MTA Queue Size Unavailable

At times, Spotlight on Exchange may not be able to retrieve data regarding the MTA queue size. If this happens, Spotlight on Exchange will display -1 as the queue size to indicate that a data gathering problem exists.

Data Gathering Log Files

Spotlight on Exchange includes a logging feature that gathers valuable information about data gathering issues you may encounter. The Data Gathering Log files are automatically generated in the Spotlight on Exchange installation directory where they can be picked up by the Support Bundle feature and sent to the support team for analysis.

To send the Data Gathering log files to Support

1. Select **File** | **Save All**.
2. Select **Help** | **Contact Support**.
3. Select the Spotlight plug-in.
4. Click **Collect**.

    This creates and sends an email addressed to Quest Support with a file called SpotlightSupport.zip attached.

Display Problems

The following section outlines problems you may encounter with the Spotlight on Exchange display.

Dataflows Are Not Changing

Dataflows in the main window may appear to be static. This could be caused because either the refresh rate is too slow or Spotlight on Exchange is paused.

Possible Solution

You can update the current screen or check the foreground refresh rate. Try a rate of approximately 30 seconds. Also, check to see if Spotlight on Exchange is paused.

To update the current screen

• Select **View** | **Refresh**.

To change the foreground refresh rate

- Use the Data Collection option in the Spotlight Console Options window to change the foreground refresh rate.

  For information on how to access this window, "Console Options" on page 16.

To Unpause Spotlight

- Select **View** | **Resume**.

  If Resume is not available, Spotlight on Exchange is not paused.

Main Window Is Hard To Read

This may be because the number of colors used is too low or the screen resolution is too low.

Possible Solution

You can increase the number of colors your computer is using. Spotlight on Exchange requires a monitor that supports 65536 colors (or Hi Color/16-bit) so that it can properly shade its graphs. You can also increase the screen resolution.

To increase the number of colors

1. Open the Windows Control panel and double-click **Display**.
2. Click the **Settings** tab.
3. Increase the number of colors in the palette.

   If this option is not available, you should upgrade your hardware.

Drilldown Problems

The following are possible situations and solutions to drilldown related problems that may occur.

Wrong Information is Displayed

You may find that when you click on a component, you are unable to see the associated drilldown. This is probably because the Always jump directly to the related drilldown option has not been selected.

Possible Solution

You can use the Help options in the Spotlight Console Options window to change the Help settings. For information on how to access this window, see "Console Options" on page 16.

Miscellaneous Problems

The following are possible situations and solutions to miscellaneous problems that may occur while you are using Spotlight on Exchange.

Sounds Are Not Played

You may find that sounds are not played when a threshold is exceeded. There are a number of reasons why this problem may occur.

Possible Solutions

You can try the following solutions:

- Check the volume on your computer and make sure that you can hear sounds made by other applications.

    – OR –

    Check the configuration of your computer's sound card. If you do not have a sound card, you should consider upgrading your hardware. Spotlight on Exchange uses standard Windows sound files.

    Standard Windows sound files normally have a file type of .wav. You must have a sound card in your computer to use .wav files.

    – OR –

    Check that sounds have been enabled.

To check that sounds have been enabled

- Use the General options in the Spotlight Console Options window to see if sounds have been enabled.

    For information on how to access this window, see "Console Options" on page 16.

To ensure that the alarms have been configured to use sounds

- Use the Action Rules options in the Alarm Log Options window to ensure that alarms have been configured to use sounds. For information on how to access this window, see "Alarm Log Options" on page 25.

Product Authorization Errors

You can take the following steps if you encounter an authorization problem in Spotlight on Exchange:

ERROR MESSAGE	EXPLANATION	POSSIBLE SOLUTION
Authorization string has expired	Trial authorization for Spotlight has expired.	If the trial date has not passed, check that the date on your system is set correctly. If the date was not set correctly, the key will no longer work.
Invalid authorization string or site message	Either the authorization string or the site message has not been entered correctly.	Make sure that you entered the authorization string and site message exactly as stated on your Product Authorization sheet or as provided by your Quest Software distributor. **Note**: The site message is case-sensitive.

Changing Your Authorization Key

You are required to change the authorization key when you upgrade from a trial version of Spotlight on Exchange to a production version.

To change the authorization key

1. Select **Help** | **About Spotlight**.
2. Select the Spotlight plug-ins tab.
3. Select Spotlight on Exchange 5.5.
4. Click **Edit License**.

If your authorization fails, you can click the Authorization button on the Connect dialog box.

Contacting Spotlight on Exchange Support

You can contact Quest Software, Inc. for product information or for customer support. If you have questions about using Spotlight on Exchange, please contact our technical support staff. Please include the version number, and if your question is about an error message, include the text as well.

You can send a snapshot of your Spotlight on Exchange installation. For more information about how to send a snapshot, see "Data Gathering Log Files" on page 182.

For important contact information, see "About Quest Software, Inc." on page 7.

Glossary

calibration

Determines the maximum and minimum values for every dataflow by observing the data moving through the database system. This information helps Spotlight on Exchange display the dataflows correctly. You can manually override these calibrated thresholds at any time, and for any given dataflow.

client

A software application that requests the services, data, or processing of another application or computer (known as the server).

component

The graphics in the main Spotlight on Exchange window. Buttons are oval in shape and contain a single value that represents the state or existence of a database process. Gauges are rectangular. The level of the gauge represents the utilization of the specified item in the server. Disks are cylindrical and fill up as a file increases in size. Meters show a measurement. The highest and lowest possible values of the measurement are shown. Queues show the number of items waiting in the specified queue.

console

The Spotlight application from which Quest Software's Spotlight suite of monitoring and diagnostic applications are launched.

dataflow

A line graph on the main Spotlight on Exchange window. Dataflows depict the flow of information between panels. The color of a dataflow can change in response to the thresholds set.

drilldown

When you have isolated a problem in the server, you can display a detailed breakdown of the underlying statistics, called a drilldown, by clicking on the component. Each drilldown contains a series of reports and graphs that provide you with specific information about the important features of your server. The statistics that are available help you to identify and anticipate performance problems.

flow

> The flow shows you the current level of activity. As the rate of data transfer increases, so too does the speed of the flow. If the statistic represented by the flow moves into another threshold, the flow may change color. The combination of movement and color makes it easy to spot congested areas. The graph sits on top of the flow and shows you how the load has varied over time.

graph

> A white line that sits on top of a pulse. The graph represents how the load on the database has varied over time.

metric

> A unit of measurement that can be applied to a database. Metrics can help you gauge the performance of a database system.

paging

> The process of moving data and code between memory and disk.

panel

> A group of related components on the main Spotlight on Exchange window. The name of the panel is normally shown at the top of the panel.

Plug-in

> A Spotlight application that is launched from the Spotlight Console. Each plug-in has a unique user interface and functionality. Examples of Spotlight plug-ins include Spotlight on Exchange 5.5, Spotlight on Windows, and Spotlight on Oracle.

process

> A unit of execution in a multi-processing environment. A process typically executes a specific program and has a unique and private allocation of memory. The operating system determines the process access to resources such as CPU, physical memory, and disk.

query

> A statement that returns a set of values. Spotlight on Exchange uses a variety of queries to collect information about a system's performance.

severity

Describes the level of importance of a threshold. A severity is user-defined and determines how Spotlight on Exchange behaves when the values for a metric fall within a range of values. For example, unusually large values might force a metric into a threshold with a high severity. This in turn could change the color of an icon, play a sound, or execute an operating-system command.

spike

An abnormally high maximum value in a dataflow or graph.

standard deviation

A measure of how widely values diverge from the mean.

template file

Spotlight on Exchange template files contain metrics and thresholds that are customized for specific environments. You must select a template file the first time you connect to a database.

thread

A unit of execution that shares its memory space with other threads. Threads can be implemented within processes on some systems or may be used in place of processes in others (for instance, in Windows NT).

threshold

A range of values that might be returned by a metric. If the metric falls within this range, Spotlight on Exchange checks the threshold's severity to determine how to behave. For example, the component representing the metric might change color.

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