Alcatel-Lucent Security Management Server (SMS)

Release 9.1

Reports, Alarms, and Logs Guide

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About this information product

Purpose

Welcome to the *Reports, Alarms, and Logs Guide*. This manual explains how to use log files, configure triggers and actions to generate alarms, and compile and view reports.

Who Should Read This Book

The *Reports, Alarms, and Logs Guide* is intended to be read by network administrators who will be using the SMS application to:

- Use logs to monitor trends in the network
- Set up triggers and actions to be notified of system events
- Generate and view reports to analyze network traffic and for troubleshooting

In the terminology used by the SMS, these administrators are referred to as SMS Administrators and Group Administrators, depending on the privileges they have been given when their profiles were created.

What is in This Book

The *Reports, Alarms, and Logs Guide* explains the five log files and how to use these log files to monitor trends in the network.

It also explains how to configure triggers and actions so that Administrators are notified of network events. Procedures for generating and memorizing reports to analyze network traffic passing through one or more Alcatel-Lucent *VPN Firewall Brick*® Security Appliances are also included.

The *Reports, Alarms, and Logs Guide* is divided into three sections, followed by a series of appendices. The following tables briefly explain what is in each chapter and appendix:

Table 1 Part 1: SMS Logs

Chapter	Purpose
Chapter 1, "Introduction to SMS Logs"	This chapter explains the five log files, how log rollover works, and the Halt All Logging feature.
Chapter 2, "SMS Log Viewer"	This chapter describes operation of the SMS Log Viewer and its associated filtering.
Chapter 3, "Types of SMS Logs"	This chapter describes the five types of SMS logs.

Table 2 Part 2: SMS Alarms

Chapter	Purpose
Chapter 4, "Introduction to Alarms"	This chapter provides basic information about LSMS alarms.
Chapter 5, "Configuring Alarm Actions"	This chapter describes the four alarm actions that can be configured to launch upon receipt of an an alarm trigger.
Chapter 6, "Configuring Alarm Triggers"	This chapter describes various types of triggers that can be set to initiate alarm actions.

Table 3 Part 3: SMS Reports

Chapter	Purpose
Chapter 8, "Introduction to SMS Reports"	This chapter provides basic information about SMS reports.
Chapter 9, "Administrative Events Report"	This chapter explains how to generate an Administrative Events Report to monitor events such as successful logins, logouts, creation of devices, zones, rulesets, and other events.
Chapter 10, "Sessions Logged Report"	This chapter explains how to generate a Sessions Logged Report to analyze network trends and to identify potential security problems.
Chapter 11, "Closed Session Details Report"	This chapter explains how to generate a Closed Session Detail Report to monitor traffic through one or more Brick devices.

Table 3 Part 3: SMS Reports (continued)

Chapter	Purpose
Chapter 12, “Alarms Logged Report”	This chapter explains how to generate an Alarms Logged Report to produce a historical record of alarms generated by any installed Brick device or Real-Secure detector.
Chapter 13, “User Authentication Report”	This chapter explains how to generate a User Authentication Report to view and analyze users who are authorized to access hosts protected by a Brick device or connected to a Brick device via a tunnel.
Chapter 14, “WebTrends Reports”	This chapter explains how to generate WebTrends reports from SMS session log files.

Table 4 Appendices

Appendix	Purpose
Appendix A, “SNMP”	This Appendix explains how to load the MIB files on a Network Management Station and how to create rules if a Brick device resides between the SMS and the Network Management System (NMS).
Appendix B, “Alarm Code Rules”	This Appendix explains how to create rules with an alarm code so that an alarm is generated. It assumes the Alarm Code trigger has already been configured.
Appendix C, “Proactive Monitoring Trigger Parameters”	This appendix comprehensively explains the Proactive Monitoring parameters that can be used when configuring a Brick or SMS Proactive Monitoring alarm.
Appendix D, “Proactive Monitoring Subtypes”	This appendix explains the fields contained in the seven subtypes that can be written to a Proactive Monitoring log record.
Appendix E, “Log Field Formats”	This appendix lists and explains the formats used in the LSMS logs and reports.
Appendix F, “Filterable Log Fields”	This appendix describes the meaning and syntax of each of the log fields that can be used to trigger an alarm or action.
Appendix G, “Log Field Syntax”	This appendix elaborates on the definition of each particular log field syntax.
Appendix H, “Log File Sizing Guidelines”	This appendix describes how to assess the amount of space required for each of the five logs based on network traffic and other factors.

Table 4 Appendices (continued)

Appendix	Purpose
Appendix I, "Transferring Log Files via FTP"	This appendix explains how to set up automated transfer of log files to long term storage areas.
Appendix J, "Pre-Configured Reports"	This appendix explains the pre-configured reports that are created when the SMS application is installed.

What is Not in This Book

If you are looking for information on any of the following topics, you should refer to the *SMS Administration Guide*:

- How to log on and off the SMS
- How to connect a Brick device to your network and configure the Brick device so that it communicates with the SMS
- How to configure SMS redundancy and Brick failover
- How to create groups and set up additional Administrator accounts

These and other topics are covered in the *SMS Administration Guide*. Since these topics pertain primarily to the set up and administration of the hardware, we recommend that you read the *Administration Guide* — and perform all required tasks — before you approach the *SMS Policy Guide*, which includes the following topics:

- How to set up and manage security policy including rulesets, host groups, network address translation, application filters, etc.
- How to set up Brick devices to proxy incoming and outgoing SMTP, FTP, and HTTP sessions
- How to set up user authentication and digital certificates
- How to setup LAN-to-LAN tunnels and how to configure a Brick device or router to serve as the endpoint of a client tunnel

Supported Brick devices

The following available Brick models are supported by the current SMS release:

- Model 20 Brick device
- Model 50 Brick device
- Model 80 Brick device
- Model 150 Brick device
- Model 350 Brick device
- Model 500 Brick device

- Model 1100/1100A Brick device
- Model 700 Brick device
- Model 1200 Standard and HS Brick devices

Some of the above Brick device models require a specific patch of the current SMS release in order to be fully supported. For details about the SMS patch release required for a specific Brick device model, refer to the *User's Guide* for the Brick device model or contact your Alcatel-Lucent customer support team representative.

Where to Find Technical Support

Technical assistance and additional information can be acquired by telephone or e-mail. If you require technical assistance, first collect information that technical support staff can use to diagnose the problem. This includes:

- Software version of the SMS.
- Model number and serial number of the Brick.
- Platform the LSMS runs on (Windows or Solaris).
- Description of problem.
- Layout of your network. For example, is the Brick connected to a device such as a hub or router? Is the Brick operating as a bridge or is it using static routes? What are the Brick ports connected to? What is the IP address range and VBA for each zone? What is the security policy for each port?

After gathering the information, contact Lucent Security Customer Care at 1-866-LUCENT-8.

How to comment

To comment on this information product, go to the Online Comment Form (http://www.lucent-info.com/comments/enus/) or e-mail your comments to the Comments Hotline (comments@alcatel-lucent.com).

1 Introduction to SMS Logs

Overview

Purpose

Compute Servers (CSs), were introduced in Release 8.0. They are identical to SMSs, except that they do not have their own database. The primary purpose of a CS is to collect log data. Therefore, in this chapter, the term ″SMS″ refers to both an SMS and Compute Server.

The chapters in this section explain how to use the SMS Log Viewer and the five logs that are provided with the SMS. These logs can be used by Administrators to monitor traffic through one or more Alcatel-Lucent *VPN Firewall Brick*® Security Appliances, track important administrative events, view statistics about the internal operations of the system, and perform a number of troubleshooting activities.

For troubleshooting, real-time data is the most useful tool. Only the SMS Log Viewer provides the administrator with a window on activity as it happens. The Log Viewer also allows you to apply filters and combinations of filters to restrict the content of the messages it displays to those that apply to your current area of interest. The Detail window feature provides the ability to examine the details of a single log entry with all the fields clearly labeled. You can double-click any entry in a Log Viewer to display the Detail window.

The standalone Log Viewer can only be run directly on the SMS or LSCS. Reports can be run on the SMS or from a remote machine. Reports cannot be run from Compute Servers. The real-time functionality of the standalone Log Viewer can be accessed on the SMS Navigator under the **Utilities** menu.

Contents

SMS Logs

Overview

The SMS application includes an audit server that monitors various aspects of SMS and Brick operations and stores that information in logs that reside on the SMS host.

You can view the contents of the logs by using one of the five Log Viewer windows, explained in Chapter 2, “SMS Log Viewer”.

When viewing the logs, you can view the logs in their entirety, or you can enter certain filtering criteria so that only specific information is displayed. The Log Viewer Filter Window and the Filter Editor are also discussed in Chapter 2, “SMS Log Viewer”.

Logs

The audit information collected by the SMS is stored in five separate logs. These logs are:

- *Administrative Events Log*
  The Administrative Events Log contains information about a variety of administrative events, including Bricks lost, policies loaded, error messages and alarms triggered and delivered. Also referred to as simply ″the Event Log,″ it is an important troubleshooting tool.
- *Proactive Monitoring (Promon) Log*
  The Proactive Monitoring Log contains records that provide statistical information about the internal operations of the SMS/CS and the Bricks it is managing. This information allows high level monitoring of resources to identify usage patterns.
- *Session Log*
  The Session Log contains Brick session records, which record network activity through the ports of the Bricks that the SMS is managing. Application filter audit information is also stored in this log.
- *User Authentication Log*
  The User Authentication Log contains messages that record successful or unsuccessful user authentication requests to the SMS or other external servers, such as RADIUS or Secure ID servers.
- *VPN Log*
  The VPN Log contains records that pertain to all VPN tunnel transactions including all errors, events, and messages. The information allows easier debugging of VPN tunnel problems.

Uses

In addition to providing Administrators with information about the operation of the SMS and Brick, the logs also serve as the basis for the alarm and reporting subsystems.

The alarm and reporting subsystems are described below.

- *Alarms Subsystem*
  The alarm subsystem monitors the logs for the occurrence of events that are configured in an alarm (such as Brick Lost). If such an event occurs, the alarm is triggered and an Administrator is notified in a number of configurable ways, for example, by e-mail, by page, or by an SNMP trap sent to a network management station.
  For details, refer to Chapter 6, "Configuring Alarm Triggers" in this Guide.
- *Reports Subsystem*
  The reports subsystem uses the logs from all SMSs and Compute Servers to filter and present network information in a user-friendly format. The information in a report can be used to analyze patterns of network traffic and for troubleshooting purposes.
  For details, see Chapter 8, "Introduction to SMS Reports", through Chapter 13, "User Authentication Report".

SMS Logs and Spreadsheets

Using the log files as the basis, you can create management or summary reports for further study and analysis with a spreadsheet application such as Microsoft Excel.

□

Log Files

Overview

The audit data in each log is accumulated in log files that are stored on the SMS/CS host. The number of files in each log depends upon the amount of auditing that the SMS is performing.

Log File Location

The table below indicates where the files for each log are located, if you chose the default installation path, on the *Windows*®, *Vista*®, and *Solaris*® platforms:

Log	*Windows*®, *Vista*®	*Solaris*®
Session	\isms\lmf\log\sessions	/opt/isms/lmf/log/sessions
Proactive Monitoring	\isms\lmf\log\promon	/opt/isms/lmf/log/promon
User Authentication	\isms\lmf\log\userauth	/opt/isms/lmf/log/userauth
Administrative Events	\isms\lmf\log\adminevents	/opt/isms/lmf/log/adminevents
VPN	\isms\lmf\log\vpn	/opt/isms/lmf/log/vpn

Log File Names

For each of the five logs, the first ″loggable″ event or activity that occurs each day causes a new log file to be created. The name of this file, and each file that is created throughout the remainder of the day, reflects the date and time the file was created.

The format of the name is:

YYYY-MM-DD-hh-mm-ss.log

where:

YYYY = year (four digits)

MM = month (01-12)

DD = day (01-31)

HH = hours (00-23)

mm = minutes (00-59)

ss = seconds (00-59)

The name of the first log file on any given day is made up of the year, month, and day. For example, the following would be the name of the first log file created on June 16, 2001:

2001-06-16-.log

If other log files are created during the day, their names would include the hour as well as the year, month, and day. Thus, if the second file created on June 16, 2001, was created at 1 pm, it would have this name:

2001-06-16-13-.log

If another log file is created before the hour is up, its name would consist of the year, month, day, hour, and minute. Therefore, if the third file created on June 16, 2001, was created at 1:30 pm, it would have this name:

2001-06-16-13-30-.log

Finally, if another log file is created before the minute is up, its name would be made up of the year, month, day, hour, and second, in the format shown below:

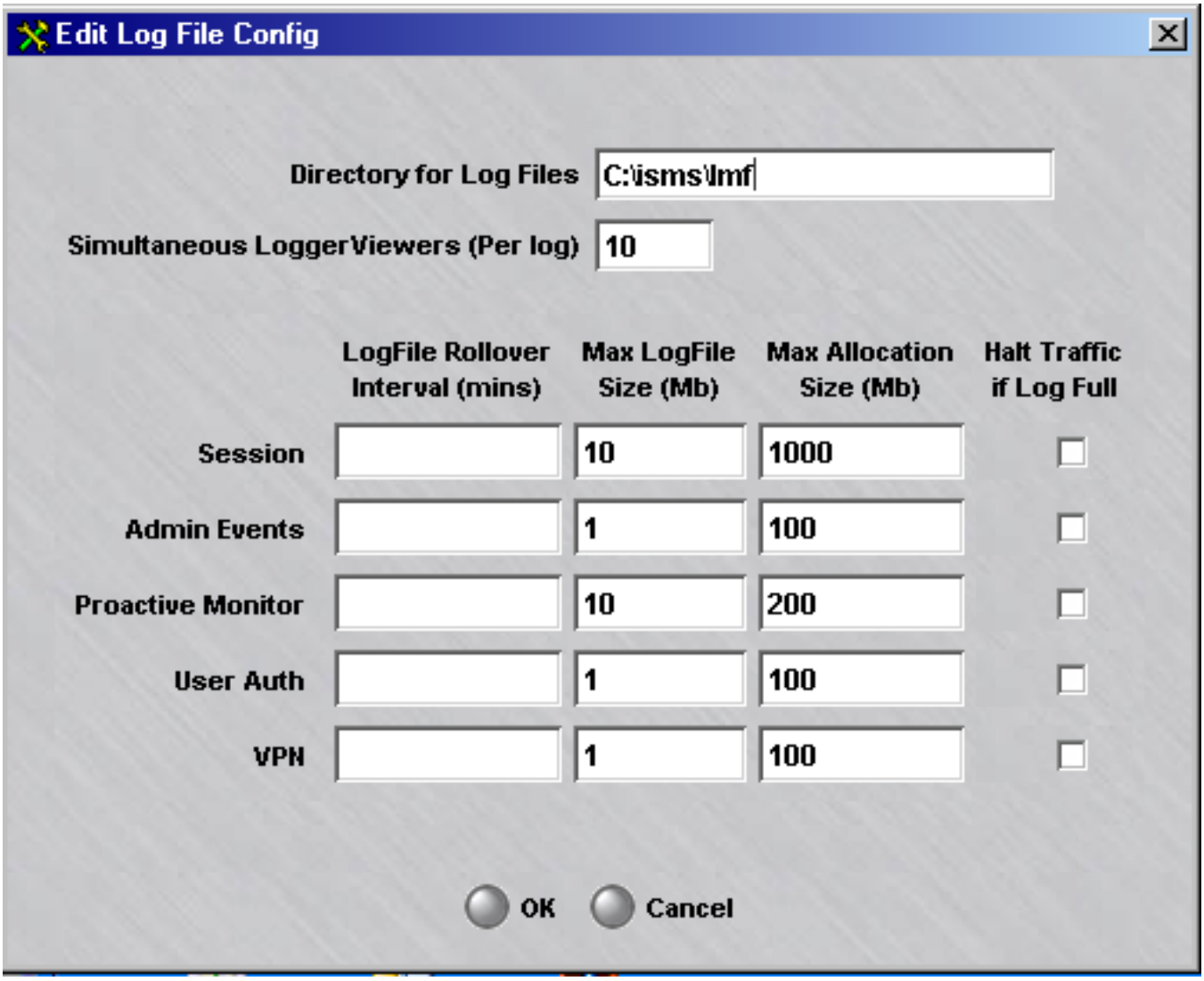
2001-06-16-13-30-45.log

> **Important!** The dash that appears before the.*log* in each file name has been added by the SMS to ensure that the files display in the proper order. You may ignore it.

Log File Size

New log files are created whenever an existing log file reaches its maximum size or after the configured rollover interval. The maximum size and the rollover interval of the log files for each log is set using the Configuration Assistant. Refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide* for details on the Configuration Assistant. Figure 1-1, “Configuration Assistant Log File Entries” (p. 1-6) shows the Configuration Assistant Log Files settings.

Figure 1-1 Configuration Assistant Log File Entries



The table below shows the default maximum file size and maximum disk allocation for each of the five logs. The time interval-based log file rotation is disabled, by default.

See Appendix H, "Log File Sizing Guidelines" for details on calculating appropriate log file sizes for your requirements.

Log	Maximum File Size (Megabytes)	Maximum Disk Allocation (Megabytes)
Session	10	1000

Log	Maximum File Size (Megabytes)	Maximum Disk Allocation (Megabytes)
Administrative Events	1	100
Proactive Monitoring	10	200
User Authentication	1	100
VPN	1	100

Halt All Traffic If Log Full

It is important that you allocate enough disk space for each log to accommodate the log files that are created. In Appendix H, "Log File Sizing Guidelines", we provide guidelines for determining how much space to allocate for each type of log.

If the disk space that was allocated for a particular log is exhausted, the SMS will begin to delete old log files, beginning with the oldest, to make room for new ones.

Since this can cause you to lose important log records that may be necessary for troubleshooting or recovery purposes, you can prevent the old files from being deleted by checking the **Halt Traffic if Log Full** checkbox in the Configuration Assistant (see Figure 1-1, "Configuration Assistant Log File Entries" (p. 1-6)). This checkbox appears next to each log, so you can turn this feature on and off for each log.

For each Brick that will be generating log data, you must also check the **Halt All Traffic if Audit Fails** checkbox when initially configuring the Brick. If this has not been done for a Brick, edit the Brick's configuration and click the checkbox. Refer to the *Maintaining an Alcatel-Lucent VPN Firewall Brick® Security Appliance Configuration* chapter in the *SMS Administration Guide* for instructions on editing a Brick configuration.

If you make any changes to a checkbox setting, you have to restart the logger service.

How it Works: If a log is about to be deleted due to lack of disk space, the logger subsystem checks to see if the **Halt Traffic if Log** Full checkbox for the log has been checked in the Configuration Assistant. If the checkbox is checked, the log is not deleted and the Bricks are disconnected from the SMS.

When a Brick is disconnected from the SMS and the **Halt All Traffic if Audit Fails** is checked on the Options tab of the Brick Editor for that Brick, then the Brick will not pass any more traffic until it reconnects to the logger on the SMS.

Generate an Alarm: If you want to be notified when the allocation for a log file is approaching maximum capacity, and network traffic will soon stop because **Halt Traffic if Log Full** has been enabled, you can configure one of these alarm trigger types:

- **A Proactive Monitoring trigger** to monitor the amount of space left. This trigger would provide notification so the problem could be rectified before it escalates into a catastrophic scenario.
- An SMS **Error trigger** configured with the error code: `E4017 All Traffic Halted`. This trigger is *not* proactive, only retroactive. It would provide a warning that a problem has already occurred and should be corrected, since traffic through the Brick will be halted until the log space is freed.

See Chapter 6, “Configuring Alarm Triggers” in this guide for details on how to configure these triggers.

□

2 SMS Log Viewer

Overview

Purpose

This chapter explains how to use the SMS Log Viewer. The purpose of the Log Viewer is to enable an administrator to view the five logs that are provided with the SMS. These logs are: an Event Log, a Proactive Monitoring (Promon) Log, a Session Log, a VPN Log and a User Authentication Event Log. These logs can be viewed real-time or historically.

Contents

Display the Log Viewer

Overview

The Log Viewer can be displayed locally from the SMS/LSCS host or remotely, using the SMS Remote Navigator. The following explains how to display the Log Viewer locally on both the Windows and Solaris platforms, and remotely using the SMS Remote Navigator.

Display the Log Viewer Locally (Windows)

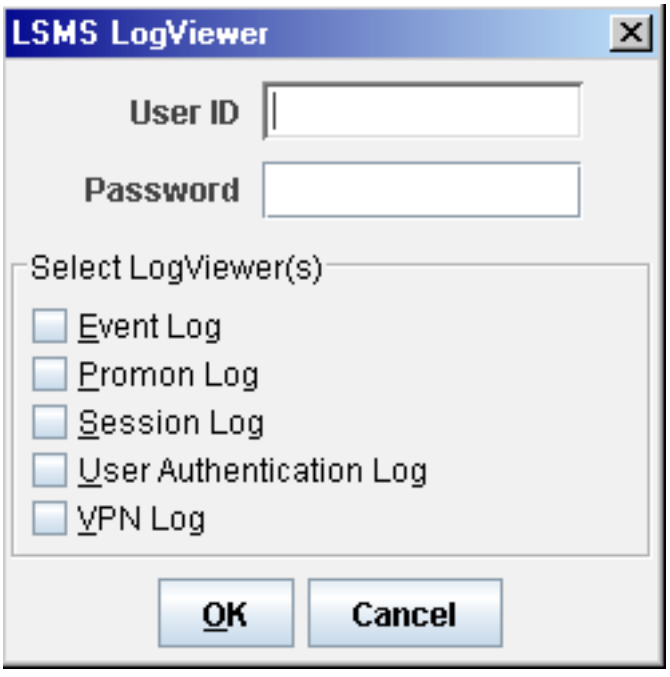
To display the Log Viewer from an SMS host running Windows, follow the steps below:

1 Click the **Start** button on the Windows taskbar, and select:

Programs ▶ Alcatel-Lucent Security Management Server ▶ SMS LogViewer

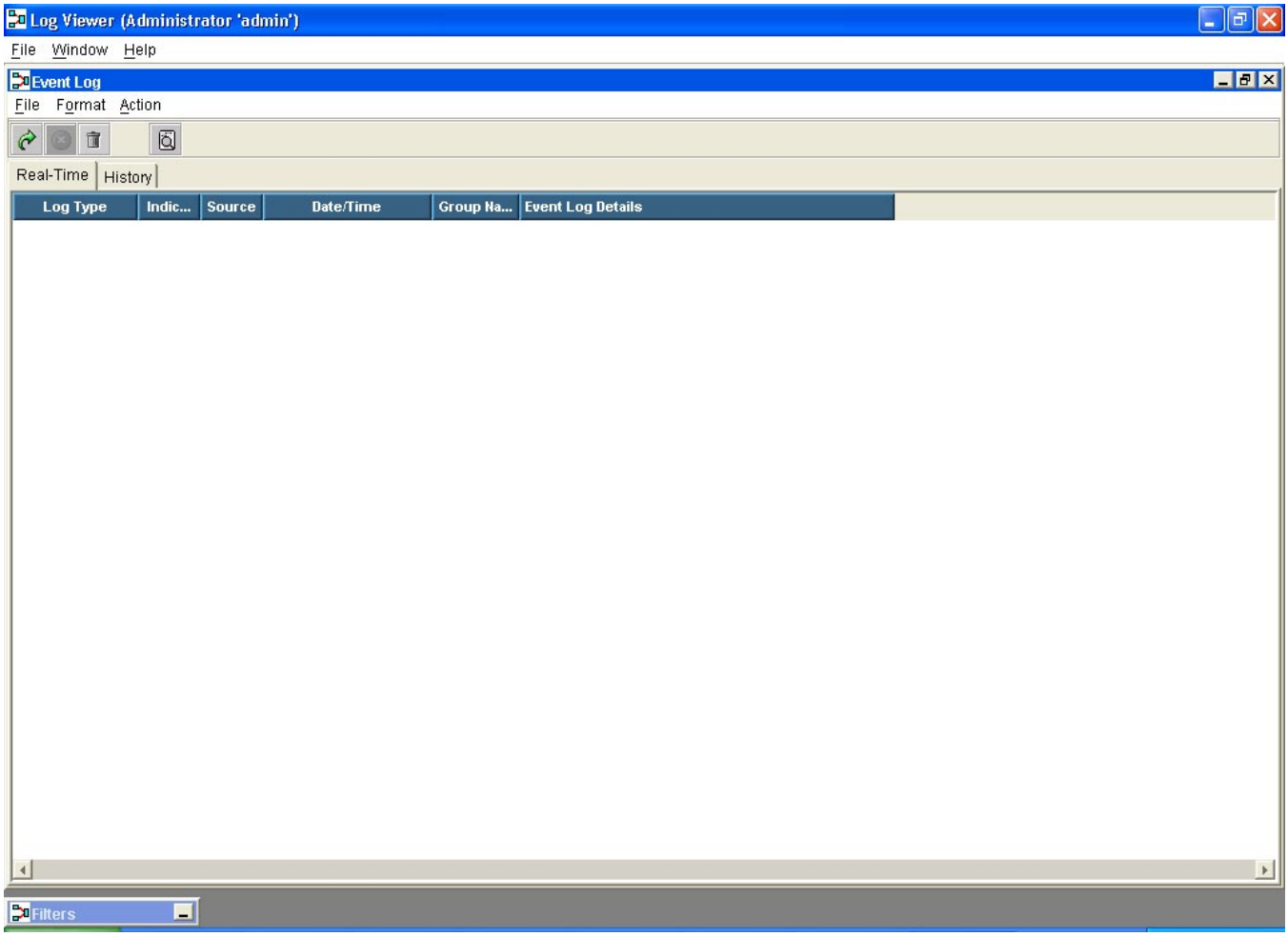
Result The Log Viewer menu is displayed (Figure 2-1, “Log Viewer Menu” (p. 2-2)).

Figure 2-1 Log Viewer Menu



2 Select the log(s) you want to view and click the **OK** button. You may select up to five logs. The Log Viewer will appear with the first log you selected displayed. Figure 2-2, "Log Viewer" (p. 2-3) shows the Log Viewer with the Event Log displayed.

Figure 2-2 Log Viewer



By default, only one log will appear in the Log Viewer at any one time. If you selected more than one log, you can switch to one of the other logs you selected by opening the **Window** menu and selecting the log. All logs that are open are shown in the Window menu.

END OF STEPS

Display the Log Viewer Locally (*Solaris*®)

To display the Log Viewer from an SMS host running *Solaris*®, follow the steps below:

1 Make the installation directory (usually */opt/isms/lmf*) the present working directory.

2 From the Solaris command line, enter:

./LogViewer

The Log Viewer window will appear. It is shown in Figure 2-3, “SMS Log Viewer With All Log Windows Open” (p. 2-4).

Figure 2-3 SMS Log Viewer With All Log Windows Open

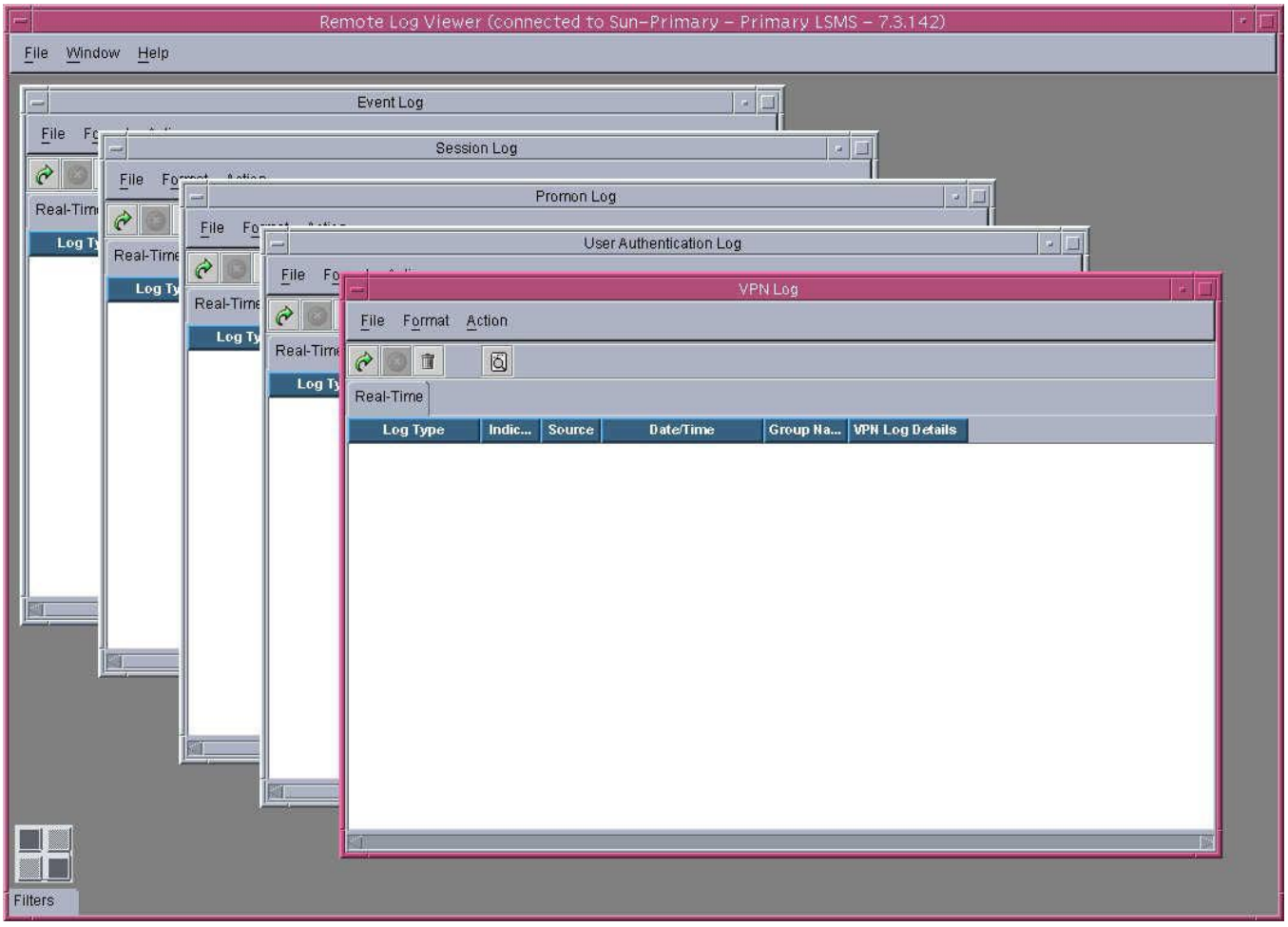
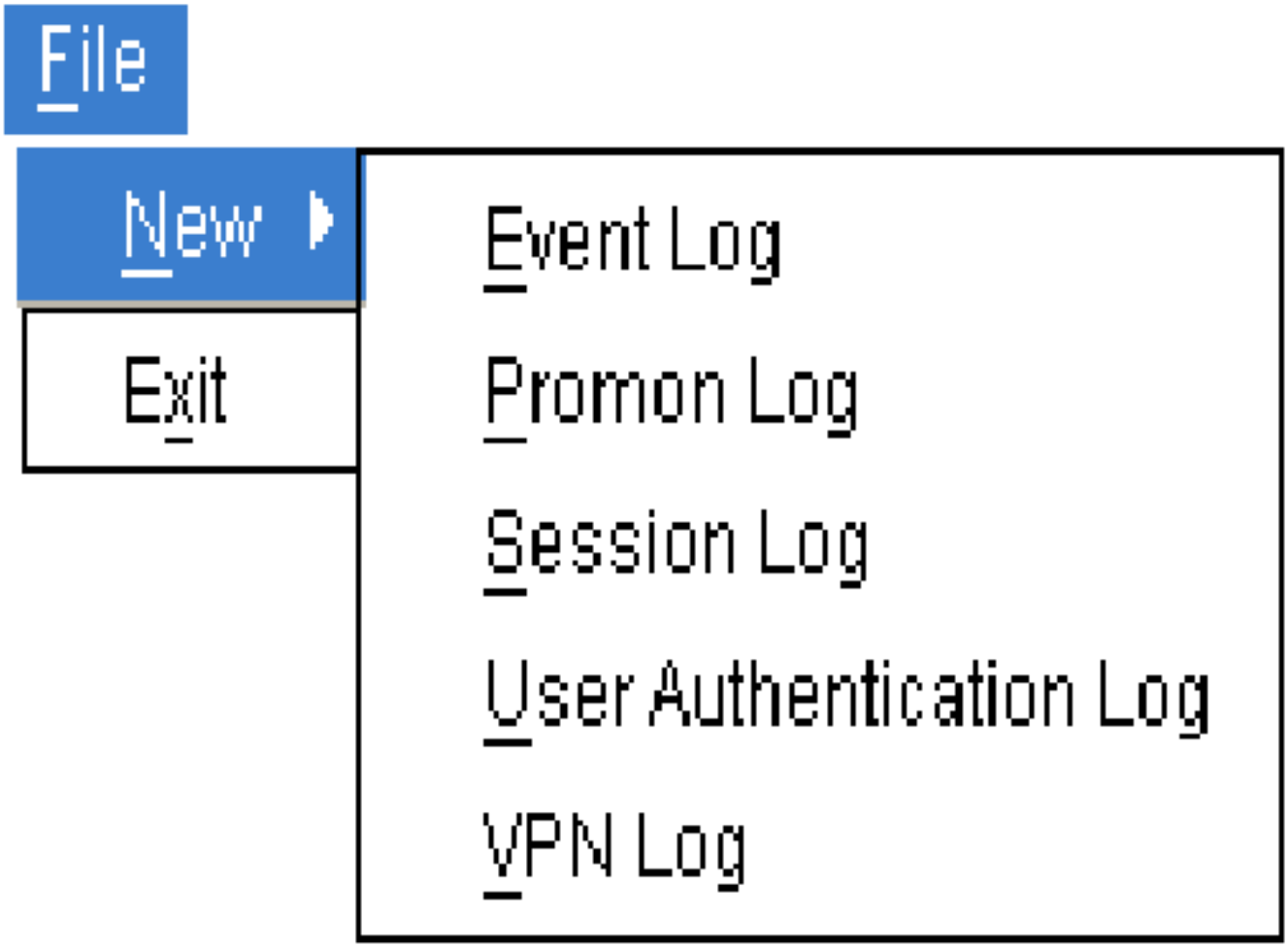


Figure 2-3, “SMS Log Viewer With All Log Windows Open” (p. 2-4) shows all five Log Windows open as well as the **Log Viewer Filters** window. The **Filters** window always opens, but only those Log Windows that you checked on the Log Viewer menu open.

The Log Viewer Filters window can be minimized, but it cannot be closed.

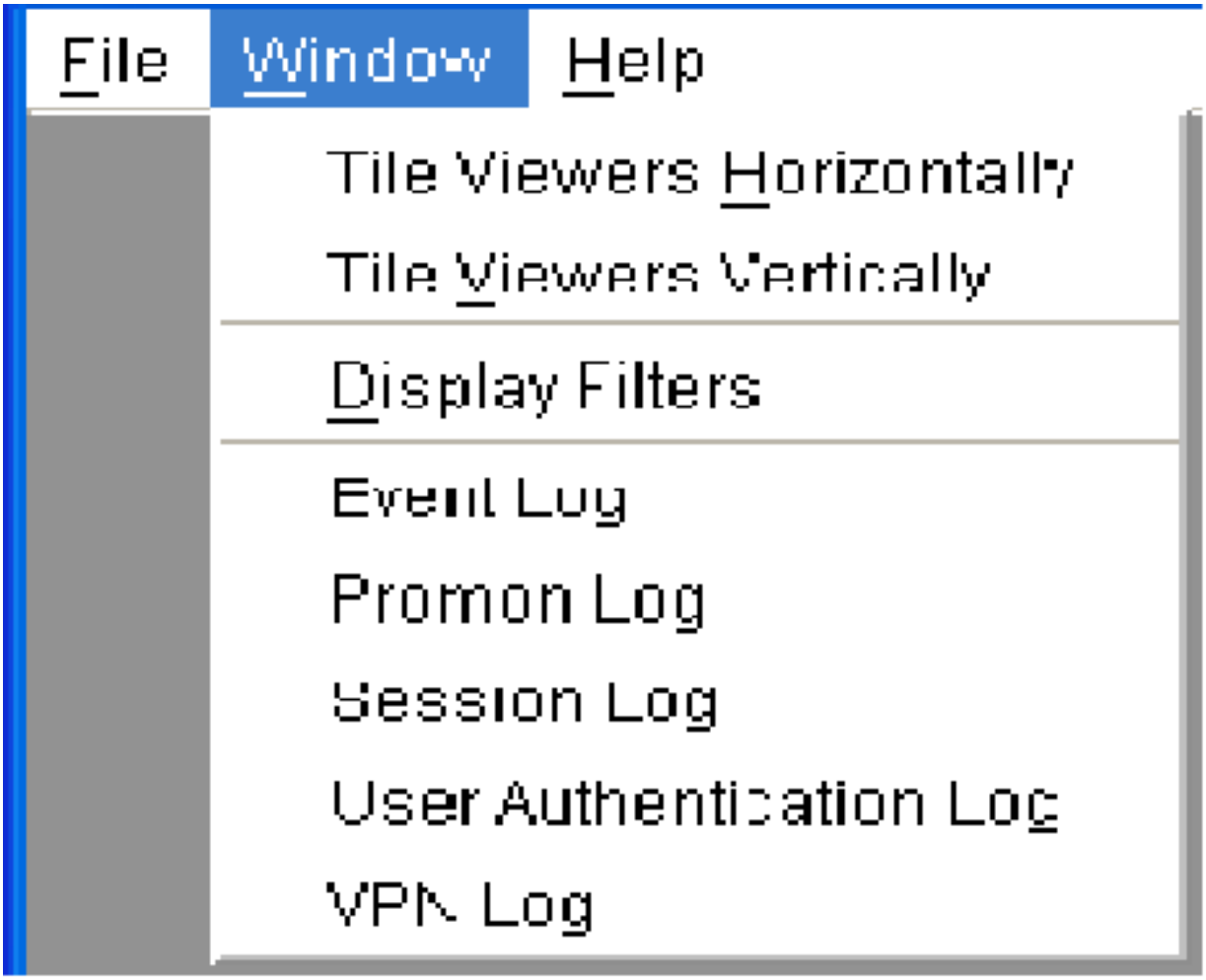
The Log Viewer’s **File** menu allows you to open additional Log Windows after you’ve launched the Log Viewer. Only one instance of each Log Window type can be open at a time however. The menu selections for each Log Window type are grayed out if the corresponding window is already open.

Figure 2-4 SMS Log Viewer File Menu



The Log Viewer **Window** menu displays a menu entry for each window that is currently open. Clicking the entry for a specific Log Window brings that window to the front of the Log Viewer. The **Display Filters** menu selection works in a similar fashion, but since the Filters window is always open, this menu entry is never grayed out.

Figure 2-5 SMS Log Viewer Window Menu



END OF STEPS

Display the Log Viewer Remotely

SMS Administrators may display the Log Viewer remotely using the SMS Remote Navigator. Follow the steps below:

1 Open the SMS Remote Navigator and log into the SMS.

2 From the main menu, select

Utilities ▶ SMS Log Viewer

Result The SMS Log Viewer is displayed (Figure 2-1, “Log Viewer Menu” (p. 2-2)). Select the logs you want.

The Log Viewer that is displayed when accessed remotely only provides real-time data, no historical data. If you need to display historical data from a remote connection use the report function.

END OF STEPS

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Log Window Modes

Overview

The Log Windows allow you to view the logs in two modes — **Real Time** and **History**.

Figure 2-6, “SMS Log Window Real Time Tab (Session Log)” (p. 2-8) and Figure 2-7, “SMS Log Window History Tab (Session Log)” (p. 2-9) show each mode of the Session Log Window. You can change modes by clicking the appropriate tab, **Realtime** or **History**.

Figure 2-6 SMS Log Window Real Time Tab (Session Log)

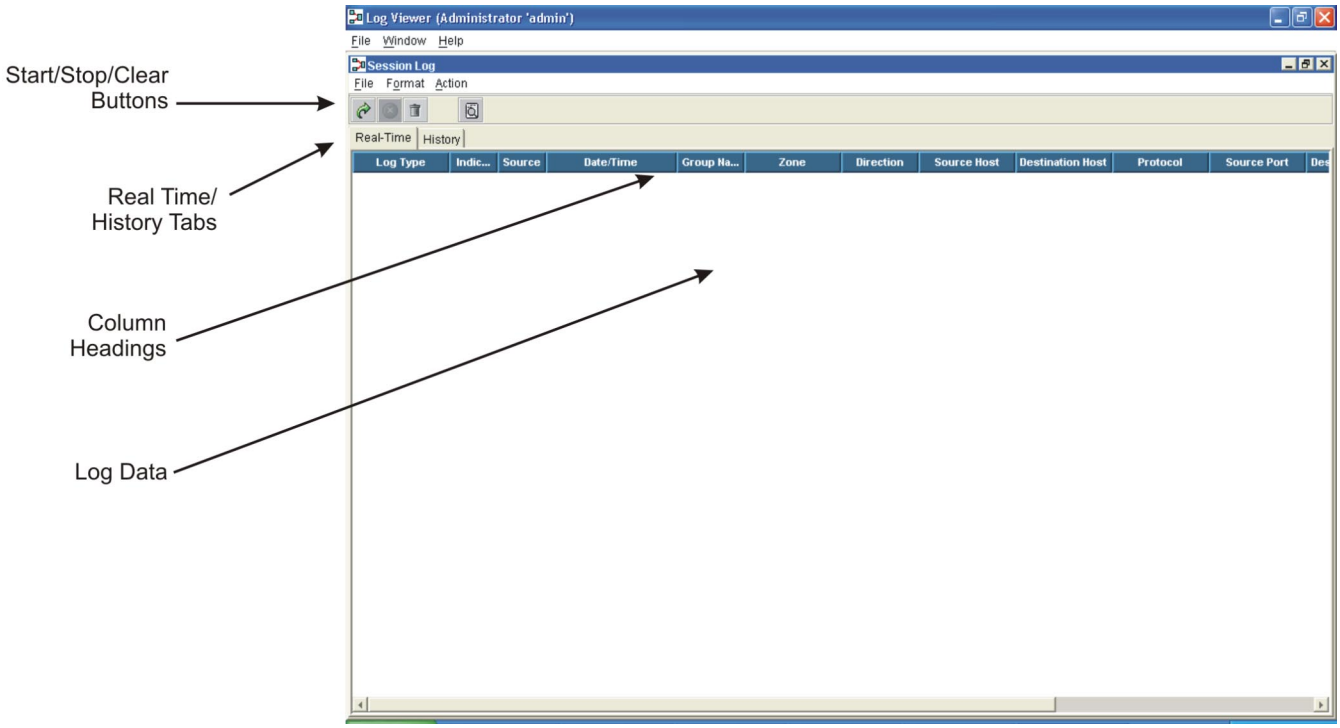
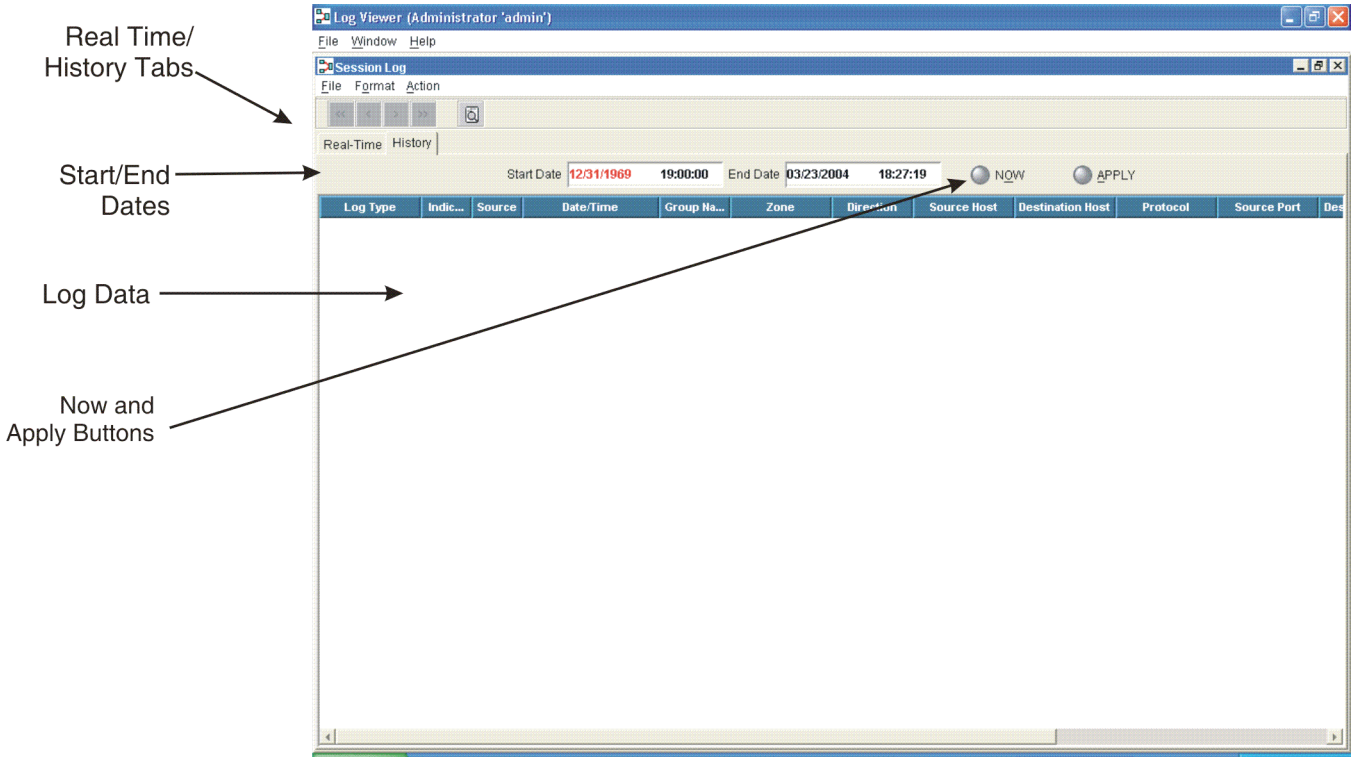


Figure 2-7 SMS Log Window History Tab (Session Log)



To use a Log Window, you first enter the filtering criteria, as explained in the section "Log Viewer Filters Window" (p. 2-17). The filtering criteria allow you to determine which traffic or events in the log files you wish to display.

For example, when using the Session Log Window **History** tab as shown above, you can specify a particular Brick device or zone — in which case, you only see data pertaining to that Brick or zone.

If you are viewing data on the **History** tab, you also have to enter a `Start Date` and `End Date`. Then, click the **APPLY** button to apply the criteria. Once this has been done, there are other buttons you can use. These are explained in the two sections below.

□

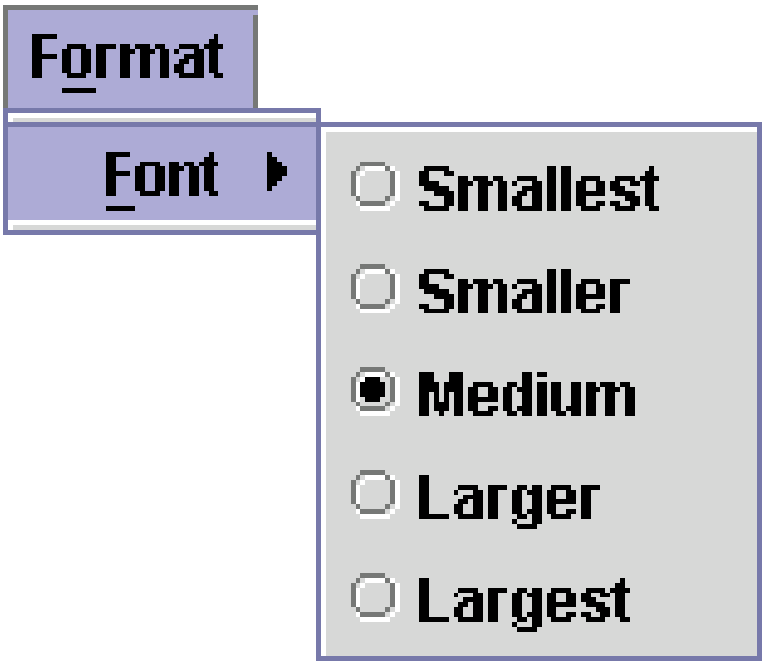
Log Window Menus

Overview

The Log Window File menu contains two selections: **Save As** and **Close**. The Save As selection allows you to save a history tab display as a comma separated text file. When you click Save As, a dialog box appears in which you can specify a name and location for the saved file.

The Log Window **Format** menu allows you to choose among five different font sizes for the log message text. The default font size is **Medium**.

Figure 2-8 SMS Log Window Format Menu

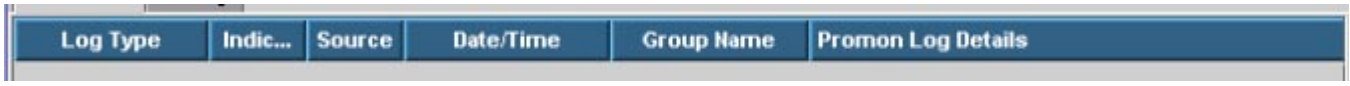


Log Window Column Headings

Overview

A Log Window's output is arranged into columns. The first five columns, `Log Type`, `Indicator`, `Source`, `Date/Time`, and **Group Name** are the same regardless of which Log Window you are using. For three of the Log Windows, the heading of the fifth column has a name appropriate to the particular log window, such as **Event Log Details, User Auth Details,** or, as in Figure 2-9, "Promon Log Window Column Headings" (p. 2-11) below, **Promon Log Details**.

Figure 2-9 Promon Log Window Column Headings



The **Session Log** viewer has seven additional columns, for a total of 12.

Figure 2-10 Session Log Window Column Headings

Sorting

In the History tab, you can sort columns of log data by clicking on the column heading.

Important! For performance reasons, sorting columns in logs with a size greater than 200 pages (around 40,000 records) is not recommended.

□

Real Time Tab

Overview

When you look at the **Real Time** tab of a Log Window, you see log information as it is being collected. It is useful to filter the log when viewing the **Real Time** tab so that you can perform real-time debugging or monitoring of a live network without impacting the performance of the system.

Colorized display of sessions

When viewing the Sessions Log in real time, each row is color-coded to indicate the action that the Brick device has taken on each session.

The following table explains the color coding used on the Real Time tab of the Log Viewer.

Color	Meaning
Magenta	Session ended abnormally.
Red	Session action taken is **Drop** by the Brick device.
Green	Session action taken is **Pass** by the Brick device.
Blue	Session action taken is **Proxy** by the Brick device.

Real time tab buttons

The Real Time tab has three buttons at the top left, below the menu bar.

Figure 2-11 Log Window Real Time Tab Buttons

These buttons are, from left to right, Start, Stop, and Clear. Clicking the **Start** button starts the display of log records. Clicking the **Stop** button stops the display of log records. Logging continues. If you click the **Start** button after click the **Stop** button, the display of log records starts at the current time, not where the display last left off. Clicking the **Clear** button clears the log list. These buttons also have exact counterparts on the **Action** menu.

Figure 2-12 Log Window Real Time Tab Action Menu

The following table explains the function of each button and menu item on a Log Window **Real Time** tab:

Button	Function
Start	Starts the display of log entries after the display has been paused using the **Stop** button. This button or menu item is disabled until you click **Stop**.
Stop	Stops displaying log entries. After **Start** has been selected, click **Stop** to pause the scrolling. This button or menu item is disabled until you click **Start**.
Clear	Refreshes the display.
Auto Scroll	When the **Auto Scroll** checkbox is checked, the log list scrolls as new entries are added. By default the checkbox is unchecked.

History Tab

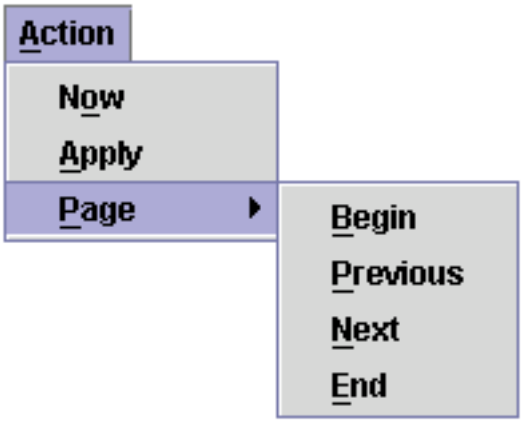
Overview

When you view the **History** tab of a Log Window, you see log information that was collected in the past. The `Start Date` and `End Date` fields allow you to specify the time frame you want displayed, down to the second. To increase performance, keep the interval between start date/time and end date/time short.

The filtering criteria allow you to specify precisely which information from that time frame you want to see.

The History tab provides the ability to step backward or forward through a log file by selecting pages. Each page is 200 lines of records. You can page through a log by using the **Begin, Previous, Next**, and **End** selections from the **Action** menu, **Page** submenu, shown in Figure 2-13, “Log Window History Tab Action Menu” (p. 2-14).

Figure 2-13 Log Window History Tab Action Menu



You can also page through a log using the paging buttons below the menu bar.

Figure 2-14 Log Window History Tab Paging Buttons

The following table explains the function of each button or menu item:

Button	Function
Now	Sets the `End Date` field to the current date/time.

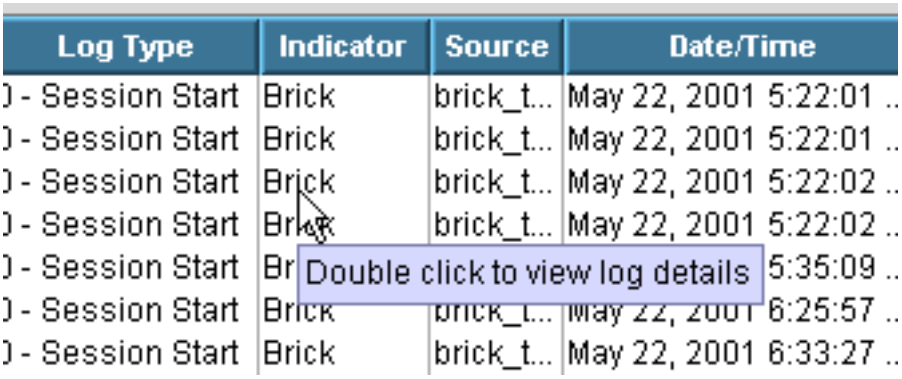
Button	Function
Apply	Starts displaying log entries. Use after entering filteringcriteria.
Begin (<<)	Displays the first page of a log file (the first 200 lines of the log). Click this menu item after you click **Apply**. This menu item is initially disabled.
Previous (<)	Displays the previous page of a log file (the previous 200 lines of the log). Click this menu item after you click **Apply**. This menu item is initially disabled.
Next (>)	Displays the next page of a log file (the next 200 lines of the log). Click this menu item after you click **Apply**. This menu item is initially disabled.
End (>>)	Displays the last page of a log file (the last 200 lines of the log). Click this button after you click **Apply**. This menu item is initially disabled.

Log Detail Window

Overview

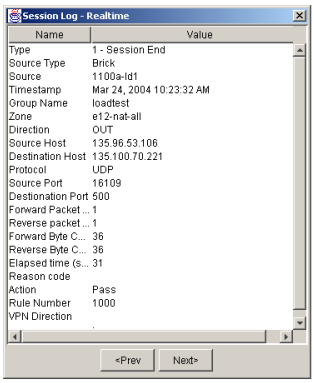
The SMS features a Log Detail window enhancement to the log windows that allows the user to view details of individual log entries. Each log message field is labeled in the **Name** column. The Log Detail window makes interpretation of log messages much easier. If you position the cursor over a line in any Log Window, a ″Tool Tip″ prompt appears to remind you of this feature.

Figure 2-15 Log Window Tool Tip Prompt



Double-click a row in the Log Window and the Log Detail window, shown in Figure 2-16, “Log Window Detail Window” (p. 2-16), appears.

Figure 2-16 Log Window Detail Window



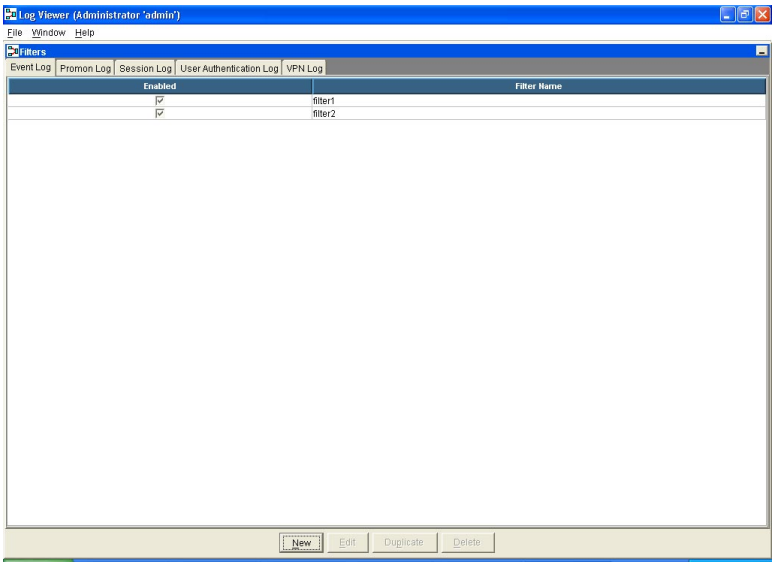
The Detail window contains two columns labeled **Name** and **Value**. You can click the **Next>** or **<Prev** buttons to view details about the next or previous events, respectively. Both the Real Time and History tabs have similar Detail windows.

Log Viewer Filters Window

Overview

When you select a log window to open from the initial Log Viewer pop-up menu, the **Log Viewer Filters** window opens at the same time.

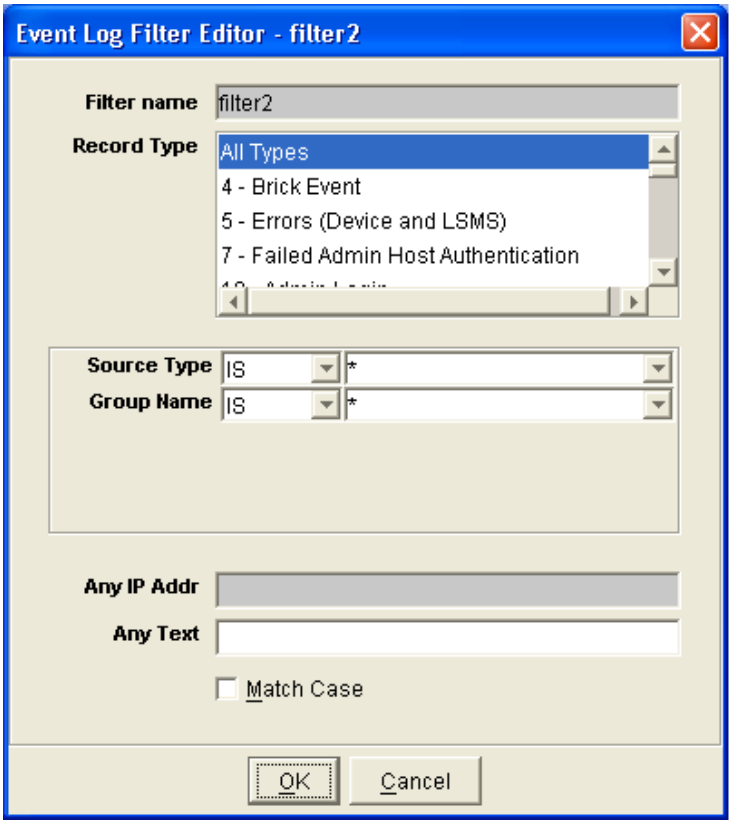
Figure 2-17 Log Viewer Filters Window



The Log Viewer Filters window has five tabs, one for each type of log. Click each tab to display filters that have already been configured for that log. A check in the **Enabled** column indicates that the filter is active.

To create a new filter, click the **New** button. The **Filter Editor** window appears.

Figure 2-18 Filter Editor Window



Assign a name to the new filter in the **Filter Name** field.

Choose **All Types** to capture all types of log records, or select one or more record types from the scrolling list. a set of log types for a given viewer

You can select more than one Filter Type by holding down the Control (CTRL) key when clicking on entries in the **Filter Type** list field. You can also select a range of Filter Types by holding down the Shift key, and clicking the first, then the last of the log types you want to include in the selected range.

The **Any IP Addr** field can be used for bi-directional IP Address filtering. This field accepts a single IP address, a range of IP addresses separated by a hyphen, or both. This field applies only to Session Log filters.

Use the **Any Text** field to define a text string for text based search. By default, the field ignores case. Check the **Match Case** checkbox to perform a case sensitive text search.

Log Filter Parameters

When you select a record type or types, the area below the Record Type list fills in with a number of fields, as shown in Figure 2-19, “Log Filter Parameters” (p. 2-19).

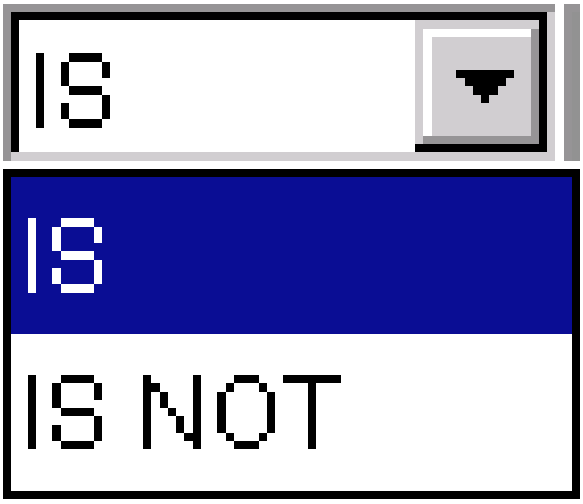
Figure 2-19 Log Filter Parameters

Depending on the type of log you are viewing and the record type you have selected, as few as two of these fields may appear. In most cases, however, more fields will be present.

Most of the fields provide drop-down menus that present all of the valid selections for that particular field. Some fields require the entry of an IP address or a port number.

All of the fields also include an IS/IS NOT drop-down menu that allows you to exclude certain entities. For example, in the Session log, the Protocol field entries available from the drop down list are TCP, UDP, ICMP, and * (for all protocols). By selecting IS NOT, then selecting UDP, your log would display entries for all sessions that use any protocol except UDP. The IS/IS NOT drop-down list is shown in Figure 2-20, “IS/IS NOT Drop-down List” (p. 2-19).

Figure 2-20 IS/IS NOT Drop-down List



The following table lists all the fields present in any log window. Some fields in the table only appear in a specific log type, such as the Promon log, and are marked as appropriate.

Filter Name	Description
Source Type	This field filters the log record source. Valid values are *, **Brick, SMS Process, Proxy Server, ISS Real SecureEngine**
Sub Type	Promon Log only. Sub type of Promon Log record. The valid values are **Brick, Brick Interface-Generic, Brick Interface-Ethernet, SMS Auditing, Authentication-VPN Client, Authentication Firewall, Brick-VPN Data, QoS Statistics, SLA Round Trip** and **VPN Local Presence**.
Brick Name	Valid Brick name. Multiple Brick names can be separated by commas.
Group Name	A valid SMS group name. This field can accept multiple groups separated by commas.
Zone	Valid SMS ruleset. Multiple rulesets can be separated by commas
Source Host	Source IP Address.
Dest Host	Destination IP Address.
Protocol	Valid Protocol. Can be selected from **TCP, UDP, ICMP**, or enter a valid protocol number. Multiple entries can be separated by commas.
Source Port	Valid Source Port Number. Can enter valid entries between 0 and 65535. Multiple entries can be separated by commas.
Dest Port	Valid Destination Port Number. Can enter valid entries between 0 and 65535. Multiple entries can be separated by commas
Source ID	Promon Log only. Source of Promon Log record. For Brick data, the source is Brick name.
Index Name	Promon Log only. Example: For port data, the index name is the port name.
Action	Valid Action. Can be **Pass** or **Drop**.
Direction	Valid direction. Can be **IN** or **OUT**.

Set the Help Facility

Overview

At the bottom of each Log Viewer is a **HELP** button that you can click to display Help about the Log Viewer. Depending on whether you are using *Windows*®, *Vista*®or *Solaris*®, there are several actions you can perform to make the Help facility easier to use.

To make the Help facility easier to use in *Solaris*®Solaris, do the following.

- *Solaris*®
  On *Solaris*® only, in order for the Log Viewer Help files to be displayed without prompting for the absolute path of *Firefox*™ browser, set the `PATH` variable to the path where *Firefox*™ browser was installed (typically, this is */opt/firefox*).
  For example, enter the following command at the command prompt or add it to a startup file (e.g., *.profile*):
  PATH=/opt/netscape:$PATH; export PATH

This example assumes /opt/netscape is the installation directory of Netscape Communicator. This may be different in your environment.

□

Find Text Function

Overview

The Log Viewer provides a ″find″ function that enables you to search through log files and find and highlight all instances of a particular character string. You can use the find function to search for text in an existing log, or you can use it real-time, so that it highlights the text you want as the text is added to the log file.

To use the find function click this icon at the top of the window:

The find an highlight window will appear (Figure 2-21, “Find and Highlight Window” (p. 2-22)).

Figure 2-21 Find and Highlight Window

Enter the character string you want to find and click **OK**. To start a new search, click **Clear**, enter the new character string, and click **OK**.

□

3 Types of SMS Logs

Administrative Events Log

Overview

The Administrative Events Log, often referred to as simply the Events Log, is the primary troubleshooting tool, providing detail on error messages as well as routing problems.

The Administrative Events Log contains log messages about administrative events (for example, that the Alcatel-Lucent*VPN Firewall Brick*® Security Appliance zone ruleset was loaded), Brick events (such as Brick was lost), error messages, and alarms that were triggered and delivered.

This log also contains informational messages and miscellaneous events not written to the other log files.

Administrative Events Logs are created and stored in *\log\adminevents* under the installation root directory.

Administrative Events Log Sample Record

The following is a sample record from an Administrative Events Log:

Figure 3-1 Administrative Events Log Sample Record

```
35:i:alarms:100941::3580:12747:
Send a Console Message:Success:Console
Message Successful in the action for
administrator las030_admin
```

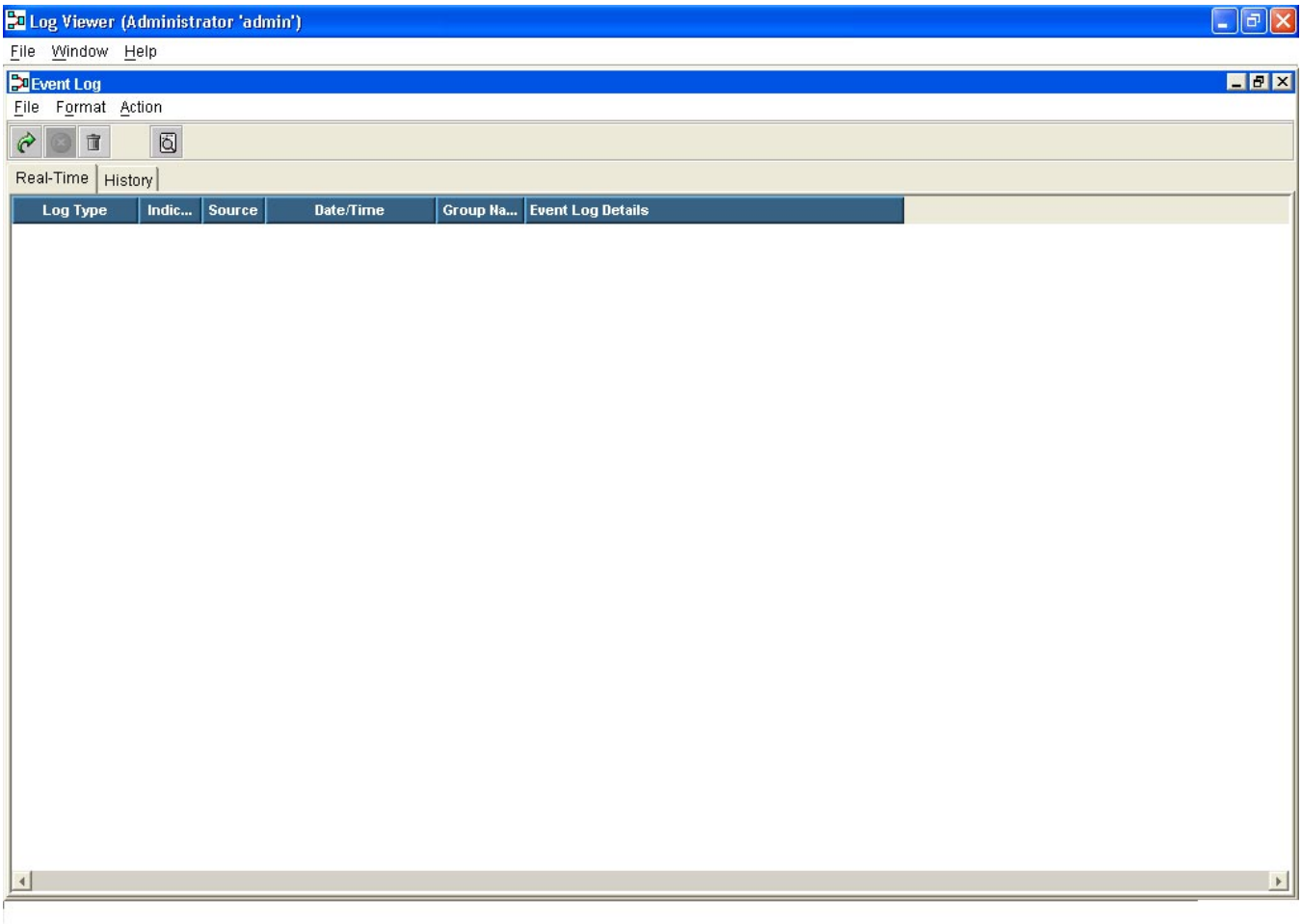
The example above shows a record that contains record type `35`. Additional record types are written to this log, with each having its own format.

The record types and fields are comprehensively explained in the Help of the Administrative Events Log Viewer.

Administrative Events Log Viewer

Figure 3-2, “Administrative Events Log Viewer” (p. 3-2) shows a typical Administrative Events Log Viewer.

Figure 3-2 Administrative Events Log Viewer



Filtering Criteria

The only filtering criteria that can be applied to data in the Administrative Events Log is a text search. For example, you could enter:

- ″SNMP Trap″ to search for all sessions where alarms sent SNMP traps to a Network Management Station (NMS).
- ″Lost″ or ″Contacted″ for Brick connectivity.
- An error code.

□

Session Log

Overview

The Session Log contains Brick session records, which describe network activity through one or many Bricks. Session transactions through all Brick ports are recorded here. Session Log files are created and stored in *\log\sessions* under the installation root directory.

When a packet is passed or dropped by the Brick, the rule number that performs that action is recorded as part of the Session Log entry. This can be important information when troubleshooting.

Session Log Sample Record

The following is a sample record from a Session Log:

Figure 3-3 Session Log Sample Record

```
8:b:1b1_las030:133330-
1:loadtest_group:las030_1b1_
  1:OUT:125.92.10.30:125.92.21.50:6:1590:21:
EXTERNAL:FORWARD:125.92.20.202:21ce:
```

Figure 3-3, “Session Log Sample Record” (p. 3-3) shows a record that begins with record type `8`. Additional record types are written to this log, with each having its own format. The record types and fields are comprehensively explained in “Overview” (p. C-1), Appendix F, “Filterable Log Fields”, and Appendix G, “Log Field Syntax” in this manual, and in the Session Log Viewer online Help.

A field worth noting is the fourth field that contains the timestamp. The timestamp reflects both the SMS timestamp and the source timestamp issued from a Brick.

The SMS timestamp (e.g., `133330`) adheres to a standard six-digit timestamp (`hhmmss`). The source timestamp is the difference between when the data was collected by the source (i.e., a Brick) and when the record was actually written to the log file (i.e., the SMS timestamp).

For example, in Figure 3-3, “Session Log Sample Record” (p. 3-3), the fourth field is 133330-1, which means the record was written to the log at 1:33 PM and 30 seconds, and the event actually occurred at the Brick one second before.

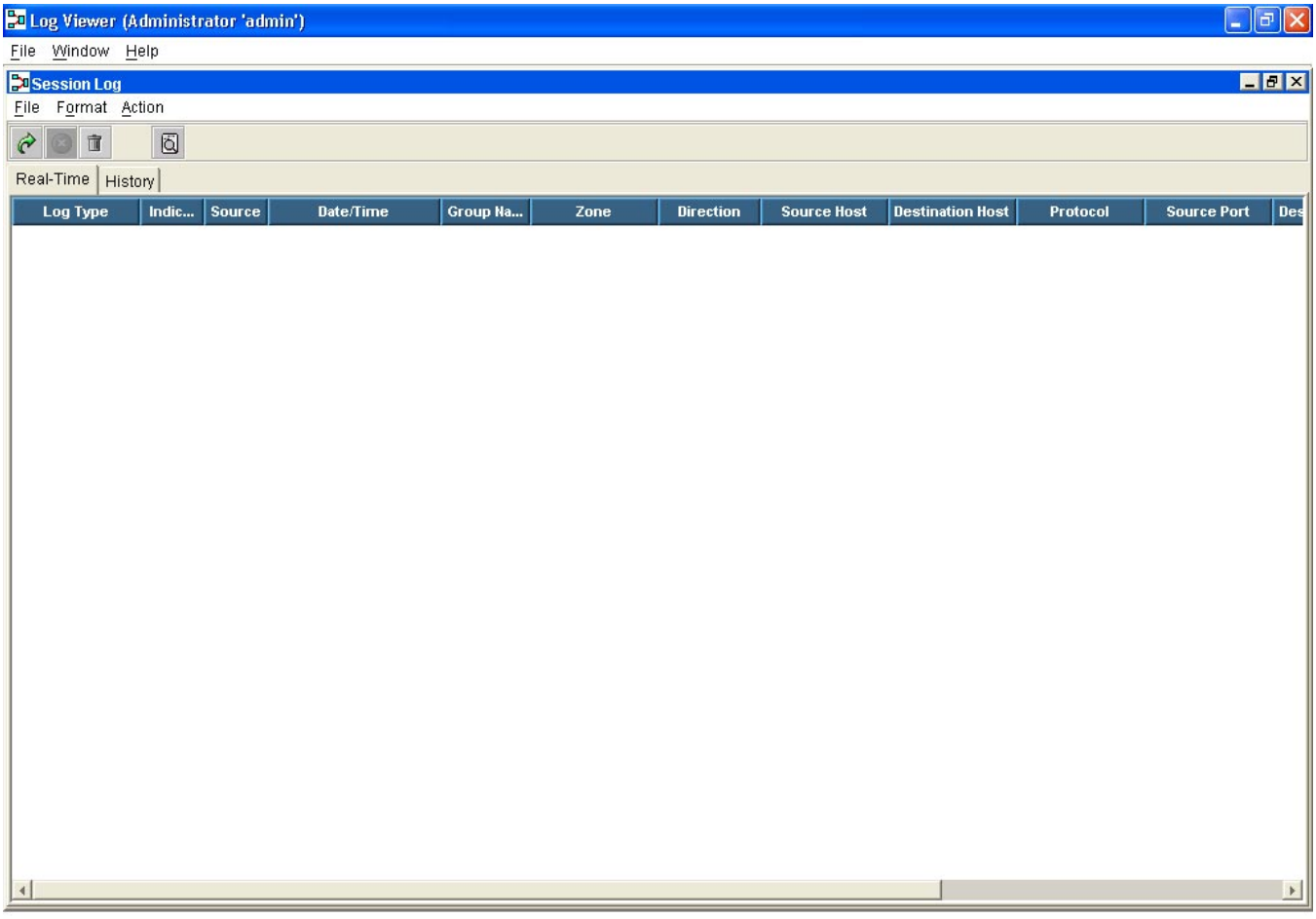
Other examples include where the SMS timestamp is followed by a positive number, such as 133330+1 or an unusually large negative number, such as 133330-28. In these cases:

- A positive number may be indicative of a clock synchronization problem; the clock on the SMS may not be synchronized with the clock on the Brick. Larger positive numbers (e.g., +2 or greater) may require attention (e.g., a reboot of the Brick, restart of services), where smaller numbers (e.g., +1) do not.
- A large negative number may indicate that a network interruption or failover occurred and the Brick could not communicate with the SMS. The Brick will queue the message until communication is re-established and the message can be sent to the logger.

Session Log Viewer

Figure 3-4, “Session Log Viewer” (p. 3-4) shows a typical Session Log Viewer.

Figure 3-4 Session Log Viewer



Session Log Filtering Criteria

The table below explains the criteria you can employ to filter the Session Log before clicking **APPLY** and displaying data:

Field	Description
Source Type	Select one or more source types to include in the output. The source types are: Brick, LSMS Process, Proxy Server, and ISS Real Secure Engine.
Brick Name	Select one or more Bricks to include in the output. All Bricks that have been configured are displayed in the pulldown menu. You can manually type a Brick name as well. Commas are automatically inserted between entries. Non-selected Bricks will not be included in the output. Selecting * includes all Bricks.
Group Name	Select one or more groups to include in the output. All groups that have been configured are displayed in the pulldown menu.
Zone	Select one or more Brick zone rulesets to include in the output. All Brick zone rulesets that have been configured are displayed in the pulldown menu. You can manually type a Brick zone ruleset as well. Commas are automatically inserted between entries. Non-selected Brick zone rulesets will not be included in the output. Selecting * includes all Brick zone rulesets.
Source Host	Enter an IP address of the host that is sending the packets. If you accept the default (*), all source hosts will be included in the output.
Dest Host	Enter an IP address of the host that is receiving the packets. If you accept the default (*), all destination hosts will be included in the output.
Protocol	Select one or more protocols to include in the output. All protocols that are available are displayed in the pulldown menu. Commas are automatically inserted between entries. Non-selected protocols will not be included in the output. Selecting * includes all protocols.
Source Port	Enter a port number used by a source host. If you accept the default (*), all source ports will be included in the output.

Field	Description
Destination Port	Enter a port number used by a destination host. If you accept the default (*), all destination ports will be included in the output.
Any IP addr	Enter an IP address that can be a source OR destination host. If you accept the default (blank), then all IP addresses will be included in the output.
Action	Pass, Drop, or * for both actions.

Proactive Monitoring Log

Overview

The Proactive Monitoring Log (often referred to as the Promon log), contains log messages about monitored events for Bricks, the logger, and the Firewall Authentication Controller (FAC).

Proactive Monitoring Logs are created and stored in *\log\promon* under the installation root directory.

Promon Log Sample Record

The following is a sample record from a Proactive Monitoring Log:

Figure 3-5 Proactive Monitoring Log Sample Record

```
53:i:logger:100114,0920041275::0:3:0:0957844777:30:5:ptrace:3970807:99999012:100000000
```

Log entries are recorded in the log file at 30 second intervals. The first five fields of the Proactive Monitoring Log comprise a standard header. It is as follows:

Field	Description
1	`Record type` The Proactive Monitoring Log only contains records of type 53.
2	`Source type` This is either `i`, which represents the SMS or `b`, which represents a Brick.
3	`Source identifier` If source type is `i`, then this could be either the logger, FAC, or VGC. If the source type is `b`, this is the name of the Brick.

Field	Description
4	`SMS timestamp` Is in six-digit format (*hhmmss*) plus a 10-digit source timestamp. The source timestamp is the time the data was sampled, expressed as the total number of seconds that has lapsed since midnight Jan 1, 1970 GMT. The source timestamp is a unique identifier that can be used to collect all samples that occurred within a particular *snapshot* of data. For example, in Figure 3-5, "Proactive Monitoring Log Sample Record" (p. 3-7), the fourth field is 100114,0920041275. The first timestamp reveals that the logger received and processed the record at 10:01 AM and 14 seconds. The second timestamp is the source timestamp which reveals that the data was collected 0920041275 seconds since midnight Jan 1, 1970 GMT.
5	`Blank`

The above standard header is followed by an additional Proactive Monitoring specific header, which is comprised of fields six through twelve. They are:

Field	Description
6	`Record number` This is the record number for the source identifier.
7	`Subtype` This is one of the six subtypes as described in Appendix D, "Proactive Monitoring Subtypes". The subtype that is recorded in this field governs the type of information that is recorded in the fields that follow the Proactive Monitoring header.
8	Always 0. This is the version number.
9	Time in seconds, but is offset from Field 4 by 30 seconds.
10	`Collection period` This is always 30 seconds.
11	`Index number` Index number of the source identifier.

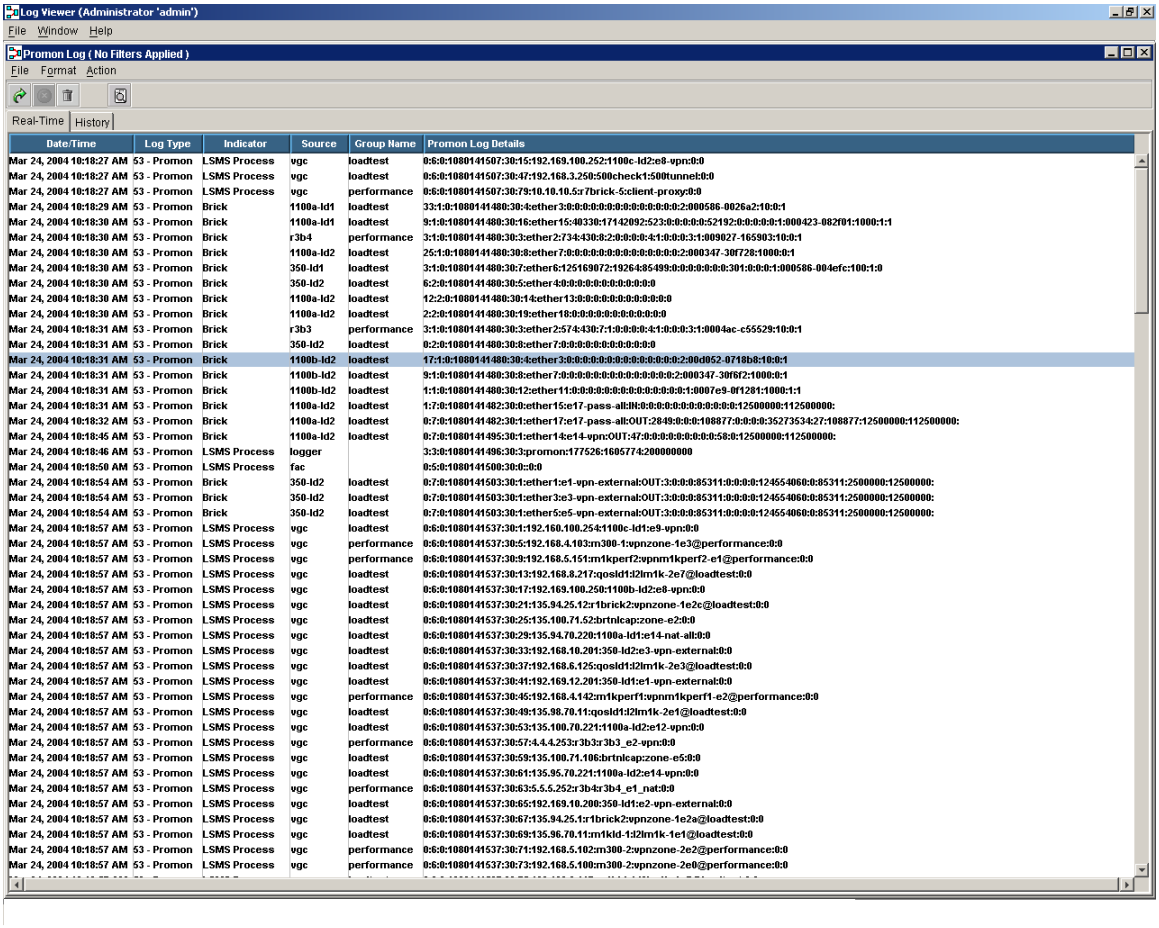
Field	Description
12	`Index name` If the subtype is `Brick interface` (generic) or (Ethernet), then the index name can be ether0 through ether10. If the subtype is SMS `Auditing`, then the index name can be sessions, adminevents, promon, userauth, or ptrace. If the subtype is `Brick`, `Authentication`, or `Local Map Pool`, then an index name is not relevant.

The record types and fields are comprehensively explained in Appendix C, “Proactive Monitoring Trigger Parameters” and Appendix D, “Proactive Monitoring Subtypes” , and in the Help of the Proactive Monitoring Log Viewer.

Proactive Monitoring Log Viewer

Figure 3-6, “Proactive Monitoring Log Viewer” (p. 3-10) shows a typical Proactive Monitoring Log Viewer.

Figure 3-6 Proactive Monitoring Log Viewer



Filtering Criteria

The table below explains the criteria you can employ to filter the Proactive Monitoring Log before clicking **APPLY** and displaying data. See Appendix C, "Proactive Monitoring Trigger Parameters", and Appendix D, "Proactive Monitoring Subtypes" for a detailed listing of all fields.

Field	Description
Sub Type	Select one of the following subtypes: Brick—the session traffic that transpires through all Brick ports. Use when source type=Brick. Brick interface (Generic)—data for each line coming into a Brick (such as packets or bytes). Source type must equal Brick or not be specified. Brick interface (Ethernet)—data on collision errors, MAC errors, framing errors, etc. Source type must equal to Brick or not be specified. SMS Auditing—status of the logger subsystem and how the log is being managed. Source must equal i or not be specified. Authentication (VPN Client)— SA negotiations, IKE negotiations. Source must equal i or not be specified. Authentication (Firewall)—data on total authentication requests. Source must equal i or not be specified.
Group	Group name, usually the name of the group associated with the administrator(s) allowed to view the record(s)
Source Type	Enter a letter that indicates the component that originated the record. i=SMS b=Brick
Source-ID	If source type is b, then the name of a Brick can be entered. If source type is i, then FAC, logger, VGC, or blank can be entered.
Index Name	If the subtype is Brick interface (generic) or (Ethernet), then the index name can be ether0 through ether19. If the subtype is SMS Auditing, then the index name can be sessions, adminevents, promon, userauth, or ptrace. If the subtype is Brick, Authentication, or Local Map Pool, then an index name is not relevant.

User Authentication Log

Overview

The User Authentication Log contains log messages that record successful or unsuccessful authentication requests for VPN or firewall users. Login and logout messages for LSMS Administrators and Group Administrators are recorded in the Administrative Events Log.

User Authentication Logs are created and stored in *\log\userauth* under the installation root directory.

User Authentication Log Sample Record

The following is a sample record from a User Authentication Log:

Figure 3-7 User Authentication Log Sample Record

```
6:i:vgc:082730::las030_1b2_
   3:875c1e82:875c1ecd:17:1117:500:client1::1:Eit
her Group or User does not exist.::I:1:LVC3.0.327:NT
```

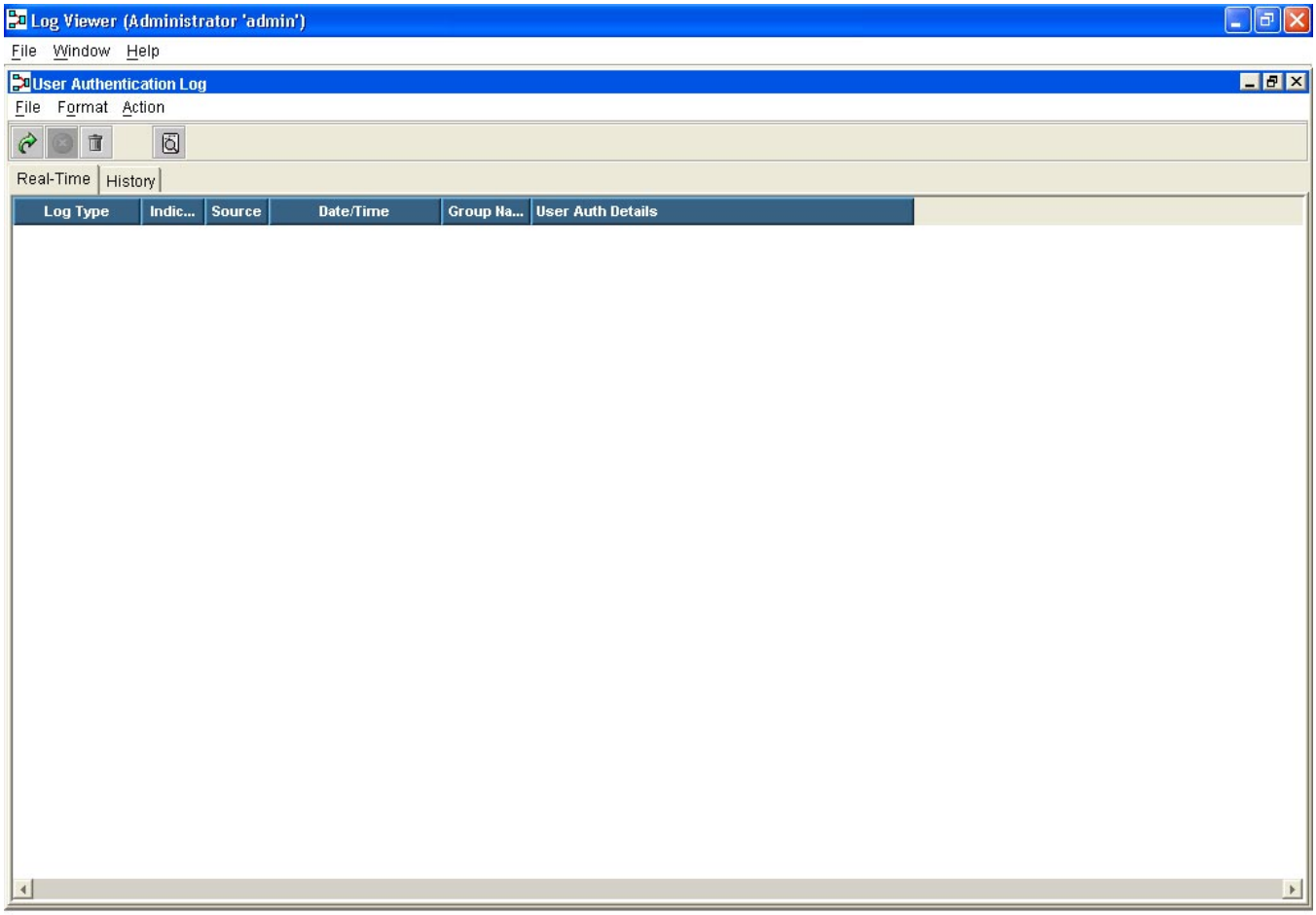
The User Authentication Log only contains records of type `6`.

The record types and fields are comprehensively explained in the Help of the User Authentication Log Viewer.

User Authentication Log Viewer

Figure 3-8, “User Authentication Log Viewer” (p. 3-13) shows a typical User Authentication Log Viewer.

Figure 3-8 User Authentication Log Viewer



Filtering Criteria

The only filtering criteria that can be applied to data in the User Authentication Log is a text search. For example, you could enter a user ID. All entries are case-insensitive.

□

4 Introduction to Alarms

Overview

Purpose

This chapter explains how to create alarm triggers and actions to notify Administrators of events occurring in the system. Administrators configure alarm triggers and assign actions to the trigger.

The SMS software provides preconfigured alarm triggers to notify administrators when a Brick device has been lost, when a LAN-to-LAN tunnel fails, and when unauthorized SMS login attempts are made. You can also create your own alarm triggers and associate them with appropriate actions to facilitate monitoring system events of interest to you.

Alarm triggers and actions are configured on a per-Administrator basis and are not shared among Administrators. Therefore, when an SMS Administrator or Group Administrator logs onto the SMS, they can only view the alarm triggers and actions that they have configured themselves. Any alarms created by an SMS Administrator or Group Administrator will apply to all groups that the administrator has rights to.

SMSs and Compute Servers (CSs) handle alarms in an identical manner, except that the Console Message Action on Compute Servers forward the action contents up to the associated SMS in the cluster. The SMS forwards the console alarm to the appropriate destination. Other actions, like email and syslog, are directly performed by the Compute Server.

Therefore, this chapter applies to both SMSs and Compute Servers. Any difference is identified.

Contents

What are Events, Alarm Triggers and Actions?

Overview

The following explains an event, an alarm trigger, and an action:

- *Event*
  An *event* refers to an incident that occurs in the system that is deemed significant or suspicious enough to warrant the attention of an Administrator. For example, an Administrator would want notification of unauthorized connection attempts, of lost Bricks, or of an excessive number of sessions attempting to connect to a particular machine. Any of these events, and others, can be associated with an alarm trigger
- *Alarm Trigger*
  An *alarm trigger* is an Administrator-defined set of conditions for an event and is associated with an action. The alarm subsystem monitors the log files in real time, and when a log entry matches the conditions of an alarm trigger, an alarm is generated and the associated action is taken.
- *Alarm Action*
  An *alarm action* is associated with an alarm trigger and defines how an Administrator is notified when an alarm is generated. An Administrator can be notified of an event via e-mail, a direct page, a syslog message, an SNMP trap sent to a network management system, or an alarm displayed in the Console Alarms window of the Status Monitor.

Alarm Trigger Types

Examples of alarm triggers that can be configured so that notification is sent to an Administrator include:

Alarm Trigger Type	Description
`Alarm Code`	A number that can be embedded in a rule so that when the rule is invoked a specified number of times within a given time frame, an Administrator is notified.
`Brick Error`	A trigger that scans for errors generated by a Brick. The error code entered needs to be between 1 and 299 and represents an event.
`Brick Failover Event`	A trigger that detects when one member of a Brick failover pair transitions from ″Standby″ to ″Active.″
`Brick Port Lost`	A trigger that detects connectivity problem events (e.g., a malfunctioning NIC card).

Alarm Trigger Type	Description
Brick Lost	A trigger that detects communication error events between a specified Brick and the SMS.
Brick Proactive Monitoring	A trigger that looks for events such as high average cache memory usage, excessive number of packets dropped or passed, so that if the health of the network is deemed questionable, an Administrator is notified.
SMS Error	A trigger that scans for errors generated by the SMS. The error code entered needs to be between 0000 and 7999 and represents events such as socket problems, LSMS failover, logger cannot write to a file, etc.
SMS Proactive Monitoring	A trigger that looks for events such as log rollover rate, disk space usage, so that if the health of the network is deemed questionable, an Administrator is notified.
Local Presence Map Pool	A trigger that detects if the pool of free IP addresses, which are used for mapping VPN users to local addresses, is below or equals a specified percentage.
Unauthorized SMS Login Attempt	A trigger that detects if an unauthorized attempt has been made to log on to the SMS.
User Authentication	A trigger that detects if an unauthorized user has attempted to log on to the SMS.
Brick ICM Alarm	A trigger that detects Brick ICM alarms.
LSMS Status Change	A trigger that detects a status change in an SMS.
LAN to LAN Tunnel Lost	A trigger that detects when a LAN-to-LAN tunnel is down.
LAN to LAN Tunnel Up	A trigger that detects when a LAN-to-LAN tunnel has been brought back up.
Local Presence Map Pool	A trigger that looks for local server information.
QoS Rule Bandwidth Exceeded	A trigger that detects when a QoS bandwidth threshold setting has been exceeded.

Alarm Trigger Type	Description
`QoS Rule Bandwidth Throttling Alarm`	A trigger that detects that alarms generated by a QoS bandwidth setting have been throttled.
`QoS Zone Bandwidth Guarantees Alarm`	A trigger that detects that a QoS bandwidth guarantees alarm has been generated.
`QoS Zone Bandwidth Throttling Alarm`	A trigger that detects that a QoS bandwidth throttling alarm has been generated.
`VPN Proactive Monitoring`	A trigger that detects if a VPN Promon alarm has been generated.

Each of the alarm trigger types listed in the table is described in detail in Chapter 6, “Configuring Alarm Triggers”.

Action Types

When an event has been detected and the conditions of an alarm trigger configured to look for this event are true, the actions that have been associated with the alarm trigger will be taken.

Actions that can be associated with alarm triggers include:

- Console Message (pre-configured)
- Direct Page
- E-mail Message
- SNMP Trap
- Syslog Message

An alarm trigger can be associated with one or more actions.

Pre-configured Alarm Triggers and Actions

The SMS comes with five pre-configured alarm triggers and the Console Message action. The triggers are enabled initially but can be disabled at any time.

PreConfigured Trigger/Action	Description
Database Synchronization	A trigger that sends an alarm message to the Console Alarms window of the Status Monitor. Detects when changes to an SMS database are not successfully resynchronized with the other SMS(s) in a redundant configuration.
SMS Status Change Notification	A trigger that sends an alarms message to the Console Alarms window of the Status Monitor. Detects when an SMS has lost communications with its peer SMS in a redundant configuration.
Lost a Brick (Trigger)	A trigger that sends an alarm message to the Console Alarms window of the Status Monitor. Detects when the SMS has lost contact with any Brick of any group for at least 30 seconds. Notification is also sent when connectivity is re-established.
Lost a LAN to LAN Tunnel (Trigger)	A trigger that sends an alarm message to the Console Alarms window of the Status Monitor.
Unauthorized SMS Login Attempts (Trigger)	A trigger that sends an alarm message to the Console Alarms window of the Status Monitor. An alarm is generated when six attempts have been made within 30 seconds to log on to the SMS.
Send a Console Message (Action)	An action that sends an alarm message (as defined in the associated trigger) to the Console Alarms window of the Status Monitor.

Console Alarms Window

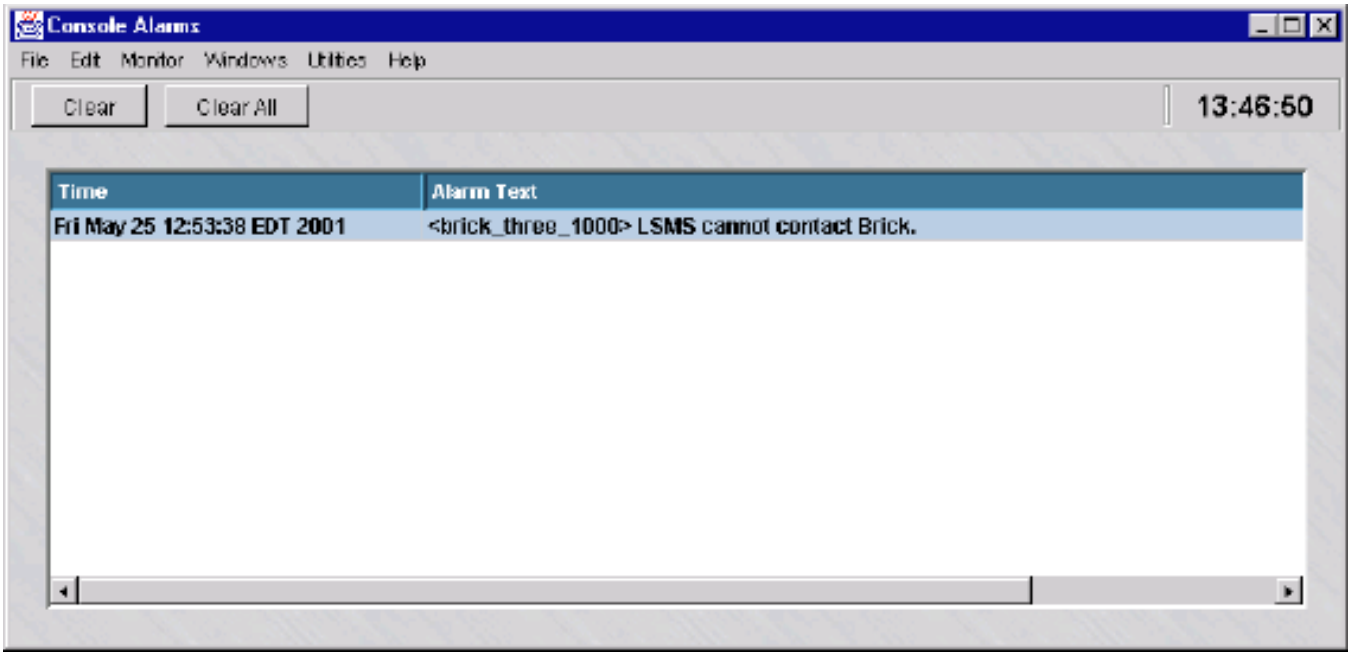
Overview

When an alarm trigger is associated with a Console Message action and the conditions of the trigger are met, an animated bell icon appears at the top of the Navigator Window, as Figure 4-1, “Alarm Bell Icon” (p. 4-6) illustrates. You must have the Navigator running to be notified of alarms by this means.

Figure 4-1 Alarm Bell Icon

To provide further details on the alarm, click the bell icon to display the Console Alarms window as shown Figure 4-2, “Console Alarms window” (p. 4-6).

Figure 4-2 Console Alarms window



The Console Alarms window can also be accessed by selecting **Console Alarms** from the **Monitor** menu on the LSMS menu bar.

The Console Alarms window can display up to 50 alarm messages. The top-most message is the most recent.

Once the problem has been rectified, you can remove the alarm message from the Console Alarms window by first highlighting the alarm and clicking the **Clear** button. To clear all messages, click the **Clear All** button.

□

5 Configuring Alarm Actions

Overview

Purpose

When a trigger detects an event, the action(s) that have been associated with it are taken. If a trigger needs to be associated with an action other than the pre configured Console Message, the action needs to be configured first.

Contents

To Configure a New Alarm Action

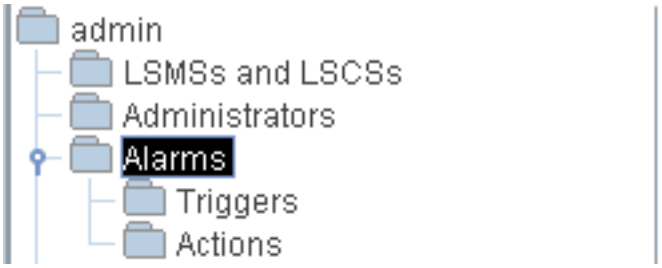
Overview

Important! A Compute Server forwards a Console Action Message to the associated SMS for display and processing as an administrator is not expected to log into the Compute Server.

To configure an action:

1 With the SMS Navigator Folder Panel open, open the **Alarms** folder in the SMS Navigator Folder Panel by double-clicking on it or expanding it in the explorer tree.

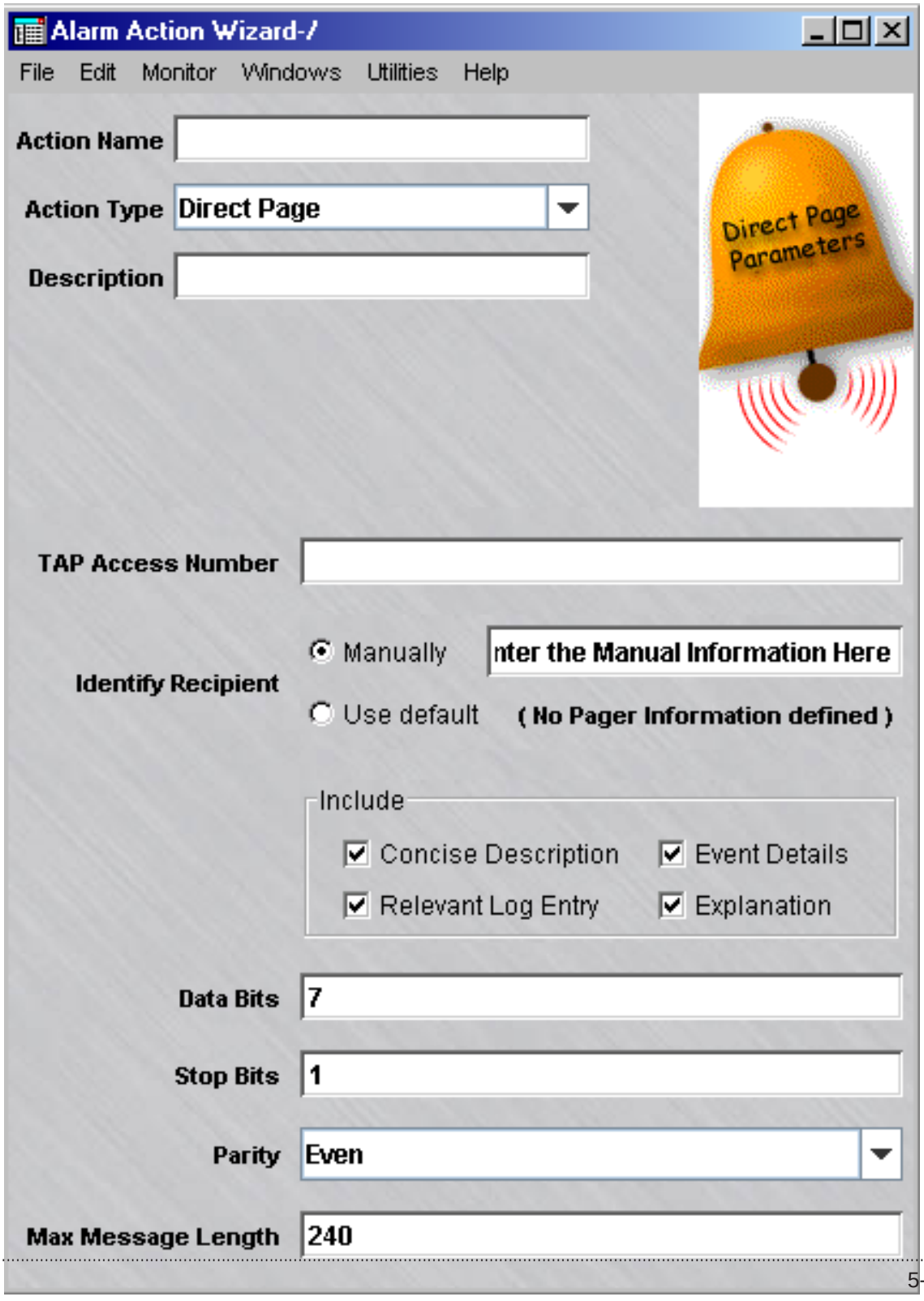
Figure 5-1 SMS Navigator Folder Panel



2 Right-click the **Actions** folder and select **New Action**.

Result The Alarm Action Wizard is displayed (Figure 5-2, “Alarm Action Wizard” (p. 5-3)).

Figure 5-2 Alarm Action Wizard



3 Enter a name for the action in the **Action Name** field. This is a required field and is displayed in the list of actions in the Contents Panel. Be as descriptive as possible. Spaces are allowed, but special characters (for example, @) are not.

4 Select an **Action Type** from the Action Type drop-down list. The sections that follow explain each action type.

Figure 5-3 Action Wizard Action Type Drop-down List

5 Optionally, enter a description for the action in the **Description** field. If a description is entered, it is displayed in the list of actions in the Contents Panel.

6 Enter parameters for the action type you selected. The parameters that are displayed are based on the action type and are explained in the subsequent sections that explain each alarm action.

7 To save the action, select one of the Save options from the File menu.

END OF STEPS

□

To Configure the Direct Page Action

Overview

The Direct Page action sends a direct page to the specified recipients. The message is sent via a PSTN/modem-based connection that is made to a wireless pager service provider.

Important! Sending a direct page should be reserved for events of the utmost priority.

Pages sent via a modem could create modem bottlenecks which may take approximately 10 seconds to complete the sending of each message.

Direct pages are transmitted even in the event of a network outage. This differs from pages that are sent via an e-mail-based paging action.

In order to support sending a direct page, the alphanumeric paging service used must support TAP (Telocator Alphanumeric Protocol v1.8). The SMS supports three paging providers that use TAP: SkyTel, *PageNet*®, and MetroCall.

If more than one direct page message is sent, it will be placed on a queue. The Direct Page action will queue messages with all pertinent information collected at *the time the action was fired*. The messages are then sent out sequentially.

Before configuring a Direct Page action, ensure that a modem is set up correctly and operational on the SMS. Also, use Configuration Assistant to set modem settings (for example, *Modem Port, Initialization String, Dial String*) in the Direct Paging parameter group. Refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide* for details.

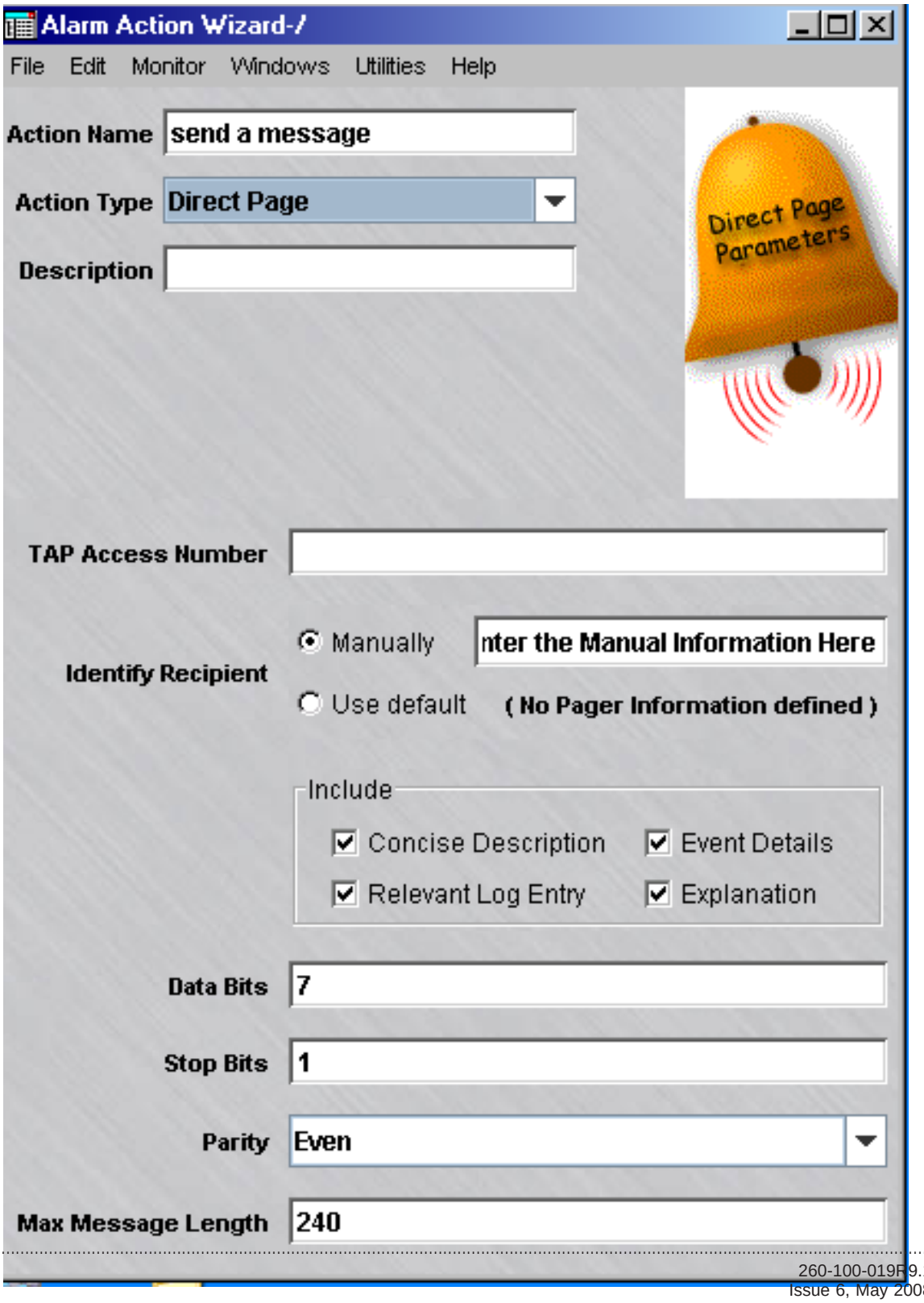
Overview

To configure a Direct Page action:

1 Enter an `Action Name`, select `Direct Page` from the Action Type drop-down list

Result The Direct Page Action Wizard screen is displayed (Figure 5-4, “Direct Page Action Wizard Screen” (p. 5-6)).

Figure 5-4 Direct Page Action Wizard Screen



2 In the **Description**field, enter an textual description of the alarm action (this field is optional).

3 In the `TAP Access Number` field, enter a TAP Access Number.

The TAP Access Number is the access number that the modem dials to connect to the TAP server. Allowable characters are 0 - 9, *, #, commas, and spaces. A maximum of 20 characters can be entered. If you are using the SkyTel paging service, you can use 1.800.679.2778 as the number.

To obtain a SkyTel TAP access number for your area, you can call SkyTel at 1.800.759.8737 and choose option 5#.

4 Select one of the Identify Recipient radio buttons to specify to whom the message should be sent:

- *Manually*
  Enter the PIN that is transmitted to the TAP server which uniquely identifies the recipient (e.g.,1234567).
- *Use Default*
  If your Administrator account includes a pager number in the Pager Info field, it will be displayed here.
  Refer to the *Creating Groups and Administrators* chapter in the *SMS Administration Guide* for details. The **Pager Info** field is dynamically linked so that when the action is fired, the most current information is used.

  Important! If an account is selected but later deleted, an error message is logged when the alarm is fired and another valid account must be re-entered.

5 Check or uncheck one or more fields to define the contents of the page message. The following table explains.

Include Field	Description
`Concise Description`	The text that is entered in the `Concise Description` field when the trigger is configured.
`Event Details`	Event Details may include IP addresses, Brick names, timestamp for the alarm.
`Explanation`	The text that is entered in the `Explanation` field when the trigger is configured.

Include Field	Description
`Relevant Log Entry`	The most recent log record when the alarm is generated.

It is recommended that you choose only **Concise Description** to accommodate pagers that accept only 240 alphanumeric characters. Otherwise, text may be truncated.

6 Enter the modem's data bits and stop bits. Default is 7 and 1 respectively.

If problems are encountered with Direct Page, an Alarms Logged Report can be generated and searched for Direct Page actions with a status of ″Failure″. This report can be memorized and run periodically to detect transmission problems.

See Chapter 12, "Alarms Logged Report" for more information.

END OF STEPS

□

To Configure the E-mail Action

Overview

This action sends an e-mail message to the specified recipients. If your paging service provides the support, a page number can be linked to your e-mail address so that you also receive a page.

Before configuring the e-mail action, use the Configuration Assistant to set the `SMTP Host Name` and `Account Name` in the `Alarms` parameter group. Refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide* for details.

Important! For some kinds of alarms, for example, **Brick Lost** due to a network outage, not all e-mail alarms may be able to reach the mail server.

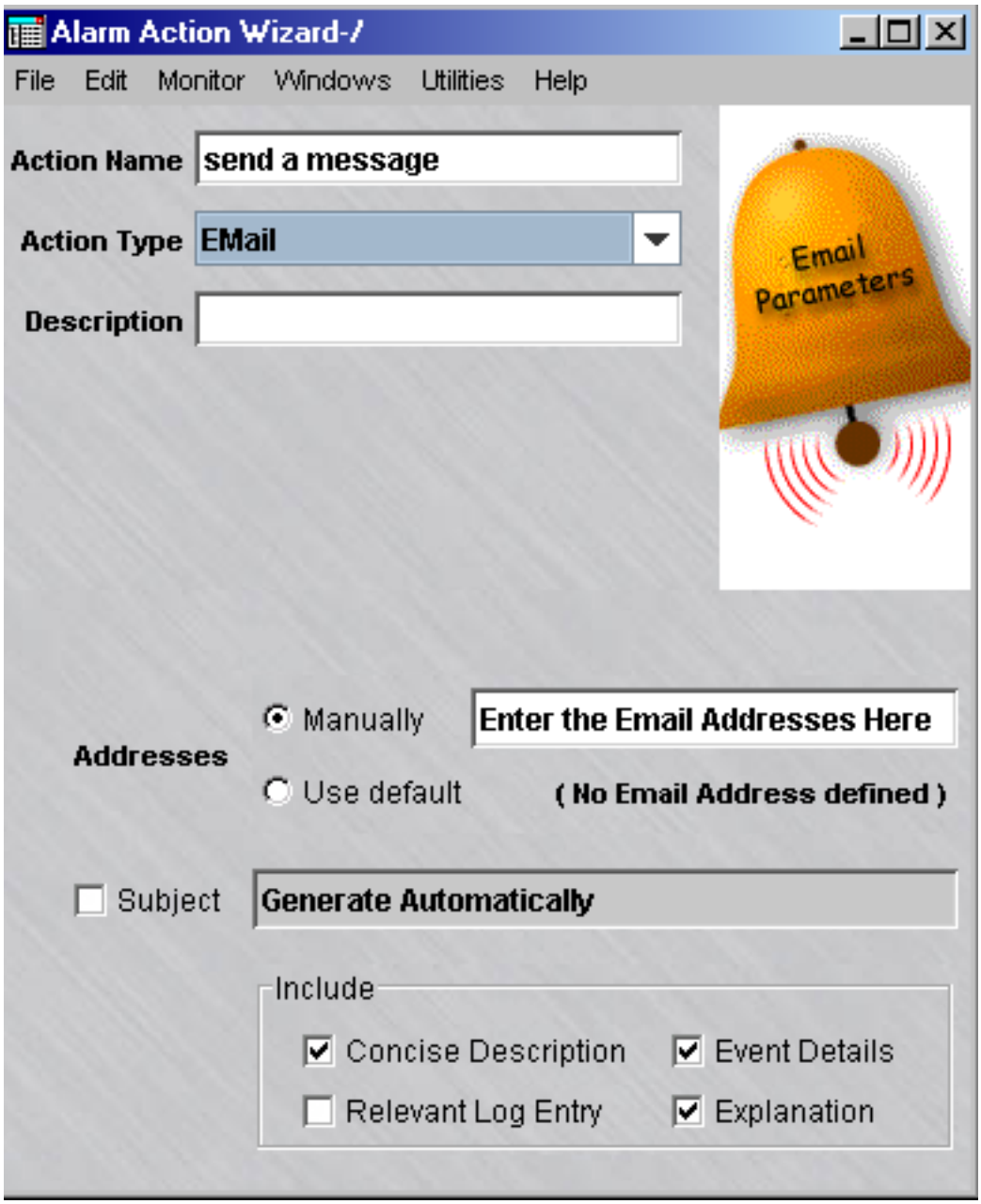
Overview

To configure an e-mail action:

1 Enter an `Action Name`, select `E-mail` from the **Action Type** drop-down list.

Result The EMail Action Wizard screen is displayed (Figure 5-5, “E-mail Action Wizard Screen” (p. 5-10)).

Figure 5-5 E-mail Action Wizard Screen



2 In the **Description** field, enter a description of the alarm action (this field is optional).

3 Select one of the **Addresses** radio buttons:

- *Manually*
  Enter one or more e-mail address (for example, john@mycompany.com) here. To specify more than one address, delimit them with commas.
- *Use Default*
  If your Administrator account includes an e-mail address, it is displayed here. Refer to the *Creating Groups and Administrators* chapter in the *SMS Administration Guide* for details. The **E-mail Address** field is dynamically linked so that when the action is fired, the most current information is used.

  Important! If an account is selected but later deleted, an error message is logged when the alarm is fired and a valid account must be entered.

4 Define a subject header for the e-mail or page message by either:

- Leaving the checkbox unchecked so that a subject header will be generated automatically. The header will contain the Concise Description that is specified when the trigger is configured. This is the default.
- Checking the **Subject** checkbox and manually entering your own subject header to have sent with an e-mail or page message.

  Important! If your paging service supports linking your e-mail address with a page number, it is recommended to accept the default to accommodate pagers that accept only 240 alphanumeric characters. Otherwise, text may be truncated. This varies according to the paging service you are using.

END OF STEPS

□

To Configure the SNMP Trap Action

Overview

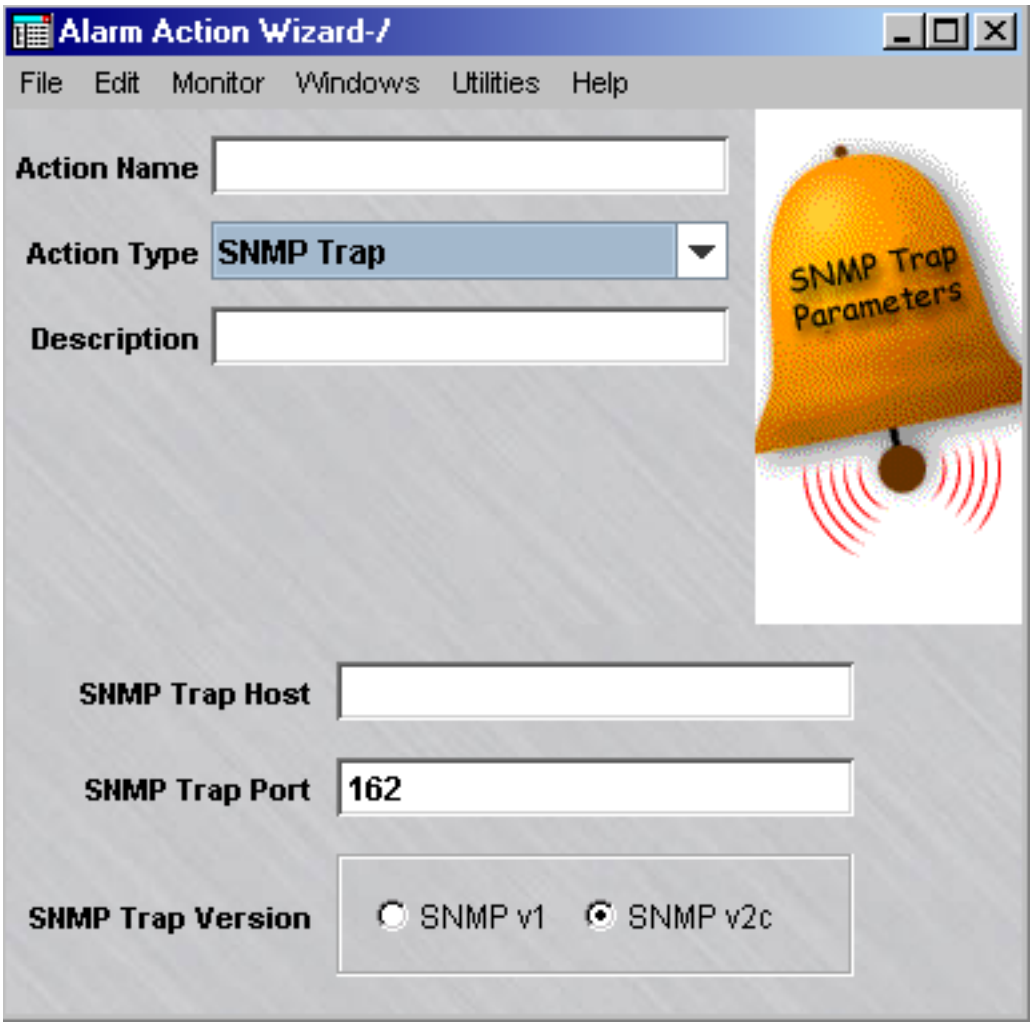
When an event is detected and an alarm is generated, the SMS can forward Simple Network Management Protocol (SNMP) traps to a Network Management Station (NMS). SNMP traps allow an NMS Administrator to monitor Bricks, the SMS itself, and network elements protected by a Brick.

Complete the following steps to configure an SNMP Trap alarm action.

1 Select `SNMP Trap` from the **Action Type** drop-down list.

Result The SNMP Trap Alarm Action Wizard screen is displayed (Figure 5-6, "SNMP Trap Action Wizard Screen" (p. 5-13)).

Figure 5-6 SNMP Trap Action Wizard Screen



2 In the **Action Name** field, enter an action name for this alarm type.

3 In the **Description** field, enter a textual description of the alarm action (this field is optional).

4 In the **SNMP Trap Host** field, enter the IP address of the NMS.

In the **SNMP Trap Port** field, enter the UDP port that is used to send the SNMP trap to the NMS. Ports 1 - 65,535 can be entered. Default is 162.

Important! Defining an SNMP Trap action is only one step of the overall procedure for sending SNMP traps to an NMS.

Management Information Bases (MIBs) need to be installed and loaded on the NMS and rules may be required. Refer to Appendix A, “SNMP” for details.

END OF STEPS

□

To Configure the Syslog Action

Overview

This action sends a UDP packet to a UNIX syslog server. The syslog process provides a centralized reporting mechanism to consolidate error messages within a UNIX system.

Standard implementations of this mechanism provide a daemon (*syslogd*), which monitors a UDP socket to accept and log *syslog* entries from remote systems on port 514.

The message sent to *syslog* is a single line that contains the following fields:

<priValue>timestamp sms: SEVERITY = severity

^ITRIGGERTIME = triggertime

^ICONCISE = concise

^IDETAILS = details

^IEXPLANATION = explanation

^ILOGENTRY = logEntry

Where:

^ represents a tab

priValue = the severity + 8 (this makes the message a ″user″ message)

triggerTime = time alarm was triggered

severity = numeric value based on the ″Severity″ field in the *syslog* alarm action:

0 - Emergency

1 - Alert

2 - Critical

3 - Error

4 - Warning

5 - Notice

6 - Informational

7 - Debug

The remaining fields are only displayed if the corresponding box is checked when configuring the *syslog* alarm action:

concise = concise description field from alarm trigger configuration

details = colon separated list of alarm trigger detail fields. Refer to "Overview" (p. C-1) for a description of these fields. They are different for each alarm time/subtype.

explanation = explanation field from alarm trigger configuration

logEntry = colon separated logEntry for the alarm (the format is described in "Overview" (p. C-1)).

The following is a sample *syslog* that shows a Brick LOST, Brick CONTACTED, and Unauthorized SMS Login Attempt:

```
Dec 20 03:29:17 [10.1.1.24.12.80] Jan 9 13:55:00 sms: SEVERITY = 1
^ITRIGGERTIME = Fri Jan 09 13:53:58 EST 2004^ICONCISE =
<ibm_laptop> SMS cannot contact Brick.^IDETAILS =
2:ibm_laptop::Brick Lost:Lost a Brick::syslog:Brick ibm_laptop^IEX-
PLANATION = The SMS has lost communications with the Brick^ILOGEN-
TRY = 24:i:logger:135358:system:ibm_laptop:LOST:135.92.38.251
Dec 20 03:29:33 [10.1.1.24.12.81] Jan 9 13:55:21 sms: SEVERITY =
1^ITRIGGERTIME = Fri Jan 09 13:54:19 EST 2004^ICONCISE =
<ibm_laptop> SMS has contacted Brick again.^IDETAILS =
3:ibm_laptop::Brick Lost:Lost a Brick::syslog:Brick ibm_laptop^IEX-
PLANATION = SMS has re-established
communications with the Brick.^ILOGENTRY = 24:i:logger:135419:sys-
tem:ibm_laptop:CONTACTED:135.92.38.251
Dec 20 03:38:54 [10.1.1.24.12.88] Jan 9 14:04:42 sms: SEVERITY =
0^ITRIGGERTIME = Fri Jan 09 14:03:40 EST 2004^ICONCISE = Unautho-
rized SMS login Attempt - IP address 10.1.1.24^IDETAILS = 4:Unautho-
rized SMS Login Attempt:Unauthorized Login
Attempts:syslog:Source 10.1.1.24, user
shsddas, reason Failed Login Attempt - Either Group or User does
not exist.^IEXPLANATION = Unauthorized user attempted to login to
SMS and failed authentication.^ILOGENTRY = 34:i:rap:140340::shsd-
das:10.1.1.24:Failed Login Attempt - Either Group or User does not
exist.
```

Before configuring the Syslog action, use Configuration Assistant to set the `Syslog Host Name` and `Syslog Port` in the `Alarms` parameter group. Refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide* for details.

Overview

Complete the following steps to configure a Syslog action:

1 Enter an `Action Name`, select `Syslog` from the **Action Type** drop-down list, then enter an optional `Description`.

2 Click **Next**.

Figure 5-7 Syslog Action

3 In the **Action Name** field, enter a name for this alarm action.

4 In the **Description** field, enter a textual description of this alarm action (this field is optional).

5 Select a Severity for the syslog message from the drop-down list. The choices are:

Severity	Description
Emergency	A panic condition that is normally broadcast to all users.
Alert	Default. A condition that should be corrected immediately (e.g., a corrupted database).
Critical	Critical conditions, such as hard device errors.
Error	Messages that indicate error conditions.
Warning	Messages that indicate warning conditions.
Notice	Conditions that are not error conditions, but that may require special handling.
Informational	Purely informational in nature.
Debug	Messages that contain information normally of use only when debugging a program.

6 Check or uncheck one or more fields to define the contents of the syslog message. The following table explains.

Include Field	Description
Concise Description	The text that is entered in the **Concise Description** field when the trigger is configured.
Event Details	Event Details may include IP addresses, Brick names, timestamp for the alarm.
Explanation	The text that is entered in the **Explanation** field when the trigger is configured.
Relevant Log Entry	The most recent log record when the alarm is generated.

END OF STEPS

□

To Maintain Alarm Actions

To duplicate an alarm action

Complete the following steps to duplicate an alarm action.

1 Right-click on an existing alarm action in the Contents Panel and select **Duplicate** from the pop-up menu.

Result The related Alarm Action Wizard screen is displayed.

2 Select **Duplicate** from the pop-up menu. The Alarm Action Wizard appears.

3 Enter a unique name for the action and change any of the other action parameters if desired.

4 To save the action, select **Finish**.

END OF STEPS

To edit alarm actions

Complete the following steps to edit an alarm action.

1 Right-click on an existing alarm action in the Contents Panel and select **Edit** from the pop-up menu.

Result The related Alarm Action Wizard screen is displayed.

2 Make the appropriate changes to the fields.

3 To save the action, select **Finish**.

END OF STEPS

To remove an alarm action

Complete the following steps to remove an alarm action.

1 Right-click an alarm action in the Contents Panel and select **Delete** from the pop-up menu.

Result A confirmation dialog box is displayed that asks if you are sure that you want to delete the alarm action.

2 Select **Yes** to confirm the deletion.

END OF STEPS

□

6 Configuring Alarm Triggers

Overview

Purpose

Configuring a trigger causes the SMS to scan for the set of conditions defined in the trigger. When the event is detected, the action associated with the trigger is taken, and an alarm is generated.

If the trigger to be configured includes an action that has not yet been configured, refer to Chapter 5, “Configuring Alarm Actions” for details about configuring alarm actions.

Configuration of alarm triggers is done the same way for SMSs and Computer Servers (CSs).

Contents

Configuring Triggers

Overview

Configuring alarm triggers involves three primary steps:

- Provide a name for the trigger, specify a trigger type, and enable it.
- Specify the set of conditions (parameters) that cause the associated action to take place.
- Associate one or more actions with the alarm.

When an Alcatel-Lucent *VPN Firewall Brick*® Security Appliance is related to the event, you also need to associate the Brick device group and the Brick device itself to the trigger.

Basic Steps to Configure a Trigger

To configure an alarm trigger:

1 With the Navigator window displayed, open the **Alarms** folder by double-clicking on it or expanding it in the explorer tree.

Figure 6-1 SMS Navigator Folder Panel

2 Right-click the **Triggers** folder and select **New Trigger**.

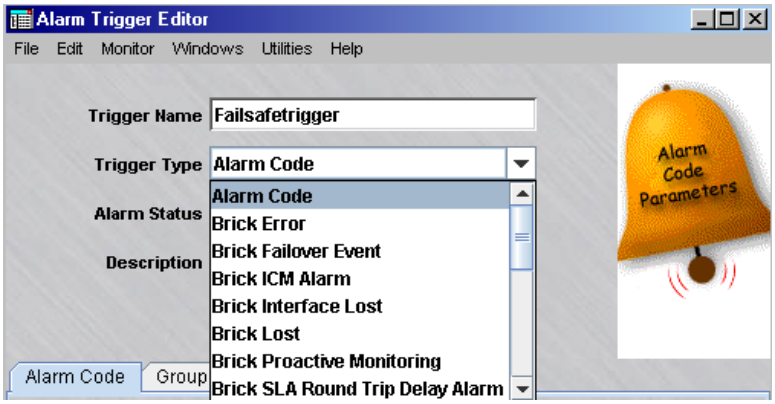
Result The Alarm Trigger Editor is displayed (Figure 6-2, “Alarm Trigger Editor” (p. 6-4)).

Figure 6-2 Alarm Trigger Editor

3 In the **Trigger Name** field, enter a name for the alarm trigger. This is a required field and is displayed in the list of triggers in the Contents Panel. Be as descriptive as possible. Spaces are allowed, but special characters are not (for example, @).

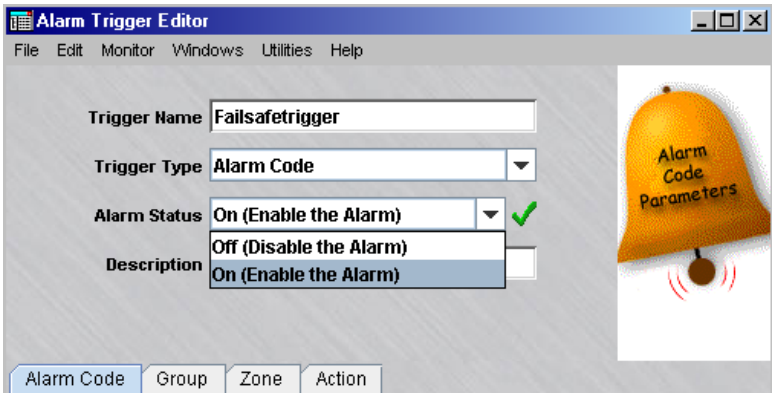
4 Select a trigger type from the **Trigger Type** field drop-down list. Trigger types are explained in more detail in the sections that follow.

Figure 6-3 Alarm Trigger Editor Trigger Type Drop-down List



5 Specify the **Alarm Status** field drop-down list. The default entry is **On (Enable the Alarm)**. Or, select **Off (Disable the Alarm)** from the drop-down list.

Figure 6-4 Alarm Trigger Editor Alarm Status Drop-down



6 Optionally, enter a `Description` for the trigger. If a description is entered, it is displayed in the list of triggers in the Contents Panel.

7 Complete the parameters on the first tab of the Alarm Trigger Editor window and then click each tab to display the next tab of the window. Complete the parameters for each tab of the alarm trigger type selected. The tab panels and parameters for each alarm trigger type are explained in the procedural sections which follow.

8 To save the trigger, select **File > Save and Close** on the last tab of the window.

Important! *Include AllCheckbox* When using the Alarm Trigger Editor to associate groups and actions with a trigger, you will see an **Include All** checkbox. This is to facilitate maintenance of the triggers.

If **Include All** is checked:

- All current groups will receive the alarm when it is triggered
- Any future groups or actions that are created will automatically be associated with the trigger.

END OF STEPS

□

Alarm Code Trigger

Overview

An **Alarm Code** alarm trigger is linked with a rule of a given security policy. When an alarm code is embedded in a rule and the rule is invoked the specified number of times within a specific time frame, an alarm is generated. The mechanism for tying the trigger to a rule is the *alarm code*.

Complete the following steps to configure an Alarm Code trigger:

1 Enter a `Trigger Name`, select **Alarm Code** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional `Description` as described in "Configuring Triggers" (p. 6-3).

Result The Alarm Code version of the Alarm Trigger Editor is displayed (Figure 6-5, "Alarm Trigger Editor Alarm Code Trigger Parameters" (p. 6-7)).

Figure 6-5 Alarm Trigger Editor Alarm Code Trigger Parameters

2 On the Alarm Code tab of the window, shown in Figure 6-5, “Alarm Trigger Editor Alarm Code Trigger Parameters” (p. 6-7), enter the parameters that define the conditions of this trigger as the following table explains:

Parameter	Description
Threshold Count	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.
Threshold Period	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
Sleep Period	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (e.g., denial-of-service attacks).
Alarm Code	Enter a number that matches the **Alarm Code** field of the rule.
Concise Description	If the action associated with this trigger includes Concise Description, this is the message that will be forwarded in the alarm.
Explanation	If the action associated with this trigger includes Explanation, this is the message that will be forwarded in the alarm.

3 Click **Group**.

Result The **Group** tab of the Alarm Code Trigger Editor is displayed.

4 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

5 Click **Zone** to display the next tab of the window.

Result The **Zone** tab of the Alarm Code Trigger Editor is displayed.

6 Choose the zone(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the zone(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all zones.

7 Click **Action** to display the next tab of the window.

Result The **Action** tab of the Alarm Code Trigger Editor is displayed.

8 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have already been configured are displayed.

9 Select **File > Save and Close**.

Important! *Alarm Code Rules* Configuring the Alarm Code trigger is only one step of generating this type of alarm. The alarm code configured here must match the alarm code of a rule. Refer to "Overview" (p. B-1) for details.

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Brick Error Trigger

Overview

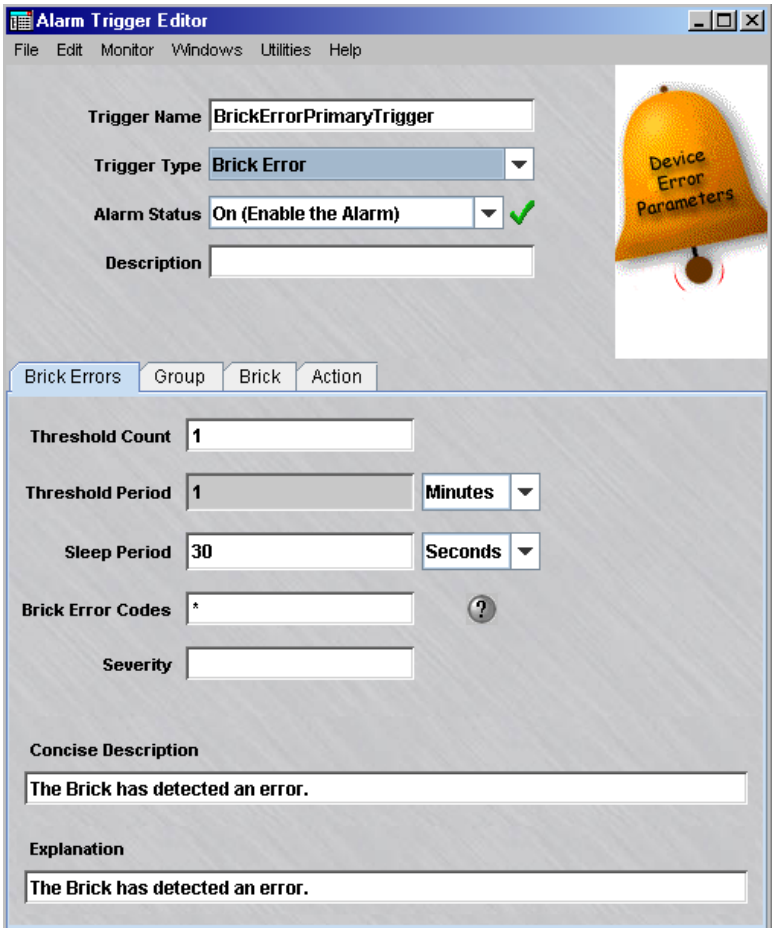
A **Brick Error** trigger detects errors that are generated by a Brick. The error code entered needs to be between 1 and 999.

To configure a Brick Error trigger:

1 Enter a `Trigger Name`, select **Brick Error** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in "Configuring Triggers" (p. 6-3).

Result The Brick Error version of the Alarm Trigger Editor is displayed (Figure 6-6, "Alarm Trigger Editor Brick Error Trigger Parameters" (p. 6-10)).

Figure 6-6 Alarm Trigger Editor Brick Error Trigger Parameters



2 On the Brick Errors tab of the window, shown in Figure 6-6, "Alarm Trigger Editor Brick Error Trigger Parameters" (p. 6-10), enter the parameters that define the conditions of this trigger. The following table explains each parameter:

Parameter	Description
`Threshold Count`	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.
`Threshold Period`	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
`Sleep Period`	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (such as denial-of-service attacks).
`Brick Error Codes`	A number between 1 and 999. Click the question mark (?) button to see the list of error codes. Alarm messages that are prefaced by a bell icon are the ones that are most useful as alarms.
`Severity`	Enter 1, 2, or 3. This is an optional field. 1 indicates a serious problem; 2 indicates a system exhibiting some degradation in functionality; 3 indicates a system with no degradation in functionality.
`Concise Description`	If the action associated with this trigger includes **Concise Description,** this is the message that will be forwarded in the alarm.
`Explanation`	If the action associated with this trigger includes **Explanation,** this is the message that will be forwarded in the alarm.

3 Click **Group** to display the next tab of the window.

Result The **Group** tab of the Brick Error Alarm Trigger Editor is displayed.

4 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

5 Click **Brick** to display the next tab of the window.

Result The **Brick** tab of the Brick Error Alarm Trigger Editor is displayed.

6 Choose the Brick(s) be associated with this trigger and click the arrow**>** or **>>** button to move the Brick(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all Bricks.

Only the Bricks that belong in the groups selected on the previous tab are displayed.

7 Click **Action** to display the next tab of the window.

Result The **Action** tab of the Brick Error Alarm Trigger Editor is displayed.

8 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

9 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Brick Failover Event Trigger

Overview

A **Brick Failover Event** trigger detects failover events, when one member of a Brick failover pair transitions from the ″Standby″ to the ″Active″ State. Refer to the *Brick Device Failover* section in the *SMS Administration Guide*.

To configure a Brick Failover Event trigger:

1 Enter a `Trigger Name`, select **Brick Failover Event** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in “Configuring Triggers” (p. 6-3).

Result The Brick Failover Event version of the Alarm Trigger Editor is displayed, initially showing the Failover Event tab (Figure 6-7, “Alarm Trigger Brick Failover Event Trigger Parameters” (p. 6-13)).

Figure 6-7 Alarm Trigger Brick Failover Event Trigger Parameters

2 On the Failover Event tab of the window, shown in Figure 6-7, “Alarm Trigger Brick Failover Event Trigger Parameters” (p. 6-13), enter the parameters that define the conditions of this trigger, as the following table explains:

Parameter	Description
`Threshold Count`	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.
`Threshold Period`	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
`Sleep Period`	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (as from denial-of-service attacks).
`Concise Description`	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the alarm.
`Explanation`	If the action associated with this trigger includes **Explanation**, this is the message that will be forwarded in the alarm.

3 Click **Group** to display the next tab of the window.

Result The **Group** tab of the Brick Failover Alarm Trigger Editor is displayed.

4 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

5 Click **Brick** to display the next tab of the window.

Result The **Brick** tab of the Brick Failover Alarm Trigger Editor is displayed.

6 Choose the Brick(s) be associated with this trigger and click the arrow**>** or **>>** button to move the Brick(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all Bricks.

Only the Bricks that belong in the groups selected on the previous tab are displayed.

7 Click **Action** to display the next tab of the window.

Result The **Action** tab of the Brick Failover Alarm Trigger Editor is displayed.

8 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

9 Select **File > Save and Close**.

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Brick ICM Trigger

Overview

This trigger allows the SMS to generate an alarm when the Intelligent Cache Management (ICM) option is activated on a given Brick. In the event of a Denial of Service attack, this alarm will notify you that the Brick is purging less important sessions to preserve cache memory for new sessions.

Task

Complete the following steps to configure a Brick ICM alarm trigger:

1. Follow steps 1 to 3 as described in “Configuring Triggers” (p. 6-3).

2. Click the down arrow next to the **Trigger Type** field to display a drop-down list and select **Brick ICM Alarm**.

Result The Brick ICM Alarm version of the Alarm Trigger Editor is displayed, initially displaying the **ICM** tab (Figure 6-8, “Brick ICM Alarm Trigger Parameters” (p. 6-17)).

Figure 6-8 Brick ICM Alarm Trigger Parameters

3 Specify the Alarm Status. The default entry is **On (Enable the Alarm)**. Or, select **Off (Disable the Alarm)** from the drop-down list to disable the alarm trigger.

4 Optionally, enter a **Description** for the trigger. If a description is entered, it is displayed in the list of triggers in the Contents Panel.

5 In the **Threshold Count** field, enter the number of cache sessions that must be present before the Brick starts purging less important sessions and an alarm is generated.

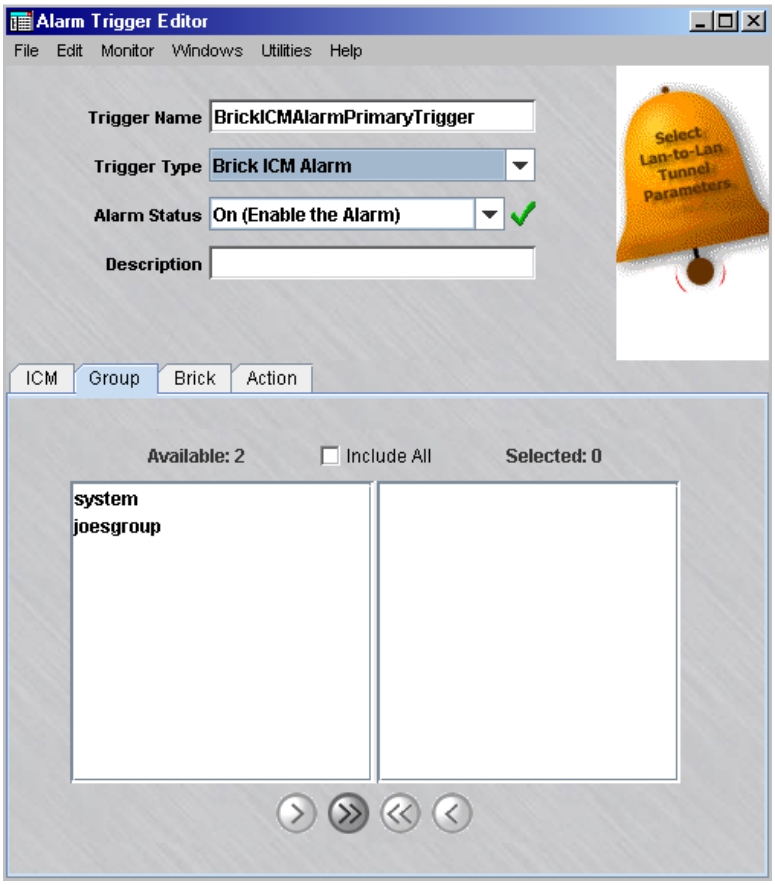
6 On the **ICM** tab, enter the parameters that define the conditions of this trigger as shown in the following table:

Parameter	Description
`Sleep Period`	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. The default value is 0 (seconds). Enforces throttling and mitigates flooding of the network (as from, for example, denial-of-service attacks).
`Concise Description`	If the action associated with this trigger includes `Concise Description`, this is the message that will be forwarded in the alarm. This message is displayed on the Alarm Console on the SMS when the alarm is triggered.
`Explanation`	If the action associated with this trigger includes `Explanation`, this is the message that will be forwarded in the alarm. This message is displayed if the email, Syslog, or Pager alarm action is configured.

7 Click **Group** to display the next tab of the window.

Result The **Group** tab panel of the Brick ICM Alarm Trigger Editor is displayed (Figure 6-9, “Brick ICM Alarm Trigger Group Panel” (p. 6-19)).

Figure 6-9 Brick ICM Alarm Trigger Group Panel



8 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

9 Click **Brick** to display the next tab of the window.

Result The **Brick** tab panel of the Brick ICM Alarm Trigger Editor is displayed (Figure 6-10, “Brick ICM Alarm Trigger Brick Panel” (p. 6-20)).

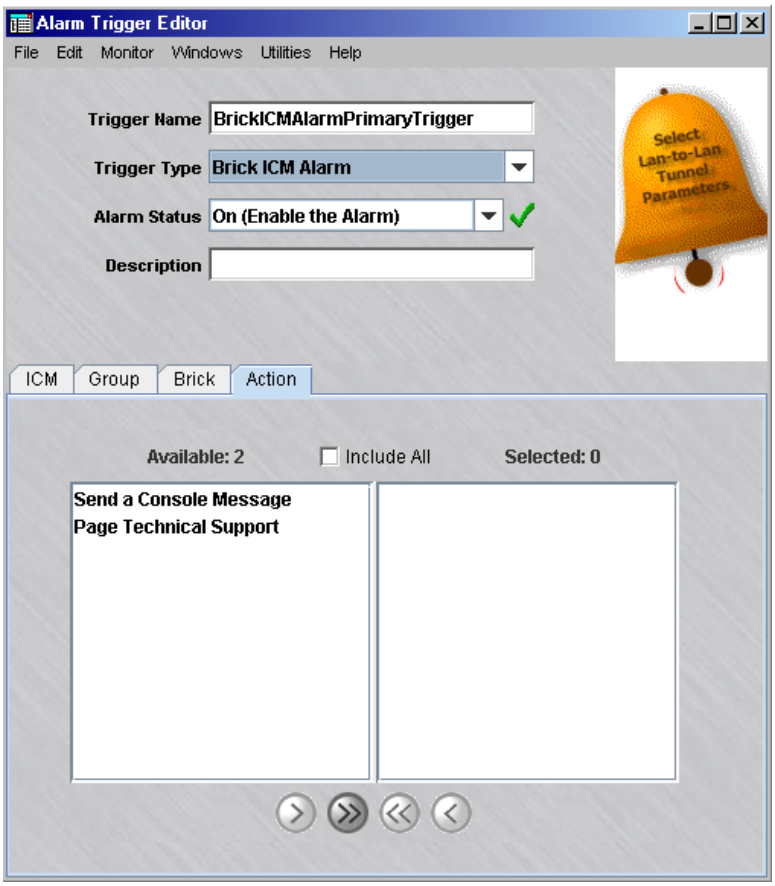
Figure 6-10 Brick ICM Alarm Trigger Brick Panel

10 Choose the Brick(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the Brick(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all Bricks.

11 Click **Action** to display the next tab panel of the window.

Result The **Action** tab panel of the Brick ICM Alarm Trigger Editor is displayed (Figure 6-11, “Brick ICM Alarm Trigger Action Panel” (p. 6-21)).

Figure 6-11 Brick ICM Alarm Trigger Action Panel



12 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have already been configured are displayed.

13 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Brick Interface Lost Trigger

Overview

A **Brick Interface Lost trigger** detects connectivity problems (such as a disconnected or malfunctioning NIC card) on one of the Brick interfaces.

To configure a Brick Interface Lost trigger:

1 Enter a `Trigger Name`, select **Brick Interface Lost** from the Trigger Type drop-down list, select an **Alarm Status** (Off or On), then enter an optional `Description` as described in "Configuring Triggers" (p. 6-3).

Result The Brick Interface Lost version of the Alarm Trigger Editor is displayed (Figure 6-12, "Alarm Trigger Editor Brick Interface Lost Parameters" (p. 6-23)).

Figure 6-12 Alarm Trigger Editor Brick Interface Lost Parameters

2 On the Brick Lost tab of the window, shown in Figure 6-12, "Alarm Trigger Editor Brick Interface Lost Parameters" (p. 6-23), enter the parameters that define the conditions of the **Brick Interface Lost** trigger as the following table explains:

Parameter	Description
`Interface Down Time`	After the initial interface event is detected, this is the amount of time that the interface must stay down before another alarm is generated. If 0 is specified, the alarm is generated when the first occurrence is detected.
`Concise Description`	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the alarm.
`Explanation`	If the action associated with this trigger includes **Explanation**, this is the message that will be forwarded in the alarm.
Notify when Interface comes back up	If you want the alarm to be generated again when the event is no longer detected, leave the checkbox checked.
`Concise Description`	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the **Notify when Interface comes back up** alarm. This message is only sent if the **Notify when Interface comes back up** checkbox is checked.
`Explanation`	If the action associated with this trigger includes **Explanation**, this is the message that will be forwarded in the **Notify when Interface comes back up** alarm. This message is only sent if the **Notify when Interface comes back up** checkbox is checked.

3 Click **Group** to display the next tab of the window.

Result The **Group** tab of the Brick Interface Lost Alarm Trigger Editor is displayed.

4 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

5 Click **Brick** to display the next tab of the window.

Result The **Brick** tab of the Brick Interface Lost Alarm Trigger Editor is displayed.

6 Choose the Brick(s) be associated with this trigger and click the arrow**>** or **>>** button to move the Brick(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all Bricks.

Only the Bricks that belong in the groups selected on the previous tab are displayed.

7 Click **Action** to display the next tab of the window.

Result The **Action** tab of the Brick Interface Lost Alarm Trigger Editor is displayed.

8 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

9 Select **File > Save and Close**.

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Brick Lost Trigger

Overview

A **Brick Lost** alarm trigger detects communication problems between the SMS and a Brick. A pre-configured Brick Lost trigger already exists, so you may not need to configure another one. See *"Preconfigured Alarm Triggers and Actions"* in Chapter 4, "Introduction to Alarms".

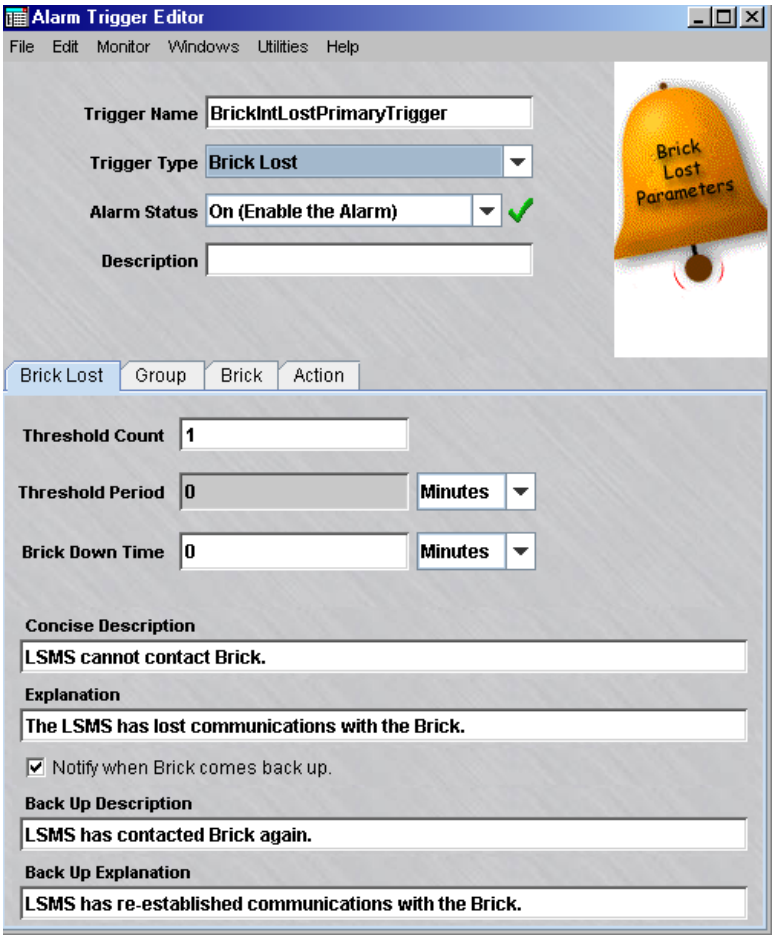
Task

Complete the following steps to configure a Brick Lost trigger:

1. Enter a `Trigger Name`, select **Brick Lost** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in "Configuring Triggers" (p. 6-3).

Result The Brick Lost version of the Alarm Trigger Editor is displayed, initially displaying the Brick Lost tab (Figure 6-13, “Alarm Trigger Editor Brick Lost Parameters” (p. 6-27)).

Figure 6-13 Alarm Trigger Editor Brick Lost Parameters



2 On the Brick Lost tab of the window, shown in Figure 6-13, “Alarm Trigger Editor Brick Lost Parameters” (p. 6-27), enter the `Brick Lost Parameters` that define the conditions of this trigger as the following table explains:

Parameter	Description
`Threshold Count`	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.

Parameter	Description
Threshold Period	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
Brick Down Time	After the initial brick event is detected, this is amount of time that the Brick must stay down before another alarm is generated. If 0 is specified, the alarm is generated when the first occurrence is detected.
Concise Description	If the action associated with this trigger includes **Concise Description,** this is the message that will be forwarded in the alarm.
Explanation	If the action associated with this trigger includes **Explanation**, this is the message that will be forwarded in the alarm.
Notify when Brick comes back up	If you want the alarm to be generated again when the event is no longer detected, leave the checkbox checked.
Concise Description	If the action associated with this trigger includes **Concise Description,** this is the message that will be forwarded in the **Notify when Brick comes back up** alarm. This message is only sent if the **Notify when Brick comes back up** checkbox is checked.
Explanation	If the action associated with this trigger includes **Explanation,** this is the message that will be forwarded in the **Notify when Brick comes back up** alarm. This message is only sent if the **Notify when Brick comes back up** checkbox is checked.

3 Click **Group** to display the next tab of the window.

Result The **Group** tab of the Brick Lost Alarm Trigger Editor is displayed.

4 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

5 Click **Brick** to display the next tab of the window.

Result The **Brick** tab of the Brick Lost Alarm Trigger Editor is displayed.

6 Choose the Brick(s) be associated with this trigger and click the arrow**>** or **>>** button to move the Brick(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all Bricks.

Only the Bricks that belong in the groups selected on the previous tab are displayed.

7 Click **Action** to display the next tab of the window.

Result The **Action** tab of the Brick Lost Alarm Trigger Editor is displayed.

8 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

9 Select **File > Save and Close**.

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Brick Proactive Monitoring Trigger

Overview

A **Brick Proactive Monitoring** trigger detects Brick events such as high average cache memory usage, or an excessive number of packets dropped or passed, so that if the health of the network is deemed questionable, an Administrator is notified before the problem worsens.

Before configuring this trigger, you should inspect normal traffic load and throughput of your network. Equipped with an understanding of normal traffic conditions, you are prepared to enter useful threshold criteria that reflect unusual traffic patterns.

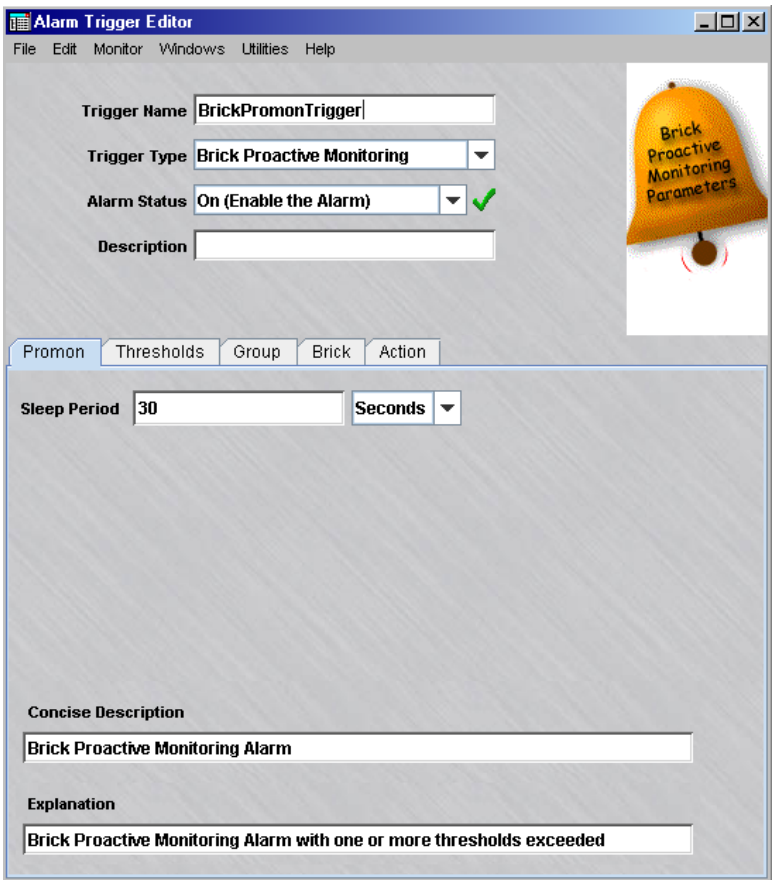
Task

Complete the following steps to configure a Brick Proactive Monitoring trigger:

1. Enter a `Trigger Name`, select **Brick Proactive Monitoring** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in “Configuring Triggers” (p. 6-3).

Result The Brick Proactive Monitoring version of the Alarm Trigger Editor is displayed, initially displaying the Promon tab (Figure 6-14, “Alarm Trigger Editor Brick Proactive Monitoring Trigger Parameters” (p. 6-31)).

Figure 6-14 Alarm Trigger Editor Brick Proactive Monitoring Trigger Parameters



2 On the Promon tab of the window, shown in Figure 6-14, “Alarm Trigger Editor Brick Proactive Monitoring Trigger Parameters” (p. 6-31), enter the parameters that define the conditions of this trigger as the following table explains:

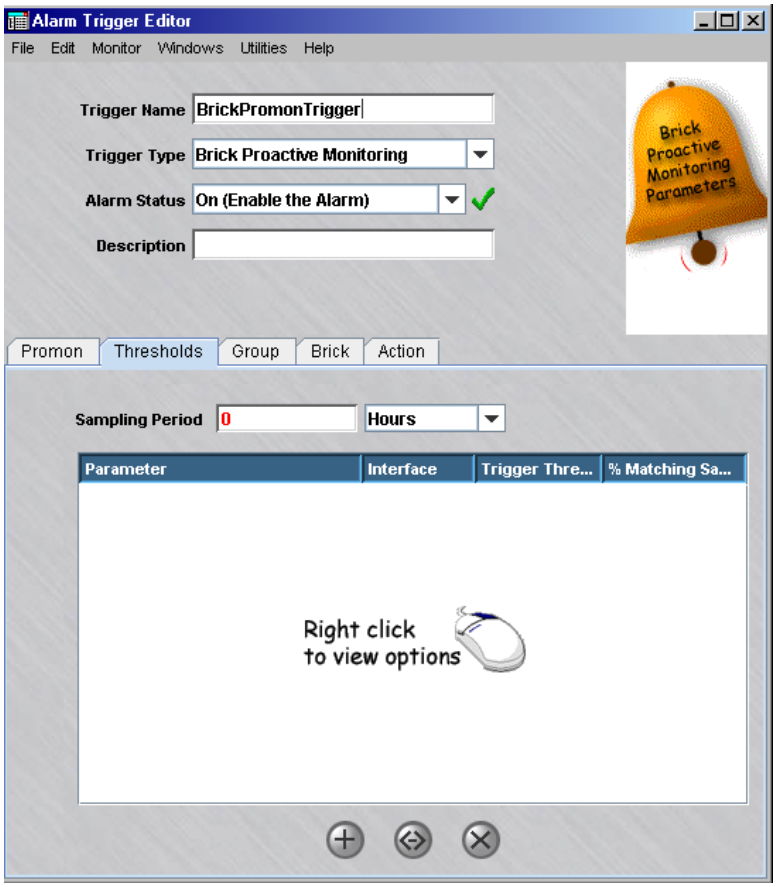
Parameter	Description
`Sleep Period`	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (e.g., denial-of-service attacks).

Parameter	Description
`Concise Description`	If the action associated with this trigger includes **Concise Description,** this is the message that will be forwarded in the alarm.
Explanation	If the action associated with this trigger includes **Explanation,** this is the message that will be forwarded in the alarm.

3 Click **Thresholds** to display the next tab of the window.

Result The Thresholds tab panel is displayed (Figure 6-15, "Brick Proactive Monitoring Select Threshold Values Panel" (p. 6-32)),

Figure 6-15 Brick Proactive Monitoring Select Threshold Values Panel



4 On the next tab of the window, shown in enter a value for `Sampling Period`. This is the time period in which the event, as further defined in the next few steps, must occur before the alarm is generated.

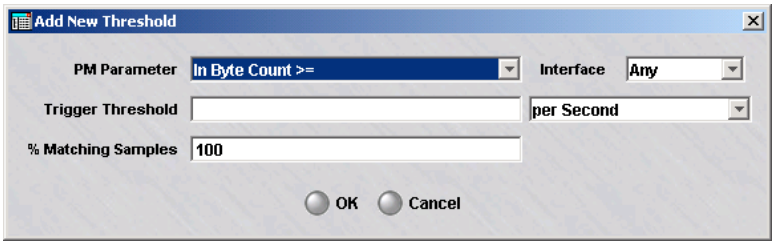
The default of 30 seconds represents how often the data is collected by a Brick and written to the Proactive Monitoring log. The value entered for the Threshold Period determines the number of collections taken.

If two minutes is entered as the Threshold Period, then four data collections are taken.

5 Right-click in the white box and select **New** from the pop-up menu.

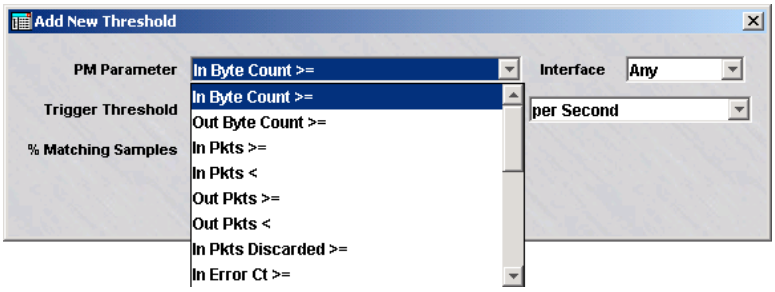
Result The **Add New Threshold** window is displayed (Figure 6-16, “Add New Threshold Window” (p. 6-33)).

Figure 6-16 Add New Threshold Window



6 Select a Proactive Monitoring parameter from the **PM Parameter** drop-down list. This parameter specifies the condition to be monitored.

Figure 6-17 Brick Proactive Monitoring Parameters Drop-down



These are parameters that are collected by a Brick and include processed packets, packets that are dropped, packet counts, and so forth. These parameters are fully described in Appendix C, “Proactive Monitoring Trigger Parameters”.

7 For some parameters, you can specify a particular port to monitor. If an **Interface** field is present, select **Any,** or one of the ports, **ether0** through **ether19,** from the drop-down list.

8 Enter a `Trigger Threshold` for the parameter to be monitored. This is the normalized threshold value per the selected unit of measure (per second, minute, hour, and so forth).

9 In the **% Matching Samples**field, enter a whole number between 0 and 100. This is the percentage of time that the collection interval reaches or exceeds the Trigger Threshold.

10 Click **OK**. The parameter now appears in the white box. To edit, delete, or create a new parameter, right-click the parameter and select an option from the pop-up menu.

11 Click **Group** to display the next tab of the window.

Result The **Group** tab of the Brick Proactive Monitoring Alarm Trigger Editor is displayed.

12 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

13 Click **Brick** to display the next tab of the window.

Result The **Brick** tab of the Brick Proactive Monitoring Alarm Trigger Editor is displayed.

14 Choose the Brick(s) be associated with this trigger and click the arrow**>** or **>>** button to move the Brick(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all Bricks.

Only the Bricks that belong in the groups selected on the previous tab are displayed.

15 Click **Action** to display the next tab of the window.

Result The **Action** tab of the Brick Proactive Monitoring Alarm Trigger Editor is displayed.

16 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

17 Select **File > Save and Close**.

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Brick SLA Round Trip Delay Alarm Trigger

Overview

The Brick SLA Round Trip Delay Alarm trigger is used to trigger an alarm when a specified percentage of SLA probes exceed the Round Trip Delay Threshold (which is defined on the SLA Probes tab of the LAN-LAN Tunnel Editor) for LAN-LAN tunnels within the selected group(s) or on the selected Brick(s), or when a specified percentage of SLA probes between the tunnel endpoints are lost.

Task

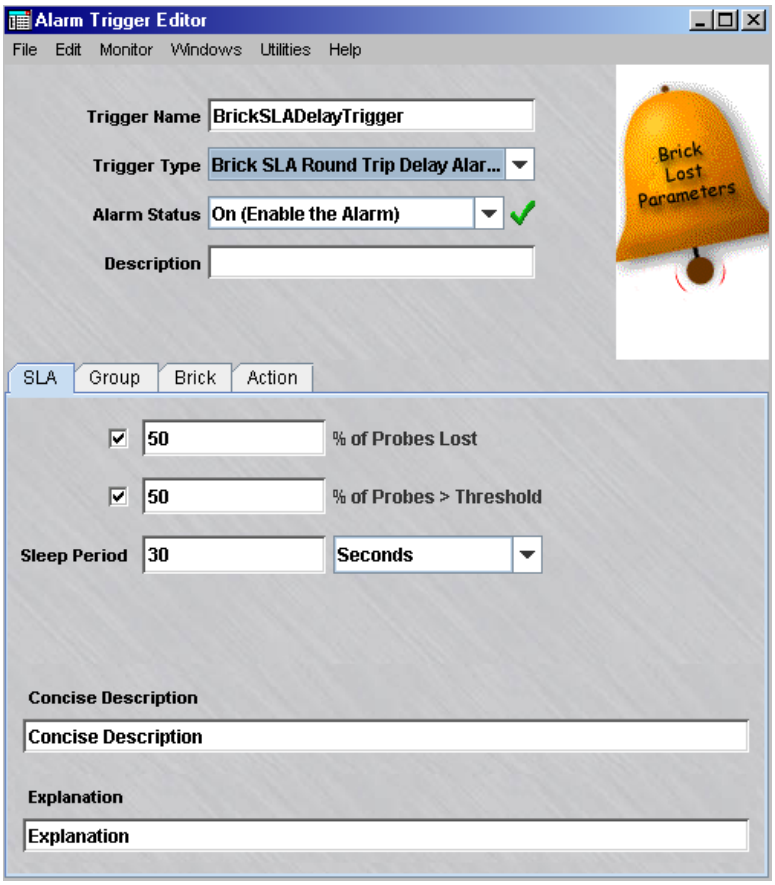
Complete the following steps to configure a Brick SLA Round Trip Delay Alarm Trigger.

1. Follow steps 1 to 3 as described in “Configuring Triggers” (p. 6-3).

2. Click the down arrow next to the **Trigger Type** field to display a drop-down list and select **Brick SLA Round Trip Delay Alarm**.

Result The Brick SLA Round Trip Delay Alarm version of the Alarm Trigger Editor is displayed, initially displaying the **SLA** tab (Figure 6-18, “Alarm Trigger Editor Brick SLA Round Trip Delay Alarm Parameters” (p. 6-37)).

Figure 6-18 Alarm Trigger Editor Brick SLA Round Trip Delay Alarm Parameters



3 Specify the Alarm Status. The default entry is **On (Enable the Alarm)**. Or, select **Off (Disable the Alarm)** from the drop-down list to disable the alarm trigger.

4 Optionally, enter a **Description** for the trigger. If a description is entered, it is displayed in the list of triggers in the Contents Panel.

5 Click the checkbox next to the **% of Probes Lost** field to enable this option (it is enabled by default; click the checkbox again to remove the check and disable the option) and enter the number for the percentage of SLA probes at the LAN-LAN tunnel endpoints that must be lost before an alarm is triggered. The default value is **50**.

6 Click the checkbox next to the **% of Probes > Threshold** field to enable this option (it is enabled by default; click the checkbox again to remove the check and disable the option) and enter a number for the percentage of SLA probes that must exceed the Round Trip Delay Threshold for LAN-LAN tunnels (which is set on the **SLA Probe** tab of the LAN-LAN Tunnel Editor) before an alarm is triggered. The default value is **50**.

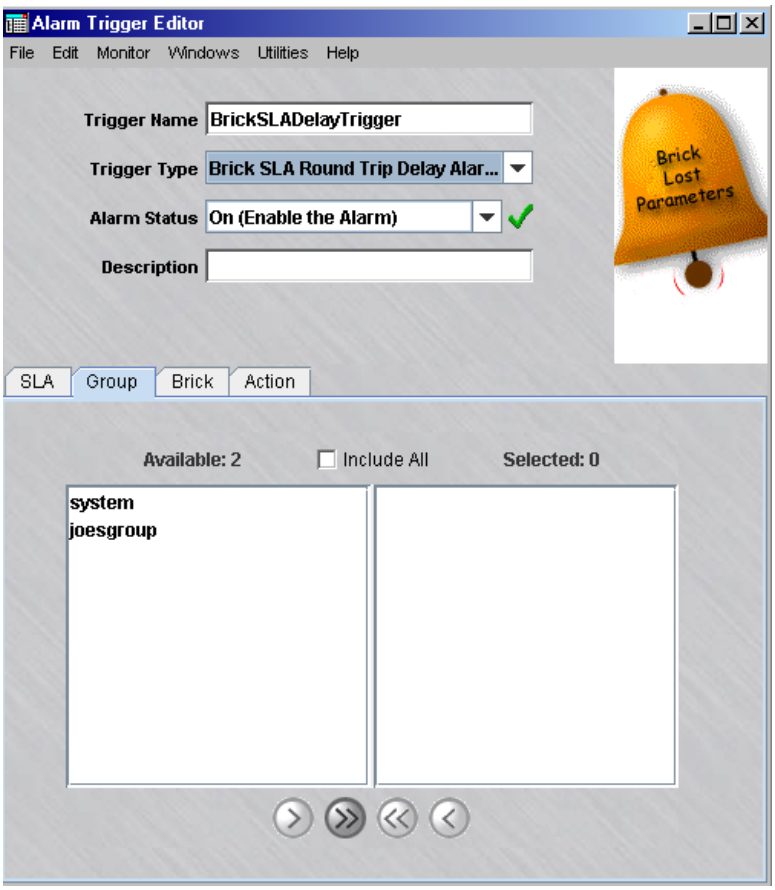
7 On the **SLA** tab, enter the parameters that define the conditions of this trigger as shown in the following table:

Parameter	Description
`Sleep Period`	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. The default value is 30 (seconds). Enforces throttling and mitigates flooding of the network (as from, for example, denial-of-service attacks).
`Concise Description`	If the action associated with this trigger includes `Concise Description`, this is the message that will be forwarded in the alarm. This message is displayed on the Alarm Console on the SMS when the alarm is triggered.
`Explanation`	If the action associated with this trigger includes `Explanation`, this is the message that will be forwarded in the alarm. This message is displayed if the email, Syslog, or Pager alarm action is configured.

8 Click **Group** to display the next tab of the window.

Result The **Group** tab panel of the Brick SLA Round Trip Delay Alarm Trigger Editor is displayed (Figure 6-19, “Brick SLA Round Trip Delay Group Panel” (p. 6-39)

Figure 6-19 Brick SLA Round Trip Delay Group Panel

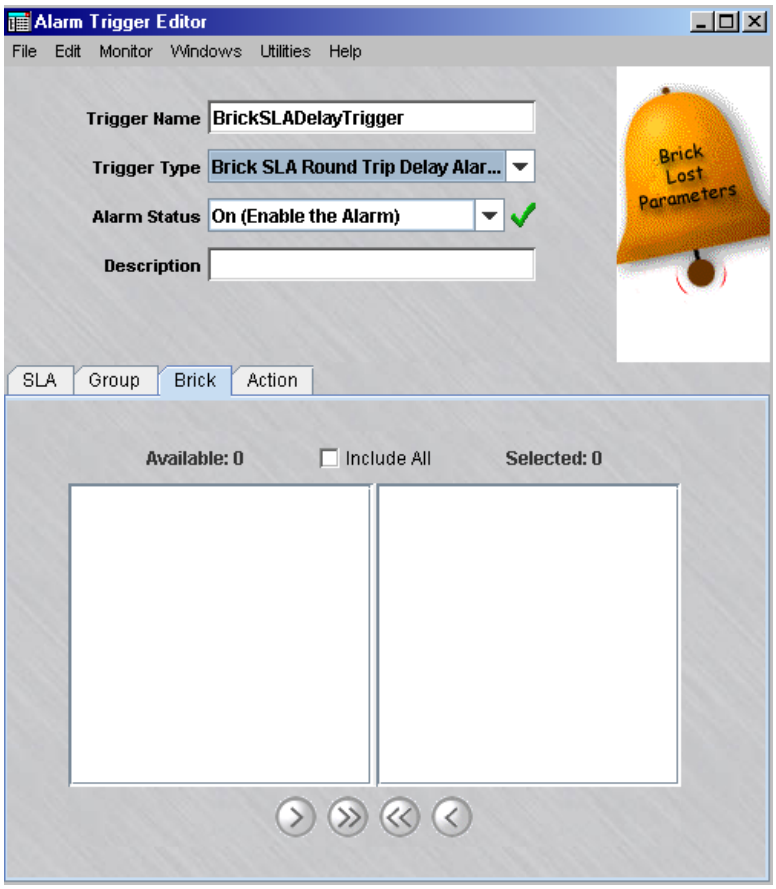


9 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

10 Click **Brick** to display the next tab of the window.

Result The **Brick** tab panel of the Brick SLA Round Trip Delay Alarm Trigger Editor is displayed (Figure 6-20, “Brick SLA Round Trip Delay Brick Panel” (p. 6-40)).

Figure 6-20 Brick SLA Round Trip Delay Brick Panel

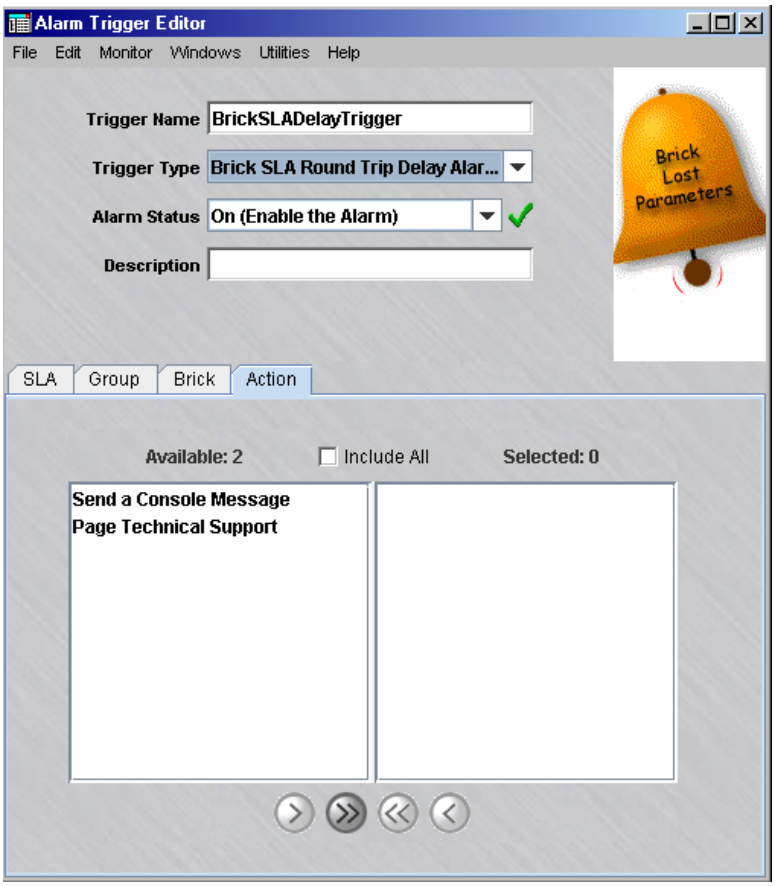


11 Choose the Brick(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the Brick(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all Bricks.

12 Click **Action** to display the next tab of the window.

Result The **Action** tab panel of the Brick SLA Round Trip Delay Alarm Trigger Editor is displayed (Figure 6-21, “Brick SLA Round Trip Delay Action Panel” (p. 6-41)).

Figure 6-21 Brick SLA Round Trip Delay Action Panel



13 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have already been configured are displayed.

14 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

VPN Proactive Monitoring Trigger

Overview

The VPN Proactive Monitoring trigger is used to detect VPN client events such as:

- IKE Initiated
- IKE Failed
- User Auth (via VPN Client) Initiated
- User Auth (via VPN Client) Failed

Task

Complete the following steps to configure the VPN Proactive Monitoring Trigger.

1. Follow steps 1 to 3 as described in “Configuring Triggers” (p. 6-3).

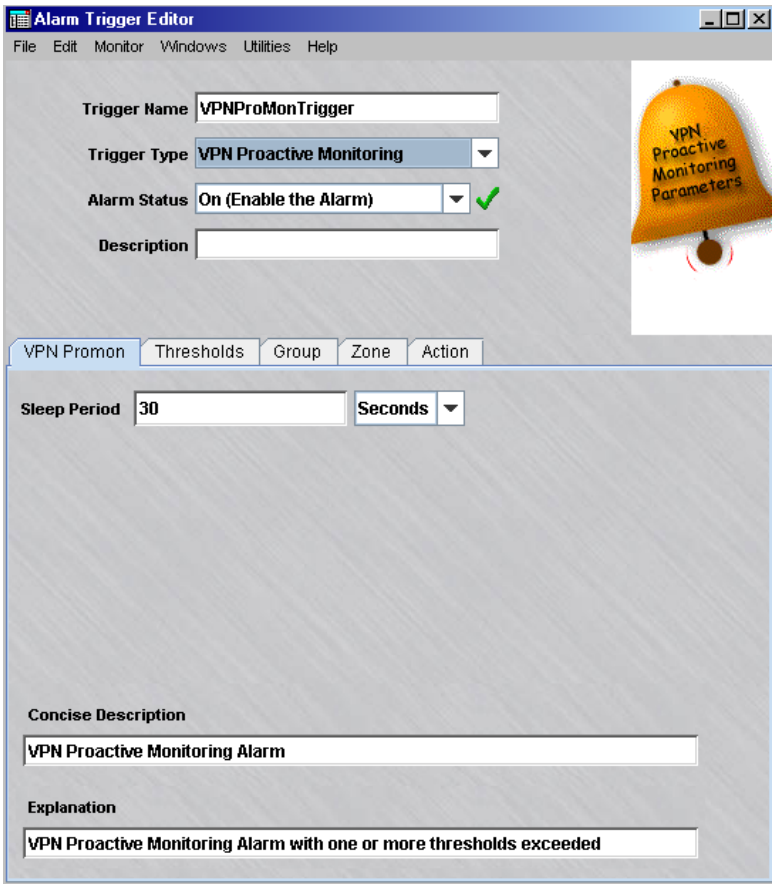
2. Click the down arrow next to the **Trigger Type** field to display a drop-down list and select **VPN Proactive Monitoring**.

3. Specify the Alarm Status. The default entry is **On (Enable the Alarm)**. Or, select **Off (Disable the Alarm)** from the drop-down list to disable the alarm trigger.

4. Optionally, enter a **Description** for the trigger. If a description is entered, it is displayed in the list of triggers in the Contents Panel.

Result The VPN Proactive Monitoring version of the Alarm Trigger Editor is displayed, initially displaying the **VPN Promon** tab (Figure 6-22, “Alarm Trigger Editor VPN Proactive Monitoring Trigger Parameters” (p. 6-44)).

Figure 6-22 Alarm Trigger Editor VPN Proactive Monitoring Trigger Parameters



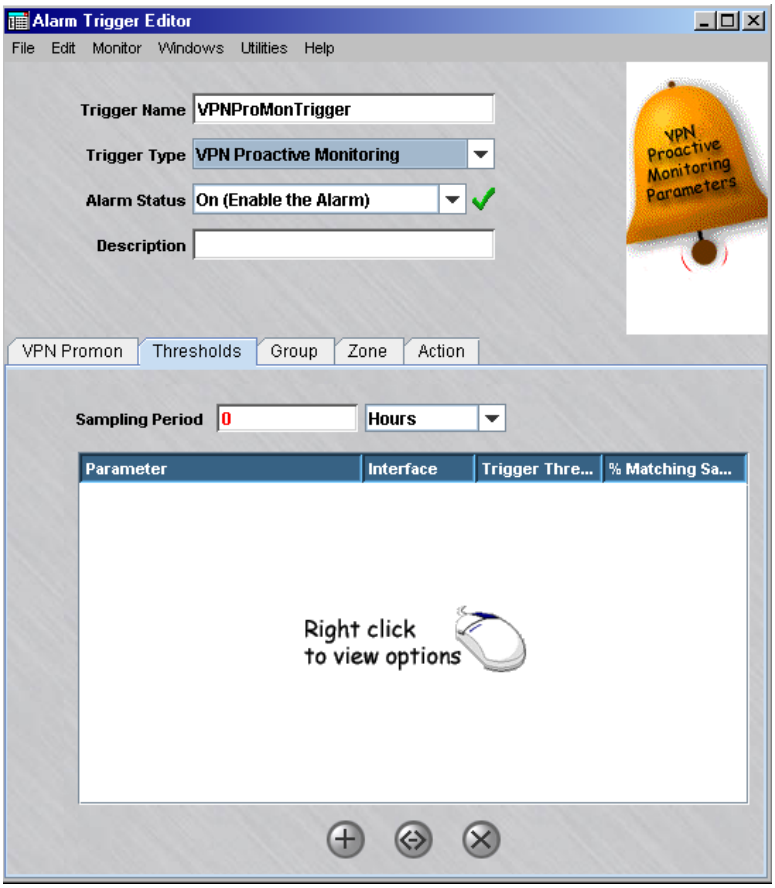
5 On the **VPN Promon** tab, enter the VPN Proactive Monitoring Parameters that define the conditions of this trigger as shown in the following table:

Parameter	Description
`Sleep Period`	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. The default value is 30 (seconds). Enforces throttling and mitigates flooding of the network (as from, for example, denial-of-service attacks).

Parameter	Description
`Concise Description`	If the action associated with this trigger includes `Concise Description`, this is the message that will be forwarded in the alarm. This message is displayed on the Alarm Console on the SMS when the alarm is triggered.
`Explanation`	If the action associated with this trigger includes `Explanation`, this is the message that will be forwarded in the alarm. This message is displayed if the email, Syslog, or Pager alarm action is configured.

6 Click **Thresholds** to display the next tab of the window (Figure 6-23, “VPN Proactive Monitoring Threshold Value Panel” (p. 6-45)).

Figure 6-23 VPN Proactive Monitoring Threshold Value Panel

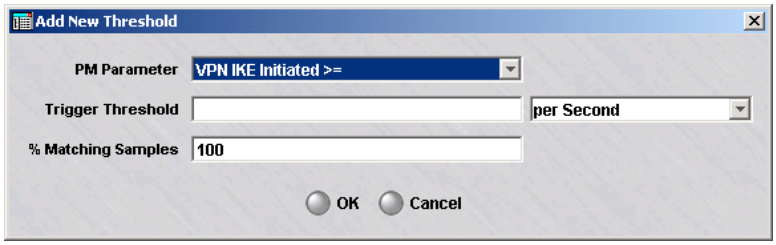


7 Set the Sampling Period to **30 Seconds**.

8 Right-click and select **New**.

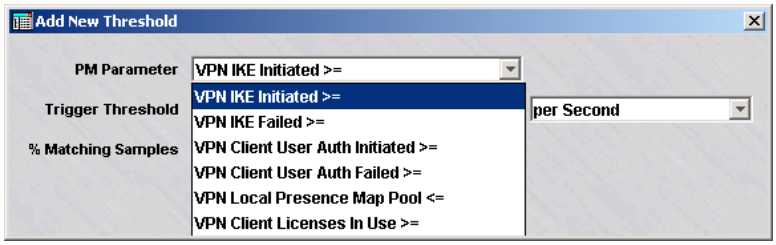
The Add New Threshold window is displayed (Figure 6-24, “Add New Threshold Window” (p. 6-46)).

Figure 6-24 Add New Threshold Window



9 Click the down arrow next to the PM Parameter field to display a drop-down list (Figure 6-25, “VPN Proactive Monitoring PM Parameter Drop-Down List” (p. 6-46)).

Figure 6-25 VPN Proactive Monitoring PM Parameter Drop-Down List



10 Select **VPN Local Presence Map Pool**.

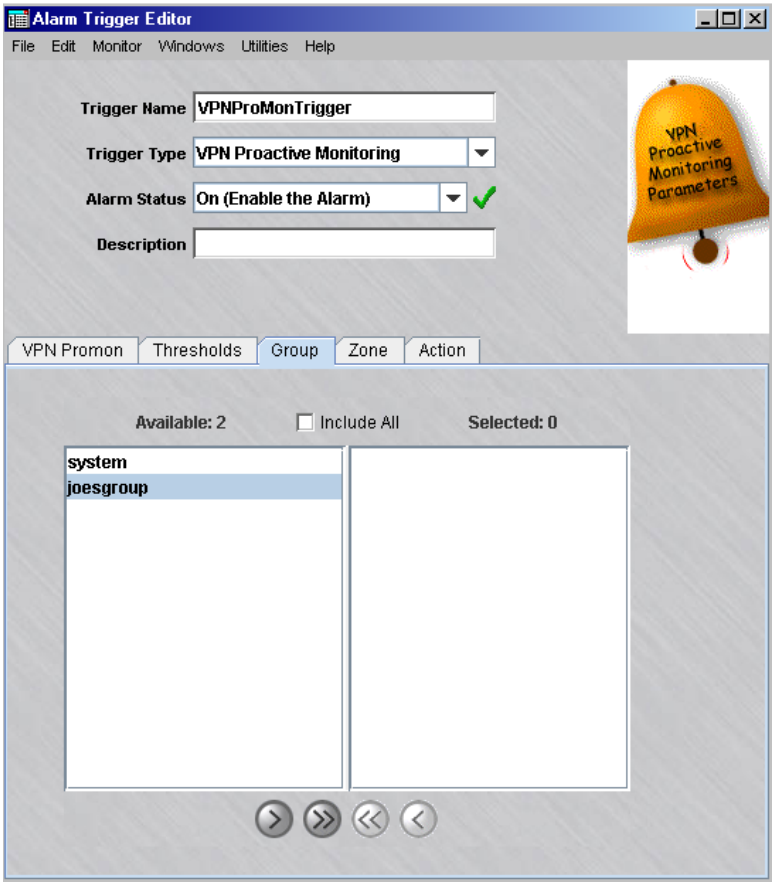
11 In the **Trigger Threshold** field, enter a percentage value for triggering an alarm when the Dynamic NAT or VPN client local presence pool of IP addresses reaches or fall belows the value entered (for example, enter `20` to trigger an alarm when the Dynamic NAT pool or VPN client local presence address pool is only 20 percent full). The second threshold field value defaults to `Percent` for this trigger.

12 Leave the **% Matching Values** field value at 100.

13 Click **OK** on the Add New Threshold window.

14 Click **Group** to display the next tab of the window(Figure 6-26, “VPN Proactive Monitoring Window (Group Tab)” (p. 6-47)).

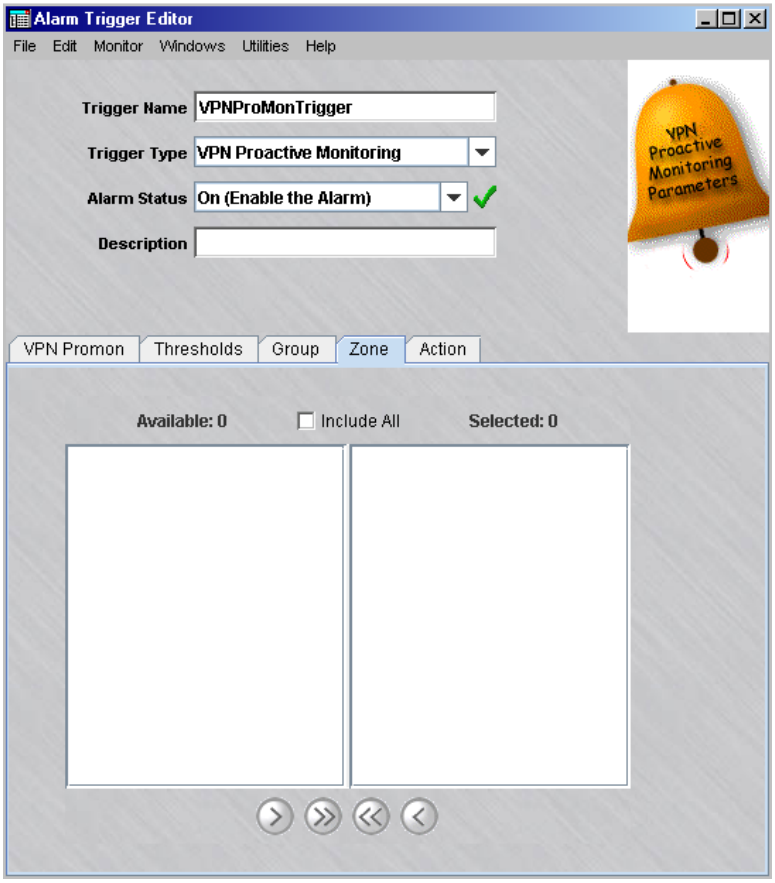
Figure 6-26 VPN Proactive Monitoring Window (Group Tab)



15 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

16 Click **Zone** to move to the next tab of the window(Figure 6-28, “VPN Proactive Monitoring Window (Action Tab)” (p. 6-49)).

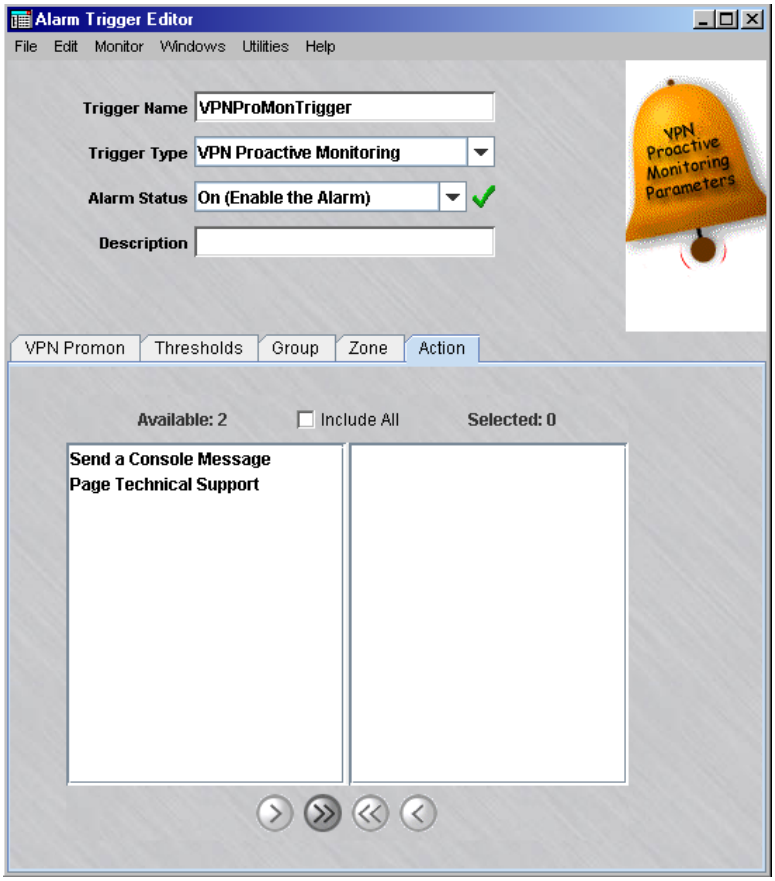
Figure 6-27 VPN Proactive Monitoring Window (Zone Tab)



17 Select the zone(s) to be associated with this trigger and click the **>** or **>>** button to move the selected zone(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all zones.

18 Click **Action** to move to the next tab of the window(Figure 6-28, “VPN Proactive Monitoring Window (Action Tab)” (p. 6-49)).

Figure 6-28 VPN Proactive Monitoring Window (Action Tab)



19 Select an action to be taken when a VPN Proactive Monitoring event occurs or when the Dynamic NAT Pool Exhausted Alarm is triggered . For this type of trigger, choose **Send a Console Message** and click the **>** or**>>** button to move it to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

20 Select **File > Save and Close**.

The alarm trigger is configured.

END OF STEPS

□

LAN-to-LAN Tunnel Lost Trigger

Overview

A **LAN-to-LAN Tunnel Lost** trigger detects the failure of an established LAN-to-LAN tunnel. A pre-configured LAN-to-LAN Tunnel Lost trigger already exists, so you may not need to configure another one. See "Pre-configured Alarm Triggers and Actions" (p. 4-5) in Chapter 4, "Introduction to Alarms".

Task

To configure a LAN-to-LAN tunnel Lost trigger:

1. Enter a `Trigger Name`, select **Lan To Lan Tunnel Lost** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in "Configuring Triggers" (p. 6-3).

Result The Alarm Trigger LAN-LAN Tunnel Lost Parameters window is displayed (Figure 6-29, “Alarm Trigger Editor LAN-to-LAN Tunnel Lost Parameters” (p. 6-51)).

Figure 6-29 Alarm Trigger Editor LAN-to-LAN Tunnel Lost Parameters

2 On the Lan to Lan Lost tab of the window, shown in Figure 6-29, “Alarm Trigger Editor LAN-to-LAN Tunnel Lost Parameters” (p. 6-51), enter the `Brick Lost Parameters` that define the conditions of this trigger as the following table explains:

Parameter	Description
`Threshold Count`	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.

Parameter	Description
Threshold Period	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
Sleep Period	The time period between events before the threshold counter is reset.
Concise Description	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the alarm.
Explanation	If the action associated with this trigger includes **Explanation**, this is the message that will be forwarded in the alarm.

3 Click **Group** to display the next tab of the window.

Result The **Group** tab of the LAN-to-LAN Tunnel Lost Alarm Trigger Editor is displayed.

4 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

5 Click **Brick** to display the next tab of the window.

Result The **Brick** tab of the LAN-to-LAN Tunnel Lost Alarm Trigger Editor is displayed.

6 Choose the Brick(s) be associated with this trigger and click the arrow**>** or **>>** button to move the Brick(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all Bricks.

Only the Bricks that belong in the groups selected on the previous tab are displayed.

7 Click **Action** to display the next tab of the window.

Result The **Action** tab of the LAN-to-LAN Tunnel Lost Alarm Trigger Editor is displayed.

8 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

9 Select **File > Save and Close**.

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

LAN-to-LAN Tunnel UP Trigger

Overview

A **LAN-to-LAN Tunnel UP** trigger is activated when a tunnel that's been previously been brought down for some reason is back up. See "Pre-configured Alarm Triggers and Actions" (p. 4-5) in Chapter 4, "Introduction to Alarms".

Task

To configure a LAN-to-LAN tunnel UP trigger:

1. Enter a `Trigger Name`, select **Lan To Lan Tunnel UP** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in "Configuring Triggers" (p. 6-3).

Result The Alarm Triggers LAN-to-LAN Tunnel Up Parameters window is displayed (Figure 6-30, “Alarm Trigger Editor LAN-to-LAN Tunnel Up Parameters Window” (p. 6-55)).

Figure 6-30 Alarm Trigger Editor LAN-to-LAN Tunnel Up Parameters Window

2 On the Lan to Lan Up tab of the window, shown in Figure 6-30, “Alarm Trigger Editor LAN-to-LAN Tunnel Up Parameters Window” (p. 6-55), enter the `Brick Lost Parameters` that define the conditions of this trigger as the following table explains:

Parameter	Description
`Threshold Count`	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.

Parameter	Description
`Threshold Period`	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
`SleepPeriod`	The time period between events before the threshold counter is reset.
`Concise Description`	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the alarm.
`Explanation`	If the action associated with this trigger includes **Explanation**, this is the message that will be forwarded in the alarm.

3 Click **Group** to display the next tab of the window.

Result The **Group** tab of the LAN-to-LAN tunnel UP Alarm Trigger Editor is displayed.

4 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

5 Click **Brick** to display the next tab of the window.

Result The **Brick** tab of the LAN-to-LAN Tunnel UP Alarm Trigger Editor is displayed.

6 Choose the Brick(s) be associated with this trigger and click the arrow**>** or **>>** button to move the Brick(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all Bricks.

Only the Bricks that belong in the groups selected on the previous tab are displayed.

7 Click **Action** to display the next tab of the window.

Result The **Action** tab of the LAN-to-LAN Tunnel UP Alarm Trigger Editor is displayed.

8 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

9 Select **File > Save and Close**.

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Local Presence Map Pool Trigger

Overview

A **Local Presence Map Pool** trigger detects if the pool of free IP addresses used for mapping VPN end users to local addresses is below or equals a particular percentage. For more information on Local Presence, refer to the *Local Presence* appendix in the *SMS Policy Guide*.

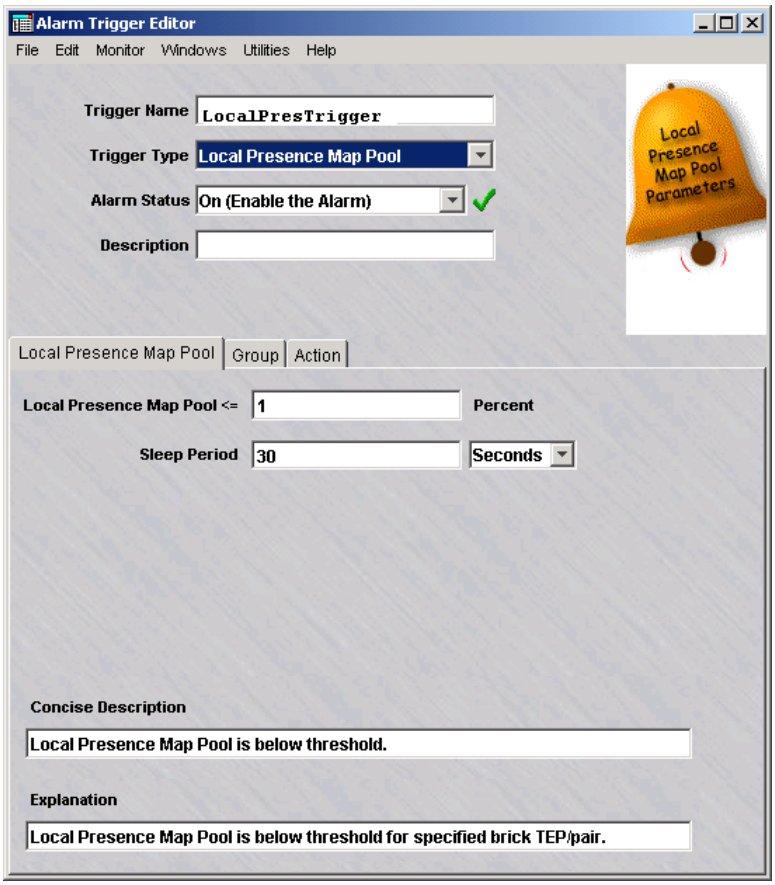
Task

Complete the following steps to configure a Local Presence Map Pool trigger:

1. Enter a `Trigger Name`, select **Local Presence Map Pool** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in "Configuring Triggers" (p. 6-3).

Result The Alarm Trigger Editor Local Presence Map Pool Trigger Parameters window is displayed (Figure 6-31, "Alarm Trigger Editor Local Presence Map Pool Trigger Parameters" (p. 6-59)).

Figure 6-31 Alarm Trigger Editor Local Presence Map Pool Trigger Parameters



2 On the Local Presence Map Pool tab, shown in Figure 6-31, "Alarm Trigger Editor Local Presence Map Pool Trigger Parameters" (p. 6-59), enter the parameters that define the conditions of this trigger, as the following table explains:

Parameter	Description
Local Presence Map Pool <=	A number between 1 and 100 to represent a percentage of the available pool of IP addresses. If the pool is below or equals the percentage entered, an alarm is generated.

Parameter	Description
Threshold Period	The time period in which the number of events (as set in Local Presence Map Pool <=) must occur before the alarm is generated. This field is only active when Local Presence Map Pool <= is 2 or higher. Both conditions must be true in order to generate the alarm.
Sleep Period	After the initial alarm is generated, this amount of time that must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (such as denial-of-service attacks).
Concise Description	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the alarm. This message is displayed on the Alarm Console on the SMS when the alarm is triggered.
Explanation	If the action associated with this trigger includes Explanation, this is the message that will be forwarded in the alarm. This message is displayed if the email, Syslog, or Pager alarm action is configured.

3 Click **Group** to display the next tab of the window.

Result The **Group** tab of the Local Presence Map Pool Alarm Trigger Editor is displayed.

4 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

5 Click **Action** to display the next tab of the window.

Result The **Action** tab of the Local Presence Map Pool Alarm Trigger Editor is displayed.

6 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

7 Select **File > Save and Close**.

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

LSMS Error Trigger

Overview

An LSMS Error trigger detects errors that are generated by the SMS. The error code is prefaced with a letter and followed by a number between 0000 and 9999 (for example, B1004). The error code represent events such as login denied due to inconsistent user certificate, unrecognized Brick, and so forth.

Task

Complete the following steps to configure an SMS Error trigger:

1 Enter a `Trigger Name`, select **SMS Error** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in “Configuring Triggers” (p. 6-3).

Result The LSMS Error Alarm Trigger Parameters window is displayed (Figure 6-32, “Alarm Trigger Editor SMS Error Trigger Parameters” (p. 6-63)).

Figure 6-32 Alarm Trigger Editor SMS Error Trigger Parameters

2 On the LSMS Errors tab of the window, shown in Figure 6-32, “Alarm Trigger Editor SMS Error Trigger Parameters” (p. 6-63), enter the parameters that define the conditions of this trigger as the following table explains:

Parameter	Description
Threshold Count	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.

Parameter	Description
Threshold Period	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
Sleep Period	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (such as denial-of-service attacks).
Error Codes	A number prefaced with a letter and followed by a number between 0000 and 7999 (e.g., B1004). Acceptable values include a single error code (example: B1009); a list of error codes (example: B1004, B1009); wildcards (example: B*); question marks (example: ?1001). Click the question mark (?) button to see the list of error codes. Error codes with a bell icon are recommended for use in alarms.
Severity	Enter 1, 2, or 3. This is an optional field. 1 indicates a serious problem; 2 indicates a system exhibiting some degradation in functionality; 3 indicates a system with no degradation in functionality.
Concise Description	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the alarm. This message is displayed on the Alarm Console on the SMS when the alarm is triggered.
Explanation	If the action associated with this trigger includes Explanation, this is the message that will be forwarded in the alarm. This message is displayed if the email, Syslog, or Pager alarm action is configured.

3 Click **Action** to display the next tab of the window.

Result The **Action** tab of the LSMS Error Alarm Trigger Editor is displayed.

4 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

5 Select **File > Save and Close**.

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

LSMS Status Change Trigger

Overview

An LSMS Status Change trigger is used to define a trigger for when an SMS that was brought down for some reason is brought back up.

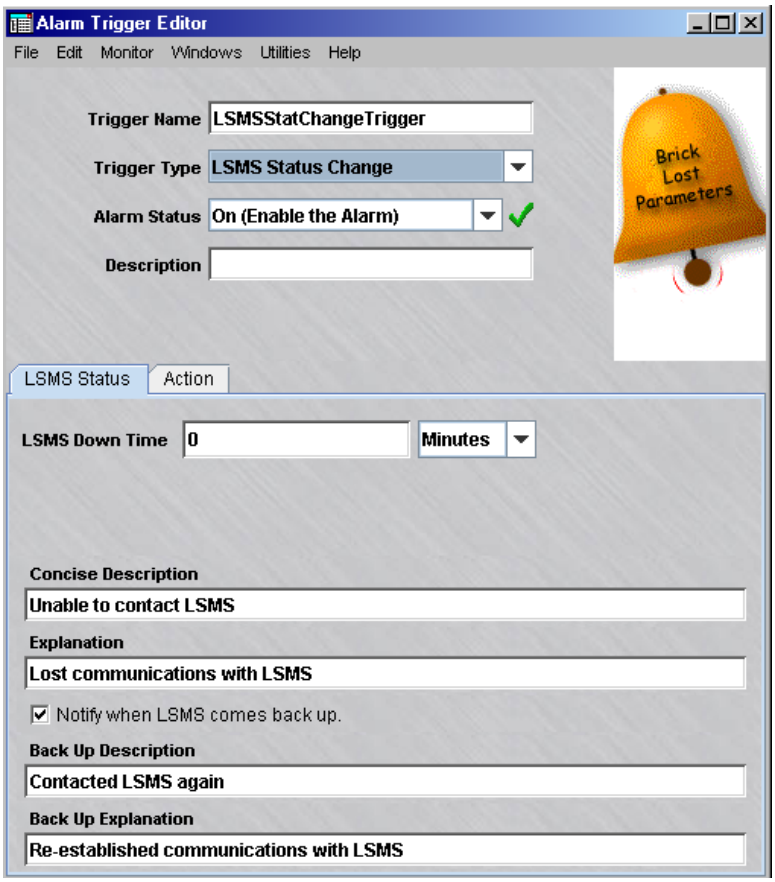
Task

To configure an SMS Status Change trigger:

1 Enter a `Trigger Name`, select **LSMS Status Change** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in “Configuring Triggers” (p. 6-3).

Result The LSMS Status Change Alarm Trigger Parameters window is displayed (Figure 6-33, “Alarm Trigger Editor LSMS Status Change Trigger Parameters” (p. 6-67)).

Figure 6-33 Alarm Trigger Editor LSMS Status Change Trigger Parameters



2 On the LSMS Status tab of the window, shown in Figure 6-33, “Alarm Trigger Editor LSMS Status Change Trigger Parameters” (p. 6-67), enter the parameters that define the conditions of this trigger as the following table explains:

Parameter	Description
SMS Down Time	Enter the amount of time (in minutes) that the SMS must be down before an alarm is triggered.

Parameter	Description
Concise Description	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the alarm. This message is displayed on the Alarm Console on the SMS when the alarm is triggered.
Explanation	If the action associated with this trigger includes Explanation, this is the message that will be forwarded in the alarm. This message is displayed if the email, Syslog, or Pager alarm action is configured.
Explanation	If the action associated with this trigger includes Explanation, this is the message that will be forwarded in the alarm. This message is displayed if the email, Syslog, or Pager alarm action is configured.
Back Up Description	Enter a textual description of the alarm status when the SMS is brought back up.
Back Up Explanation	Enter a textual description of the event that occurs when the SMS is brought back up.

3 Click **Action** to display the next tab of the window.

Result The **Action** tab of the LSMS Status Change Alarm Trigger Editor is displayed.

4 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have been already configured are displayed.

5 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

LSMS Proactive Monitoring Trigger

Overview

An LSMS Proactive Monitoring trigger detects SMS events such as platform resource utilization (such as log rollover rate and disk space usage), and number of user authentication attempts from VPN clients, so that if the health of the network is deemed questionable, an Administrator is notified before the problem worsens.

Before configuring this trigger, you should be familiar with normal conditions for log rollover rates, disk usage, amd so forth. Equipped with an understanding of normal conditions, you are prepared to enter useful threshold criteria that reflect unusual resource utilization patterns.

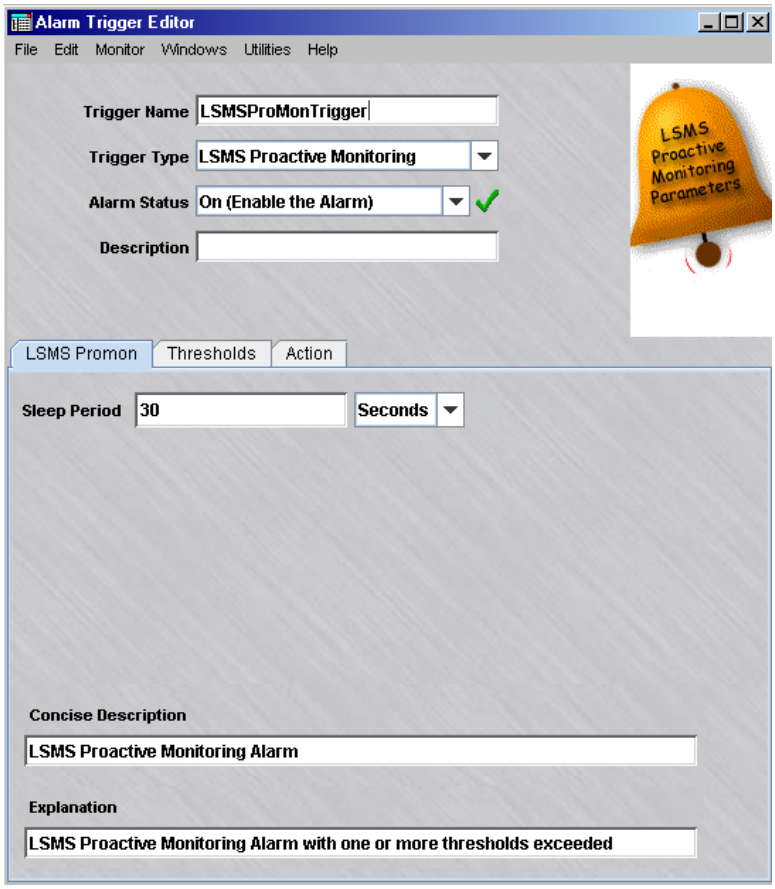
Task

To configure an SMS Proactive Monitoring trigger:

1 Enter a `Trigger Name`, select **LSMS Proactive Monitoring** from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional **Description** as described in “Configuring Triggers” (p. 6-3).

Result The Alarm Trigger Editor SMS Proactive Monitoring Trigger Parameters window is displayed (Figure 6-34, “Alarm Trigger Editor SMS Proactive Monitoring Trigger Parameters” (p. 6-70)).

Figure 6-34 Alarm Trigger Editor SMS Proactive Monitoring Trigger Parameters



2 On the LSMS Promon tab of the window, shown in Figure 6-34, “Alarm Trigger Editor SMS Proactive Monitoring Trigger Parameters” (p. 6-70), enter the parameters that define the conditions of this trigger as the following table explains:

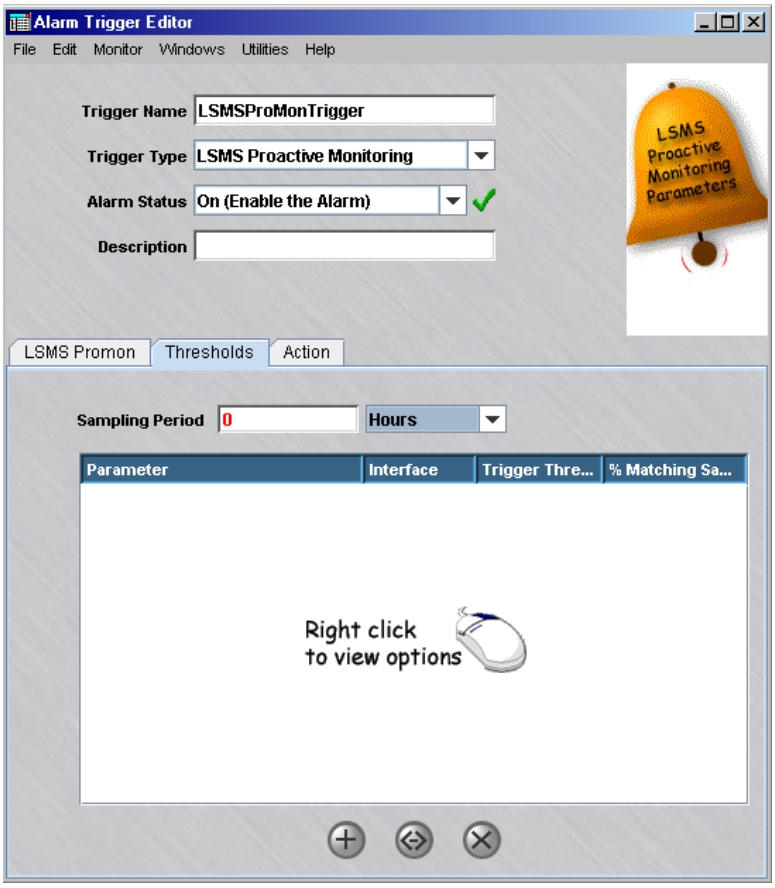
Parameter	Description
Sleep Period	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (e.g., denial-of-service attacks).

Parameter	Description
`Concise Description`	If the action associated with this trigger includes `Concise Description`, this is the message that will be forwarded in the alarm.
`Explanation`	If the action associated with this trigger includes `Explanation`, this is the message that will be forwarded in the alarm.

3 Click **Thresholds** to display the next tab of the window.

Result The Thresholds tab of the LSMS Proactive Monitoring Alarm Trigger window is displayed (Figure 6-35, “LSMS Proactive Monitoring Alarm Trigger Editor (Thresholds Tab)” (p. 6-71)).

Figure 6-35 LSMS Proactive Monitoring Alarm Trigger Editor (Thresholds Tab)

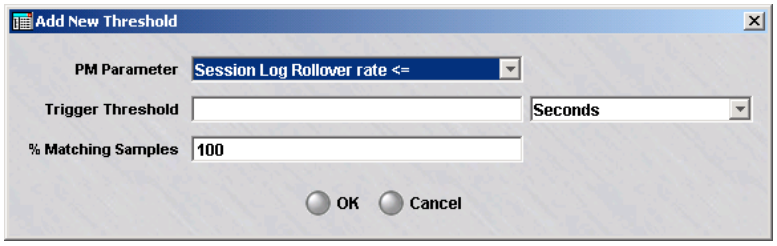


4 On the next tab of the window, shown in Figure 6-35, "LSMS Proactive Monitoring Alarm Trigger Editor (Thresholds Tab)" (p. 6-71) enter a value for `Sampling Period`. This is the time period in which the event (as further defined in the next few steps) must occur before the alarm is generated.

The recommended value of **30 Seconds** equals how often the data is collected by the SMS and written to the Proactive Monitoring log. The value entered for the Threshold Period determines the number of collections taken.

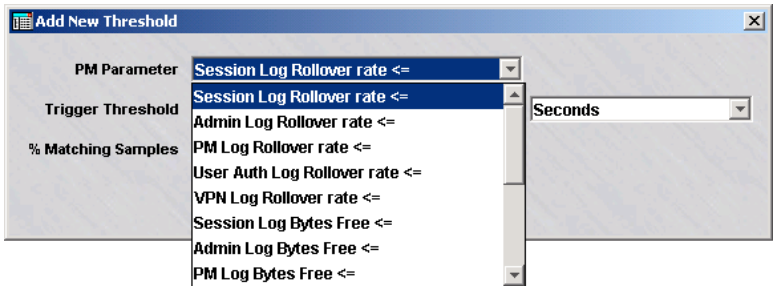
If **2 Minutes** is entered as the Sampling Period, then four data collections are taken.

5 Right-click in the white box and select **New** from the pop-up menu. The **Add New Threshold** pop-up window appears:



6 Select a Proactive Monitoring parameter from the **PM Parameter** drop-down list. This is the condition you want monitored.

Figure 6-36 SMS Proactive Monitoring Parameters Drop-down List



These are parameters that are collected by the SMS and include log rollover rates, disk space usage, etc. They are fully described in Appendix D, "Proactive Monitoring Subtypes"

7 Enter a `Trigger Threshold` value for the parameter to be monitored. This is the *normalized* threshold value per the selected unit of measure (per second, minute, hour, etc.).

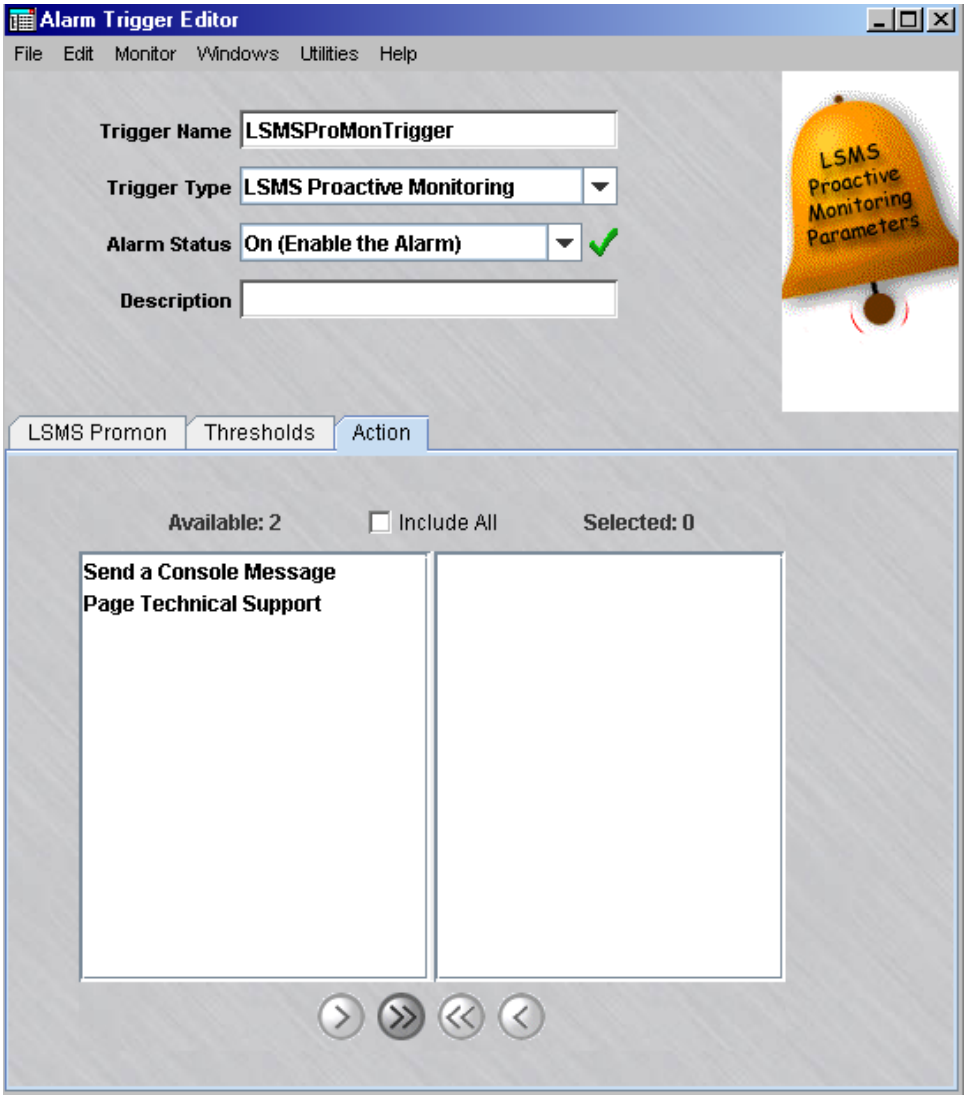
8 In the **% Matching Samples** field, enter a whole number between 0 and 100. This is the percentage of time that the collection interval reaches or exceeds the Trigger Threshold.

9 Click **OK**. The parameter now appears in the box. To edit, delete, or create a new parameter, right-click the parameter and select an option from the pop-up menu.

10 Click **Action** to display the next tab of the window.

Result The Action tab of the LSMS Proactive Monitoring Alarm Trigger Editor window is displayed (

Figure 6-37 LSMS Proactive Monitoring Alarm Trigger Editor (Action Tab)



11 Select the action(s) to be associated with this alarm trigger and click the **>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have already been configured are displayed.

12 Select **File >Save and Close**.

END OF STEPS

□

QoS Alarm Triggers

Overview

The following discussion assumes that the reader is familiar with the implementation of Quality of Service (QoS) / Bandwidth Management in the SMS and Brick as discussed in the *Alcatel-Lucent VPN Firewall Brick® Security Appliance Zone Rulesets* chapter in the *SMS Policy Guide* and the *Configuring Alcatel-Lucent VPN Firewall Brick® Security Appliance Ports* chapter in the *SMS Administration Guide*.

When configuring QoS Alarm triggers, there are two basic aims — to ensure guarantees and limits, and to monitor rule bandwidth usage. These are explained below.

Ensuring guarantees and limits

When setting up QoS parameters at the individual rule level or at the zone level, a key consideration for the user community is verifying that bandwidth ″guarantees″ (minimum packet throughput) and ″limits″ (maximum packet throughput) are always met. Depending on the QoS configuration and the bandwidth needs of the users, it is possible that resource contention between multiple rules and zones may cause packet throughput to dip below one of the guarantees or exceed a configured limit.

Configuring these QoS Alarm Triggers allows the administrators to be notified for:

- QoS Rule Bandwidth Exceeded Alarm
- QoS Rule Bandwidth Guarantees Alarm
- QoS Rule Bandwidth Throttling Alarm
- QoS Zone Bandwidth Guarantees Alarm
- QoS Zone Bandwidth Throttling Alarm

Bandwidth guarantees and limits for an individual rule within a Brick zone ruleset are configured on the Bandwidth tab of the Brick Zone Ruleset Editor. Bandwidth guarantees and limits for a zone ruleset are configured on the Bandwidth tab of the Brick Policy Assignment Editor when a zone ruleset is assigned to a Brick port.

Monitoring rule bandwidth usage

Defining QoS guarantees and limits is more of an art than a science. The administrator may need to monitor the bandwidth needs of the users over the long term to determine the most intelligent parameters. Under the TOS/Alarms tab of the Brick Zone Rule Editor, you may configure bandwidth restrictions and an alarm trigger point for an individual rule in the **Alarm When Traffic Exceeds** portion of the TOS/Alarms tab if desired. If the **QoS Rule Bandwidth Exceeded Alarm** alarm trigger is active and you have bandwidth restrictions configured in one or more rules, an alarm will be triggered and logged in the Administrative Events Log any time that bandwidth limit is exceeded.

For example, you may have a rule with a bandwidth limit of 5 MB/sec. But you may want to monitor how frequently your throughput exceeds 3 MB/sec. Depending on the frequency that this alarm is triggered, you can adjust the rule restrictions for the most efficient use of your bandwidth.

To configure a QoS Rule Bandwidth Exceeded alarm trigger

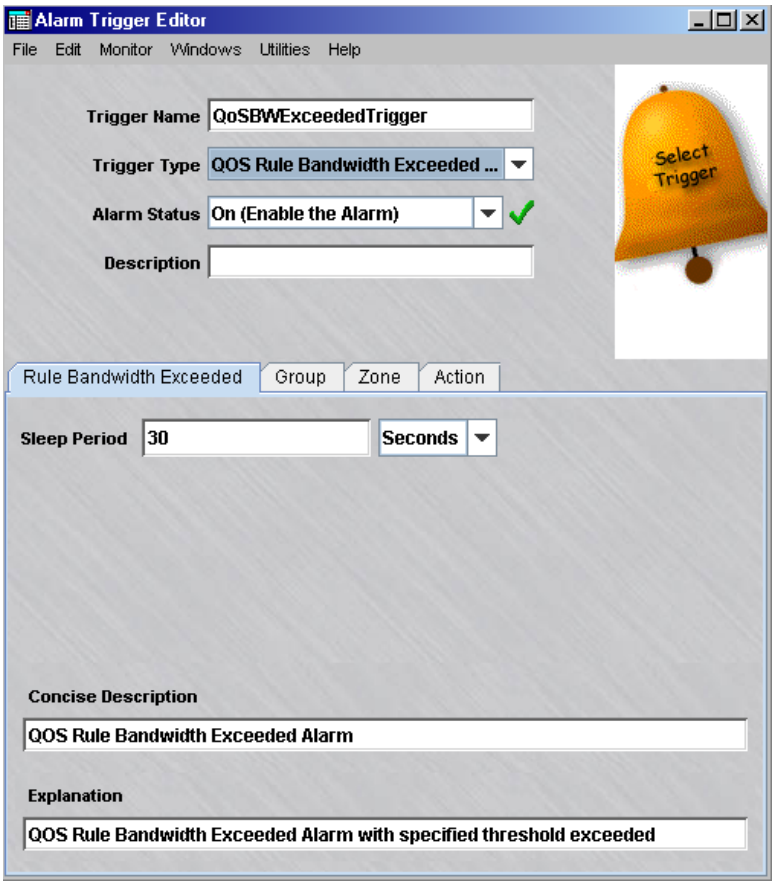
Complete the following steps to configure a QoS Rule Bandwidth Exceeded alarm trigger.

1. Follow steps 1 to 3 as described in “Configuring Triggers” (p. 6-3).

2. Click the down arrow next to the **Trigger Type** field to display a drop-down list and select **QoS Rule Bandwidth Exceeded Alarm**.

Result The QoS Rule Bandwidth Exceeded version of the Alarm Trigger Editor is displayed, initially displaying the **Rule Bandwidth Exceeded** tab (Figure 6-38, "Alarm Trigger Editor QoS Rule Bandwidth Exceeded Parameters" (p. 6-78)).

Figure 6-38 Alarm Trigger Editor QoS Rule Bandwidth Exceeded Parameters



3 Specify the Alarm Status. The default entry is **On (Enable the Alarm)**. Or, select **Off (Disable the Alarm)** from the drop-down list to disable the alarm trigger.

4 Optionally, enter a **Description** for the trigger. If a description is entered, it is displayed in the list of triggers in the Contents Panel.

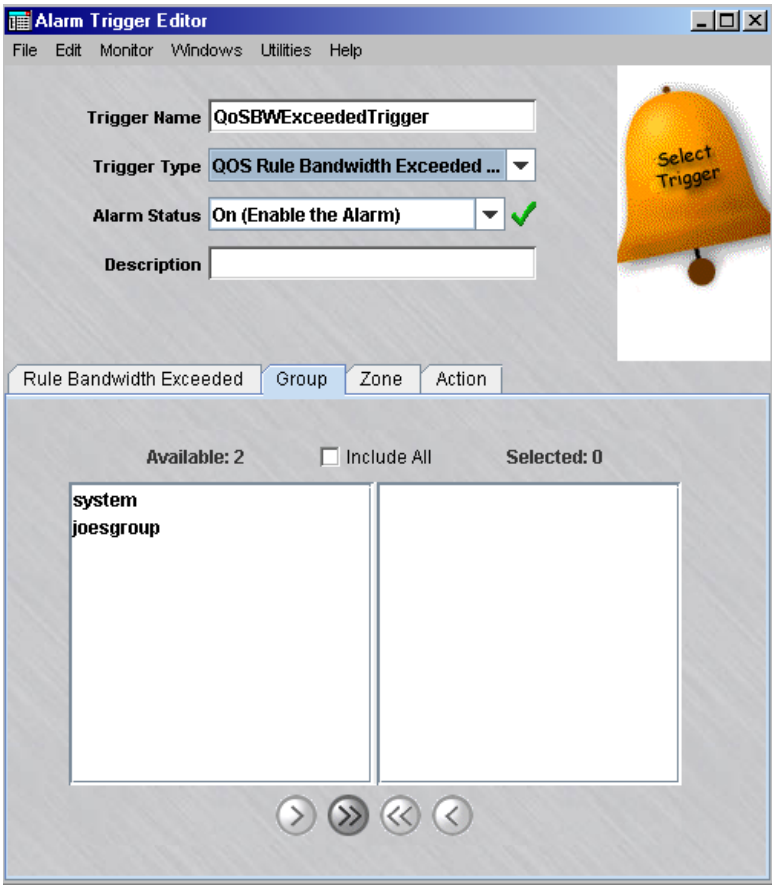
5 Enter the parameters that define the conditions of this trigger as shown in the following table:

Parameter	Description
`Sleep Period`	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. The default value is 30 (seconds). Enforces throttling and mitigates flooding of the network (as from, for example, denial-of-service attacks).
`Concise Description`	If the action associated with this trigger includes `Concise Description`, this is the message that will be forwarded in the alarm. This message is displayed on the Alarm Console on the SMS when the alarm is triggered.
`Explanation`	If the action associated with this trigger includes `Explanation`, this is the message that will be forwarded in the alarm. This message is displayed if the email, Syslog, or Pager alarm action is configured.

6 Click **Group** to display the next tab of the window.

Result The **Group** tab panel of the QoS Rule Bandwidth Exceeded Alarm Trigger Editor is displayed (Figure 6-39, “QoS Rule Bandwidth Exceeded Alarm Trigger Editor (Group Tab)” (p. 6-80)).

Figure 6-39 QoS Rule Bandwidth Exceeded Alarm Trigger Editor (Group Tab)

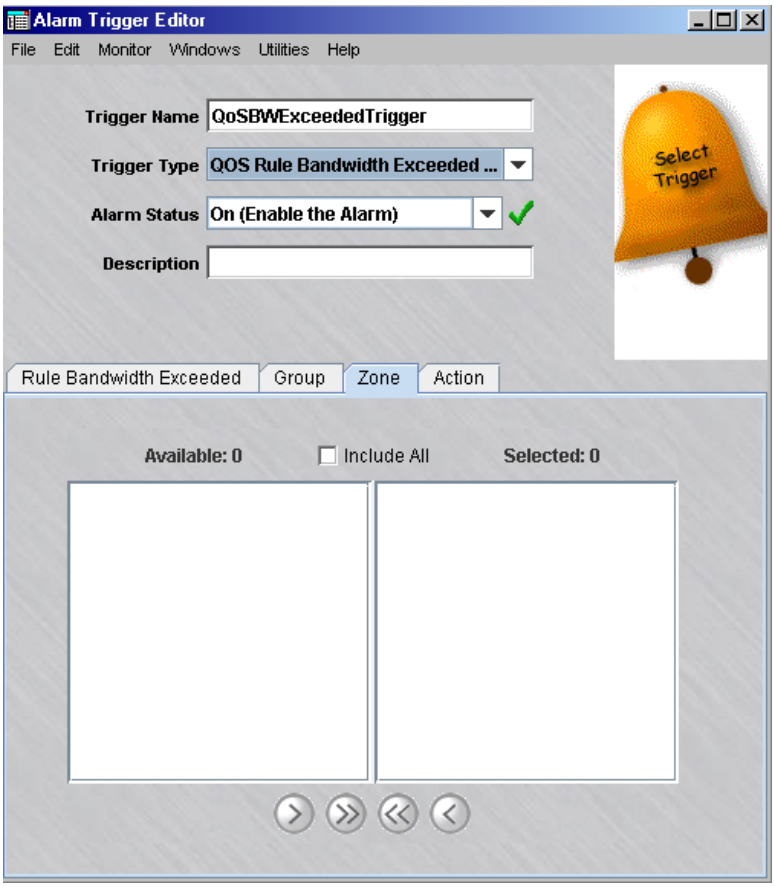


7 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

8 Click **Zone** to display the next tab of the window.

Result The **Zone** tab panel of the QoS Rule Bandwidth Exceeded Alarm Trigger Editor is displayed (Figure 6-40, "QoS Rule Bandwidth Exceeded Alarm Trigger Editor (Zone Tab)" (p. 6-81)).

Figure 6-40 QoS Rule Bandwidth Exceeded Alarm Trigger Editor (Zone Tab)

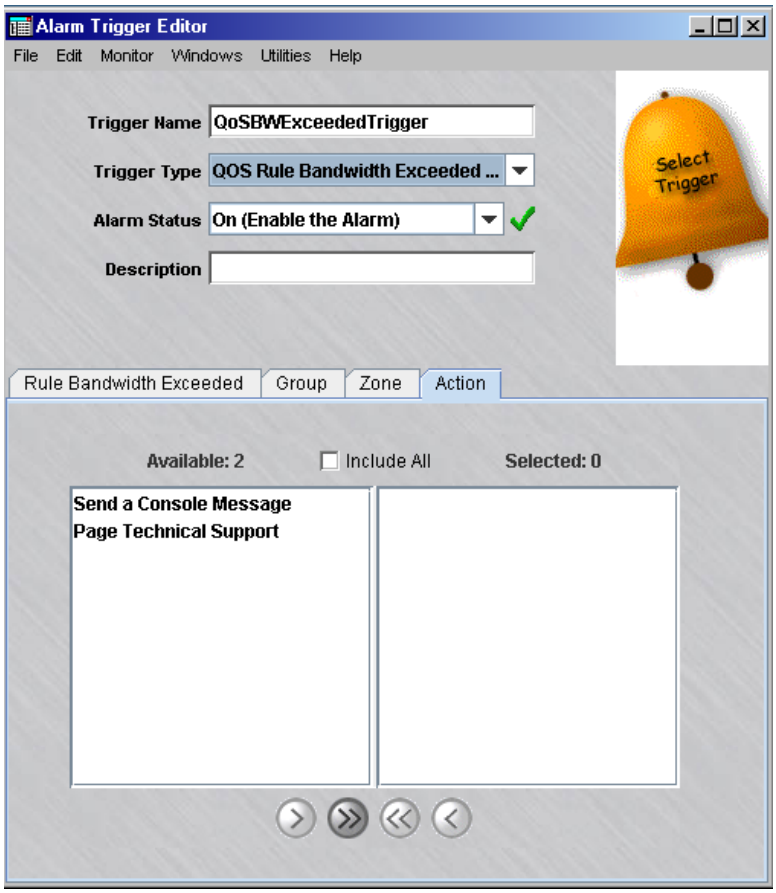


9 Choose the zone(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the zone(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all zones.

10 Click **Action** to display the next tab of the window.

Result The **Action** tab of the QoS Rule Bandwidth Exceeded Alarm Trigger Editor is displayed (Figure 6-41, "QoS Rule Bandwidth Exceeded Alarm Trigger Editor (Action Tab)" (p. 6-82)).

Figure 6-41 QoS Rule Bandwidth Exceeded Alarm Trigger Editor (Action Tab)



11 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have already been configured are displayed.

12 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

To configure a QoS Rule Bandwidth Guarantees alarm trigger

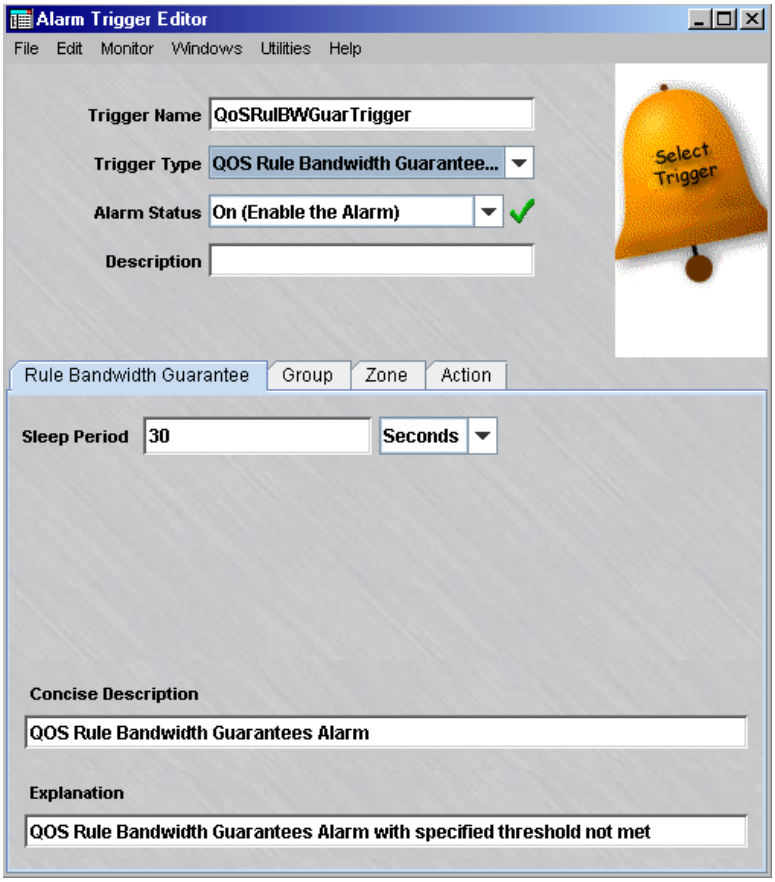
Complete the following steps to configure a QoS Rule Bandwidth Guarantees alarm trigger.

1 Follow steps 1 to 3 as described in "Configuring Triggers" (p. 6-3).

2 Click the down arrow next to the **Trigger Type** field to display a drop-down list and select **QoS Rule Bandwidth Guarantees Alarm**.

Result The QoS Rule Bandwidth Guarantees version of the Alarm Trigger Editor is displayed, initially displaying the **Rule Bandwidth Guarantee** tab (Figure 6-42, "Alarm Trigger Editor QoS Rule Bandwidth Guarantee Parameters" (p. 6-83)).

Figure 6-42 Alarm Trigger Editor QoS Rule Bandwidth Guarantee Parameters



3 Follow steps 3 to 5 as described in the "To configure a QoS Rule Bandwidth Exceeded alarm trigger" (p. 6-77) procedure to set up general parameters for this alarm trigger.

4 Follow steps 6 to 11 as described in the "To configure a QoS Rule Bandwidth Exceeded alarm trigger" (p. 6-77) procedure to select the group(s), zone(s), and action(s) associated with this trigger.

5 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

To configure a QoS Rule Bandwidth Throttling alarm trigger

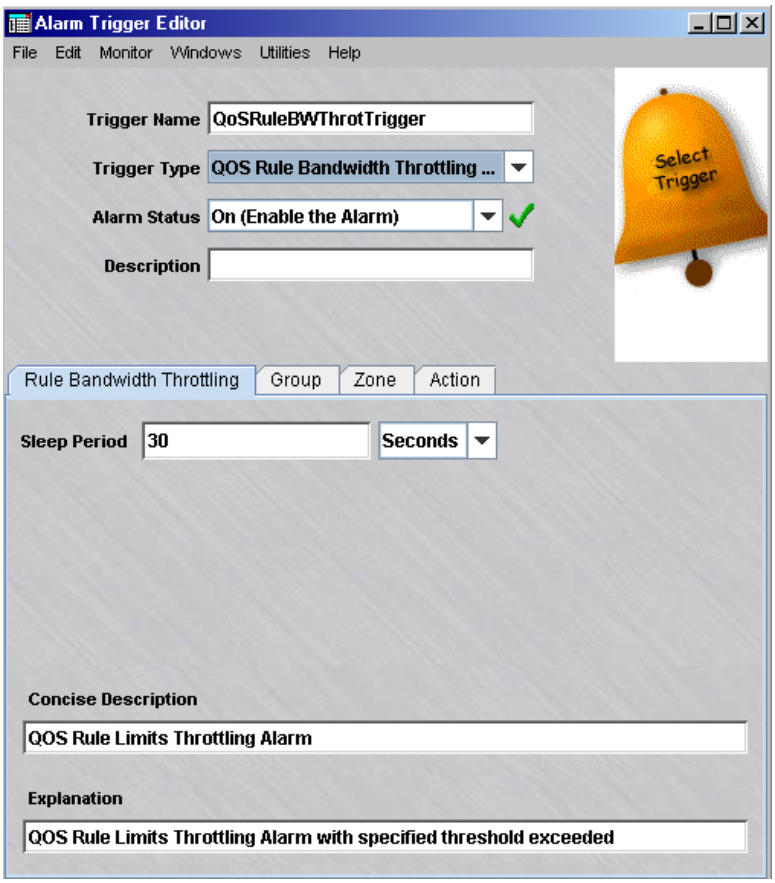
Complete the following steps to configure a QoS Rule Bandwidth Throttling alarm trigger.

1 Follow steps 1 to 3 as described in "Configuring Triggers" (p. 6-3).

2 Click the down arrow next to the **Trigger Type** field to display a drop-down list and select **QoS Rule Bandwidth Throttling Alarm**.

Result The QoS Rule Bandwidth Throttling version of the Alarm Trigger Editor is displayed, initially displaying the **Rule Bandwidth Throttling** tab (Figure 6-43, "Alarm Trigger Editor QoS Rule Bandwidth Throttling Parameters" (p. 6-85)).

Figure 6-43 Alarm Trigger Editor QoS Rule Bandwidth Throttling Parameters



3 Follow steps 3 to 5 as described in the "To configure a QoS Rule Bandwidth Exceeded alarm trigger" (p. 6-77) procedure to set up general parameters for this alarm trigger.

4 Follow steps 6 to 11 as described in the "To configure a QoS Rule Bandwidth Exceeded alarm trigger" (p. 6-77) procedure to select the group(s), zone(s), and action(s) associated with this trigger.

5 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

To configure a QoS Zone Bandwidth Guarantees alarm trigger

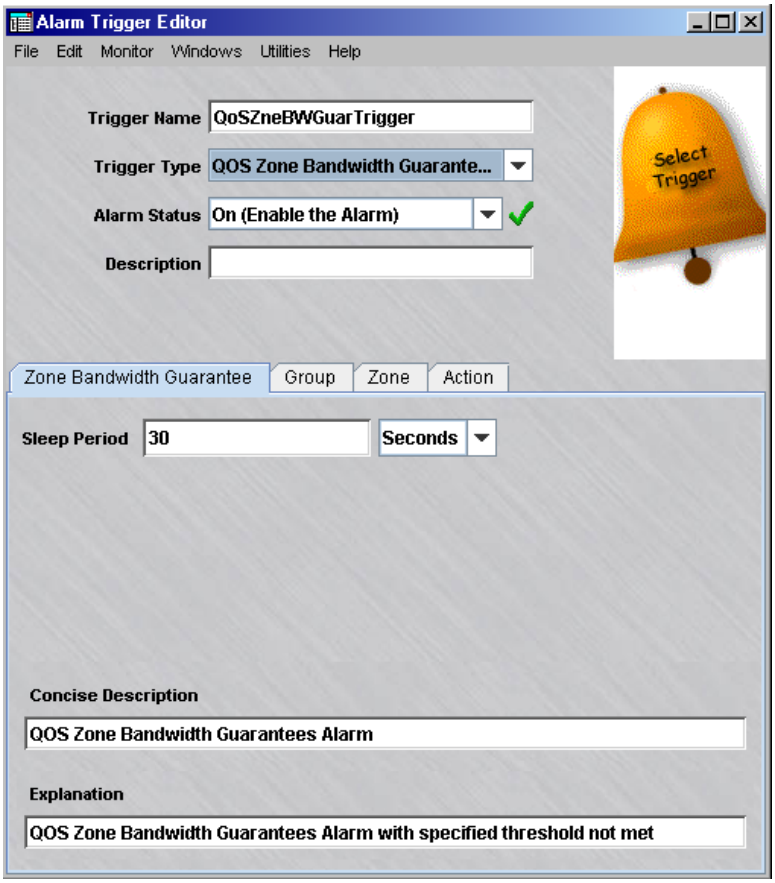
Complete the following steps to configure a QoS Zone Bandwidth Guarantees alarm trigger.

1 Follow steps 1 to 3 as described in "Configuring Triggers" (p. 6-3).

2 Click the down arrow next to the **Trigger Type** field to display a drop-down list and select **QoS Zone Bandwidth Guarantees Alarm**.

Result The QoS Zone Bandwidth Guarantees version of the Alarm Trigger Editor is displayed, initially displaying the **Zone Bandwidth Guarantee** tab (Figure 6-44, "Alarm Trigger Editor Zone Bandwidth Guarantees Parameters" (p. 6-86)).

Figure 6-44 Alarm Trigger Editor Zone Bandwidth Guarantees Parameters



3 Follow steps 3 to 5 as described in the "To configure a QoS Rule Bandwidth Exceeded alarm trigger" (p. 6-77) procedure to set up general parameters for this alarm trigger.

4 Follow steps 6 to 11 as described in the "To configure a QoS Rule Bandwidth Exceeded alarm trigger" (p. 6-77) procedure to select the group(s), zone(s), and action(s) associated with this trigger.

5 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

To configure a QoS Zone Bandwidth Throttling alarm trigger

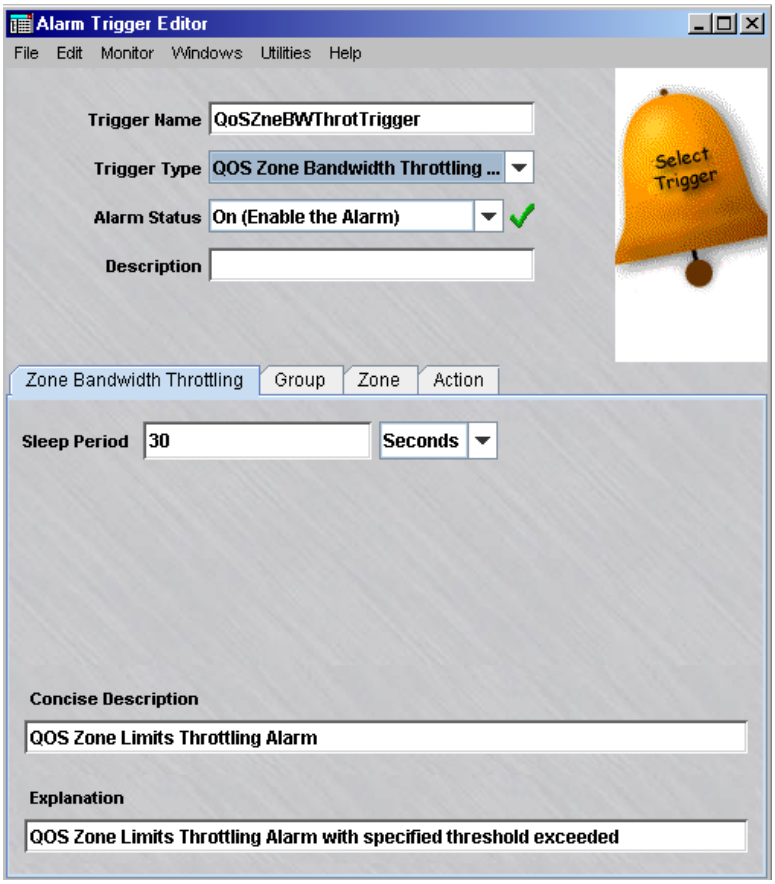
Complete the following steps to configure a QoS Zone Bandwidth Throttling alarm trigger.

1 Follow steps 1 to 3 as described in "Configuring Triggers" (p. 6-3).

2 Click the down arrow next to the **Trigger Type** field to display a drop-down list and select **QoS Zone Bandwidth Throttling Alarm**.

Result The QoS Zone Bandwidth Throttling version of the Alarm Trigger Editor is displayed, initially displaying the **Zone Bandwidth Throttling** tab (Figure 6-45, "Alarm Trigger Editor Zone Bandwidth Throttling Parameters" (p. 6-88)).

Figure 6-45 Alarm Trigger Editor Zone Bandwidth Throttling Parameters



3 Follow steps 3 to 5 as described in the "To configure a QoS Rule Bandwidth Exceeded alarm trigger" (p. 6-77) procedure to set up general parameters for this alarm trigger.

4 Follow steps 6 to 11 as described in the "To configure a QoS Rule Bandwidth Exceeded alarm trigger" (p. 6-77) procedure to select the group(s), zone(s), and action(s) associated with this trigger.

5 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Unauthorized LSMS Login Attempt Trigger

Overview

An Unauthorized LSMS Loging Attempt alarm trigger detects when one or more unauthorized attempts to login to the SMS as an SMS or Group Administrator occur. A pre-configured Unauthorized LSMS Login Attempt trigger already exists, so you may not need to configure another one. See "Pre-configured Alarm Triggers and Actions" (p. 4-5) in Chapter 4, "Introduction to Alarms" for details.

Task

To configure an Unauthorized SMS Login Attempt trigger:

1 Enter a `Trigger Name`, select `Unauthorized LSMS Login Attempt` from the **Trigger Type** drop-down list, select an `Alarm Status` (Off or On), then enter an optional `Description` as described in "Configuring Triggers" (p. 6-3).

Result The Alarm Trigger Editor Unauthorized Login Attempt Trigger Parameters window is displayed (Figure 6-46, “Alarm Trigger Editor Unauthorized Login Attempt Trigger Parameters” (p. 6-91)).

Figure 6-46 Alarm Trigger Editor Unauthorized Login Attempt Trigger Parameters

2 On the LSMS Login Attempts tab of the window, shown in Figure 6-46, “Alarm Trigger Editor Unauthorized Login Attempt Trigger Parameters” (p. 6-91), enter the parameters that define the conditions of this trigger as the following table explains:

Parameter	Description
Threshold Count	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.

Parameter	Description
Threshold Period	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
Sleep Period	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (e.g., denial-of-service attacks).
Concise Description	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the alarm.
Explanation	If the action associated with this trigger includes **Explanation**, this is the message that will be forwarded in the alarm.

3 Click **Action**.

4 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have already been configured are displayed.

5 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

User Authentication Trigger

Overview

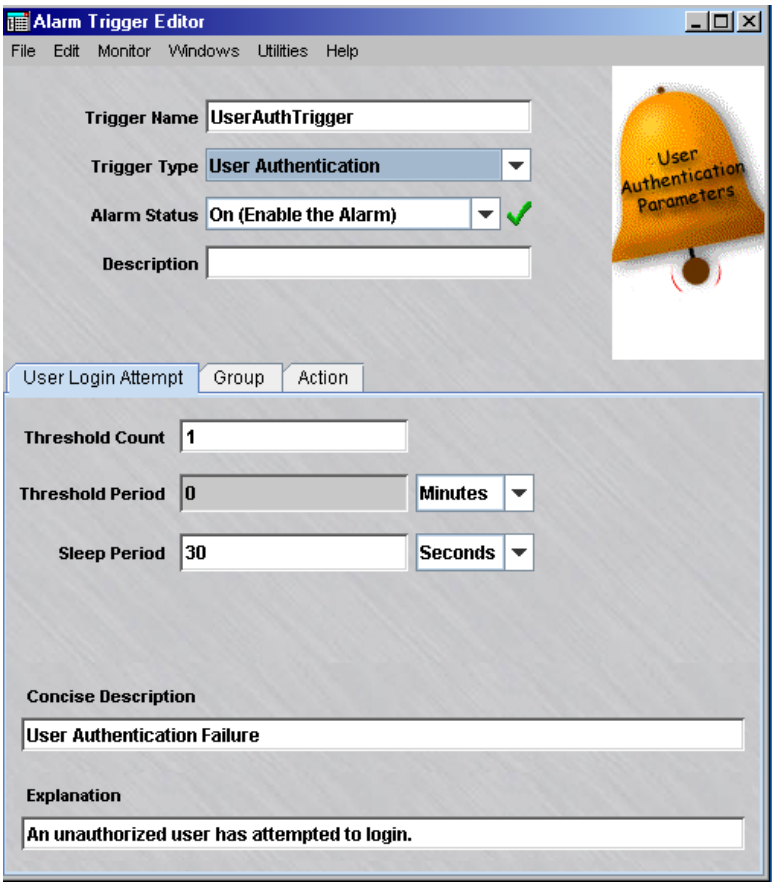
A `User Authentication` alarm trigger detects when an attempt to login to the SMS is made by authorized user fails.

To configure a User Authentication trigger:

1 Enter a `Trigger Name`, select `User Authentication` from the **Trigger Type** drop-down list, select an **Alarm Status** (Off or On), then enter an optional `Description` as described in "Configuring Triggers" (p. 6-3).

Result The Alarm Trigger Editor User Authentication Trigger Parameters is displayed (Figure 6-47, "Alarm Trigger Editor User Authentication Trigger Parameters" (p. 6-93)).

Figure 6-47 Alarm Trigger Editor User Authentication Trigger Parameters



2 On the User Login Attempt tab of the window, shown in Figure 6-47, “Alarm Trigger Editor User Authentication Trigger Parameters” (p. 6-93), enter the parameters that define the conditions of this trigger as the following table explains:

Parameter	Description
Threshold Count	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.
Threshold Period	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
Sleep Period	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (such as denial-of-service attacks).
Concise Description	If the action associated with this trigger includes **Concise Description**, this is the message that will be forwarded in the alarm.
Explanation	If the action associated with this trigger includes **Explanation**, this is the message that will be forwarded in the alarm.

3 Click **Group** to display the next tab of the window.

Result The **Group** tab of the User Authentication Alarm Trigger Editor is displayed (Figure 6-48, “User Authentication Alarm Trigger Editor (Group Tab)” (p. 6-95)).

Figure 6-48 User Authentication Alarm Trigger Editor (Group Tab)

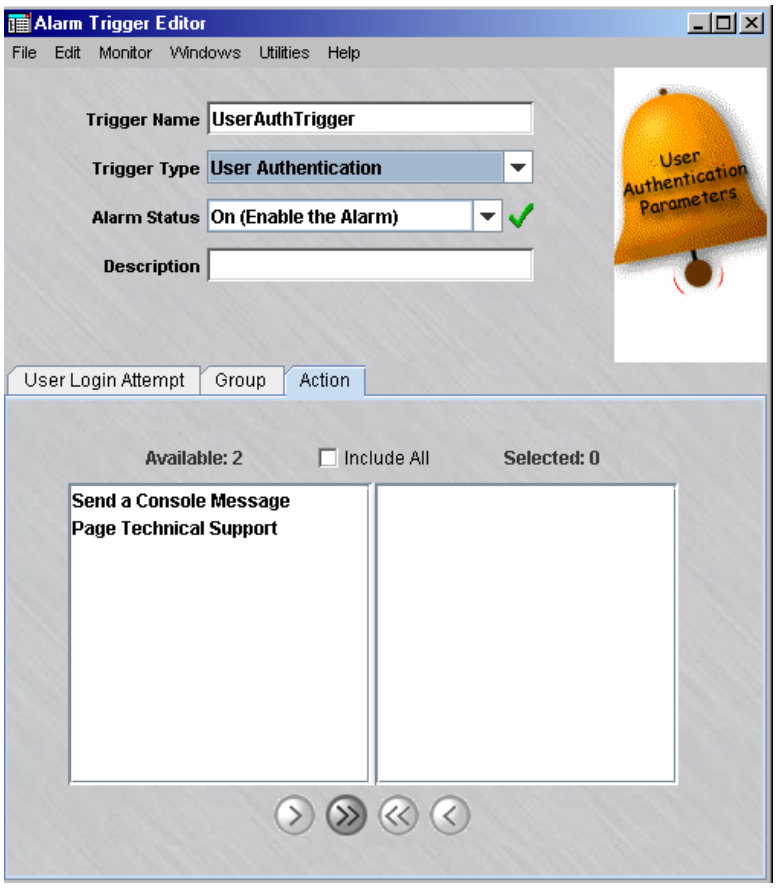
4 Choose the group(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the group(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all groups.

Only the group(s) to which alarms can be sent are displayed..

5 Click **Action** to display the next tab of the window.

Result The **Action** tab of the User Authentication Alarm Trigger Editor is displayed (Figure 6-49, "User Authentication Alarm Trigger Editor (Action Tab)" (p. 6-96)).

Figure 6-49 User Authentication Alarm Trigger Editor (Action Tab)



6 Choose the action(s) to be associated with this trigger and click the arrow**>** or **>>** button to move the action(s) to the Selected column. Use the **>>** and **<<** buttons to move all items back and forth between the Available and Selected columns, as needed. You can also click the **Include All** checkbox to include all actions.

Only the actions that have already been configured are displayed.

7 Select **File > Save and Close**

Result The alarm trigger is configured and displayed on the Contents Panel.

END OF STEPS

□

Maintaining Triggers

Overview

Once triggers have been initially configured, you may want to copy a trigger and its defined parameters but give it a different name and edit its parameters. Or, you may want to keep a trigger but temporarily disable it so it is no longer active.

You can also modify certain parameters of an existing trigger, or delete the trigger altogether if it is no longer needed.

Duplicating Triggers

To duplicate a trigger:

1. Right-click a trigger in the Contents Panel.
2. Select **Duplicate** from the pop-up menu.
3. Enter a unique name for the trigger and change any of the other trigger parameters if desired.
4. To save the action, click **Finish**.

END OF STEPS

Editing Triggers

To edit a trigger:

1. Double-click a trigger in the Contents Panel. The Alarm Trigger Editor appears.
2. Make the appropriate changes to the fields on each tab of the window.
3. To save the trigger, click **Finish**.

END OF STEPS

Enabling/Disabling Triggers

When configuring or editing a trigger, you have the ability to dynamically turn them on (enable) or off (disable) in the **Alarm Status** field. The status of an alarm is apparent in the Contents Panel in the **Description** field. If the trigger is enabled, a green checkmark is displayed. If the trigger is disabled, a red "X" is displayed.

They can also be enabled or disabled if you:

1 Right-click a trigger in the Contents Panel.

2 Select **Enable** or **Disable** from the pop-up menu.

END OF STEPS

Removing Triggers

To remove a trigger:

1 Right-click a trigger in the Contents Panel.

2 Select **Delete** from the pop-up menu.

3 Select **Yes** in the pop-up window to confirm the deletion.

END OF STEPS

□

7 Configuring TL1 Alarms

Overview

Purpose

The TL1 Alarms interface allows automated telecommunication maintenance systems, like NMA, to collect Brick alarm information from the SMS using Transaction Language 1 messages. The TL1 Alarms feature is enabled by the Configuration Assistant and certain system-wide parameters are specified there (refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide*). This section shows how to specify information to allow an NMA host to connect to the SMS. Entries for up to 12 hosts are allowed.

Contents

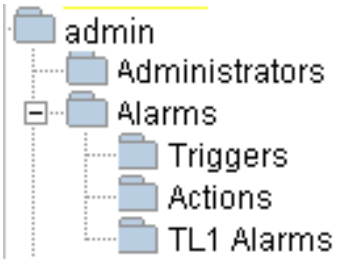
Configure TL1 Alarms

Task

Configure an NMA host interface:

1 To define a new TL1 Alarms interface, double-click the Alarms folder in the SMS Navigator Folder Panel (Figure 7-1, “SMS Navigator Folder Panel” (p. 7-2)).

Figure 7-1 SMS Navigator Folder Panel



2 Right-click the TL1 Alarms folder and select **New TL1 Alarm**. The TL1 Alarm Wizard appears.

Figure 7-2 TL11 Alarm Wizard

3 Enter a name for the NMA in the **Action Name** field. This is a required field and is displayed in the list of TL1 Alarm interfaces in the Contents Panel. Be as descriptive as possible to make differentiation easy when there are multiple entries in the list.

4 Optionally, enter a description for the TL1 Alarm interface in the **Description** field. If a description is entered, it is displayed in the list of TL1 Alarm interfaces in the Contents Panel.

5 Select **Next** to display the next page of the wizard and enter parameters for the used to authenticate an NMA host connection.

Figure 7-3 TL11 Alarm Wizard - NMA Parameters

6 Enter the IP Address of the NMA in the **NMA IP Address** filed. When a connection request is detected by the TL1 server, it searches all TL1 Alarm interface configurations looking for an IP address match. If none is found, the connection will be terminated.

7 Enter a User ID for the NMA in the **User ID** field. This parameter is used by the NMA in the UID field of the TL1 ACT-USER authentication command.

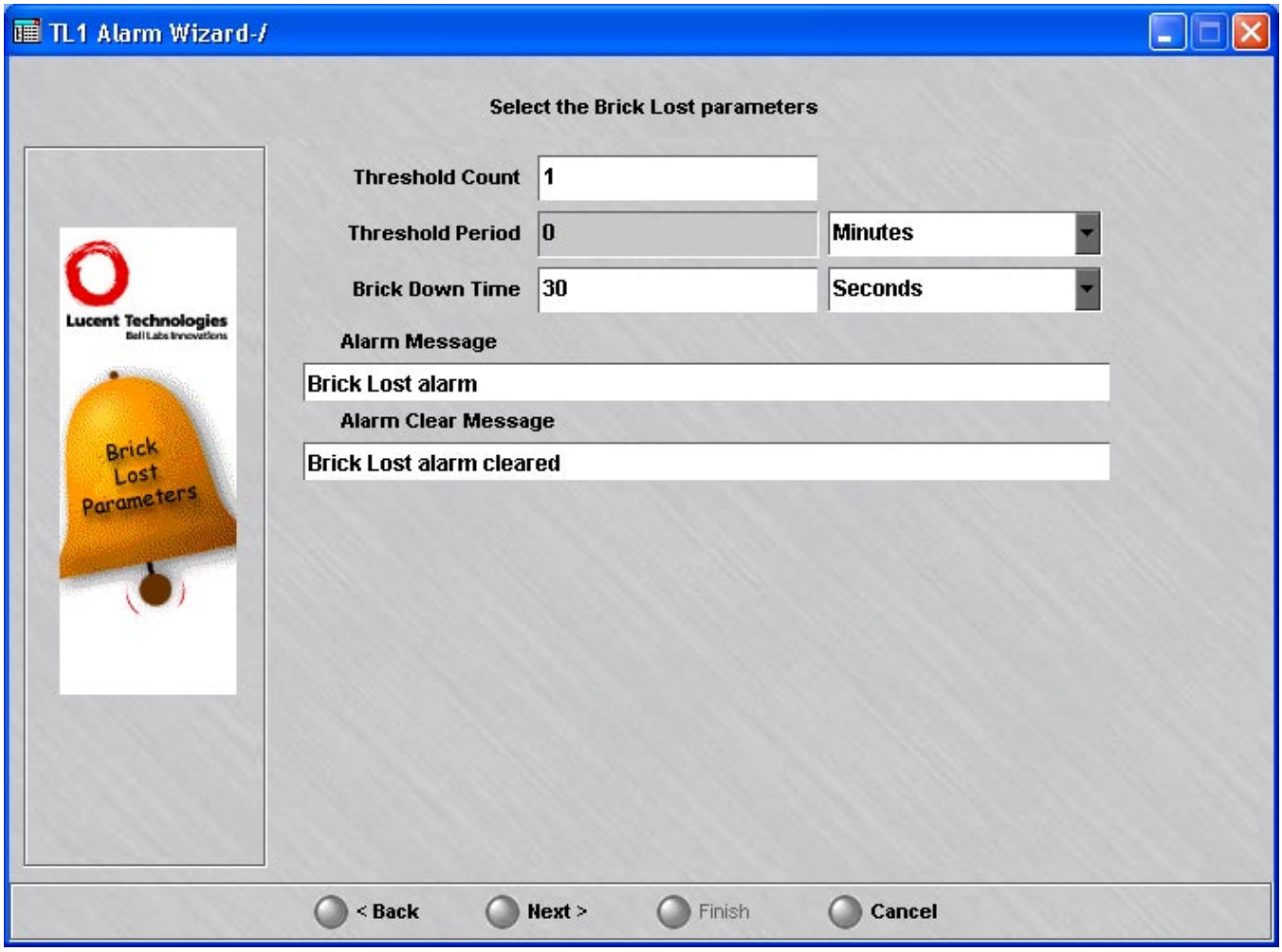
8 Enter a Password for the NMA in the **Password** field. This parameter is used by the NMA in the PID field of the TL1 ACT-USER authentication command.

9 Re-enter the Password for the NMA in the **Verify Password** field. The actual password is not displayed and is stored in a an encrypted format. Telcordia password guidelines are enforced, so at least two non-alpha characters and one special character are required.

The TL1 server expects a valid ACT-USER command to be issued by the NMA after it connects. The host's IP address, User ID, and Password must all match one of the TL1 Alarm interface configurations or the connection will be terminated. If no ACT-USER command is received, the connection is terminated after two minutes.

10 Select **Next** to display the next page of the wizard and enter parameters used to configure TL1 Brick Lost alarms.

Figure 7-4 TL11 Alarm Wizard - Brick Lost Parameters



11 Enter the `Brick Lost Parameters` that define the conditions of this TL1 alarm as the following table explains:

Parameter	Description
`Threshold Count`	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.
`Threshold Period`	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
`Brick Down Time`	After the initial Brick event is detected, this is amount of time that the Brick must stay down before another alarm is generated. If 0 Hours is specified, the alarm is generated when the first occurrence is detected.
`Alarm Message`	The `Alarm Message` field is a detailed text description of the alarm. It is sent to the NMA in the <conddescr> field of the TL1 REPT^ALM^EQPT message.
`Alarm Clear Message`	The `Alarm Clear Message` field is a detailed text description of the alarm clear. It is sent to the NMA in the <conddescr> field of the TL! REPT^ALM^EQPT clear message.

12 Select **Next** to display the next page of the wizard and enter parameters used to configure TL1 Brick Interface Lost alarms.

Figure 7-5 TL11 Alarm Wizard - Brick Interface Lost Parameters

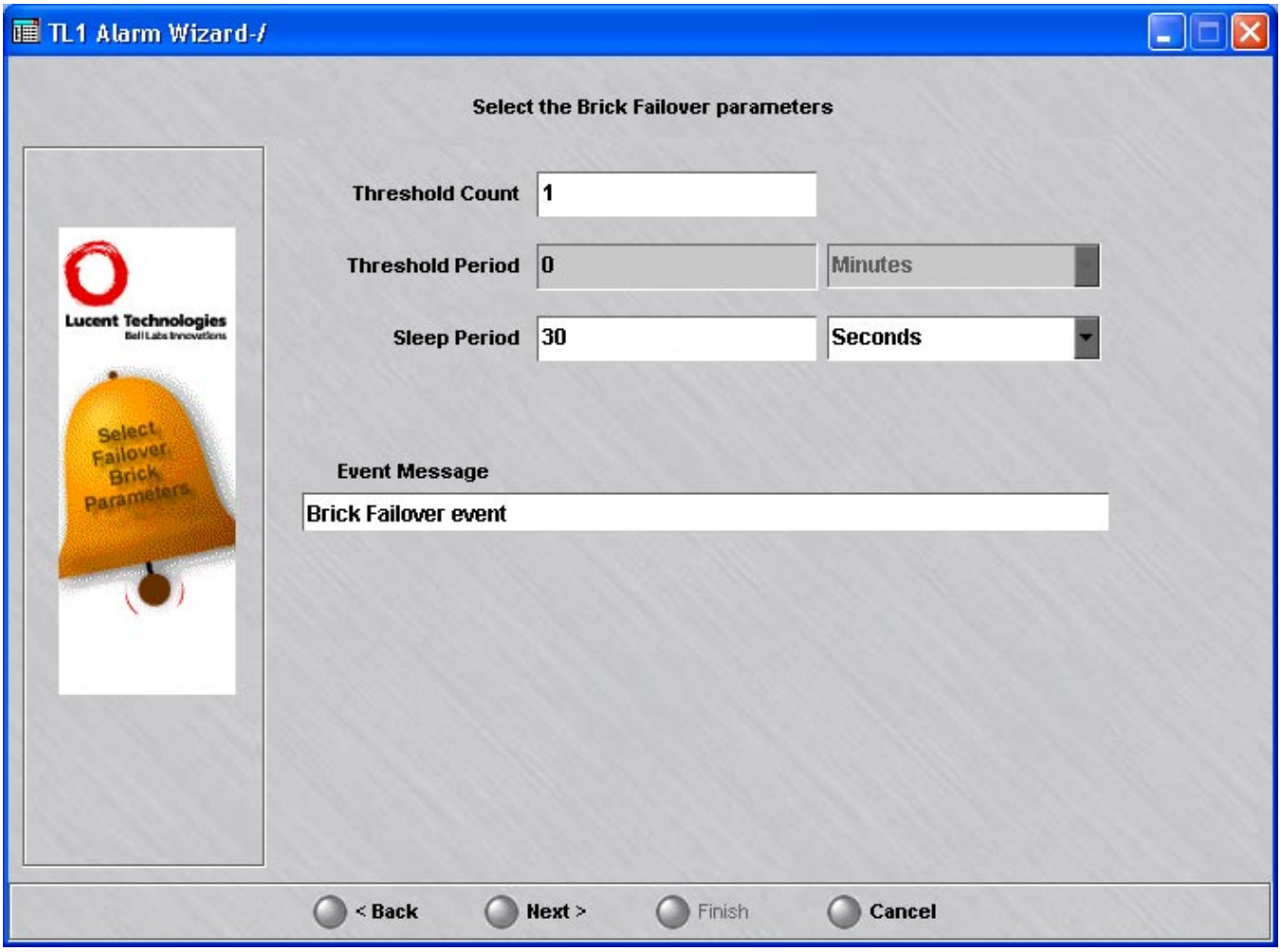
13 Enter the `Brick Interface Lost Parameters` that define the conditions of this TL1 alarm as the following table explains:

Parameter	Description
`Interface Down Time`	After the initial interface event is detected, this is the amount of time that the interface must stay down before another alarm is generated. If 0 Hours is specified, the alarm is generated when the first occurrence is detected.

Parameter	Description
`Alarm Message`	The `Alarm Message` field is a detailed text description of the alarm. It is sent to the NMA in the <conddescr> field of the TL1 REPT^ALM^EQPT message.
`Alarm Clear Message`	The `Alarm Clear Message` field is a detailed text description of the alarm clear. It is sent to the NMA in the <conddescr> field of the TL! REPT^ALM^EQPT clear message.

14 Select **Next** to display the next page of the wizard and enter parameters used to configure TL1 Brick Failover events.

Figure 7-6 TL11 Alarm Wizard - Brick Failover Parameters

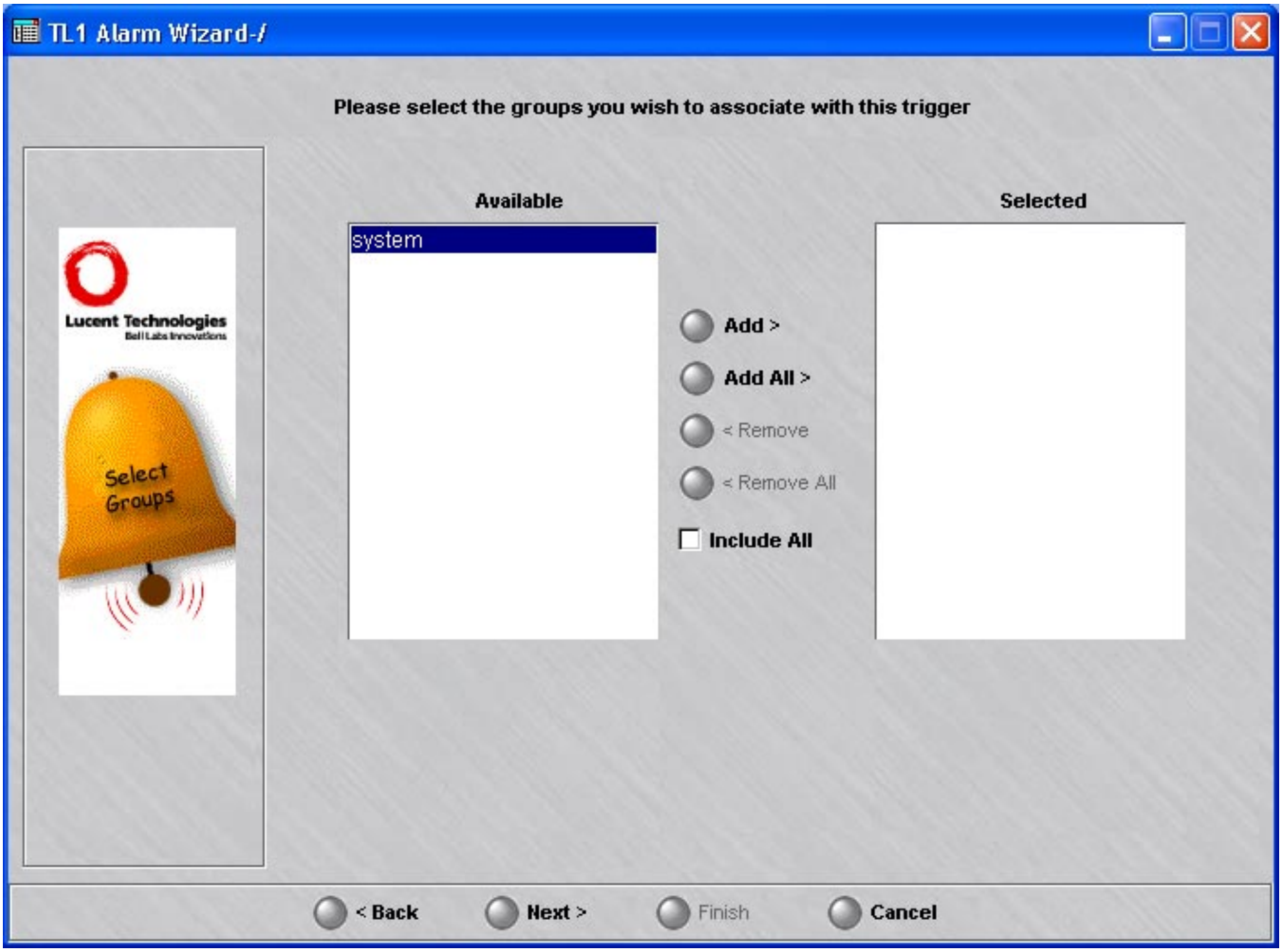


15 Enter `Brick Failover Parameters` that define the conditions of this TL1 event as the following table explains:

Parameter	Description
`Threshold Count`	The number of events that must be detected before the alarm is generated. This is a required field. If 1 is entered, then Threshold Period is not needed.
`Threshold Period`	The time period in which the number of events (as set in Threshold Count) must occur before the alarm is generated. This field is only active when Threshold Count is 2 or higher. Both conditions must be true in order to generate the alarm.
`Sleep Period`	After the initial alarm is generated, this amount of time must elapse before another alarm is generated. Enforces throttling and mitigates flooding the network (e.g., denial-of-service attacks).
`Event Message`	The `Event Message` field is a detailed description of the alarm clear. It is sent to the NMA in the <conddescr> field of the TL1 REPT^EVT^EQPT message.

16 Click **Next**.

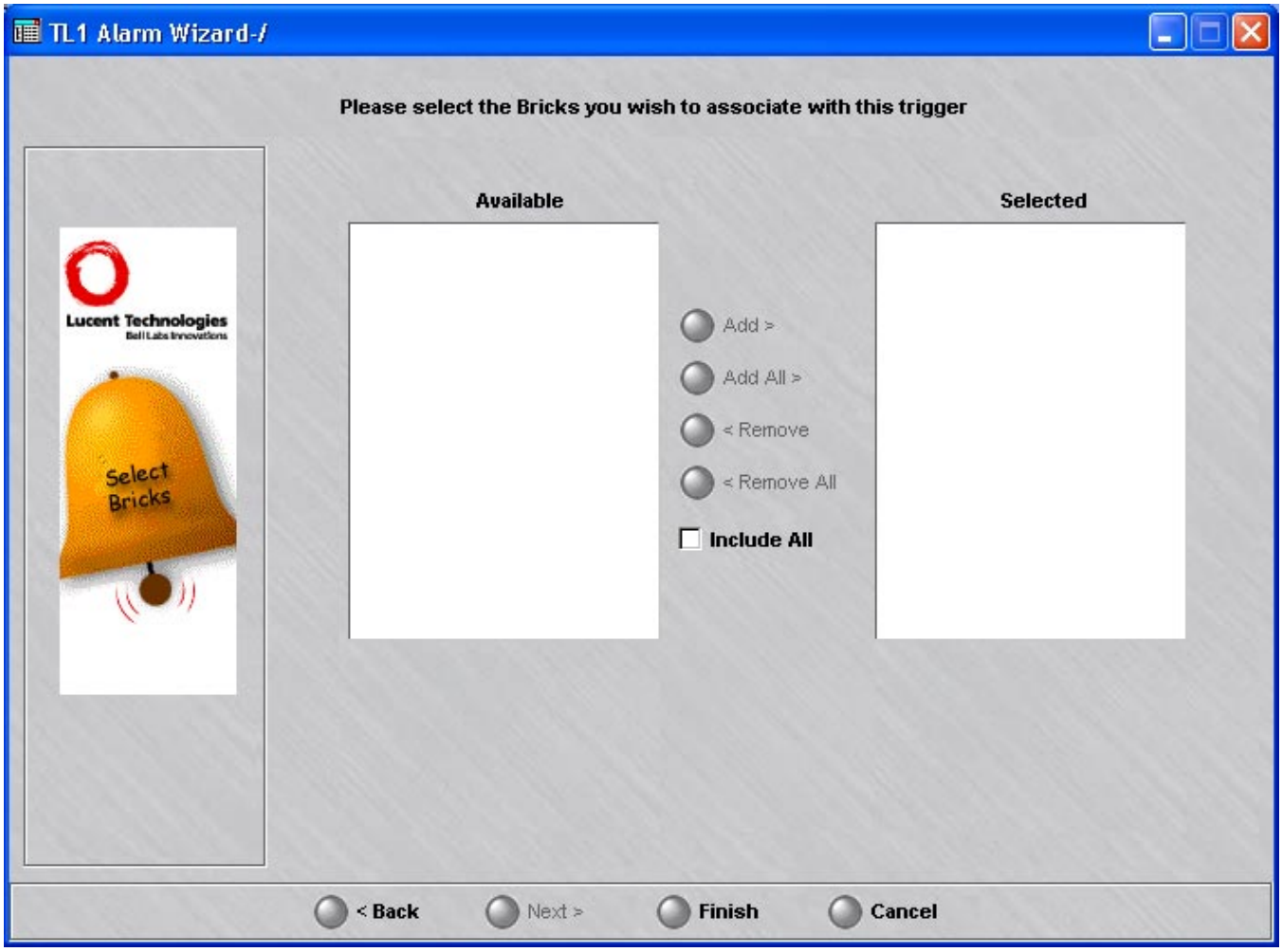
Figure 7-7 TL11 Alarm Wizard - Select Group



17 On the next page of the wizard, select at least one group to associate with this TL1 Alarm NMA interface and **select** Add. The group(s) will then be moved to the **Selected** box.

18 Click **Next**.

Figure 7-8 TL11 Alarm Wizard - Brick Interface Lost Parameters



19 On the next page of the wizard, select at least one Brick to associate with this TL1 Alarm NMA interface and select **Add**. Only the Bricks that are in the groups selected on the previous page are displayed. Brick Lost and Brick Interface Lost alarms and Brick Failover events for the selected Bricks will be sent to this NMA host via the TL1 Alarm interface.

20 Click **Finish**.

END OF STEPS

□

8 Introduction to SMS Reports

Overview

Purpose

SMS reports provide a useful tool for identifying the nature of firewall and tunnel problems. You can use the SMS reports Memorize function to build a library of reports to assist in diagnosis of specific kinds of transmission failures.

SMS Administrators can run reports for any group. Group Administrators can only run reports for groups for which they have at least *View* privileges.

Reports can be run from any machine that is running the SMS Navigator or Remote Navigator. While reports cannot display real time information, as logs can, they do allow access to the same information as contained in the Historical logs from any location.

Web browser software must be installed on your workstation in order to view SMS reports. The following browsers are supported by the SMS:

- *Microsoft*® Internet Explorer 5.5 or later
- Netscape Navigator 4.7 or later
- Mozilla 1.7 or later

If you are running the SMS application on a *Solaris*® workstation, you will be prompted for the path to the browser software (for example, `/usr/sfw/bin/mozilla`) in order to bring up the browser and view the selected report.

Contents

Types of SMS Reports

Types of reports

The SMS provides six types of reports:

- *Administrative Events Report*
  The Administrative Events report can be used to monitor network events and, in particular, troubleshoot problems related to routing, LAN-LAN tunnels, and Client-LAN tunnels.
- *Session Log Report*
  The Sessions Logged report can be used to monitor traffic on the network, identify potential problem areas, and troubleshoot security operations.
- *Closed Session Details Report*
  The Closed Session Details report can be used to monitor traffic on the network, identify potential problem areas, and troubleshoot security operations.
- *Alarms Logged report*
  The Alarms Logged report can be used to troubleshoot network problems by tracking and analyzing alarms
- *User Authentication Report*
  The User Authentication Report can show all login attempts, successful and unsuccessful. It can show user authentications performed by the local SMS database, as well as authentications performed by any RADIUS or SecurID servers referenced by the SMS.
- *VPN Events Report*
  The VPN Events Report is used to generate a report for all VPN-related events, such as setting up and taking down of VPN tunnels.

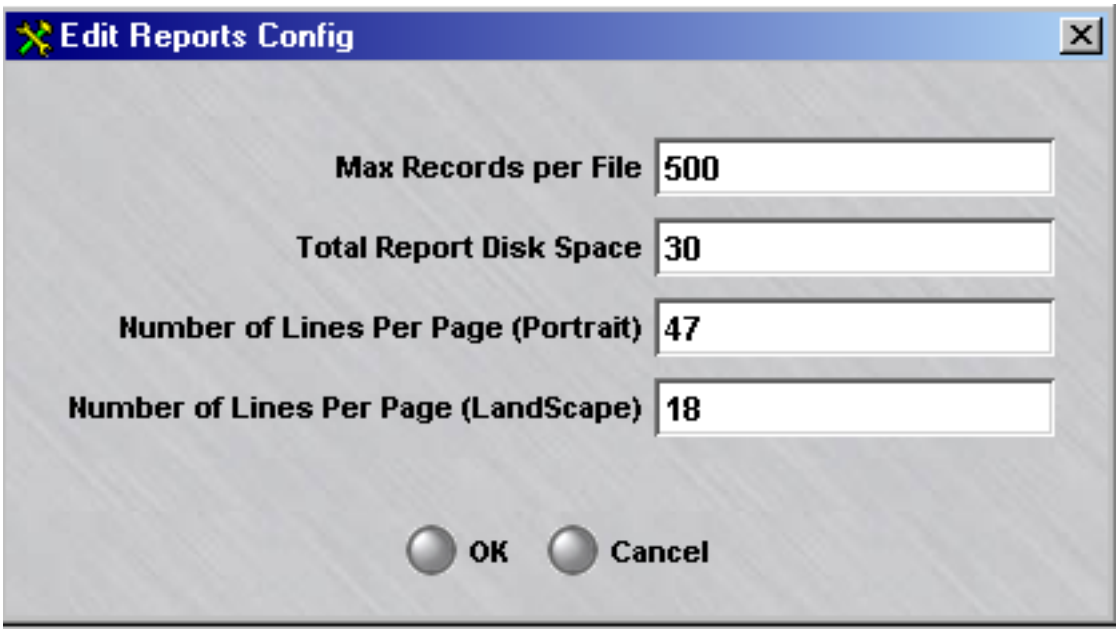
□

Configuration Assistant Reports Settings

Overview

The SMS Configuration Assistant Reports parameters, shown in Figure 8-1, "Configuration Assistant Reports Parameters" (p. 8-3), allow you to specify the maximum number of records in a report file and the total amount of disk space to be allocated for reports. They also allow you to set the number of lines per page in both portrait and landscape formats. Refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide* for complete details on reports settings.

Figure 8-1 Configuration Assistant Reports Parameters



Report logic

Input conventions

When using the multi-tabbed panels of each Report Editor to specify the data that is collected for report generation, certain conventions are used:

- If an asterisk (*) is left in a field, no qualifications are made for records for that criteria and is semantically equivalent to leaving it unspecified (blank).
- The ACROSS fields on the Report Editor tabs use AND logic and the WITHIN fields use OR logic. For example, if you specify on the Sessions Log Report the following fields: BrickA, direction IN, and Record Type Begin Session, then all three must be true within a given log record for it to be included in the report output. If you specify more than one Brick device, or more than one Record Type, within each of those records the system employs OR logic; for example, (Brick = = (BrickA OR BrickB) AND (Record Type = = (Begin OR End)) AND (Direction = = IN).

□

9 Administrative Events Report

Overview

Purpose

The Administrative Events report is an important tool that can be used to monitor network events and, in particular, troubleshoot problems related to LAN-LAN tunnels and Client-LAN tunnels.

The Administrative Events report can be configured to show all events, or just specific types of events that an Administrator is currently interested in.

A few common administrative events are pre-configured with the SMS, as follows:

- Alcatel-Lucent *VPN Firewall Brick*® Security Appliance Errors
- Brick devices and SMS Logging Connectivity
- Failed Login Attempts
- Successful Admin Logins
- Successful Admin Logouts

Contents

To Generate an Administrative Events Report

When to use

To generate an Administrative Events report, you must display the Administrative Events Report Editor, and then enter selection criteria that will determine the scope and type of the information that is included in the report.

To display the Administrative Events Report Editor

Complete the following steps to display the Administrative Events Report Editor.

1 With the Navigator window displayed, open the **Reports** folder.

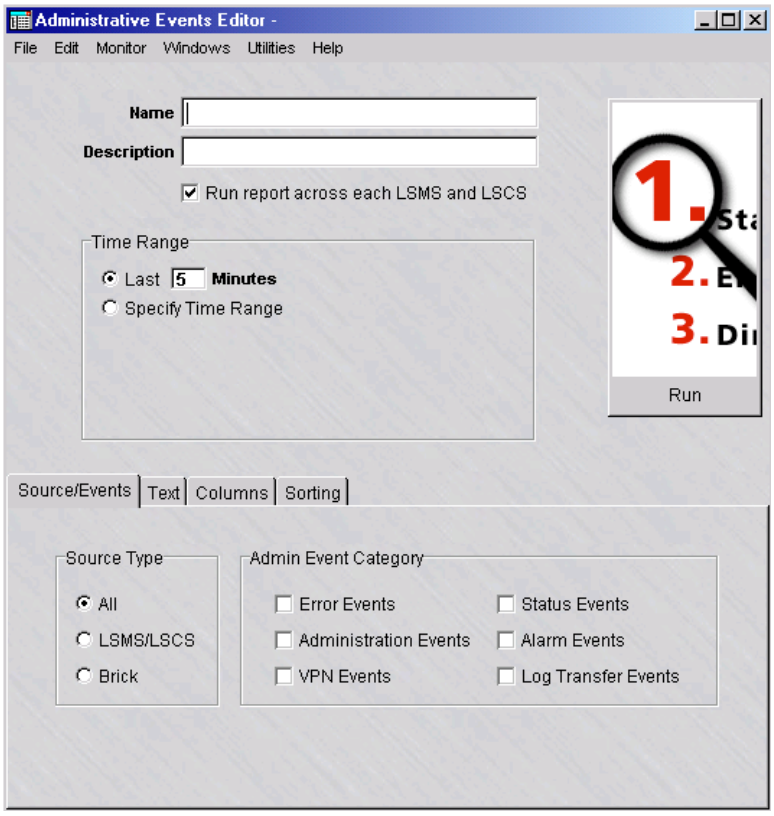
2 Right-click **Administrative Events** and select **New Administrative Events**.

To edit an existing report and its settings, right-click on the report in the list of the Contents panel and choose **Edit** from the pop-up menu.

To view an existing report, and change the Time Range for a previously run report or the checkbox that controls whether you want to run a report across all LSMSs for data, right-click on the report in the list of the Contents panel and choose **View** from the pop-up menu.

Result The Administrative Events Report Editor is initially displayed with the Source/Events tab(Figure 9-1, “Administrative Events Report Editor (Source/Events tab)” (p. 9-3)).

Figure 9-1 Administrative Events Report Editor (Source/Events tab)



3 In the **Name** field, enter a name for the report file to be created.

4 In the **Description** field, enter a textual description of the report. This field is optional.

5 Click the **run report across each LSMS and LSCS** checkbox to collect and run a merged report of all network events for all connected SMSs and Compute Servers. (This checkbox is checked, by default.)

6 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **1** to **99** minutes.	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

7 Select the Source Type by selecting the source(s) of the events to be included.

The choices are:

- **All**—to report on all events from all source types
- **LSMS/LSCS**—to report on events and errors generated by the LSMS(s) and Compute Server(s)
- **Brick**—to report on events and errors for the specified Brick(s). When this option is chosen, a **Brick** field is displayed under the radio button. Right-click in this field and choose **Select a Brick**. A Browse window is displayed. Select one or more Bricks from the Bricks folder. Choose **Clear All** to clear the selection(s) made and make new selections. After making your selection(s), click **OK** to close the Browse window and activate your selection(s).

8 Select one or more Event Categories to be included in the report.

Select one or more of the following categories:

- **Error Events**—error messages that originate in the Brick device or the SMS, such as failed login attempts
- **Administration Events**—events such as logging in or out of the SMS, Brick zone ruleset modifications, or Brick zone ruleset asssignments
- **VPN Events**—all VPN tunnel-related events
- **Status Events**—any status or informational messages generated by the Brick device or SMS

- **Alarm Events**—information about any alarms that were activated
- **Log Transfer Events**—error messages generated when transferring log files to an FTP server

  Important! If you selected **Brick**as the Source Type, only **Error Events**, **Administration Events**, and **VPN Events** are displayed in the Admin Event Category section of the window

END OF STEPS

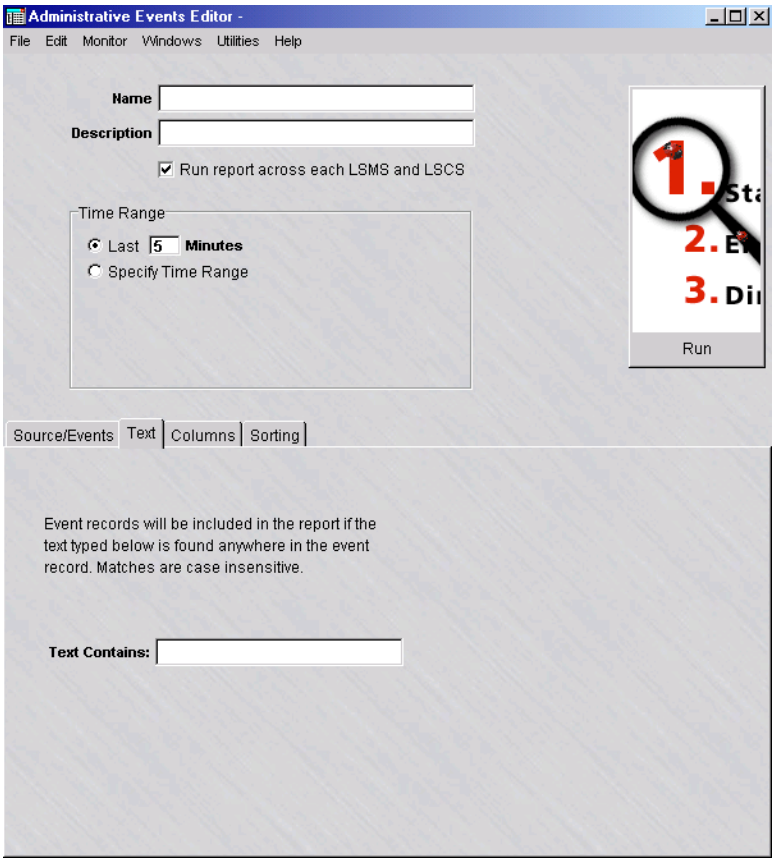
To enter event text

1 Click on the **Text** tab.

Result

The Event Text Search tab is displayed (Figure 9-2, “Administrative Events Editor (Text Search tab)” (p. 9-5)

Figure 9-2 Administrative Events Editor (Text Search tab)



2 To include event records in the report, enter a text string in the **Text Contains** field.

The report will include any event records that contain text matching the text entry. The text search ignores case.

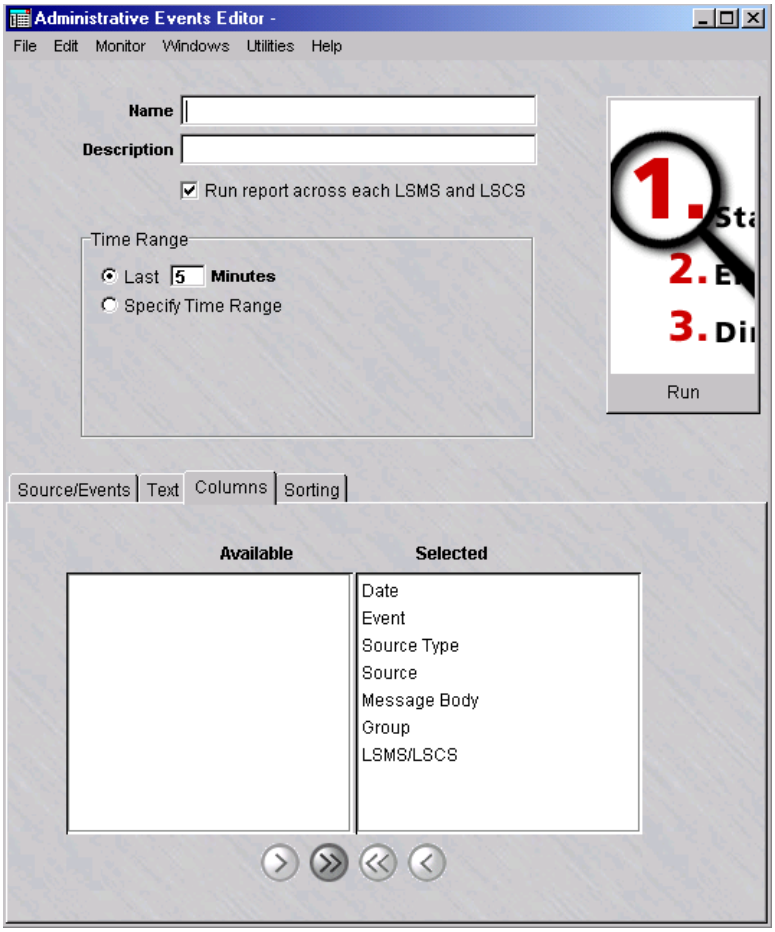
END OF STEPS

To select the columns

1 Click on the **Columns** tab.

Result The Columns tab is displayed (Figure 9-3, “Administrative Events Editor (Columns tab)” (p. 9-6)).

Figure 9-3 Administrative Events Editor (Columns tab)



2

To	Do This
Produce a report that contains all data columns	Leave all column names in the **Selected** portion of the tab. (This is the default.)
Produce a report with selected data column(s)	Use the arrow keys to move column names from the **Selected** portion to the **Available** portion of the tab. Only the columns in the **Selected** portion will be shown in the report. Use the arrow keys to move column names back and forth between the two lists as necessary.

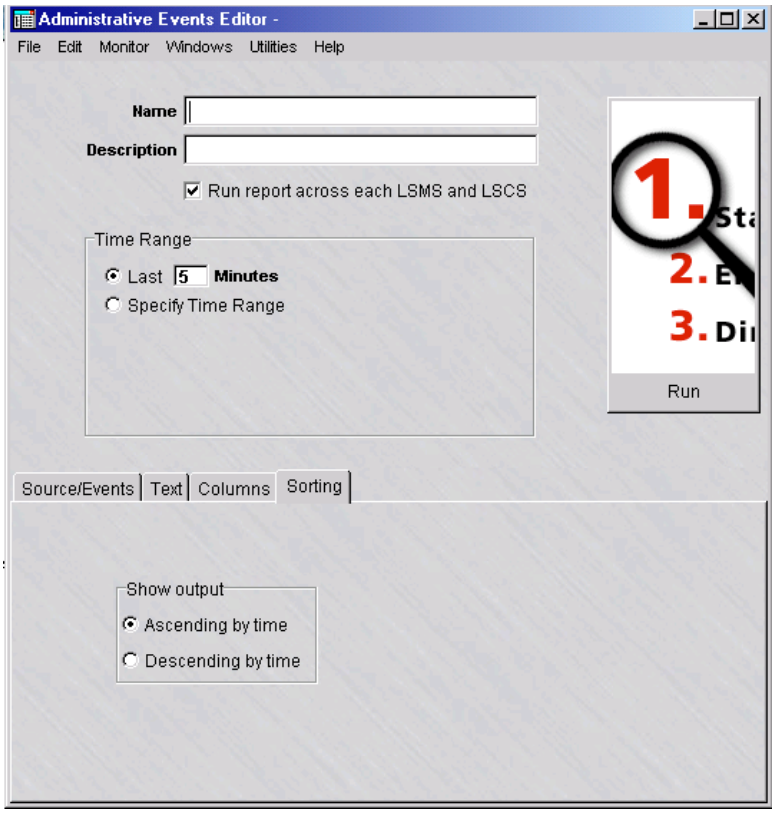
END OF STEPS

To select the order of the report

1 Click the **Sorting** tab.

Result The Sorting tab is displayed (Figure 9-4, “Administrative Events Editor (Sorting tab)” (p. 9-8)).

Figure 9-4 Administrative Events Editor (Sorting tab)



2 Select the order in which to sort the report output. The default is **Ascending by time** (in chronological order).

END OF STEPS

To save the report

Complete the following steps to save a named copy of the report and its parameter settings.

1 In the **Name** field, enter a name for the report.

2 In the **Description** field, enter a textual description for the report. (This step is optional.)

3 From the File menu, choose **Save**.

Result The report and its parameter settings are saved and stored in the report folder. The report is saved and can be reused as a template for similar reports when it is duplicated and renamed.

END OF STEPS

To duplicate a report

Complete the following steps to duplicate a report. You can duplicate a report, edit the parameters, and rename as necessary to generate a different report.

1 Right-click on an existing report in the Contents panel and choose **Duplicate** from the pop-up menu.

Result The initial tab of the Report Editor is displayed.

2 In the **Name** field, give the report a different name. Edit the parameter fields on the other tabs of the Report Editor, as needed.

3 From the File menu, choose **Save** to save the duplicated report under its new name.

END OF STEPS

To run the report

Complete the following steps to run the report.

1 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

2 Close the Administrative Events Editor window and Administrative Events Log browser after viewing the output.

END OF STEPS

To run multiple reports

Complete the following steps to run multiple reports.

1 Right-click on existing reports in the Contents panel and choose **Run Multiple Reports** from the pop-up menu.

Result The Run Multiple Filters window is displayed.

2 Click the **run report across each LSMS and LSCS** checkbox to collect and run a merged report of all network events for all connected SMSs and Compute Servers. (This checkbox is checked, by default.)

3 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **1** to **99** minutes.	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.

To	Do This
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

4 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

5 Close the Admin Events Editor window and Admin Events browser after viewing the output.

END OF STEPS

□

Administrative Events Report Output

Overview

The output from an Administrative Events report is displayed in your web browser, and consists of a header and a body in table format with up to six columns of information. Figure 9-5, “Administrative Events Log Report” (p. 9-13) on the next page shows a fragment of a typical Administrative Events report.

The report in Figure 9-5, “Administrative Events Log Report” (p. 9-13) contains all six columns. The administrator generating the report determines the number of columns that appear in the finished report.

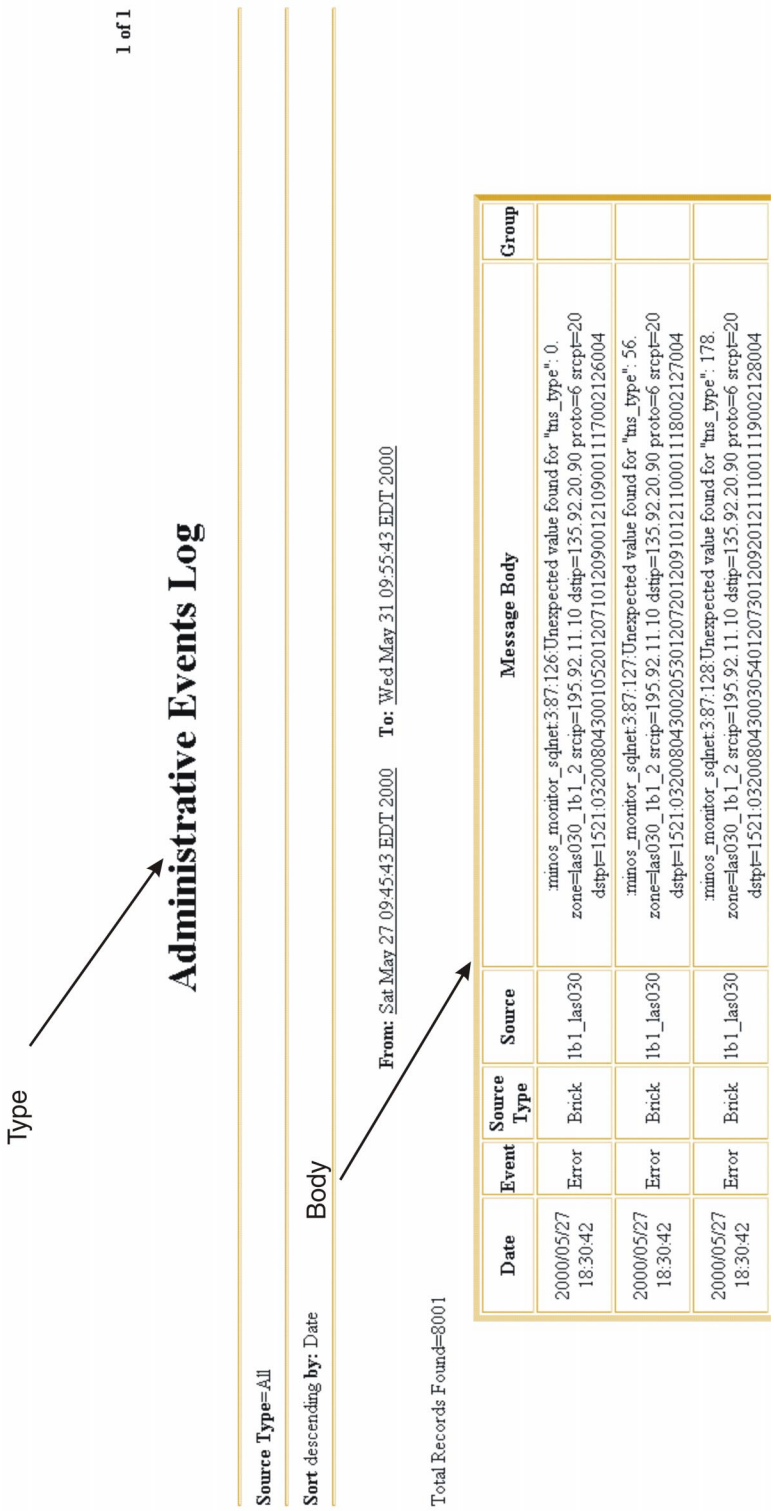
The following sections explain the information in the header and in all six columns of the body.

Header

The header of an Administrative Events Log report contains the following information:

- **Page Number and Total Number of Pages**
  In the upper right corner of the header, above the title Administrative Events Log, the report indicates the total number of pages in the report, and the number of the current page.
- **Source Type**
  On the left margin, below the title Administrative Events Log, the report indicates the names of the event source that are included in the report. This information was determined by the administrator generating the report.

Figure 9-5 Administrative Events Log Report



The fields on the Administrative Events Log report are described as follows:

- **Sort Order**
  On the left margin, under the Bricks and Brick zone rulesets, the report indicates the order in which the entries in the body are listed. The choices are ascending (i.e., chronological) or descending (i.e., reverse chronological). The administrator generating the report makes the choice.
- **Time Interval**
  In the center, under the sort order, the report indicates the time interval covered by the report. This is determined by the administrator when running the report.
- **Total Records**
  On the left margin, under the time interval, the report indicates the number of records included in the report, including records collected from the LSMSs, and lists them. It also lists any LSMSs that could not be contacted to retrieve records. The number of entries found in the body of the report is shown. The number of records in the report depends upon how specifically you define the selection criteria when generating the report.

Date Column

The first column in the body of the report is the **Date** column. It gives the date and time the event was recorded in the administrative events log, in the format:

year/month/day

hour:minute:second

Event Column

The **Event** column indicates the type of event.

Source Type Column

The **Source Type** column indicates the source(s) of the event.

The administrator generating the report determines the source(s) that will be included in the report.

Source Column

The **Source** column pinpoints the source (e.g., logger, rap) for the selected source type.

Message Body Column

The **Message Body** column provides additional information about the event. When the Administrative Events report is displayed, a second browser window is launched behind the report. This window provides a key that explains the contents of the report's Message Body column.

The second browser is launched as a pop-up, which may be suppressed if the browser has pop-up blocking enabled.

Group Column

The **Group** column identifies the group that the session is using.

□

10 Sessions Logged Report

Overview

Purpose

The Sessions Logged report enables an Administrator to view traffic through one or more Alcatel-Lucent *VPN Firewall Brick*® Security Appliances during a specified period of time.

The report can be configured to show all traffic through the Brick devices, or just specific types of traffic of interest to the Administrator.

The Sessions Logged report can be used to monitor traffic on the network, identify potential problem areas, and troubleshoot security operations.

Contents

To Generate a Sessions Logged Report

When to use

To generate a Sessions Logged report, you must display the Sessions Logged Editor, and then enter selection criteria to determine the scope and type of the information that is included in the report.

To display the Sessions Logged Editor

Complete the following steps to display the Sessions Logged Editor.

1 With the Navigator window displayed, open the **Reports** folder.

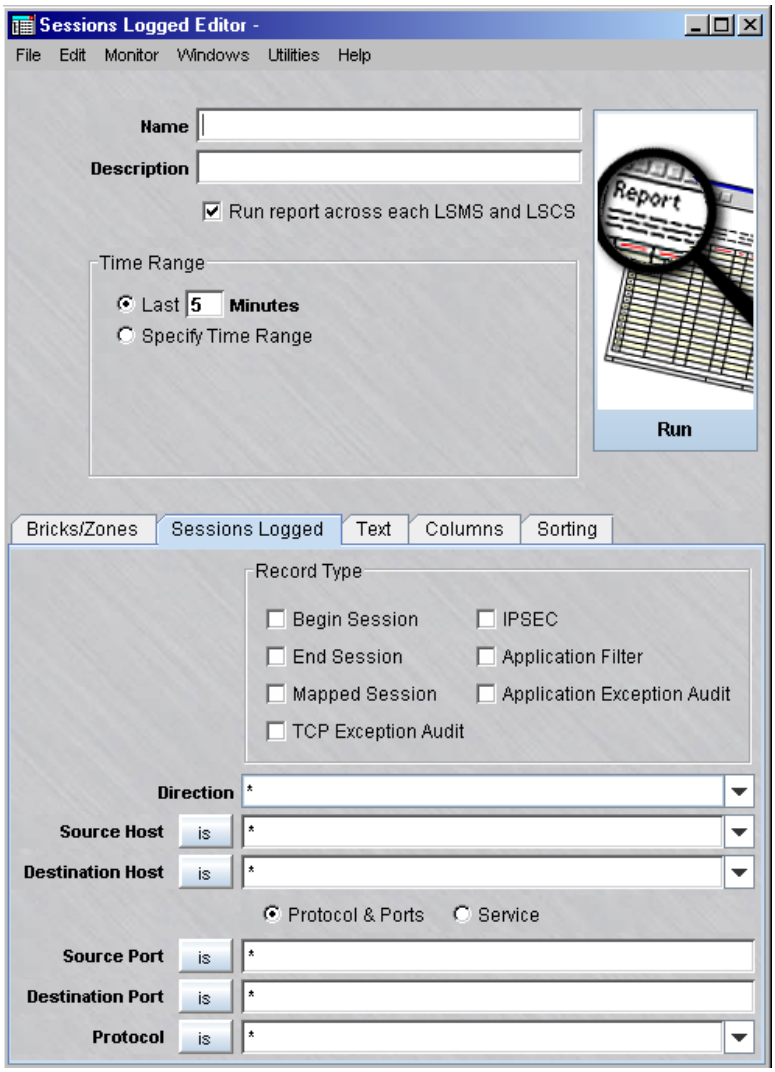
2 Right-click the **Sessions Logged** folder and select **New Sessions Logged**.

To edit an existing report and its settings, right-click on the report in the list of the Contents panel and choose **Edit** from the pop-up menu.

To view an existing report, and change the Time Range for a previously run report or the checkbox that controls whether you want to run a report across all SMSs for data, right-click on the report in the list of the Contents panel and choose **View** from the pop-up menu.

Result The Sessions Logged Editor is initially displayed with the Sessions Logged tab (Figure 10-1, “Sessions Logged Editor (Sessions Logged tab)” (p. 10-3)).

Figure 10-1 Sessions Logged Editor (Sessions Logged tab)



3 In the **Name** field, enter a name for the report file to be created.

4 In the **Description** field, enter a textual description of the report. This field is optional.

5 Click the **run report across each LSMS and LSCS** checkbox to collect and run a merged report of all network events for all connected SMSs and Compute Servers. (This checkbox is checked, by default.)

6 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **15** to **6099** minutes.	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

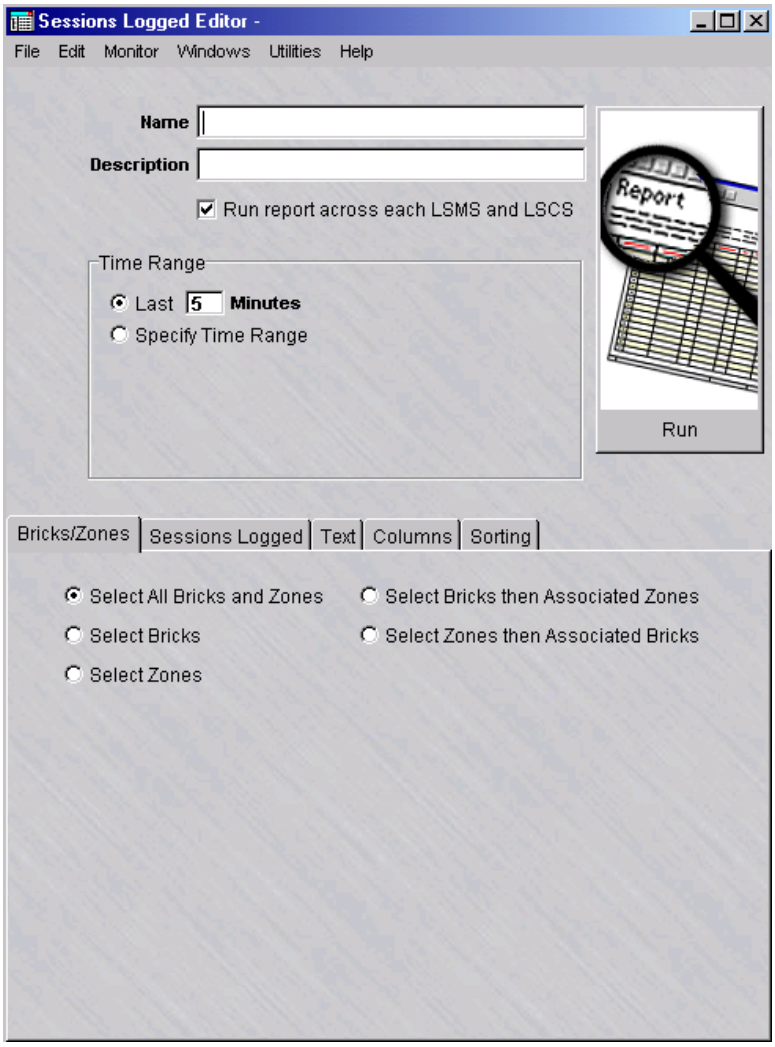
END OF STEPS

To select the Bricks and Brick zone rulesets

1 Click on the **Bricks/Zones** tab.

Result The Bricks/Zones tab is displayed (Figure 10-2, “Sessions Logged Editor (Bricks/Zones tab)” (p. 10-5)).

Figure 10-2 Sessions Logged Editor (Bricks/Zones tab)



2

To	Do This
Generate a report for all Brick devices and Brick zone rulesets	Click the **Select All Bricks and Zones** radio button.

To	Do This
Restrict the report to the specified Brick device(s)	Click the **Select Bricks** radio button. Right-click in the **Bricks** box and choose **Select a Brick** from the pop-up menu. In the **Browse: Select a Brick** window, select the Brick device(s) from the **Bricks** folder and click **OK**. Repeat as necessary to add new Brick devices. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection(s) and make new choices.
Restrict the report to the specified Brick zone ruleset(s)	Click the **Select Zones** radio button. Right-click in the **Zones** box and choose **Select a Brick Zone Ruleset** from the pop-up menu. In the **Browse: Select a Brick Zone Ruleset** window, select the Brick zone ruleset(s) from the **Brick Zone Rulesets** folder and click **OK**. Repeat as necessary to add other Brick zone rulesets. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection(s) and make new choices.
Restrict the report to the specified Brick device(s) and associated Brick zone ruleset(s).	Click the **Select Bricks then Associated Zones** radio button. Right-click in the **Bricks** box and choose **Select a Brick** from the pop-up menu. In the **Browse: Select a Brick** window, select the Brick device(s) from the **Bricks** folder and click **OK**. Repeat as necessary to add other Brick devices. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection(s) and make new choices. The Brick zone rulesets that have been assigned to at least one port on the selected Brick device(s) are displayed in the Zones box. Select only the Brick zone ruleset(s) to be included in the report. Press the **CTRL** key while pressing the left mouse button to select multiple items. Press the **Shift** key while pressing the left mouse button to select a range of items.

To	Do This
Restrict the report to the specified Brick zone ruleset(s) and associated Brick devices	Click the **Select Zones then Associated Bricks** radio button. Right-click in the **Zones** box and choose **Select a Brick Zone Ruleset** from the pop-up menu. In the **Browse: Select a Brick zone Ruleset** window, select the Brick zone ruleset to be included in the report and click **OK**. Repeat as necessary to add other Brick zone rulesets. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection and choose a different zone ruleset. The Brick device(s) with at least one port assignment for the zone ruleset are displayed in the Bricks box. Select the Brick device(s) to be included in the report. Press the **CTRL** key while pressing the left mouse button to select multiple items. Press the **Shift** key while pressing the left mouse button to select a range of items.

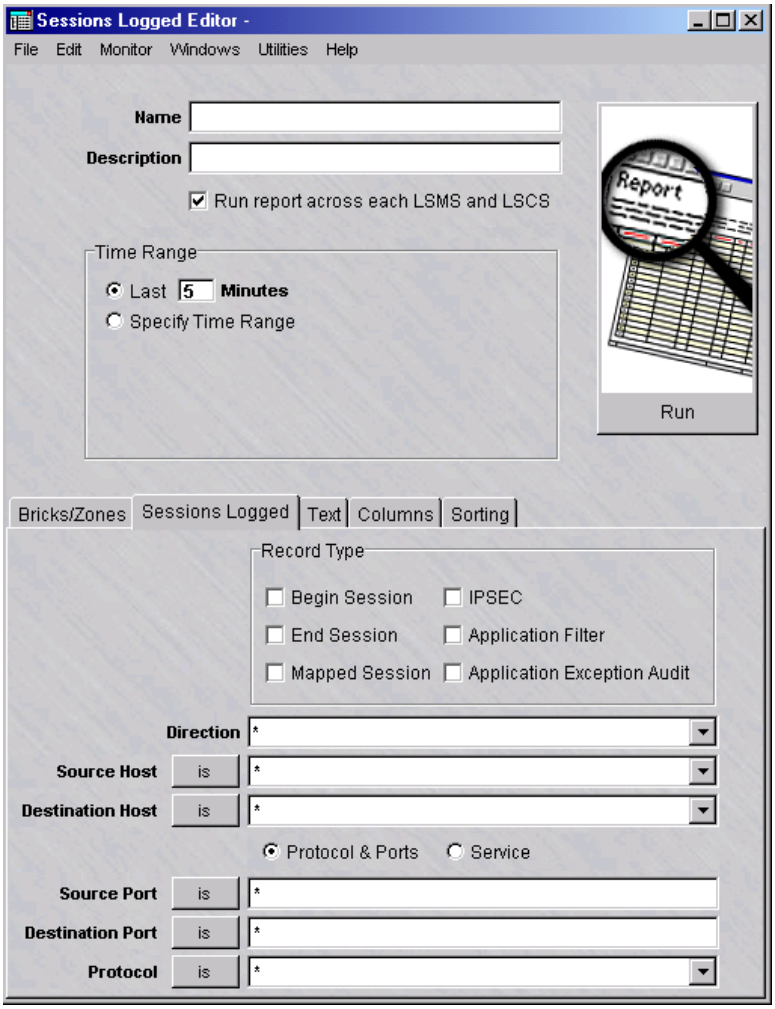
END OF STEPS

To select the records

1 Click the **Sessions Logged** tab.

Result The Sessions Logged tab is displayed.

Figure 10-3 Sessions Logged Editor (Sessions Logged tab)



2 In the **Direction** field, filter the report to include only sessions in one direction. Click the down arrow next to the field and choose **IN TO ZONE** or **OUT OF ZONE** from the drop-down list. By default, the report includes sessions in both directions.

3 In the **Source Host** field, filter the report to include only sessions initiated by a specific source host. Enter either the IP address of the host or click the down arrow next to the field to display a drop-down list and select a host group. Multiple entries can be made, each separated by a comma. An alternate method is to click the **is** button next to the field to change it to **is not**, and then enter an IP address, to include all source hosts except the one entered.

4 In the **Destination Host** field, filter the report to include only sessions intended for a specific destination host. Enter either the IP address of the host or click the down arrow next to the field to display a drop-down list and select a host group. Multiple entries can be made, each separated by a comma. An alternate method is to click the **is** button next to the field to change it to **is not**, and then enter an IP address, to include all source hosts except the one entered.

5

To	Do This
Restrict the report to one or more protocols and ports	Click the **Protocols & Ports** radio button and enter the IP address of each port in the respective port field. Click the down arrow next to the **Protocol** field and choose a protocol from the drop-down list or enter the protocol number. If you click the **is** button next to the field to change it to **is not**, the report will include all records except for the one entered in the respective field.
Optionally restrict the report to the specified service records	Click the **Service** radio button. Click the down arrow next to the **Service** field and choose a service from the drop-down list. If you click the **is** button next to the field to change it to **is not**, the report will include all records except for the one entered in the respective field.

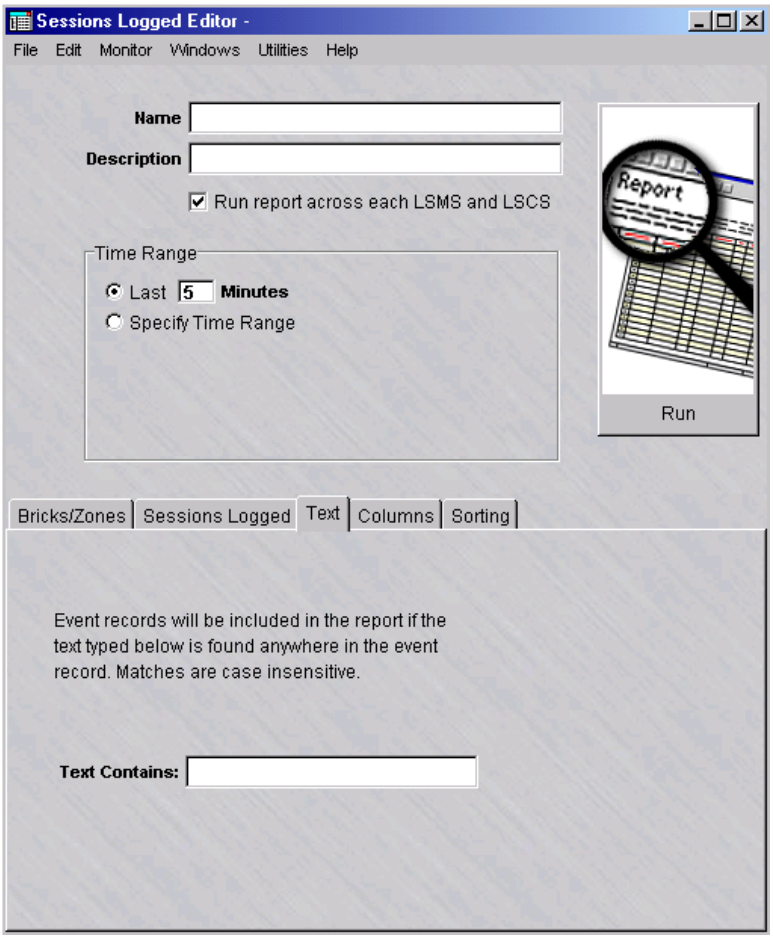
END OF STEPS

To enter event text

1 Click on the **Text** tab.

Result The Event Text Search tab of the Sessions Logged Editor is displayed (Figure 10-4, “Sessions Logged Editor (Text Search tab)” (p. 10-10)).

Figure 10-4 Sessions Logged Editor (Text Search tab)



2 To include event records in the report, enter a text string in the **Text Contains** field.

The report will include any event records that contain text matching the text entry. The text search ignores case.

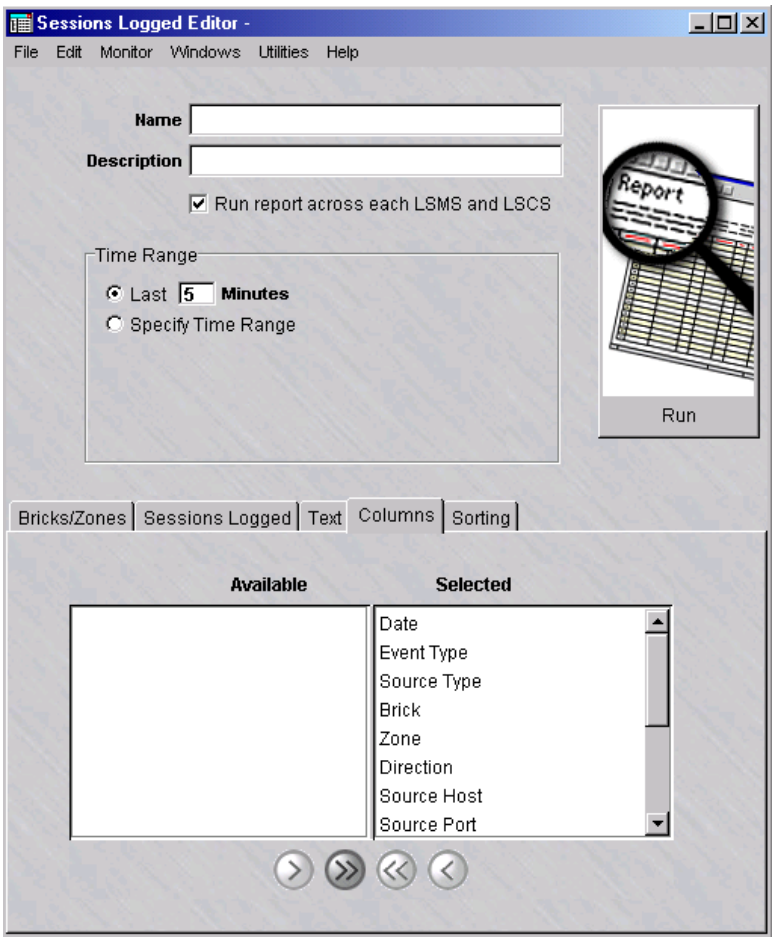
END OF STEPS

To select the columns of the report

1 Click on the **Columns** tab.

Result The Columns tab of the Sessions Logged Editor is displayed (Figure 10-5, "Sessions Logged Editor (Columns tab)" (p. 10-11)).

Figure 10-5 Sessions Logged Editor (Columns tab)



2

To	Do This
Produce a report that contains all data columns	Leave all column names in the **Selected** portion of the tab. (This is the default.)
Produce a report with selected data column(s)	Use the arrow keys to move column names from the **Selected** portion to the **Available** portion of the tab. Only the columns in the **Selected** portion will be shown in the report. Use the arrow keys to move column names back and forth between the two lists as necessary.

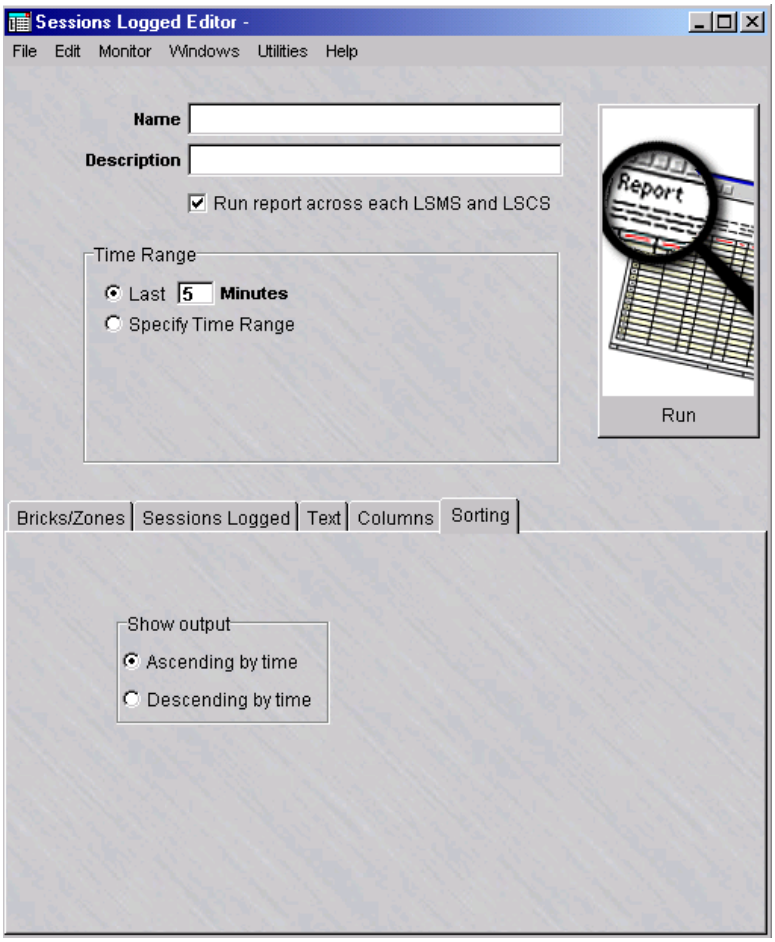
END OF STEPS

To select the order of the report

1 Click on the **Sorting** tab.

Result The Sorting tab of the Sessions Logged Editor is displayed (Figure 10-6, “Sessions Logged Editor (Sorting tab)” (p. 10-12)).

Figure 10-6 Sessions Logged Editor (Sorting tab)



2 Select the order in which to sort the report output. The default is **Ascending by time** (in chronological order).

END OF STEPS

To save the report

Complete the following steps to save a named copy of the report and its parameter settings.

1 In the **Name** field, enter a name for the report.

2 In the **Description** field, enter a textual description for the report. (This step is optional.)

3 From the File menu, choose **Save**.

Result The report and its parameter settings are saved and stored in the report folder. The report is saved and can be reused as a template for similar reports when it is duplicated and renamed.

END OF STEPS

To duplicate a report

Complete the following steps to duplicate a report. You can duplicate a report, edit the parameters, and rename as necessary to generate a different report.

1 Right-click on an existing report in the Contents panel and choose **Duplicate** from the pop-up menu.

Result The initial tab of the Report Editor is displayed.

2 In the **Name** field, give the report a different name. Edit the parameter fields on the other tabs of the Report Editor, as needed.

3 From the File menu, choose **Save** to save the duplicated report under its new name.

END OF STEPS

To run the report

Complete the following steps to run the report.

1 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

2 Close the Sessions Logged Editor window and Sessions Logged browser after viewing the output.

END OF STEPS

To run multiple reports

Complete the following steps to run multiple reports.

1 Right-click on existing reports in the Contents panel and choose **Run Multiple Reports** from the pop-up menu.

Result The Run Multiple Filters window is displayed.

2 Click the **run report across each LSMS and LSCS** checkbox to collect and run a merged report of all network events for all connected SMSs and Compute Servers. (This checkbox is checked, by default.)

3 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **1** to **99** minutes.	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.

To	Do This
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

4 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

5 Close the Sessions Logged Editor window and Sessions Logged browser after viewing the output.

END OF STEPS

□

Sessions Logged Report Output

Overview

The output from a Sessions Logged report is displayed in your web browser, and consists of a header and a body in table format with up to 14 columns of information. Figure 11-9, “Closed Session Details Report (Part A)” (p. 11-24) on the next page shows a fragment of a typical Sessions Logged report.

The report in Figure 11-9, “Closed Session Details Report (Part A)” (p. 11-24) contains all 14 columns. The administrator generating the report determines the number of columns that appear in the finished report.

The following sections explain the information in the header and in all 14 columns of the body.

Report colors

All Begin Session entries in the Sessions Logged report appear in green or red.

The colors are defined as follows:

- Green = a session that has been passed by the Brick device.
- Red = a session that has been dropped by the Brick device.

Header

The header of a Sessions Logged report contains the following information:

- *Page number and total number of pages*
  In the upper right corner of the header, above the title Sessions Log, the report indicates the total number of pages in the report, and the number of the current page.
- *Bricks and Brick zone rulesets*
  On the left margin, below the title Sessions Log, the report indicates the names of the Bricks and Brick zone rulesets that are included in the report. This information was determined by the administrator generating the report.
- *Sort order*
  On the left margin, under the Bricks and Brick zone rulesets, the report indicates the order in which the entries in the body are listed. The choices are ascending (i.e., chronological) or descending (i.e., reverse chronological). The administrator generating the report makes the choice.

- *Time interval*
  In the center, under the sort order, the report indicates the time interval covered by the report. This is determined by the administrator when running the report.
- *Total records*
  On the left margin, under the time interval, the report indicates the number of records included in the report. This is the number of entries found in the body of the report. The number of records in the report depends upon how specifically you define the selection criteria when generating the report.

Date Column

The first column in the body of the report is the Date column. It gives the date and time the record was created in the sessions log, in the format:

year/month/day

hour:minute:second

Event Column

The **Event** column indicates the type of record. The Sessions Logged report can include the following four record types:

- Begin session records
- End session records
- Mapped session records (indicating network address translation)
- IPSec records (indicating a VPN).

The administrator generating the report determines which types of records will be included in the report.

Source Type Column

In the current release, the **Source Type** is always **Brick**. In future releases, additional source types may be supported.

Brick Column

The **Brick** column indicates the name of the Brick that passed or dropped the session and produced this record.

The administrator generating the report determines the Brick devices to be included in the report.

Zone Column

The **Zone** column indicates the name of the Brick zone ruleset whose security policy caused the Brick to pass or drop the session. The Brick zone ruleset must be assigned to a port on the Brick.

The administrator generating the report determines the Brick zone rulesets to be included in the report.

Dir Column

The **Dir** column gives the direction of the session, vis a vis the Brick zone ruleset. The alternatives are:

- `IN` (the session originated outside the Brick zone ruleset and is intended for a destination IP address in the Brick zone ruleset), or
- `OUT` (the session originated in the Brick zone ruleset and is intended for a destination IP address outside the Brick zone ruleset).

The administrator generating the report can include sessions in both directions, or choose one of the two directions.

Src Host Column

The **Src Host** column provides the IP address of the source host. This is the host that initiated the session.

The administrator generating the report determines which source hosts will be included in the report.

Src Port Column

The **Src Port** column gives the source port. This is the port used by the application on the source host that initiated the session.

The administrator generating the report determines which source ports will be included in the report.

Dst Host Column

The **Dst Host** column provides the IP address of the destination host. This is the host that is intended to receives the session.

The administrator generating the report determines which destination hosts will be included in the report.

Dst Port Column

The **Dst Port** column gives the destination port. This is the port used by the application on the destination to receive the session.

The administrator generating the report determines which destination ports will be included in the report.

Pcol Column

The **Pcol** column indicates the protocol that the session is using. The options are UDP, TCP or ICMP.

The administrator generating the report determines which protocols will be included in the report.

Service Column

The **Service** column indicates the service (Dest Port/Src Port/Protocol) that the session is using. Examples are bootps, netbios-gm, netbios-ns.

The administrator generating the report determines which services will be included in the report.

Message Body Column

The **Message Body** column provides additional information about the session.

When the Sessions Logged report is displayed, a second browser window is launched behind the report. This window provides a key that explains the contents of the report's Message Body column.

Group Column

The **Group** column identifies the group that the session is using.

□

11 Closed Session Details Report

Overview

Purpose

The Closed Session Details report enables an Administrator to view traffic through one or more Alcatel-Lucent *VPN Firewall Brick*® Security Appliances during a specified period of time. It only shows closed sessions, not active ones.

The report can be configured to show all traffic through the Bricks devices, or just specific types of traffic that the Administrator is currently interested in.

The Closed Session Details report can be used to monitor traffic on the network, identify potential problem areas, and troubleshoot security operations.

Filter criteria can be expanded to every field of the combined Begin/End record. In contrast to the Sessions Logged Report, a greater variety of columns can be chosen for the output, including the duration of the sessions. Sorting by fields other than the Start Time is supported.

The SMS is shipped with the following pre-configured reports in this category:

- Drops by Rule 65535
- Unauthorized Brick Connection Attempts

Contents

To Generate a Closed Session Details Report

When to use

To generate a Closed Session Details report, you must display the Closed Session Details Report Editor, then enter selection criteria that will determine the scope and type of the information that is included in the report.

To display the Closed Session Details Editor

Complete the following steps to display the Closed Session Details Editor.

1 With the Navigator window displayed, open the **Reports** folder.

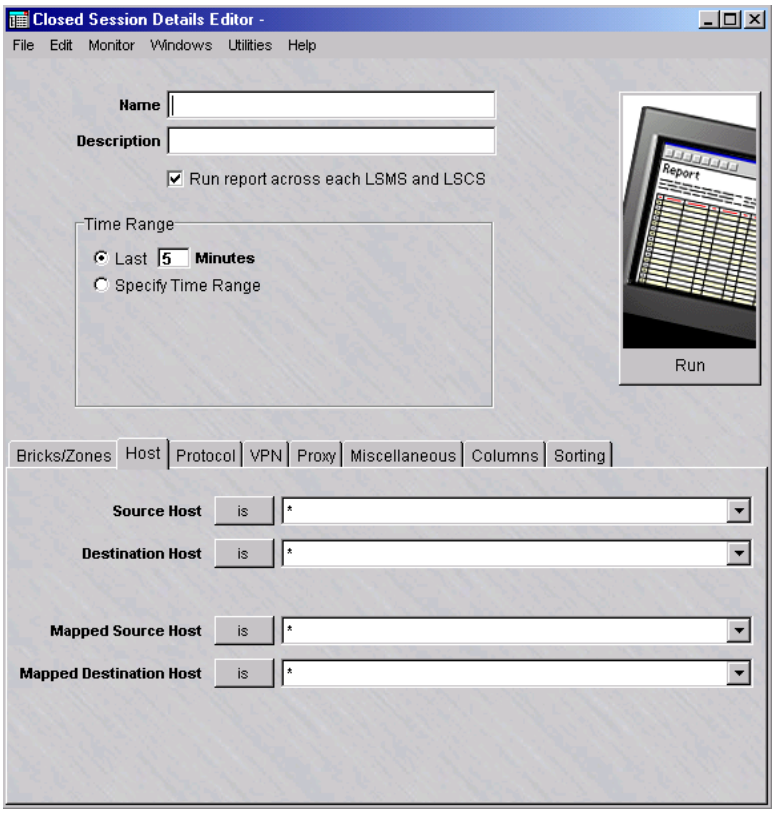
2 Right-click the **Closed Session Details** folder and select **New Closed Session Details**.

To edit an existing report and its settings, right-click on the report in the list of the Contents panel and choose **Edit** from the pop-up menu.

To view an existing report, and change the Time Range for a previously run report or the checkbox that controls whether you want to run a report across all SMSs for data, right-click on the report in the list of the Contents panel and choose **View** from the pop-up menu.

Result The Closed Session Details Editor is initially displayed with the Hosts tab (Figure 11-1, “Closed Session Details Editor (Host tab)” (p. 11-3)).

Figure 11-1 Closed Session Details Editor (Host tab)



3 In the **Name** field, enter a name for the report file to be created.

4 In the **Description** field, enter a textual description of the report. This field is optional.

5 Click the **run report across each LSMS and LSCS** checkbox to collect and run a merged report of all network events for all connected SMSs and Compute Servers. (This checkbox is checked, by default.)

6 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **1** to **99** minutes.	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

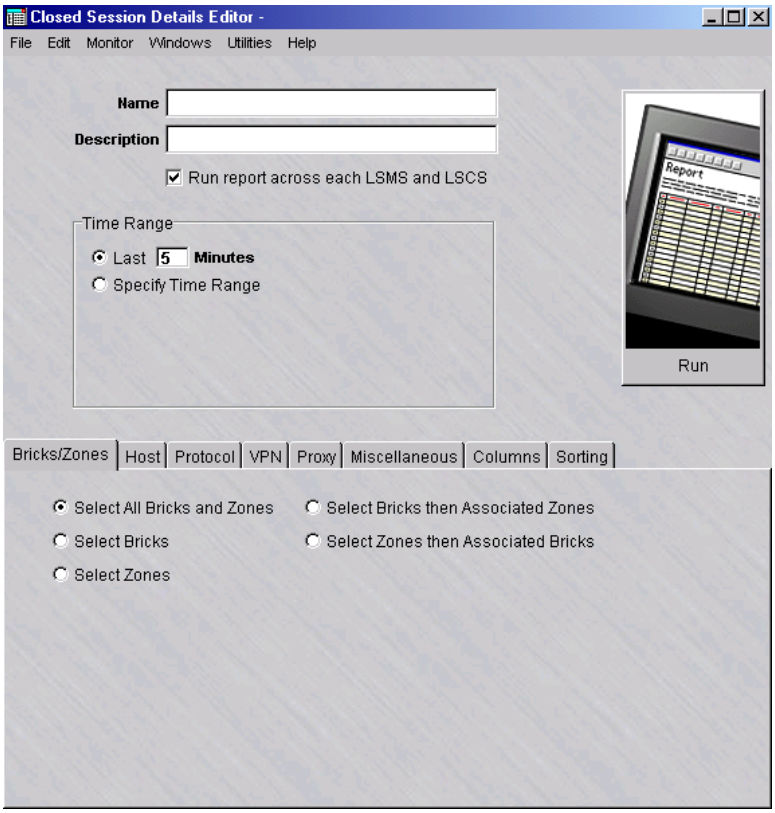
END OF STEPS

To select the Brick devices and zone rulesets

1 Click on the **Bricks/Zones** tab.

Result The Bricks/Zones tab of the Closed Session Details Editor is displayed (Figure 11-2, “Closed Session Details Editor (Bricks/Zones tab)” (p. 11-5)).

Figure 11-2 Closed Session Details Editor (Bricks/Zones tab)



2

To	Do This
Generate a report for all Brick devices and Brick zone rulesets	Click the **Select All Bricks and Zones** radio button.
Restrict the report to the specified Brick device(s)	Click the **Select Bricks** radio button. Right-click in the **Bricks** box and choose **Select a Brick** from the pop-up menu. In the **Browse: Select a Brick** window, select the Brick device(s) from the **Bricks** folder and click **OK**. Repeat as necessary to add other Bricks. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection(s) and make new choices.

To	Do This
Restrict the report to the specified Brick zone ruleset(s)	Click the **Select Zones** radio button. Right-click in the **Zones** box and choose **Select a Brick Zone Ruleset** from the pop-up menu. In the **Browse: Select a Brick Zone Ruleset** window, select the Brick zone ruleset(s) from the **Brick Zone Rulesets** folder and click **OK**. Repeat as necessary to add other Brick zone rulesets. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection(s) and make new choices.
Restrict the report to the specified Brick device(s) and associated Brick zone ruleset(s).	Click the **Select Bricks then Associated Zones** radio button. Right-click in the **Bricks** box and choose **Select a Brick** from the pop-up menu. In the **Browse: Select a Brick** window, select the Brick device(s) from the **Bricks** folder and click **OK**. Repeat as necessary to add other Brick devices. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection(s) and make new choices. The Brick zone rulesets that have been assigned to at least one port on the selected Brick device(s) are displayed in the Zones box. Select only the Brick zone ruleset(s) to be included in the report. Press the **CTRL** while pressing the left mouse button to select more than one item at a time. Press the **Shift** key while pressing the left mouse button to select a range of items.

To	Do This
Restrict the report to the specified Brick zone ruleset(s) and associated Brick devices	Click the **Select Zones then Associated Bricks** radio button. Right-click in the **Zones** box and choose **Select a Brick Zone Ruleset** from the pop-up menu. In the **Browse: Select a Brick zone Ruleset** window, select the Brick zone ruleset to be included in the report and click **OK**. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection and choose a different zone ruleset. The Brick device(s) with at least one port assignment for the zone ruleset are displayed in the Bricks box. Select the Brick device(s) to be included in the report. Press the **CTRL** while pressing the left mouse key to select more than one item at a time. Press the **Shift** key while pressing the left mouse button to select a range of items.

END OF STEPS

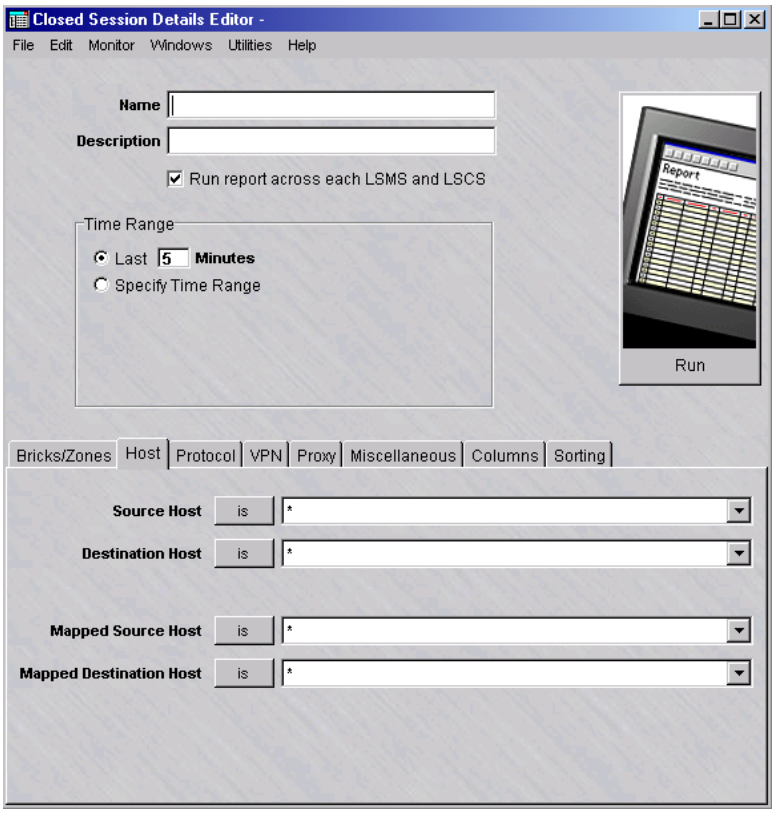
To select the hosts

Complete the following steps to choose the source and destination hosts to be included in the report.

1 Click on the **Host** tab.

Result The Host tab of the Closed Session Details Editor is displayed (Figure 11-3, “Closed Session Details Editor (Host tab)” (p. 11-8)).

Figure 11-3 Closed Session Details Editor (Host tab)



2 In the **Source Host** field, filter the report to include only sessions initiated by a specific source host. Enter either the IP address of the host or click the down arrow next to the field to display a drop-down list and select a host group. An alternate method is to click the **is** button next to the field to change it to **is not**, and then enter an IP address, to include all source hosts except the one entered.

3 In the **Destination Host** field, filter the report to include only sessions intended for a specific destination host. Enter either the IP address of the host or click the down arrow next to the field to display a drop-down list and select a host group. An alternate method is to click the **is** button next to the field to change it to **is not**, and then enter an IP address, to include all source hosts except the one entered.

4 In the **Mapped Source Host** field, filter the report to include only Brick zone rulesets that are using Network Address Translation (NAT) and are mapped to specific source hosts. Mapped hosts are the IP addresses that the source IPs in the incoming packet are mapped to by the Brick device. Enter either the IP address of the host or click the down arrow next to the field to display a drop-down list and select a host group. An alternate method is to click the **is** button next to the field to change it to **is not**, and then enter an IP address, to include all source hosts except the one entered.

   If you do not make an entry in this field, the report includes all mapped hosts.

5 In the **Destination Source Host** field, filter the report to include only Brick zone rulesets that are using NAT and are mapped to specific destination hosts. Mapped hosts are the IP addresses that the destination IPs in the outgoing packet are mapped to by the Brick device. Enter either the IP address of the host or click the down arrow next to the field to display a drop-down list and select a host group. An alternate method is to click the **is** button next to the field to change it to **is not**, and then enter an IP address, to include all source hosts except the one entered.

   If you do not make an entry in this field, the report includes all mapped hosts.

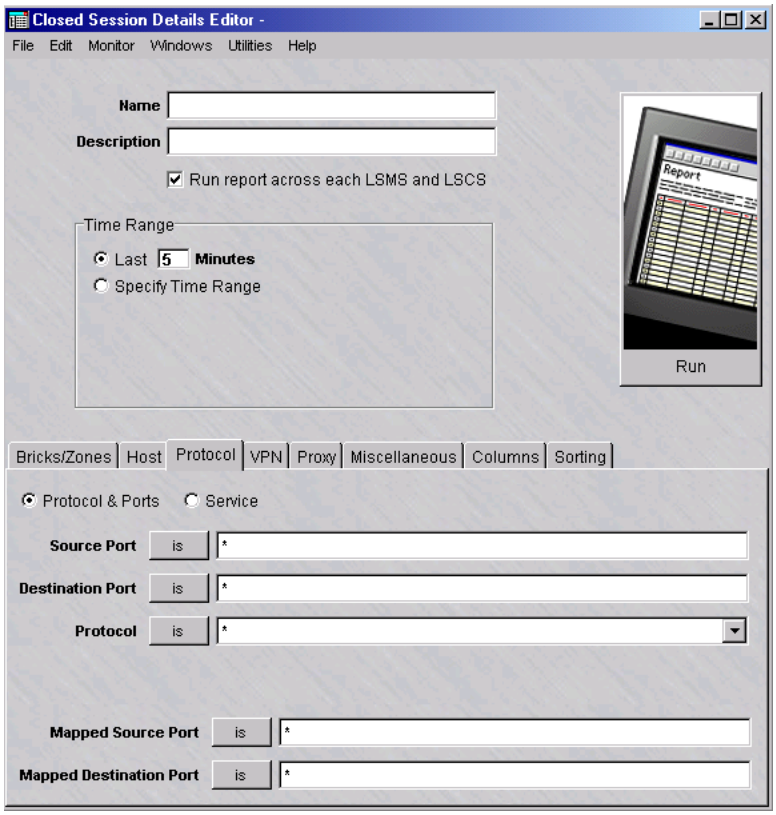
END OF STEPS

To select the ports and protocols

1 Click on the **Protocol** tab.

Result The Protocol tab of the Closed Session Details Editor is displayed (Figure 11-4, “Closed Session Details Editor (Protocol tab)” (p. 11-10)).

Figure 11-4 Closed Session Details Editor (Protocol tab)



2

To	Do This
Optionally restrict the report to one or more protocols and ports	Click the **Protocols & Ports** radio button and enter the IP address of each port in the respective port field. Click the down arrow next to the **Protocol** field and choose a protocol from the drop-down list, or enter the protocol number. If you click the **is** button next to the field to change it to **is not**, the report will include all records except for the one entered in the respective field.

To	Do This
Optionally restrict the report to the specified service records	Click the **Service** radio button. Click the down arrow next to the **Service** field and choose a service from the drop-down list. If you click the **is** button next to the field to change it to **is not**, the report will include all records except for the one entered in the respective field.

END OF STEPS

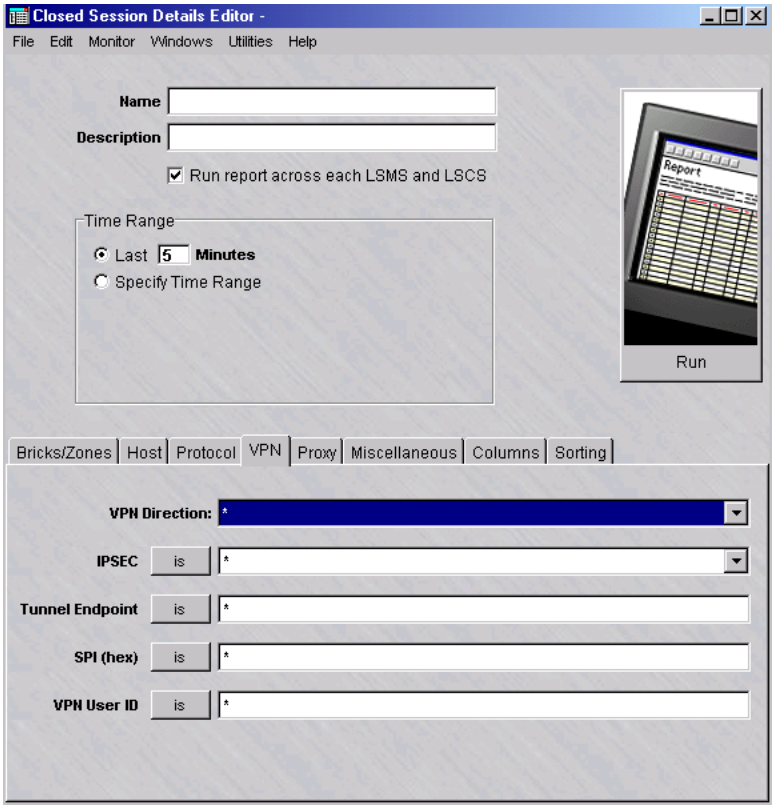
To enter VPN information

Complete the following steps to filter session details for encrypted tunnel traffic in the report.

1 Click the **VPN** tab.

Result The VPN tab of the Closed Session Details Editor is displayed (

Figure 11-5 Closed Session Details Editor (VPN tab)



2 To include only sessions of a specific direction, click the down arrow next to the **VPN Direction** field and select the direction from the drop-down list.

The choices are:

- **Forward**—initial session from the source host to the destination host
- **Reverse**—return session from the destination host back to the source host

3 To filter the report by IPSec mode, click the down arrow next to the **IPSEC** field and select the IPSec mode to be used as filtering criteria for the report. An alternate method is to click the **is** button next to the field to change it to **is not** and select an IPSec mode from the drop-down list. The report will include sessions using all modes *except* for the one entered.

4 To filter the report by tunnel endpoint, which is the Virtual Brick Address (VBA) assigned to the Brick zone ruleset that contains the destination IP address of the session, enter the IP address of the tunnel endpoint in the **Tunnel Endpoint** field. An alternate method is to click the **is** next to the field to change it to **is not** and enter an endpoint IP address. The report will include sessions using all tunnel endpoints *except* for the one entered. If you do not make an entry in this field, the report includes sessions from all tunnel endpoints.

5 To filter the report by Security Parameter Index (SPI) used in a VPN session, enter the SPI in the **SPI (hex)** field. An alternate method is to click the **is** next to the field to change it to **is not** and enter an SPI. The report will include sessions using all SPIs *except* for the one entered. If you do not make an entry in this field, the report includes sessions from all SPIs.

6 To filter the report by VPN User ID (the ID of the person who uses the IPSec Client program to set up the tunnel), enter the VPN User ID in the **VPN User ID** field. An alternate method is to click the **is** next to the field to change it to **is not** and enter a VPN User ID. The report will include sessions using all VPN User IDs*except* for the one entered. If you do not make an entry in this field, the report includes sessions for all VPN User IDs.

END OF STEPS

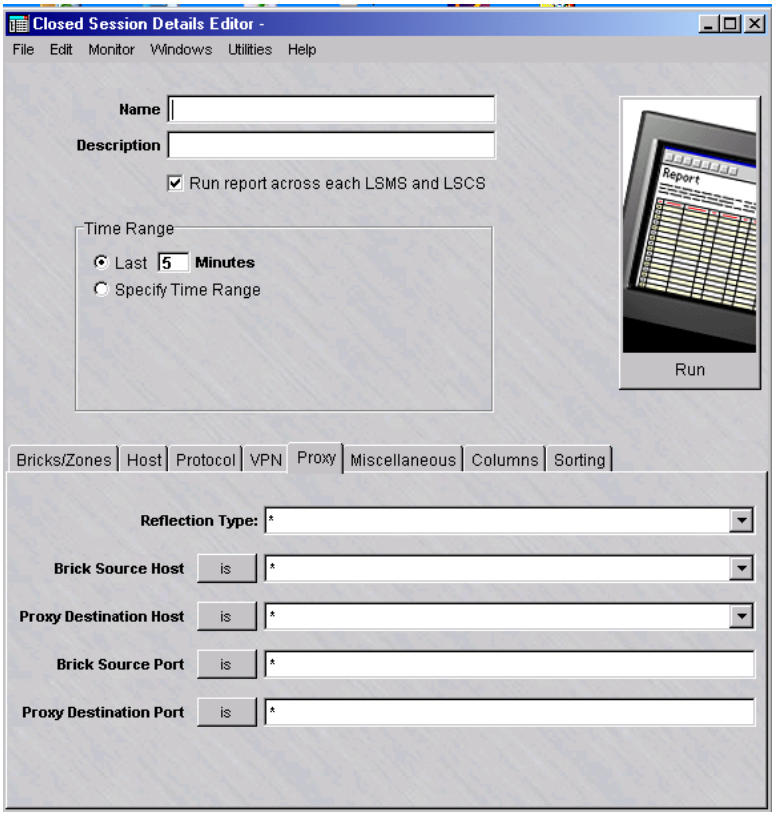
To enter proxy information

Complete the following steps to filter the report for sessions generated by clients running the Lucent Proxy Agent (LPA) software. This tab is only relevant and report information is only available if you are running the LPA software. If not, this tab should can be skipped.

1 Click on the **Proxy** tab.

Result The Proxy tab of the Closed Session Details Editor is displayed (Figure 11-6, “Closed Session Details Editor (Proxy tab)” (p. 11-14)).

Figure 11-6 Closed Session Details Editor (Proxy tab)



2 To filter the report by the reflection type for packets sent from the Brick device to the proxy server and forwarded to the client server, click the down arrow next to the **Reflection Type** field and make a choice from the drop-down list.

The choices are:

- **Single**—include packets that are sent from the Brick device to the proxy server and then directly to the requesting server
- **Dual**—include packets that are sent to the Brick device twice: once from the client to the proxy server, and then back through the Brick device where it is forwarded to the destination server

3 In the **Brick Source Host** field, you can optionally filter the report to include only reflected sessions originating from one or more Brick devices. Enter either the IP address of the Brick device or click the down arrow next to the field to display a

drop-down list, and select **BROWSE** to open a Browse window and select a host group. An alternate method to identify the source Brick host group is to click the **is** button next to the field to change it to **is not**, and then enter an IP address or host group, to include records from all originating Brick devices *except* the one(s) entered.

4 In the **Proxy Destination Host** field, you can optionally filter the report to include reflected sessions where the proxy server is a specific IP address. Either enter the IP address of the proxy server or click the down arrow next to the field to display a drop-down list, and select **BROWSE** to open a Browse window and select a host group. An alternate method to identify the proxy server is to click the **is** button next to the field to change it to **is not**, and then enter an IP address or host group, to include records from al proxy server(s) *except* for the one(s) entered.

5 In the **Brick Source Port** field, you can optionally filter the report to include only sessions originating from a particular Brick source port. Enter the port number of the Brick device. An alternate method to identify the Brick source port is to click the **is** button next to the field to change it to **is not**, and then enter source port, to include records from all originating Brick source ports*except* the one entered.

6 In the **Proxy Destination Port** field, you can optionally filter the report to include only sessions with a particular proxy destiantion port. Enter the proxy destination port number. An alternate method to identify the proxy destination port is to click the **is** button next to the field to change it to **is not**, and then enter port number, to include records from all proxy destiantion ports*except* the one entered.

END OF STEPS

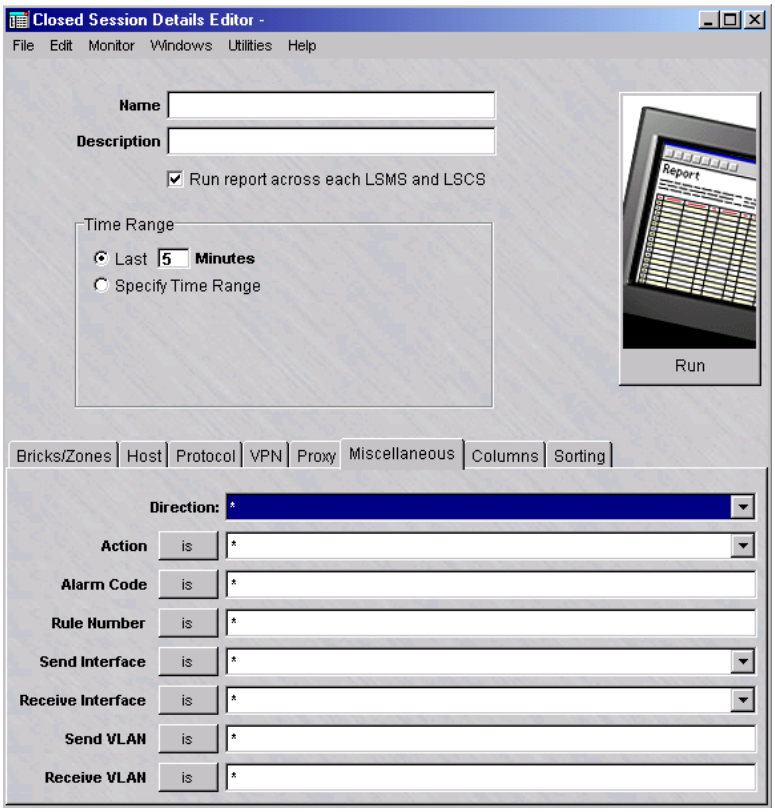
To enter miscellaneous information

Complete the following steps to enter miscellaneous filtering criteria for sessions to be included in the report.

1 Click the **Miscellaneous** tab.

Result The Miscellaneous tab of the Closed Session Details Editor is displayed (Figure 11-7, “Closed Session Details Editor (Miscellaneous tab)” (p. 11-16)).

Figure 11-7 Closed Session Details Editor (Miscellaneous tab)



2 In the **Direction** field, filter the report to include only sessions in one direction. Click the down arrow next to the field and choose **IN TO ZONE** or **OUT OF ZONE** from the drop-down list. By default, the report includes sessions in both directions.

3 In the **Action** field, filter the report to include sessions according to the action taken by the Brick device. Click the down arrow next to the field and choose **PASS**, **DROP**, or **PROXY**. An alternate means to choose the action is to click the **is** button next to the field to change it to **is not** and then enter an action, to include all sessions with all other actions *except* the one entered.

4 In the **Alarm Code** field, filter the report to include sessions according to alarm code. Enter one or more alarm codes, each separated by a comma. An alternate means to choose the alarm code(s) is to click the **is** button next to the field to change it to **is not** and then enter the alarm code(s), to include all sessions with all alarm codes *except* for the one(s) entered.

5 In the **Rule Number** field, filter the report to include sessions that were passed, dropped, or proxied by specific rules. Enter one or more rule numbers, each separated by a comma. An alternate means to choose the rule(s) is to click the **is** button next to the field to change it to **is not** and then enter the rule(s), to include all sessions with all rules *except* the one(s) entered.

6 In the **Send Interface** field, filter the report to include sessions by Brick device port that is sending the first packet of the session. Click the down arrow next to the field and select the port number from the drop-down list, or leave the asterisk(*) in place to indicate all ports. An alternate means to choose the port is to click the **is** button next to the field to change it to **is not** and then select the port, to include all sessions from all ports *except* the one entered.

7 In the **Receive Interface** field, filter the report to include sessions by Brick device port that is receiving the first packet of the session. Click the down arrow next to the field and select the port number from the drop-down list, or leave the asterisk(*) in place to indicate all ports. An alternate means to choose the port is to click the **is** button next to the field to change it to **is not** and then select the port, to include all sessions from all ports *except* the one entered.

8 In the **Send VLAN** field, filter the report to include sessions by VLAN number used for the first packet send during the session. Enter the VLAN number in the field. An alternate means to choose the VLAN is to click the **is** button next to the field to change it to **is not** and then select the port, to include all sessions with all VLANs *except* the one entered.

9 In the **Receive VLAN** field, filter the report to include sessions by VLAN number used for the first packet received during the session. Enter the VLAN number in the field. An alternate means to choose the VLAN is to click the **is** button next to the field to change it to **is not** and then select the port, to include all sessions with all VLANs *except* the one entered.

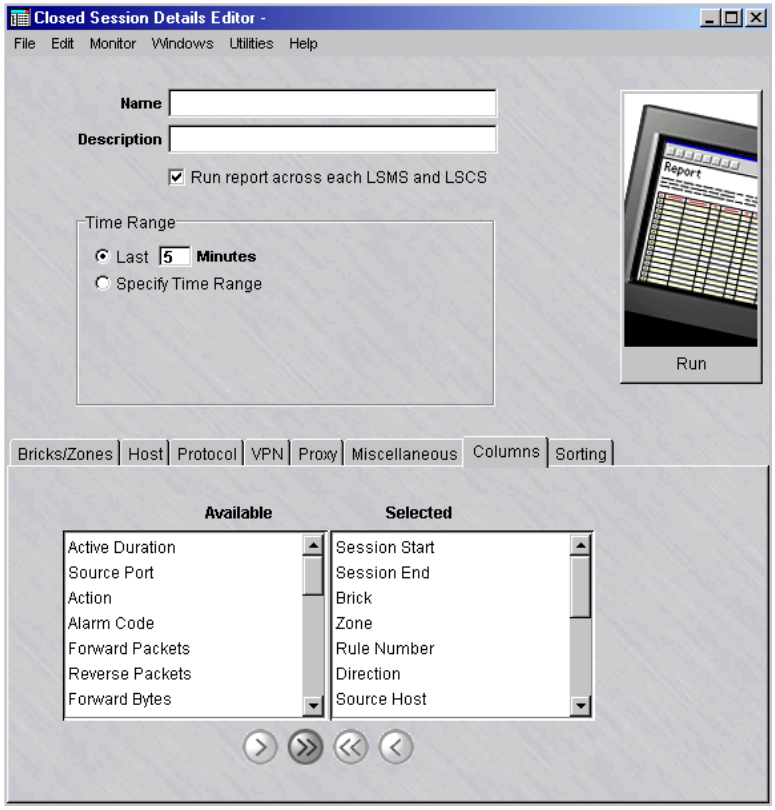
END OF STEPS

To select the columns

1 Click on the **Columns** tab.

Result The Columns tab of the Closed Sessions Details Editor is displayed (Figure 11-8, “Closed Session Details Editor (Columns tab)” (p. 11-18)).

Figure 11-8 Closed Session Details Editor (Columns tab)



2

To	Do This
Produce a report that contains all data columns	Leave all column names in the **Selected** portion of the tab. (This is the default.)

To	Do This
Produce a report with selected data column(s)	Use the arrow keys to move column names from the **Selected** portion to the **Available** portion of the tab. Only the columns in the **Selected** portion will be shown in the report. Use the arrow keys to move column names back and forth between the two lists as necessary.

END OF STEPS

To select the order of the report

1 Click on the **Sorting** tab.

Result The Sorting tab of the Closed Session Details Editor is displayed.

2 In the **Available** list, highlight a field to be used to determine the order of the report and click one of the arrow buttons to move it to the **Selected** list. You can select more than one field at a time from the list by clicking the left mouse button and the **CTRL** or **Shift** key.

Use the arrow keys to move the field(s) back and forth between the two lists, as necessary.

3 Repeat the previous step as necessary until all fields to be used in determining the order of the report have been selected.

The order of the report output will be determined by the order of the fields shown in the **Selected** list.

END OF STEPS

To save the report

Complete the following steps to save a named copy of the report and its parameter settings.

1 In the **Name** field, enter a name for the report.

2 In the **Description** field, enter a textual description for the report. (This step is optional.)

3 From the File menu, choose **Save**.

Result The report and its parameter settings are saved and stored in the report folder. The report is saved and can be reused as a template for similar reports when it is duplicated and renamed.

END OF STEPS

To duplicate a report

Complete the following steps to duplicate a report. You can duplicate a report, edit the parameters, and rename as necessary to generate a different report.

1 Right-click on an existing report in the Contents panel and choose **Duplicate** from the pop-up menu.

Result The initial tab of the Report Editor is displayed.

2 In the **Name** field, give the report a different name. Edit the parameter fields on the other tabs of the Report Editor, as needed.

3 From the File menu, choose **Save** to save the duplicated report under its new name.

END OF STEPS

To run the report

Complete the following steps to run the report.

1 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

2 Close the Closed Sessions Details Editor window and Closed Session Details browser after viewing the output.

END OF STEPS

To run multiple reports

Complete the following steps to run multiple reports.

1 Right-click on existing reports in the Contents panel and choose **Run Multiple Reports** from the pop-up menu.

Result The Run Multiple Filters window is displayed.

2 Click the **run report across each LSMS and LSCS** checkbox to collect and run a merged report of all network events for all connected SMSs and Compute Servers. (This checkbox is checked, by default.)

3 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **1** to **99** minutes.	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.

To	Do This
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

4 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

5 Close the Closed Sessions Details Editor window and Closed Sessions Details browser after viewing the output.

END OF STEPS

□

Closed Session Details Report Output

When to use

The output from a Closed Session Details report is displayed in your web browser, and consists of a header and a body in table format with up to 37 columns of information. Figure 11-9, "Closed Session Details Report (Part A)" (p. 11-24) on the next page shows a fragment of a typical Closed Session Details report.

The administrator generating the report determines the number of columns that appear in the finished report.

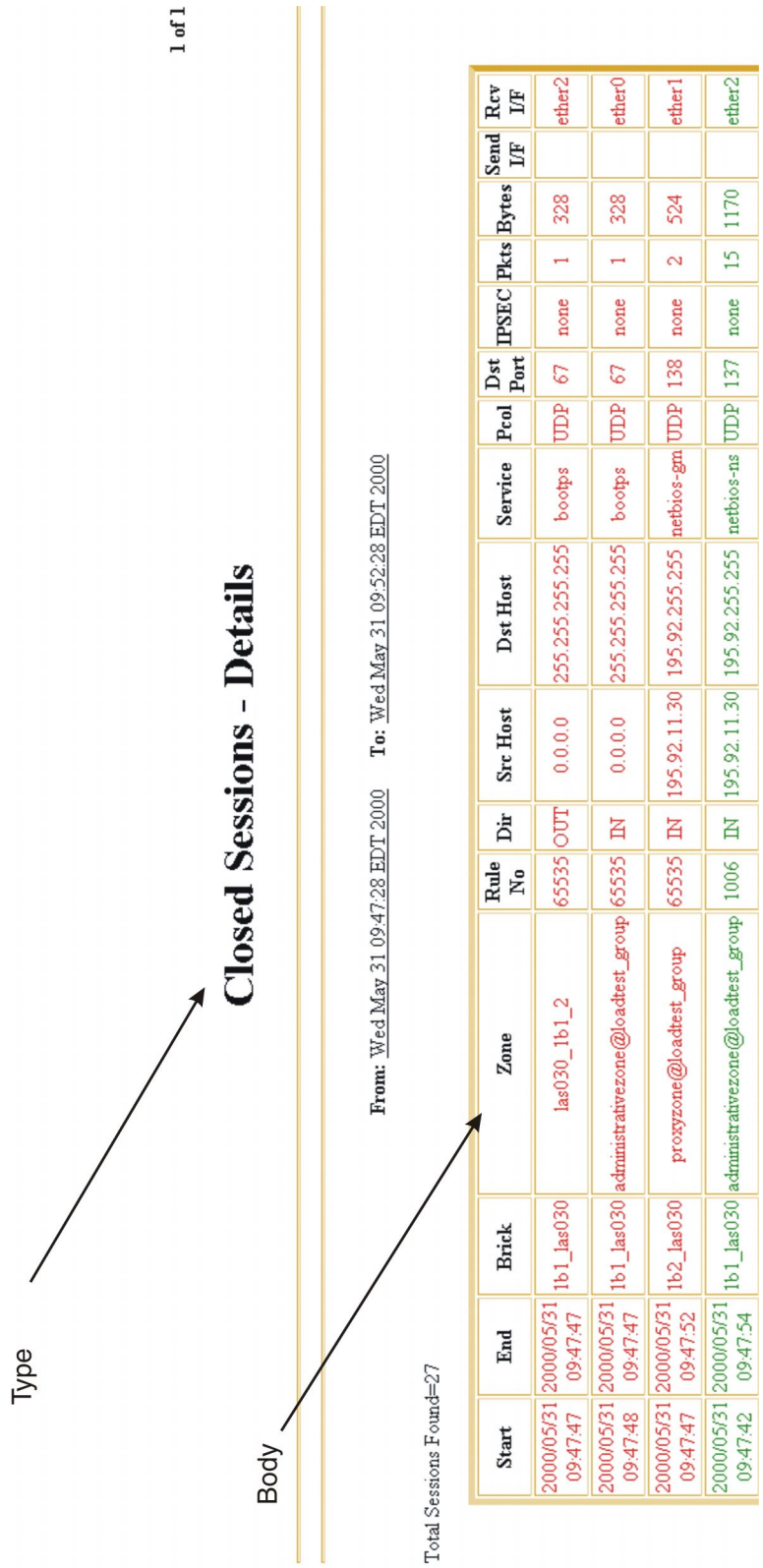
The following sections explain the information in the header and 37 columns of the report output.

Header

The header of a Closed Session Details report contains the following information:

- *Page number and total number of pages*
  In the upper right corner of the header, above the title Closed Session – Details, the report indicates the total number of pages in the report, and the number of the current page.
- *Time interval*
  In the center, under the sort order, the report indicates the time interval covered by the report. This is determined by the administrator when running the report.
- *Total sessions found*
  On the left margin, under the time interval, the report indicates the number of closed sessions included in the report. This is the number of entries found in the body of the report. The number of sessions in the report depends upon how specifically you define the selection criteria when generating the report.

Figure 11-9 Closed Session Details Report (Part A)



Start	End	Brick	Zone	Rule No	Dir	Src Host	Dst Host	Service	Pcol	Dst Port	IPSEC	Pkts	Bytes	Send I/F	Rcv I/F
2000/05/31 09:47:47	2000/05/31 09:47:47	1b1_las030	las030_1b1_2	65535	OUT	0.0.0.0	255.255.255.255	bootps	UDP	67	none	1	328		ether2
2000/05/31 09:47:48	2000/05/31 09:47:47	1b1_las030	administrativezone@loadtest_group	65535	IN	0.0.0.0	255.255.255.255	bootps	UDP	67	none	1	328		ether0
2000/05/31 09:47:47	2000/05/31 09:47:52	1b2_las030	proxyzone@loadtest_group	65535	IN	195.92.11.30	195.92.255.255	netbios-gm	UDP	138	none	2	524		ether1
2000/05/31 09:47:42	2000/05/31 09:47:54	1b1_las030	administrativezone@loadtest_group	1006	IN	195.92.11.30	195.92.255.255	netbios-ns	UDP	137	none	15	1170		ether2

Session Start

The first column in the body of the report is the **Start** column. It gives the date and time the session was started and recorded in the Sessions log, in the format of:

year/month/day

hour:minute:second

Session End

The **End** column indicates the date and time the session was ended and recorded in the Sessions log, in the format of:

year/month/day

hour:minute:second

Active Duration

The **Active Duration** column indicates the amount of time the session lasted. This is the result of subtracting the time in the **End** column from the time in the **Start** column.

Rule No.

The **Rule No**. column indicates the rule number of the security policy that caused the Brick to pass, drop, or proxy the session.

The administrator generating the report can include a particular rule number.

Brick

The **Brick** column indicates the name of the Brick that passed or dropped the session and produced this record.

The administrator generating the report determines the Brick devices to include in the report.

Zone

The **Zone** column indicates the name of the Brick zone ruleset whose security policy caused the Brick to pass or drop the session. The Brick zone ruleset must be assigned to a port on the Brick.

The administrator generating the report determines the Brick zone rulesets to include in the report.

Dir

The **Dir** column gives the direction of the session, vis a vis the Brick zone ruleset. The alternatives are:

- **IN** (the session originated outside the Brick zone ruleset and is intended for a destination IP address in the Brick zone ruleset), or
- **OUT** (the session originated in the Brick zone ruleset and is intended for a destination IP address outside the Brick zone ruleset).

The administrator generating the report can include sessions in both directions, or choose one of the two directions.

Src Host

The **Src Host** column provides the IP address of the source host. This is the host that initiated the session.

The administrator generating the report determines which source hosts to include in the report.

Src Port

The **Src Port** column gives the source port. This is the port used by the application on the source Brick that initiated the session.

The administrator generating the report determines which source ports to include in the report.

Dst Host

The **Dst Host** column provides the IP address of the destination host. This is the host that is intended to receive the session.

The administrator generating the report determines which destination hosts to include in the report.

Dst Port

The **Dst Port** column gives the destination port. This is the port used by the application on the destination host to receive the session.

The administrator generating the report determines which destination ports to include in the report.

Service

The **Service** column indicates the service (Dest Port/Src Port/Protocol) that the session is using. Examples are BOOTPS, NETBIOS-GM, NETBIOS-NS.

The administrator generating the report determines which services to include in the report.

Pcol

The **Pcol** column indicates the protocol that the session is using. The options are UDP, TCP or ICMP.

The administrator generating the report determines which protocols to include in the report.

Action

The **Action** column displays the action taken by the Brick when it encountered the session. Possibilities include:

- *Drop*
  The Brick discarded the session and did not allow it through.
- *Pass*
  The Brick accepted the session and allowed it through.
- *Proxy*
  The Brick forwarded the session to a designated proxy server.

The administrator generating the report can include an action.

Alarm Code

The **Alarm Code** column identifies the alarm code (number between 1 and 65,535) that was configured with the rule number as displayed in the Rule No column.

If a rule is configured with an alarm code and the rule was invoked (indicating that packets processed by a Brick matched the conditions of the rule), an alarm will trigger to notify an administrator.

The administrator generating the report determines which alarm code(s) to include in the report.

Pkts

The **Pkts** column is the total number of packets that were processed in the session.

The number displayed in this column is the summation of the **For Pkts** and **Rev Pkts** columns.

For Pkts

The **For Pkts** column is the total number of packets in the session that were initiated from the source host to the destination host.

The number in this column is added to the number in the **Rev Pkts** column to display the total number of packets in the **Pkts** column.

Rev Pkts

The **Rev Pkts** column is the total number of packets in the session that were initiated from the destination host to the source host.

The number in this column is added to the number in the **For Pkts** column to display the total number of packets in the Pkts column.

Bytes

The **Bytes** column is the total number of bytes that were processed in the session.

The number displayed in this column is the summation of the **For Bytes** and **Rev Bytes** columns.

For Bytes

The **For Bytes** column is the total number of bytes in the session that were initiated from the source host to the destination host.

The number in this column is added to the number in the **Rev Bytes** column to display the total number of bytes in the **Bytes** column.

Rev Bytes

The **Rev Bytes** column is the total number of bytes in the session that were initiated from the destination host to the source host.

The number in this column is added to the number in the **For Bytes** column to display the total number of bytes in the **Bytes** column.

Receive I/F

The **Receive I/F** column identifies the port that is receiving the first packet of a session.

The administrator generating the report determines the receive port to include in the report.

Send I/F

The **Send I/F** column identifies the port that is sending the first packet of the session.

The administrator generating the report determines the send port to include in the report.

Mapped Src Host

If Network Address Translation was implemented, the **Mapped Src Host** column contains the IP address of the mapped source host. This is the host that initiated the session.

The administrator generating the report determines which mapped source hosts to include in the report.

Mapped Dst Host

If Network Address Translation was implemented, the **Mapped Dst Host** column contains the IP address of the mapped destination host. This is the host that is intended to receive the session.

The administrator generating the report determines which mapped destination hosts to include in the report.

Mapped Src Port

If Network Address Translation was implemented, the **Mapped Src Port** column contains the mapped source port. This is the port used by the application on the mapped source host that initiated the session.

The administrator generating the report determines which mapped source ports to include in the report.

Mapped Dst Port

If Network Address Translation was implemented, the **Mapped Dst Port** column contains the mapped destination port. This is the port used by the application on the mapped destination host that received the session.

The administrator generating the report determines which mapped destination ports to include in the report.

VPN Direction

If a Virtual Private Network was implemented, the **VPN Direction** column refers to the direction of the VPN packets. The direction is either:

- *Forward*
  Refers to the initial session from the source host to the destination host.
- *Reverse*
  Refers to the return session from the destination host back to the source host.

The administrator generating the report determines the direction of the VPN packets to include in the report.

IPSEC

If a Virtual Private Network was implemented, the **IPSEC** column refers to the presence of encryption or decryption in the session. The options are: None, Decrypted, Encrypted, or Decrypted and Encrypted.

The administrator generating the report determines which IPSEC mode to include in the report.

Tunnel Endpoint

If a Virtual Private Network was implemented, the **Tunnel Endpoint** column is the IP address (virtual Brick address (VBA)) assigned to the Brick zone ruleset that contains the destination IP address of the session.

The administrator generating the report determines which tunnel endpoints to include in the report.

SPI

If a Virtual Private Network was implemented, the **SPI** column contains a unique identifier that identifies the specific Security Association used in a VPN. The Security Association, in turn, provides the manual keying information that the VPN requires to perform encryption/decryption.

The administrator generating the report determines which SPIs to include in the report.

VPN User ID

If a Virtual Private Network was established between the Brick and a Lucent IPSec Client, the **VPN User ID** column contains the ID of an individual using the Lucent IPSec Client program to set up a VPN. Every user of the Client program must enter a unique ID to activate a VPN.

The administrator generating the report determines which VPN User IDs to include in the report.

Brick Src Host

If proxying to a remote host was implemented, the **Brick Src Host** column is the IP address of the Brick that is forwarding the session to a proxy host.

Proxy Dst Host

If proxying to a remote host was implemented, the **Proxy Dst Host** column is the IP address of the proxy host that is running the proxy software (e.g., Lucent Proxy Agent).

Brick Src Port

If proxying to a remote host was implemented, the **Brick Src Port** indicates the port used by the Brick to forward the session to the proxy host.

Proxy Dst Port

If proxying to a remote host was implemented, the **Proxy Dst Port** indicates the port used by the proxy host to receive the session from the Brick.

Reflection Type

If proxying to a remote host was implemented, the **Reflection Type** column indicates the type of session used for proxying. The reflection type is either:

- *Dual*
  The packets are sent through the Brick twice — once from the client to the proxy host, and then back through the Brick where it appears to the server as if the session came from the original client.
- *Single*
  The packets are sent from the Brick to the proxy host, and then directly to the requesting destination server. The packets are routed through the Brick only once and the destination server sees the proxy host as the originating client instead of the actual client.

□

12 Alarms Logged Report

Overview

Purpose

The Alarms Logged report enables an Administrator to produce a historical record of alarms generated by any installed Alcatel-Lucent *VPN Firewall Brick*® Security Appliance.

The report can be configured to show alarms by Brick device or Brick zone ruleset. In addition, the Administrator generating the report can enter selection criteria to determine exactly which alarms to include in the finished report.

The Alarms Logged report can be used to troubleshoot network problems by tracking and analyzing alarms.

Contents

To Generate an Alarms Logged Report

When to use

To generate an Alarms Logged report, you must display the Alarms Logged Editor and then enter selection criteria that determine the scope and type of alarm information included in the report.

To display the Alarms Logged Editor

Complete the following steps to display the Alarms Logged Editor.

1 With the Navigator window displayed, open the **Reports** folder.

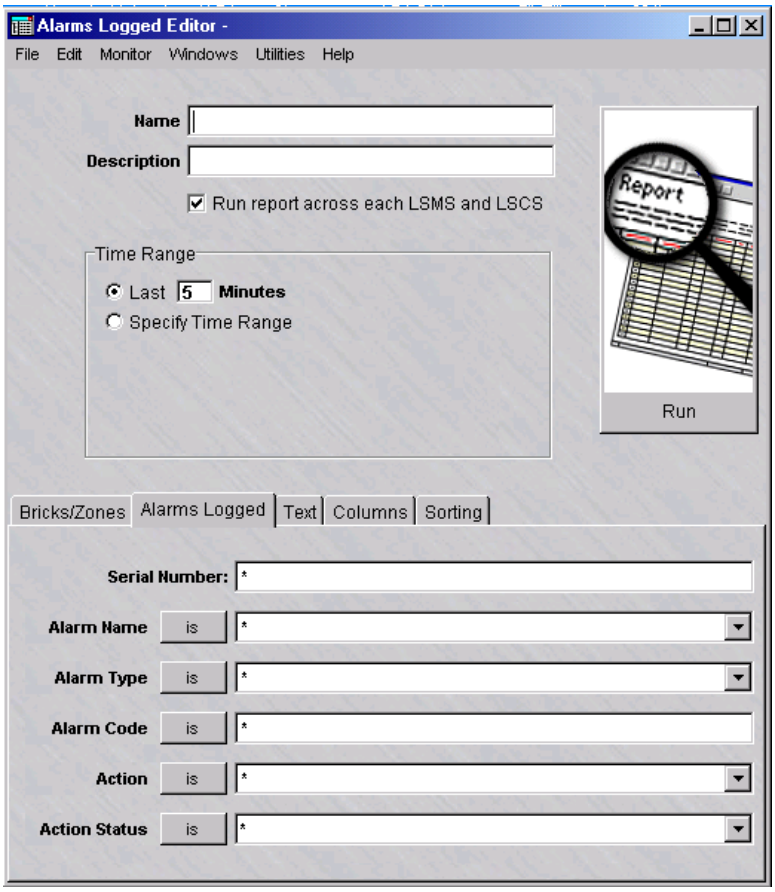
2 Right-click the **Alarms Logged** folder and select **New Alarms Logged**.

To edit an existing report and its settings, right-click on the report in the list of the Contents panel and choose **Edit** from the pop-up menu.

To view an existing report, and change the Time Range for a previously run report or the checkbox that controls whether you want to run a report across all SMSs for data, right-click on the report in the list of the Contents panel and choose **View** from the pop-up menu.

Result The Alarms Logged Editor is initially displayed with the Alarms Logged tab (Figure 12-1, “Alarms Logged Editor (Alarms Logged tab)” (p. 12-3)).

Figure 12-1 Alarms Logged Editor (Alarms Logged tab)



3 In the **Name** field, enter a name for the report file to be created.

4 In the **Description** field, enter a textual description of the report. This field is optional.

5 Click the **run report across each LSMS and LSCS** checkbox to collect and run a merged report of all network events for all connected SMSs and Compute Servers. (This checkbox is checked, by default.)

6 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **1** to **99** minutes	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

END OF STEPS

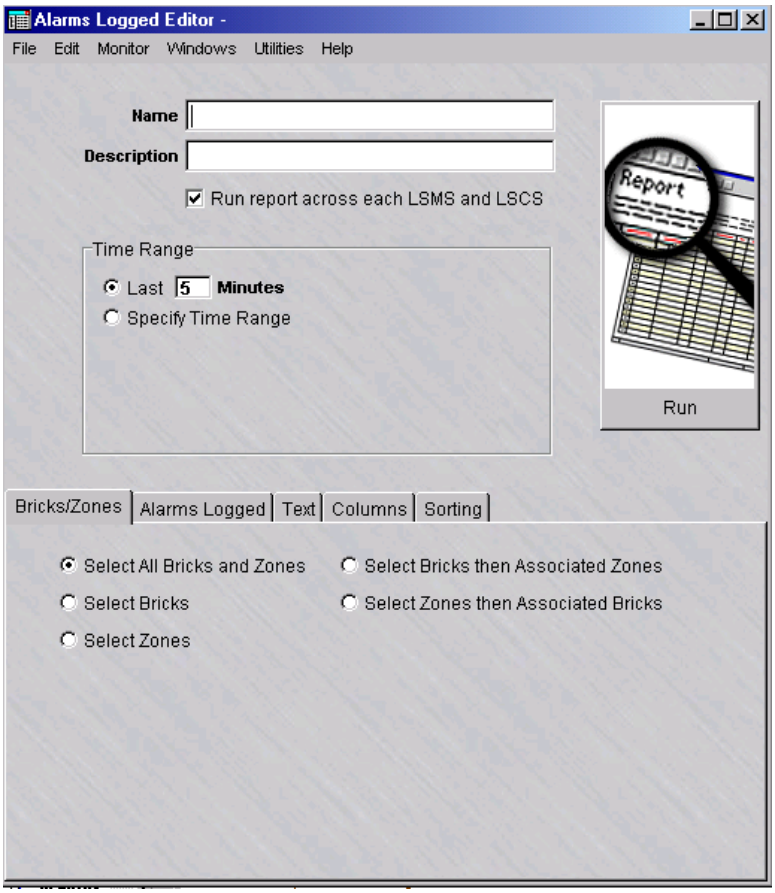
To select the source(s) of the alarms

Complete the following steps to select the source(s) of the alarms to be included in the report. You can optionally restrict the scope of the report to the specified Brick device(s) or Brick zone ruleset(s).

1 Click the **Bricks/Zones** tab.

Result The Bricks/Zones tab of the Alarms Logged Editor is displayed (Figure 12-2, “Alarms Logged Editor (Bricks/Zones tab)” (p. 12-5)).

Figure 12-2 Alarms Logged Editor (Bricks/Zones tab)



2

To	Do This
Generate a report for all Brick devices and Brick zone rulesets	Click the **Select All Bricks and Zones** radio button.

To	Do This
Restrict the report to the specified Brick device(s)	Click the **Select Bricks** radio button. Right-click in the **Bricks** box and choose **Select a Brick** from the pop-up menu. In the **Browse: Select a Brick** window, select the Brick device(s) from the **Bricks** folder and click **OK**. Repeat as necessary to add other Brick devices. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection(s) and make new choices.
Restrict the report to the specified Brick zone ruleset(s)	Click the **Select Zones** radio button. Right-click in the **Zones** box and choose **Select a Brick Zone Ruleset** from the pop-up menu. In the **Browse: Select a Brick Zone Ruleset** window, select the Brick zone ruleset(s) from the **Brick Zone Rulesets** folder and click **OK**. Repeat as necessary to add other Brick zone rulesets. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection(s) and make new choices.
Restrict the report to the specified Brick device(s) and associated Brick zone ruleset(s).	Click the **Select Bricks then Associated Zones** radio button. Right-click in the **Bricks** box and choose **Select a Brick** from the pop-up menu. In the **Browse: Select a Brick** window, select the Brick device(s) from the **Bricks** folder and click **OK**. Repeat as necessary to add other Brick devices. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection(s) and make new choices. The Brick zone rulesets that have been assigned to at least one port on the selected Brick device(s) are displayed in the Zones box. Select only the Brick zone ruleset(s) to be included in the report. Press the **CTRL** while holding the left mouse button to select more than one item. Press the **Shift** key while pressing the left mouse button to a range of items.

To	Do This
Restrict the report to the specified Brick zone ruleset(s) and associated Brick devices	Click the **Select Zones then Associated Bricks** radio button. Right-click in the **Zones** box and choose **Select a Brick Zone Ruleset** from the pop-up menu. In the **Browse: Select a Brick zone Ruleset** window, select the Brick zone ruleset to be included in the report and click **OK**. Repeat as necessary to selecte other Brick zone rulesets. Right-click and choose **Clear Selection** from the pop-up menu if you want to clear your selection and choose a different zone ruleset. The Brick device(s) with at least one port assignment for the zone ruleset are displayed in the Bricks box. Select the Brick device(s) to be included in the report. Press the **CTRL** while holding the left mouse button to select more than one item. Press the **Shift** key while pressing the left mouse button to select a range of items.

END OF STEPS

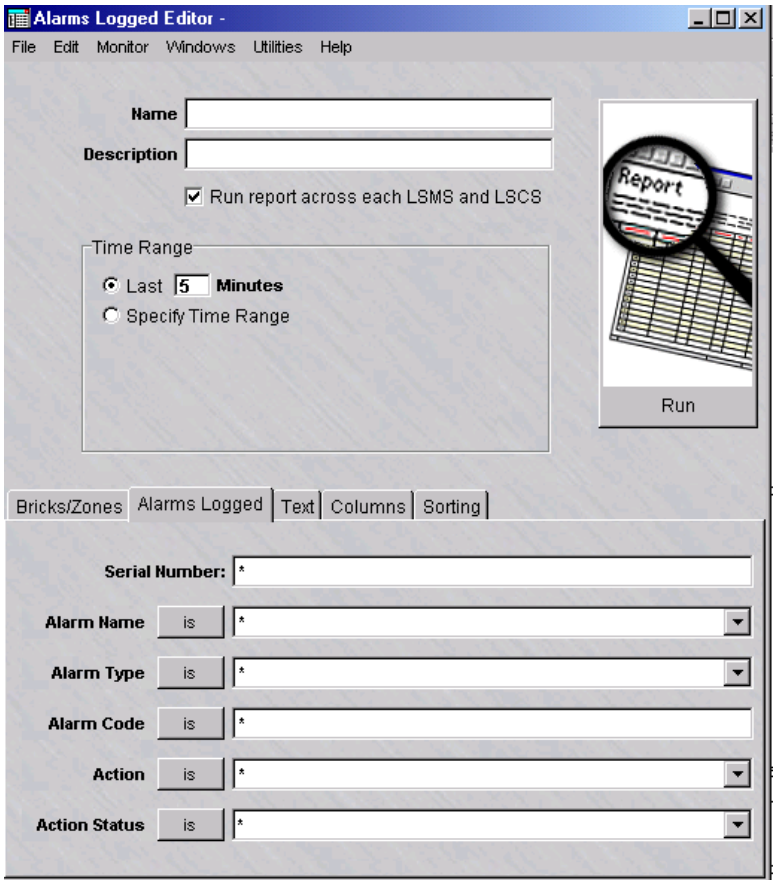
To select the alarms

Complete the following steps to select criteria for the alarm records to be included in the report.

1 Click on the **Alarms Logged** tab.

Result The Alarms Logged tab of the Alarms Logged Editor is displayed (Figure 12-3, “Alarms Logged Editor (Alarms Logged tab)” (p. 12-8)).

Figure 12-3 Alarms Logged Editor (Alarms Logged tab)



2 In the **Serial Number** field, enter the serial number (1-10 digits) that uniquely identifies the alarm to be included in the report. You can enter more than one serial number, separated by commas.

3 Click the down arrow next to the **Alarm Name** field and select **BROWSE**. A Browse window is displayed. Select an alarm trigger and click **OK** to close the Browse window and activate your choice. Repeat as necessary to add additional alarm triggers, each separated by a comma.

An alternate means to select alarm triggers is to click the **is** button to change it to **is not** and enter one or more alarm trigger. The report will include all alarm triggers *except* the one(s) entered.

4 Click the down arrow next to the **Alarm Type** field to display a drop-down list and select the alarm type to include in the report. Repeat as necessary to add additonal alarm types, each separated by a comma.

An alternate means to select alarm types is to click the **is** button to change it to **is not** and enter one or more alarm types. The report will include all alarm types *except* the one(s) entered.

5 In the **Alarm Code** field, enter one or more alarm codes, which identify the alarms when creating security rules and dependency masks, each separated by a comma.

An alternate means to select alarm codes is to click the **is** button to change it to **is not** and enter one or more alarm codes. The report will include all alarm codes *except* the one(s) entered.

6 Click the down arrow next to the **Action** field and choose **BROWSE**. A Browse window is displayed. Choose an alarm action and click **OK** to close the Browse window and activate your choice. Repeat as necessary to add additional alarm actions to be included in the report.

An alternate means to select alarm actions is to click the **is** button to change it to **is not** and choose one or more alarm actions. The report will include all alarm actions *except* the one(s) entered.

7 Click the down arrow next to the **Action Status** field to display a drop-down list and choose alarms with a specific action status to include in the report. The choices are **Success** or **Failure**.

An alternate means to select alarms with a specific action status is to click the **is** button to change it to **is not** and choose one of the actions statuses. The report will include all alarms *except* those with the action status entered.

END OF STEPS

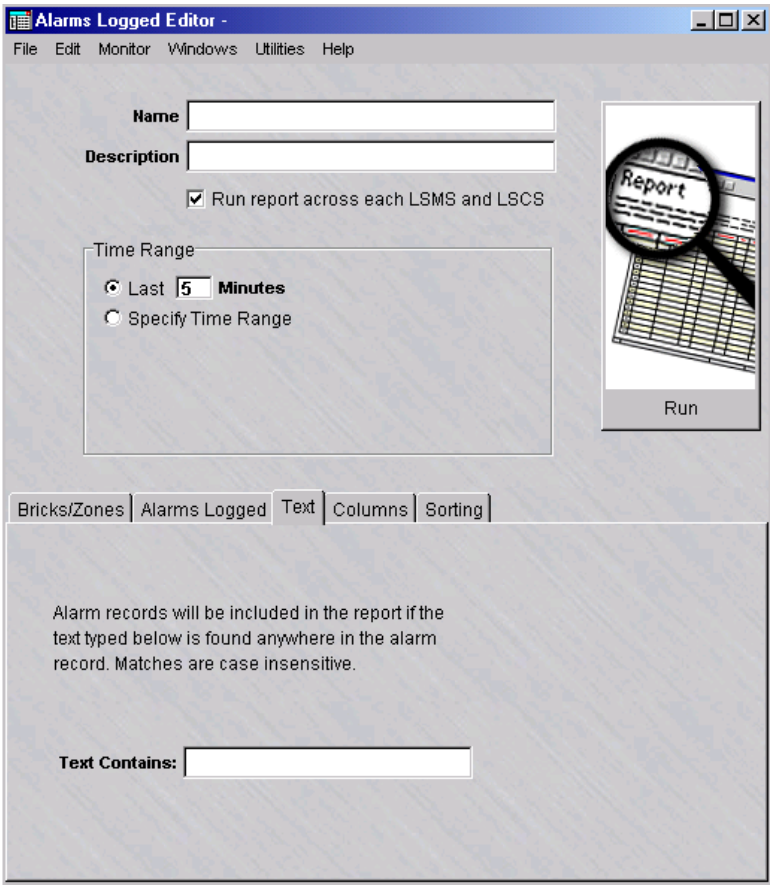
To enter alarm text

Complete the following steps to search for alarm records with the specified text to be included in the report.

1 Click on the **Text** tab.

Result The Text tab of the Alarms Logged Editor is displayed (Figure 12-4, “Alarms Logged Editor (Text tab)” (p. 12-10)).

Figure 12-4 Alarms Logged Editor (Text tab)



2 To include event records in the report, enter a text string in the **Text Contains** field.

The report will include any event records that contain text matching the text entry. The text search ignores case.

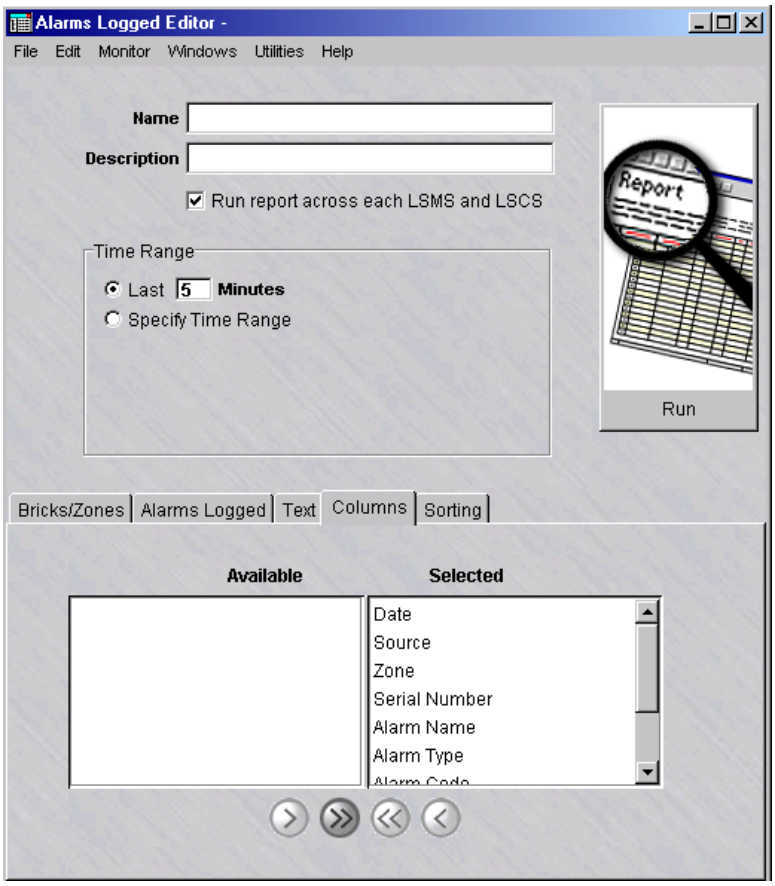
END OF STEPS

To select the columns of the report

1 Click on the **Columns** tab.

Result The Columns tab of the Alarms Logged Editor is displayed (Figure 12-5, “Alarms Logged Editor (Columns tab)” (p. 12-11)).

Figure 12-5 Alarms Logged Editor (Columns tab)



2

To	Do This
Produce a report that contains all data columns	Leave all column names in the **Selected** portion of the tab. (This is the default.)

To	Do This
Produce a report with selected data column(s)	Use the arrow keys to move column names from the **Selected** portion to the **Available** portion of the tab. Only the columns in the **Selected** portion will be shown in the report. Use the arrow keys to move column names back and forth between the two lists as necessary.

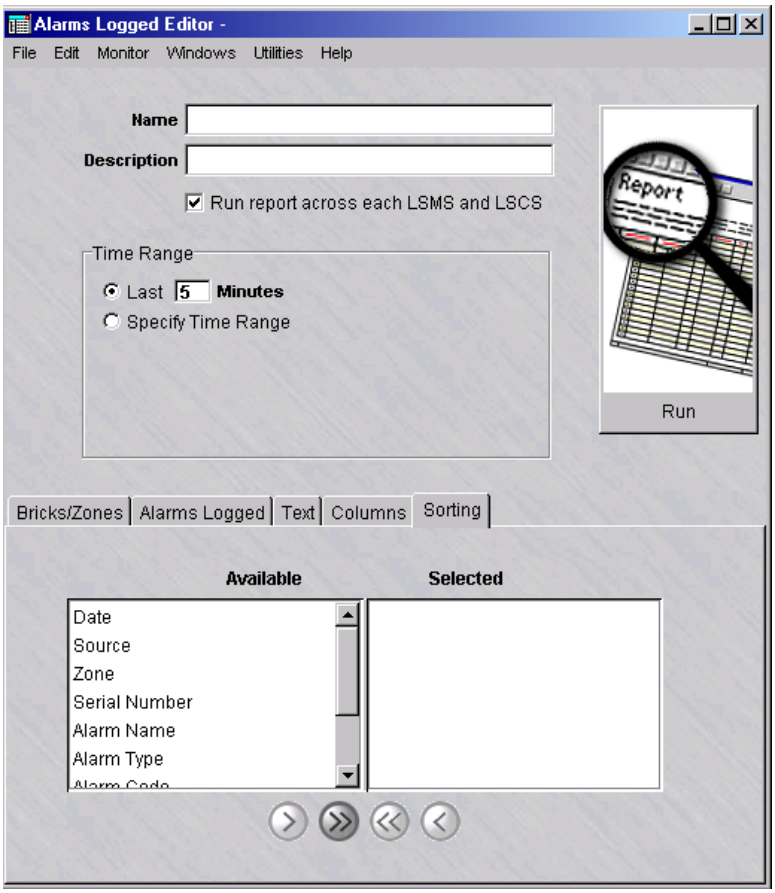
END OF STEPS

To select the order of the report

1 Click on the **Sorting** tab.

Result The Sorting tab of the Alarms Logged Editor is displayed (Figure 12-6, “Alarms Logged Editor (Sorting tab)” (p. 12-13)).

Figure 12-6 Alarms Logged Editor (Sorting tab)



2 In the **Available** list, highlight a field to be used to determine the order of the report and click one of the arrow buttons to move it to the **Selected** list. You can select more than one field at a time from the list by clicking the left mouse button and the **CTRL** or **Shift** key.

Use the arrow keys to move the field(s) back and forth between the two lists, as necessary.

3 Repeat the previous step as necessary until all fields to be used in determining the order of the report have been selected.

The order of the report output will be determined by the order of the fields shown in the **Selected** list.

END OF STEPS

To save the report

Complete the following steps to save a named copy of the report and its parameter settings.

1 In the **Name** field, enter a name for the report.

2 In the **Description** field, enter a textual description for the report. (This step is optional.)

3 From the File menu, choose **Save**.

Result The report and its parameter settings are saved and stored in the report folder. The report is saved and can be reused as a template for similar reports when it is duplicated and renamed.

END OF STEPS

To duplicate a report

Complete the following steps to duplicate a report. You can duplicate a report, edit the parameters, and rename as necessary to generate a different report.

1 Right-click on an existing report in the Contents panel and choose **Duplicate** from the pop-up menu.

Result The initial tab of the Report Editor is displayed.

2 In the **Name** field, give the report a different name. Edit the parameter fields on the other tabs of the Report Editor, as needed.

3 From the File menu, choose **Save** to save the duplicated report under its new name.

END OF STEPS

To run the report

Complete the following steps to run the report.

1 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

2 Close the Alarms Logged Editor window and Alarms Logged browser after viewing the output.

END OF STEPS

To run multiple reports

Complete the following steps to run multiple reports.

1 Right-click on existing reports in the Contents panel and choose **Run Multiple Reports** from the pop-up menu.

Result The Run Multiple Filters window is displayed.

2 Click the **run report across each SMS and LSCS** checkbox to collect and run a merged report of all network events for all connected SMSs and Compute Servers. (This checkbox is checked, by default.)

3 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **1** to **99** minutes.	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.

To	Do This
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

4 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

5 Close the Alarms Logged Editor window and Alarms Logged browser after viewing the output.

END OF STEPS

□

Alarms Logged Report Output

When to use

The output from an Alarms Logged report is displayed in your web browser, and consists of a header and a body in table format with up to nine columns of information. Figure 12-7, “Alarms Logged Report” (p. 12-18) on the next page shows a fragment of a typical Alarms Logged Report.

The report in Figure 12-7, “Alarms Logged Report” (p. 12-18) contains all nine columns. The Administrator generating the report determines the number of columns that appear in the finished report.

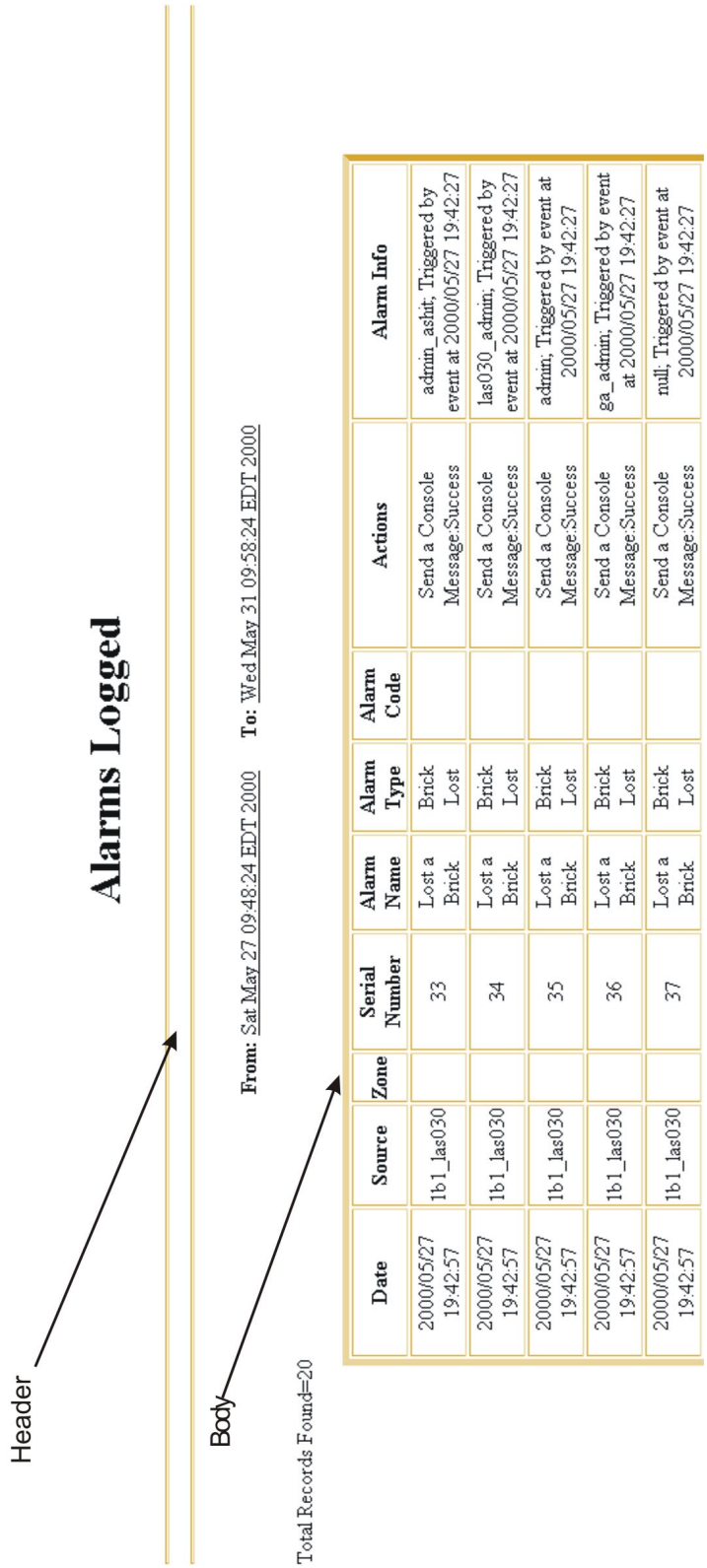
The following sections explain the information in the header and in all nine columns of the body.

Header

The header of an Alarms Logged Report contains the following information:

- *Time interval*
  In the center, under the sort order, the report indicates the time interval covered by the report. This is determined by the Administrator when running the report.
- *Total records*
  On the left margin, under the time interval, the report indicates the number of records included in the report. This is the number of entries found in the body of the report. The number of records in the report depends upon how specifically you define the selection criteria when generating the report.

Figure 12-7 Alarms Logged Report



Date	Source	Zone	Serial Number	Alarm Name	Alarm Type	Alarm Code	Actions	Alarm Info
2000/05/27 19:42:57	1b1_las030		33	Lost a Brick	Brick Lost		Send a Console Message:Success	admin_ashit; Triggered by event at 2000/05/27 19:42:27
2000/05/27 19:42:57	1b1_las030		34	Lost a Brick	Brick Lost		Send a Console Message:Success	las030_admin; Triggered by event at 2000/05/27 19:42:27
2000/05/27 19:42:57	1b1_las030		35	Lost a Brick	Brick Lost		Send a Console Message:Success	admin; Triggered by event at 2000/05/27 19:42:27
2000/05/27 19:42:57	1b1_las030		36	Lost a Brick	Brick Lost		Send a Console Message:Success	ga_admin; Triggered by event at 2000/05/27 19:42:27
2000/05/27 19:42:57	1b1_las030		37	Lost a Brick	Brick Lost		Send a Console Message:Success	null; Triggered by event at 2000/05/27 19:42:27

Date Column

The first column in the body of the report is the **Date** column. It gives the date and time the alarm was recorded in the administrative events log, in the format:

year/month/day

hour:minute:second

Source Column

The **Source** column indicates the Brick source that originated the alarm.

The Administrator generating the report determines the specific sources to include in the report.

Zone Column

The **Zone** column indicates the Brick zone ruleset in which the alarm originated.

The Administrator generating the report determines the Brick zone rulesets to include in the report at the same time that the sources of the alarms are selected.

Serial Number Column

The **Serial Number** column indicates a number (1 - 10 digits) that uniquely identifies an alarm.

The number must be a positive number less than or equal to 2,147,483,647.

Alarm Name Column

The **Alarm Name** column gives the name that the Administrator assigned to this alarm when initially configuring the alarm.

The Administrator generating the report determines the names of the alarms to include in the report.

Alarm Type Column

The **Alarm Type** column indicates the type of alarm. There are twelve alarm types:

- Alarm Code
- Brick Error
- Brick Failover Event
- Brick ICM Alarm
- Brick Interface Lost
- Brick Lost

- Brick Proactive Monitoring
- Brick SLA Round Trip Delay Alarm
- SMS Error
- SMS Proactive Monitoring
- SMS Status Change
- LAN To LAN Tunnel Lost
- LAN To LAN Tunnel Up
- Local Presence Map Pool
- QOS Rule Bandwidth Exceeded Alarm
- QOS Rule BandwidthGuarantees Alarm
- QOS Rule BandwidthThrottling Alarm
- QOS Zone Bandwidth Guarantees Alarm
- QOS Zone BandwidthThrottling Alarm
- RealSecure
- Unauthorized SMS Login Attempt
- User Authentication

The Administrator generating the report determines the types of alarms to include in the report.

Alarm Code Column

The **Alarm Code** column indicates the alarm code associated with this alarm. If an Administrator associates an alarm code with a rule, the alarm will be triggered every time the rule is invoked by an incoming or outgoing session.

The Administrator generating the report determines the types of alarms to include in the report.

Actions Column

The **Actions** column indicates whether the action to notify an Administrator was a success or failure.

The Administrator generating the report determines the types of alarms to include in the report.

Alarm Info Column

The **Alarm Info** column provides text that was found in the alarm record in the log.

The Administrator generating the report identifies the text to be found.

□

13 User Authentication Report

Overview

Purpose

The User Authentication report enables an Administrator to view and analyze user accounts that are authorized to access hosts protected by an Alcatel-Lucent *VPN Firewall Brick*® or can connect to a Brick device via a tunnel.

The User Authentication Report can show all login attempts, successful and unsuccessful. It can show user authentications performed by the local SMS database, as well as authentications performed by any RADIUS or SecurID servers referenced by the LSMS.

Contents

To Generate a User Authentication Report

When to use

To generate a User Authentication report, you must display the User Auth Editor and then enter selection criteria that determine the scope and type of information included in the report.

To display the User Auth Editor

Complete the following steps to display the User Auth Editor.

1 With the Navigator window displayed, open the **Reports** folder.

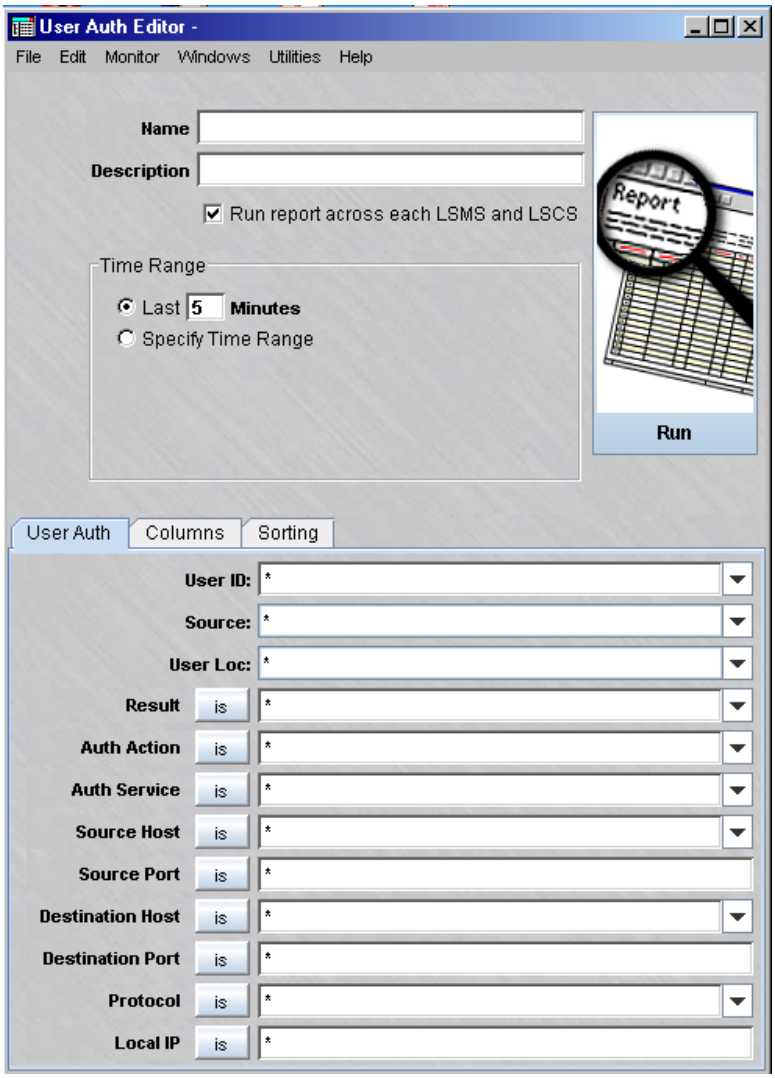
2 Right-click the **User Auth**folder and select **New User Auth**.

To edit an existing report and its settings, right-click on the report in the list of the Contents panel and choose **Edit** from the pop-up menu.

To view an existing report, and change the Time Range for a previously run report or the checkbox that controls whether you want to run a report across all SMSs for data, right-click on the report in the list of the Contents panel and choose **View** from the pop-up menu.

Result The User Auth Editor is initially displayed with the User Auth tab (Figure 13-1, “User Auth Editor (User Auth tab)” (p. 13-3)).

Figure 13-1 User Auth Editor (User Auth tab)



3 In the **Name** field, enter a name for the report file to be created.

4 In the **Description** field, enter a textual description of the report. This field is optional.

5 Click the **run report across each LSMS and LSCS** checkbox to collect and run a merged report of all network events for all connected SMSs and Compute Servers. (This checkbox is checked, by default.)

6 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **1** to **99** minutes.	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

7

To	Do This
Specify one or more users for the report	Click the down arrow next to the **User ID** field and select **BROWSE** from the drop-down list. A Browse window is displayed. Select a user or administrator ID from the respective folder and click **OK** to close the Browse window and activate your choice. Repeat as needed. Each user ID is separated by a comma. You can also manually enter the user ID(s) in the **User ID** field, each separated by a comma.
Generate a report that includes all user IDs	In the **User ID** field, leave the asterisk (*) in place (this is the default).

8 Click the down arrow next to the **Source** field to display a drop-down list and choose the source associated with the user

The choices are:

- **Administrators**—administrators who access the managed Brick devices through the SMS
- **Firewall**—users who attempt to establish a session through a Brick device
- **VPN**—users who attempt to set up a VPN tunnel, with a Brick device as the tunnel endpoint

An asterisk in the **Source** field indicates that the report includes users associated with all sources (the default).

9 Click the down arrow next to the **User Loc** field to display a drop-down list and choose the user location.

The choices are:

- **Internal**—via the SMS
- **External**—using RADIUS, SecurID, or a VPN Certificate.

An asterisk in the **User Loc** field indicates that the report includes both internal and external user (the default).

10 Click the down arrow next to the **Result** field to display a drop-down list and choose one or more login results to be included in the report.

The choices are:

- **Failure**—report includes login failures
- **Password**—report indicates when additional information is processed for Local Password authentication. This typically occurs when a user password has expired and the user is prompted to select a new one.
- **Query**—report indicates when additional information is processed for RADIUS or SecurID authentication. For RADIUS users, this typically occurs when their user password has expired and they are prompted to select a new one. For SecurID users, this is typically a "challenge" page for entering a new PIN.
- **RADIUS Attributes**—report indicates when additional RADIUS attributes are processed for RADIUS users during authentication.
- **Success**—report includes successful user logins

  An alternate means to select the login result is to click the **is** button next to the field to change it to **is not** and choose one or more login results; the report will include all login results *except* the one(s) entered.

11 Click the down arrow next to the **Auth Action** field to display a drop-down list and choose the user actions to be included in the report.

The choices are:

- **Lock**
- **Login**
- **Login Phase 1**
- **Logoff**
- **Password**
- **Query**
- **Query Phase 1**
- **Unlock**
- **Unlock Phase 1**

An asterisk (*) in the field indicates that the report includes all user authentication actions (the default).

An alternate means to select the user authentication action is to click the **is** button next to the field to change it to **is not** and choose one or more user authentication actions; the report will include all user authentication actions *except* the one(s) entered.

12 Click the down arrow next to the **Auth Service** field to display a drop-down list and choose **BROWSE**. A Browse window is displayed for choosing the authentication service. Choose the authentication service and click **OK** to close the Browse window and activate your choice. Repeat as necessary to select additional services, each separated by a comma in the field.

An alternate means to select the authentication service is to click the **is** button next to the field to change it to **is not** and choose one or more user authentication services from the Browse window; the report will include all user authentication services *except* the one(s) entered.

13 Click the down arrow next to the **Source Host** field to display a drop-down list and choose **BROWSE**. A Browse window is displayed for choosing the source host or host group. Choose the source host or host group and click **OK** to close the Browse window and activate your choice. Repeat as necessary to select additional source hosts or host groups, each separated by a comma in the field.

An alternate means to select the source host is to click the **is** button next to the field to change it to **is not** and choose one or more source hosts or host groups from the Browse window; the report will include all source hosts *except* the one(s) entered.

14 In the **Source Port** field, enter the source port number(s) to be included in the report, each separated by a comma.

An alternate means to select the source port(s) is to click the **is** button next to the field to change it to **is not** and enter one or more source port numbers; the report will include all source ports *except* the one(s) entered.

15 Click the down arrow next to the **Destination Host** field to display a drop-down list and choose **BROWSE**. A Browse window is displayed for choosing the destination host or host group. Choose the destination host or host group and click **OK** to close the Browse window and activate your choice. Repeat as necessary to select additional destination hosts or host groups, each separated by a comma in the field.

An alternate means to select the destination host is to click the **is** button next to the field to change it to **is not** and choose one or more destination hosts or host groups from the Browse window; the report will include all destination hosts *except* the one(s) entered.

16 In the **Destination Port** field, enter the destination port number(s) to be included in the report, each separated by a comma.

An alternate means to select the destination port(s) is to click the **is** button next to the field to change it to **is not** and enter one or more destination port numbers; the report will include all source ports *except* the one(s) entered.

17 Click the down arrow next to the **Protocol** field to display a drop-down list and choose one or more protocol types to be included in the report.

An alternate means to select the protocol(s) is to click the **is** button next to the field to change it to **is not** and choose one or more protocols; the report will include all protocols *except* the one(s) entered.

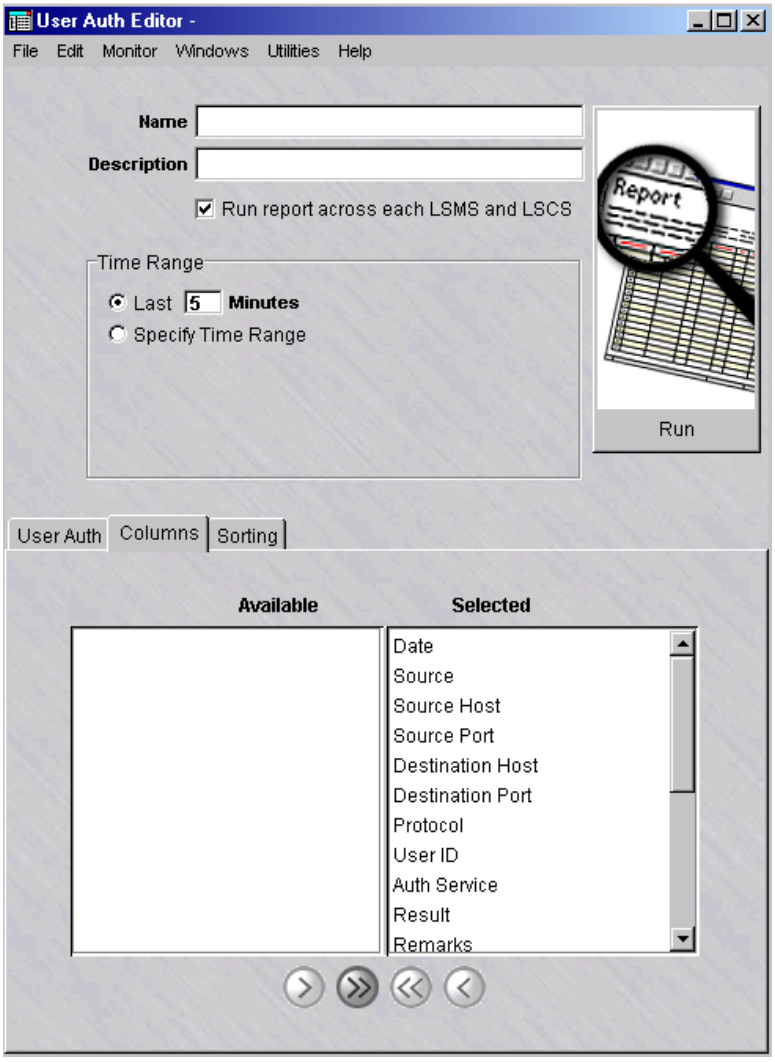
END OF STEPS

To select the columns of the report

1 Click on the **Columns** tab.

Result The Columns tab of the User Auth Editor is displayed (Figure 13-2, “User Auth Editor (Columns tab)” (p. 13-8)).

Figure 13-2 User Auth Editor (Columns tab)



2

To	Do This
Produce a report that contains all data columns	Leave all column names in the **Selected** portion of the tab. (This is the default.)
Produce a report with selected data column(s)	Use the arrow keys to move column names from the **Selected** portion to the **Available** portion of the tab. Only the columns in the **Selected** portion will be shown in the report. Use the arrow keys to move column names back and forth between the two lists as necessary.

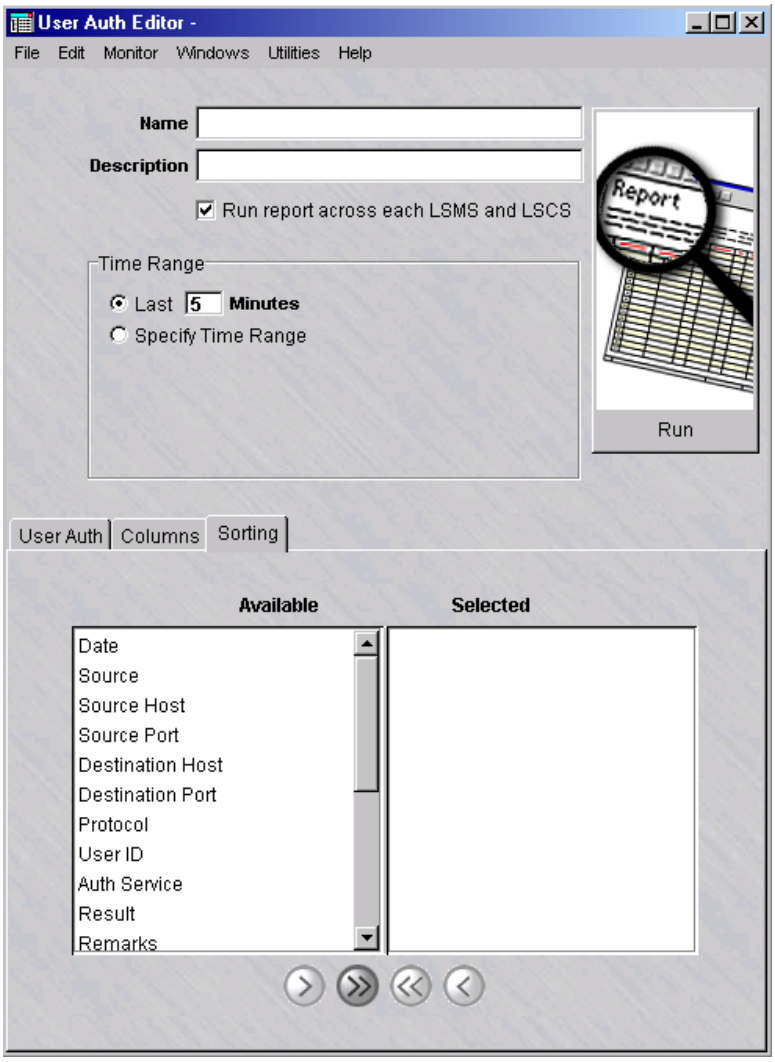
END OF STEPS

To select the order of the report

1 Click on the **Sorting** tab.

Result The Sorting tab of the User Auth Editor is displayed (Figure 13-3, “User Auth Editor (Sorting tab)” (p. 13-10)).

Figure 13-3 User Auth Editor (Sorting tab)



2 In the **Available** list, highlight a field to be used to determine the order of the report and click one of the arrow buttons to move it to the **Selected** list. You can select more than one field at a time from the list by clicking the left mouse button and the **CTRL** key. You can select a range of fields by pressing the **Shift** key and holding the left mouse button.

Use the arrow keys to move the field(s) back and forth between the two lists, as necessary.

3 Repeat the previous step as necessary until all fields to be used in determining the order of the report have been selected.

The order of the report output will be determined by the order of the fields shown in the **Selected** list.

END OF STEPS

To save the report

Complete the following steps to save a named copy of the report and its parameter settings.

1 In the **Name** field, enter a name for the report.

2 In the **Description** field, enter a textual description for the report. (This step is optional.)

3 From the File menu, choose **Save**.

Result The report and its parameter settings are saved and stored in the report folder. The report is saved and can be reused as a template for similar reports when it is duplicated and renamed.

END OF STEPS

To duplicate a report

Complete the following steps to duplicate a report. You can duplicate a report, edit the parameters, and rename as necessary to generate a different report.

1 Right-click on an existing report in the Contents panel and choose **Duplicate** from the pop-up menu.

Result The initial tab of the Report Editor is displayed.

2 In the **Name** field, give the report a different name. Edit the parameter fields on the other tabs of the Report Editor, as needed.

3 From the File menu, choose **Save** to save the duplicated report under its new name.

END OF STEPS

To run the report

Complete the following steps to run the report.

1 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

2 Close the User Auth Editor window and User Auth browser after viewing the output.

END OF STEPS

To run multiple reports

Complete the following steps to run multiple reports.

1 Right-click on existing reports in the Contents panel and choose **Run Multiple Reports** from the pop-up menu.

Result The Run Multiple Filters window is displayed.

2 Click the **run report across each LSMS and LSCS** checkbox to collect and run a merged report of all network events for all connected LSMSs and Compute Servers. (This checkbox is checked, by default.)

3 Select the time range of the report.

To	Do This
Generate a report of the most recent network events that have occurred within the past **1** to **99** minutes.	Click the **Last** radio button in the Time Range portion of the window and enter a value (in minutes), up to **99**. **5** minutes is the default value.
Generate a report for a specific time range with beginning/end dates	Click the **Specify Time Range** radio button. The **Start** and **End** date fields are displayed. Click the **Earliest** button to select the earliest available date and time and the **Now** button to select the current date and time, or manually enter the month/day/year and hours/minutes/seconds values in each field.

4 Click the **Run** button. The Run a Report window appears.

Result A dialog window is displayed, indicating that the report is being generated. The window shows the progress of the report generation and the number of records retrieved that match the selected criteria.

If no event records are found that match the selected criteria, a warning dialog box is displayed, indicating that no records have been found and asks if you want to view the output anyway. Choose **Yes** to view the output anyway or **No** to cancel the report output.

5 Close the User Auth Editor window and User Auth browser after viewing the output.

END OF STEPS

□

User Authentication Report Output

When to use

The output from a User Authentication report is displayed in your web browser, and consists of a header and a body in table format with up to eighteen columns of information. Figure 13-4, “User Authentication Report” (p. 13-15) on the next page shows a fragment of a typical User Authentication report.

The report in Figure 13-4, “User Authentication Report” (p. 13-15) contains all eighteen columns. The administrator generating the report determines the number of columns that appear in the finished report.

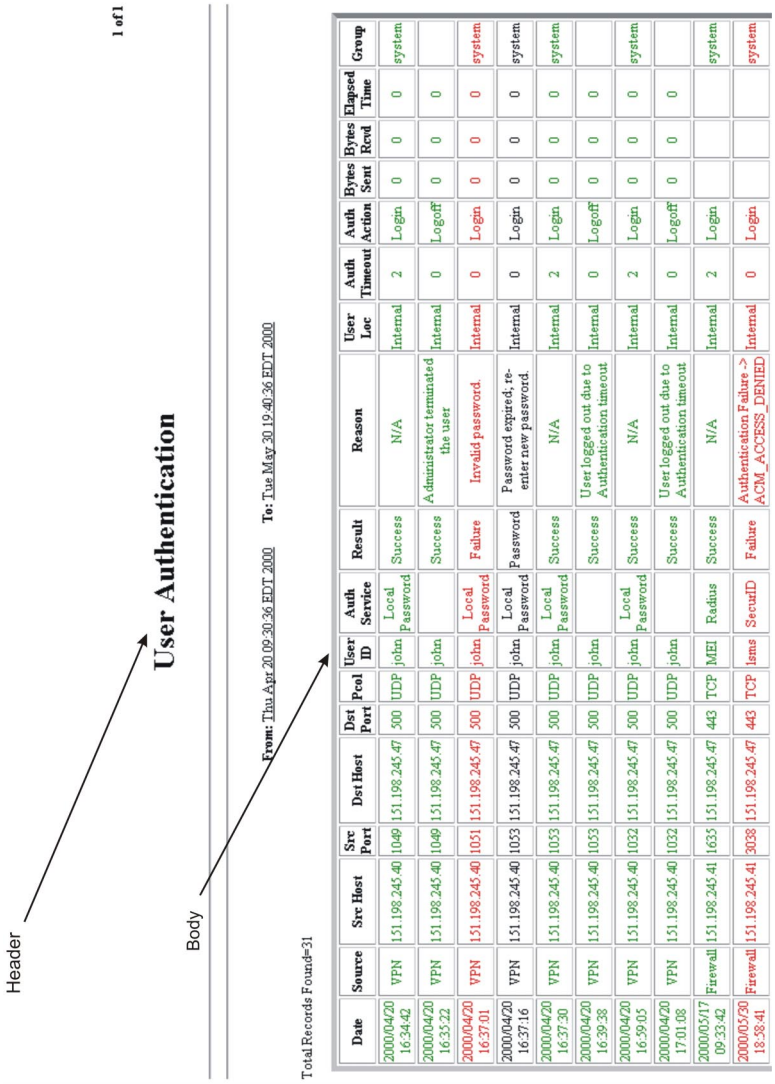
The following sections explain the information in the header and all eighteen columns of the body.

Header

The header of a User Authentication report contains the following information:

- *Page Number and Total Number of Pages*
  In the upper right corner of the header, above the title User Authentication, the report indicates the total number of pages in the report, and the number of the current page.
- *Time Interval*
  In the center, under the sort order, the report indicates the time interval covered by the report. This is determined by the administrator when running the report.
- *Total Records*
  On the left margin, under the time interval, the report indicates the number of records included in the report. This is the number of entries found in the body of the report. The number of records in the report depends upon how specifically you define the selection criteria when generating the report.

Figure 13-4 User Authentication Report



Date	Source	Src Host	Src Port	Dst Host	Dst Port	Pcol	User ID	Auth Service	Result	Reason	User Loc	Auth Timeout	Auth Action	Bytes Sent	Bytes Rcvd	Elapsed Time	Group
2000/04/20 16:34:42	VPN	151.198.245.40	1049	151.198.245.47	500	UDP	john	Local Password	Success	N/A	Internal	2	Login	0	0	0	system
2000/04/20 16:35:22	VPN	151.198.245.40	1049	151.198.245.47	500	UDP	john		Success	Administrator terminated the user	Internal	0	Logoff	0	0	0	
2000/04/20 16:37:01	VPN	151.198.245.40	1051	151.198.245.47	500	UDP	john	Local Password	Failure	Invalid password.	Internal	0	Login	0	0	0	system
2000/04/20 16:37:16	VPN	151.198.245.40	1053	151.198.245.47	500	UDP	john	Local Password	Password	Password expired; re-enter new password.	Internal	0	Login	0	0	0	system
2000/04/20 16:37:30	VPN	151.198.245.40	1053	151.198.245.47	500	UDP	john	Local Password	Success	N/A	Internal	2	Login	0	0	0	system
2000/04/20 16:39:38	VPN	151.198.245.40	1053	151.198.245.47	500	UDP	john		Success	User logged out due to Authentication timeout	Internal	0	Logoff	0	0	0	
2000/04/20 16:59:05	VPN	151.198.245.40	1032	151.198.245.47	500	UDP	john	Local Password	Success	N/A	Internal	2	Login	0	0	0	system
2000/04/20 17:01:08	VPN	151.198.245.40	1032	151.198.245.47	500	UDP	john		Success	User logged out due to Authentication timeout	Internal	0	Logoff	0	0	0	
2000/05/17 09:33:42	Firewall	151.198.245.41	1635	151.198.245.47	443	TCP	MEI	Radius	Success	N/A	Internal	2	Login				system
2000/05/30 18:58:41	Firewall	151.198.245.41	3038	151.198.245.47	443	TCP	lsms	SecurID	Failure	Authentication Failure -> ACM_ACCESS_DENIED	Internal	0	Login				system

Date Column

The first column in the body of the report is the **Date** column. It gives the date and time the user was authenticated as recorded in the User Authentication log, in the format:

year/month/day

hour:minute:second

Source Column

The **Source** column indicates the source of the user authentication session. The source can be:

- *Firewall users*, who are attempting to establish a session through the Brick, and
- *VPN users*, who are attempting to set up a VPN tunnel, with the Brick as the tunnel endpoint.

The administrator generating the report determines which source will be included in the report.

Src Host Column

The **Src Host** column provides the IP address of the source host. This is the host that initiated the session.

The administrator generating the report determines which source hosts will be included in the report.

Src Port Column

The **Src Port** column gives the source port. This is the port used by the application on the source Brick that initiated the session.

The administrator generating the report determines which source ports will be included in the report.

Dst Host Column

The **Dst Host** column provides the IP address of the destination host. This is the host that is intended to receive the session.

The administrator generating the report determines which destination hosts will be included in the report.

Dst Port Column

The **Dst Port** column gives the destination port. This is the port used by the application on the destination host to receive the session.

The administrator generating the report determines which destination ports will be included in the report.

Pcol Column

The **Pcol** column indicates the protocol that the session is using. The options are UDP, TCP or ICMP.

The administrator generating the report determines which protocols will be included in the report.

User ID Column

The **User ID** column indicates the identification of the user being authenticated.

The administrator generating the report determines which IDs will be included in the report.

Result Column

The **Result** column indicates the result of any user login attempt, which can be either success, failure, query or password.

The administrator generating the report determines which the value to be included in the report.

Auth Service Column

The **Auth Service** column indicates the authentication service that is used by an authentication method (i.e., Local Password, RADIUS, SecurID, or VPN certificate).

The administrator generating the report determines the value to be included in the report.

Reason Column

The **Reason** column provides more explanation on how and if the user was authenticated.

User Loc Column

The **User Loc** column is the location of the user, which can be either internal (to the Brick zone ruleset) or external.

The administrator generating the report determines the value to be included in the report.

Auth Timeout Column

The **Auth Timeout** column is the amount of time that has elapsed before the authentication process expires.

Auth Action Column

The **Auth Action** column is the action performed by the user, which can be either login, logoff, query, or password.

The administrator generating the report determines the value to be included in the report.

Bytes Sent Column

The **Bytes Sent** column is the total number of bytes in the session that were sent during authentication when the source is a VPN user.

Bytes Rcvd Column

The **Bytes Rcvd** column is the total number of bytes in the session that were received during authentication.

Elapsed Time Column

The **Elapsed Time** column is the amount of time that has elapsed for authentication.

Group Column

The **Group** column identifies the group that the user belongs to and is used in the session during authentication.

□

14 WebTrends Reports

Overview

Purpose

This chapter will step the user through the process of configuring the WebTrends application to translate SMS session log files to WELF format (using Log2WELF.jar) and then using them to generate a WebTrends report. We assume that the SMS log files and the WebTrends application reside on the same PC.

By default, all of the SMS log files may be found on the same machine as the SMS application. However, in order to convert the SMS session log files into the WELF format, the session log files must be delivered to the WebTrends PC via ″ftp″. Refer to Appendix I, “Transferring Log Files via FTP” in this Guide for additional information about that process.

Contents

Preparing the Environment

Task

To run the Log2WELF.jar with WebTrends, the following changes must be made on the WebTrends PC:

1. Since Log2WELF.jar is a Java application, you must install Java version 1.3, available from www.sun.com.

2. The directory containing the Java executable must be added to your PATH.

   To modify the PATH on *Windows*® , perform the following steps:

   - Open the Control Panel and select the **System** icon to display the System Properties window. Then, click the **Environment** tab.
   - On *Windows*® 2000, use **System Properties** → **Advanced** → **Environment Variables**.

     Result The Enviromental Variables window is displayed.

3. Highlight the PATH variable.

4. Click **Edit** to append the directory for the Java executable.

   Result The Edit User Variable Window is displayed.

5. Copy the Log2WELF.jar file from Tools\Reports folder on the SMS CD to a directory of your choice.

6. The Log2WELF.jar file must be added to your CLASSPATH. Follow the same procedure as outlined in Step 2 above.

END OF STEPS

□

Web Trends Configuration

Generating a WebTrends report

Now that the environmental changes have been made to the WebTrends PC, we can explore the details of the two procedures that lead to a WebTrends report:

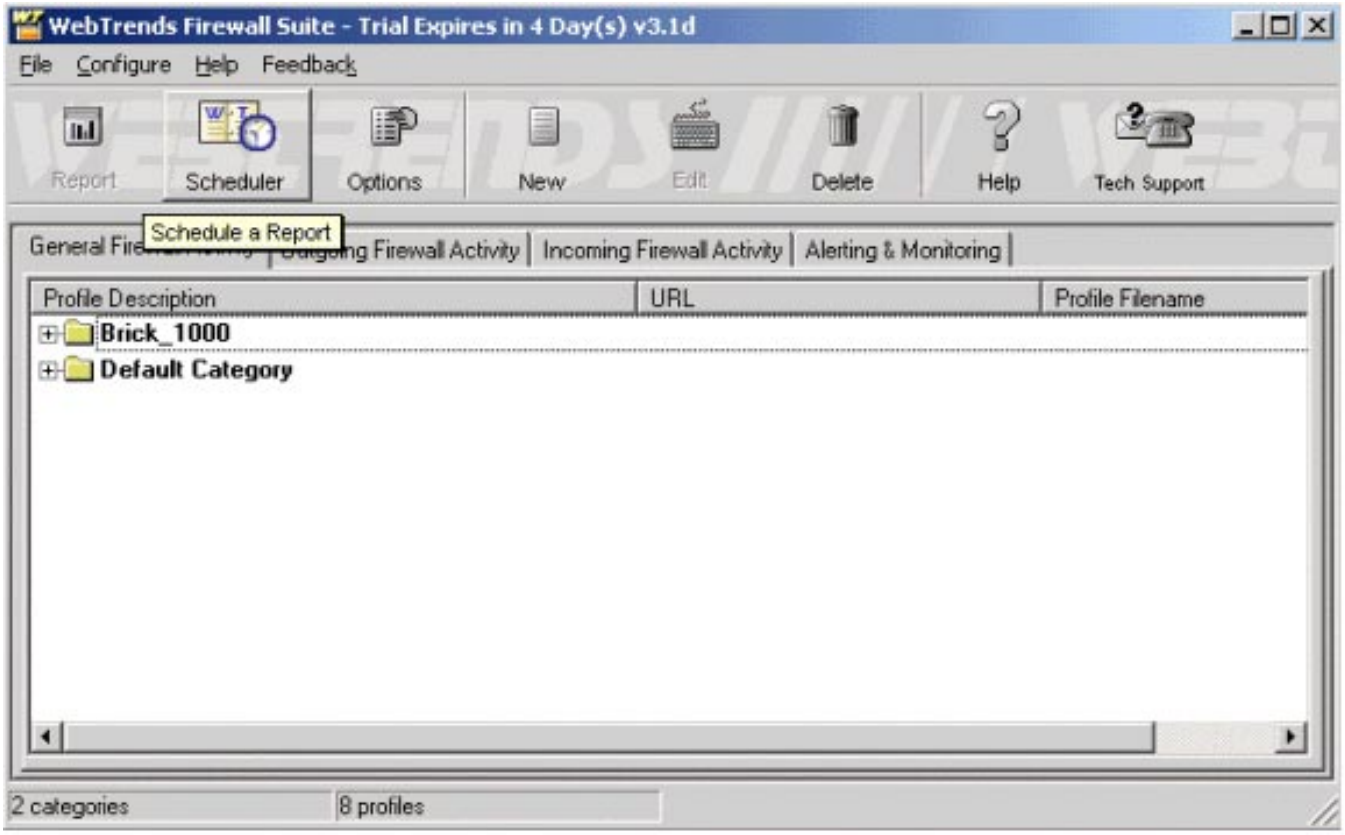
- Convert SMS Session Logs to WELF (using Log2WELF.jar)
- Configure the WebTrends report

Convert SMS Session Logs to WELF

The section describes how to automate the conversion of the SMS Session Logs to WebTrends WELF format using WebTrends and Log2WELF.jar. The jar file will convert and separate session logs into a directory defined by the user. The logs will also be further divided into different directories based on *Brick*® Names / Group Name /Zones / Logs.

1 Launch WebTrends and click the **Scheduler** button. The Scheduler allows WebTrends to automatically convert SMS logs to WELF format at specified intervals configured by users (Figure 14-1, “Webtrends Scheduler” (p. 14-4)).

Figure 14-1 Webtrends Scheduler



2 In the Scheduler window, click on the **Add** button. This will display a pop-up window, and you will select **Incoming Web Activity**.

3 In the Add Scheduled Event window, choose the duration for the **Start Time & Date** and **Repeat Every** fields and then click **Next**.

4 The Reporting screen defines the report style, the location where the report will be saved and the report name. The default style is HTML. Click **Next**.

5 The Pre-processing screen specifies the application that needs to be run before creating the report. This is where the Log2WELF.jar file is used to reformat the SMS Session Logs into WELF format, prior to generating the WebTrends reports. Fill in the following fields (Figure 14-2, “Add Scheduled Event Window” (p. 14-6)):

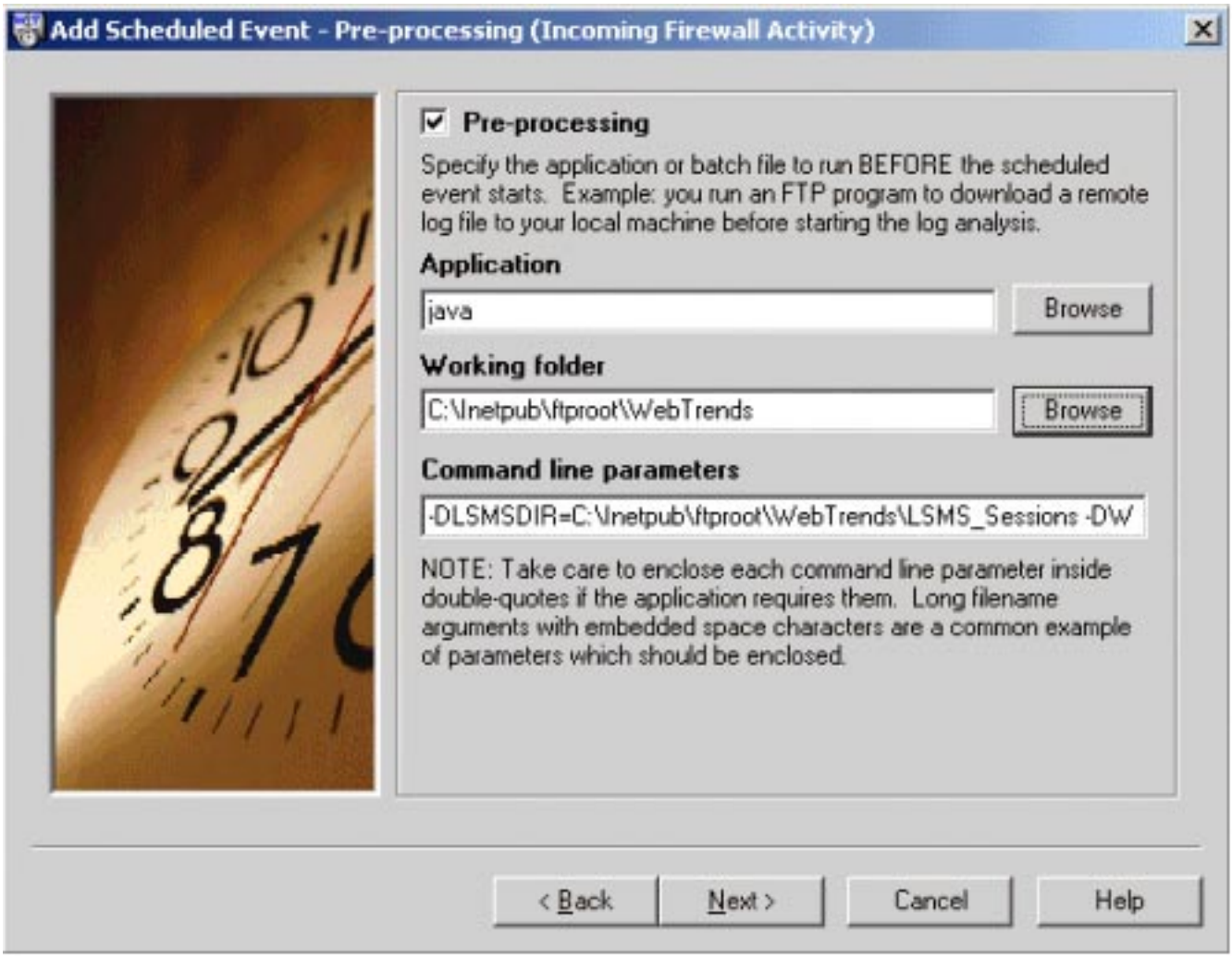
- **Application**: Java
- **Working Folder**: Directory path to Log2WELF.jar
- **Command Line Parameter**: Command used to run Log2WELF.jar. The following shows the syntax for this command. Please note that this is a one-line command that automatically wraps onto the next line when space runs out on the first line.

```
-classpath [directory path to Log2WELF.jar] -DSMSDIR=
[Source directory path
where SMS session logs reside] -DWELFDIR=
[Target directory path where the WELF
files will reside] LogFileMonitor
```

The following is an example of this command:

```
-classpath c:\WedTrends\Lon2WELF.jar -DSMSDIR=C:\Inettpub\ftproot\
WedTrends\
SMS_Sessions -DWEFDIR=C:\Inettpub\ftproot\WedTrends\WELF_Files LogFileMonitor
```

Figure 14-2 Add Scheduled Event Window



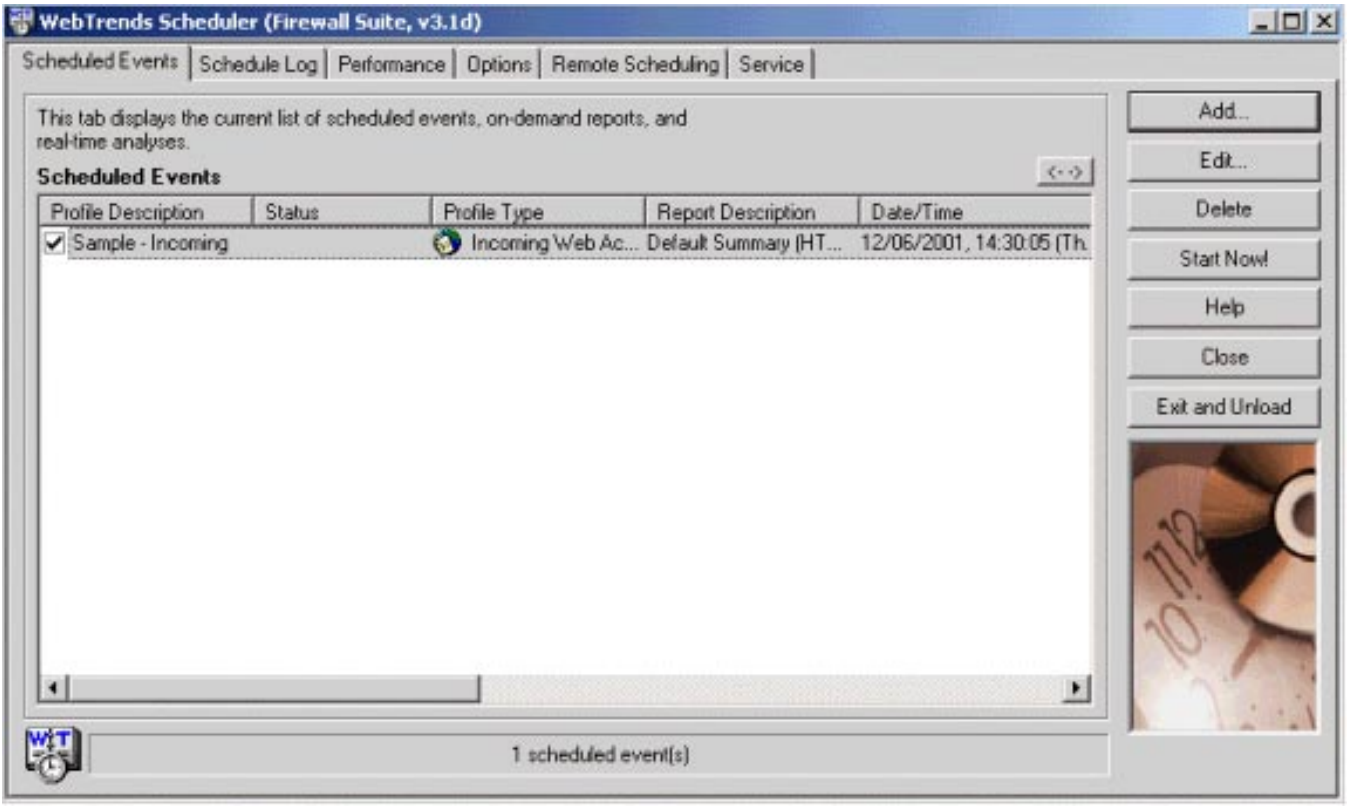
6 No need to configure post-processing, so click **Next**.

7 Select the priority for this Scheduler Event from the Priority screen. See WebTrends documentation or OnLine Help for further information.

8 Click **Finish**.

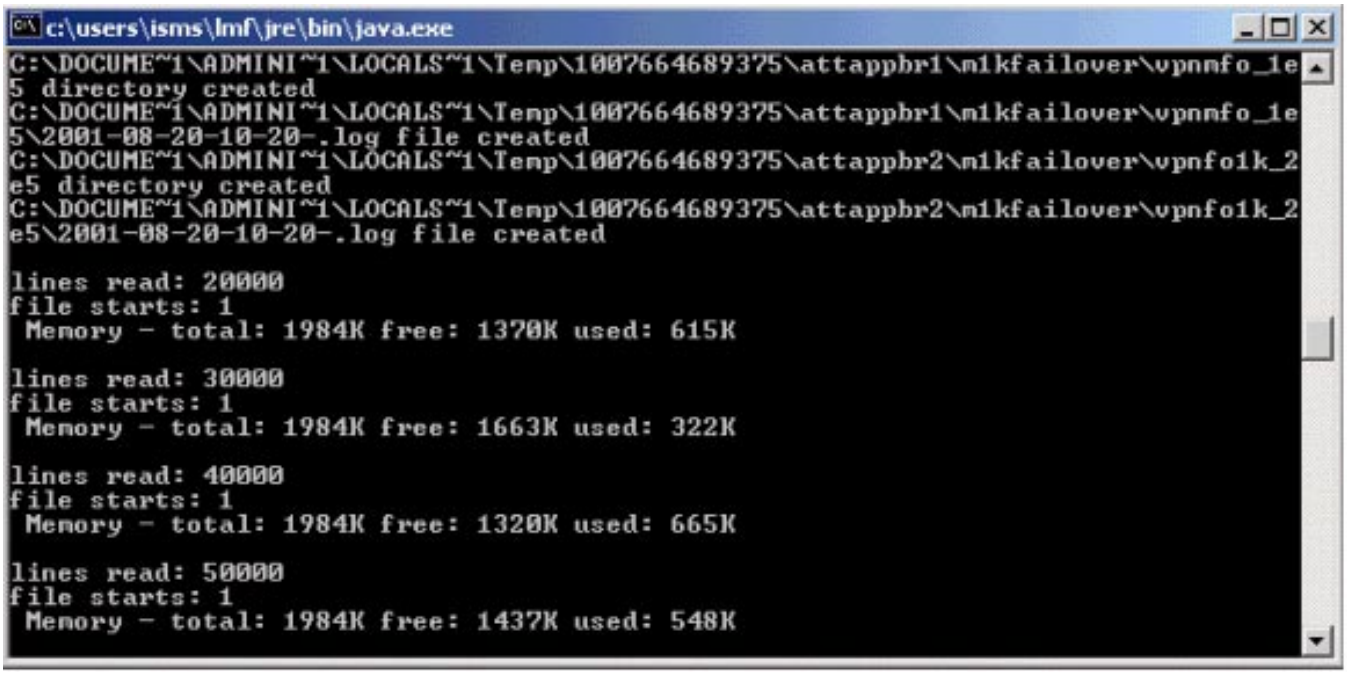
9 The Scheduled Event should now appear in the Scheduler window (Figure 14-3, "Webtrends Scheduler" (p. 14-7)). The Scheduler is now prepared to convert the session logs into WELF format at the specified interval that you defined. The user may override this interval by clicking **Start Now**.

Figure 14-3 Webtrends Scheduler



You can also click on this button to verify that the Scheduler has been properly configured. If clicked, a DOS window should appear on the Windows desktop (Figure 14-4, "DOS Window (Start Now)" (p. 14-8)). In addition, the updated WELF files should be available in the directory configured in the Pre-processing window of the Scheduler.

Figure 14-4 DOS Window (Start Now)



10 You are now ready to generate WebTrends reports.

END OF STEPS

Configuring and Generating WebTrends Reports

This section will describe how to create a report for a specific zone on a Brick. In our example, it is assumed that each zone represents a different customer. More information on report configuration may be found in the WebTrends documentation.

1 Launch WebTrends and ensure that the General Firewall Activity tab is active. From the File Menu Bar, select the **New Category** option.

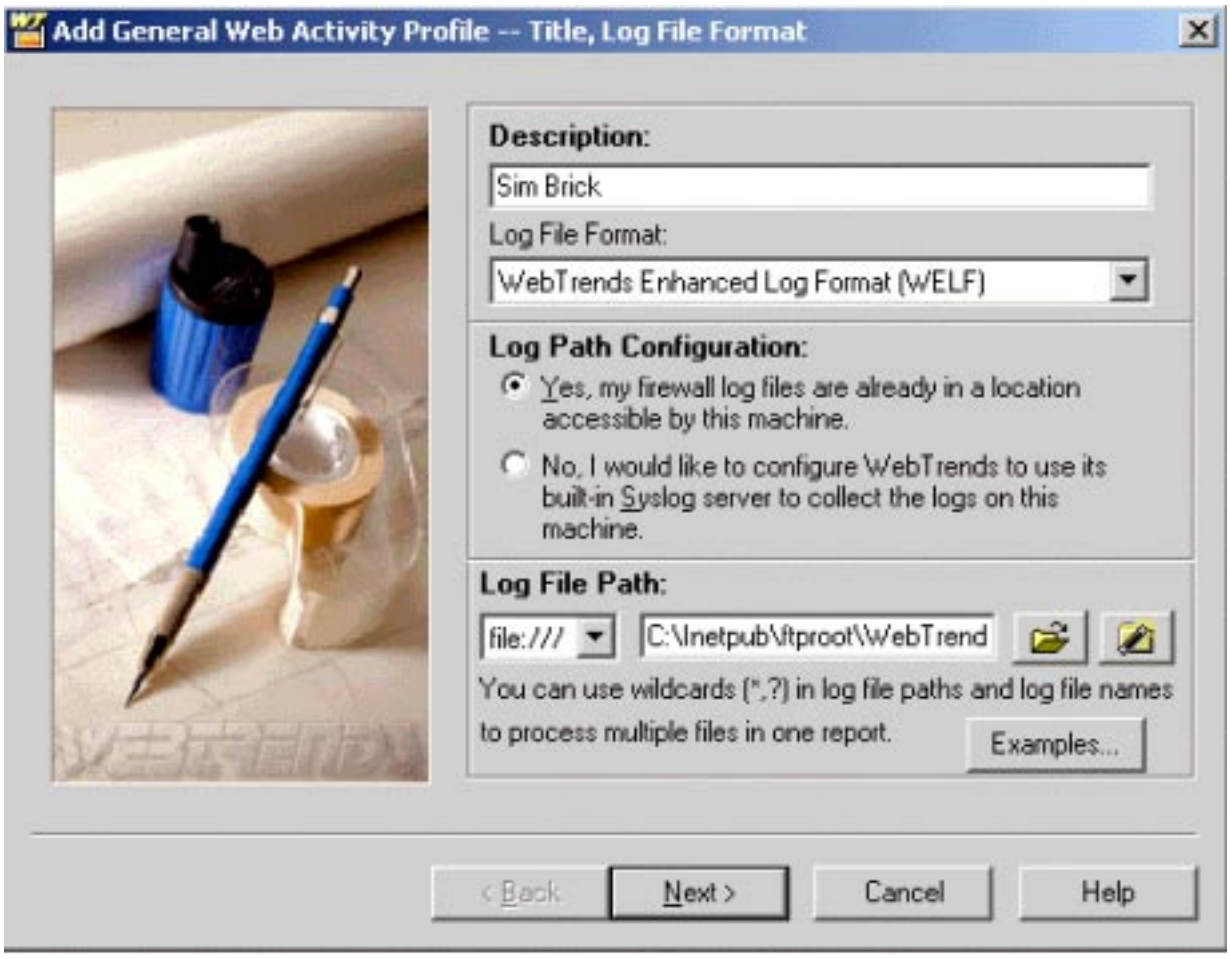
2 Highlight the newly created Category by clicking on it, then select **New Profile** from the File menu. A profile represents a zone on a particular Brick.

3 The Add General Web Activity Profile will pop up. Select **My firewall is on one physical machine** and click **Next**.

4 On the ″Title, Log File Format″ window (Figure 14-5, “Title, Log File Format Window” (p. 14-9)), we need to:

- Type in a description and select WebTrends Enhanced Log Format from the drop down menu.
- Select **Yes** for the Log Path Configuration (since the WELF files reside on the same machine).
- Enter the directory path to the WELF logs that were generated by the Log2WELF.jar tool. Use the browse option button, if there is only one specific log that you require within the Zone directory -OR - use the Extended Browse button option. Then, click the **Add** button to choose all the log files within the Zone directory. Click **Next**.

Figure 14-5 Title, Log File Format Window



5 In the IPs Behind Firewall window, add the (optional) list of IP addresses. Click **Next**.

6 If you need to configure the DNS Lookup Window, refer to the WebTrends documentation. Once completed, click **Next**.

7 In the Filters window, you can specify the type of traffic that you are looking for. The Include Everything filter is selected by default. Once completed, click **Next**.

8 Enter the Cost of Bandwidth per Kilobyte and Currency, if necessary, then click **Next**.

9 In the Database and Real Time window, accept the default values. If you require additional information, refer to the WebTrends documentation. Click **Next**.

10 In the Advanced Fast Trends window, accept the default values. If you require additional information, refer to the WebTrends documentation. Click **Finish** to return to the main WebTrends window.

A new profile should appear under the category that you created back in step 1. To run the report, double click on the profile that you have just created. A window called Create Report will display. The default report format is HTML, so make sure that a browser is installed on your machine.

To choose a different report format, click the drop-down menu and select the format required, and click on the **Start** button.

END OF STEPS

□

WebTrends Reports

Types of WebTrends reports

A number of WebTrends reports can be run with the session log data provided by the SMS:

- General Firewall Statistics
- Firewall Rules Triggered by Internal Clients and Servers
- Bandwidth Summary
- Web Summary
- E-mail Summary
- FTP Summary
- Telnet Summary
- Outgoing Traffic by Protocol
- Critical Events for Internal Clients
- Critical Events for External Clients
- Largest Outgoing E-mail Connections

Appendix A: SNMP

Overview

Purpose

This appendix explains how to send Simple Network Management Protocol (SNMP) traps from the SMS to a Network Management Station (NMS).

The SNMP agent that comes with the SMS software is also described. The agent responds to queries initiated by an SNMP-based Network Management System (NMS). The SMS returns data to the NMS, which includes status of elements (such as Alcatel-Lucent *VPN Firewall Brick*® Security Appliances and the SMS itself) in the network.

Many network administrators use an NMS (such as HP OpenView) to manage network elements within their corporate networks. Both SNMP traps and the SNMP agent allows NMS Administrators to monitor trends in the network.

Contents

What are SNMP Traps?

Definition: SNMP traps

In the SMS environment, SNMP traps are associated with an alarm action (see Chapter 4, “Introduction to Alarms” in this guide). The SNMP Trap action can be associated with any trigger. When the trigger fires, the SNMP trap is sent to a designated NMS host and UDP port.

Once the SNMP trap is received on the NMS and the NMS administrator is notified, the NMS administrator would log into the SMS and analyze the situation by viewing log files or generating reports.

Important! *Unidirectional Transmission*

SNMP traps are uni-directional.

The SNMP agent supports bi-directional transmissions. The agent can be polled for statistics regarding the state and health of all Bricks in the network and the SMS software itself (see “What is the SNMP Agent?” (p. A-9) in this appendix).

OID

Each alarm type (such as Unauthorized SMS Login Attempt, Brick Lost) has a unique Object ID (OID).

This allows the NMS to uniquely associate the trap with a specific alarm type. The network administrator can then determine exactly which alarm type has occurred.

Each OID in the MIB will begin with the prefix of:

```
iso.org.dod.internet.private.enterprises.lucent.
(1.3.6.1.4.1.1751)
```

SNMP Trap Contents

Each SNMP Trap contains data elements that are specific to the type of alarm that has occurred. These data elements are defined in the MIB. In addition to the ’alarm specific’ information, each trap also includes:

- Alarm Index
- Alarm Trigger Time
- Alarm Details (unparsed)
- Alarm Log Entry
- Alarm Trigger Name

LSMS Alarms include the LSMS name while Brick alarms include the Brick name.

How to Send SNMP Traps

The LSMS can send traps in SNMPv1 or SNMPv2c format. Select the format required by your NMS as part of the SNMP Trap action configuration.

1. Install and load the Management Information Bases (MIBs) on the NMS. The MIBs can be found on the SMS CD-ROM.

2. Optionally, if a Brick is positioned between the SMS and the NMS, you need to create at least one rule so the SNMP trap can be passed through the Brick and onto the NMS.

3. Optionally, configure the NMS so that when a trap is received from the SMS, the NMS node will change color.

END OF STEPS

Install and Load the MIBs on *Windows*® or *Vista*®

To decode the information in the trap, the NMS uses MIBs that are provided on the SMS CD-ROM. The following steps describe how to install and load the MIBs on an HP OpenView *Windows*® or *Vista*®NMS.

1. Log into the NMS.

2. Navigate to the folder *\OpenView\tmp*.

3. On the SMS CD-ROM, click the SNMP folder, then click on **SNMPv1_MIBS** or **SNMPv2c_MIBS**, depending on which version is supported by your NMS.

4. Copy the MIBs from the CD-ROM into *\OpenView\tmp*.

5. On the NMS, load the MIBs one at a time by selecting `Load/Unload MIBs:SNMP` from the **Options** menu.

6 To browse the trap definitions from the NMS Browser:

- Select **Tools** **SNMP MIB Browser**.
- Double-click **Down Tree**.
- Double-click **private**.
- Double-click **enterprise**.
- Double-click **lucent**.

END OF STEPS

Install and Load the MIBs on Solaris

The following steps describe how to install and load the MIBs on a Solaris HP OpenView NMS.

1 Log into the NMS.

2 Change directory to */var/opt/OV/tmp*.

3 On the SMS CD-ROM, click the SNMP folder, then click on **SNMPv1_MIBS** or **SNMPv2c_MIBS**, depending on which version is supported by your NMS.

4 Copy all eight MIBs from the CD-ROM into */var/opt/OV/tmp*.

5 On the NMS, load the MIBs one at a time by selecting `Load/Unload MIBs:SNMP` from the **Options** menu.

6 To browse the trap definitions from the NMS Browser:

- Select **Tools** *SNMP MIB Browser*.
- Select the **Down Tree** button.
- Select **private**.
- Select the **Down Tree** button.
- Select **enterprise**.

- Select the **Down Tree** button.
- Select **lucent**.

END OF STEPS

How to Create Rules

When SNMP traps travel between the SMS and an NMS residing on the same LAN, creating additional security rules to pass the SNMP (UDP/162) traffic is not necessary. Typically, however, a Brick is protecting the SMS and is positioned between the NMS and the SMS. Therefore, creating a security rule to pass the SNMP (UDP/162) traffic between them becomes necessary. One security rule needs to be added to the Administrative Zone (or NOC Gateway Zone) to pass the SNMP trap from the SMS to the NMS. The rule below allows SNMP traps to pass from the SMS, from the Administrative Zone (or NOC Gateway Zone), through a Brick and onto the NMS.

To create this rule, follow the steps below:

1 Open the Policies folder.

2 Open the Brick Zone Rulesets folder and double-click the administrativezone (or nocgwzone).

3 In the Brick Zone Ruleset Editor, right-click any rule and select **New**.

The Brick Zone Rule Editor appears.

4 In the **Direction** field, select **Out Of Zone** from the dropdown list. This rule will now apply to sessions initiated inside the Administrative Zone.

5 In the **Source** field, click **Host** and enter the IP address of the SMS. This ensures that only sessions initiated by this IP address are permitted to pass through the Brick.

You could also enter an asterisk, since the SMS should be the only host in the Administrative Zone.

6 In the **Destination** field, click **Host** and enter the IP address of the NMS.

7 In the **Service** or **Group** field, select BROWSE. In the Browse: Select a Service Group window, select **snmp_trap** from the dropdown list. This is a Service Group defined as UDP/162/* and provided with the SMS specifically for this purpose.

8 In the Action field, select **Pass** from the dropdown list.

9 In the **Audit Session** field, Basic auditing is the default. You can leave this as is, or select **None** or **Detailed**, depending on your needs.

10 In the **Description** field, enter an optional description, if necessary.

11 In the **Rule Active** field, the default is **Yes**. Leave the default in place, so that the rule will become active as soon as it is applied to a Brick.

12 Click the Advanced tab and ensure that **Authorize Return Channel** is NOT checked.

13 Click the **OK** button to temporarily store the rule on the SMS.

14 Display the File menu and select one of the **Save** options.

Important! *Additional Rule*

If a Brick zone ruleset does exist between the Brick and NMS, then an additional rule needs to be added for the Brick zone ruleset.

The rule would be identical to the rule above, except the Direction would be *In To Zone*.

END OF STEPS

Configure the NMS

After loading the MIBs onto the NMS, you can optionally configure the NMS so that the icon for the SMS node on the NMS will change color when an SNMP trap is sent from the SMS. Once a trap has been sent, double-click the SMS node icon to change the color of the back to the normal green.

To configure the NMS so that the SMS node changes color on a Windows NT platform:

1 Log into the NMS.

2 On the NMS, select the SMS node.

Do the following:

- From the taskbar, select **Map**  **Properties**.
- Select the Applications tab.
- Select the **IP Map** entry in the Configurable Applications pulldown and then click the **Configure For This Map** button.
- Change the ″On-Demand: To what level should submaps be persistent?″ value to **Internet Level**.
- Click **Verify** and then **OK**.
- Click **Apply** and then **OK**.

3 Right-click the SMS node.

Do the following:

- Select **Symbol Properties** from the popup menu.
- Change the Status Source to **Object**.
- Click **OK**.

4 Restart the NMS.

END OF STEPS

Task

To configure the NMS so that the SMS node changes color on a Solaris platform:

1 Add the OV bin directory to the PATH in */etc/profile*. For example, add */opt/OV/bin*.

2 Open the NMS.

3 On the NMS Terminal, select the SMS node.

Do the following:

- From the taskbar, select **Map** ▶ **Properties**.
- Select the **IP Map** entry in the Configurable Applications pulldown and then click the **Configure For This Map** button.
- Change the ″On-Demand: To what level should submaps be persistent?″ value to **Internet Level**.
- Click **Verify**, then click **OK**.
- Click **OK**.

4 Right-click the SMS node.

Do the following:

- Select **Symbol** from the popup menu.
- Change the Status Source to **Object**.
- Click **OK**.

5 Restart the NMS.

END OF STEPS

Auditing and Reporting

To aid in troubleshooting, you can view the Administrative Events log file or generate an Alarms Logged report.

When an SNMP trap is sent to an NMS, the event is written with a record type of 21 or 22 to the Administrative Events log. The log message includes:

- The time/date the alarm was triggered
- A label that indicates the action was ″Send an SNMP Trap″
- The IP address of the NMS host
- The UDP port used to send the SNMP trap to the NMS host
- Whether or not the trap transmission took place or not (i.e., did it experience any I/O exceptions upon transmit)

For details, refer to Chapter 9, “Administrative Events Report” and Chapter 12, “Alarms Logged Report” in this guide.

□

What is the SNMP Agent?

Definition: SNMP agent

The SNMP agent is a process that runs on the SMS only. For security reasons, SNMP agents are not allowed to run on any Brick in the system. However, an agent running on the LSMS will provide data from Bricks to the NMS.

An NMS can poll the SNMP agent for statistics regarding the state and health of all Bricks in the system, and the SMS software itself. The NMS can request configuration, status, and statistical information from many elements of the system, such as the Logger and the User Authentication Server.

The SNMP agent obtains Brick statistical information primarily from the Proactive Monitoring log. This log contains information reported by each Brick in the system and is updated every 30 seconds. Therefore, the NMS does not need to poll the SMS for information more frequently than about every 30 seconds. For standalone LSMSs, information for all Bricks is available. For redundant LSMSs, only information on Bricks that are currently homed to a given LSMS is available on that host.

During installation of the SMS application, you are prompted for the UDP port the agent listens on. The default port is 161. Either accept the default or enter another port number.

You should only change the default if you already have or are planning on installing a third-party agent on the SMS host using port 161.

After installation, this port setting can be changed with Configuration Assistant. See Chapter 10. Using the Configuration Assistant in the LSMS Administration Guide for details.

Multiple SNMP Agents

The SNMP agent that comes with the LSMS software does not provide information about the LSMS host or the operating system.

If this is desired, you must install a separate third party SNMP agent (not provided with the LSMS software) on the LSMS host or configure/enable the SNMP agent that comes with the operating system (e.g., SNMP Agent Service on Windows).

If you will be running the operating system SNMP agent or a third party SNMP agent as a third party SNMP agent on the LSMS, both agents cannot be configured to use default SNMP port 161. Use the LSMS Configuration Assistant to define which port is used by the System SNMP agent and which port is used by the LSMS SNMP agent. For more information on the LSMS Configuration Assistant, see Chapter 10 Using the Configuration Assistant in the *LSMS Administration Guide*.

Configure your NMS to make GET requests to the LSMS SNMP agent port. If the request is for information in the LSMS MIB, the LSMS SNMP agent will respond. If not, the request is forwarded to the System SNMP agent.

OID 56

The Lucent Secure/VPN Solutions Group has been assigned OID 56 off Lucent Technologies' IANA-Assigned enterprises node (`enterprises 1751`).

Two nodes have been assigned — one for products and one for MIBs. The following is taken from the Global Registrations MIB:

```
--the root of the enterprises sub-tree for Lucent Technologies
lucentRoot OBJECT IDENTIFIER ::= {iso(1) org(3) dod(6) internet(1)
 private(4) enterprises(1) lucent(1751) }

--the Lucent Technologies TRA structure uses two arcs: products and
  MIBs
lucentProductRoot OBJECT IDENTIFIER ::= { lucentRoot products(1) }
lucentMibRoot OBJECT IDENTIFIER ::= { lucentRoot mibs(2) }

--the pair of nodes assigned to Secure/VPN Solutions
svsProductRoot OBJECT IDENTIFIER ::= { lucentProductRoot
  svsProducts(56)}
svsMibRoot OBJECT IDENTIFIER ::= {lucentMibRoot svsMibs(56)}
```

Agent and MIB Design

The SNMP agent is compliant with SNMP v2. Eight Management Information Bases (MIBs) are provided on the SMS CD-ROM. They were written using rules outlined in SMIv2 (Structure of Management Information, v2) in RFC 1902, 1903, 1904.

The Lucent MIBs are private but based on MIB-II. Many parameters found in MIB-II are supported in the Lucent MIBs under private OIDs. All MIB modules are prefixed by ″svs,″ which stands for Lucent ″Secure/VPN Solutions.″

The Lucent MIBs contain two basic types of information: configuration and statistical. Generally, the MIBs are designed such that these two pieces of information are kept separate. The MIBs are as follows:

MIB Name	MIB Description
svs-global-reg.mib	LUCENT-SECURE-VPN-SOLUTIONS-GLOBAL-REG The Global Registration module contains the assigned numbers for all other modules, as well as entry points for conformance, capabilities, requirements, and experimental sections to be added. It also contains OIDs for current products including Bricks, the SMS, etc. All modules depend on the Global Registration Module. This MIB includes the ipsecClient MIB.
svs-Brick-mib.mib	LUCENT-SECURE-VPN-SOLUTIONS-Brick-MIB The Brick module is the most complex of all the modules. Since there can be many Brick devices in the system, and each Brick device has multiple interfaces, there needs to be several layers of hierarchy to accommodate all information. However, since SMIv2 does not allow nesting of tables, the data is arranged in the following five related tables: • Brick Configuration • Brick Statistics • Brick Interface Configuration • Brick Interface Statistics • Brick Tunnel Endpoints
svs-lsms-mib.mib	LUCENT-SECURE-VPN-SOLUTIONS-LSMS-MIB The SMS module contains basic configuration and statistical information about the SMS, as well as all objects related to notifications (traps). The LSMSEvents object is contained in the SMS module. This module also contains a table of up to six alarms, so if the NMS believes it may have missed a notification due to network packet loss, it may query the SMS alarms table. Each entry in the table contains the same information that is sent in the notification.

MIB Name	MIB Description
svs-lsms-notification-mib.mib	LUCENT-SECURE-VPN-SOLUTIONS-LSMS-NOTIFICATIONS-MIB The Notifications module contains one notification-type for every SMS alarm that exists in the SMS. All notifications are sent with respect to objects in the SMS module. Each notification contains the date/time it was triggered and a plain-text explanation as to what happened. Since each notification has its own type, no type information is included within the notification body. There are no tables in this module.
svs-auditsvr-mib.mib	LUCENT-SECURE-VPN-SOLUTIONS-AUDITSVR-MIB The Audit Server module is designed to allow the NMS to query the Audit Server process to determine the number and type of audit logs currently in service on that host, as well as current statistics regarding free space and usage rates. There is no ability to view log records via SNMP. This module contains a table with information about each audit log on the device (such as the AdminEvents log and Proactive Monitoring log).
svs-authsvr-mib.mib	LUCENT-SECURE-VPN-SOLUTIONS-AUTHSVR-MIB The Authentication Server module gives statistics and configuration regarding the Authentication Server process. Currently, the Auth Server must be collocated on the SMS host. This module only has a very small number of parameters. There are no tables in this module.

Issue a Query to the SMS

The following procedure illustrates using a Windows NT HP Openview MIB Browser to query the SMS.

To browse the MIB definitions:

1 Do the following:

- Select **Tools ▶ SNMP MIB Browser**
- Double-click **Down Tree**
- Double-click **private**

- Double-click **enterprise**
- Double-click **lucent**

2 To issue a query to the SMS:

- Select any MIB Object ID (e.g., svsBrickMIBs)
- Click the **Start Query** button
  Information for the Brick is displayed, such as the model of the Brick, the SMS IP address, version of software running on the Brick, etc.

END OF STEPS

Create a Rule

When SNMP queries and responses travel between the SMS and an NMS residing on the same LAN, creating additional security rules to pass the SNMP (UDP/161) traffic is not necessary. Typically, however, a Brick is protecting the SMS and is positioned between the NMS and the SMS. Therefore, creating a security rule to pass the SNMP (UDP/161) traffic between them becomes necessary. One security rule needs to be added to the Administrative Zone (or NOC Gateway Zone) to pass the SNMP query from the NMS to the SMS.

To create this rule, follow the steps below:

1 Open the Policies folder.

2 Open the Brick Zone Rulesets folder and double-click the administrativezone (or nocgwzone).

3 In the Brick Zone Ruleset Editor, right-click any rule and select **New**.

The Brick Zone Rule Editor appears.

4 In the **Direction** field, select **In To Zone** from the dropdown list. This rule will now apply to sessions initiated outside of the Administrative Zone.

5 In the **Source** field, click **Host** and enter the IP address of the NMS. This ensures that only sessions initiated by this IP address is permitted to pass through the Brick.

6 In the **Destination** field, click **Host** and enter the IP address of the SMS.

7 In the **Service or Group** field, select BROWSE. In the Browse: Select a Service Group window, select **snmp** from the dropdown list. This is a Service Group defined as UDP/161/* and provided with the SMS specifically for this purpose.

8 In the **Action** field, select **Pass** from the dropdown list.

9 In the **Audit Session** field, **Basic** auditing is the default. You can leave this as is, or select **None** or **Detailed**, depending on your needs.

10 In the **Description** field, enter an optional description, if necessary.

11 In the **Rule Active** field, the default is **Yes**. Leave the default in place, so that the rule will become active as soon as it is applied to a Brick.

12 Click the Advanced tab and ensure that **Authorize Return Channel** is checked.

13 Click the **OK** button to temporarily store the rule on the SMS.

14 Display the File menu and select one of the **Save** options.

Important! *Additional Rule*

If a Brick zone ruleset exists between the Brick and NMS, then an additional rule needs to be added for the Brick zone ruleset.

The rule would be identical to the rule above, except the *Direction* would be *Out Of Zone*.

END OF STEPS

□

How to Collect Data from the SMS

Methods of collecting information from the LSMS

There are four typical methods that an NMS or NMS Administrator could use to gather information from the SMS.

The four methods used to obtain information from the LSMS are as follows:

- *Automatic Demand Polling*
  This is generally initiated by the SMS periodically to ensure the device is still up, available, reachable, and responding to requests. HP OpenView uses a combination of ICMP 'ping' and SNMP GETREQUEST to verify the device status.
  For this to work correctly, the NMS must be instructed on the exact IP address and OID to request the status for each device or subsystem.
- *Automatic Polling of Statistics*
  This is almost always a manually-configured process whereby the NMS Administrator sets up certain OIDs to retrieve information periodically from specific devices. The NMS then automatically retrieves the value returned for that specific OID at the configured interval.
  The NMS can then be configured to alarm on threshold crossings, or archive polled values, or even display real-time graphs of these statistics. Of course, historical graphs could be generated from archived values, but this does not involve SNMP at the time when the graph is created.
- *Trap-Directed Polling*
  This can be either a manual or automatically initiated process, depending on the functionality provided by the NMS. Once the NMS receives a notification (trap), the NMS would poll the source of the trap for more information.
  For example, if a Proactive Monitoring alarm was received with a threshold crossing event, the NMS may want to know related information. It would then perform a series of GETREQUESTS to find that additional information.
- *Administrator-Initiated Polling*
  This is always a manual process, usually begun by browsing through the MIB for a particular object, and selecting an OID.
  The NMS then creates the GETREQUEST, sends it to the element, receives the response, and then displays it to the Administrator.

□

Appendix B: Alarm Code Rules

Overview

Purpose

This appendix explains how to embed an alarm code in a rule so that an alarm is generated. You must configure an Alarm Code trigger before you can embed an alarm code in a rule however. To configure such a trigger, see “Alarm Code Trigger” (p. 6-7) in Chapter 6, “Configuring Alarm Triggers” in this guide.

If an alarm that is associated with a trigger is generated, the way you are notified is determined by the action(s) associated with the Alarm Code trigger.

Contents

Analyze Security Events First

When to use

Before creating the rule with the alarm code, you need to determine:

- Which security events you want to be notified of
- How you want to be notified

Certain events are potentially serious, and you will probably want to be notified immediately with a message to your pager.

Other events may not require immediate attention, and so a console or syslog message may suffice.

□

How to Create the Alarm Code Rules

When to use

Once you have determined the events you want to be notified of, you have to develop a security policy that define these events.

For example, suppose an Administrator wants to know when unauthorized hosts attempt to connect to a particular FTP server. Two rules would have to be written to accomplish this.

Create Rule #1

This section describes how to create the first rule that allows hosts in the host group *ftpclients* to connect to FTP servers (as defined in the *ftp_servers* host group).

To create the first rule that allows hosts in the host group *ftpclients* to connect to FTP servers, perform the following steps:

1. Open the Policies folder.
2. Open the *Brick*® Zone Rulesets folder and double-click the zone protecting the FTP servers.
3. In the Brick Zone Ruleset Editor, right-click any rule and select **New**.

   The Brick Zone Rule Editor appears.
4. In the **Direction** field, select **In To Zone** from the drop down list. This rule will now apply to sessions initiated outside of the zone.
5. In the **Source** field, click **Host,** select Browse, and select the host group (*ftp_clients*) that contains the IP addresses of FTP clients that may be attempting to connect to the FTP servers.
6. In the **Destination** field, click **Host**, select Browse, and select the host group that contains the IP addresses of the FTP servers (*ftp_servers*).
7. In the **Service or Group** field, select Browse, and select **ftp** from the dropdown list. This is a Service Group provided with the SMS application.

8 In the **Action** field, select **Pass** from the dropdown list.

9 In the **Audit Session** field, **Basic** auditing is the default. You can leave this as is, or select **None** or **Detailed,** depending on your needs.

10 In the **Description** field, enter an optional description, if necessary.

11 In the **Rule Active** field, the default is **Yes**. Leave the default in place, so that the rule will become active as soon as it is applied to a Brick.

12 Click the **OK** button to temporarily store the rule on the SMS.

13 Display the File menu and select one of the **Save** options.

END OF STEPS

Create Rule #2

To create the second rule that will drop all other sessions that attempt to connect to the FTP server, follow the steps below:

1 Open the Policies folder.

2 Open the Brick Zone Rulesets folder and double-click the zone protecting the FTP servers.

3 In the Brick Zone Ruleset Editor, right-click any rule and select **New**.

The Brick Zone Rule Editor appears.

4 In the **Direction** field, select **In To Zone** from the dropdown list. This rule will now apply to sessions initiated outside of the zone.

5 In the **Source** field, accept the default (*).

6 In the **Destination** field, click **Host,** select Browse, and select the host group that contains the IP addresses of the FTP servers (*ftp_servers*).

7 In the **Service or Group** field, select Browse, and select **ftp** from the dropdown list. This is a Service Group provided with the SMS application.

8 In the **Action** field, select **Drop** from the dropdown list.

9 In the **Audit Session** field, **Basic** auditing is the default. You can leave this as is, or select **None** or **Detailed,** depending on your needs.

10 In the **Description** field, enter an optional description, if necessary.

11 In the **Rule Active** field, the default is **Yes**. Leave the default in place, so that the rule will become active as soon as it is applied to a Brick.

12 Click the Advanced tab of the Brick Zone Rule Editor and enter the same **alarm code** in the **Alarm Code field** that was used to configure the Alarm Code trigger.

13 Click the **OK** button to temporarily store the rule on the SMS.

14 Display the File menu and select one of the **Save** options.

END OF STEPS

□

Appendix C: Proactive Monitoring Trigger Parameters

Overview

Purpose

This appendix explains the parameters that can be configured in Alcatel-Lucent *VPN Firewall Brick*® Security Appliance or SMS Proactive Monitoring triggers. For procedures to configure triggers, see Chapter 6, "Configuring Alarm Triggers" in this guide.

Contents

What are the Brick Proactive Monitoring Parameters?

Brick proactive monitoring statistics

The statistical data that can be monitored by configuring a Brick Proactive Monitoring trigger is described in the table that follows.

Essentially, this data is collected by a Brick and tracks traffic load and throughput.

Brick PM Parameter	Description
`In Byte Count >=`	Count of bytes coming into a port (e.g., ether0 through ether10). Since the ports of a Brick are in promiscuous mode, the count includes all traffic on the local LAN. This count includes Ethernet framing characters.
`Out Byte Count >=`	Count of bytes going out of a port (Example: ether0 through ether10). This count includes Ethernet framing characters.
`In Pkts >=` `In Pkts <`	Count of inbound packets (unicast, multicast, and broadcast) coming into a port (Example: ether0 through ether10). Since the ports of a Brick are in *promiscuous* mode, the count includes all traffic on the local LAN. It is acceptable to include both of these parameters in the same Proactive Monitoring alarm.
`Out Pkts >=` `Out Pkts <`	Count of outbound processed packets (unicast, multicast, and broadcast) going out of a port (e.g., ether0 through ether10).
`In Pkts Discarded >=`	Inbound packets that are discarded not because of error conditions, but because of resource deficiencies such as a lack of buffers.

Brick PM Parameter	Description
`In Error Ct >=`	Total count of Ethernet inbound packets that contain receive errors (examples are alignment errors, frame collision errors, frames exceeding maximum frame length, MAC overruns, invalid data symbols), which prevent the delivery to a higher layer protocol. Since the ports of a Brick are in *promiscuous* mode, the count includes all traffic on the local LAN.
`Out Error Ct>=`	Total count of Ethernet outbound packets that contain transmission errors (e.g., late collisions, excessive collisions, MAC transmissions, carrier sense errors). The errors prevent the delivery to a higher layer protocol.
`Processed Pkts >=`	Total count of packets that were processed by any security policy on any port of a Brick. The packets could have been PASSED, DROPPED, or been processed by a PROXY. Essentially, it is the sum of all packets that were routed, bridged, or dropped by a Brick. Unlike port statistics, this count excludes traffic that the Brick filters out for being localized to a particular port LAN segment.
`Pkts Dropped (Policy) >=`	Total count of packets that were dropped by a Brick's security policy. The count excludes traffic on the local LAN.
`Brick Session Ct >=`	The total number of concurrent sessions (including sessions using Network Address Translation (NAT)) over the collection interval.
`Avg % CPU Usage <=` `Avg % CPU Usage >=`	The average percentage of CPU the Brick is using during a collection interval (i.e., 30 seconds). If the average is a high number, it could be indicative that the Brick is overloaded.

Brick PM Parameter	Description
`Avg % Session Cache Memory Usage >=`	The average percentage of session cache memory the Brick is using during a collection interval (i.e., 30 seconds). A high number of failing sessions may indicate an attack, or an incorrect DNS entry being used by a lot of traffic through your network. To investigate the problem, check the sessions log and look for dropped sessions.
`Peak % Session Cache Memory Usage >=`	The peak usage (bursts) of session cache memory, in percent, that the Brick is using during a collection interval (i.e., 30 seconds). A high number may indicate that sessions are failing. To investigate the problem, check the sessions log and look for dropped sessions.
`Avg % Main Memory Usage >=`	The average percentage of main memory (packet memory plus buffers) the Brick is using during a collection interval (30 seconds). A high number may indicate a Brick problem or that the Brick is under attack. To investigate the problem, check the log files.
`Avg % Packet Memory Usage >=`	The average percentage of packet memory (memory that is allocated to store packets) the Brick is using during a collection interval (30 seconds). A high number may indicate that incomplete and fragmented packets are being passed or the Brick is overloaded. Use in conjunction with Avg % CPU Usage. If the CPU number is also high, the Brick is probably overloaded. If the CPU number is not high, then the Brick is probably passing incomplete fragmented packets.
`Peak % Packet Memory Usage >=`	The peak usage (bursts) of packet memory (memory that is allocated to store packets) that the Brick is using during a collection interval (30 seconds). A high number may indicate that incomplete and fragmented packets are being passed or the Brick is overloaded.

What are the SMS Proactive Monitoring Parameters?

SMS proactive monitoring parameters

The statistical data that can be monitored by configuring an SMS Proactive Monitoring trigger is described in the table that follows.

The logger, the VPN Gateway Controller (VGC), and the Firewall Authentication Controller (FAC), are the sources that write the statistical data to the Proactive Monitoring log.

Essentially, this data tracks platform resource utilization (such as disk space usage, log rollover rate, and so forth), the number of initiated IKE negotiations, and the number of initiated User Authentication attempts from VPN clients or through a firewall.

For details on platform resource utilization topics, refer to Appendix H, "Log File Sizing Guidelines" in this guide for an explanation of log sizing requirements, and the *Using the Configuration Assistant* chapter in the *SMS Administration Guide* for instructions on how to configure log file size and the disk space allocated to them.

SMS PM Parameter	Description
`Session Log Rollover rate <=`	Rate at which the Sessions Log fills up and rolls over. The default setting allows the log to grow to 10 megabytes before creating a new log.
`Admin Log Rollover rate <=`	Rate at which the Administrative Events Log fills up and rolls over. The default setting allows the log to grow to 1 megabyte before creating a new log.
`PM Log Rollover rate <=`	Rate at which the Proactive Monitoring Log fills up and rolls over. The default setting allows the log to grow to 10 megabytes before creating a new log.
`User Auth Rollover rate <=`	Rate at which the User Authentication Log fills up and rolls over. The default setting allows the log to grow to 1 megabyte before creating a new log.
`Session Log Bytes Free <=`	The free bytes that are available to accommodate the Sessions Log. The default amount of disk space allocated to Session logs is 1000 megabytes before old logs are deleted to create new space.

SMS PM Parameter	Description
`Admin Log Bytes Free <=`	The free bytes that are available to accommodate the Administrative Events Log. The default amount of disk space allocated to Administrative Event logs is 100 megabytes before old logs are deleted to create new space.
`PM Log Bytes Free <=`	The free bytes that are available to accommodate the Proactive Monitoring Log. The default amount of disk space allocated to Proactive Monitoring logs is 200 megabytes before old logs are deleted to create new space.
`User Auth Log Bytes Free <=`	The free bytes that are available to accommodate the User Authentication Log. The default amount of disk space allocated to User Authentication logs is 100 megabytes before old logs are deleted to create new space.
`IKE Failed >=`	The number of IKE negotiations that failed and did not complete negotiation.
`User Auth (via VPN Client) Initiated >=`	The number of user authentication requests from a VPN client that were initiated. Essentially, it is the sum of all successful and failed requests.
`User Auth (via VPN Client) Failed >=`	The number of user authentication requests from a VPN client that failed and did not complete negotiation.
`User Auth (via firewall) Initiated >=`	The number of user authentication requests through a firewall that were initiated. Essentially, it is the sum of all successful and failed requests.
`User Auth (via firewall) Failed >=`	The number of user authentication requests through a firewall that failed and did not complete negotiation.

Appendix D: Proactive Monitoring Subtypes

Overview

Purpose

This appendix explains the fields contained in the seven subtypes of a Proactive Monitoring log record.

In the Proactive Monitoring log, each record contains a subtype. For each subtype, the fields that follow the subtype in the remainder of the log record will differ.

To view the data for a specific subtype, enter one of the seven subtypes in the Subtype field of the Proactive Monitoring Log Viewer (see "Administrative Events Log" (p. 3-1) in this guide for details). The fields explained in this appendix will assist in interpreting the data displayed in the Viewer.

Contents

Brick Data

Brick data table

The following table lists the fields that are recorded when the record contains Subtype 0, Brick Data.

Field	Description
SessStarted	Number of sessions started (whether or not they were dropped due to policy).
InPkts	Number of in packets (not counting those dropped at MAC level).
DroppedPkts	Number of packets dropped because of the security policy.
IpsecPkts	Number of IPSEC packets originating or terminating at this Brick.
PeakSess	Peak number of concurrent sessions during the interval.
PeakNatSess	Peak number of sessions employing NAT during the interval.
PeakIpsecSess	Peak number of IPSEC sessions originating or terminating at this Brick during the interval.
PeakDynSa	Peak number of dynamic SAs during the interval.
PeakProxy	Peak number of sessions reflected to proxy during the interval.
AvgCPU	Average percentage CPU utilization.
AvgCacheMem	Average percentage utilization of session cache memory.
PeakCacheMem	Peak percentage utilization of session cache memory.
AvgMainMem	Average percentage utilization of main memory.
AvgPktMem	Average percentage of memory allocated to store packets.
PeakPktMem	Peak percentage of memory allocated to store packets.
PeakDropSess	Peak dropped sessions.
PassedPkts	Number of unicast packets transmitted by the Brick during the last interval.
NewTcpSess	New TCP sessions.

Field	Description
NewUdpSess	New UDP sessions.
NewIcmpSess	New ICMP sessions.
NewIpsecSess	New IPSec sessions.
TcpInvPkts	TCP invalid packets.
numberSeconds	Number of seconds since the Brick device booted.
standbyState	State of Standby Brick device in a failover pair.
activeLabel	Label for active Brick device in a failover pair.
standbyLabel	Label for standby Brick device in a failover pair.
activeHWStatus	Alarm status of fan, power supply, or alarm card for active Brick device.
standbyHWStatus	Alarm status of fan, power supply, or alarm card for standby Brick device.
Number of Encryption Accelerators	Number of packets processed by the EAC
Standby Brick Software Version	Software version of the standby Brick's operating system in a failover pair

Brick Interface Generic

Brick interface data

The following table lists the fields that are recorded when the record contains Subtype 1, Brick Interface — Generic.

Field	Description
InOctets	Number of inbound bytes at port.
OutOctets	Number of outbound bytes at port.
InUcastPkts	Number of inbound unicast packets.
InMcastPkts	Number of inbound multicast packets.
InBcastPkts	Number of inbound broadcast packets.
InDiscards	Number of inbound packets discarded due to resource deficiencies in the Brick (not due to packet errors).
InErrors	Number of inbound packets containing receive errors. (Because the Brick operates in promiscuous mode, this is all errors on the LAN).
InUnknowns	Number of inbound packets where the Layer-2 protocol was not recognized.
OutUcastPkts	Number of outbound unicast packets.
OutMcastPkts	Number of outbound multicast packets.
OutBcastPkts	Number of outbound broadcast packets.
OutDiscards	Number of outbound packets discarded due to resource deficiencies in the Brick (not due to packet errors).
OutErrors	Number of outbound packets discarded due to errors.
FilteredPkts	Number of packets discarded due to bridge-level operation; this is only the number of incident LAN packets not accepted for processing on this port.
OperStatus	Current operational status of port:1 = up, 2 = down, 4 = link is a failover link in the “Up No Data” state, indicating no traffic, 5 = link is a failover link in the Receiving state, 6 = link is a failover link in the Unverified state, 7 = link is a failover link in the Verified state
MacAddr	MAC address.
LnkSpd	Link speed.
FlowCtrl	Flow control enabled.

Field	Description
DuplicateHeartbeats	Number of duplicate heartbeats
MissedHeartbeats	Number of missed heartbeats
OtherFailoverErrors	Other failover errors (including invalid digest)

Brick Interface Ethernet

Ethernet interface data

The following table lists the fields that are recorded when the record contains Subtype 2, Brick Interface — Ethernet.

Field	Description
AlignErrors	Number of alignment errors during the interval.
FcsErrors	Number of frames with frame-check errors during the interval.
SingleCollFrm	Number of single-collision frames during the interval.
MultiCollFrm	Number of multi-collision frames during the interval.
DeferXmits	Number of transmitted frames during the interval that had initially been deferred, not including frames involved in collisions.
LateColl	Number of late collisions (more than 512 bit times into the transmission) during the interval.
ExcessColl	Number of packets that failed to be transmitted, because there were too many collisions. (The other ″Coll″ entries represent packets that eventually did get through; this is the count of those that didn’t.)
MacXmitErr	Number of MAC transmission errors during the interval; transmit underruns are included here.
CarrSenseErr	Number of transmissions that experienced loss of carrier-sense during the interval.
TooLongErr	Number of frames that were too long during the interval.
MacRcvErr	Number of MAC reception errors during the interval; receive overruns are included here.
SymbolErr	Between packets we see a wrong symbol (not allowed by the protocol) on the line.

SMS Auditing

Log data

The following table lists the fields that are recorded when the record contains Subtype 3, Log Data.

Field	Description
RolloverRate	Number of seconds of data currently stored in the log. Computed as the difference in time between the oldest record and the current time.
BytesFree	Number of bytes available in the log. Computed as the difference between the allocation and bytes used by log files. If the value is zero, the log has overflowed.
Bytes Allocated	Number of bytes allocated to the log.

Authentication Firewall

FAC data

The following table lists the fields that are recorded when the record contains Subtype 5, FAC Data.

Field	Description
Firewall Auth Initiated	Number of user authentications attempted via the firewall.
Firewall Auth Failed	Number of unsuccessful user authentications via the firewall.

Local Map Pool

VGC routing pool data

The following table lists the fields that are recorded when the record contains Subtype 6, VGC Routing Pool Data.

Field	Description
Brick	Name of the Brick device.
Zone	Name of the Brick zone ruleset.
Total IPs	Number of IPs in the pool for this Brick device and TEP.
Free IPs	Number of free (not in use) IPs in the pool for this Brick device and TEP.

QoS Statistics

QoS data

The following table lists the fields that are recorded when the record contains Subtype 7, QoS Data.

Field	Description
Interface	Interface
Zone	Name of the Brick zone ruleset.
Dir	Direction relative to zone ruleset.
NumSess	Total number of sessions.
NumClassesQ	Number of classes that queued a packet.
AvgNumQ	Average number of non-empty queues.
AvgLenQ	Average length of non-empty queues.
TotPkts	Total number of packets seen.
TotPktsQ	Total number of packets queued.
AvgWaitTime	Average wait time for packets that were queued (msec).
DropSessLimit	Number of packets dropped due to being over session limit.
DropAllowSess	Number of packets dropped within an allowed session.
BytesThru	Number of bytes allowed through.
newSessions	Number of new sessions created.
PktsThru	Number of packets allowed through.
GuarBytesSec	Guaranteed number of bytes per second.
LimBytesSec	Limit number of bytes per second.
LimSessDir	Limit sessions in this direction.

SLA Statistics

SLA data

The following table lists the fields that are recorded when the record contains Subtype 9, SLA Data.

Field	Description
PID	Probe ID.
PSent	Number of probes sent.
PLost	Number of probes lost.
MinDelay	Minimum round trip delay.
MaxDelay	Maximum round trip delay.
AvgDelay	Average round trip delay.
POverThresh	Number of probes above threshold.
Threshold	Threshold.

Brick VPN Data

Brick VPN Data table

The following table lists the fields that are recorded when the record contains Subtype 10, Brick VPN Data.

Field	Description
Version	Version of Brick device data.
PreviousTimeStamp	Previous SMS timestamp.
CollectionInterval	Data collection interval (seconds).
Index	Data collection index.
Name	Tunnel endpoint name (TEP IP).
Zone	Brick zone ruleset.
TotalIPsinLocalMapPool	Total IPs in Local Map Pool.
FreeIPsinLocalMapPool	Free IPs in Local Map Pool.
IKEInitiated	Number of IKE initiated sessions.
IKEFailed	Number of failed IKE initiated sessions.
UserAuthInitiated	Number of user authentication sessions initiated.
UserAuthFailed	Number of failed user authentication sessions.
ActiveIKEv1ClientSessions	Number of active client IKEv1 client sessions.
LicenseLimit	Allocated license limit.
LANLANIKEv1UpTunnels	Number of LAN-LAN IKEv1 tunnels active and up.
LANLANIKEv1DownTunnels	Number of LAN-LAN IKEv1 tunnels down.
LANLANDisabledTunnels	Number of LAN-LAN disabled tunnels.
LANLANManualTunnels	Number of LAN-LAN manual tunnels.
ClientLicensesInUse	Number of client tunnel endpoint licenses currently in use.
ActiveIKEv2ClientSessions	Number of active IKEv2 client tunnel sessions.
LANLANIKEv2UpTunnels	Number of LAN-LAN IKEv2 tunnels currently up and active.
LANLANIKEv2DownTunnels	Number of LAN-LAN IKEv2 tunnels currently down.

Appendix E: Log Field Formats

Overview

Purpose

If you are running any of the Log Viewers on the SMS and you want more detail on an audit log entry, double-click the desired entry to view it in the Detail window.

If you are working with SMS reports, *Appendices E, F, and G* provide explanations of the various fields in log entries. For some types, the source and srcType fields are filled in with the appropriate static values.

Contents

Record Header

Log record headers

All log messages are required to have the following header:
`type:srcType:source:timestamp:[subtype]:`

	Semantics	Syntax
`type`	The type of record, by number. For instance, a session-start record is type=0, and an error record is type=5.	ASCII decimal number
`srcType`	A letter designating the type of entity that originated the record.	`i` = SMS process `b` = Brick `p` = Proxy server `r` = ISS RealSecure engine
`source`	If srcType is `i`, the subsystem name. Subsytems include `servlet`, `rap`, `rad`, `logger`, `alarm`, `eua`, `url`, `report` and `vgc`. If `b`, the Brick name. If `p`, the proxy name. If `r`, the engine name.	String
`timestamp`	The time that the logger received and processed the record. Many records may also have a source timestamp, also as part of this field. The source timestamps will be on all Proactive Monitoring (promon) records, in the form of the full 10-digit timestamp. It will be on Session Log records from the Brick, in the form of the ″delta″ (seconds before or after) timestamp.	`SMS Timestamp` Exactly six digits, of form hhmmss: hh = hours (00-23) mm = minutes (00-59) ss = seconds (00-59) [`Source Timestamp`] <10-digit number> Seconds since midnight Jan 1, 1970 GMT. or +<number> Seconds after, or -<number> Seconds before the SMS timestamp.

	Semantics	Syntax
`group`	Name of the group whose administrators are entitled to see this record.	String
`[subtype]`	Some records (e.g.- type 4) have subtypes, each with its own format. For records with subtypes, the subtype lies between the fixed header and the type-dependent fields.	ASCII decimal number

Log Record Types

Log record type table

The following table documents the record types. It includes:

- The record type and the subtype in parentheses, if applicable.
- A verbal description of the purpose of the record.
- A symbol for the log in which the record is found. The symbols for the logs are as follows:
  - `E` = AdminEvents
  - `S` = Session
  - `P` = Proactive Monitoring
  - `U` = User Authentication
  - `V` = VPN
  - `Sp` = Session Log on Proxy server
    (only applicable if running Lucent Proxy Agent)

- The source-type for the record, if only one source-type can create it.
- The fields in order, not including the header fields

Type & Sub-type	Description	Log	SRC Type	Fields
0	Session Start	S	b	zone dir srcHost dstHost proto srcprt dstprt action recIntf sndIntf alrCode ruleNum received VLAN id send VLAN id relVpn (opt) BrickSrc (only if action is Proxy) proxyDst (only if action is Proxy) BrickPrt (only if action is Proxy) proxyPrt (only if action is Proxy) reflectType (only if action is Proxy) encapsulation type

Type & Sub-type	Description	Log	SRC Type	Fields
1	Session End	S	b	zone dir srcHost dstHost proto srcprt dstprt forPkt revPkt forByte revByte elapsed time reason for session termination action abbreviation rule number VPN type abbreviation TCP forward invalid segments TCP reverse invalid segments

Type & Sub-type	Description	Log	SRC Type	Fields
2	Packet Audit	S	b	zone dir srcHost dstHost proto srcprt dstprt action recIntf sndIntf byteCnt alrCode ruleNum VLAN ID in VLAN ID out

Type & Sub-type	Description	Log	SRC Type	Fields
3	Session Start Mapped (The optional field are present if the action is ″Proxy″)	S	b	zone dir srcHost dstHost proto srcprt dstprt mapSrc mapDst mapSrcprt mapDstprt action recIntf sndIntf alrCode ruleNum received VLAN id send VLAN id relVpn (opt) BrickSrc (opt) proxyDst (opt) BrickPrt (opt) proxyPrt (opt) reflectType (opt) encapsulation type
4(0)	General Brick Event	E	b	text
4(1)	Boot Brick	E	b	(no data)
4(2)	Flush Cache	E	b	zone
4(3)	Load Brick Zone Ruleset	E	b	zone

Type & Sub-type	Description	Log	SRC Type	Fields
4(4)	Load Table	E	b	BrickName
4(5)	Switchover New Policy	E	b	zone
4(6)	Load Dynamic Rule	E	b	ruleFieldsTable
4(7)	Load Dynamic Host	E	b	zone hostGrp hostgrpEntry
4(8)	Load Dynamic Service	E	b	zone srvGrp srvgrpEntry
4(9)	Audit Ping (not a loggable event, just a keep-alive between Brick and logger)	E	b	BrickName
4(10)	Abort Load	E	b	zone|*
4(11)	File Download (tvpc, inferno.ini)	E	b	filename adminID
4(12)	File Download Aborted	E	b	filename adminID
4(13)	Reboot	E	b	msg
4(14)	Software Version	E	b	version
4(15)	Command Response	E	b	msg
4(16)	Brick Disabled	E	b	reason
4(17)	Brick Enabled	E	b	

Type & Sub-type	Description	Log	SRC Type	Fields
4(18)	Refresh MAC Table	E	b	
4(19)	Load Proxy	E	b	
4(20)	Feature Information	E	b	featureCode statusCode
4(21)	Refresh arp table executed	E	b	
4(22)	User login to remote console	E	b	brick name, timestamp, user ID
4(23)	Authentication of remote console connection failed	E	b	Failed authentication for remote console
4(24)	Brick has (re)homed	E	b	firewall name new SMS IP address
4(25)	Standby has changed state	E	b	state my label standby's label
4(26)	Brick time of day clock updated	E	b	number of seconds of change
5	Errors (Device and SMS) For more information on device error codes select **Error Codes** from the SMS Navigator Help menu.	E	-	codeID severity errno args text

Type & Sub-type	Description	Log	SRC Type	Fields
6	End User Authentication	U	i	zone srcHost dstHost proto srcprt dstprt userID authtype result euaResult reason authTimeout userDb euaAction forByte revByte elap VPN Vendor
7	Failed Admin Host Authentication	E	b	srcHost dstHost proto srcprt dstprt reason

Type & Sub-type	Description	Log	SRC Type	Fields
8	IPSEC	S	b	zone dir srcHost dstHost proto srcprt dstprt relVpn vpnDir endpt SPI userID
9	Session Summary Stats (Not yet implemented.)		i	Brick zone httpPass httpDrop ftpPass ftpDrop telnetPass telnetDrop dnsPass dnsDrop smtpPass smtpDrop pingPass pingDrop euaPass euaDrop pktCnt byteCnt
10	Admin Login	E	i	adminID IP

Type & Sub-type	Description	Log	SRC Type	Fields
11	Admin Logout	E	i	adminID
12	Add Admin Account	E	i	adminID admRec
13	Modify Admin Account (the two records are the old and the new record, respectively)	E	i	adminID admRec admRec
14	Delete Admin Account	E	i	adminID admRec
15	Add Brick Zone Ruleset Table Entry	E	i	adminID zone zoneRec
16	Modify Brick Zone Ruleset Table Entry	E	i	adminID zone zoneRec
17	Delete Brick Zone Ruleset Table Entry	E	i	adminID zone zoneRec
18	Add Brick Table Entry	E	i	adminID BrickName BrickRec
19	Modify Brick Table Entry	E	i	adminID BrickName BrickRec
20	Delete Brick Table Entry	E	i	adminID BrickName BrickRec

Type & Sub-type	Description	Log	SRC Type	Fields
21	Brick Alarm	E	i	serialno BrickName zone triggerType triggerName alarmCode actions alarmInfo
22	SMS Alarm	E	i	serialno triggerType triggerName actions alarmInfo
23	Session Full (Brick)	S	b	zone dir srcHost dstHost proto srcprt dstprt action recIntf sndIntf alrCode ruleNum forPkt revPkt forByte revByte elap sessionStart

Type & Sub-type	Description	Log	SRC Type	Fields
24	Brick Status (SMS message)	E	i	BrickName CONTACTED/LOST IP address (new if CONTACTED, previous if LOST)
25	SMS Subsystem Information Message (e.g. logger process startand stop)	E	-	text
26	Add Brick Zone Ruleset to SMS	E	i	adminID zone
27	Delete Brick Zone Ruleset from SMS	E	i	adminID zone
28	Modify Brick Zone Ruleset in the SMS	E	i	adminID zone
29	Add Brick	E	i	adminID BrickName
30	Delete Brick	E	i	adminID BrickName
31	Modify Brick	E	i	adminID BrickName
32	Audit GUI Request	E	i	adminID
33	Audit GUI Request for File Modification	E	i	adminID
34	Admin Login Failed	E	i	adminID IP reason

Type & Sub-type	Description	Log	SRC Type	Fields
35	Alarm Alert Status (Alert passed or failed)	E	i	serialno action serialno text
36	SMS Data Object Imported	E	i	adminID importZone objectName
37	SMS Data Object Published	E	i	adminID publishZone objectName
38	Add Brick Route	E	i	adminID BrickName
39	Delete Brick Route	E		adminID BrickName
40	Modify Brick Route	E	i	adminID BrickName
41	Start Brick Upgrade	E	i	adminID BrickName
42	End Brick Upgrade	E	i	adminID BrickName
43	ISS RealSecure Event	E	i	srcZone dstZone srcHost dstHost proto srcprt dstprt eventName priority rsTime rsActions eventInfo

Type & Sub-type	Description	Log	SRC Type	Fields
44	Add Dynamic SA	V	i	BrickName zone srcHost dstHost proto srcprt dstprt endpt SPI userID compression salifeKb salifeSec timeoutAction timeout tunnelID
45	Delete Dynamic SA	V	i	BrickName zone srcHost dstHost proto srcprt dstprt endpt SPI userID tunnelID
46	FTP Log File	E	i	fileName
47	Add RS Engine	E	i	adminID engineName
48	Delete RS Engine	E	i	adminID engineName

Type & Sub-type	Description	Log	SRC Type	Fields
49	Modify RS Engine	E	i	adminID engineName
50	Duplicate Brick Zone Ruleset	E	i	adminID zone newZone
51	Start Loading Brick Config	E	i	BrickName
52	End Loading Brick Config	E	i	BrickName
53	Proactive Monitoring	P	-	See "Administrative Events Log" (p. 3-1), "Proactive Monitoring Log" (p. 3-7).

Type & Sub-type	Description	Log	SRC Type	Fields
53(10)	Proactive Monitoring	P	-	source type source identifier lsms timestamp group record number subtype version number previous snapshot collection period index number index name zone total IPs IKE initiated IKE failed User Auth initiated User Auth failed Active sessions License Limit Up Tunnels Down Tunnels Disabled Tunnels Manual Tunnels
54	Start Reflected Session	Sp	p	sessionID BrickName srcHost proto srcprt dstprt

Type & Sub-type	Description	Log	SRC Type	Fields
55	Original Session Info	Sp	p	sessionID zone dir srcHost dstHost proto srcprt dstprt reflectType mapSrc mapDst mapSrcPort mapDstPort
56	URL Filtering Result	Sp	p	sessionID result urlAction url
57	Scan URL Content Result	Sp	p	sessionID result url
58	Scan Mail Content Result	Sp	p	sessionID sender receivers result
59	Application Protocol Command Filter	Sp	p	sessionID cmd cmdResult

Type & Sub-type	Description	Log	SRC Type	Fields
60	End Reflected Sessions	Sp	p	sessionID BrickName srcHost proto srcprt dstprt result
61	Add Proxy Table Entry	E	i	adminID proxyRec
62	Modify Proxy Table Entry	E	i	adminID proxyRecNew proxyRecOld
63	Delete Proxy Table Entry	E	i	adminID proxyRec
64	Add User Table Entry	E	i	zone userID adminID userRec
65	Modify User Table Entry (the two records are the new and old records, respectively)	E		zone userID adminID userRec userRec
66	Delete User Table Entry	E	i	zone userID adminID userRec
67	Add UserGrp Table Entry	E	i	zone userGrp adminID userGrpRec

Type & Sub-type	Description	Log	SRC Type	Fields
68	Modify UserGrp Table Entry (the two records are the new and old records, respectively)	E	i	zone userGrp adminID userGrpRec userGrpRec
69	Delete UserGrp Table Entry	E	i	zone userGrp adminID userGrpRec
70	Add AuthSvc Table Entry	E	i	zone authtype adminID authSvcRec
71	Modify AuthSvc Table Entry (the two records are the new and old records, respectively)	E	i	zone authtype adminID authSvcRec authSvcRec
72	Delete AuthSvc Table Entry	E	i	zone authtype adminID authSvcRec
73(0)	Brick SA Info: General	V	i	text
73(1)	Brick SA Info: General	V	i	text

Type & Sub-type	Description	Log	SRC Type	Fields
73(2,6)	SA replaced	V	i	zone SPI dstHost proto endpt userID tunnelEndpt tunnelID
73(3,7,8)	SA Deleted on Lifetime Expiry	V	i	zone SPI dstHost proto endpt userID tunnelEndpt tunnelID
73(4)	SA Deleted on Idle Timeout	V	i	zone SPI dstHost proto endpt userID tunnelEndpt tunnelID
73(5)	User-related SA info	V	i	zone userID endpt byteCnt tunnelStartTime elap SPI tunnelEndpt tunnelID

Type & Sub-type	Description	Log	SRC Type	Fields
74	Kill session	E	i	adminID sessionRec
75	Kill all sessions	E	i	adminID zone
76(0)	Add VPN routing info to pool	E	i	BrickName zone endpt clientIP localIP userID
76(1)	Remove VPN routing info from pool	E	i	BrickName zone endpt clientIP localIP userID
77	Packet trace log, implemented for the ″private doorbell″ feature. Note that ‘dir’ is with regard to the port, not the Brick zone ruleset (there is no Brick zone ruleset in the record).	T	b	recIntf dir srcHost dstHost proto srcprt dstprt length binaryData
78	FTP Command The Brick detects FTP commands on sessions through it, and logs them.	S	b	zone srcHost dstHost proto srcprt dstprt text

Type & Sub-type	Description	Log	SRC Type	Fields
79	Dynamic Rule Record the creation of a dynamic rule in the Brick	E	b	zone ruleNumber creator ruleTimeout cacheTimeout ruleFlags encryptionRequire-ments maxUseCount monitorType direction srcHost dstHost service mapSrcHost mapDstHost mapService ruleAction
80	Add Host Group	E	i	adminID hostGrp count=count
81	Modify Host Group	E	i	adminID hostGrp count=count
82	Delete Host Group	E	i	adminID hostGrp
83	Add Service Group	E	i	adminID svcGrp count=count
84	Modify Service Group	E	i	adminID svcGrp count=count

Type & Sub-type	Description	Log	SRC Type	Fields
85	Delete Service Group	E	i	adminID svcGrp
86	Add Dependency Mask	E	i	adminID dependencyMask
87	Modify Dependency Mask	E	i	adminID dependencyMask
88	Delete Dependency Mask	E	i	adminID dependencyMask
89	Add Group	E	i	adminID group permissions=count
90	Modify Group	E	i	adminID group permissions=count
91	Delete Group	E	i	adminID group
92	VPN Status	V	i	vpnEvent vpnEventRec
93	Add Router	E	i	adminID router
94	Modify Router	E	i	adminID router
95	Delete Router	E	i	adminID router
96	Add Router Rule Set	E	i	adminID routerRules
97	Modify Router Rule Set	E	i	adminID routerRules
98	Delete Router Rule Set	E	i	adminID routerRules

Type & Sub-type	Description	Log	SRC Type	Fields
99	Add Authentication Service	E	i	adminID authSvc
100	Modify Authentication Service	E	i	adminID authSvc
101	Delete Authentication Service	E	i	adminID authSvc
102	Add User Group	E	i	adminID userGroup
103	Modify User Group	E	i	adminID userGroup
104	Delete User Group	E	i	adminID userGroup
105	Add User	E	i	adminID userID
106	Modify User	E	i	adminID userID
107	Delete User	E	i	adminID userID
111	Add LAN-to-LAN Tunnel	E	i	adminID localTepName remoteTepName
112	Modify LAN-to-LAN Tunnel	E	i	adminID localTepName remoteTepName
113	Modify LAN-to-LAN TunnelDefaults	E		adminID
115	Enable LAN-to-LAN Tunnel	E	i	adminID localTepName remoteTepName

Type & Sub-type	Description	Log	SRC Type	Fields
116	Disable LAN-to-LAN Tunnel	E	i	adminID localTepName remoteTepName
117	Delete LAN-to-LAN Tunnel	E	i	adminID localTepName remoteTepName
118	Intelligent Cache Management	E	i	msg system timestamp percentage of session memory in use before ICM ran total session bytes in use before ICM ran total sessions in use before ICM ran percentage of session memory in use before ICM ran total sessions in use after ICM ran
119	Add Client Tunnel	E	i	adminId deviceName tunnelEndpoint zone
120	Modify Client Tunnel	E	i	adminId deviceName tunnelEndpoint zone
121	Modify Client Tunnel Defaults	E	i	adminId

Type & Sub-type	Description	Log	SRC Type	Fields
122	Enable Client Tunnel	E	i	adminId deviceName tunnelEndpoint zone
123	Disable Client Tunnel	E	i	adminId deviceName tunnelEndpoint zone
124	Delete Client Tunnel	E	i	adminId deviceName tunnelEndpoint zone
125	SMS Status	E	i	lsmsName lsmsStatus lsmsVersion
126	SMS Refresh	E	i	refreshStatus
127	Encapsulation	S	b	zone srcHost dstHost proto srcprt dstprt encapReq dir

Type & Sub-type	Description	Log	SRC Type	Fields
128	Tunnel Heartbeat Received	V	i	zone reasonCode SPI srcHost dstHost proto TEP userId locelTepName heartBeatInterval
129	Tunnel Heartbeat Missing	V	i	zone reasonCode SPI srcHost dstHost proto TEP userId locelTepName heartBeatInterval
130	List Up Tunnels	V	i	zone tunnelEndpoint count tunnelID
131	SMS Clock Synchronization	E	i	msg
132	Log Brick control executed	E	i	adminId BrickName cmd

Type & Sub-type	Description	Log	SRC Type	Fields
133	Encapsulation entry audit	E	i	subtype 1-new, 2-changed destination port, 3-marked as deletable, 4-deleted zone target host IP or group encapsulation IP encapsulation protocol encapsulation src port encapsulation destination port encapsulation tag internal flags # of sessions currently using this entry
134	Scan FTP Content result	E	i	session id reason + action + virusname URL

Type & Sub-type	Description	Log	SRC Type	Fields
135	Address Translation Table Action	E	i	nat type 0-direct hostgroup to hostgroup mapping subtype 1-new, 2-changed destination port, 3-marked as deletable, 4-deleted zone table name number of mappings in this table map-from host group map-to host group map-from host group (if # of mappings > 1) map-to host group (if # mappings > 1) nat tag internal flags # of sessions or rules currently using this entry
136	Archive (History) Details	E	i	adminId object type object name archive file hash archive file name

Type & Sub-type	Description	Log	SRC Type	Fields
137	QOS alarm	E	i	zone name interface direction rule number (if applicable) option exception type bandwidth type units passed bandwidth after throttling
138	Add Application Filter executed	E	i	adminId app filter name
139	Modify Application Filter executed	E	i	adminId app filter name
140	Delete Application Filter executed	E	i	adminId app filter name
141	List Application Filter executed (not currently used)	E	i	adminId app filter name

Type & Sub-type	Description	Log	SRC Type	Fields
142	Application Monitor result	E	i	zone direction srcip destination ip protocol src port dest port filter name disposition (block or pass) reason (if block) pattern (if block and reason is pattern match) text of the URI that failed
143	Application Monitor exception	E	i	zone direction srcip destination ip protocol src port dest port filter name disposition (block or pass) reason (if block) pattern (if block and reason is pattern match) text of the URI that failed

Type & Sub-type	Description	Log	SRC Type	Fields
144	Strict TCP checking exception	E	i	zone direction src ip dest ip protocol src port dest port <empty> receive interface send interface alarm code rule number received VLAN id send VLAN id source TCP state source TCP next seq # source TCP right seq # source TCP window size source TCP scale source TCP time stamp source TCP time stamp echo dest TCP state dest TCP next seq # dest TCP right seq # dest TCP window size dest TCP scale dest TCP time stamp dest TCP time stamp echo TCP seqn # delta error type path direction (forward or backward) TCP sequence number TCP flags from this packet

Type & Sub-type	Description	Log	SRC Type	Fields
145	VPN Error	V	i	name of the program that generated the error severity error number arguments text
146	Add Dynamic SA	V	i	device name ruleset source host destination host protocol source port destination port end point SPI user id compression life of dynamic SA in KB life of dynamic SA in seconds timeout action idle timeout replay protocol tunnel id

Type & Sub-type	Description	Log	SRC Type	Fields
147	Delete Dynamic SA	V	i	device name ruleset source host destination host protocol source port destination port end point SPI user id tunnel id
154	VPN Debug	V	i	name of the program that generated the error severity error number arguments text
155	L2L Tunnel Down	V	b	source type source identifier lsms timestamp group zone local TEP remote TEP
156	L2L Tunnel Up	V	b	source type source identifier lsms timestamp group zone local TEP remote TEP

Type & Sub-type	Description	Log	SRC Type	Fields
175	Cache statistics	V	b	source address destination address service rule number action session count
176	Heartbeats	V	b	Interface number direction milliseconds since last hearbeat anomalies

Appendix F: Filterable Log Fields

Overview

Purpose

This section provides more information on the data listed in the `Fields` column in Appendix F.

Each field has a semantics (what it means) and a syntax (how to parse it, depending on its type). For instance:

SourceIP is, *semantically*, the IP address of the source. Its *syntax* is ″IP″.

DestIP is, *semantically*, the IP address of the destination. Its *syntax* is ″IP″.

DestIP is the destination, not the source. It thus has different semantics than SourceIP. But it is expressed in the same syntax.

SourcePort is, *semantically*, the port number of the source. Its *syntax* is ″number″.

Contents

Filterable Log Fields

Log type semantics

In the following table, each log field type is defined by its semantics, and a pointer is given to its syntax. More detail on the `Syntax Type` column is provided in Appendix H.

Field Name	Semantics	Syntax Type
`action`	Action	action
`actions`	Which alarm actions are specified for this alarm. This can be a single action or an action group.	string
`adminID`	Administrator's identity	string
`admRec`	Administrator record. The items in the table are: adminId zone pvec fullName phone e-mail expire lockStatus comment	table
`alarmInfo`	Text to indicate information specific to this alarm.	string
`alrCode`	Alarm code that was activated, if any	number
`args`	A set of free-form arguments, containing any text character except newline.	args
`authSvcRec`	Authentication Service Record, consisting of: • zone • authentication service • authentication method • description • authentication service parameters	table

Field Name	Semantics	Syntax Type
`authtype`	Authentication type, authentication service name	string
`authTimeout`	Authentication timeout, in minutes	number
`binaryData`	Free-form byte array, which can contain any byte, including non-text information and field and record delimination.	-
`brickName`	*Brick*® name	string
`brickPrt`	Source port of reflected session, Brick local port	number
`brickRec`	A change to an entry in the Brick table. The fields are... For a BrickData record: • ipAdr • defGW • intType • adminIP • auditIP • comment For a ZoneTbl record: • intf • fromIPAddr (opt) • toIPAddr (opt) • zone • comment	table
`brickSrc`	Source IP (VBA) of reflected session	IP
`byteCnt`	Total byte count	number
`clientIP`	IP of VGC client	IP
`codeID`	Name of the program that generated the error	string
`cmd`	A command	string

Field Name	Semantics	Syntax Type
`cmdResult`	nDisposition of a filtered protocol command	cmdres
`compression`	Type of compression	string
`count`	Count, usually the number of entries	number
`creator`	Who created it? (examples: ″H323_Mon″, ″TFTP_Mon″	string
`dependMask`	Dependency Mask name	string
`dir`	Direction of travel	inOut
`dstHost`	Destination IP	IP
`dstprt`	Destination port	number
`dstZone`	Destination Brick zone ruleset	string
`elap`	Elapsed time, in seconds	number
`endpt`	Endpoint of an IPSEC relation	IP
`encryptReq`	Encryption requirement: 0 = None 1 = Start 2 = End	number
`engineName`	Name of the RealSecure engine being administered	string
`errno`	Error number	errCode
`euaAction`	What caused this action to take place? 0 = Login 1 = Logoff 2 = Reauth after being queried for more info (like PIN) 3 = Reauth after entering new password	number

Field Name	Semantics	Syntax Type
euaResult	0 = Success (authorized) 1 = Failure (denied) 2 = Query for more info (like PIN or SecurID token) 3 = Request for new password to replace expired one	number
eventInfo	Additional event-specific information, in the form of name-value pairs	eventArgs
eventName	Name of a RealSecure event	string
featureCode	0 = Hardware IPSEC card 1 = Compression	number
filename	Name of file being operated upon	string
flags	Arbitrary collection of bits represented by a hex string. The interpretation depends on the context.	hexString
forByte	Forward byte count	number
forPkt	Forward packet count	number
group	Group name, usually name of the group whose administrators are entitled to see this record.	string
host	(For DynamicRule record) Can be one of: IP Host Group (with leading ″@″) wild card	
hostGrp	Host group name	string
hostgrpEntry	(Not yet implemented)	
importZone	The Brick zone ruleset that was imported	string
IP	IP address	IP
length	Length in bytes of the field that follows (used for fields that might contain delimiters as data.)	number

Field Name	Semantics	Syntax Type
localIP		IP
mapDst	Mapped destination IP	IP
mapDstprt	Mapped destination port	number
mapSrc	Mapped source IP	IP
mapSrcprt	Mapped source port	number
maxUseCount	How many times can this be used?	number
monitorType	Monitor type, for example: ″″, ″H.323″, ″H.245″, ″SQL*Net″, ″TFTP″	string
msg	The message associated with the operation	string
newZone	When Brick zone ruleset is duplicated, name of the new Brick zone ruleset	string
objectName	Name of an object	string
priority	Priority	number
privilege	(Not yet implemented)	
proto	Protocol, identified by standard number	number
proxyDst	Destination IP of reflected session, proxy server IP	IP
proxyPrt	Destination port of reflected session, proxy server port	number

Field Name	Semantics	Syntax Type
proxyRec	Proxy record, consisting of: Brick name Zone Service tuple Description Proxy host IP address Proxy listening port Encrypt (yes/no) Key Reflection type (Single/Dual)	table
publishZone	The Brick zone ruleset that was published	string
PVEC	Privilege vector	string
reason	Reason for the message	string
receivers	The argument to all ″RCPT TO″ commands, comma separated. (Limited to first 10, more indicated by ″...″)	string
recIntf	Receiving port on Brick	intf
reflectType	Reflection type, dual or single	refType
relVpn	Describes a VPN connection as internal, external, both, or neither	relVpn
result	Result of an operation	string
revByte	Reverse byte count	number
revPkt	Reverse packet count	number
router	Router name	string
routerRules	Router Ruleset name	string

Field Name	Semantics	Syntax Type
rsActions	Bit vector of actions taken by RealSecure	IP
rsTime	Time that RealSecure engine reported the event	number
ruleFieldsTbl	(Not yet implemented)	
ruleNum	Rule number governing the session/packet	number
salifeKb	Life of dynamic SA in KB	number
salifeSec	Life of dynamic SA in seconds	number
sender	The argument to the ″MAIL FROM″ command	string
serialno	Every alarm triggered has a unique ID	string
service	(For DynamicRule record) Can be one of: A concatenation of protocol/dstport/srcport Service Group (with leading ″@″) wild card	
sessionID	Unique session identifier	number.number
sessionRec	Record of an authenticated session, including: zone user ID tunnel endpoint IP	table
sessionStart	Time that the session started	timestamp
severity	Number indicating the severity of the error; lower is more severe. Current severity levels and their meanings are: 1 = critical error - Critical errors are those involving probable loss of core functionality. 2 = attention required (major error) - Major errors are those involving probable loss of data or important (but not critical) functionality. 3 = warning (minor error) - Minor errors are recoverable or not system affecting.	severity
sndIntf	Sending port on Brick	intf

Field Name	Semantics	Syntax Type
SPI	Security Parameters Index, numeric ID for encryption and authentication parameters for an IPSEC relationship	number
srcHost	Source IP	IP
srcprt	Source port	number
srcZone	Source Brick zone ruleset	string
srvGrp	Service group name	string
srvgrpEntry	(Not yet implemented)	
statusCode	0 = Not available 1 = Available	number
table	Name of the table in the admin operation	string
tepName	Name of the local or remote Tunnel End Point (TEP). The format of the name depends on the device type. If Brick or fixed router: <deviceName>,<IP>, <ruleSetName> If mobile router: <deviceName>,mobile	string
text	Textual information intended for human interpretation	string
timeout	Timeout in seconds	number
timeoutAction	What to do if we time out	string
triggerName	Name of this specific trigger	string
triggerType	Class of trigger	string
tunnelEndpoint	Local tunnel endpoint	IP
tunnelID	Unique identifier for tunnel	number

Field Name	Semantics	Syntax Type
tunnelStart	Start time of tunnel	number
url	URL (Universal Resource Locator)	string
urlAction	Action due to URL filtering	urlact
userDb	Database where the user was found for authentication	userdbID
userGrp	User group name	string
userGrpRec	User group record, consisting of: zone group name description number of users in group userID list	table
userId	User identity	string

Field Name	Semantics	Syntax Type
`userRec`	User record, consisting of: zone userID full name account active description phone e-mail pager authSvc authTimeout disableAfter source IP range start date end date VPN pre-shared key expiration count expiration units expiration type unique history	table
`version`	Version of the Brick	string
`vpnDir`	The ″in″ or ″out″ direction of a VPN connection	inOut

Field Name	Semantics	Syntax Type
vpnEvent	Type of the event, indicated by a number and a parenthetical word description. The events that can appear in the log are: 5(Packet received that requires a client policy, but none is configured) 6(Tunnel is up) 7(Tunnel is down) 8(IKE Error) 9(Packet Received on Disabled Tunnel) 11(IKE Error) 12(Rekey complete) 13(Rekey failed) 14(Tunnel initiate failed) 21(IP Address added to user group) 22(IP Address deleted from user group) 41(Initiating Phase 1) 42(Initiating Phase 2) 43(Received an IKE Packet) 44(Sent an IKE Packet) 45(Received an IKE Packet) 47(Received a notify packet) 48(Sent a notify packet)	

Field Name	Semantics	Syntax Type
vpnEventRec	Table of parameters associated with a VPN event, which can include items from the following: tunnelID device/TEP IP remote name remote IP user group IP address length mode type error was initiated by	table
zone	Name of Brick zone ruleset	string
zoneRec	A change to some some Brick zone ruleset. The entries in the record are: For a Policy record: ruleNumber, srcHost, dstHost, service, action, drop_notify, comment For a HostGroup record: hostGroupName, IPAdr, [toIPAdr], comment For a ServiceGroup record: serviceName, proto, [dstPort], [toDstPort] , [srcPort], [toSrcPort], comment For a DependencyMask: maskName, srcHost, dstHost, service, action, inIntf, outIntf, userAuth, alarmCode, hitCount, omment	table

Appendix G: Log Field Syntax

Overview

Purpose

The syntax of any log field consists only of text (printable) characters. The field may not include a newline, because newline ends the log record. It may not contain a colon except for the ″args″ syntax, because colon delimits fields.

Contents

Log Field Syntax

action type syntax

Syntax Type	Representation
action	″Pass″, ″Drop″, ″Proxy″, ″VPN″, or ″VpnProxy″
args	A collection of free-form arguments, that may contain any characters except newline. In order for this to work, we need a different way to delimit the arguments. We do this with count fields for the number of arguments and the length of each argument. The argument list starts with a two digit decimal number which identifies the number of arguments. If there are no arguments in the message, indicate this by using a value of 00. Each argument begins with a three digit decimal number that identifies the number of characters in the argument. Example: the two arguments ″beanie″ and ″not recognized″ would be represented as: 02006beanie014not recognized
cmdres	″a″ = allowed ″d″ = disallowed ″ae″ = allowed, with exception flag of ″Y″ ″de″ = disallowed, with exception flag of ″N″
errCode	A letter to denote the subsystem that encountered the error, followed by a four-digit error number. Example: ″E3001″ is error 3001 from the logger, which has been assigned letter ‘E’. For more information on device error codes select **Error Codes** from the LSMS Navigator Help menu.

Syntax Type	Representation
`eventArgs`	A collection of name-value pairs, carrying event-specific information from a RealSecure event record. The representation of a pair is: *<name>=<value>* and the pairs are separated from each other by colons.
`hexString`	A sequece of hex digits (0-9,A-F) representing a bit string.
`IP`	Starting with SMS v4.1, the IP is represented in the normal decimal-dot notation that people are used to seeing for IP addresses. In earlier versions, for ease of processing and compactness of staorage rather than ease of viewing, we represented the four-bytes address as 8 hex digits with no decimal point.(Note: if the lead digit is 15 or less, the representation may only be 7 digits.)In the viewer, an IP address is displayed in the normal decimal-dot notation that people are used to seeing.
`inOut`	″IN″ or ″OUT″
`intf`	″e0″, ″e1″, ″e2″, etc. in log records from *Bricks*® of LSMS v4.1 vintage or later. ″ether0″,″ether1″,″ether2″, etc. in logs from Bricks earlier than LSMS v4.1.
`number`	Decimal representation of a number, in ASCII text. Example: 2345
`refType`	″Dual″ or ″Single″
`relVpn`	″INTERNAL″,″EXTERNAL″,″BOTH″, or empty
`severity`	″1″, ″2″, or ″3″
`string`	Simple text string

Syntax Type	Representation
`table`	A string of name-value pairs giving the properties of some administered entity. The representation of a pair is *<name>=<value>* and the pairs are separated from each other by commas.
`timestamp`	Same six-digit timestamp as in the log record header
`urlact`	″b″ = block ″p″ = pass ″n″ = passed because no filtering was done
`userdbid`	″I″ = internal, or ″E″ = assumed external, because not found locally

Appendix H: Log File Sizing Guidelines

Administrative Events Log Sizing Guidelines

Notes on sizing guidelines

Default file size is 1 megabyte and the default space allocated is 100 megabytes.

Using the defaults, the log can grow to 1 megabyte before creating a new log and the amount of disk space that can be consumed by all Administrative Events Logs can be 100 megabytes before deleting old logs to create new space.

The size of the Administrative Events Log varies from site to site. Therefore, a sizing formula does not exist for this log.

Generally, you can start by making the size of the Administrative Events Log 1/10th the size of the Session Log. From then on, monitor the size and adjust it accordingly. This is especially critical as new Bricks are added to your network and the amount of network traffic increases.

□

Session Log Sizing Guidelines

Notes on session log sizing guidelines

Default file size is 10 megabytes and the default space allocated is 1000 megabytes.

Fill in the formula below to help determine the amount of disk space (in bytes) needed for the Session Log:

```
space(bytes) = (86400 * M * (1000*F)) + (86400 * 1000 * (M * V/2)
```

where:

`M` = Total network traffic to be audited, in megabits

`F` = 1 for full auditing, 1/20 (or .05) for auditing drops only

`V` = Fraction of traffic that goes through a VPN tunnel

The numbers in the formula (86400, 1000) are constant and are to be used literally.

Example:

If your configuration includes 10 Bricks supporting four T3's and twelve T1's and each connection operates at an average of 50% utilization (full duplex), then the total network traffic (M) is just under 200 Mbps.

Additionally, if you need to audit all traffic and keep the logs for one day and have 10% traffic traveling through VPNs (V), then you need approximately 18.1 GB of disk space, as shown below:

```
space = (86400 * 200 * 1000) + (86400 * 1000 * (200 * 0.10/2)) = 17.3
GB + .8GB = 18.1 GB
```

If you need to keep the logs around for a longer period, then multiply the calculated disk space by the number of days. For example, to keep the logs for three days and using the above calculation, multiply

```
18.1 GB x 3 = 54.3 GB.
```

For information on general disk space guidelines, refer to the *Sizing Guidelines* appendix in the *SMS Administration Guide* for details.

> **Important!** The above formula only estimates the amount of disk space you may need — it cannot guarantee the exact amount of disk space required for your environment.

□

Promon Log Sizing Guidelines

Notes on promon log sizing guidelines

Default file size is 10 megabytes and the default space allocated is 200 megabytes.

Fill in the formula below to help determine the amount of disk space (in bytes) needed for the Proactive Monitoring Log:

```
space(bytes) = 86400 * (F+1) * 2KB/60
```

where:

`F` = Number of Bricks

The numbers in the formula (86400, 60) are constant and are to be used literally.

Example:

If you have 50 Bricks, then you need approximately .146 GB of disk space, as shown below:

```
.146 GB = 86400 * 51 * 2000/60
```

Since you want to keep the logs for seven days, multiply the calculated disk space by the number of days (in this case, 7) to arrive at the final result of approximately 1.028 GB

```
.1.028 GB = 7 * .146
```

For information on general disk space guidelines, refer to the *Sizing Guidelines* appendix in the *SMS Administration Guide* for details.

> **Important!** The above formula only estimates the amount of disk space you may need — it cannot guarantee the exact amount of disk space required for your environment.

□

User Authentication Log Sizing Guidelines

Notes on user authentication sizing guidelines

Default file size is 1 megabyte and the default space allocated is 100 megabytes.

Fill in the formula below to help determine the amount of disk space (in bytes) needed for the User Authentication Log:

```
space(bytes) = 86400 * (U * 400 + V * 1200)
```

where:

`U` = User authentications per second

`V` = VPN authentications per second

The numbers in the formula are constant and are to be used literally.

Example:

If you expect an average of one authentication or negotiation per second, and an average of one VPN authentication or negotiation per second, then you need 138.24 MB per day of disk space, as shown below:

```
138.24 MB = 86400 * (1 * 400 + 1 * 1200)
```

Since you wanted to keep the logs for seven days, multiply the calculated disk space by the number of days (in this case 7) to arrive at the final result of 967.68 MB.

```
967.68 MB = 7 * 138.24
```

For information on general disk space guidelines, refer to the *Sizing Guidelines* appendix in the *SMS Administration Guide* for details.

> **Important!** The above formula only estimates the amount of disk space you may need — it cannot guarantee the exact amount of disk space required for your environment.

□

VPN Log Sizing Guidelines

Notes on VPN log sizing guidelines

Default file size is 1 megabyte and the default space allocated is 100 megabytes.

Using the defaults, the log can grow to 1 megabyte before creating a new log and the amount of disk space that can be consumed by all VPN Logs can be 100 megabytes before deleting old logs to create new space.

The size of the VPN Log varies from site to site. Therefore, a sizing formula does not exist for this log.

Generally, you can start by making the size of the VPN Log 1/10th the size of the Session Log. From then on, monitor the size and adjust it accordingly. This is especially critical as new Bricks are added to your network and the amount of network traffic increases.

□

Appendix I: Transferring Log Files via FTP

Overview

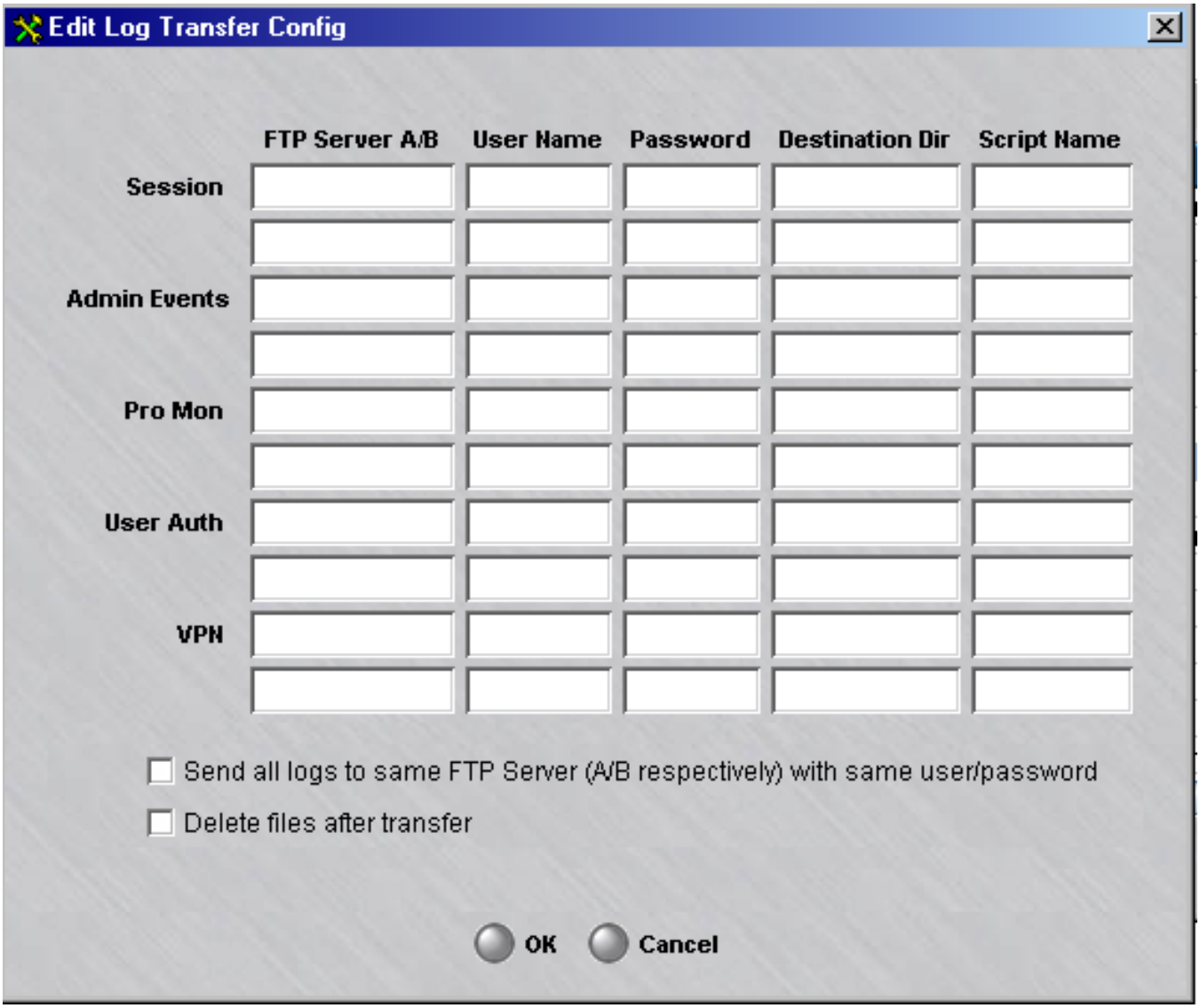
Purpose

The SMS allows you to transfer any of the log files to a designated FTP server and destination directory. Storing log files on a machine other than the SMS is useful for archiving purposes or if you have third-party tools that you want to use to analyze trends using the aggregate log file data.

Configuration Assistant

Set the Log Transfer parameters in theConfiguration Assistant (see Figure I-1, “Log Transfer Parameter in Configuration Assistant” (p. I-2)) to tell the SMS where and how to transfer log files.

Figure I-1 Log Transfer Parameter in Configuration Assistant



For details on Configuration Assistant, refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide*.

FTP Parameters

To transfer logs, enter:

- FTP Server (IP address or host name if DNS is accessible from the SMS)
- Login Name for FTP Server
- Password for Login Name

- Destination directory where the logs are placed (relative path from the FTP root directory on the FTP server)
- Script name (optional)

FTP Host Requirements

The host that is receiving the log files:

- Must be configured as an FTP server
- Should be configured with any third-party tools you need to use when analyzing the log file data
- Ideally resides on a trusted network segment. If the SMS resides on this same segment, the log files are sent in the clear and not encrypted.

  The following describes how log files are treated on the SMS with the FTP host:

  – If the FTP host and the SMS reside on different network segments, a LAN to LAN VPN could be created to encrypt the log files.

  – If one or more Bricks are positioned between the SMS and the host, then rules must be manually entered to allow the FTP traffic. See the *SMS Policy Guide* for more information about creating rules.

Contents

Scheduling Log Transfer

Files for scheduling log transactions

In addition to designating the FTP parameter information, you also must establish a schedule that will automatically send the log files.

To establish a schedule for transferring log files, you need to edit these two files:

- schedTables.txt
- schedTable

These files determine the frequency at which the log files are sent.

You may need to periodically adjust these files according to how much traffic has been generated over the network and how large the log files have become.

Procedure

To set-up a log transfer schedule:

1 Log into the SMS.

2 Using an ASCII editor, create a file named *schedTables.txt.*

Execute the command as follows:

- Place the file in *$installdir/isms/scheduler*.
- Create an entry in *schedTables.txt* as explained in the next section.

3 Using an ASCII editor, create a file named *schedTable*.

Do the following:

- Place the file in a directory that is readable or place it in the same directory (e.g., *$installdir/isms/scheduler*)as the *schedTables.txt* file.
- Create an entry in the *schedTable* file that defines the schedule as explained in the next section.

4 Stop and restart all LSMS services.

END OF STEPS

schedTables.txt

This file must be created in *$installdir/isms/scheduler* and needs to contain entries conforming to this format:

user|*schedTable*

where:

The *user*|*schedTable*file is described below:

- *user* is the login that is used to transfer the files (e.g., `root`)
- *schedTable* includes the full path to the *schedTable* file that describes a schedule.

The format of this file differs slightly for each platform. An example of *schedTables.txt* on Windows NT is as follows:

Figure I-2 Example schedTables.txt File (Windows NT)

```
root|c:\users\isms\lmf\isms\scheduler\schedTable
```

An example of *schedTables.txt* on Solaris is as follows:

Figure I-3 Example schedTables,txt File (Solaris)

```
root|/opt/isms/lmf/isms/scheduler/schedTable
```

schedTable

This file must be created in a directory that is readable and can reside in the same directory (e.g., *$installdir/isms/scheduler*)as the *schedTables.txt* file.

This file resembles a crontab file and needs to contain entries conforming to this format:

```
year|month|day|hour|min|day of the week|true(false)|repeatcount|Freq(Spec)|act
```

where:

The elements of the crontab file are described below:

- `year` = a four-digit number or wildcard (*).

and

– `month` = a two-digit number or wildcard (*).

- `day` = a two-digit number or wildcard (*).
- `hour` = a two-digit number (24 hour time) or wildcard (*).
- `min` = a two-digit number or wildcard (*).
- `day of the week` = a one-digit number (0-6) or wildcard (*).
- `true` (or `false`) = if `true`, make the repeatcount field active. If `false`, the repeatcount field is ignored and the logs are transferred only once.
- `repeatcount = this field` is active only if `true` is specified in the prior field. This is the number of times the scheduled event will be executed. If repeatcount is a wildcard (*), the log files will be transferred each time the schedule criteria is met.
  The following entry schedules the logs to be transferred only three times. Every time the schedule criteria is satisfied, the logs are transferred. The transfer will take place 5 minutes after 3 consecutive hours (e.g., 12:05, 13:05, 14:05).
  Another example illustrates repeatcount as a wildcard (*). In this example, the following entry schedules the logs to be sent every five minutes.
- `Freq` (or `Spec`) = if `Freq` is specified, the logs will be transferred repeatedly at the frequency specified in the time fields (e.g., year, month, day, etc).
  If `Spec` is specified, the logs will be transferred at the explicit time as specified in the time fields (e.g., year, month, day, etc.). For example, the following entry schedules the logs to be sent five minutes past midnight on the 15th of every month:
- `actual action or command` = any executable or script that you want to invoke. Typically, to send the logs, specify `"ismsjre isms.qnr.LogSender"`.

Disabling the Transfer Schedule

To disable a schedule that is currently in place, you can either:

- Remove the entries from the SchedTable file and restart the LSMSschedSvc service.
- With Configuration Assistant, remove all Log transfer parameters so they are blank. Refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide* for details.

□

Creating FTP Scripts

Overview

Specifying a script in the **Script Name** field for each log is optional. For instance, if you need to compress the log before it is transferred, you can provide your own customized script. Compression is the example that is carried out through this section of the chapter.

The script you write can reside anywhere as long as you provide the entire pathname to the script (for example, *c:\scripts\log_pkzip.bat*) or the directory is in the machine's PATH. Environment variables are also accepted as long as they have been pre-defined.

The script requires two arguments:

- The full pathname of the log file.
- The full pathname of the file to be transferred. Typically, this is the compressed file that was created by the script.

The transfer program automatically assigns the processed log to a file name with a *.lxg* extension (for example, *2001-07-22-.lxg*).

The first argument (the actual log file) that is passed to the script is not transferred to the FTP Server.

Only the second argument (i.e., the processed file) is actually sent. See the next few sections for some script examples.

Sample PKZIP Compression Scripts

The following is a sample script that compresses a log file before it is transferred to the designated FTP Server.

The sample script is named *processlog_pkzip.bat* and runs on Windows NT. Pkzip Version 2.5 is used here because it can handle long file names (for example, *2001-07-22-.log*).

The script accepts two arguments that were just explained:

- `%1` is the original log file (for example, *\users\isms\lmf\log\sessions\2001-07-22-.log*)
- `%2` is the log file in zipped format (for example, *\users\isms\lmf\log\sessions\2001-07-22-.lxg*) that will be transferred.

Figure I-4 Sample PKZIP Compression Script (Wundows NT)

```
c:\ emp\application\pkzip\pkzip25 -add -nozipextension %2 %1
```

The `-nozipextension` switch is supplied so the name of the processed log does not contain the *.zip* suffix. Otherwise, the transfer program would not recognize the file (e.g., *2001-07-22-.lxg.zip*) and the file would not be sent.

The equivalent script on Solaris would be:

Figure I-5 Sample PKZIP Compression Script (Unix)

```
/export/home/pkzip/pkzip25 -add -nozipextension $2 $1
```

Sample GZIP Compression Scripts

Another example script also compresses a log file prior to file transfer but uses a different compression utility (i.e., *gzip*).

Like *pkzip*, the *gzip* utility adds a file extension to the compressed file that must be suppressed in order for a successful transfer. However, the *gzip* utility does not have a comparable *-nozipextension* switch as does *pkzip*, so this has to addressed in a different manner as the following sample scripts illustrate.

The sample script is named *processlog_gzip.bat* and runs on *Windows*® NT.

Figure I-6 Sample GZIP Compression Script (Windows NT)

```
copy %1 %2
c:\ emp\application\gzip\gzip %2
rename %2.gz %2
```

The first line of the script copies the contents of the original log file (e.g., *2001-07-22-.log*) to the second argument (e.g., *2001-07-22-.lxg*).

In the second line of the script, the log file is compressed and the *.gz* file extension is automatically added. So there is now a compressed file named *2001-07-22-.lxg.gz.*

The third line of the script removes the *.gz* suffix so the file is left with only the .lxg suffix (e.g., *2001-07-22-.lxg*). Otherwise, the transfer program would not recognize the file (for example, *2001-07-22-.lxg.gz*) and the file would not be sent.

The equivalent script on Unix would be:

Figure I-7 Sample GZIP Compression Script (Unix)

```
cp $1 $2
/export/home/gzip/gzip-1.2.4/gzip $2
mv $2.gz $2
```

□

Post Log Transfer

Deletion of log files

After the log files have been transferred, the log files can be automatically deleted from the original machine to free up disk space.

To delete the logs automatically, check ▶ the **Delete files after transfer** checkbox as shown in Figure I-1, “Log Transfer Parameter in Configuration Assistant” (p. I-2). This will delete all log files that have been successfully transferred. When the **Delete files after transfer** checkbox is checked, it also ensures that logs are not transmitted twice.

Important! *Non-successful Transmission*

If the logs are not successfully transferred, the log file is not deleted and an error message is written to the Administrative Events Log.

If the FTP transfer fails, the system will attempt to transmit the file at the next scheduled transfer.

□

Using FTP Logs

Purpose of ftp log file

As log files are transferred via FTP, all activity is recorded to an FTP log file. This file is created in the *trace* directory under the installation root directory.

The name of the log is *ftplog.txt*. This log can be viewed to examine real-time or historical FTP activity. It is especially useful if problems were encountered with FTP.

An excerpt of *ftplog.txt* on Windows NT is as follows:

Figure I-8 ftplog.txt on Windows NT

```
July 21, 2001 1:25:00 PM GMT+02:00

Verbose mode On.
user ftptest *****
verbose
cd /nt/session
250 CWD command successful.
Local directory now C:\users\isms\lmf\log\sessions
lcd C:\users\isms\lmf/log/sessions
binary
200 Type set to I.
!c:/temp/application/gzip/processlog.bat 2001-07-21-12-.log 2001-07-
  21-12-.lxg >>C:\users\isms\lmf/trace/ftpScriptOut.txt
put 2001-07-21-12-.lxg
200 PORT command successful.
150 Opening BINARY mode data connection for 2001-07-21-12-.lxg.
```

An excerpt of ftplog.txt on Solaris is as follows:

Figure I-9 ftplog.txt on Solaris

```
20 july 2001 15:19:01 GMT-04:00
---> USER ftptest
---> PASS *****
Verbose mode on.
---> CWD /solaris/session
250 CWD command successful.
Local directory now /opt/isms/lmf/log/sessions
---> TYPE I
200 Type set to I.
/bin/sh -c /export/home/gzip/gzip-1.2.4/processlog.bat 2001-07-20-14-
  57-.log 2001-07-20-14-57-.lxg
---> PORT 148,70,10,4,130,123
200 PORT command successful.
---> STOR 2001-07-20-14-57-.lxg
150 Opening BINARY mode data connection for 2001-07-20-14-57-.lxg.
226 Transfer complete.
local: 2001-07-20-14-57-.lxg remote: 2001-07-20-14-57-.lxg
65376 bytes sent in 0,12 seconds (553,34 Kbytes/s)
/bin/sh -c rm 2001-07-20-14-57-.lxg
local: 2001-07-20-14-57-.lxg remote: 2001-07-20-14-57-.lxg
65376 bytes sent in 0,12 seconds (553,34 Kbytes/s)
/bin/sh -c /export/home/gzip/gzip-1.2.4/processlog.bat 2001-07-20-15-
  .log 1999-07-20-15-.lxg
local: 2001-07-20-14-57-.lxg remote: 1999-07-20-14-57-.lxg
65376 bytes sent in 0,12 seconds (553,34 Kbytes/s)
```

The FTP logs are rolled over when the file size exceeds 5 MB. When the first *ftplog.txt* exceeds 5 MB, it is copied to *ftplog_1.txt* and a new ftplog.txt is created.

When *ftplog.txt* exceeds 5 MB again, *ftplog_1.txt* is copied to *ftplog_2.txt and ftplog.txt* is copied to *ftplog_1.txt*. Up to six FTP log files, with the oldest being *ftplog_5.txt*, are created, with each growing in size up to 5 MB.

When *ftplog_5.txt* reaches capacity, new FTP activity overwrites *ftplog_1.txt*, *ftplog_5.txt* is deleted, and the files are shifted again.

□

Troubleshooting Log Transfer

Overview

If problems occur with the transfer of any log:

- You can run an Administrative Events report and search for one or more of these record types:
  - Type `46`. Indicates successful transfer.
  - Type `5`. Indicates error in transfer.
  - Type `25`. Informational message on the transfer.

  As Figure I-13 illustrates, the source of the record must be `report` .
  This report can be memorized and run periodically to detect transfer problems. See Chapter 9, "Administrative Events Report" for more information.
- Look in the FTP log file as described in "Using FTP Logs" (p. I-11) for details on recorded FTP activity.
- Look in *trace/ftplog.txt* and *trace/ftpScriptOut.txt*.
- Ensure the path for *schedTable* is correct in *schedTables.txt* file. See "Scheduling Log Transfer" (p. I-4).
- If using a compression script (see "Creating FTP Scripts" (p. I-7)), ensure the path is correct for the compression utility or if using an environment variable, ensure the variable has been defined.
- Build the script incrementally, one line at a time. Issue just the copy command first, and after it completes successfully, issue the compression commands.
- After defining the FTP parameters in Configuration Assistant and setting up the schedule, ensure that you stop and restart the services.
- Finally, try to transfer the logs manually using the same login, password, and FTP server. If a manual transfer is successful, then the problem lies elsewhere.

□

Appendix J: Pre-Configured Reports

Overview

Purpose

This appendix explains the pre-configured reports that are created when the SMS application is installed.

An SMS administrator can view and run all seven pre-configured reports. A Group administrator can view and run three pre-configured reports as long as they have the correct privileges.

Contents

Closed Session Details Reports

Types of Closed Session Details reports

There are two pre-configured Closed Session Details reports, as described below.

Drops by Rule 65535 Report

This report tracks all sessions that are dropped by rule 65535. This report resides in the Closed Session Details folder.

An SMS administrator automatically can view and run this report. By default, the report includes sessions involving all Brick zone rulesets in all groups.

A Group administrator can view and run this report if they have been assigned at least View privileges for the Policies & VPN privilege category of at least one group. Refer to the *Creating Groups and Administrators* chapter in the *SMS Administration Guide* for details on privileges. Therefore, the report will contain only sessions of Brick zone rulesets in groups for which they have this privilege.

Unauthorized Brick Connection Attempts Report

This report tracks all sessions where an unauthorized connection attempt was made to one or more Bricks. This report resides in the Closed Session Details folder.

The report includes sessions that pass through the *firewall* Brick zone ruleset and when the traffic is dropped.

An SMS administrator automatically can view and run this report. By default, the report includes sessions involving all Bricks in all groups.

A Group administrator can access and run this report if they have been assigned at least View privileges for the Devices privilege category of at least one group. Refer to the*Creating Groups and Administrators* chapter in the *SMS Administration Guide* for details on privileges. Therefore, the report will contain only sessions of Bricks in groups for which they have this privilege.

□

Administrative Events Reports

Types of Administrative Events reports

There are five pre-configured Administrative Events reports, as described below.

Brick and SMS Logging Connectivity Report

This report tracks all sessions that transpire between the Logger of the SMS and all Bricks of any group. This report resides in the Administrative Events folder.

An SMS administrator automatically can view and run this report. By default, the report includes sessions involving all Bricks in all groups.

A Group administrator will not see and cannot run this report.

Brick Errors Report

This report tracks all sessions that includes errors generated by one of more Bricks. This report resides in the Administrative Events folder.

The report includes errors with codes between 1 and 199 and represent events such as land attacks, a failed port, etc.

An SMS administrator automatically can view and run this report. By default, the report includes sessions involving all Bricks in all groups.

A Group administrator can access and run this report if they have been assigned at least View privileges for the Devices privilege category of at least one group. Refer to the *Creating Groups and Administrators* chapter in the *SMS Administration Guide* for details on privileges. Therefore, the report will contain only sessions of Bricks in groups for which they have this privilege.

Failed Login Attempts

This report tracks all sessions where an attempt to login into the SMS failed. This report resides in the Administrative Events folder.

An SMS administrator automatically can view and run this report. A Group administrator will not see and cannot run this report.

Successful Admin Logins

This report tracks all sessions where logins to the SMS were successful. This report resides in the Administrative Events folder.

An SMS administrator automatically can view and run this report. A Group administrator will not see and cannot run this report.

Successful Admin Logouts

This report tracks all sessions where logouts from the SMS were successful. This report resides in the Administrative Events folder.

An SMS administrator automatically can view and run this report. A Group administrator will not see and cannot run this report.

□

Run a Pre-Configured Report

Task

To run a pre-configured report:

1 With the Navigator window displayed, open the Reports folder.

2 Right-click the report in the Contents panel and select **Run Report** from the pop-up menu.

3 The default is for the report to cover the last five minutes of activity. Do any of the following:

- Leave the default in place and click the **OK** button to run the report.
- Change the five minutes to a different time period (it can range from one to 99 minutes) and click the **Run** button to run the report.
- Click **Select Time Range** to display **Start Date and Time** and **End Date and Time** fields.
- Enter the appropriate dates and times (or click the **Earliest Start Date** or **Now** buttons), and click the **Run** button to run the report.
  A progress window will appear as the report is generated. Once the report is complete, it will appear in a separate browser window on your screen.

END OF STEPS

□

Run Multiple Reports

When to use

Multiple reports can be selected and run simultaneously to produce a single report. The output from the individual reports will be merged together.

A union of the log records is produced in the single report where the output of the report must match the filter criteria of at least one of the reports. The only restriction in running multiple reports together is that both reports must be of the same type (e.g., all Administrative Events reports).

Task

To run multiple reports together:

1. With the Navigator window displayed, open the Reports folder.
2. Open one of the reports folders and right-click a report in the Contents panel.
3. Select **Run Multiple Reports** from the pop-up menu.
4. In the window, select one or more reports. You can use the modifier keys (Ctrl or Shift) to select non-sequential reports or a range of reports.
5. Select **Run**.

   A progress window will appear as the report is generated. Once the report is complete, it will appear in a separate browser window on your screen.

END OF STEPS

□

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