

**STONESOFT**



**StoneGate Monitoring Client 4.0**

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# **User's Guide**

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# Using StoneGate Documentation

Welcome to StoneGate™ Monitoring Client by Stonesoft Corporation. This chapter describes how to use this guide and related documentation. It also provides directions for giving feedback about the documentation.

The following sections are included:

- ▶ [Objectives and Audience](#), on page 6
- ▶ [How to Use This Guide](#), on page 6
- ▶ [Typographical Conventions](#), on page 6
- ▶ [Contact Information](#), on page 6

# Objectives and Audience

*StoneGate Monitoring Client User's Guide* describes step by step how to start and use the StoneGate Monitoring Client software. This guide is intended for customers of service providers who want to monitor the logs related to their own network traffic and for other users with monitoring accounts.

To launch the online help system, press F1 on your keyboard in any Management Client window or dialog.

# How to Use This Guide

This guide is divided in two main parts: the first part explains how to start up and use the Monitoring Client. The second part presents detailed information on how to interpret the log data you view in the Monitoring Client. The information contained in this guide is also included in the online help system, accessible through the Help menu.

## Typographical Conventions

The following typographical conventions are used in this guide:

TABLE 1.1 Typographical Conventions

Formatting	Informative Uses
Normal text	This is normal text.
<b>GUI elements</b>	Interface elements (buttons, menus, icons) and any other interaction with the user interface are in <b>bold-face</b> .
<i>References, terms</i>	Cross-references and first use of acronyms and terms are in <i>italics</i> .
Command line	File names and directories are monospaced.

We use the following ways to indicate important or additional information:



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**Note** – Notes provide important information that may help you complete a task.

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**Tip:** Tips provide information that is not crucial, but may still be helpful.

# Contact Information

For general information about StoneGate and Stonesoft Corporation, please visit our Web site at <http://www.stonesoft.com/>.

## **Product Sales**

For sales questions and other information or comments on the StoneGate product, please send e-mail to *info@stonesoft.com*.

## **Documentation Comments**

We continuously strive to improve our documentation. Should you find any instructions unclear or misleading, or should you have any suggestions for improvements, let us know by e-mailing to *documentation@stonesoft.com*.



# Using the Monitoring Client

This section explains the use of the StoneGate Monitoring Client, a tool that allows you to monitor StoneGate firewall, VPN, and IPS logs.

The following sections are included:

- ▶ [Getting Started with the Monitoring Client](#), on page 10
- ▶ [Starting the Monitoring Client](#), on page 10
- ▶ [Monitoring Client Layout](#), on page 12
- ▶ [Viewing Log Data](#), on page 13
- ▶ [Filtering Log Data](#), on page 16
- ▶ [Copying Extracts of Log Data](#), on page 20
- ▶ [Printing Extracts of Log Data](#), on page 21

# Getting Started with the Monitoring Client

The StoneGate Monitoring Client is a tool for viewing the log files of the StoneGate firewall/VPN and StoneGate IPS systems maintained for you by your StoneGate administrator. It allows you to examine log data specific to you. You can view current log data (logs that are being delivered to the Log Server in real time) and stored log data (logs that your StoneGate administrator has decided to store).

You can launch the Monitoring Client Java™ Web Start application directly through your regular Web browser. The Monitoring Client requires the Java Runtime Environment (JRE), which you may need to install separately. You also need a username and a password from your StoneGate administrator to log in to the system and view your logs.

Logs generated by the StoneGate firewall/VPN and StoneGate IPS systems record the type and volume of inbound and outbound traffic, as well as certain configuration and diagnostic information. They are the fundamental resource for checking and proving your system, as well as for intrusion detection.

Which logs you are able to see depends on limitations that your StoneGate administrator has set. The Monitoring Client also allows you to flexibly define temporary filters for your own purposes. This helps you to focus easily on the most interesting data at any given time.

## Starting the Monitoring Client

The StoneGate Monitoring Client is accessed via a web page maintained by your StoneGate administrator.



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**Note** – You must have the appropriate Java Runtime Environment (JRE) installed locally on the machine from where you access the Monitoring Client. If you are unsure about the required version, contact your StoneGate administrator.

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### ▼ To access the Monitoring Client

1. Open your web browser and type in the address of the web site that your StoneGate administrator has given you. The web page opens.
2. On the web page, click on the StoneGate Monitoring Client link.
3. Wait while the Monitoring Client application loads. Read all certificate warnings, if there are any, and accept if the certificates are correct. Wait for the login window to open.



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**Note** – In some cases you may have to give the operating system the command to run this file using `javaws.exe`.

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Illustration 2.1 Monitoring Client Login

StoneGate™

User Name

Password

Server Address

Remember Server Address

Login Cancel

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 which can be found at <https://my.stonesoft.com/licenses/sqgula.html>.

4. Your StoneGate administrator has given you a user name, password, and the server address that you need in order to log in. Enter the required information and click **Login**.
5. Wait for the Monitoring Client to open the default view of your logs.

Illustration 2.2 Monitoring Client Default View

Creation time	Sender	Facility	Type	Event	Situation	Action	Src Addr	Ds
2007-04-18 15:39:57	192.168.10.21	Packet filter	Notification	Related packet		Allow	212.20.1.1	192
2007-04-18 15:39:59	192.168.10.21	Packet filter	Notification	Incomplete connect...			192.168.10.200	3.4
2007-04-18 15:40:18	192.168.10.21	Packet filter	Notification	New connection		Allow	192.168.10.200	3.4
2007-04-18 15:40:18	192.168.10.21	Packet filter	Notification	Related packet		Allow	212.20.1.1	192
2007-04-18 15:40:19	192.168.10.21	Packet filter	Notification	Incomplete connect...			192.168.10.200	3.4
2007-04-18 15:40:38	192.168.10.21	Packet filter	Notification	New connection		Allow	192.168.10.200	3.4
2007-04-18 15:40:38	192.168.10.21	Packet filter	Notification	Related packet		Allow	212.20.1.1	192
2007-04-18 15:40:40	192.168.10.21	Packet filter	Notification	Incomplete connect...			192.168.10.200	3.4
2007-04-18 15:40:59	192.168.10.21	Packet filter	Notification	New connection		Allow	192.168.10.200	3.4
2007-04-18 15:40:59	192.168.10.21	Packet filter	Notification	Related packet		Allow	212.20.1.1	192
2007-04-18 15:41:00	192.168.10.21	Packet filter	Notification	Incomplete connect...			192.168.10.200	3.4
2007-04-18 15:41:19	192.168.10.21	Packet filter	Notification	New connection		Allow	192.168.10.200	3.4
2007-04-18 15:41:19	192.168.10.21	Packet filter	Notification	Related packet		Allow	212.20.1.1	192
2007-04-18 15:41:20	192.168.10.21	Packet filter	Notification	Incomplete connect...			192.168.10.200	3.4
2007-04-18 15:41:40	192.168.10.21	Packet filter	Notification	Incomplete connect...			192.168.10.200	3.4
2007-04-18 15:41:40	192.168.10.21	Packet filter	Notification	New connection		Allow	192.168.10.200	3.4
2007-04-18 15:41:40	192.168.10.21	Packet filter	Notification	Related packet		Allow	212.20.1.1	192
2007-04-18 15:41:55	192.168.10.21	Packet filter	Notification	Connection closed			192.168.10.200	212
2007-04-18 15:42:00	192.168.10.21	Packet filter	Notification	Incomplete connect...			192.168.10.200	3.4
2007-04-18 15:42:20	192.168.10.21	Packet filter	Notification	Incomplete connect...			192.168.10.200	3.4
2007-04-18 15:42:45	192.168.10.21	Packet filter	Notification	Incomplete connect...			192.168.10.200	3.4
2007-04-18 15:44:58	192.168.10.21	Packet filter	Notification	New connection		Allow	192.168.10.200	212
2007-04-18 15:46:12	192.168.10.21	Packet filter	Notification	New connection		Allow	192.168.10.200	212
2007-04-18 15:46:16	192.168.10.21	Packet filter	Notification	Connection closed			192.168.10.200	212

Wed 15:00 18:00 21:00 Thu 03:00 06:00 09:00

Ready root@192.168.10.211

# Monitoring Client Layout

The Monitoring Client window consists of the *Log Entry Table*, *Details panel*, *Query panel*, *Situation panel*, and *Toolbar*.

## Log Entry Table

The Log Entry Table shows the actual log data. You can either view the current logs in real time or previous logs that your StoneGate administrator has stored for you.

The table consists of several columns, and you can select which columns are shown (see [Selecting Log Data Columns to View](#), on page 15). You can also change the order of the columns by dragging the title cell to a different location. See [Log Field Values](#), on page 23 for detailed information on the different log data fields.

*Log entries* are records of the connections that attempt to pass through the firewall, and matches to IPS traffic patterns. In the Monitoring Client, each line in the Log Entry Table corresponds to one log entry.

When you view logs, the color of the line gives information about the log entry. By default the following colors are used:

TABLE 2.1 Default Log Color Filters








	Color	Filter	Explanation
	Light Green	Allow	A new connection or packet was allowed through the firewall or inline IPS, or observed by IDS.
	Green	Permit	The inspected traffic was not terminated, but it generated a log or alert.
	Pink	Refuse	A connection or packet was refused by the firewall or inline IPS.
	Pink	Discard	A connection or packet was silently discarded by the firewall or inline IPS.
	Orange	Terminate	The traffic matched an Inspection rule with a Terminate action and was dropped.
	Light orange	Terminate (passive)	The traffic matched an Inspection rule with a Passive Terminate action and could have been dropped.

TABLE 2.1 Default Log Color Filters (Continued)

	Color	Filter	Explanation
	Yellow	Blacklist received	The firewall received a blacklist request.
	White	No filter	The traffic did not match any defined filter.



**Note** – The log color filters may be different from these defaults if your StoneGate administrator has customized the colors. You can also ask the StoneGate administrator to customize the log colors specifically for you.

## Info Panels

In addition to the data displayed in the columns, there are *Info Panels* you can open on different sides of the window through the **View**→**Tools** menu. You can drag and drop the Info Panels to a new position in the Monitoring Client window to customize your layout. The following Info Panels are available:

- *Query* (for creating temporary filters based on log entries)
- *Details* (for details of the selected log entry)
- *Alert Events* (for event information on selected alert)
- *Hex Viewer* (displays traffic captures)
- *Situation* (for details on detected events in the traffic)

## Viewing Log Data

The StoneGate Monitoring Client shows by default stored logs for firewalls and IPS. You can retrieve older, stored log entries from the archives by defining a time range (see [Specifying a Time Range](#), on page 14). Furthermore, you may use filters to focus on specific log data (see [Filtering Log Data](#), on page 16). To view the most recent log entries, you must activate the Current Logs mode.

### Viewing Current Log Data

You can view the most recent log entries in the Current Logs mode. A screenful of the most recent entries is displayed by default. The screen is constantly updated as new logs are being generated.

▼ **To view current logs**

- ◆ Click the Current Logs button in the toolbar. Log entries are displayed as they arrive to the Log Server.

## Related Tasks

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- ▶ [Selecting Log Data Columns to View](#), on page 15
  - ▶ [Filtering Log Data](#), on page 16
  - ▶ Detailed information on [Log Field Values](#), on page 23
- 

## Viewing Stored Log Data

The log entries that are stored in the log archives (as defined by your StoneGate administrator) can be retrieved for viewing at any time. By default, the Monitoring Client shows the stored logs. You can specify the time range for which you want to display the logs (see [Specifying a Time Range](#), on page 14). You can further narrow down the focus by selecting a filter (see [Filtering Log Data](#), on page 16).

If you have activated the Current Logs mode, you must deactivate it to view the stored logs.

▼ **To view stored logs**

- ◆ Click the active Current Logs button. Current Logs is deactivated, and log entries that are stored on the Log Server are displayed.

## Specifying a Time Range

▼ **To specify a time range**

1. Select the time range for which you want to view logs in the time fields in the Query panel. If you want to manually specify the start and end date and times, select **Custom**.
2. Enter the date and time in the time field or click the button next to the time field to open a calendar for selecting a date. If you selected Custom as the time period, you must enter both a start date and time and an end date and time.
3. Click the **Backward** or the **Forward** button to select whether you want to view logs generated before the selected point of time (the **Backward** option) or after the selected point of time (the **Forward** option).
4. Click **Apply**. The log data is refreshed, and only logs from the selected time range are displayed. The selected time range is visualized in the timeline below the log entry table.

## Navigating in the Timeline

Once you have specified a time range, you can navigate within the selected time range in the timeline.

Illustration 2.3 Timeline in the Log Entry Table



### ▼ To navigate in the Timeline

- ◆ Drag the endpoint arrow left or right to move the selected time range.

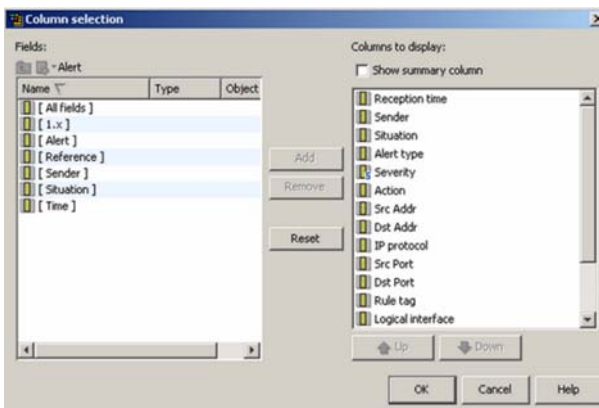
## Selecting Log Data Columns to View

The first time your Monitoring Client starts, a limited number of log data columns are shown. You can customize the column selection according to your needs. It is a good idea to keep the number of columns selected for viewing to a minimum, and use the Info Panels for checking the details of log entries.

### ▼ To select columns in the Monitoring Client

1. Select **View**→**Column Selection** from the menu. The Column Selection dialog opens. The right side of the window shows a list of the columns that are currently displayed.

Illustration 2.4 Column Selection



2. Select the column(s) you want to view from the list on the left and click **Add** to add them to the list on the right. If you want to remove a column from the list of displayed columns on the right, select it and click **Remove**.



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**Note** – Select a manageable number of columns to view. You can always view the full details of each log entry in the Details and Situation panels of the Monitoring Client.

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3. To change the order of the displayed columns, select a column name in the list on the right and click the **Up** or **Down** button to move it in the list.
4. (Optional) Select the **Show Summary Column** checkbox if you want to display a column containing a summary of the log entry.
5. Click **OK** to save the column selection. The selected columns are now shown in the Monitoring Client.

## Selecting the Time Zone

You can select the time zone you want to use for viewing the logs in the Monitoring Client. The times on screen are automatically converted to use the chosen time zone.

### ▼ To select the time zone

1. Click the time zone displayed at the status bar at the bottom of the Monitoring Client window (shown as a City/Country pair or a three-letter code). A menu opens.
2. Browse to the correct time zone, and select it. The entries in the Logs view are now displayed in the time of your chosen time zone.

## Filtering Log Data

You can use filters to select only the log entries fulfilling certain criteria from the bulk of log data. Your StoneGate administrator most likely already restricts the log data you can view, but in addition to that, you can create temporary filters in the Monitoring Client yourself. For example, if you encounter an interesting log entry when viewing logs, you might decide to examine whether there are other entries like that.

There are two ways to create these temporary filters:

- Directly in the Monitoring Client, as explained below in [Creating Simple Filters](#) and in [Using the Query Panel](#), on page 17.
- By using the *Filter Properties* window. See [Creating Filters in the Filter Properties Window](#), on page 18.

## Creating Simple Filters

If you want to create a simple filter, and you can easily find a matching entry in the Log Entry Table, it is convenient to create the filter directly in the Details panel. If you want to create a more complex filter, or you are unable to quickly find a matching entry, create the filter in the Filter Properties window as instructed in [Creating Filters in the Filter Properties Window](#), on page 18.

### ▼ To create temporary filters from the Details Panel

1. Select the appropriate log entry in the log table. In the Details panel, the log entry is displayed in more detail.
  - If the Details panel is not shown, select **View**→**Tools**→**Details** from the menu.
2. Drag-and-drop the item(s) to the <Match All> row in the Query panel.
  - Alternatively, you can right-click one of the selected items and select **Add to Current Filter**. The selected item(s) appear on a new row in the Query panel.
3. Repeat [Step 2](#) as many times as necessary, if you want to add more items to the filter.
  - You can add several items to the same row in the Query panel or put them on different rows.
  - To add more rows to the filter, click the **Add Row** button in the Query panel.
4. (Optional) If you want to use a permanent filter as part of the temporary filter, click the **Select** button and select a filter.
5. (Optional) You can also select other options in the Query panel to define which logs are displayed:
  - Select log data type from the drop-down menu.
  - Select a time range for the logs (see [Specifying a Time Range](#), on page 14).
6. Click **Apply**. The filter is activated and the logs or alerts are filtered correspondingly.

To see all logs again without any filtering, select all the rows in the temporary filter, right-click and select **Disable**. Click **Apply**. The temporary filter can be re-enabled as long as the Monitoring Client is open.

## Using the Query Panel

The Query panel provides flexible tools that allow you to quickly create and modify filters.

### ▼ To create or modify a filter in the Query panel

1. Add and remove filtering criteria:
  - Add new items by dragging-and-dropping items from the log table to the Query panel.
  - You can also add items by right-clicking log entry details and selecting **Add Filter**.
  - Deactivate individual items by right-clicking their row and selecting **Disable** from the menu that opens.
  - Remove items by right-clicking their row and selecting **Delete** from the menu that opens.
  - Add predefined filters as rows in the Query panel by clicking the Select icon above the list of filters, selecting one or more filters in the Select dialog that opens and clicking **Select**.
2. (Optional) Select **and** to require all enabled items to match, or select **or** to require only one of the enabled items to match.

3. (Optional) To negate an item, check the checkbox before the filter.

To see all logs again without any filtering, select all the rows in the temporary filter, right-click and select **Disable**. Click **Apply**. The temporary filter can be re-enabled as long as the Monitoring Client is open.

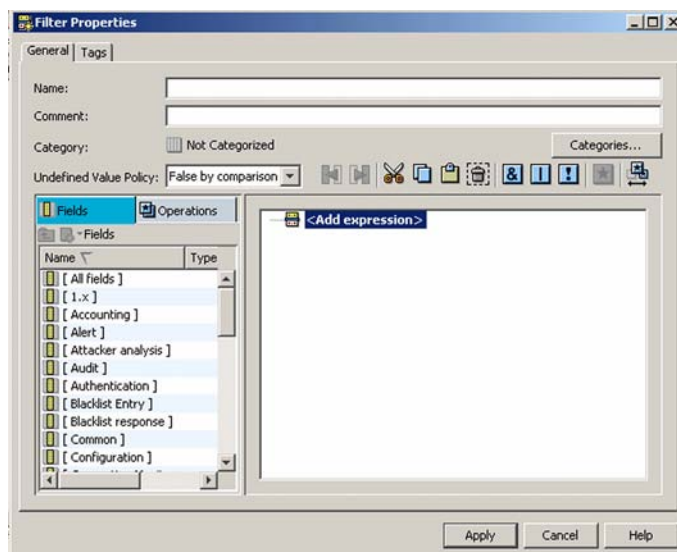
## Creating Filters in the Filter Properties Window

If you want to create a simple filter, and you can easily find a matching entry in the Log Entry Table, it is convenient to create the filter directly in the Details panel as explained in [Creating Simple Filters](#), on page 16. If you want to create a more complex filter, or you are unable to quickly find a matching entry, use the Filter Properties window instead as instructed below.

### ▼ To create temporary filters in the Filter Properties window

1. Click the **New** icon above the filter list in the Query panel and select **Filter**. The Filter Properties window opens.

Illustration 2.5 Filter Properties



2. Construct the filter by dragging and dropping items from the left panel to the right panel:
  - Select fields from the Fields tab.
  - Select Operations from the Operations tab.
  - Add values to the fields.

- See the sections below for detailed information on selecting fields and operations, and adding field values, as well as setting the Undefined Value Policy.
3. Once the filter is ready, click **Apply** to close the Filter Properties window.
  4. Click **Apply** in the Query panel. The log data in the Monitoring Client is now filtered based on the filter you just created. The filter is listed in the filter list in the Query panel as long as you keep the Monitoring Client open.

## Selecting an Operation

Operations are the basic building blocks that allow you to construct filters of varying complexity. By combining different operations into one filter, you can easily create a filter that shows you only the log entries you want to see. The three logical operations (AND, OR, and NOT) are the most important ones.

### ▼ To select an operation

1. Construct the new filter in the Filter Properties window, or open the properties of an existing filter.
2. Either:
  - Click one of the logical operation icons in the toolbar in the Filter Properties window.
  - Or drag and drop an operation from the **Operations** tab in the left panel to the filter in the right panel.

TABLE 2.2 Logical Operations

Operator	Effect
<b>AND</b>	Logs match the filter only if all the rows under the <b>AND</b> operation are true.
<b>OR</b>	Logs match the <b>OR</b> operation if one of the rows under the <b>OR</b> operation is true.
<b>NOT</b>	Logs match the <b>NOT</b> operation if all the rows under the <b>NOT</b> operation are false.

## Adding Fields and Values

You must set values (for example an IP address range) for the fields you use in the filter.

### ▼ To define a field value

1. Select a field type from the Fields tab in the left panel of the Filter Properties window, or select **All fields** to display all fields. The individual fields you can add to your filter are displayed in the panel.

2. Select the field you want to add and drag it on the correct operation in the filter you are constructing.
3. Right-click the field you just added and select **Add** and the value type you want to add in the contextual menu that opens (the value types with the Add menu item depend on what kind of field you have selected). A field for entering the value appears.
4. Fill in the value in the field. If necessary, first activate the field by clicking it.

## Setting the Undefined Value Policy

In the Filter Properties window, the **Undefined Value Policy** setting specifies how fields used in the filter but missing from log data are handled when the filter is applied. Selecting a setting for **Undefined Value Policy** is optional. In most cases, you can leave the **Undefined Value Policy** at its default setting of *False by Comparison*.

TABLE 2.3 Undefined Value Policy Options

Option	Effect
<b>False by comparison</b>	A field used in the filter but missing from log data is considered to be <i>false</i> and it is ignored in the comparison. Log data may still match depending on the filter's structure.
<b>False by filter</b>	A field used in the filter but missing from log data is considered to be <i>false</i> . Log data does not match the filter.
<b>True by filter</b>	A field used in the filter but missing from log data is considered to be <i>true</i> . Log data matches the filter.
<b>Undefined</b>	A field used in the filter but missing from log data is considered to be <i>undefined</i> . Whether the log data matches the filter or not depends on the component which uses the filter.

## Modifying Filters

- ▼ **To modify filters**
- ◆ Right-click the filter in the Query panel and select **Properties** from the menu that opens. Modify the filter in the Filter Properties window as explained in [Creating Filters in the Filter Properties Window](#), on page 18.

## Copying Extracts of Log Data

You can select parts of the log data to be copied to some other application, for example, a text editor.

▼ **To copy log data to another application**

1. In the Monitoring Client, select a log data entry in the Log Entry Table. In order to select multiple entries, hold down the ctrl or shift key while selecting the entries.
2. Right-click and select **Copy** in the menu that opens.
3. Open the application where you wish to copy the log data information and paste the log data.

## Printing Extracts of Log Data

You can also print extracts of log data directly from the Monitoring Client. The data is printed according to what is displayed in the log data columns. To specify which columns are displayed, see [Selecting Log Data Columns to View](#), on page 15.

▼ **To print an extract of log data**

1. Select the log entries you want to print.
  - Ctrl- or Shift-click to select several log entries.
2. Right-click one of the selected entries and select **Print** from the menu that opens. The print dialog for your installed printer opens.
3. Select your printing options and click **OK**. The log data information for the visible columns is printed according to the settings of the computer you are using.



# Log Field Values

The following sections are included:

- ▶ [Log Entry Table](#), on page 24
- ▶ [Facility Field Values](#), on page 26
- ▶ [Type Field Values](#), on page 27
- ▶ [Action and Event Occurrences](#), on page 28
- ▶ [VPN-Related Information Messages](#), on page 29
- ▶ [Syslog Entries](#), on page 30
- ▶ [Log Fields Controlled by the Additional Payload Option](#), on page 31
- ▶ [Connection States](#), on page 32

# Log Entry Table

The following table lists all fields of the log entry table.

TABLE A.1 Fields of the Log Entry Table

Field	Description
Creation Time	Entry creation time
Sender	Firewall or server node IP address that passes this information
Situation	The identifier of the situation that caused this event to be sent
Src Addr	Packet source IP address
Dst Addr	Packet destination IP address
Src Port	Packet source protocol port
Dst Port	Packet destination protocol port
Severity	Severity of the situation.
Facility	Firewall subsystem. For more information on facility values, see <a href="#">Table A.2</a>
Type	Log entry severity type. For more information on type values, see <a href="#">Table A.3</a>
Event	Logged event, e.g., New connection, Connection closed, Connection discarded
Action	Connection action. The action values are Discard, Allow, Wait for further actions, Refuse, and Wait for authentication
Protocol	Connection IP protocol
Rule Tag	Rule tag value of acceptance rule. When clicking on the cell, you get a Rule definition dialog box indicating the name of the policy, sub-policy, or template that generated the log record
NAT Src Addr	Translated packet source IP address
NAT Dst Addr	Translated packet destination IP address
NAT Src Port	Translated packet source protocol port
NAT Dst Port	Translated packet destination protocol port
Src IF	Defined source interface number for the firewall cluster
Protocol Agent	Protocol Agent numerical code.

TABLE A.1 Fields of the Log Entry Table (Continued)

Field	Description
Alert	Firewall Engine-generated system or custom alert.
Syslog	Syslog is a system service used in some operating systems, e.g., UNIX- and software packages. It is not a real standard but a de-facto standard that transports events and log information in UNIX server environment. For more information on syslog and syslog types, refer to <i>RFC 3164</i>
ICMP type	The Internet Control Message Protocol is an extension to the Internet Protocol (IP) that supports packets containing error, control and informational messages. ICMP messages are sent using the basic IP header. The first octet of the data portion of the datagram is an ICMP “type” field. For more information, refer to <i>RFC 792</i> and <i>RFC 950</i>
ICMP code	ICMP code attribute. Many of the ICMP types have a code field. ICMP code provides further information about message type (i.e., network unreachable). For more information, refer to <i>RFC 792</i> and <i>RFC 950</i>
ICMP ID	ICMP identifier recorded by the engine when ICMP packets pass through the firewall. ICMP identifier may be used by the echo sender to aid in matching the replies with the echo requests. For example, the identifier might be used like a port in TCP or UDP to identify a session. For more information on ICMP ID and the ICMP protocol, refer to <i>RFC 792</i> and <i>RFC 950</i>
IPsec SPI	The IPsec Security Parameter Index is the connection identifier of an IPsec connection. IPsec is a set of protocols supporting secure exchange of packets. Used for the implementation of VPNs, it provides transport and tunnel encryption modes. IPsec is defined in <i>RFC 2401</i>
Round trip	Round trip time for outbound Multi-Link link testing. Time indicated is from sending queries to the first reply. The unit is 0.01 seconds
Elapsed time	Elapsed time of connection in seconds. It will be indicated only when accounting entries are created, that means, when a connection is closed
Bytes sent	Number of bytes sent during connection. As it happens with the elapsed time, the bytes sent will be indicated just when accounting entries are created
Bytes rcvd.	Number of bytes received during connection
Auth. user	Username of authorized user
Src VLAN	Source VLAN ID number (up to 4095)

TABLE A.1 Fields of the Log Entry Table (Continued)

Field	Description
Information message	Informative message to further explain the entry
Reception time	Time when the entry was received by the log server
NAT_RULE_ID	The rule number of the NAT rule that lead to the log creation
DstIF	Destination interface of firewall
AUTH_RULE_ID	The rule number of the authorization rule that lead to the log creation

## Facility Field Values

The following table lists the possible values for the Facility field in the log table.

TABLE A.2 Facility Field Values

Value
Accounting
Authentication
Cluster Daemon
Cluster Protocol
Connection Tracking
Data Synchronization
DHCP Client
DHCP Relay
IPsec
Load Balancing Filter
License
Logging System
Log Server
Invalid
Management

TABLE A.2 Facility Field Values (Continued)

Value
Monitoring
Network Address Translation
NetLink Incoming HA
Packet Filter
Protocol Agent
Server Pool
SNMP Monitoring
State Synchronization
System
Syslog
Tester
Undefined
User Defined

## Type Field Values

The following table lists the possible values for the Type field in the log table.

TABLE A.3 Type Field Values

Value
Critical Error
Debug high
Debug low
Debug mid
Diagnostic
Emergency - System Unusable
Error

TABLE A.3 Type Field Values (Continued)

Value
Informational
Internal Max
Max
Notification
System Alert
Undefined
Warning

## Action and Event Occurrences

The following table show the most common log occurrences for the Action and Event fields.

TABLE A.4 Action and Event Occurrences

Action	Event	Description
Allow	New connection	A new connection is allowed through the firewall
Allow	Related Connection	A related connection is allowed through the firewall. For example, an FTP data connection
Allow	Related Packet	A related packet is allowed through the firewall. For instance, ICMP error messages related to an earlier TCP connection
Allow	New VPN connection	A new VPN connection is allowed through the firewall
Discard	Connection Discarded	A connection is discarded by the firewall
Discard	Packet Discarded	A packet is discarded by the firewall
Refused	Connection Refused	A connection is refused by the firewall
	Authentication service started Went Online	Both messages together indicate firewall startup
	New configuration successfully installed	New configuration is installed on the firewall

TABLE A.4 Action and Event Occurrences (Continued)

Action	Event	Description
	Security Policy reload	New security policy is loaded on the firewall

A successful engine login causes an event that is displayed in the Log and Alert Browser with the following type of message in the Info Message field: *date time login[id]:USERNAME LOGIN on 'device'*. A failed login causes an info message of the following type: *date time login[id]:FAILED LOGIN (#) on 'device' FOR 'UNKNOWN'*.

## VPN-Related Information Messages

The table below lists the most common VPN-related log messages. Some messages can only be seen when the VPN diagnostics are enabled. The messages listed below appear in the logs as part of IPsec info, Diagnostic, or Warning messages. Note that the messages may be different between different engine versions. The messages below are valid at least for StoneGate Firewall/VPN 3.0 and earlier.

TABLE A.5 Common VPN-related Log Messages

Information Message	Description
No IKE SA found [...]	This message is visible only when IPsec diagnostics are enabled. The gateway did not find the packet a part of any connection with an existing VPN tunnel. Negotiation of a new VPN tunnel follows. Repeated negotiations for the same connection are normal in a Multi-Link environment.
IKE Phase-1 initiator done IKE Phase-1 responder done	IKE Phase-1 negotiations were successfully completed, Phase-2 negotiations should begin. Which message is displayed depends on whether the gateway is the initiator or the responder in the negotiation.
IKE Phase-2 initiator done IKE Phase-2 responder done	IKE Phase-2 negotiations were successfully completed. The VPN tunnel is now established and ESP or AH message(s) should appear shortly. Which message is displayed depends on whether the gateway is the initiator or the responder in the negotiation.

TABLE A.5 Common VPN-related Log Messages (Continued)

Information Message	Description
ESP [...] AH [...]	Traffic going through the VPN tunnel. When you enable IPsec diagnostics you may see more of these messages.
Remote identity [...] used in IKE negotiation doesn't match to policy [...]	The IKE Phase 1 ID defined for the external security gateway in StoneGate is different from the ID with which the gateway actually identified itself. The ID and its type are set for each tunnel End-Point in the properties of the external Gateway.
SPD doesn't allow connection [...]	Most likely indicates that the Site definitions do not match the IP addresses used. Check the addresses included under the Sites for both Gateways, and also that the translated addresses are included under the Site, if NAT is used for communications inside the VPN.
Can not get QM policy [...]	Indicates that there is a mismatch in granularity settings between the negotiating gateways. In StoneGate, granularity is controlled with the Security Association Granularity setting on the IPsec Settings tab of the VPN Profile properties.
Can not get policy [...] No matching connection	May indicate that the gateway has no valid VPN certificate.
[...] No proposal chosen	IKE negotiations failed because of a mismatch in the configurations of the two negotiating parties. You must define a matching pair for all settings; double-check all settings at both ends.
[...] Payload malformed [...]	Most likely due to a mismatch in preshared keys between the initiator and the responder. May also be due to corruption of packets in transit.

## Syslog Entries

The following table presents the categories for messages that appear in log entries sent to an external syslog server.

TABLE A.6 Syslog Entries

Value
Clock daemon for BSD systems

TABLE A.6 Syslog Entries (Continued)

Value
Clock daemon for System V systems
File transfer protocol
Kernel messages
Line printer subsystem
Mail system
Messages generated internally by syslogd
Network news subsystem
Network time protocol
Random user-level messages
Security/authorization messages
Security/authorization messages (private)
System daemons
UUCP subsystem

## Log Fields Controlled by the Additional Payload Option

The following table presents the log fields that may be logged when the Additional Payload option is selected in inspection rule options.:

TABLE A.7 Additional Payload Log Fields

Value
DNS qname
FTP command
FTP reply
FTP server banner
HTTP header
HTTP header name

TABLE A.7 Additional Payload Log Fields (Continued)

Value
HTTP request URI
HTTP request method
HTTP request version
ICMP field datagram reference
Imf encoded word
Imf header field
Imf token
SMTP command
SMTP misplaced command
SMTP recipient
SMTP reply
SMTP reverse path
SMTP server banner

## Connection States

The following states are used in both the Connection Monitoring table in the **State** column and (in part) in the Logs view in conjunction with info messages or logs on the closing of connections. They reflect the standard states regarding the initiation and termination of TCP connections as seen by the firewall in the transmissions. [Table A.8](#) lists the possible states.

TABLE A.8 Connection Monitoring States

State	Description
Related	New connection related to an existing one is expected soon.
New	New connection is being opened.
TCP established	Normal status of TCP connections for data transfer.
TCP closing	Closing packet (FIN) sent by one end of the connection (simultaneous).

TABLE A.8 Connection Monitoring States (Continued)

State	Description
TCP syn seen	Very first packet sent by one end of the connection.
TCP fin wait 1	One end of the connection waits for sending FIN packet (active close).
TCP fin wait 2	One end of the connection waits for receiving ACK packet.
TCP time wait	One end of the connection acknowledged closing packet (FIN).
TCP close wait	One end of the connection waits for the FIN packet (passive close).
TCP last ack	One end of the connection sent a FIN packet (passive close).
TCP syn ack seen	Second phase of the TCP three-way handshake, the server has replied to client sent SYN with SYN+ACK, next status will be established.
TCP time wait ack	Waiting ACK for the FIN status before going to time wait status (active close).
TCP closing ack	Waiting ACK for the FIN before going to closing status (active close).
TCP close wait ack	Waiting ACK for the FIN before going to close wait status (passive close).
UDP established	UDP connection is recognized.
ICMP echo	Ping reply is expected.
ICMP reply wait	Other ICMP request/reply types.
IPsec established	IPsec tunnel packet is recognized.
CP established	StoneGate cluster protocol packet is recognized.
Unknown established	Connection from other transport level protocol.
Remove	Connection cannot be physically removed yet.
Remove soon	Expecting to still see some packets (multiple reset packet), so delaying the removal for a few seconds. Eliminates unnecessary packet filtering and possible logging of dropped packets.
Invalid	The communication has violated the protocol.

TABLE A.8 Connection Monitoring States (Continued)

<b>State</b>	<b>Description</b>
Unknown	Something unexpected has happened (for example, memory corruption) and the node has an inconsistent status of the connection.



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