SonicOS and SonicOSX 7 Device Log

Administration Guide

SONICWALL®

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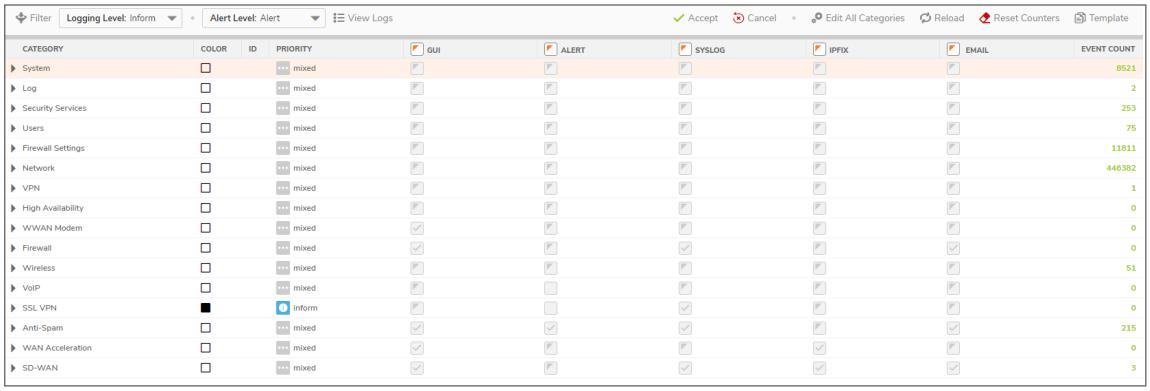
Settings

NOTE: References to SonicOS/X indicate that the functionality is available in both SonicOS and SonicOSX.

This section provides configuration tasks to enable you to categorize and customize the logging functions on your SonicWall security appliance for troubleshooting and diagnostics.



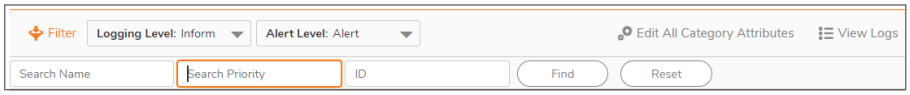
The **Device > Log > Settings** page displays logging settings in a series of columns and allows you to configure the logging and alert levels, edit attributes of categories, groups, and events, and reset event counts. You can filter the entries to limit the data display to only those events of interest. You can select storage options on appliances with built-in or flexible storage components, and you can import and save logging templates.

Topics:

- Filtering the Base Setup View
- Configuring the Logging and Alert Levels
- About Other Top Row Buttons
- About the Log Settings Base Setup Table
- Configuring Event Attributes Globally
- Configuring Event Attributes Selectively

Filtering the Base Setup View

You can filter the log data by using the **Filter** icon on the **Device > Log > Settings** page to filter at the category, group, or event level. This provides a way to filter the display of **Log > Settings** to make it easier to view settings of selected events. The Filter View in this context only allows “name, priority, id.” Enter the name, priority or id and click **Find** to filter the log data. Click **Reset** to clear the filter applied.



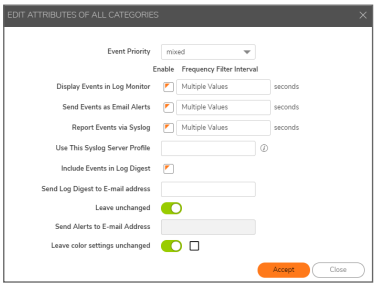
Log data is displayed on the **Monitor > Logs > System Logs** page that has its own Filter View that is more granular. You can navigate to the **Logs > System Logs** page quickly by clicking **View Logs** in the top row of the **Log > Settings** page. For more information, see *SonicWall SonicOS/X Monitor Log*.

Configuring the Logging and Alert Levels

This section provides information on configuring the level of priority of log messages that are captured, and the corresponding alert messages that are sent through email for notification.

Alert emails are sent when enabled and an email address is configured. Specifically:

- The **Enable** option for **Send Events as E-mail Alert**s is selected in the **Edit Log Event** dialog launched from the table on the **Log > Settings** page.



- There is an email address configured in **Send Alerts to E-mail Address** in the **Log > Automation** page or in one of the following Edit dialogs launched from the table on **Log > Settings** page.
  - **Edit Log Category** dialog
  - **Edit Log Group** dialog
  - **Edit Log Event** dialog

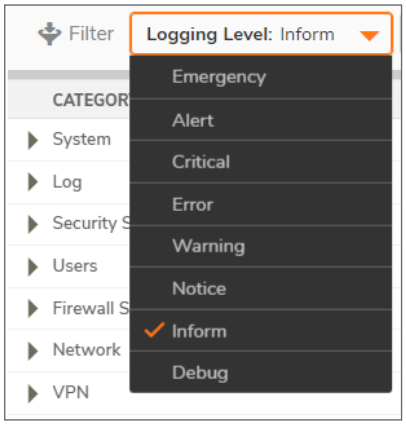
Topics:

- Setting the Logging Level
- Setting the Alert Level

Setting the Logging Level

The **Logging Level** provides a way to use the **Event Priority** setting of the event to filter for log generation. Events with equal or greater priority are logged. Events with a lower priority are not logged. This enables you to filter out lower-level priorities to prevent them from being logged. This **Logging Level** filtering is done at the beginning of logging the event, before any other filtering settings are applied. The **Logging Level** filtering affects which logs are actually stored in the Log database (and storage), unlike the **Filter** icon that only affects the display of those logs.

ⓘ **TIP:** While the **Event Priority** for each event has a factory default value, the **Edit** dialogs allow the **Event Priority** to be customized as needed on the Category level, Group level, or individual Event level. By changing the Event Priority for selected events, administrators can include events that are otherwise filtered out because of the **Logging Level** setting. For example, a factory default Debug event can be set to have an **Event Priority** of **Warning** so that it is included in the logs when **Logging Level** is set to **Warning**.



On the **Log > Settings** page, you can set the baseline logging level to be displayed on the **Monitor > Logs > System Logs** page. The following logging levels are available for selection, from highest to lowest:

- Emergency
- Alert
- Critical
- Error
- Warning
- Notice
- Inform
- Debug

The default level is **Inform**.

To set the logging level:

1. Navigate to the **Log > Settings** page.
2. From the **Logging Level** drop-down menu, select the logging level you want.

   All events with **Event Priority** equal to or higher than the selected entry are logged. For example, if you select **Error** as the **Logging Level**, all messages with **Event Priority** of **Error**, **Critical**, **Alert**, and **Emergency** are logged.

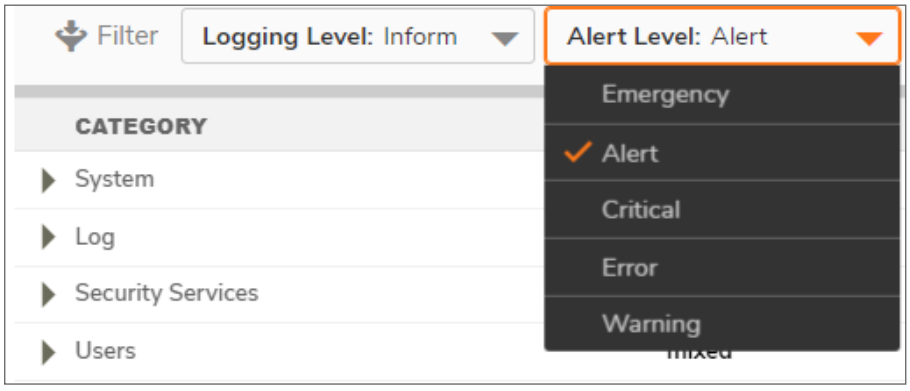
   ⓘ | **NOTE:** To display all events, select **Debug** as the logging level.

Setting the Alert Level

The **Alert Level** provides a way to use the **Event Priority** setting of the event to filter for email alerts generation. It is assumed that the event has already been included after applying the **Logging Level** filter and after applying the **Frequency Filter Interval** configured for the **Send Events as E-mail Alerts** option in the **Edit** dialogs. For **Alert Level** filtering, only events with an **Event Priority** of **Warning** or higher are included.

ⓘ | **TIP:** While the **Event Priority** for each event has a factory default value, the **Edit** dialogs allow the **Event Priority** to be customized as needed on the Category level, Group level, or individual Event level. By changing the Event Priority for selected events, administrators can include events that are otherwise filtered out because of the **Logging Level** setting. For example, a factory default Debug event can be set to have an **Event Priority** of **Warning** so that it is included in the logs when **Logging Level** is set to **Warning**.

Email alerts are sent to the email address configured in **Send Alerts to E-mail Address** in the **Log > Automation** page or, if set, configured in one of the **Edit** dialogs launched from the table on the **Log > Settings** page. Events with an alert level equal to or greater than the configured **Alert Level** are sent to the specified email address. No email alerts are sent for events with a lower alert level. This enables you to filter out lower-level email alerts to reduce the actual emails transmitted.



The following alert levels are available for selection:

- Emergency
- Alert
- Critical
- Error
- Warning

The default value is **Alert**.

To set the alert level:

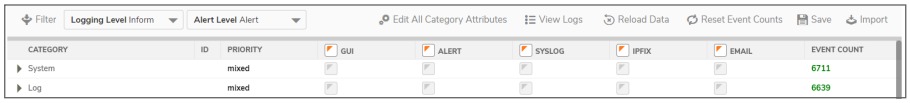
1. Navigate to the **Log > Settings** page.
2. From the **Alert Level** drop-down menu, select the alert level you want.

   All events with **Event Priority** equal to or higher than the selected **Alert Level** are also emailed. For example, if you select **Error** as the **Alert Level**, all messages all messages with **Event Priority** of **Error**, **Critical**, **Alert**, and **Emergency** are emailed.

   ⓘ | **TIP:** To email alerts for events of all alert levels, select **Warning** as the **Alert Level**.

About Other Top Row Buttons

The Logging Level and Alert Level configurations are described previously. This section provides a summary of the other buttons that appear above the table on the **Device > Log > Settings** page.

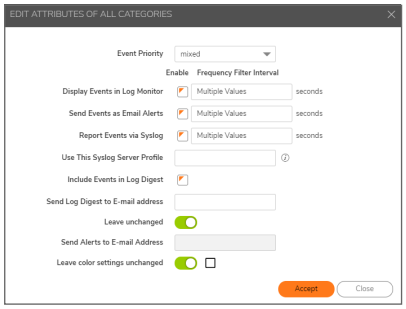


Topics:

- Edit Attributes of All Categories
- Reset Event Count
- Save Template
- Import Template
- View Logs

Edit Attributes of All Categories

Clicking the **Edit All Categories Attributes** button above the table launches the **Edit Attributes of All Categories** dialog. This dialog enables you to set the attributes for all events in all categories and groups at once.



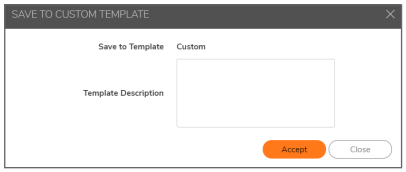
For information about this procedure, refer to Configuring Event Attributes Globally.

Reset Event Count

Click the **Reset Event Counts** button to set all the event counters to zero (0).

Save Template

Save Template displays the **Save to Custom Template** pop-up dialog so you can export the current configured Log Settings to the Custom template. The dialog also lets you enter a description for the Custom template.



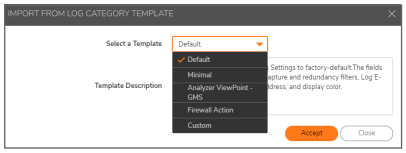
Only the Custom template can be modified and saved, and there is only one custom template. Each time the custom template is saved, the old custom template is overwritten.

Import Template

Clicking on the **Import Template** button displays the **Import from Log Category Template** dialog that allows you to select and import one of these templates:

- Default
- Minimal
- Analyzer / Viewpoint / GMS
- Firewall Action
- Custom

You can select **Custom** if you previously saved a template using **Save Template**. If there is no user template saved, **Custom** option cannot be selected.



CAUTION: The imported template overwrites individual settings. Normally, production environments would not set all Categories/Groups/Events to have exactly the same settings. Before doing this, be sure to save your current configuration using the Save Template option, so that the previous settings can be restored when a mistake is made by using Import Template > Custom. Also, factory default settings can be restored using Import Template > Default.

Topics:

- Default Template
- Minimal Template
- Analyzer/ViewPoint/GMS Template
- Firewall Action Template
- Custom Template

NOTE: The Default, Minimal, and Analyzer/Viewpoint/GMS templates are default templates defined in SonicOS/X.

Default Template

The **Default** template restores all log event settings to the SonicOS/X default values for each of these log fields:

- Event Priority
- Display Events in Log Monitor
- Send Events as E-mail Alerts
- Report Events through Syslog
- Include Events in Log Digest
- Frequency Filter Interval
- Send Log Digest to E-mail Address
- Send Alerts to E-mail Address
- Show Events using Color

Minimal Template

The **Minimal** template keeps the generated logs at a minimum level, while still providing sufficient information about the most important events on the firewall. The minimal template modifies the capture filters to allow only high-priority events to be logged. Most non-critical events are filtered out. The capture filters are modified for these fields: **GUI**, **Alert**, **Syslog**, and **Email**.

NOTE: Only the capture filters are modified; the **Frequency Filter Interval** settings are left as is.

Analyzer/ViewPoint/GMS Template

The **Analyzer/Viewpoint/GMS** template ensures that the firewall works well with Reporting Software server settings (Analyzer, Viewpoint, and/or GMS server). All related events are configured to meet the server requirements.

All configurations are limited to the **Report Events via Syslog** option and its associated **Frequency Filter Interval**. Events critical to the reporting function of Analyzer, Viewpoint, and GMS has these fields set to the recommended factory-default values:

- Report Events via Syslog
- Frequency Filter Interval for Syslog

Firewall Action Template

The Firewall Action template is based on the Analyzer/ViewPoint/GMS Template. In addition to the settings that the **Analyzer/Viewpoint/GMS Template** provides, it enables logs that report dropped packets.

Custom Template

The **Custom** template is created by clicking **Save Template**. Each time you click **Save Template**, the previous **Custom** template is overwritten. Importing it brings back the saved settings.

View Logs

The **View Logs** button in the top row takes you to the **Monitor > Logs > System Logs** page where you can view the log data.

About the Log Settings Base Setup Table

Following are columns present in the Log Settings page.

Topics:

- Category Column
- Color Column
- ID Column
- Priority Column
- GUI Column
- Alert Column
- Syslog Column
- Ipfix Column
- Email Column
- Event Count Column
- Edit and Reset Count Icons

Category Column

The **Category** column of the Log Settings table has three levels:

- **Category**, first and highest level of the tree structure
- **Group**, the second level
- **Event**, the third level

Clicking the triangle icon to the left of the category or group name expands or collapses the category or group contents:

Color Column

The Color column shows the color with which the event is highlighted in the Monitor > Logs > System Logs. To change the color of the event, click the **Edit** icon for the event.

ID Column

The **ID** column shows the ID number of the event. The ID for a particular message is listed in the *SonicOS/X Log Events Reference Guide*.

The ID number of the event is the same value used in Syslog as the **m=** message ID and can also be found in the **Event ID** column of Log Event Message Index table in the *SonicOS Log Events Reference Guide*.

ⓘ | **NOTE:** The ID number is only displayed on the event level that can be either second or third level.

Priority Column

△ | **CAUTION: Changing the Event Priority could have serious consequences. Changing the Event Priority on the Group or Category level also changes all Events under that Group or Category to the same Event Priority value. Modifying the Event Priority affects the Syslog output for the tag "pri=" as well as how the event is treated when performing filtering by Logging Level or Alert Level. Setting the Event Priority to a level that is lower than the Logging Level causes those events to be filtered out. Also, as SonicWall GMS ignores received Syslogs that have a level of Debug, heartbeat messages and reporting messages must have a minimum Event Priority of Inform.**

The **Priority** column shows the severity or priority of a category, group, or event. For events, a drop-down menu lists the selectable priorities. For categories and groups, the priorities are listed in the dialog when you click **Configure** at the end of the row.

The available priorities are:

- Emergency
- Alert
- Critical
- Error
- Warning
- Notice
- Inform
- Debug

GUI Column

The Gui column indicates whether this item is displayed in the **Monitor > Logs > System** Logs. The checkbox displayed for an Event in this column corresponds to the **Enable** checkbox setting for the **Display Events in Log Monitor** option in the **Edit Log Event** dialog.

Display of categories and groups is shown with a To show or hide indicator. To change the display for:

- An event, select or clear the checkbox in the column.
- Categories and groups, click the **Edit** icon in the column to display the **Edit Log Category** or **Edit Log Group** dialog.

Alert Column

The **Alert** column indicates whether an Alert message is sent for this event, group, or category. The checkbox displayed for an Event in this column corresponds to the **Enable** checkbox setting for the **Send Events as E-mail Alerts** option in the **Edit Log Event** dialog.

The checkbox or indicator for **Alert** applies to both sending of an email per-event and to the generation of an SNMP Trap (if SNMP configuration is enabled). For E-mail Alerts, the E-mail Address is either the global value set in the **Send Alerts to E-mail Address** field in the **Device > Log > Automation > Email Settings** page or the custom address configured in the **Send Alerts to E-mail Address** field in one of the **Edit** dialogs launched from the table on the **Log > Settings** page.

Whether the message is sent is shown with a To show or hide indicator. To change whether the Alert message is sent for:

- An event, select or clear the checkbox in the column.
- Categories and groups, click the **Edit** icon in the column to display the **Edit Log Category** or **Edit Log Group** dialog.

Syslog Column

The **Syslog** column indicates whether the event, group, or category is sent to a Syslog server. The checkbox displayed for an Event in this column corresponds to the **Enable** checkbox setting for the **Report Events via Syslog** option in the **Edit Log Event** dialog.

Whether the event, group, or category is sent is shown with a To show or hide indicator. To change whether the event, group, or category is sent for:

- An event, select or clear the checkbox in the column.
- Categories or groups, click the **Edit** icon in the column to display the **Edit Log Category** or **Edit Log Group** dialog.

Ipfix Column

The **Ipfix** column indicates whether IPFIX is enabled for log events. The checkbox displayed for an Event in this column corresponds to the **Enable** checkbox setting for the **Report Events via IPFIX** option in the **Edit Log Event** dialog.

System logs can be sent to an external server through IPFIX packets and then saved into the database on the disk. The logs only include the ones reported without connection cache.

Whether the event, group, or category has IPFIX enabled is shown with a To show or hide indicator. To enable/disable IPFIX for:

- An event, select or deselect the checkbox in the column.
- Categories or groups, click the **Edit** icon in the column to display the **Edit Log Category** or **Edit Log Group** dialog.

Email Column

The **Email** column indicates whether the log is emailed to the configured address. The checkbox displayed for an Event in this column corresponds to the **Enable** checkbox setting for the **Include Events in Log Digest** option in the **Edit Log Event** dialog. The **Log Digest** is further configured in the **Device > Log > Automation > Email Settings** page in the **E-mail Log Automation** section, in the **Send Log to E-mail Address** and **Send Log (Daily, Weekly, When Full)** options.

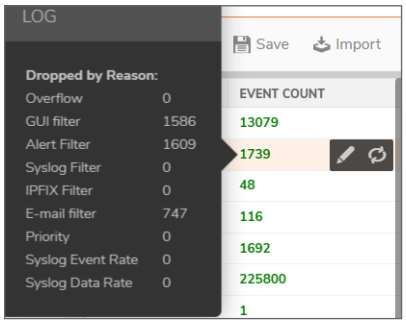
For events, these checkboxes are configurable in the column. For categories or groups, **Email** is configured in the **Edit Log Group** or **Edit Log Category** dialogs that appear when you click **Edit** at the end of the row.

Event Count Column

The **Event Count** column shows the count of events by:

- **Event** level — The number of times that this event has occurred.
- **Group** level — The total events that occurred within the group.
- **Category** level — The total events that occurred within the category.

By hovering your mouse over an event count, a pop-up message displays the count of events dropped for these reasons:



- **Overflow** – count of events dropped because they cannot be enqueued for logging
- **GUI Filter** – count of events dropped because the checkbox for **Display Events in Log Monitor** is disabled, or, if enabled, the event was dropped because of **GUI Frequency Filter Interval**
- **Alert Filter** – count of events dropped because the checkbox for **Send Events as E-mail Alerts** is disabled, or, if enabled, the event was dropped because of **Alert Frequency Filter Interval**
- **Syslog Filter** – count of events dropped because the checkbox for **Report Events via Syslog** is disabled, or, if enabled, the event was dropped because of **Syslog Frequency Filter Interval**
- **E-mail Filter** – count of events dropped because the checkbox for **Include Events in Log Digest** is disabled, or, if enabled, the event was dropped because of **E-mail Frequency Filter Interval**
- **Priority** – count of events dropped because the **Event Priority** was excluded from **Logging Level**
- **Syslog Event Rate** – applies only to Syslogs dropped when **Event Rate Limiting** is enabled in the **Device > Log > Syslog** page, and **Maximum Events Per Second** exceeded the configured threshold
- **Syslog Data Rate** – applies only to Syslogs dropped when **Data Rate Limiting** is enabled in the **Log > Syslog** page, and **Maximum Bytes Per Second** exceeded the configured threshold

Edit and Reset Count Icons

The **Edit** and **Reset Event Count** icons appear at the end of each row.

	The **Edit** icon launches the **Edit Log Event**, **Edit Log Group**, or **Edit Log Category** dialog. You can configure all of the attributes for an event, group, or category.
	The **Reset Event Count** icon resets the event counter for an event, a group, or a category, and the event counters of higher levels are recalculated. To reset all counters, use **Reset Event Count** above the table on the **Device > Log > Settings** page, as described in Reset Event Count .

Configuring Event Attributes Globally

NOTE: For information about configuring event attributes selectively, see Configuring Event Attributes Selectively.

Clicking the **Edit All Category Attributes** icon above the table launches the **Edit Attributes of All Categories** dialog. This dialog enables you to set the attributes for all events in all categories and groups at once.

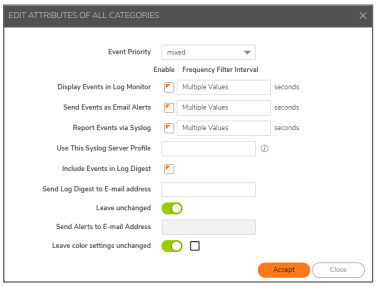
These global attributes can be modified:

- Event Priority
- Inclusion of events in Log Monitor, Email, and Syslog
- Frequency Filter Interval
- Email settings
- Font color when displayed in Log Monitor

One practical use of this global setting is to force ALL events to use the same Syslog Server Profile (GMS uses Profile 0 only), send Log Digest to the same E-mail Address, and send Alerts to the same E-mail Address.

To edit the Category attributes globally:

1. Navigate to the **Device > Logs > Settings** page.
2. Click the **Edit All Category Attributes** icon. The **Edit Attributes of All Categories** pop-up dialog appears.



NOTE: **Enable** is solid green when all categories, groups, and/or events are enabled, white when all are disabled, and semi-solid when they are mixed (some enabled, some disabled).

As this configuration is for all categories, you have to explicitly set the option to “all enabled” by clicking the icon until it is solid green, or to set the option to “all disabled” by clicking the icon until it is white. To configure a single event to be different from the rest of its group or category, you must go into the individual event setting configuration. If you do this, the icon is semi-solid.

When the fields display **Multiple Values**, different values have been specified for one or more category, group, or event. To view the individual settings, refer to Configuring Event Attributes Selectively. To change the setting from **Multiple Values** into one value for all categories, groups, or events while in the **Edit Attributes of All Categories** dialog, verify that the option was enabled so the field can be accessed for entering the new value. If the option is disabled, the field is dimmed and inaccessible.

CAUTION: The changes are saved and overwrite individual settings. Normally, production environments would not set all Categories/Groups/Events to have exactly the same settings. Before doing this, be sure to save your current configuration using the Save Template option, so that the previous settings can be restored if a mistake is made by using Import Template > Custom. Also, factory default settings can be restored using Import Template > Default.

3. From the **Event Priority** drop-down menu, select the priority that you want.

   CAUTION: Changing the Event Priority globally uses the same value for all Events. Modifying the Event Priority affects the Syslog output for the tag "pri=" as well as how the event is treated when performing filtering by Logging Level or Alert Level. Setting the Event Priority to a level that is lower than the Logging Level causes those events to be filtered out. Also, as GMS ignores received Syslogs that have a level of Debug, heartbeat messages and reporting messages must have a minimum Event Priority of Inform.

   TIP: The following **Frequency Filter Interval** fields enable you to specify how many events of the same **Event ID** to log per time interval. Note that having the same **Event ID** does not mean that the event is a duplicate because the message itself might contain different information such as source/destination IP addresses, and so on. The filtering is done based on **Event ID** only. The range for these intervals is 0 to 86400 seconds.

   TIP: The different options are independent of each other, and you can enable any combination of them and set different frequencies of generation for them. For example, you might want an event message emailed to you, but it is not shown in the **Monitor > Logs > System Logs** page. When GMS is enabled, however, care must be taken when modifying event attributes so events used to generate reports are not incorrectly filtered out. Explicit modification of individual events are saved even if used for GMS. Before making any changes, save current Log settings using **Save Template**. This way, should a mistake be made, the previous settings can be restored using **Import Template > Custom**. As a last resort, the GMS settings can be restored using **Import Template > Analyzer/Viewpoint/GMS**.

4. If you want to display the log events in the **Monitor > Logs > System Logs** page, select the **Enable** icon for the **Display Events in Log Monitor** option.

   - In the **Frequency Filter Interval** field for **Display Events in Log Monitor**, enter the number of seconds that should elapse before allowing the same event to be logged and displayed again when that event occurs one after the other. The range is 0 to 86400.

     For example, if you set this value to 60 seconds, then when the event **Connection Closed** first happens at 1:15 p.m., the next **Connection Closed** event to be displayed must occur at least 60 seconds after the first one. Any **Connection Closed** event occurring within the 60-second interval is not displayed.

5. If you want to send events as **E-mail Alerts**, select the **Enable** icon for the Send Events as E-mail Alerts option.

   - In the **Frequency Filter Interval** field for **Send Events as E-mail Alerts**, enter the number of seconds that should elapse before allowing the same email event to be sent when that event occurs one after the other. The range is 0 to 86400.

     For example, if you set this value to 60 seconds, then when an **E-mail Alerts** first happens at 1:15 p.m., the next **E-mail Alerts** for the same event is not sent until 60 seconds after the first one. Alerts for the same event occurring within the 60-second interval are not emailed.

6. If you want to report events through Syslog, select the **Enable** icon for the **Report Events via Syslog** option.
    - In the **Frequency Filter Interval** field for **Report Events via Syslog**, enter the number of seconds that should elapse before allowing the same Syslog messages to be sent when that event occurs one after the other. The range is 0 to 86400.

      For example, if you set this value to 60 seconds, then when a Syslog message is first reported at 1:15 p.m., the next Syslog message for the same event is not sent until 60 seconds after the first one. Syslog messages for the same event occurring within the 60-second interval are not sent.
7. To send the Syslogs to a particular Syslog server group, enter the group's ID in the **Use this Syslog Server Profile** field. The default is 0.
8. If you want to report events through IPFIX, select the **Enable** icon for the **Report Events via IPFIX** option.
    - In the **Frequency Filter Interval** field for **Report Events via IPFIX**, enter the number of seconds that should elapse before allowing the same events to be reported through IPFIX when events occur one after the other. The range is 0 to 86400.

      For example, if you set this value to 60 seconds, then when an event reported through IPFIX first happens at 1:15 p.m., the next report for the same event is not sent until 60 seconds after the first one. Reports to IPFIX for the same event occurring within the 60-second interval are not sent.
9. If you want to include the events in the Log Digest, select the **Enable** icon for the **Include Events in Log Digest** option. The Log Digest is a chronological collation of events.
10. If you enabled **Include Events in Log Digest**, do one of the following for **Send Log Digest to E-mail Address**:
    - If you want to use the same email address that is entered in the **Log > Automation** page even when you change other values in this dialog, select **Leave Unchanged**. This option is enabled by default.

      ⓘ **NOTE:** If this option is enabled, it is important to verify the email address configured in the **Send Log Digest to Email Address** field is correct.
    - To change the email address, clear the **Leave Unchanged** option and enter a new address in the now-active field.

      ⓘ **TIP:** An email alert is one email sent for each event occurrence as soon as that event has occurred. A Log Digest, on the other hand, is a chronological collation of events sent as a single email in digest format. Because it is a summation of events, the event information time period is a mix of older and newer events.
11. If you want to receive alerts through email based on the global settings in this dialog, do one of the following for **Send Alerts to E-mail Address**:
    - If you want to use the same email address that is entered in the **Log > Automation** page even when you change other values in this dialog, select **Leave Unchanged**. This option is enabled by default.
    - To change the email address, clear the **Leave Unchanged** option and enter a new address in the now-active field.
12. Click **Accept**.

Configuring Event Attributes Selectively

ⓘ | **NOTE:** For how to configure event attributes globally, see Configuring Event Attributes Globally.

On the **Log > Settings** page, the columns show the main event attributes that can be configured on different levels: category, group, or per event.

ⓘ | **NOTE:** The **Edit Log** pop-up dialogs might look slightly similar, but the effect of each varies in scope.

- **Edit Log Category** dialog modifies settings for a category and all groups that belong to the same category and, consequently, all events in that category.
- **Edit Log Group** dialog modifies settings for a group and all events that belong to that group.
- **Edit Log Event** dialog modifies settings for one specific event.

ⓘ | **NOTE: Enable** for the columns is green when all are enabled, white when all are disabled, and semi-solid when they are mixed (some enabled, some disabled).

As this configuration is for all categories, you have to explicitly set the option to “all enabled” by clicking the icon until it is solid green, or to set the option to “all disabled” by clicking the icon until it is white. To configure a single category, group, or event to be different, you must go into the individual dialog or event setting. If you do this, the icon is semi-solid.

You can enable or disable a column. In the rows for categories and groups, the enable indicators are gray (enabled, disabled, and mixed) and cannot be changed except through the **Edit Log Category** or **Edit Log Group** dialogs.

The rows for events contain checkboxes for enabling (✓) or disabling () the event instead of indicators.

Topics:

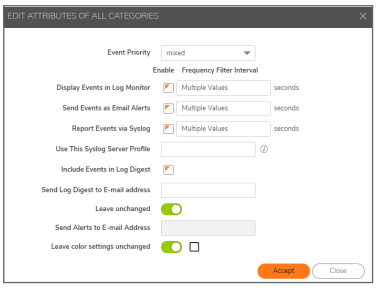
- Configuring Event Attributes by Category
- Configuring Event Attributes by Group
- Configuring Event Attributes by Event
- About Filename Logging

Configuring Event Attributes by Category

Any changes done at the category level apply to all groups and all events within the selected category.

To set the Event Attributes by category level:

1. In the **Log > Settings** page, click the **Edit** icon in the right-most column of the row with the category you want to edit. The **Edit Log Category** dialog for that category is displayed.



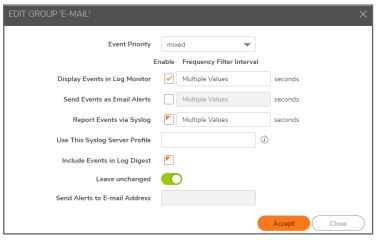
2. Follow the steps in Configuring Event Attributes Globally.

Configuring Event Attributes by Group

Setting the Event Attributes by group level allows the modification of settings on a smaller scale within a selected category. Any changes done to the group apply to all events that belong only to the selected group.

To set the Event Attributes by group level:

1. In the **Log > Settings** page, click the arrow on the left to expand the category that contains the group you want to edit.
2. Click the **Edit** icon in the right-most column of the row with the group you want to edit. The **Edit Log Group** dialog for that group is displayed.



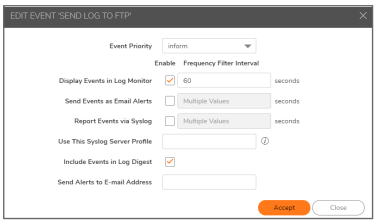
3. Follow the steps in Configuring Event Attributes Globally.

Configuring Event Attributes by Event

The most granular level, the event level, allows the Event Attributes columns to be directly modified by expanding the selected category into groups, then expanding the selected group into individual events within that group. Any changes done to the event apply to just that event within the selected group.

To set the Event Attributes by event level:

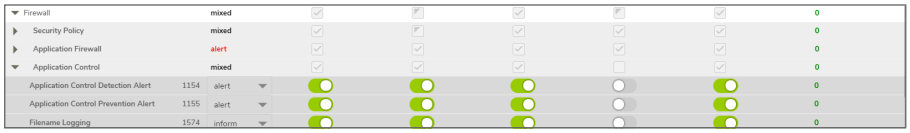
1. In the **Log > Settings** page , click the arrow on the left to expand the category that contains the group with the event you want to edit.
2. Click the arrow on the left to expand the group that contains the event you want to edit.
3. Click the **Edit** icon in the right-most column of the row with the event you want to edit. The **Edit Log Event** dialog for that event is displayed.



4. Follow the steps in Configuring Event Attributes Globally.

About Filename Logging

The **Firewall > Application Control** group provides the **Filename Logging** event. Application Control Filename Logging allows the administrator to be notified of each filename or URIs of interest that Application Control has explicitly identified as it processes packets or flows.



The notification uses the Log mechanism where the output can be shown in several message formats, such as on the **Monitor > Logs > System Logs** page or by Syslog. For Syslog, the message-id for an Application Control Filename Log is 1574 and it has a message template of *Filename: %s*, where the value substituted for *%s* can be a filename or URI identified by Application Control.

Filename Logging events can occur when the following requirements are met:

- **Enable App Control** - Application Control is enabled per zone from the **Object > Match Objects > Zones** page and globally on the **Policy > Rules and Policies > App Control**.
- **Enable Filename Logging** - Filename Logging is enabled on the **Log > Settings** page.
- **Logging is enabled for the App Control Filename Logging event id=1574** - Enable **GUI** or **Syslog** with appropriate filtering on the **Log > Settings** page.

Filename Logging works with the following protocols:

- HTTP
- FTP
- NetBios/CIFS
- SMTP
- POP3
- IMAP

Gateway Anti-Virus does not need to be enabled.

With HTTP, if the server response does not have a filename in its headers, the last portion of the URL that the client requested is used.

If the entire filename cannot be captured because of any reason, (for example, the filename was too long or it straddles multiple packets or any other reason), the prefix portion that was captured is logged and an asterisk is appended to it in the log entry.

2

Syslog

In addition to displaying event messages in the GUI, the SonicWall security appliance can send the same messages to an external, user-configured Syslog Server for viewing. The Syslog message format can be selected in **Syslog Settings** and the destination Syslog Servers can be specified in the **Syslog Servers** table.

SonicWall Syslog captures all log activity and includes every connection source and destination name and/or IP address, IP service, and number of bytes transferred. SonicWall Syslog support requires an external server running a Syslog daemon; the UDP Port is configurable.

SonicWall has fully compatible Syslog viewers, such as GMS and Analyzer that can generate useful reports based on received Syslog messages. When GMS or Analyzer has been enabled, the destination hosts are automatically added as one of the Syslog Servers. Other Syslog Servers can be added as needed.For more information about adding Syslog Servers, see About Event Profiles.

NOTE: SonicWall Syslog support requires an external server running a Syslog daemon on a UDP Port. The default port is UDP Port 514, but you can choose a different port.

Packet data can be sent to Syslog Servers. For information on how to configure this option, contact SonicWall Support.

Topics:

- About Event Profiles
- About Syslog Server Profiling
- Using a GMS Server for Syslog
- Syslog Settings
- Syslog Servers

About Event Profiles

By configuring events globally for all Syslog Servers, the events generated from all the modules in the system are reported to all the configured Syslog Servers. This generates huge amounts of Syslog traffic that might cause issues, such as reduced performance and packet loss. Syslog Server profiling, known as Event Profiling, allows more granular control by configuring events by Syslog server instead of globally. Also, there can be multiple groups of Syslog servers, with different events reported to different groups of servers. You

can specify up to 24 Event Profiles, with up to 7 Syslog Servers configured for each Event Profile, for a maximum of 168 Syslog Servers per firewall.

IMPORTANT: A GMS server used for Syslog must belong to the Profile 0 group. Only Profile 0 group, therefore, can have up to 8 servers total (7 Syslog Servers and 1 GMS server).

The Event Profile is used, along with the Server Name and Port, to uniquely identify a Syslog Server in the **Syslog Server** table. This allows multiple rows to have same Name, Port combination with different Profiles. Therefore, a Syslog Server can be a member of more than one Event Profile group.

About Syslog Server Profiling

This feature provides the ability to configure the settings for each Syslog server independently, instead of using the global settings for all the servers. In previous releases, the events generated from all the modules in the system were reported to all the configured Syslog servers. Depending on the deployment, this generates a huge amount of Syslog traffic and can cause performance issues or even packet loss.

With Syslog Server Profiling, the following new functionality is available:

- Syslog messages can be sent using different settings for different Syslog servers
- There can be multiple groups of Syslog servers
- Different events can be configured to be reported to different groups of Syslog servers

All the settings in the **Log > Syslog** page except **Enable NDPP Enforcement for Syslog Server** can be configured independently for each row in the **Syslog Servers** table. This allows Syslog messages to be rendered with different settings for different servers, and each server can have its own Rate Limiting options.

Enable/Disable sending of Syslog messages to a specific Syslog server. The settings for Enhanced Syslog and ArcSight format can also be configured individually.

All these settings can be configured from the SonicOS/X web interface and from the command line interface (CLI.) For convenience, the global settings can be used to configure all servers.

NOTE: The **Override Syslog Settings with Reporting Software Settings** option has been removed. As the Syslog servers have their own independent settings, this option is no longer needed.

Using a GMS Server for Syslog

GMS can be enabled or disabled only on the **Device > Log > Settings** page (for enabling and configuring GMS, see *SonicWall SonicOS and SonicOSX System Setup*).

When using a GMS server for Syslog, the following restrictions apply:

- The Event Profile must be **0**.
- The Syslog Facility must be **Local Use 0**.
- The Syslog Format must be **Default**.
- The Syslog ID must be **firewall**.

When firewall is managed using GMS, only the global settings can be configured from GMS. So, if a global setting is changed, it affects all the servers. The settings for an individual server cannot be configured, as GMS does not support those tags. When adding a new Syslog Server, therefore, only the hostname and port can be configured; all other fields contain default values.

When GMS is enabled, the GMS server is added to the Event Profile 0 group in the **Syslog Servers** table. It cannot be added to any other Profile groups. The events in the GMS group in the **Device > Log > Settings** page have Profile 0 and cannot be changed. Other events can have a different Profile.

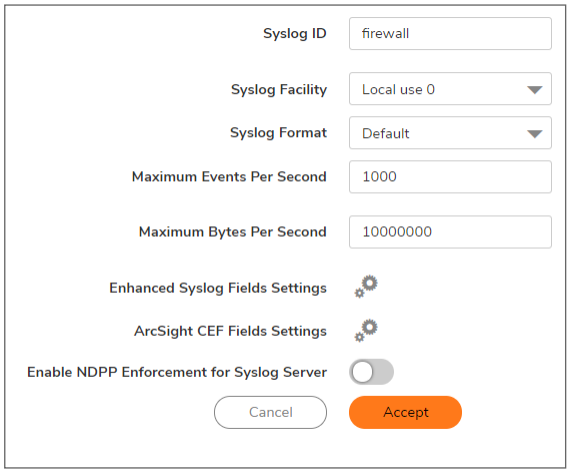
Syslog Settings

The **Device > Log > Syslog** page enables you to configure the various settings you want when you send the log to a Syslog server. You can choose the Syslog facility and the Syslog format.

NOTE: If you are using SonicWall's Global Management System (GMS) to manage your firewall, the **Syslog Format** is set to **Default** and the **Syslog ID** is set to **firewall**. Therefore, these fields are grayed-out and cannot be modified. All other fields, however, can still be customized as needed.

To configure Syslog settings on your firewall:

1. Navigate to **Device > Log > Syslog** page.



2. In the **Syslog ID** field, enter the Syslog ID. The default is **firewall**.

   A **Syslog ID** field is included in all generated Syslog messages, prefixed by *id=*. Therefore, for the default value, *firewall*, all Syslog messages include *id=firewall*. The ID can be set to a string consisting of 0 to 32 alphanumeric and underscore characters.

3. The Syslog Facility might be left as the factory default. Optionally, however, from the **Syslog Facility** drop-down menu, select the **Syslog Facility** appropriate to your network:

   SYSLOG FACILITY

Kernel	UUCP Subsystem	Local Use 0
User-Level Messages	Clock Daemon (BSP Linux)	Local Use 1
Mail System	AUTHPRV Security/Authorization Messages	Local Use 2

System Daemons	FTP Daemon	Local Use 3
Security/Authorization Messages	NTP Subsystem	Local Use 4
Messages Generated Internally by syslogd	Log Audit	Local Use 5
Line Printer Subsystem	Log Alert	Local Use 6
Network News Subsystem	Clock Daemon (Solaris)	Local Use 7

4. **Limiting Saved Records** - You can limit the maximum number of events logged to prevent the internal or external logging mechanism from being overwhelmed by logged events. **Enable Data Rate Limiting** is used to accomplish this action.

   ⓘ | **NOTE:** Data rate limiting is applied regardless of the Log Priority of individual events.

   Specify the maximum number of bytes in the Maximum Bytes Per Second field. The default minimum is 0, and the maximum is 1,000,000,000. The default maximum is 10,000,000 bytes per second.

5. From the **Syslog Format** drop-down menu, select the Syslog format:

   SYSLOG FORMATS

Default	Default SonicWall Syslog format. ⓘ | **NOTE:** This format is required for GMS or Reporting software.
WebTrends	WebTrends Syslog format. You must have WebTrends software installed on your system.
Enhanced Syslog	Enhanced SonicWall Syslog format.
ArcSight	ArcSight Syslog format. The Syslog server must be configured with the ArcSight Logger application to decode the ArcSight messages.

6. If you selected:
   - **Default** or **WebTrends**, go to *Step 14*.
   - **Enhanced Syslog**, go to *Step 7*.
   - **ArcSight**, go to *Step 11*.
7. (Optional) If you selected **Enhanced Syslog**, click the **Enhanced Syslog Fields Settings Configure** icon. The **Enhanced Syslog Field Settings** pop-up dialog displays.
8. (Optional) Select the **Enhanced Syslog** options to log. By default, all options are selected; the **Host (sn)** and **Event ID (m)** options are dimmed as they cannot be changed. To:
   - Select all options, click **Select All**.
   - Deselect all options, click **Clear All**.
   - Select only some options, either:
     - Click **Clear All**, then select only those options to log.
     - Deselect only those options to not log.
9. Click **Save**.
10. Go to *Step 14*.
11. Optionally, if you selected **ArcSight**, click the **ARCSight CEF Fields Settings Configure** icon. **ArcSight CEF Fields Settings** pop-up dialog displays.

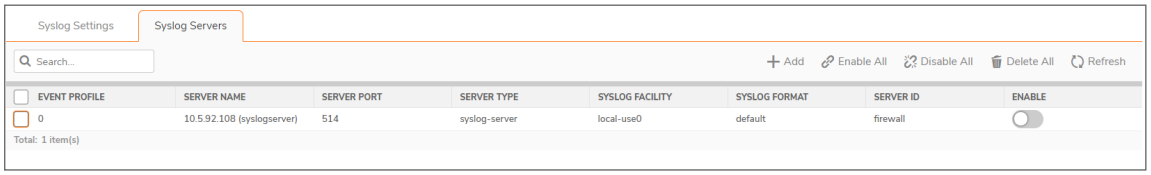
12. Optionally, select the **ArcSight** options to log. By default, all options are selected; the *Host* and **Event ID** options are dimmed as they cannot be changed. To:
    - Select all options, click **Select All**.
    - Deselect all options, click **Clear All**.
    - Select only some options, either:
        - Click **Clear All**, then select only those options to log.
        - Deselect only those options to not log.
13. Click **Save**.
14. Optionally, specify the maximum number of events in the **Maximum Events Per Second** field; the minimum number is 0 per second, the maximum is 1000 per second, and the default is **1000**. This option limits events logged to prevent the internal or external logging mechanism from being overwhelmed by log events.

    ⓘ | **NOTE:** Event rate limiting is applied regardless of Log Priority of individual events.
15. Optionally, specify the maximum number of bytes in the **Maximum Bytes Per Second** field; the minimum is number is 0 bytes per second, the maximum is 1000000000 bytes per second, and the default is **10000000**. This control limits data logged to prevent the internal or external logging mechanism from being overwhelmed by log events.

    ⓘ | **NOTE:** Data rate limiting is applied regardless of Log Priority of individual events.
16. Optionally, select the **Enable NDPP Enforcement for Syslog Server**.
17. Click **Accept**.

Syslog Servers

Global settings affect all servers. For example, a change in a global format changes the format of all the servers to the selected value.



Event Profile	Profile configured for the Syslog Server.
Server Name	IP address and name of the Syslog Server.
Server Port	Port of the Syslog Server.
Server Facility	Server Facility of the Syslog Server; for a list of Server Facilities, see Syslog Facility
Server Format	Format expected by the Syslog Server: • Default (default) • WebTrends • Enhanced Syslog • ArcSight
Server ID	ID configured for the Syslog Server; default is firewall.

Enable	Indicates whether the Syslog Server is enabled and allows you to enable or disable the sending of Syslog messages to a specific Syslog Server.
Configure	Contains the Edit and Delete icons for a Syslog Server. As a GMS server cannot be deleted or configured through the **Device > Log > Syslog** page, these two icons are dimmed.

Adding a Syslog Server

To add a Syslog server to the firewall.

1. Go to **Device > Log > Syslog** page.
2. Click **Syslog Servers** tab.
3. Click **Add**. The **Add Syslog Server** dialog appears.

4. Specify the Event Profile for this server in the **Event Profile** field. The minimum value is 0 (1 group), the maximum is 23 (24 groups), and the default is **0**. Each group can have a maximum of 7 Syslog servers.

   ⓘ | **NOTE:** For GMS, the Event Profile must be **0**.
5. Select the Syslog server name or IP address from the **Name or IP Address** drop-down menu. Messages from the firewall are then sent to the servers.
6. If your Syslog server does not use default port **514**, type the port number in the **Port Number** field.
7. Select the Syslog format from the **Syslog Format** drop-down menu. The default is **Default**; for all the options, see Syslog Formats.

   ⓘ | **NOTE:** For GMS, the Syslog format must be **Default**.
8. Select the Syslog Facility from the **Syslog Facility** drop-down menu. The default is **Local Use 0**; for all the Syslog Facilities, see Syslog Facility.

   ⓘ | **NOTE:** For GMS, the Syslog format must be **Local Use 0**.
9. In the **Syslog ID** field, type in the Syslog ID. The default ID is **firewall**.
10. Optionally, to limit events logged and therefore, prevent the internal or external logging mechanism from being overwhelmed by log events, select **Enable Event Rate Limiting**.

    ⓘ | **NOTE:** Event rate limiting is applied regardless of Log Priority of individual events.

    Specify the maximum number of events in the **Maximum Events Per Second** field; the minimum number is 0, the maximum is 1000, and the default is **1000** per second.
11. Optionally, to limit events logged and therefore, prevent the internal or external logging mechanism from being overwhelmed by log events, select **Enable Data Rate Limiting**.

    ⓘ | **NOTE:** Data rate limiting is applied regardless of Log Priority of individual events.

Specify the maximum number of bytes in the **Maximum Bytes Per Second** field; the minimum is number is 0, the maximum is 1000000000, and the default is **10000000** bytes per second. This control limits data logged to prevent the internal or external logging mechanism from being overwhelmed by log events.

12. To bind to a VPN tunnel and create a network monitor policy in NDPP mode:
    a. Optionally, choose an interface from the **Local Interface** drop-down menu.
    b. Optionally, choose an Interface from the **Outbound Interface** drop-down menu.
13. Click **Add**.

Editing a Syslog Server

To edit a Syslog Server:

1. Mouse over on the Syslog Server which you want to edit and click the **Edit** icon. The **Edit Syslog Server** dialog displays.

2. Follow the appropriate Step 4 through Step 12 in Adding a Syslog Server.

Enabling Syslog Servers

IMPORTANT: You can enable a GMS Syslog Server only on the **Device > Settings > Administration** page; see *SonicWall SonicOS/X System Setup*.

To enable a single Syslog Server:

1. Select the toggle button in the **Enable** column.

To enable all Syslog Servers:

1. Select the Syslog servers and click **Enable All**.

Disabling Syslog Server

IMPORTANT: You can disable a GMS Syslog Server only on the **Device > Settings > Administration** page; see *SonicWallSonicOS/X System Setup*.

To disable a single Syslog Server:

1. Deselect the toggle button in the **Enable** column.

To disable all Syslog Servers:

1. Select the Syslog servers and click **Disable All**.

Deleting Syslog Servers

IMPORTANT: You can delete a GMS Syslog Server only on the **Device > Settings > Administration** page; see*SonicWallSonicOS/X System Setup*.

To delete a single Syslog Server:

1. Mouse over on the Syslog server which you want to delete and select the **Delete** icon.

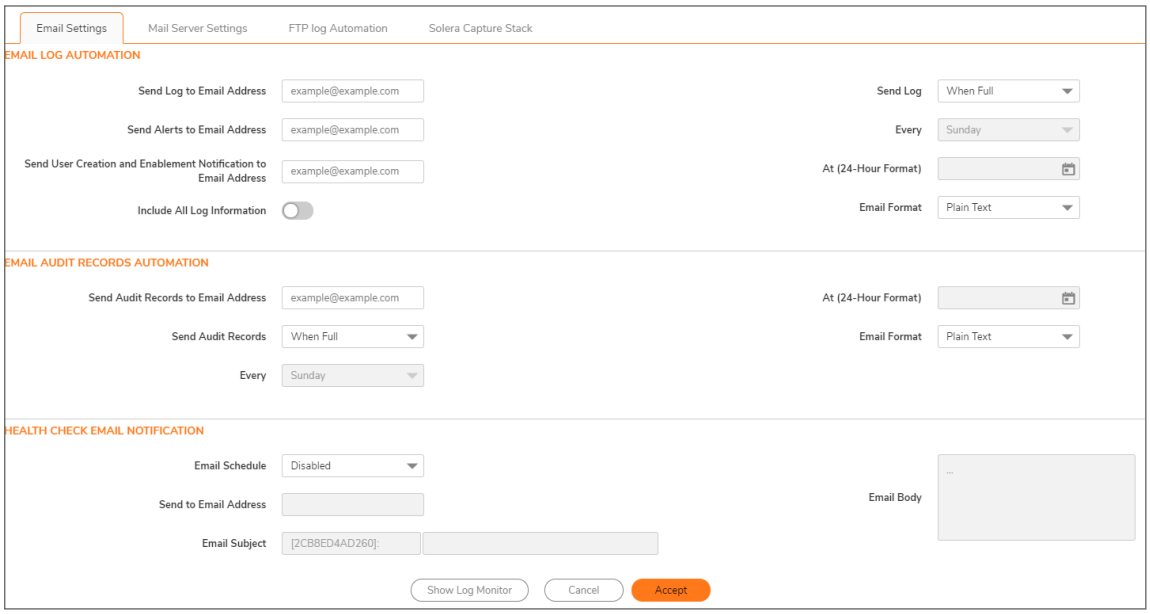
To delete all Syslog Servers:

1. Select the Syslog servers and click **Delete All**.

3

Automation

The **Device > Log > Automation** page includes settings for configuring the SonicWall to send log files using Email and configuring mail server settings.

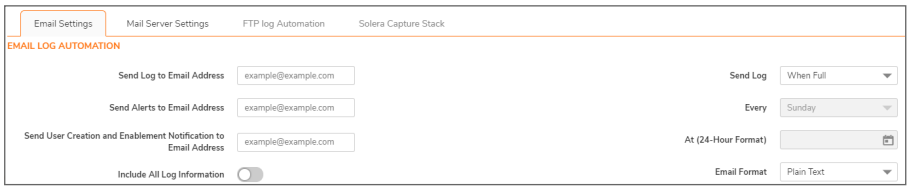


Topics:

- Email Settings
- Mail Server Settings
- FTP Log Automation
- Solera Capture Stack

Email Settings

This section describes the procedure for automating email dispatching. You can also send an email of logs manually at any time.



- **Send Log to Email address** - To receive the Log Digest through email, enter your email address (*username@mydomain.com*). After being sent, the Log Digest is cleared from the SonicWall memory. If this field is left blank, the Log Digest is not emailed.
- **Send Alerts to Email address** - To be emailed immediately when attacks or system errors occur, enter your email address (*username@mydomain.com*) as a standard email address or an email paging service. If this field is left blank, email alert messages are not sent.
- **Send User Creation and Enablement Notification to Email Address** – To be emailed immediately when a user has been created and enabled, enter your email address (*username@mydomain.com*). If this field is left blank, email notifications are not sent.
- **Send Log** - Determines the frequency of sending Log Digest files. The options in the drop-down menu are:
  - **When Full** - This setting is the default.
  - **Weekly** - Select the day of the week the Log Digest is sent in **Every** drop-down menu and enter the time of day in 24-hour format in the **At** field.
  - **Daily** - Enter the time of day the Log Digest is to be sent in 24-hour format in the **At** field.
- **Email Format** - Select whether log emails are sent in **Plain Text** or **HTML** format or as a **CSV Attachment** from the drop-down menu.
- **Include All Log Information** - Select to have all information included in the log report. If not selected, only readable column data is sent.
- If finished configuring settings on this page, click **Accept**.

Email Audit Records Automation

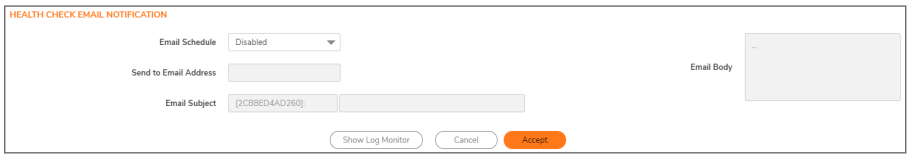
Use this feature to send audit records to specific e-mail addresses automatically on a predefined schedule.

To send audit records to specific email addresses:

1. In the **Send to Email Address** field, enter the email address(es) of the recipient(s) to notify.
2. In **Send Audit Records**, define when:
    - **Daily** - Enter the time of day in 24-hour format in the **At** field.
    - **Weekly** - Select the day of the week in **Every** drop-down menu and enter the time of day in 24-hour format in the **At** field.
    - **When Full** - This setting is the default.
3. Select **Email Format**:
    - **Plain Text**
    - **HTML**
    - **CSV Attachment**
4. When all the fields are configured, click **Accept**.

Health Check Email Notification

The **Health Check Email Notification** section enables you to create a predefined email notification with a set subject and body at the times specified by the selected schedule.

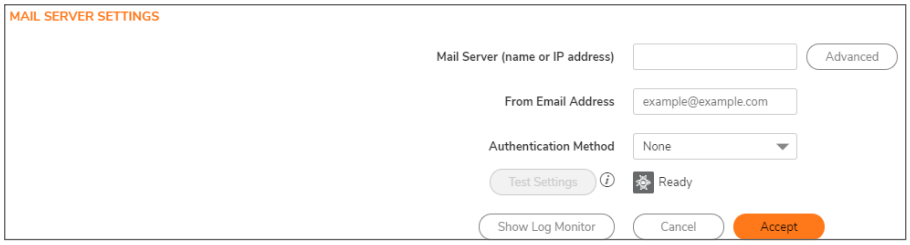


To set up a Health Check Email Notification:

1. From the **Email Schedule** drop-down menu, select a predefined schedule, **Create a new schedule**, or **Disabled**.
2. In the **Send to Email Address** field, enter the email address of the recipient(s) to notify.
3. In the **E-mail Subject** field, enter the subject of the email. The Firewall Name is included by default. The Firewall Name is configured on **Policy > Firewall**, and is the appliance serial number by default.
4. In the **Email Body** field, enter the body of email.
5. If finished configuring settings on this page, click **Accept**.

Mail Server Settings

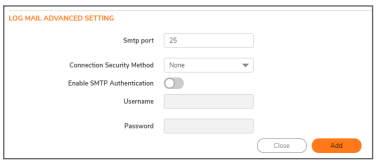
The mail server settings allow you to specify the name or IP address of your mail server, the from Email address, and authentication method. You can also enter a POP3 server name or IP address, with username and password.



- **Mail Server (name or IP address)** - Enter the IP address or FQDN of the email server used to send your log emails in this field.

  NOTE: If the **Mail Server (name or IP address)** is left blank, log and alert messages are not emailed.

- **Advanced** - The **Advanced** button displays the **Log Mail Advanced Setting** dialog.



  - **Smtp port** - Enter the SMTP port used for email. The default port number is 25.
  - **Connection Security Method** - Select a security method for the email from the drop-down menu:
    - **None** (default)
    - **SSL/TLS**
    - **STARTTLS**
  - **Enable SMTP Authentication** - Select to enable SMTP authentication for the emails, then enter the following. This option is disabled by default.
    - **Username**
    - **Password**

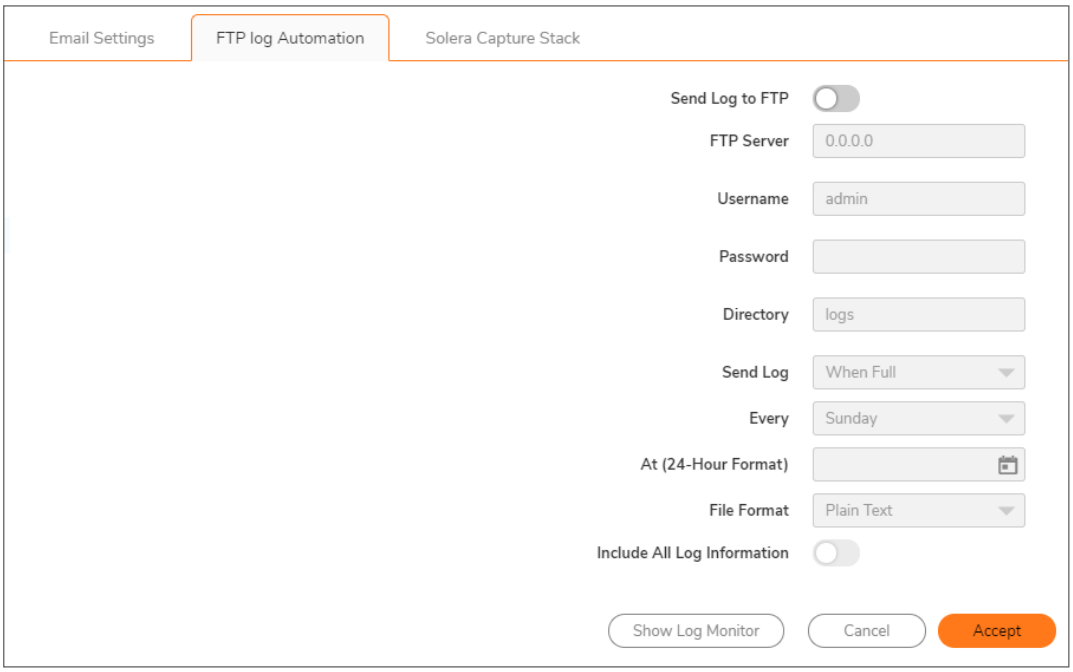
- **From Email Address** - Enter the Email address you want to display in the From field of the message.
- **Authentication Method** - You can use the default **None** or select **POP Before SMTP**.
  - **POP3 Server (name or IP address)** - Enter the IP address or FQDN of the email server used to send your log emails in this field.
  - **Username** - Enter the POP3 username.
  - **Password** - Enter the password for the POP3 account.
- If finished configuring settings on this page, click **Accept**.

  Clicking on **Show Log Monitor** displays you all the system logs.

FTP Log Automation

FTP log automation enables the administrator to send logs to an FTP server. It is similar to Email Log Automation in the following aspects:

- You can select text, HTML, or CSV file format
- You can select detailed or concise log information
- You can select a predefined time schedule. In addition to the defined schedule, logs are sent when the administrator clicks **Restart** and when the log is full.



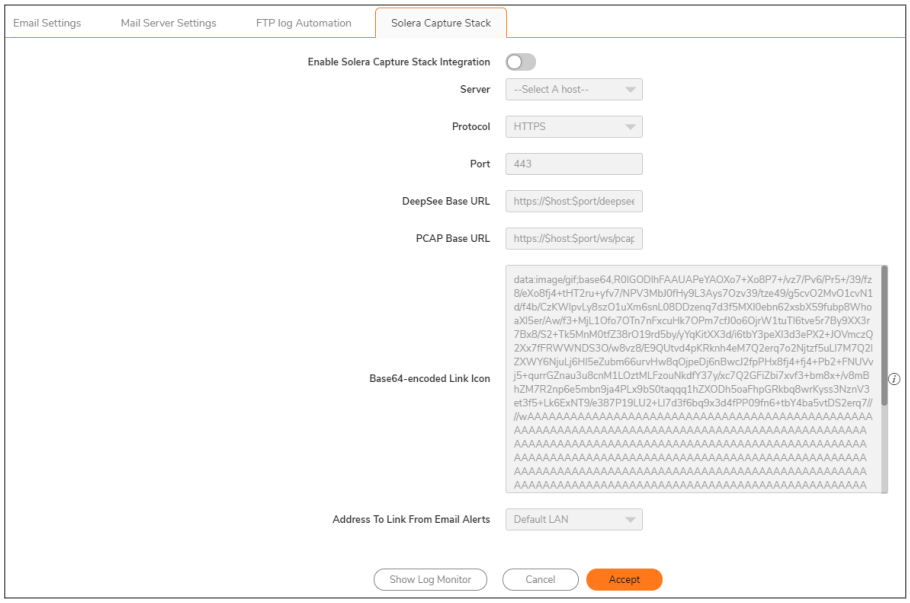
To configure FTP log automation settings:

1. Navigate to the **Device > Log > Automation** page and select **FTP Log Automation** tab.
2. Select **Send Log to FTP** to enable FTP log automation. If this option is not selected, all the other options are grayed out.
3. For **FTP Server**, enter the IPv4 address of the FTP server.
4. For **Username**, enter the username for authenticating to the FTP server.
5. For **Password**, enter the password for the FTP server account.
6. For **Directory**, enter the destination directory on the FTP server. The default is **logs**.
7. From the **Send Log** drop-down menu, select the frequency for sending the logs to the FTP server. Choose Daily, Weekly, or When Full. The default is **When Full**.
8. Select the day of the week for sending the logs from the drop-down menu next to **Every** field. This is used for a Weekly schedule.

9. Select the hour and minute of the day in 24 hour format in the two fields next to the **At (24-Hour Format)**. The time is used for Daily and Weekly schedules.
10. From the **File Format** drop-down menu, select one of **Plain Text**, **HTML**, or **CSV Attachment** as the format in which the logs are sent.
11. Select **Include All Log** Information to have all information included in the log report. If not selected, only readable column data is sent.
12. If finished configuring settings on this page, click **Accept**.
    Clicking on **Show Log Monitor** displays you all the system logs.

Solera Capture Stack

Solera Networks makes a series of appliances of varying capacities and speeds designed to capture, archive, and regenerate network traffic. The Solera Networks Network Packet Capture System (NPCS) provides utilities that allow the captured data to be accessed in time-sequenced playback, that is, analysis of captured data can be completed on a live network through NPCS while the device is actively capturing and archiving data.



To configure your firewall with Solera:

1. Select **Enable Solera Capture Stack Integration** option. If this option is not selected, all the other options are grayed out.
2. Select the host for the Solera server from the **Server** drop-down menu. You can dynamically create the host by selecting **Create New Host**.
3. From the **Protocol** drop-down menu, select either **HTTP** or **HTTPS**. The default is **HTTPS**.
4. In the **Port** field, enter the port number for connecting to the Solera server. The default port is **443**.

5. In the **DeepSee Base URL** field, define the format for the base URL for the DeepSee path. The format can include special tokens; in the actual URL, the special tokens are replaced with the actual values. A default format is given.

   The following tokens can be used in the **DeepSee Base URL** and **PCAP Base URL** fields:

   - **$host** - server name or IP address that has the data
   - **$port** - HTTP/HTTPS port number where the server is listening
   - **$usr** - user name for authentication
   - **$pwd** - password for authentication
   - **$start** - start date and time
   - **$stop** - stop date and time
   - **$ipproto** - IP protocol
   - **$scrip** - source IP address
   - **$dstip** - destination IP address
   - **$srcport** - source port
   - **$dstport** - destination port

6. In the **PCAP Base URL** field, define the format for the base URL for the PCAP path. The format can include special tokens; in the actual URL, the special tokens are replaced with the actual values. For these tokens and their definitions, see **Step 5**. A default format is given.
7. In the **Base64-encoded Link Icon** field, define the Base 64-encoded GIF image to be used as desktop shortcut to the Solera server. Ensure the icon is valid and the size is as small as possible. A default icon is given.
8. From the **Address to link from E-mail Alerts** drop-down menu, select either **Default LAN** (default) or **Default WAN**.
9. If finished configuring settings on this page, click Accept.

   Clicking on **Show Log Monitor** displays you all the system logs.

4

Name Resolution

The **Device > Log > Name Resolution** page includes settings for configuring the name servers used to resolve IP addresses and server names in the log reports.

The SonicWall network security appliance uses a DNS server or NetBIOS to resolve all IP addresses in log reports into server names. It stores the names/address pairs in a cache, to assist with future lookups. You can clear the cache by clicking **Reset Name Cache** button.

Selecting Name Resolution Settings

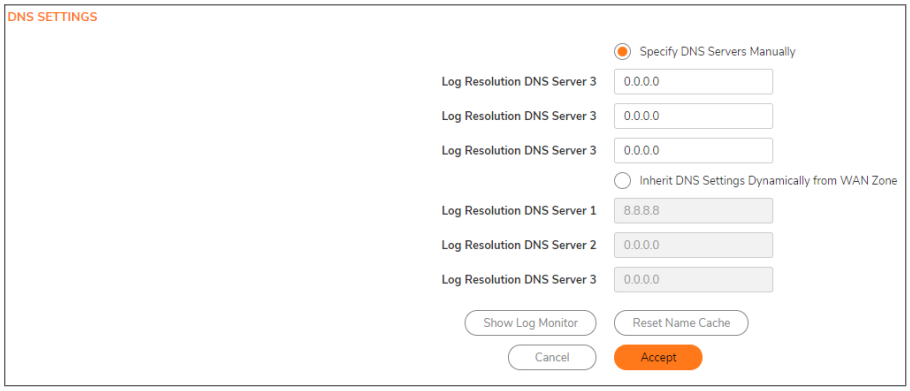
The firewall appliance can use DNS, NetBIOS, or both to resolve IP addresses and server names.

In the **Name Resolution Method** list, select:

- **None**: The security appliance does not attempt to resolve IP addresses and Names in the log reports.
- **DNS**: The security appliance uses the DNS server you specify to resolve addresses and names.
- **NetBIOS**: The security appliance uses NetBIOS to resolve addresses and names. If you select NetBIOS, no further configuration is necessary.
- **DNS then NetBIOS**: The security appliance first uses the DNS server you specify to resolve addresses and names. If it cannot resolve the name, it tries again with NetBIOS.

Specifying the DNS Server

You can choose to specify DNS servers, or to use the same servers as the WAN zone.



1. Select **Specify DNS Servers Manually** or **Inherit DNS Settings Dynamically from WAN Zone**. The second choice is selected by default.
2. If you selected to specify a DNS server, enter the IP address for at least one DNS server on your network. You can enter up to three servers.
3. Click **Accept**.

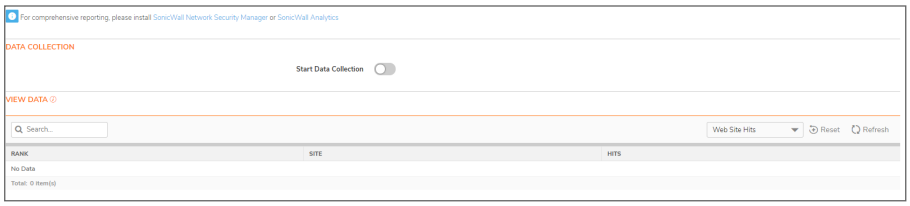
   Clicking on **Show Log Monitor** navigates you to the System logs page.

   Clicking on **Reset Name Cache** clears all the log cache.

5

Reports

The firewall can complete a rolling analysis of the event log to show the top 25 most frequently accessed Web sites, the top 25 users of bandwidth by IP address, and the top 25 services consuming the most bandwidth. Generate these reports from the **Device > Log > Reports** page.



NOTE: SonicWall Analyzer provides a comprehensive Web-based reporting solution for firewalls. For more information on SonicWall Analyzer, go to http://www.SonicWall.com.

Topics:

- Data Collection
- Viewing Data
- Persistent Logging

Data Collection

The **Device > Log > Reports** page includes these functions:

- **Data Collection** – Enable **Start Data Collection** to begin log analysis. When log analysis is enabled, the button label changes to **Stop Data Collection**.
- **Restart** – Click **Restart** icon to update the real-time data in the table.
- **View Data** – Click **Reset** icon to clear the report statistics and begin a new sample period. The sample period is also reset when data collection is stopped or started, and when the firewall is restarted.

Viewing Data

Select the desired report from Report View:

- **Web Site Hits** (default)
- **Bandwidth Usage by IP Address**
- **Bandwidth Usage by Service**

The length of time analyzed by the report is displayed in the **Current Sample Period**.

Web Site Hits

Selecting **Web Site Hits** from the drop-down displays a table showing the URLs for the 25 most frequently accessed Web sites and the number of hits to a site during the current sample period.

The **Web Site Hits** report ensures that the majority of Web access is to appropriate Web sites. If leisure, sports, or other inappropriate sites appear in the Web Site Hits Report, you can choose to block the sites. For information on blocking inappropriate Web sites refer to the **Objects > Profile Objects > Content Filter** command in *SonicWall SonicOS and SonicOSX Profile Objects*.

Bandwidth Usage by IP Address

Selecting Bandwidth **Usage by IP Address** from the drop-down displays a table showing the IP address of the 25 top users of Internet bandwidth and the number of megabytes transmitted during the current sample period.

Bandwidth Usage by Service

Selecting **Bandwidth Usage by Service** from the drop-down displays a table showing the name of the 25 top Internet services, such as HTTP, FTP, RealAudio, and so on, and the number of megabytes received from the service during the current sample period.

The **Bandwidth Usage by Service** report shows whether the services being used are appropriate for your organization. If services such as video or push broadcasts are consuming a large portion of the available bandwidth, you can choose to block these services.

Persistent Logging

The new SonicWall appliances have been enhanced so that more logging information can be retained in an on-board database. It can also preserve the data in the event of a loss of power. These features apply if the appliance has had additional non-volatile storage built into the it and the appliance is running SonicOS 6.5.1 or later.

The maximum number of entries that can be stored on the log database is increased to 50,000 for all platforms, but the amount of space available is driven by the size of the built-in storage module and space allocated for logging.

If storage is available, backups of the logs are taken automatically and requires no configuration. They can also be manually deleted.

NOTE: Loading the Log Reports page can be slower when there are too many entries in the log database. Similarly, exporting a log report can be slower.

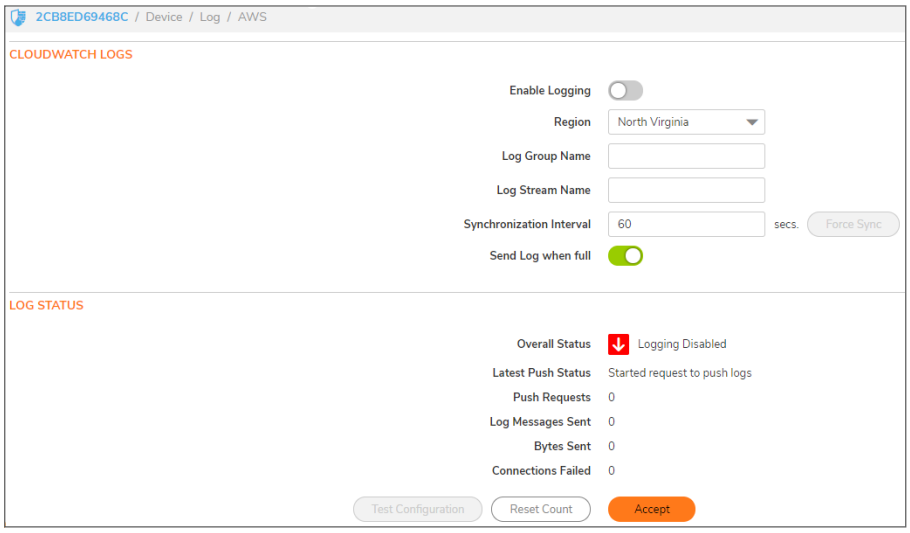
To delete backups:

1. Navigate to the **Device > Settings > Storage > Files** page.
2. Under Logs group, click **Purge**.
   The backups are deleted.

6

AWS

The **Log > AWS** Logs page allows configuration of the Amazon Web Services (AWS) endpoint to which the logs are sent along with settings affecting the frequency with which the data is posted.



Logged events generated on the firewall can be sent to the AWS CloudWatch Logs service. From there, the data can be used by AWS hosted analysis tools such as ElasticSearch and Kibana.

Enabling AWS Logs

ⓘ **NOTE:** In order to send the logs from SonicOS/X to Amazon CloudWatch Logs, you must first create a Log Group and a Log Stream in AWS.

If you already have an Identity Access Management (IAM) user account with the appropriate permissions to access CloudWatch Logs from the AWS Console:

1. Navigate to the **CloudWatch** section.
2. Select the Logs item in the left navigation menu. Ensure that you have selected the appropriate **AWS Region** for the logs to be stored. As with many AWS services, **CloudWatch Logs** is region-specific.
3. Create the **Log Group**.
4. Create the **Log Stream**.

To enable AWS logs in SonicOS/X:

1. Navigate to the **Device > Log > AWS** page.
2. In the **CloudWatch Logs** section, select **Enable Logging**.
3. Select the **Region** in which you created a Log Group and Log Stream in the AWS Console. (You can change the region used by the firewall either on this page or on the **Network > System > AWS Configuration** page.)
4. Enter the names of the **Log Group** and **Log Stream** that you created in the AWS Console that holds the logs sent to AWS CloudWatch Logs.
5. The logs are sent at the specified **Synchronization Interval**. Change the value of the interval (in seconds) to suit your needs.
6. Optionally, you can click **Force Sync** to manually synchronize with your AWS Console settings.
7. Click **Accept**.

7

SonicWall Support

Technical support is available to customers who have purchased SonicWall products with a valid maintenance contract.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. To access the Support Portal, go to https://www.sonicwall.com/support.

The Support Portal enables you to:

- View knowledge base articles and technical documentation
- View and participate in the Community forum discussions at https://community.sonicwall.com/technology-and-support.
- View video tutorials
- Access https://mysonicwall.com
- Learn about SonicWall professional services
- Review SonicWall Support services and warranty information
- Register for training and certification
- Request technical support or customer service

To contact SonicWall Support, visit https://www.sonicwall.com/support/contact-support.

About This Document

NOTE: A NOTE icon indicates supporting information.

IMPORTANT: An IMPORTANT icon indicates supporting information.

TIP: A TIP icon indicates helpful information.

CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death.

SonicOS and SonicOSX Device Log Administration Guide
Updated - August 2020
Software Version - 7
232-005338-00 Rev B

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1033 McCarthy Blvd
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