Auditing the System

The following topics describe how to audit activity on your system:

- The System Log, on page 1
- About System Auditing, on page 2

The System Log

The System Log (syslog) page provides you with system log information for the appliance.

You can audit activity on your system in two ways. The appliances that are part of the Firepower System generate an audit record for each user interaction with the web interface, and also record system status messages in the system log.

The system log displays each message generated by the system. The following items are listed in order:

- the date that the message was generated
- the time that the message was generated
- the host that generated the message
- the message itself

Viewing the System Log

System log information is local. For example, you **cannot** use the Firepower Management Center to view system status messages in the system logs on your managed devices.

You can filter messages using most syntax accepted by the UNIX file search utility Grep. This includes using Grep-compatible regular expressions for pattern matching.

Before you begin

You must be an Admin or Maintenace user and be in the Global domain to view system statistics.

Step 1 Choose **System** > **Monitoring** > **Syslog**.

Step 2 To search for specific message content in the system log:

a) Enter a word or query in the filter field as described in Syntax for System Log Filters, on page 2.

   Only Grep-compatible search syntax is supported.

   Examples:

   To search for all log entries that contain the user name "Admin," use `Admin`.

   To search for all log entries that are generated on November 27, use `Nov[[:space:]]*27` or `Nov.*27` (but not `Nov 27` or `Nov*27`).

   To search for all log entries that contain authorization debugging information on November 5, use `Nov[[:space:]]*5.*AUTH.*DEBUG`.

b) To make your search case-sensitive, select **Case-sensitive**. (By default, filters are not case-sensitive.)
c) To search for all system log messages that do **not** meet the criteria you entered, select **Exclusion**.
d) Click **Go**.

Syntax for System Log Filters

The following table shows the regular expression syntax you can use in System Log filters:

Table 1: System Log Filter Syntax

Syntax Component	Description	Example
.	Matches any character or white space	`Admi.` matches `Admin`, `AdmiN`, `Admi1`, and `Admi`
`[[:alpha:]]`	Matches any alphabetic character	`[[:alpha:]]dmin` matches `Admin`, `bdmin`, and
`[[:upper:]]`	Matches any uppercase alphabetic character	`[[:upper:]]dmin` matches `Admin`, `Bdmin`, and
`[[:lower:]]`	Matches any lowercase alphabetic character	`[[:lower:]]dmin` matches `admin`, `bdmin`, and
`[[:digit:]]`	Matches any numeric character	`[[:digit:]]dmin` matches `0dmin`, `1dmin`, and
`[[:alnum:]]`	Matches any alphanumeric character	`[[:alnum:]]dmin` matches `1dmin`, `admin`, `2dmin`,
`[[:space:]]`	Matches any white space, including tabs	`Feb[[:space:]]29` matches logs from Februar
*	Matches zero or more instances of the character or expression it follows	`ab*` matches `a`, `ab`, `abb`, `ca`, `cab`, and `cabb` `[ab]*` matches anything
?	Matches zero or one instances	`ab?` matches `a` or `ab`
\	Allows you to search for a character typically interpreted as regular expression syntax	`alert\?` matches `alert?`

About System Auditing

The appliances that are part of the Firepower System generate an audit record for each user interaction with the web interface.

Related Topics

Standard Reports

Audit Records

Firepower Management Centers and 7000 and 8000 Series devices log read-only auditing information for user activity. Audit logs are presented in a standard event view that allows you to view, sort, and filter audit log messages based on any item in the audit view. You can easily delete and report on audit information and can view detailed reports of the changes that users make.

The audit log stores a maximum of 100,000 entries. When the number of audit log entries exceeds 100,000, the appliance prunes the oldest records from the database to reduce the number to 100,000.

Note If you reboot a 7000 or 8000 Series device, then log into the auxiliary CLI as soon as you are able, any commands you execute are not recorded in the audit log until the local web interface is available.

Viewing Audit Records

On a Firepower Management Center or 7000 and 8000 Series devices, you can view a table of audit records. The predefined audit workflow includes a single table view of events. You can manipulate the table view depending on the information you are looking for. You can also create a custom workflow that displays only the information that matches your specific needs.

In a multidomain deployment, you can view data for the current domain and for any descendant domains. You cannot view data from higher level or sibling domains.

Before you begin

You must be an Admin user to perform this procedure.

Step 1 Access the audit log workflow using **System** > **Monitoring** > **Audit**.

Step 2 If no events appear, you may need to adjust the time range. For more information, see Event Time Constraints.

Note Events that were generated outside the appliance's configured time window (whether global or event-specific) may appear in an event view if you constrain the event view by time. This may occur even if you configured a sliding time window for the appliance.

Step 3 You have the following choices:

- To learn more about the contents of the columns in the table, see The System Log, on page 1.
- To sort and constrain events on the current workflow page, see Using Table View Pages.
- To navigate between pages in the current workflow, keeping the current constraints, click the appropriate page link at the top left of the workflow page. For more information, see Using Workflows.
- To drill down to the next page in the workflow, see Using Drill-Down Pages.
- To constrain on a specific value, click a value within a row. If you click a value on a drill-down page, you move to the next page and constrain on the value. Note that clicking a value within a row in a table view constrains the table view and does **not** drill down to the next page. See Event View Constraints for more information.

Tip Table views always include “Table View” in the page name.

- To delete audit records, check the check boxes next to events you want to delete, then click **Delete**, or click **Delete All** to delete all events in the current constrained view.
- To bookmark the current page so you can quickly return to it, click **Bookmark This Page**. For more information, see Bookmarks.
- To navigate to the bookmark management page, click **View Bookmarks**. For more information, see Bookmarks.
- To generate a report based on the data in the current view, click **Report Designer**. For more information, see Creating a Report Template from an Event View.
- To view a summary of a change recorded in the audit log, click **Compare** next to applicable events in the **Message** column. For more information, see Using the Audit Log to Examine Changes, on page 5.

Related Topics

Event View Constraints

Audit Log Workflow Fields

The following table describes the audit log fields that can be viewed and searched.

Table 2: Audit Log Fields

Field	Description
Time	Time and date that the appliance generated the audit record.
User	User name of the user that triggered the audit event.
Subsystem	The full menu path the user followed to generate the audit record. For example, **System** > **Monitoring** > **Audit** is the menu path to view the audit log. In a few cases where a menu path is not relevant, the Subsystem field displays only the event type. For example, **Login** classifies user login attempts.
Message	The action the user performed or the button the user clicked on the page. For example, `Page View` signifies that the user simply viewed the page indicated in the Subsystem, while `Save` means that the user clicked the **Save** button on the page. Changes made to the Firepower System appear with a **Compare icon** that you can click to see a summary of the changes.
Source IP	IP address associated with the host used by the user. Note: When searching this field you must type a specific IP address; you cannot use IP ranges when searching audit logs.
Domain	The current domain of the user when the audit event was triggered. This field is only present if you have ever configured the Firepower Management Center for multitenancy.
Configuration Change (search only)	Specifies whether to view audit records of configuration changes in the search results. (`yes` or `no`)
Count	The number of events that match the information that appears in each row. Note that the Count field appears only after you apply a constraint that creates two or more identical rows. This field is not searchable.

Related Topics

Event Searches

The Audit Events Table View

You can change the layout of the event view or constrain the events in the view by a field value. When disabling columns, after you click the **Close** ( ) in the column heading that you want to hide, in the pop-up window that appears, click **Apply**. When you disable a column, it is disabled for the duration of your session (unless you add it back later). Note that when you disable the first column, the Count column is added.

To hide or show other columns, or to add a disabled column back to the view, select or clear the appropriate check boxes before you click **Apply**.

Clicking a value within a row in a table view constrains the table view and does not drill down to the next page in the workflow.

Tip Table views always include “Table View” in the page name.

Related Topics

Using Workflows

Using the Audit Log to Examine Changes

You can use the audit log to view detailed reports of some of the changes to your system. These reports compare the current configuration of your system to its most recent configuration before a supported change was made.

The Compare Configurations page displays the differences between the system configuration before changes and the running configuration in a side-by-side format. The audit event type, time of last modification, and name of the user who made the change are displayed in the title bar above each configuration.

Differences between the two configurations are highlighted:

- Blue indicates that the highlighted setting is different in the two configurations, and the difference is noted in red text.
- Green indicates that the highlighted setting appears in one configuration but not the other.

In a multidomain deployment, you can view data for the current domain and for any descendant domains. You cannot view data from higher level or sibling domains.

Before you begin

You must be an Admin user to perform this procedure.

Step 1 Choose **System** > **Monitoring** > **Audit**.

Step 2 Click **Compare** next to an applicable audit log event in the **Message** column.

Tip You can navigate through changes individually by clicking **Previous** or **Next** above the title bar. If the change summary is more than one page long, you can also use the scroll bar on the right to view additional changes.

Suppressing Audit Records

If your auditing policy does not require that you audit specific types of user interactions with the Firepower System, you can prevent those interactions from generating audit records on a Firepower Management Center or 7000 and 8000 Series devices. For example, by default, each time a user views the online help, the Firepower System generates an audit record. If you do not need to keep a record of these interactions, you can automatically suppress them.

To configure audit event suppression, you must have access to an appliance's `admin` user account, and you must be able to either access the appliance's console or open a secure shell.

Caution Make sure that only authorized personnel have access to the appliance and to its `admin` account.

Before you begin

You must be an Admin user to perform this procedure.

In the `/etc/sf` directory, create one or more `AuditBlock` files in the following form, where type is one of the types described in Audit Block Types, on page 6:

`AuditBlock.`*`type`*

Note If you create an `AuditBlock.`*`type`* file for a specific type of audit message, but later decide that you no longer want to suppress them, you must delete the contents of the `AuditBlock.`*`type`* file but leave the file itself on the Firepower System.

Audit Block Types

The contents for each audit block type must be in a specific format, as described in the following table. Make sure you use the correct capitalization for the file names. Note also that the contents of the files are case sensitive.

Note that when you add an `AuditBlock` file, an audit record with a subsystem of `Audit` and a message of `Audit Filter` *`type`* `Changed` is added to the audit events. For security reasons, this audit record **cannot** be suppressed.

Table 3: Audit Block Types

Type	Description
Address	Create a file named `AuditBlock.address` and include, one per line, each IP address that you want to suppress from the audit log. You can use partial IP addresses provided that they map from the beginning of the address. For example, the partial address `10.1.1` matches addresses from `10.1.1.0` through `10.1.1.255`.
Message	Create a file named `AuditBlock.message` and include, one per line, the message substrings that you want to suppress. Note that substrings are matched so that if you include `backup` in your file, all messages that include the word `backup` are suppressed.

Type	Description
Subsystem	Create a file named `AuditBlock.subsystem` and include, one per line, each subsystem that you want to suppress. Note that substrings are **not** matched. You must use exact strings. See Audited Subsystems, on page 7 for a list of subsystems that are audited.
User	Create a file named `AuditBlock.user` and include, one per line, each user account that you want to suppress. You can use partial string matching provided that they map from the beginning of the username. For example, the partial username `IPSAnalyst` matches the user names `IPSAnalyst1` and `IPSAnalyst2`.

Audited Subsystems

The following table lists audited subsystems.

Table 4: Subsystem Names

Name	Includes user interactions with...
Admin	Administrative features such as system and access configuration, time synchr backup and restore, device management, user account management, and sche
Alerting	Alerting functions such as email, SNMP, and syslog alerting
Audit Log	Audit event views
Audit Log Search	Audit event searches
Cisco Security Packet Analyzer Integration	Cisco Security Packet Analyzer integration
Command Line	Command line interface
Configuration	Email alerting
contextual cross-launch	External resources added to the system or accessed from dashboards and ever
COOP	Continuity of operations feature
Date	Date and time range for event views
Default Subsystem	Options that do not have assigned subsystems
Detection & Prevention Policy	Menu options for intrusion policies
Error	System-level errors
eStreamer	eStreamer configuration
EULA	Reviewing the end user license agreement
Events	Intrusion and discovery event views
Events Clipboard	Intrusion event clipboard

Name	Includes user interactions with...
Events Reviewed	Reviewed intrusion events
Events Search	Any event search
Failed to install rule update `rule_update_id`	Installing rule updates
Header	Initial presentation of the user interface after a user logs in
Health	Health monitoring
Health Events	Health monitoring event views
Help	Online help
High Availability	Establishing and managing Firepower Management Centers in high availability p
IDS Impact Flag	Impact flag configuration for intrusion events
IDS Policy	Intrusion policies
IDSRule sid:`sig_id` rev:`rev_num`	Intrusion rules by SID
Incidents	Intrusion incidents
Install	Installing updates
Intrusion Events	Intrusion events
Login	Web interface login and logout functions
Logout	Web interface logout functions
Menu	Any menu option
Configuration export > `config_type` > `config_name`	Importing configurations of a specific type and name
Permission Escalation	User role escalation
Preferences	User preferences, such as the time zone for a user account and individual event p
Policy	Any policy, including intrusion policies
Register	Registering devices on a FMC
RemoteStorageDevice	Configuring remote storage devices
Reports	Report listing and report designer features
Rules	Intrusion rules, including the intrusion rules editor and the rule importation proce
Rule Update Import Log	Viewing the rule update import log
Rule Update Install	Installing rule updates

Name	Includes user interactions with...
Session Expiration	Web interface session timeouts
Status	Syslog, as well as host and performance statistics
System	Various system-wide settings
Task Queue	Viewing background process status
Users	Creating and modifying user accounts and roles

About Sending Audit Logs to an External Location

To send audit logs to an external location from the FMC, see:

- Audit Logs
- Audit Log Certificate

For Classic devices, see:

- Stream Audit Logs from Classic Devices
- Require Valid Audit Log Server Certificates for Classic Devices
- Obtain a Signed Client Certificate for Secure Audit Log Streaming on a 7000/8000 Series Device