External Alerting with Alert Responses

The following topics describe how to send external event alerts from the Firepower Management Center using alert responses:

Firepower Management Center Alert Responses

External event notification via SNMP, syslog, or email can help with critical-system monitoring. The Firepower Management Center uses configurable *alert responses* to interact with external servers. An *alert response* is a configuration that represents a connection to an email, SNMP, or syslog server. They are called *responses* because you can use them to send alerts in response to events detected by Firepower. You can configure multiple alert responses to send different types of alerts to different monitoring servers and/or people.

Note Depending on your device and Firepower version, alert responses may not be the best way to send syslog messages. See the *About Syslog* chapter in the Firepower Management Center Device Configuration Guide and Best Practices for Configuring Security Event Syslog Messaging..

Note Alerts that use alert responses are sent by the Firepower Management Center. Intrusion email alerts, which do not use alert responses, are also sent by the Firepower Management Center. By contrast, SNMP and syslog alerts that are based on individual intrusion rules triggering are sent directly by managed devices. For more information, see External Alerting for Intrusion Events.

In most cases, the information in an external alert is the same as the information in any associated event you logged to the database. However, for correlation event alerts where the correlation rule contains a connection

tracker, the information you receive is the same as for an alert on a traffic profile change, regardless of the base event type.

You create and manage alert responses on the Alerts page (**Policies** > **Actions** > **Alerts**). New alert responses are automatically enabled. To temporarily stop alert generation, you can disable alert responses rather than deleting them.

Changes to alert responses take effect immediately, except when sending connection logs to an SNMP trap or syslog server.

Configurations Supporting Alert Responses

After you create an alert response, you can use it to send the following external alerts from the Firepower Management Center.

Alert/Event Type	For More Information
Intrusion events, by impact flag	Configuring Impact Flag Alerting, on page 7
Discovery events, by type	Configuring Discovery Event Alerting, on page 8
Malware and retrospective malware events detected by AMP for Networks ("network-based")	Configuring AMP for Networks Alerting, on page 9
Correlation events, by correlation policy violation	Adding Responses to Rules and Allow Lists
Connection events, by the logging rule or default action (email alerts not supported)	Other Connections You Can Log
Health events, by health module and severity level	Creating Health Monitor Alerts

Requirements and Prerequisites for Alert Responses

Model Support

Any.

Supported Domains

Any

User Roles

- Admin

Creating an SNMP Alert Response

You can create SNMP alert responses using SNMPv1, SNMPv2, or SNMPv3 for FTD devices.

Note When selecting SNMP versions for the SNMP protocol, note that SNMPv2 only supports read-only communities and SNMPv3 only supports read-only users. SNMPv3 also supports encryption with AES128.

If you want to monitor 64-bit values with SNMP, you must use SNMPv2 or SNMPv3. SNMPv1 does not support 64-bit monitoring.

Before you begin

- If your network management system requires the FMC's management information base (MIB) file, obtain it at `/etc/sf/DCEALERT.MIB`.

Procedure

Step 1 Choose **Policies** > **Actions** > **Alerts**.

Step 2 From the **Create Alert** drop-down menu, choose **Create SNMP Alert**.

Step 3 Edit the SNMP Alert Configuration fields:

a) **Name—**Enter a name to identify the SNMP response.

b) **Trap Server—**Enter the hostname or IP address of the SNMP trap server.

Note
The system does **not** warn you if you enter an invalid IPv4 address (such as 192.169.1.456) in this field. Instead, the invalid address is treated as a hostname.

c) **Version—**Choose the SNMP version you want to use from the drop-down list. SNMPv3 is the default.

Choose from:

- **SNMPv1** or **SNMPv2**: Enter a read-only SNMP community name in the **Community String** field, then skip to the end of the procedure.

  Note
  Do not include special characters (< > / % # & ? ', etc.) in the SNMP community string name.

- For **SNMPv3**: Enter the name of the user that you want to authenticate with the SNMP server in the **User Name** field and continue to the next step.

d) **Authentication Protocol—**Choose the protocol you want to use to encrypt authentication from the drop-down list.

Choose from:

- **MD5**—Message Digest 5 (MD5) hash function.
- **SHA**—Secure Hash Algorithm (SHA) hash function.

e) **Authentication Password—**Enter the password to enable authentication.

f) **Privacy Protocol—**Choose the protocol you want to use to encrypt a private password from the drop-down list.

Choose from:

- **DES**—Data Encryption Standard (DES) using 56-bit keys in a symmetric secret-key block algorithm.
- **AES**—Advanced Encryption Standard (AES) using 56-bit keys in a symmetric cipher algorithm.
- **AES128**—AES using 128-bit keys in a symmetric cipher algorithm. A longer key provides higher security but a reduction in performance.

g) **Privacy Password—**Enter the privacy password required by the SNMP server. If you specify a private password, privacy is enabled, and you must also specify an authentication password.

h) **Engine ID—**Enter an identifier for the SNMP engine, in hexadecimal notation, using an even number of digits.

When you use SNMPv3, the system uses an Engine ID value to encode the message. Your SNMP server requires this value to decode the message.

Cisco recommends that you use the hexadecimal version of the FMC's IP address. For example, if the FMC has an IP address of 10.1.1.77, use 0a01014D0.

Step 4 Click **Save**.

What to do next

Changes take effect immediately, except if you are using alert responses to send connection logs, you must deploy configuration changes after you edit those alert responses.

Creating a Syslog Alert Response

When configuring a syslog alert response, you can specify the severity and facility associated with the syslog messages to ensure that they are processed properly by the syslog server. The facility indicates the subsystem that creates the message and the severity defines the severity of the message. Facilities and severities are not displayed in the actual message that appears in the syslog, but are instead used to tell the system that receives the syslog message how to categorize it. These fields allow you to set the severity and facility in the syslog events configured from the FMC web interface but these fields are not meant for filtering event types.

Tip For more detailed information about how syslog works and how to configure it, refer to the documentation for your system. On UNIX systems, the `man` pages for `syslog` and `syslog.conf` provide conceptual information and configuration instructions.

Although you can choose any type of facility when creating a syslog alert response, you should choose one that makes sense based on your syslog server; not all syslog servers support all facilities. For UNIX syslog servers, the `syslog.conf` file should indicate which facilities are saved to which log files on the server.

Syslog messages are transmitted over either UDP or TCP, depending on the configuration of the syslog server.

Before you begin

- This procedure is not the recommended way to send syslog messages in many cases.

- Confirm that the syslog server can accept remote messages.

Procedure

Step 1 Choose **Policies** > **Actions** > **Alerts**.

Step 2 From the **Create Alert** drop-down menu, choose **Create Syslog Alert**.

Step 3 Enter a **Name** for the alert.

Step 4 In the **Host** field, enter the hostname or IP address of your syslog server.

Note
The system does **not** warn you if you enter an invalid IPv4 address (such as 192.168.1.456) in this field. Instead, the invalid address is treated as a hostname.

Step 5 In the **Port** field, enter the port the server uses for syslog messages. By default, this value is 514.

Step 6 From the **Facility** list, choose a facility described in Syslog Alert Facilities, on page 5.

Step 7 From the **Severity** list, choose a severity described in Syslog Severity Levels, on page 6.

Step 8 In the **Tag** field, enter the tag name that you want to appear with the syslog message.

For example, if you wanted all messages sent to the syslog to be preceded with `FromMC`, enter `FromMC` in the field.

Step 9 Click **Save**.

What to do next

Changes take effect immediately, EXCEPT:

If you are using alert responses to send connection logs to a syslog server, you must deploy configuration changes after you edit those alert responses.

If you will use this alert response for security events, you MUST specify the alert response in a policy. See Configuration Locations for Security Event Syslogs.

Syslog Alert Facilities

The following table lists the syslog facilities you can select.

Table 1: Available Syslog Facilities

Facility	Description
AUTH	A message associated with security and authorization.
AUTHPRIV	A restricted access message associated with security and authorization. On many systems, these messages are forwarded to a secure file.
CONSOLE	An alert message.

Facility	Description
CRON	A message generated by the clock daemon. Note that syslog servers running a Linux operating system will use the `CRON` facility.
DAEMON	A message generated by a system daemon.
FTP	A message generated by the FTP daemon.
KERN	A message generated by the kernel. On many systems, these messages are printed to the console when they appear.
LOCAL0-LOCAL7	A message generated by an internal process.
LPR	A message generated by the printing subsystem.
MAIL	A message generated by a mail system.
NEWS	A message generated by the network news subsystem.
NTP	A message generated by the NTP daemon.
SECURITY	A message generated by the audit subsystem.
SYSLOG	A message generated by the syslog daemon.
SOLARIS-CRON	A message generated by the clock daemon. Note that syslog servers running a Windows operating system will use the `CLOCK` facility.
USER	A message generated by a user-level process.
UUCP	A message generated by the UUCP subsystem.

Syslog Severity Levels

The following table lists the standard syslog severity levels you can select.

Table 2: Syslog Severity Levels

Level	Description
ALERT	A condition that should be corrected immediately.
CRIT	A critical condition.
DEBUG	Messages that contain debugging information.
EMERG	A panic condition broadcast to all users.
ERR	An error condition.
INFO	Informational messages.

Level	Description
NOTICE	Conditions that are not error conditions, but require attention.
WARNING	Warning messages.

Creating an Email Alert Response

Before you begin

- Ensure that the Firepower Management Center can reverse-resolve its own IP address. Some mail servers may perform reverse DNS lookups to verify the sender's identity as a measure to prevent spam and unauthorized access.
- Configure your mail relay host as described in Configuring a Mail Relay Host and Notification Address.

Note You cannot use email alerting to log connections.

Procedure

Step 1 Choose **Policies** > **Actions** > **Alerts**.

Step 2 From the **Create Alert** drop-down menu, choose **Create Email Alert**.

Step 3 Enter a **Name** for the alert response.

Step 4 In the **To** field, enter the email addresses where you want to send alerts, separated by commas.

Step 5 In the **From** field, enter the email address that you want to appear as the sender of the alert.

Step 6 Next to **Relay Host**, verify the listed mail server is the one that you want to use to send the alert.

Tip
To change the email server, click **Edit** ( ).

Step 7 Click **Save**.

Configuring Impact Flag Alerting

You can configure the system to alert you whenever an intrusion event with a specific impact flag occurs. Impact flags help you evaluate the impact an intrusion has on your network by correlating intrusion data, network discovery data, and vulnerability information.

You must have the Threat Smart License or Protection Classic License to configure these alerts.

Procedure

Step 1 Choose **Policies** > **Actions** > **Alerts**.

Step 2 Click **Impact Flag Alerts**.

Step 3 In the **Alerts** section, choose the alert response you want to use for each alert type.

Tip
To create a new alert response, choose **New** from any drop-down list.

Step 4 In the **Impact Configuration** section, check the appropriate check boxes to specify the alerts you want to receive for each impact flag.

For definitions of the impact flags, see Intrusion Event Impact Levels.

Step 5 Click **Save**.

Configuring Discovery Event Alerting

You can configure the system to alert you whenever a specific type of discovery event occurs.

Before you begin

- Configure your network discovery policy to log the discovery event types you want to configure alerting for as described in the *Network Discovery Policies* chapter in the Firepower Management Center Device Configuration Guide.

Procedure

Step 1 Choose **Policies** > **Actions** > **Alerts**.

Step 2 Click **Discovery Event Alerts**.

Step 3 In the **Alerts** section, choose the alert response you want to use for each alert type.

Tip
To create a new alert response, choose **New** from any drop-down list.

Step 4 In the **Events Configuration** section, check the check boxes that correspond to the alerts you want to receive for each discovery event type.

Step 5 Click **Save**.

Configuring AMP for Networks Alerting

You can configure the system to alert you whenever any malware event, including a retrospective event, is generated by AMP for Networks (that is, a "network-based malware event" is generated.) You cannot alert on malware events generated by AMP for Endpoints ("endpoint-based malware events.")

Before you begin

- Configure a file policy to perform malware cloud lookups and associate that policy with an access control rule. See *Access Control Overview* in the Firepower Management Center Device Configuration Guide for more information.
- You must have the Malware license to configure these alerts.

Procedure

Step 1 Choose **Policies** > **Actions** > **Alerts**.

Step 2 Click **Advanced Malware Protections Alerts**.

Step 3 In the **Alerts** section, choose the alert response you want to use for each alert type.

Tip
To create a new alert response, choose **New** from any drop-down list.

Step 4 In the **Event Configuration** section, check the check boxes that correspond to the alerts you want to receive for each malware event type.

Keep in mind that **All network-based malware events** includes **Retrospective Events**.

(By definition, network-based malware events do not include events generated by AMP for Endpoints.)

Step 5 Click **Save**.