Pulse Secure®

Pulse Policy Secure

Admission Control using IBM QRadar

Deployment Guide

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Pulse Policy Secure: Admission Control with IBM QRadar

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Purpose of this Guide

This guide describes how to configure *Pulse Policy Secure (PPS)* to provide Alert-based admission control protection for your network using IBM QRadar.

Prerequisites

This guide assumes you are familiar with the use of the following products and their related terminology.

- *Pulse Policy Secure* at version 9.1R3.
- *IBM QRadar* at version 7.3.2 Build 20190705120852
- *Palo Alto Firewall (IBM QRadar configured as syslog Server)*
- *Pulse Secure app at version 1.0.0*
- *802.1X/RADIUS CoA supported Switch/WLC*

Alert-Based Admission Control with IBM QRadar

This section describes how to integrate *IBM QRadar SIEM device* with *PPS* to support alert-based admission control in your network.

Overview of Alert-Based Admission Control with IBM QRadar

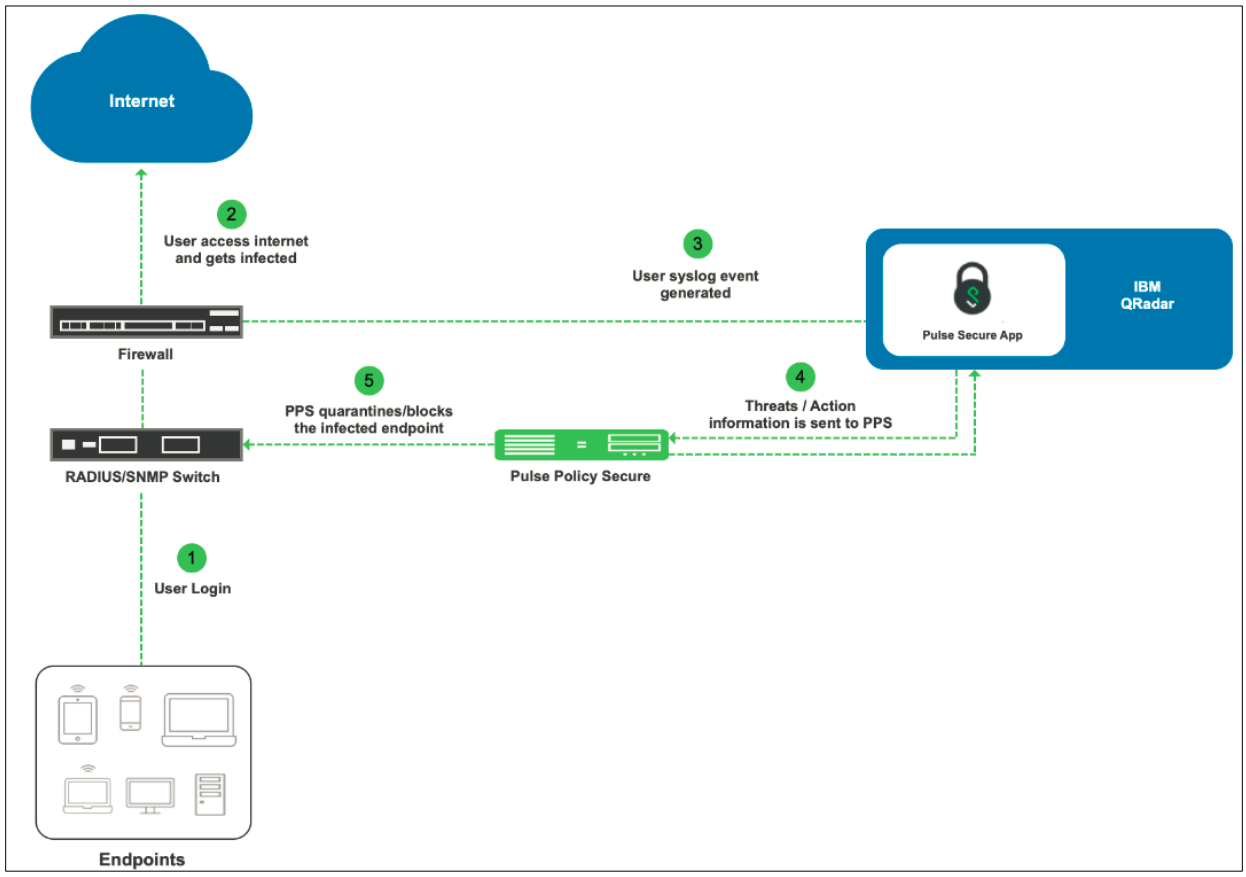
Pulse Policy Secure (PPS) integration with the *IBM QRadar* provides complete visibility of network endpoints, including unmanaged endpoints and provide end to end network security. The PPS integration with IBM QRadar integration allows Admin to perform user access control based on alerts received from the IBM QRadar.

IBM QRadar receives log or threat information from various log sources such as Palo Alto Network firewall. Based on the offense rules configured on IBM QRadar an offense is created to trigger alerts to PPS. PPS takes action on user session by blocking or quarantining the user.

The authentication process is described below:

1) User downloads a file from the Internet. The perimeter firewall scans the file and, based on user-defined policies, sends the file for analysis.
2) Firewall detects that the file contains malware and a threat alert sylog gets generated and sent to IBM QRadar.
3) Based on the offense rules configured on IBM QRadar. It generates alerts and this has to be manually sent to PPS with the help of Pulse Secure App.
4) The offense includes severity, credibility and other information for the affected endpoint.
5) The PPS server quarantines/blocks the endpoint based on the configured Admission control policies.

Figure 1: Deployment using PPS, IBM QRadar and Palo Alto Networks Firewall



In this example, the endpoint is connected to a third-party switch. The switch has 802.1X/MAB authentication enabled. As an alternate, SNMP enforcement mechanism can also be used.

Summary of Configuration

To prepare your network to perform alert-based admission control using *Pulse Policy Secure*, *IBM QRadar* and *Firewall*, perform the following tasks:

- Configuring PPS with IBM QRadar
- Configuring IBM QRadar

The following sections describe each of these steps in detail.

Configuring PPS with IBM QRadar

The *PPS* configuration requires defining the *IBM QRadar* as a client in PPS. PPS acts as a REST API server for IBM QRadar.

A high-level overview of the configuration steps needed to set up and run the integration is described below:

- The Administrator configures the basic PPS configurations such as creating an authentication server, authentication realm, user roles, and role mapping rules.
- Configure IBM QRadar as a client in PPS. PPS acts as a REST API Server for IBM QRadar. The REST API access for the admin user needs to be enabled by accessing the serial console or alternatively from the PPS admin UI (Authentication > Auth Server > Administrators > Users > click “admin”, enable Allow access to REST APIs).
- Configure PPS to block/quarantine the endpoint based on the threat prevention policy.
- Configure the Switches/WLC as RADIUS Client in PPS (Endpoint Policy > Network Access > Radius Clients > New Radius Client). Switch should be configured with PPS as a RADIUS server.
- Configure RADIUS return attribute policies to define the action upon receiving the event.

Note: Ensure that PPS has the endpoint IP Address for the enforcement to work correctly.

This section covers the following topics:

- Admission Control Template
- Admission Control Client
- Admission Control Policies.

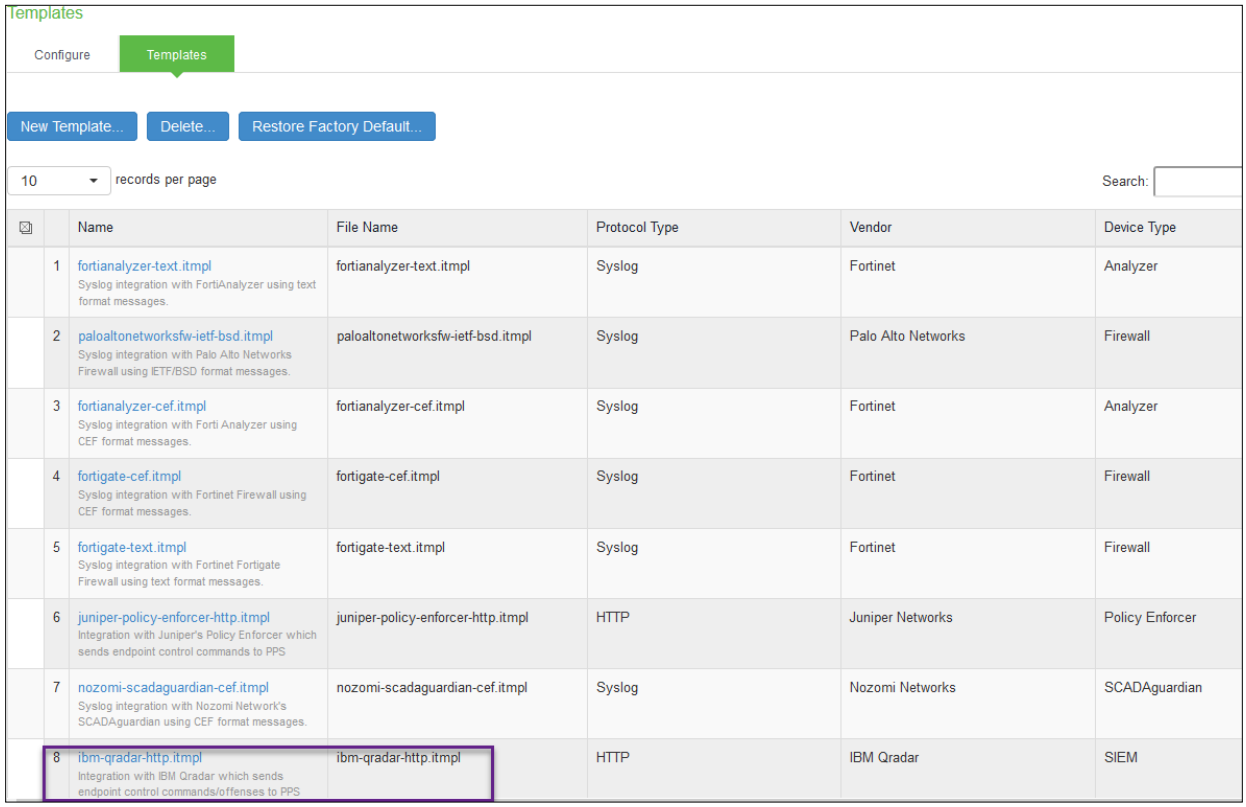
Admission Control Template

The admission control template provides the list of possible events that can be received from the network security device along with regular expression to parse the message. The template also provides possible actions that can be taken for an event. PPS is loaded with default templates for IBM QRadar.

To view the admission control template in *PPS*:

Select **Endpoint Policy > Admission Control > Templates.**

Figure 2: IBM QRadar Template



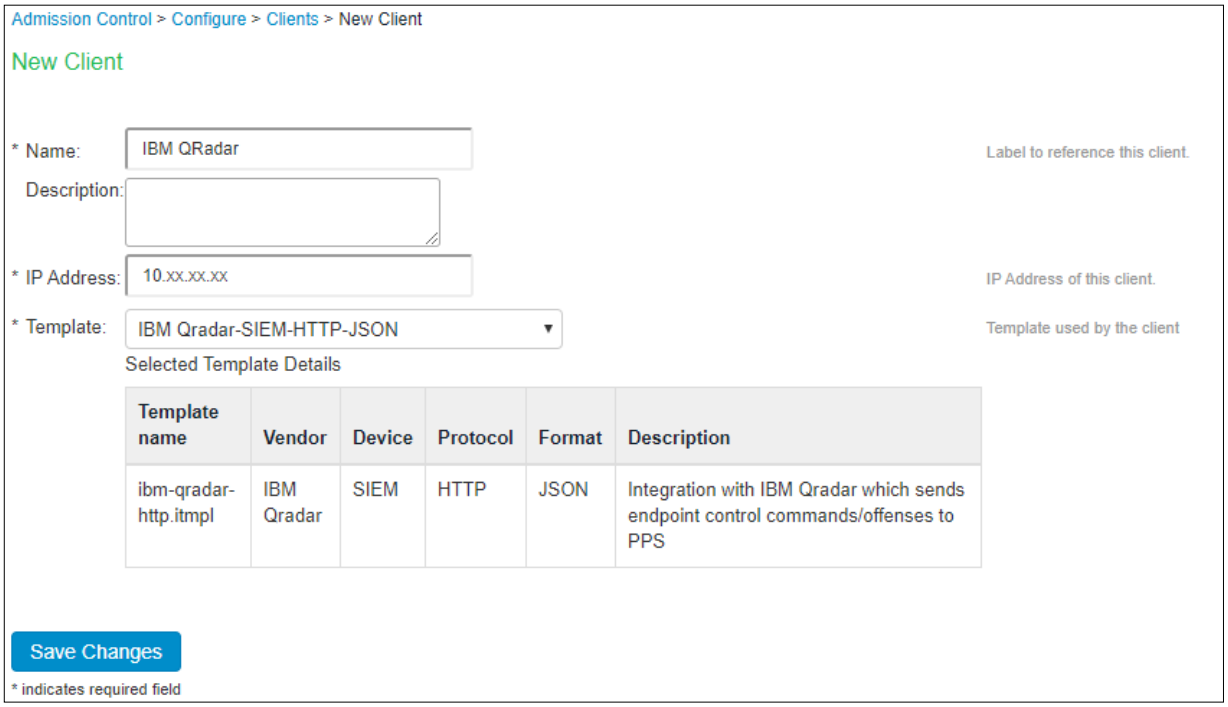
Admission Control Client

The admission control clients are the network security devices on which the syslog forwarding is enabled. The messages are received by the syslog server module running on PPS.

To add IBM QRadar as a client:

1) Select **Endpoint Policy > Admission Control > Clients.**
2) Click **New Client**.
3) Enter the name.
4) Enter the description.
5) Enter the IP address of the client.
6) Under Template, select IBM Qradar-SIEM-HTTP-JSON.
7) Click **Save Changes.**

Figure 3: Template



Admission Control Policies

The admission control policies define the list of actions to be performed on PPS for the user sessions. The actions are based on the event and the severity information received from the network security device.

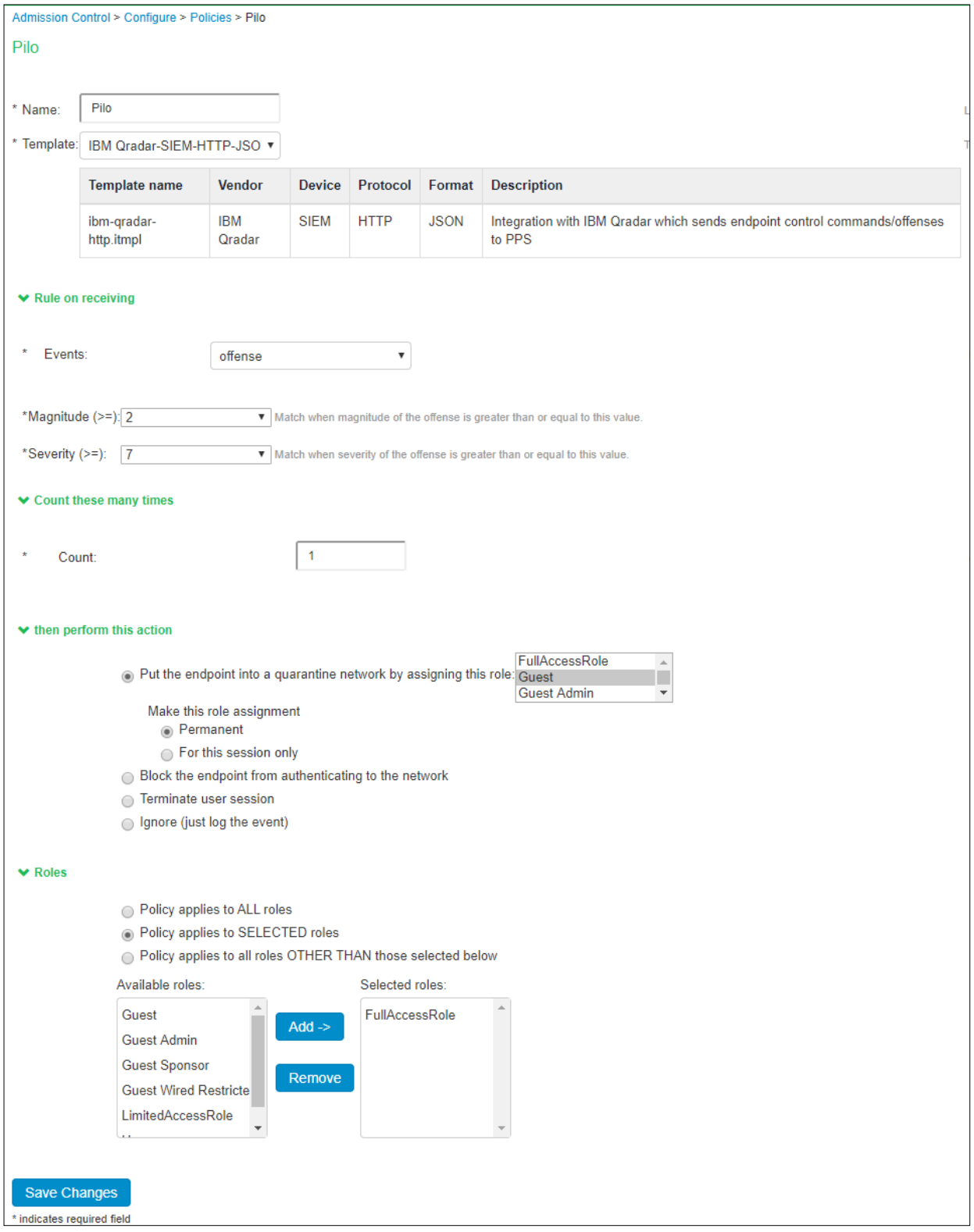
To view and add the new integration policy:

1) Select Endpoint Policy > Admission Control > Policies.
2) Click New Policy.
3) Enter the policy name.
4) Select IBM QRadar--SIEM-HTTP-JSON as a template.
5) Under Rule on Receiving, select the event type (block-endpoint, quarantine-endpoint, alert, any) and the severity level. The event types and the severity level are based on the selected template.

   The actions on sessions supported are:

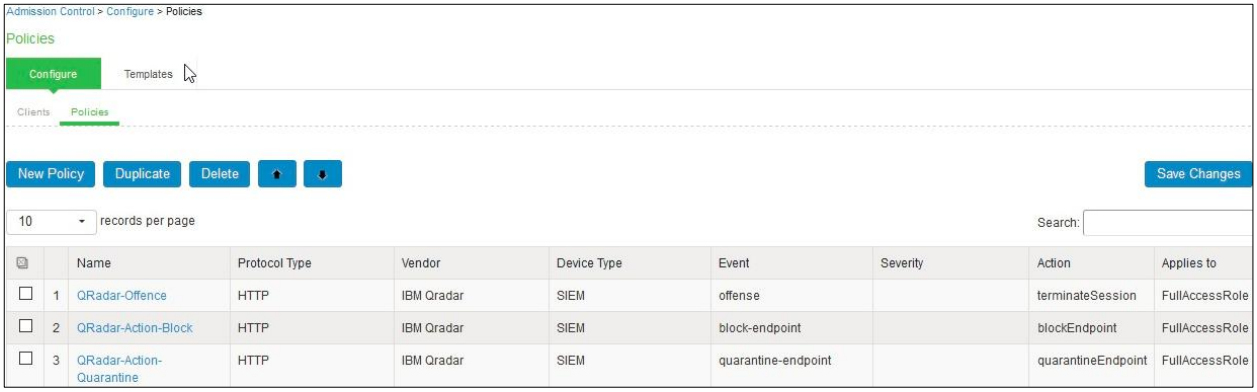
   - Block Endpoint: Blocks the host MAC Address on the PPS permanently. If admin choose to clear this, it can be cleared either by using IBM QRadar application or by using the PPS Admin UI.
   - Quarantine Endpoint (Change user roles): Changes the roles assigned to the user on PPS so that restriction/privileges for the user can be changed.
   - Offense – Generated based on the Severity level and magnitude of the alert. Specify the magnitude and severity of the offense (High, Information, Low, Medium, Any). Enter the Count Value (1-256)
6) Under then perform this action, select the desired action.
   - Block the endpoint from authenticating the network.
   - Put the endpoint into a quarantine network by assigning this role — choose the role to put endpoint in quarantine role. Specify whether to apply the role assignment permanently or only for the session.
   - Terminate user session—Terminates the user session on the PPS.
   - Ignore (log the event) —Received syslog event details are logged on the PPS and no specific action is taken.
7) Under Roles, specify:
   - Policy applies to ALL roles—To apply the policy to all users.
   - Policy applies to SELECTED roles—To apply this policy only to users who are mapped to roles in the Selected roles list. You must add roles to this list from the Available roles list.
   - Policy applies to all roles OTHER THAN those selected below—To apply this policy to all users except for those who map to the roles in the Selected roles list. You must add roles to this list from the Available roles list.

Figure 4: Configuration Policies



8) Click **Save Changes**.

Once the policy is created. You can see the summary page as shown below. The following page shows the different policies created for different events with different user roles.



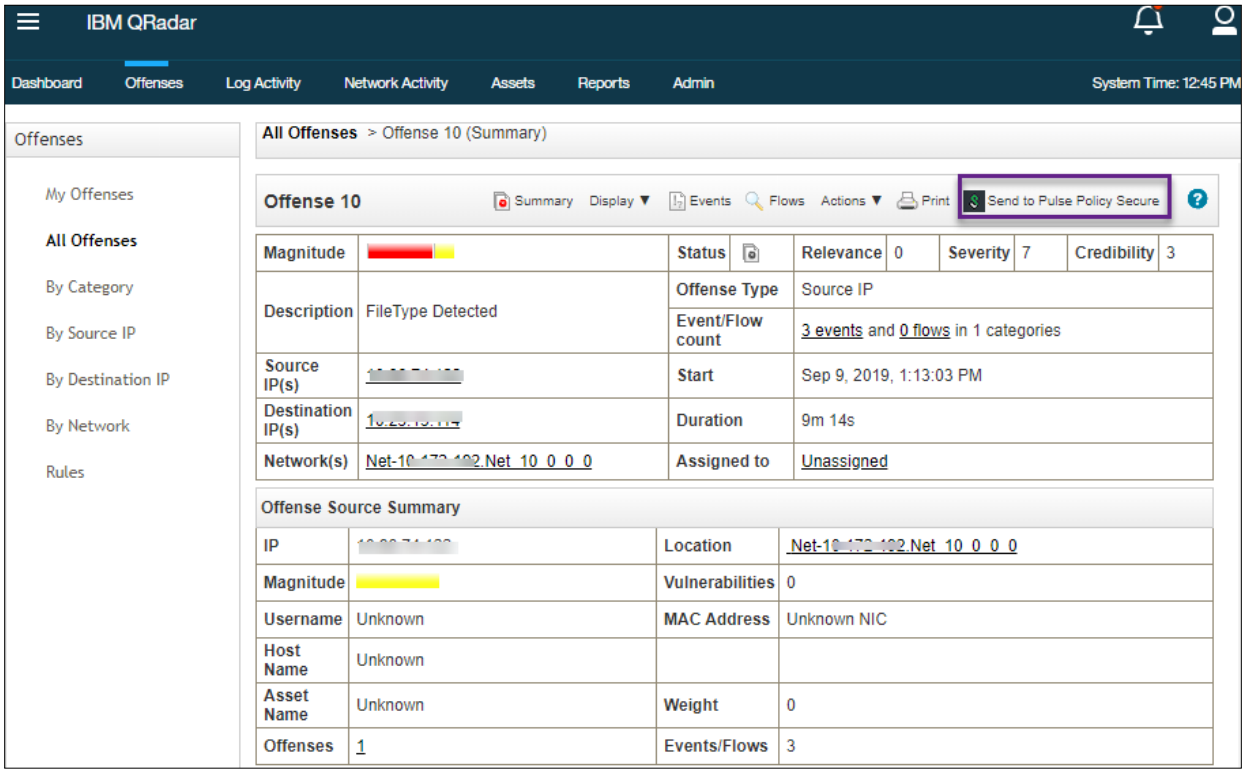
		Name	Protocol Type	Vendor	Device Type	Event	Severity	Action	Applies to
☐	1	QRadar-Offence	HTTP	IBM Qradar	SIEM	offense		terminateSession	FullAccessRole
☐	2	QRadar-Action-Block	HTTP	IBM Qradar	SIEM	block-endpoint		blockEndpoint	FullAccessRole
☐	3	QRadar-Action-Quarantine	HTTP	IBM Qradar	SIEM	quarantine-endpoint		quarantineEndpoint	FullAccessRole

Configuring IBM QRadar

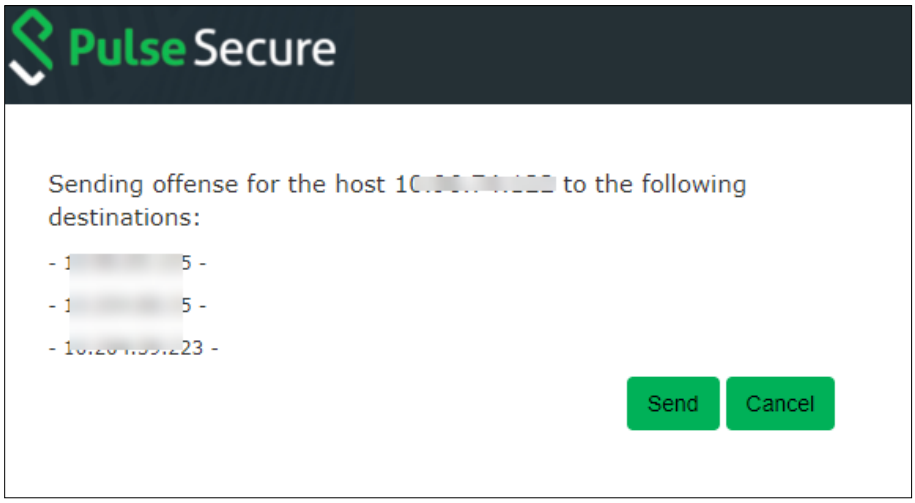
This section covers the following topics:

- Install Pulse Policy Secure Alert Add-On for
- Sending Offense information to PPS
- Sending Offense information to PPS
- To send the offense information to PPS:

1. Login to the IBM QRadar console and click **Offenses.**
2. In the left pane, select **All Offenses**. The full list of offenses is displayed.
3. Double-click on an offense. The Offense detail page opens. The Relevance, Severity and Credibility values are listed in the right corner.
    - High Credibility and (High) Severity events – By default the last offense credibility is set to 8, 9, and 10.
    - Medium Credibility and (Medium) Severity events - By default the last offense credibility is set to 4, 5, 6, and 7.
    - Low Credibility and (Low) Severity events - By default the last offense credibility is set to 1, 2, and 3



4. Click **Send to Pulse Policy Secure**. The Success or Failure message is displayed based on the action.



Note: Pulse Secure App supports only four types of offenses: Source/Destination IP address, Source/Destination MAC address.

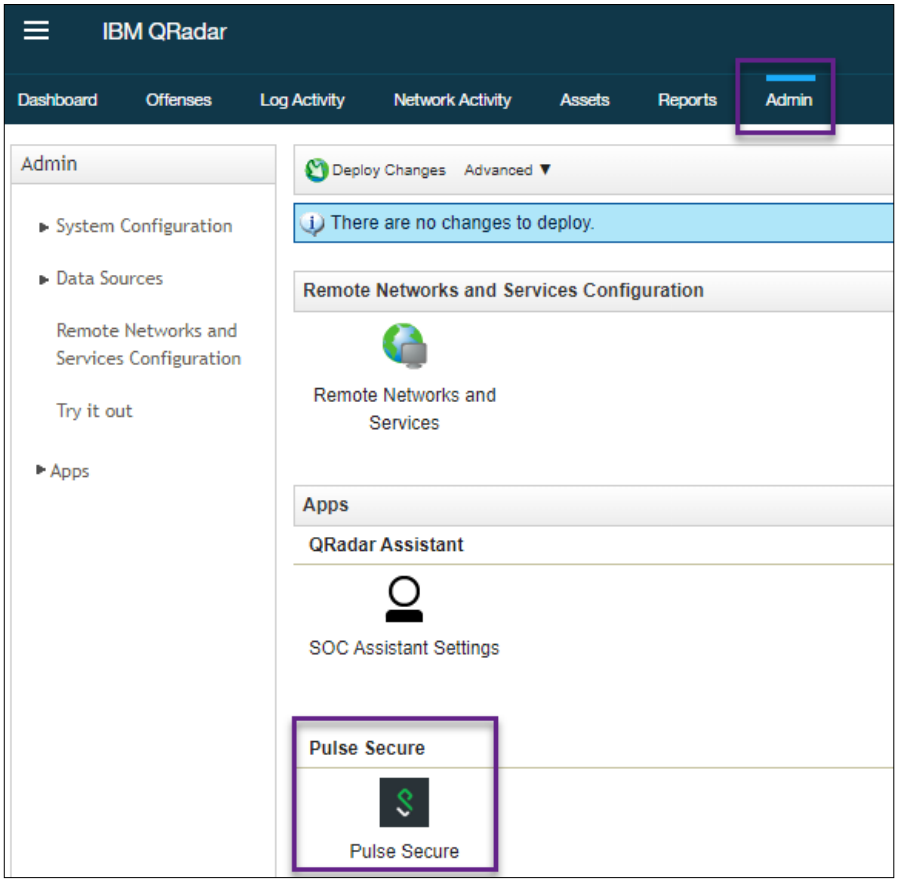
- Alert Action Based on Source IP/MAC Address

Install Pulse Policy Secure Alert Add-On for IBM QRadar

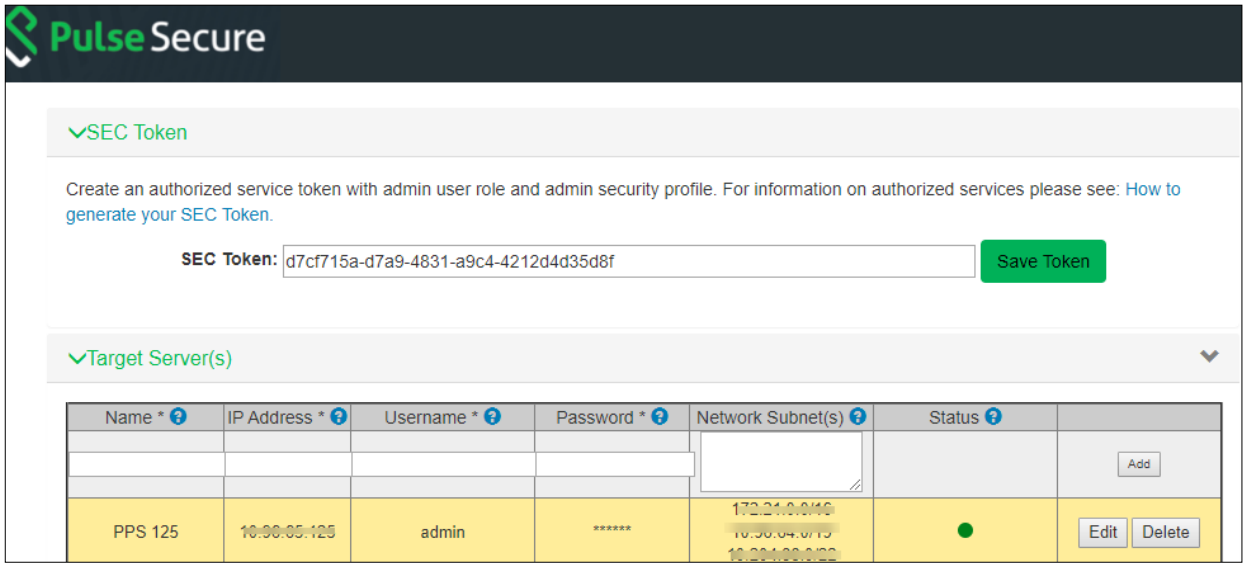
Download the PulseSecureAppForQRadar.zip file from Pulse Secure software downloads location and install them onto your IBM QRadar server. You can also download and install the Pulse Secure app from IBM X-Force exchange site.

To configure the Pulse Policy Secure App:

1) Log into IBM QRadar as an Admin user.
2) In the IBM QRadar Dashboard, select the **Admin** tab.
3) Select **Extension Management**.
4) In the Extensions Management window, click Add and select the app archive that you want to upload to the console
5) Click Browse and upload the Pulse-Secure.zip file to install the Pulse Secure App for IBM QRadar.



6) After installation, Pulse Secure App for IBM QRadar appears in the App section.
7) Select **Authorized Services**, and then select **Add Authorized Service** and follow the wizard to create authorized service.
8) Copy the Authentication Token.
9) Select the Pulse Secure Icon, paste or enter the authentication token and Save.
10) Enter the name, PPS IP address, user name, network subnet to send offenses/action. Click Add.
11) Click **Save**.



Sending Offense information to PPS

To send the offense information to PPS:

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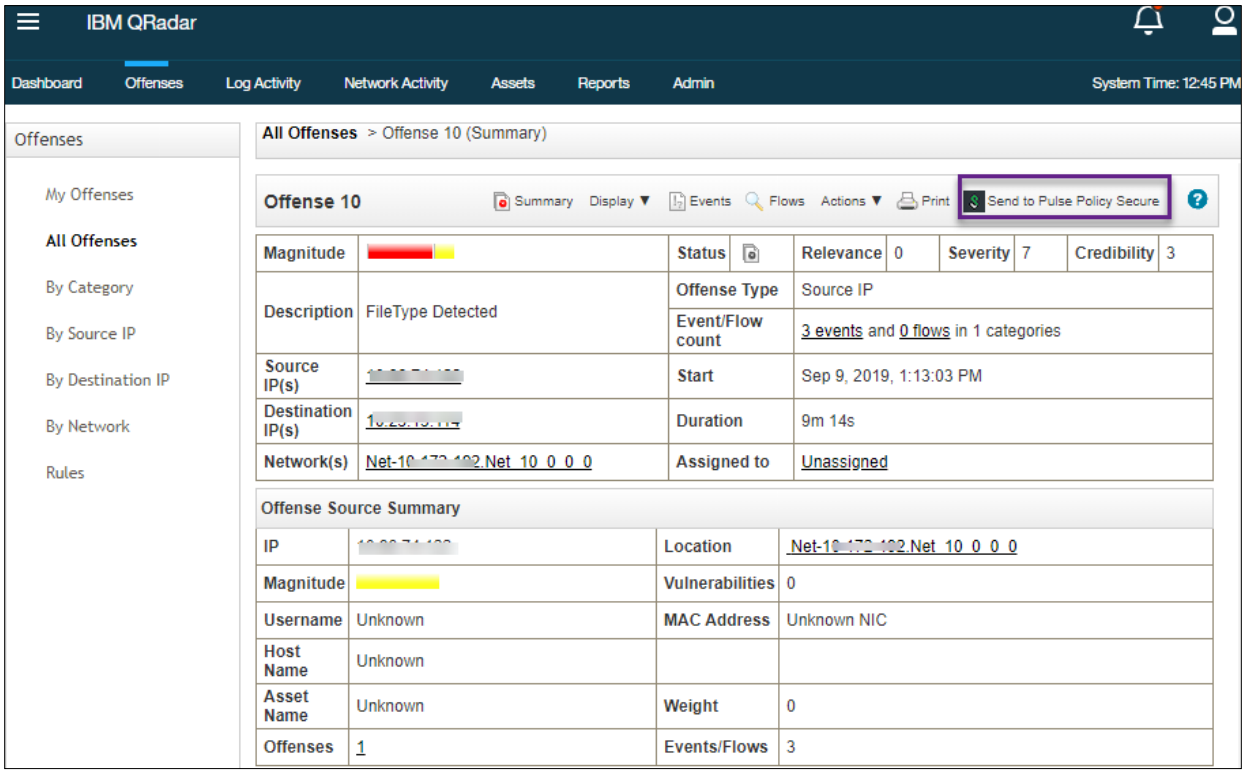

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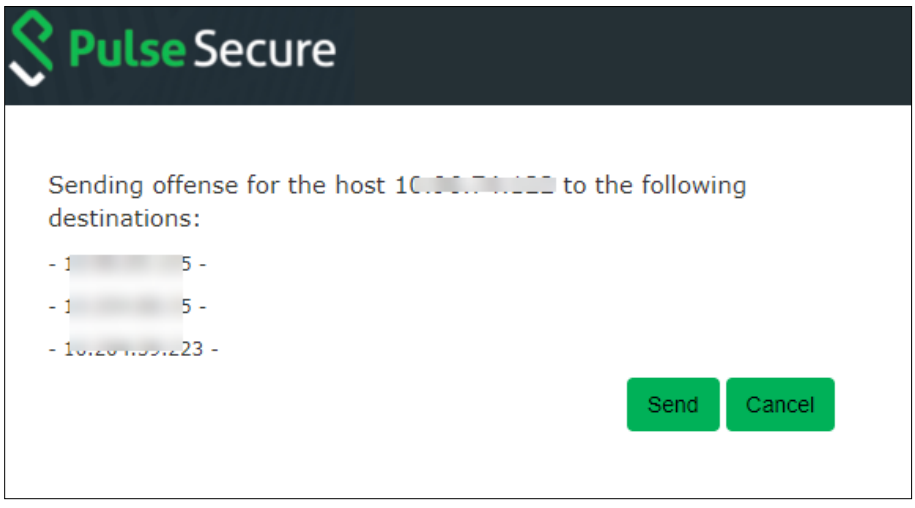


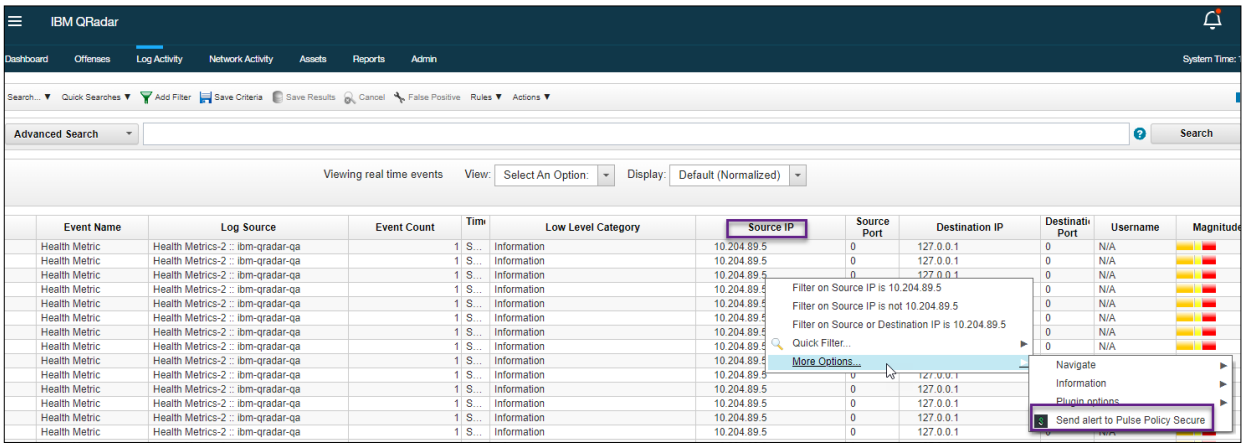
Note: Pulse Secure App supports only four types of offenses: Source/Destination IP address, Source/Destination MAC address.

Alert Action Based on Source IP/MAC Address

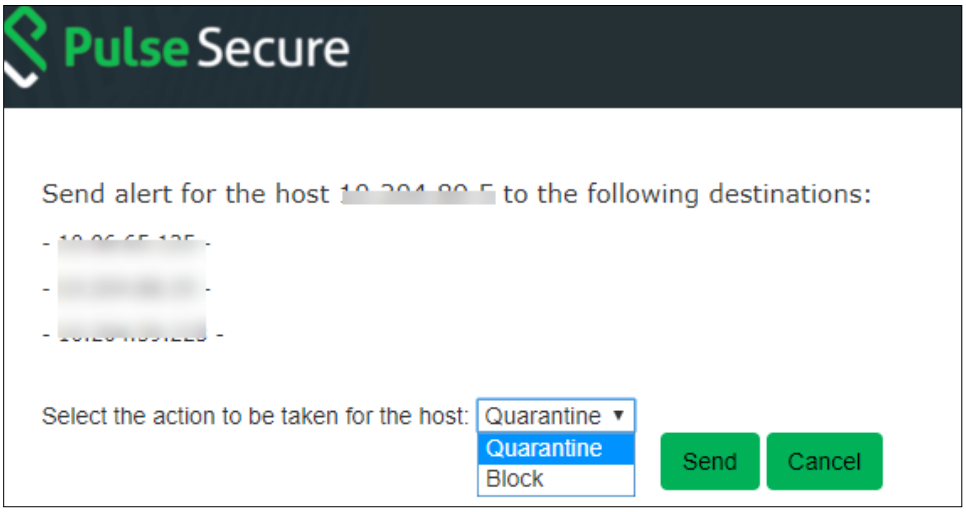
SIEM provides live streaming of the processed events and flows. SIEM admin live monitors these log and network activity. Expert SIEM admin can identify the malicious host by monitoring these data. Pulse Secure application provides an option for the SIEM admin to take action for such host based on IP

Address even if these are not listed under alerts.

1) Click **Log Activity/Network Activity** in IBM QRadar console.
2) Under Source IP column select the host by IP address or MAC address.
3) Click **Send alert to Pulse Policy Secure**.



4) On the new page, SIEM user needs to decide the action and the PPS server IP.
5) Click **Send**.

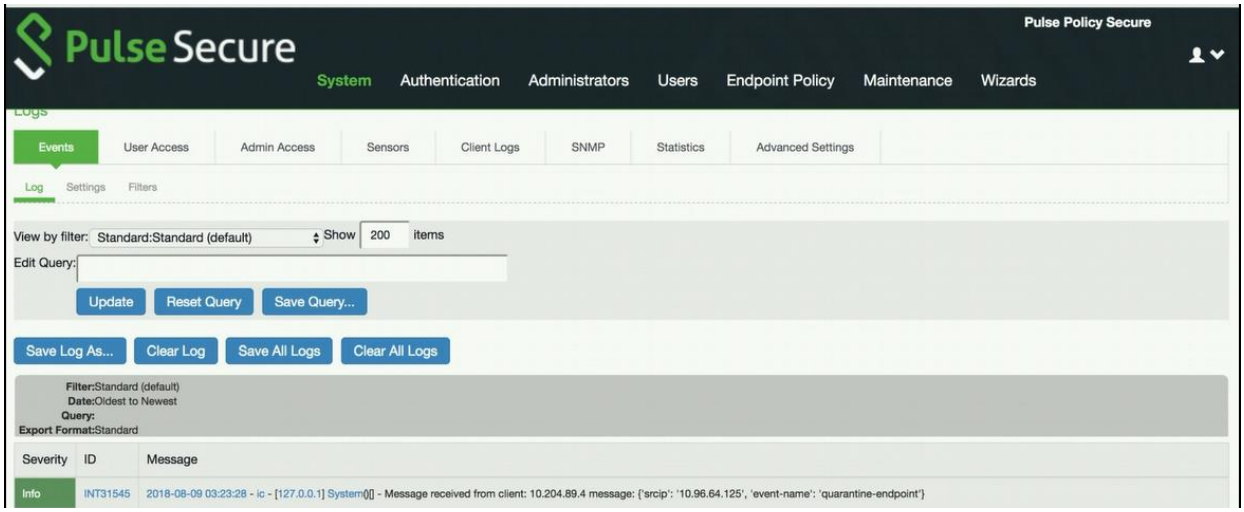


For more information on IBM QRadar configuration, see IBM QRadar documentation.

Troubleshooting

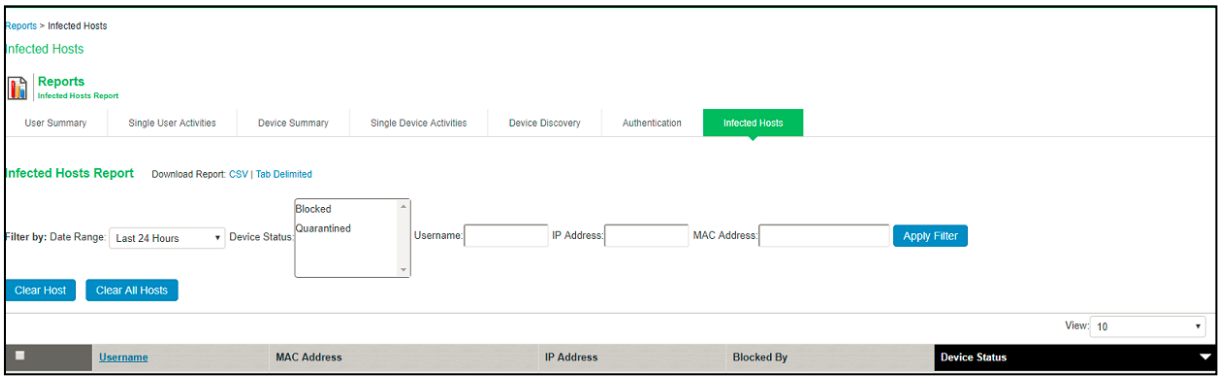
To verify the event logs on PPS, select System > Log/Monitoring > Events. Ensure Admission control events option is enabled in Event logs settings.

You can verify that the event logs are generated every time when an event is received from IBM QRadar.



To verify the user access logs, select System >Logs & Monitoring > User Access to verify the user login related logs like realm, roles, username and IP address.

You can also verify whether the quarantined/blocked host is listed in the Infected Devices report, which lists the mac address, IP address, and the device status. To verify the reports, select System > Reports > Infected Devices.



You can also enable debug logs to troubleshoot any issues. Select Maintenance > Troubleshooting > Monitoring > Debug Log to enable debug logs.