Policy Management

The following topics describe how to manage various policies on the Firepower Management Center:

- Policy Deployment, on page 1
- Policy Comparison, on page 11
- Policy Reports, on page 12
- Out-of-Date Policies, on page 13
- Performance Considerations for Limited Deployments, on page 14

Policy Deployment

After you configure your deployment, and any time you change that configuration, you must deploy the changes to affected devices. You can view deployment status in the Message Center.

Deploying updates the following components:

- Device and interface configurations
- Device-related policies: NAT, VPN, QoS, platform settings
- Access control and related policies: DNS, file, identity, intrusion, network analysis, prefilter, SSL
- Network discovery policy
- Intrusion rule updates
- Configurations and objects associated with any of these elements

You can configure the system to deploy automatically by scheduling a deploy task or by setting the system to deploy when importing intrusion rule updates. Automating policy deployment is especially useful if you allow intrusion rule updates to modify system-provided base policies for intrusion and network analysis. Intrusion rule updates can also modify default values for the advanced preprocessing and performance options in your access control policies.

In a multidomain deployment, you can deploy changes for any domain where your user account belongs:

- Switch to an ancestor domain to deploy changes to all subdomains at the same time.
- Switch to a leaf domain to deploy changes to only that domain.
Guidelines for Deploying Configuration Changes

**Inline vs Passive Deployments**

Do not apply inline configurations to devices deployed passively, and vice versa.

**Time to Deploy and Memory Limitations**

The time it takes to deploy depends on multiple factors, including (but not limited to):

- The configurations you send to the device. For example, if you dramatically increase the number of Security Intelligence entries you block, deploy can take longer.
- Device model and memory. On lower-memory devices, deploying can take longer. For example, it can take up to five minutes to deploy to a Firepower 7010, 7020, or 7030 device.

Do not exceed the capability of your devices. If you exceed the maximum number rules or policies supported by a target device, the system displays a warning. The maximum depends on a number of factors—not only memory and the number of processors on the device, but also on policy and rule complexity. For information on optimizing policies and rules, see Rule Performance Guidelines.

**Interruptions to Traffic Flow and Inspection During Deploy**

When you deploy, resource demands may result in a small number of packets dropping without inspection. Additionally, deploying some configurations restarts the Snort process, which interrupts traffic inspection. Whether traffic drops during this interruption or passes without further inspection depends on how the target device handles traffic. See Snort® Restart Traffic Behavior, on page 6 and Configurations that Restart the Snort Process When Deployed or Activated, on page 8.

⚠️ **Caution**

We strongly recommend you deploy in a maintenance window or at a time when interruptions will have the least impact.

**Auto-Enabling Application Detectors**

If you are performing application control but disable required detectors, the system automatically enables the appropriate system-provided detectors upon policy deploy. If none exist, the system enables the most recently modified user-defined detector for the application.

**Asset Rediscovery with Network Discovery Policy Changes**

When you deploy changes to a network discovery policy, the system deletes and then rediscovers MAC address, TTL, and hops information from the network map for the hosts in your monitored networks. Also, the affected managed devices discard any discovery data that has not yet been sent to the Firepower Management Center.

**Related Topics**

   - Snort® Restart Scenarios, on page 5
Deploy Configuration Changes

<table>
<thead>
<tr>
<th>Smart License</th>
<th>Classic License</th>
<th>Supported Devices</th>
<th>Supported Domains</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any</td>
<td>Any</td>
<td>Any</td>
<td>Any</td>
<td>Admin/Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Admin/Security</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Approver</td>
</tr>
</tbody>
</table>

After you change configurations, deploy to the affected devices. We *strongly* recommend you deploy in a maintenance window or at a time when any interruptions to traffic flow and inspection will have the least impact.

⚠️ **Caution**

When you deploy, resource demands may result in a small number of packets dropping without inspection. Additionally, deploying some configurations restarts the Snort process, which interrupts traffic inspection. Whether traffic drops during this interruption or passes without further inspection depends on how the target device handles traffic. See [Snort® Restart Traffic Behavior](#) on page 6 and [Configurations that Restart the Snort Process When Deployed or Activated](#) on page 8.

**Before you begin**

- Review the guidelines described in [Guidelines for Deploying Configuration Changes](#), on page 2.
- Be sure all managed devices use the same revision of the Security Zones object. If you have edited security zone objects: Do not deploy configuration changes to any device until you edit the zone setting for interfaces on *all* devices you want to sync. You must deploy to all managed devices at the same time. See [Synchronizing Security Zone Object Revisions](#).

**Procedure**

**Step 1**

On the Firepower Management Center menu bar, click **Deploy**.

The Deploy Policies dialog lists devices with out-of-date configurations. The **Version** at the top of the dialog specifies when you last made configuration changes. The **Current Version** column in the device table specifies when you last deployed changes to each device.

**Step 2**

Identify and choose the devices where you want to deploy configuration changes.

- **Sort**—Sort the device list by clicking a column heading.
- **Expand**—Click the plus icon (➕) to expand a device listing to view the configuration changes to be deployed. The system marks out-of-date policies with an index (🗂) icon.
- **Filter**—Filter the device list. Click the arrow in the upper-right corner of any column heading in the display, enter text in the **Filters** text box, and press Enter. Check or uncheck the check box to activate or deactivate the filter.
- **Arrange**—Place the mouse on a column heading to drag and drop the column in your preferred order.

**Step 3**

(Optional) Enable **Check for rule conflicts** to check for rule conflicts before deployment begins.

In policies that evaluate rules in a specific order, conflicts occur when a rule will never match traffic because an earlier rule always matches the traffic first. Although rule conflicts do not prevent deployment, properly
creating and ordering rules is essential to building an effective deployment. The deployment process can check for rule conflicts in access control policies. However, in complex deployments, checking for rule conflicts can take some time.

**Step 4**  Click **Deploy**.

**Step 5**  If the system identifies errors or warnings in the changes to be deployed, you have the following choices:

- **Proceed**—Continue deploying without resolving warning conditions. If you enabled rule conflict checks, warnings include detected rule conflicts. You cannot proceed if the system identifies errors.
- **Cancel**—Exit without deploying. Resolve the error and warning conditions, and attempt to deploy the configuration again.

---

**What to do next**

- (Optional) Monitor deployment status; see Viewing Deployment Messages.
- If deploy fails, see Guidelines for Deploying Configuration Changes, on page 2.

**Related Topics**

Snort® Restart Scenarios, on page 5

---

**Redeploy Existing Configurations to a Device**

<table>
<thead>
<tr>
<th>Smart License</th>
<th>Classic License</th>
<th>Supported Devices</th>
<th>Supported Domains</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any</td>
<td>Any</td>
<td>Any</td>
<td>Leaf only</td>
<td>Admin/Network Admin/Security Approver</td>
</tr>
</tbody>
</table>

You can force-deploy existing (unchanged) configurations to a single managed device. We strongly recommend you deploy in a maintenance window or at a time when any interruptions to traffic flow and inspection will have the least impact.

---

**Caution**

When you deploy, resource demands may result in a small number of packets dropping without inspection. Additionally, deploying some configurations restarts the Snort process, which interrupts traffic inspection. Whether traffic drops during this interruption or passes without further inspection depends on how the target device handles traffic. See Snort® Restart Traffic Behavior, on page 6 and Configurations that Restart the Snort Process When Deployed or Activated, on page 8.

---

**Before you begin**

Review the guidelines described in Guidelines for Deploying Configuration Changes, on page 2.

**Procedure**

**Step 1**  Choose **Devices > Device Management**.
**Step 2**  
Click the edit icon (✏️) next to the device where you want to force deployment.  
In a multidomain deployment, if you are not in a leaf domain, the system prompts you to switch.

**Step 3**  
Click the **Device** tab.

**Step 4**  
Click the edit icon (✏️) next to the **General** section heading.

**Step 5**  
Click the **Force Deploy** arrow ( chùy ).

**Step 6**  
Click **Deploy**.

The system identifies any errors or warnings with the configurations you are deploying. You can click **Proceed** to continue without resolving warning conditions. However, you cannot proceed if the system identifies an error.

---

**What to do next**

- (Optional) Monitor deployment status; see **Viewing Deployment Messages**.
- If deploy fails, see **Guidelines for Deploying Configuration Changes, on page 2**.

**Related Topics**

- Snort® Restart Scenarios, on page 5

---

**Snort® Restart Scenarios**

When the traffic inspection engine referred to as **the Snort process** on a managed device restarts, inspection is interrupted until the process resumes. Whether traffic drops during this interruption or passes without further inspection depends on how the target device handles traffic. See **Snort® Restart Traffic Behavior, on page 6** for more information. Additionally, resource demands may result in a small number of packets dropping without inspection when you deploy, regardless of whether the Snort process restarts.

Any of the scenarios in the following table cause the Snort process to restart.

**Table 1: Snort Restart Scenarios**

<table>
<thead>
<tr>
<th>Restart Scenario</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deploying a specific configuration that requires the Snort process to restart.</td>
<td><strong>Configurations that Restart the Snort Process When Deployed or Activated, on page 8</strong></td>
</tr>
<tr>
<td>Modifying a configuration that immediately restarts the Snort process.</td>
<td><strong>Changes that Immediately Restart the Snort Process, on page 10</strong></td>
</tr>
<tr>
<td>Traffic-activation of the currently deployed Automatic Application Bypass (AAB) configuration.</td>
<td><strong>Configuring Automatic Application Bypass</strong></td>
</tr>
</tbody>
</table>

**Related Topics**

- Access Control Policy Advanced Settings
- **Configurations that Restart the Snort Process When Deployed or Activated, on page 8**
Inspect Traffic During Policy Apply

Inspect traffic during policy apply is an advanced access control policy general setting that allows managed devices to inspect traffic while deploying configuration changes; this is the case unless a configuration that you deploy requires the Snort process to restart. You can configure this option as follows:

- **Enabled** — Traffic is inspected during the deployment unless certain configurations require the Snort process to restart.

  When the configurations you deploy do not require a Snort restart, the system initially uses the currently deployed access control policy to inspect traffic, and switches during deployment to the access control policy you are deploying.

- **Disabled** — Traffic is not inspected during the deployment. The Snort process always restarts when you deploy.

The following graphic illustrates how Snort restarts can occur when you enable or disable **Inspect traffic during policy apply**.

![Snort Restart Traffic Behavior Diagram](image)

**Caution**

When you deploy, resource demands may result in a small number of packets dropping without inspection. Additionally, deploying some configurations restarts the Snort process, which interrupts traffic inspection. Whether traffic drops during this interruption or passes without further inspection depends on how the target device handles traffic. See Snort® Restart Traffic Behavior, on page 6 and Configurations that Restart the Snort Process When Deployed or Activated, on page 8.

**Snort® Restart Traffic Behavior**

The following tables explain how different devices handle traffic when the Snort process restarts.

*Table 2: FTD and FTD Virtual Restart Traffic Effects*

<table>
<thead>
<tr>
<th>Interface Configuration</th>
<th>Restart Traffic Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>inline: <strong>Snort Fail Open</strong>: Down: disabled</td>
<td>dropped</td>
</tr>
<tr>
<td>inline: <strong>Snort Fail Open</strong>: Down: enabled</td>
<td>passed without inspection</td>
</tr>
</tbody>
</table>
### Interface Configuration

- routed, transparent (including EtherChannel, redundant, subinterface) when **preserve-connection** is enabled (*configure snort preserve-connection enable*; default)

Note that both the FMC and FTD must be running Version 6.2.0.2 or a subsequent 6.2.0.x patch.

For more information, see `Command Reference for Firepower Threat Defense`.

### Restart Traffic Behavior

- existing TCP/UDP flows: passed without inspection
- new TCP/UDP flows and all non-TCP/UDP flows: dropped

Note that the following traffic drops even when **preserve-connection** is enabled:

- When Snort goes down before the system tags traffic that would have matched a **Do not decrypt** SSL rule or default policy action (tagging occurs after a few handshake packet exchanges)
- plaintext, passthrough prefilter tunnel traffic that matches an **Analyze** rule action or an **Analyze all tunnel traffic** default policy action
- decrypted TLS/SSL traffic
- a safe search flow
- a captive portal flow

### Table 3: 7000 and 8000, NGIPSv Restart Traffic Effects

<table>
<thead>
<tr>
<th>Interface Configuration</th>
<th>Restart Traffic Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>inline: tap mode</td>
<td>egress packet immediately, copy bypasses Snort</td>
</tr>
<tr>
<td>passive</td>
<td>uninterrupted, not inspected</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interface Configuration</th>
<th>Restart Traffic Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>inline: <strong>Failsafe</strong> enabled or disabled</td>
<td>passed without inspection</td>
</tr>
<tr>
<td></td>
<td>A few packets might drop if <strong>Failsafe</strong> is disabled and Snort is busy but not down.</td>
</tr>
<tr>
<td>inline: tap mode</td>
<td>egress packet immediately, copy bypasses Snort</td>
</tr>
<tr>
<td>passive</td>
<td>uninterrupted, not inspected</td>
</tr>
<tr>
<td>routed, switched</td>
<td>dropped</td>
</tr>
<tr>
<td>(7000 and 8000 Series only)</td>
<td></td>
</tr>
</tbody>
</table>
**Configurations that Restart the Snort Process When Deployed or Activated**

Deploying any of the following configurations except AAB restarts the Snort process as described. Deploying AAB does not cause a restart, but excessive packet latency activates the currently deployed AAB configuration, causing a partial restart of the Snort process.

**Access Control Policy**

- Add the first or remove the last URL category/reputation condition in an access control rule.

- Change the total number of active intrusion policies by adding an intrusion policy that is not currently used, or by removing the last instance of an intrusion policy. You can use an intrusion policy in an access control rule, as the default action, or as the default intrusion policy.

**Access Control Policy Advanced Settings**

- Deploy when **Inspect Traffic During Policy Apply** is disabled.

- Configure a non-default value under Files and Malware Settings.

- Add or remove an SSL policy.

- Enable or disable adaptive profiles.

- Enable or disable the **Log Session/Protocol Distribution** troubleshooting option.

**Security Intelligence**

Add or delete multiple Security Intelligence whitelist or blacklist networks or network objects. Changes can be to custom or system-provided lists, and whether the Snort process restarts can vary by device, depending on the memory available for inspection.
SSL Policy

• Add the first or remove the last category/reputation condition in an SSL rule.

File Policy

Deploy the first or last of any one of the following configurations; note that while otherwise deploying these file policy configurations does not cause a restart, deploying non-file-policy configurations can cause restarts.

• Enable or disable Inspect Archives.

• Take either of the following actions:
  • Enable or disable Inspect Archives when the deployed access control policy includes at least one file policy.
  • Add the first or remove the last file policy rule when Inspect Archives is enabled (note that at least one rule is required for Inspect Archives to be meaningful).

• Select Detect Files or Block Files in a file rule.

• Enable or disable Store files in a Detect Files or Block Files rule.

• Add the first or remove the last active file rule that combines the Malware Cloud Lookup or BlockMalware rule action with an analysis option (Spero Analysis or MSEXE, Dynamic Analysis, or LocalMalware Analysis) or a store files option (Malware, Unknown, Clean, or Custom).

Note that access control rules that deploy these file policy configurations to security zones or tunnel zones cause a restart only when your configuration meets the following conditions:

• Source or destination security zones in your access control rule must match the security zones associated with interfaces on the target devices.

• Unless the destination zone in your access control rule is any, a source tunnel zone in the rule must match a tunnel zone assigned to a tunnel rule in the prefilter policy.

Identity Policy

• When SSL decryption is disabled (that is, when the access control policy does not include an SSL policy), add the first or remove the last active authentication rule.

An active authentication rule has either an Active Authentication rule action, or a Passive Authentication rule action with Use active authentication if passive authentication cannot identify user selected.

Network Analysis Policy

• Change the total number of network analysis policies by adding a network analysis policy that is not currently used, or by removing the last instance of a network analysis policy. You can use a network analysis policy with network analysis rules or as the default network analysis policy.

• Change the value for the IMAP, POP, or SMTP preprocessor Base64 Decoding Depth, 7-Bit/8-Bit/BinaryDecoding Depth, Quoted-Printable Decoding Depth, or Unix-to-Unix Decoding Depth.
Network Discovery

• Enable or disable non-authoritative, traffic-based user detection over the HTTP, FTP, or MDNS protocols, using the network discovery policy.

Device Management

• Routing—Add a routed interface pair or virtual router to a 7000 or 8000 Series device.

• VPN—Add or remove a VPN on a 7000 or 8000 Series device.

Caution

The system does not warn you that the Snort process restarts when you add or remove a VPN on a 7000 or 8000 Series device.

• MTU—Change the highest MTU value among all non-management interfaces on a device.

• Classic device high availability—Change a high-availability state sharing option.

• Automatic Application Bypass (AAB)—The currently deployed AAB configuration activates when a malfunction of the Snort process or a device misconfiguration causes a single packet to use an excessive amount of processing time. The result is a partial restart of the Snort process to alleviate extremely high latency or prevent a complete traffic stall. This partial restart causes a few packets to pass without inspection, or drop, depending on how the device handles traffic.

Updates

• System update—Deploy configurations the first time after a software update that includes a new version of the Snort binary or data acquisition library (DAQ).

• VDB—Deploy configurations the first time after installing a vulnerability database (VDB).

• Intrusion rule update—Deploying configurations the first time after importing an intrusion rule update (also known as a Snort Rule Update).

Caution

Intrusion rule updates are cumulative. Any shared object rule that is added or modified since your last update causes a restart when you deploy, even if the current update has no shared object rule changes.

Related Topics

Deploy Configuration Changes, on page 3
Snort® Restart Scenarios, on page 5

Changes that Immediately Restart the Snort Process

The following changes immediately restart the Snort process without going through the deploy process. How the restart affects traffic depends on how the target device handles traffic. See Snort® Restart Traffic Behavior, on page 6 for more information.

• Take any of the following actions involving applications or application detectors:
• Activate or deactivate a system or custom application detector.
• Delete an activated custom detector.
• Save and Reactivate an activated custom detector.
• Create a user-defined application.

The Snort process restarts on all managed devices.
• Create or break a Firepower Threat Defense high availability pair—Restarts the Snort process on the primary and secondary devices.
• Install a vulnerability database (VDB) update.
• Restart the Snort process in the 7000 or 8000 Series user interface (System > Configuration > Process)—The system prompts you for confirmation and allows you to cancel.

Policy Comparison

To review policy changes for compliance with your organization's standards or to optimize system performance, you can examine the differences between two policies or between a saved policy and the running configuration.

You can compare the following policy types:
• DNS
• File
• Health
• Identity
• Intrusion
• Network Analysis
• SSL

The comparison view displays both policies in a side-by-side format. Differences between the two policies are highlighted:
• Blue indicates that the highlighted setting is different in the two policies, and the difference is noted in red text.
• Green indicates that the highlighted setting appears in one policy but not the other.

Comparing Policies

<table>
<thead>
<tr>
<th>Smart License</th>
<th>Classic License</th>
<th>Supported Devices</th>
<th>Supported Domains</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>feature dependent</td>
<td>feature dependent</td>
<td>Any</td>
<td>feature dependent</td>
<td>feature dependent</td>
</tr>
</tbody>
</table>
Procedure

Step 1  Access the management page for the policy you want to compare:

- DNS—Policies > Access Control > DNS
- File—Policies > Access Control > Malware & File
- Health—System > Health > Policy
- Identity—Policies > Access Control > Identity
- Intrusion—Policies > Access Control > Intrusion
- Network Analysis—Policies > Access Control, then click Network Analysis Policy or Policies > Access Control > Intrusion, then click Network Analysis Policy

Note  If your custom user role limits access to the first path listed here, use the second path to access the policy.

- SSL—Policies > Access Control > SSL

Step 2  Click Compare Policies.

Step 3  From the Compare Against drop-down list, choose the type of comparison you want to make:

- To compare two different policies, choose Other Policy.
- To compare two revisions of the same policy, choose Other Revision.
- To compare another policy to the currently active policy, choose Running Configuration.

Step 4  Depending on the comparison type you choose, you have the following choices:

- If you are comparing two different policies, choose the policies you want to compare from the Policy A and Policy B drop-down lists.
- If you are comparing the running configuration to another policy, choose the second policy from the Policy B drop-down list.

Step 5  Click OK.

Step 6  Review the comparison results:

- Comparison Viewer—To use the comparison viewer to navigate individually through policy differences, click Previous or Next above the title bar.
- Comparison Report—To generate a PDF report that lists the differences between the two policies, click Comparison Report.

Policy Reports

For most policies, you can generate two kinds of reports. A report on a single policy provides details on the policy's current saved configuration, while a comparison report lists only the differences between two policies. You can generate a single-policy report for all policy types except health.
Intrusion policy reports combine the settings in the base policy with the settings of the policy layers, and make no distinction between which settings originated in the base policy or policy layer.

Generating Current Policy Reports

<table>
<thead>
<tr>
<th>Smart License</th>
<th>Classic License</th>
<th>Supported Devices</th>
<th>Supported Domains</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>feature dependent</td>
<td>feature dependent</td>
<td>Any</td>
<td>feature dependent</td>
<td>feature dependent</td>
</tr>
</tbody>
</table>

Procedure

Step 1
Access the management page for the policy for which you want to generate a report:

- Access Control—Policies > Access Control
- DNS—Policies > Access Control > DNS
- File—Policies > Access Control > Malware & File
- Health—System > Health > Policy
- Identity—Policies > Access Control > Identity
- Intrusion—Policies > Access Control > Intrusion
- NAT for 7000 & 8000 Series devices—Devices > NAT
- Network Analysis—Policies > Access Control, then click Network Analysis Policy or Policies > Access Control > Intrusion, then click Network Analysis Policy

Note If your custom user role limits access to the first path listed here, use the second path to access the policy.

- SSL—Policies > Access Control > SSL

Step 2
Click the report icon ( ) next to the policy for which you want to generate a report.

Out-of-Date Policies

The Firepower System marks out-of-date policies with red status text that indicates how many of its targeted devices need a policy update. To clear this status, you must re-deploy the policy to the devices.

Configuration changes that require a policy re-deploy include:

- Modifying an access control policy: any changes to access control rules, the default action, policy targets, Security Intelligence filtering, advanced options including preprocessing, and so on.
- Modifying any of the policies that the access control policy invokes: the SSL policy, network analysis policies, intrusion policies, file policies, identity policies, or DNS policies.
- Changing any reusable object or configuration used in an access control policy or policies it invokes:
  - network, port, VLAN tag, URL, and geolocation objects
• Security Intelligence lists and feeds
• application filters or detectors
• intrusion policy variable sets
• file lists
• decryption-related objects and security zones
• Updating the system software, intrusion rules, or the vulnerability database (VDB).

Keep in mind that you can change some of these configurations from multiple places in the web interface. For example, you can modify security zones using the object manager (Objects > Object Management), but modifying an interface type in a device’s configuration (Devices > Device Management) can also change a zone and require a policy re-deploy.

Note that the following updates do **not** require policy re-deploy:

- automatic updates to Security Intelligence feeds and additions to the Security Intelligence global blacklist or whitelist using the context menu
- automatic updates to URL filtering data
- scheduled geolocation database (GeoDB) updates

---

**Performance Considerations for Limited Deployments**

Host, application, and user discovery data allow the system to create a complete, up-to-the-minute profile of your network. The system can also act as an intrusion detection and prevention system (IPS), analyzing network traffic for intrusions and exploits and, optionally, dropping offending packets.

Combining discovery and IPS gives context to your network activity and allows you to take advantage of many features, including:

- impact flags and indications of compromise, which can tell you which of your hosts are vulnerable to a particular exploit, attack, or piece of malware
- adaptive profile updates and Firepower recommendations, which allow you to examine traffic differently depending on the destination host
- correlation, which allows you to respond to intrusions (and other events) differently depending on the affected host

However, if your organization is interested in performing only IPS, or only discovery, there are a few configurations that can optimize the performance of the system.

**Discovery Without Intrusion Prevention**

The *discovery* feature allows you to monitor network traffic and determine the number and types of hosts (including network devices) on your network, as well as the operating systems, active applications, and open ports on those hosts. You can also configure managed devices to monitor user activity on your network. You can use discovery data to perform traffic profiling, assess network compliance, and respond to policy violations.
In a basic deployment (discovery and simple, network-based access control only), you can improve a device’s performance by following a few important guidelines when configuring its access control policy.

You must use an access control policy, even if it simply allows all traffic. The network discovery policy can only examine traffic that the access control policy allows to pass.

First, make sure your access control policy does not require complex processing and uses only simple, network-based criteria to handle network traffic. You must implement all of the following guidelines; misconfiguring any one of these options eliminates the performance benefit:

- Do not use the Security Intelligence feature. Remove any populated global whitelist or blacklist from the policy’s Security Intelligence configuration.

- Do not include access control rules with Monitor or Interactive Block actions. Use only Allow, Trust, and Block rules. Keep in mind that allowed traffic can be inspected by discovery; trusted and blocked traffic cannot.

- Do not include access control rules with application, user, URL, ISE attribute, or geolocation-based network conditions. Use only simple network-based conditions: zone, IP address, VLAN tag, and port.

- Do not include access control rules that perform file, malware, or intrusion inspection. In other words, do not associate a file policy or intrusion policy with any access control rule.

- Make sure that the default intrusion policy for the access control policy is set to No Rules Active.

- Select Network Discovery Only as the policy’s default action. Do not choose a default action for the policy that performs intrusion inspection.

In conjunction with the access control policy, you can configure and deploy the network discovery policy, which specifies the network segments, ports, and zones that the system examines for discovery data, as well as whether hosts, applications, and users are discovered on the segments, ports, and zones.

Intrusion Prevention Without Discovery

Disabling discovery if you don't need it (for example, in an IPS-only deployment) can improve performance. To disable discovery you must implement all of these changes:

- Delete all rules from your network discovery policy.

- Use only simple network-based conditions to perform access control: zone, IP address, VLAN tag, and port.

  Do not perform any kind of, application, user, URL, or geolocation control. Although you can disable storage of discovery data, the system still must collect and examine it to implement those features.

After you deploy, new discovery halts on target devices. The system gradually deletes information in the network map according to your timeout preferences. Or, you can purge all discovery data immediately.