ASA and ASA FirePOWER Module Deployment with ASDM

Note ASA version 9.16 is the final supported version for the ASA 5508-X and 5516-X.

Is This Chapter for You?

This chapter describes how to deploy the ASA 5508-X or 5516-X in your network with the ASA FirePOWER module and how to perform initial configuration. This chapter does not cover the following deployments, for which you should refer to the ASA configuration guide:

- Failover
- Clustering (ASA 5516-X only)
- CLI configuration

This chapter also walks you through configuring a basic security policy; if you have more advanced requirements, refer to the configuration guide.

The ASA 5508-X and 5516-X hardware can run either ASA software or FTD software. Switching between ASA and FTD requires you to reimage the device. See Reimage the Cisco ASA or Firepower Threat Defense Device.

Privacy Collection Statement—The ASA 5508-X or 5516-X do not require or actively collect personally-identifiable information. However, you can use personally-identifiable information in the configuration, for example for usernames. In this case, an administrator might be able to see this information when working with the configuration or when using SNMP.

About the ASA

The ASA provides advanced stateful firewall and VPN concentrator functionality in one device, and with the included ASA FirePOWER module, next-generation firewall services including Next-Generation Intrusion Prevention System (NGIPS), Application Visibility and Control (AVC), URL filtering, and Advanced Malware Protection (AMP).

You can manage the ASA using one of the following managers:

- ASDM (covered in this guide)—A single device manager included on the device.
- CLI
- Cisco Defense Orchestrator—A simplified, cloud-based multi-device manager
- Cisco Security Manager—A multi-device manager on a separate server.

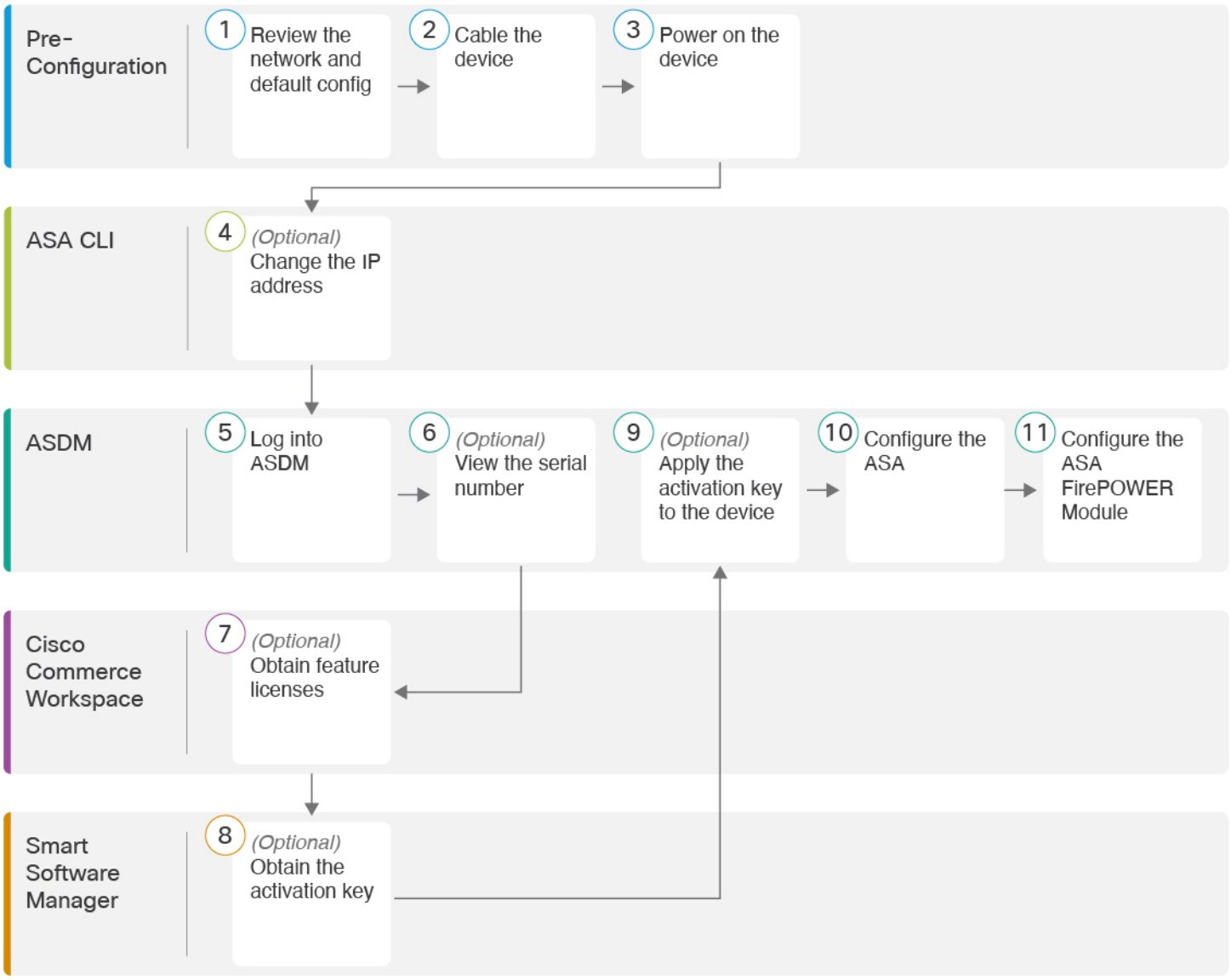
You can manage the ASA FirePOWER module using one of the following managers:

- ASDM (Covered in this guide)—A single device manager included on the device.
- Firepower Management Center (FMC)—A full-featured, multidevice manager on a separate server.

You can also access the FirePOWER CLI for troubleshooting purposes.

End-to-End Procedure

See the following tasks to deploy and configure the ASA on your chassis.



1	Pre-Configuration	Review the Network Deployment and Default Configuration, on page 4.
2	Pre-Configuration	Cable the Device, on page 7.
3	Pre-Configuration	Power on the ASA, on page 7.
4	ASA CLI	(Optional) Change the IP Address, on page 8.
5	ASDM	Log Into ASDM, on page 9.

6	ASDM	(Optional) Configure ASA Licensing, on page 10: View the serial number.
7	Cisco Commerce Workspace	(Optional) Configure ASA Licensing, on page 10: Obtain feature licenses.
8	Smart Software Manager	(Optional) Configure ASA Licensing, on page 10: Obtain the activation key.
9	ASDM	(Optional) Configure ASA Licensing, on page 10: Apply the activation key to the device.
10	ASDM	Configure the ASA, on page 11.
11	ASDM	Configure the ASA FirePOWER Module, on page 14.

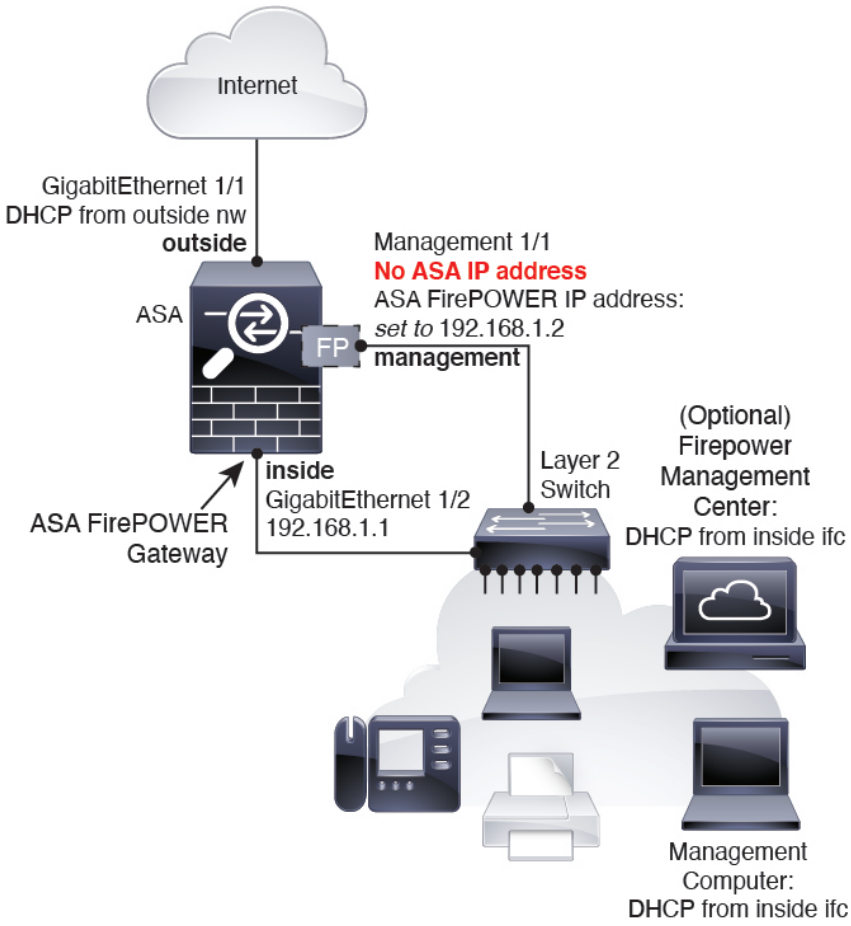
Review the Network Deployment and Default Configuration

The following figure shows a typical edge deployment for the ASA 5508-X and 5516-X using the default configuration. In this deployment, the ASA acts as the internet gateway for the ASA FirePOWER module, which needs internet access for database updates. You can connect the Management 1/1 interface to the same network (through a switch) as the inside interface if you do not set the Management 1/1 IP address for the ASA. (You can set the Management 1/1 IP address for the ASA FirePOWER module to be on the same network as inside because it is a separate system from the ASA.)

If you connect the outside interface directly to a cable modem or DSL modem, we recommend that you put the modem into bridge mode so the ASA performs all routing and NAT for your inside networks. If you need to configure PPPoE for the outside interface to connect to your ISP, you can do so as part of the ASDM Startup Wizard.

Note If you cannot use the default inside IP address for ASDM access, you can set the inside IP address at the ASA CLI. See (Optional) Change the IP Address, on page 8. For example, you may need to change the inside IP address in the following circumstances:

- If the outside interface tries to obtain an IP address on the 192.168.1.0 network, which is a common default network, the DHCP lease will fail, and the outside interface will not obtain an IP address. This problem occurs because the ASA cannot have two interfaces on the same network. In this case you must change the inside IP address (and later, the ASA FirePOWER IP address) to be on a new network.
- If you add the ASA to an existing inside network, you will need to change the inside IP address (and later, the ASA FirePOWER IP address) to be on the existing network.



ASA 5506-X, 5508-X, and 5516-X Default Configuration

The default factory configuration for the ASA 5506-X series, 5508-X, and 5516-X configures the following:

- **inside --> outside** traffic flow—GigabitEthernet 1/1 (outside), GigabitEthernet 1/2 (inside)
- **outside IP address** from DHCP
- **inside IP address**—192.168.1.1
- (ASA 5506W-X) **wifi <--> inside, wifi --> outside** traffic flow—GigabitEthernet 1/9 (wifi)
- (ASA 5506W-X) **wifi IP address**—192.168.10.1
- **DHCP server** on inside and wifi. The access point itself and all its clients use the ASA as the DHCP server.
- **Default route** from outside DHCP
- **Management 1/1 interface** is Up, but otherwise unconfigured. The ASA FirePOWER module can then use this interface to access the ASA inside network and use the inside interface as the gateway to the Internet.
- **ASDM** access—inside and wifi hosts allowed.

- **NAT**—Interface PAT for all traffic from inside, wifi, and management to outside.

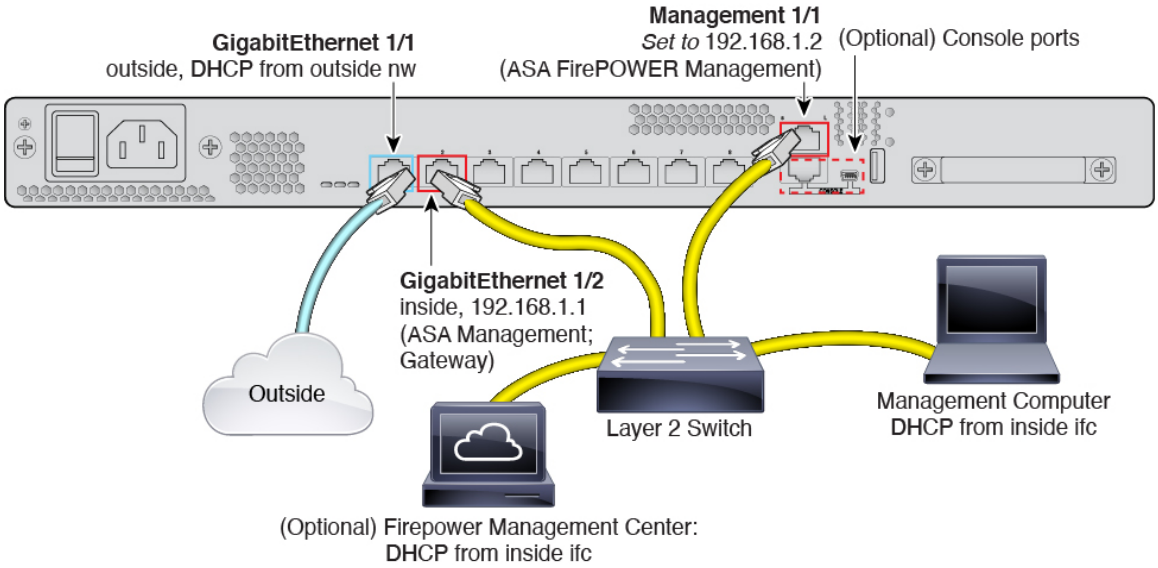
The configuration consists of the following commands:

```
interface Management1/1
  management-only
  no nameif
  no security-level
  no ip address
  no shutdown
interface GigabitEthernet1/1
  nameif outside
  security-level 0
  ip address dhcp setroute
  no shutdown
interface GigabitEthernet1/2
  nameif inside
  security-level 100
  ip address 192.168.1.1 255.255.255.0
  no shutdown
!
object network obj_any
  subnet 0.0.0.0 0.0.0.0
  nat (any,outside) dynamic interface
!
http server enable
http 192.168.1.0 255.255.255.0 inside
!
dhcpd auto_config outside
dhcpd address 192.168.1.5-192.168.1.254 inside
dhcpd enable inside
!
logging asdm informational
```

For the ASA 5506W-X, the following commands are also included:

```
same-security-traffic permit inter-interface
!
interface GigabitEthernet 1/9
  security-level 100
  nameif wifi
  ip address 192.168.10.1 255.255.255.0
  no shutdown
!
http 192.168.10.0 255.255.255.0 wifi
!
dhcpd address 192.168.10.2-192.168.10.254 wifi
dhcpd enable wifi
```

Cable the Device



Manage the ASA 5508-X or 5516-X on the GigabitEthernet 1/2 interface, and manage the ASA FirePOWER module on the Management 1/1 interface. The default configuration also configures GigabitEthernet 1/1 as outside.

Procedure

Step 1 Cable the following to a Layer 2 Ethernet switch:

- GigabitEthernet 1/2 (inside)
- Management 1/1
- Management computer
- (Optional) Firepower Management Center

Step 2 (Optional) Connect the management computer to the console port.

If you need to change the inside IP address from the default, you must also cable your management computer to the console port. See (Optional) Change the IP Address, on page 8.

Step 3 Connect the GigabitEthernet 1/1 interface (outside) to your outside router.

Step 4 Connect other networks to the remaining interfaces.

Power on the ASA

System power is controlled by a rocker power switch located on the rear of the device.

Procedure

Step 1 Attach the power cord to the device, and connect it to an electrical outlet.

Step 2 Turn the power on using the standard rocker-type power on/off switch located on the rear of the chassis, adjacent to the power cord.

Step 3 Check the Power LED on the front or rear of the device; if it is solid green, the device is powered on.

Figure 1: Rear Panel

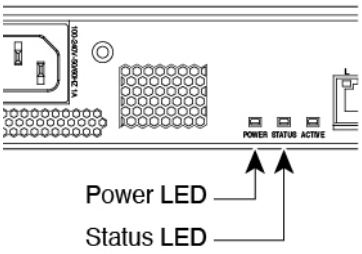
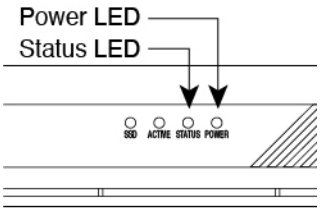


Figure 2: Front Panel



Step 4 Check the Status LED on the front or rear of the device; after it is solid green, the system has passed power-on diagnostics.

(Optional) Change the IP Address

If you cannot use the default IP address for ASDM access, you can set the IP address of the inside interface at the ASA CLI.

Note This procedure restores the default configuration and also sets your chosen IP address, so if you made any changes to the ASA configuration that you want to preserve, do not use this procedure.

Procedure

Step 1 Connect to the ASA console port, and enter global configuration mode. See Access the ASA CLI, on page 16 for more information.

Step 2 Restore the default configuration with your chosen IP address.

configure factory-default [*ip_address* [*mask*]]

Example:

```
ciscoasa(config)# configure factory-default 10.1.1.151 255.255.255.0
Based on the management IP address and mask, the DHCP address
pool size is reduced to 103 from the platform limit 256

WARNING: The boot system configuration will be cleared.
The first image found in disk0:/ will be used to boot the
system on the next reload.
Verify there is a valid image on disk0:/ or the system will
not boot.

Begin to apply factory-default configuration:
Clear all configuration
Executing command: interface gigabitethernet1/2
Executing command: nameif inside
INFO: Security level for "inside" set to 100 by default.
Executing command: ip address 10.1.1.151 255.255.255.0
Executing command: security-level 100
Executing command: no shutdown
Executing command: exit
Executing command: http server enable
Executing command: http 10.1.1.0 255.255.255.0 management
Executing command: dhcpd address 10.1.1.152-10.1.1.254 management
Executing command: dhcpd enable management
Executing command: logging asdm informational
Factory-default configuration is completed
ciscoasa(config)#
```

Step 3 Save the default configuration to flash memory.

write memory

Log Into ASDM

Launch ASDM so you can configure the ASA.

Before you begin

- See the ASDM release notes on Cisco.com for the requirements to run ASDM.

Procedure

Step 1 Enter the following URL in your browser.

- **https://192.168.1.1**—Inside (GigabitEthernet 1/2) interface IP address.

Note Be sure to specify **https://**, and not **http://** or just the IP address (which defaults to HTTP); the ASA does not automatically forward an HTTP request to HTTPS.

The **Cisco ASDM** web page appears. You may see browser security warnings because the ASA does not have a certificate installed; you can safely ignore these warnings and visit the web page.

Step 2 Click one of these available options: **Install ASDM Launcher** or **Run ASDM**.

Step 3 Follow the onscreen instructions to launch ASDM according to the option you chose.

The **Cisco ASDM-IDM Launcher** appears.

Step 4 Leave the username and password fields empty, and click **OK**.

The main ASDM window appears.

(Optional) Configure ASA Licensing

The ASA 5508-X or ASA 5516-X includes the **Base** license by default.

It also comes pre-installed with the **Strong Encryption (3DES/AES)** license if you qualify for its use; this license is not available for some countries depending on United States export control policy. The Strong Encryption license allows traffic with strong encryption, such as VPN traffic.

This procedure describes how to obtain and activate additional licenses. You do not need to follow this procedure unless you obtain new licenses.

If you need to manually request the Strong Encryption license (which is free), see https://www.cisco.com/go/license.

You can optionally purchase the following licenses:

- **5 Security Contexts**
- **AnyConnect Plus** or **Apex**

To install additional ASA licenses, perform the following steps.

Procedure

Step 1 Obtain the serial number for your ASA in ASDM by choosing **Configuration** > **Device Management** > **Licensing** > **Activation Key**.

Note The serial number used for licensing is different from the chassis serial number printed on the outside of your hardware. The chassis serial number is used for technical support, but not for licensing. To view the licensing serial number, enter the **show version | grep Serial** command or see the ASDM **Configuration** > **Device Management** > **Licensing Activation Key** page.

Step 2 See http://www.cisco.com/go/ccw to purchase the 5 Security Context license using the following PID: **L-ASA-SC-5=**. The ASA supports 2 contexts with the Base license.

For AnyConnect License PIDs, see the Cisco AnyConnect Ordering Guide and the AnyConnect Licensing Frequently Asked Questions (FAQ).

After you order a license, you will then receive an email with a Product Authorization Key (PAK) so you can obtain the license activation key. For the AnyConnect licenses, you receive a multi-use PAK that you can

apply to multiple ASAs that use the same pool of user sessions. The PAK email can take several days in some cases.

Step 3 Obtain the activation key from the following licensing website: https://www.cisco.com/go/license

Enter the following information, when prompted:

- Product Authorization Keys
- The serial number of your ASA
- Your e-mail address

An activation key is automatically generated and sent to the e-mail address that you provide. This key includes all features you have registered so far for permanent licenses.

Step 4 On the ASDM **Configuration** > **Device Management** > **Licensing** > **Activation Key** pane, enter the **New Activation Key**.

The key is a five-element hexadecimal string with one space between each element. The leading 0x specifier is optional; all values are assumed to be hexadecimal. For example:

```
ASA0xd11b3d48 0xa80a4c0a 0x48e0fd1c 0xb0443480 0x843fc490
```

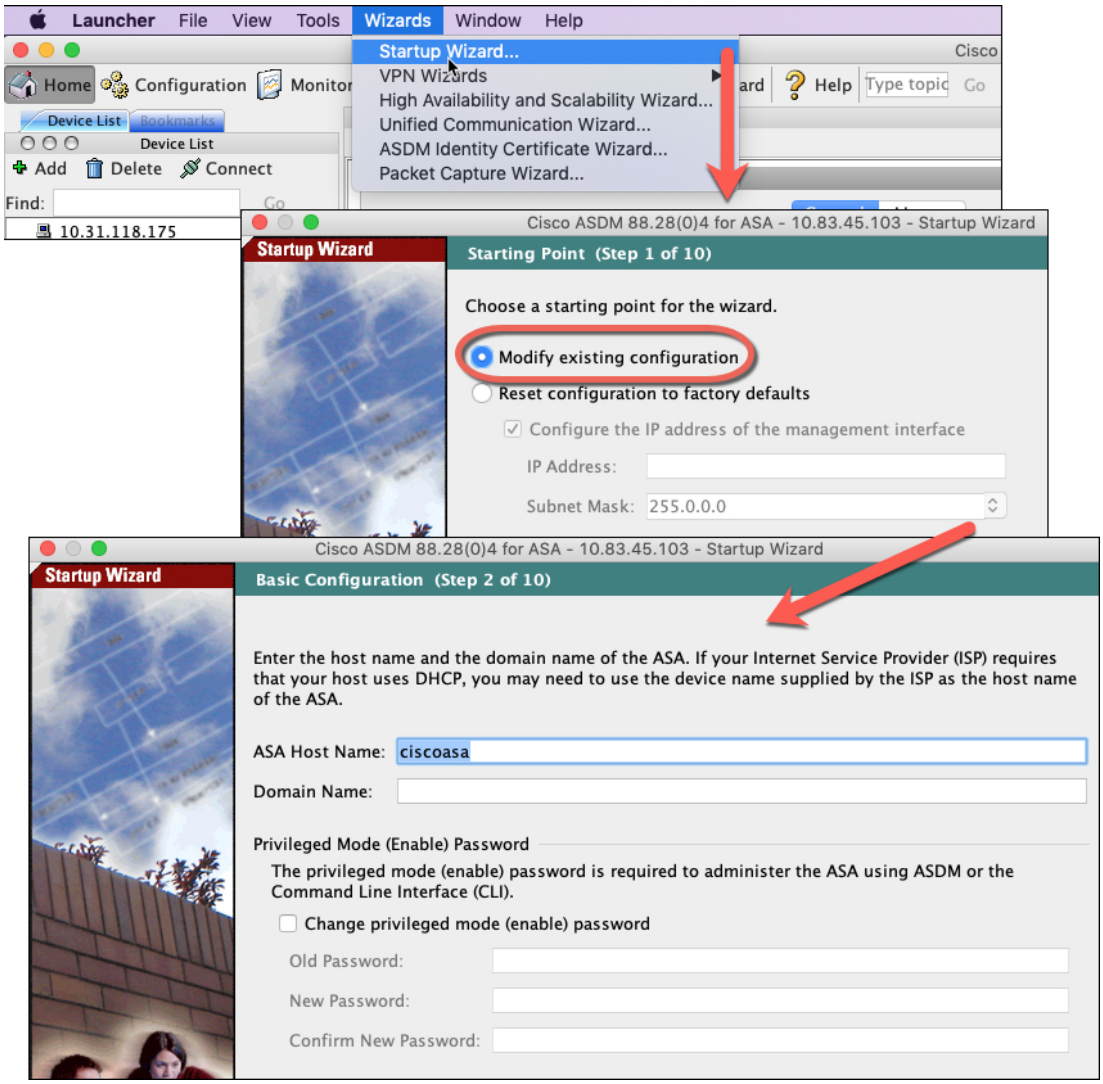
Step 5 Click **Update Activation Key**.

Configure the ASA

Using ASDM, you can use wizards to configure basic and advanced features. You can also manually configure features not included in wizards.

Procedure

Step 1 Choose **Wizards** > **Startup Wizard**, and click the **Modify existing configuration** radio button.



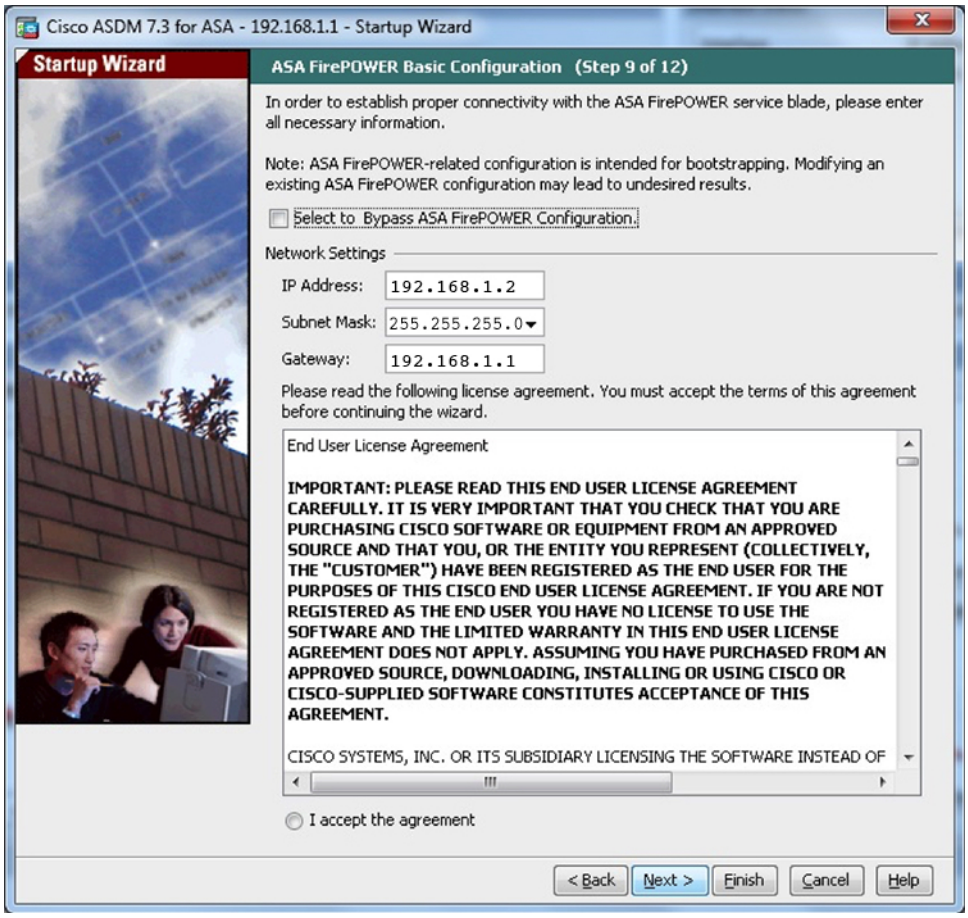
Step 2 The **Startup Wizard** walks you through configuring:

- The enable password
- Interfaces, including setting the inside and outside interface IP addresses and enabling interfaces.
- Static routes
- The DHCP server
- And more...

Step 3 Configure the ASA FirePOWER module management IP address.

Note The ASA FirePOWER module is supported with 9.16 and earlier only.

a) Configure additional ASA settings as desired, or skip screens until you reach the **ASA FirePOWER Basic Configuration** screen.



b) Set the following values to work with the default configuration:

- **IP Address**—192.168.1.2. If you changed the ASA default IP address according to (Optional) Change the IP Address, on page 8, then use an available IP address on the same network. Be sure not to use an IP address in the DHCP server range (if you used the **configure factory-default** command, do not use any address higher than the ASA address you specified).
- **Subnet Mask**—255.255.255.0
- **Gateway**—192.168.1.1

c) Click **I accept the agreement**, and click **Next** or **Finish** to complete the wizard.

d) Quit ASDM, and then relaunch. You should see **ASA FirePOWER** tabs on the **Home** page.

Step 4 (Optional) From the **Wizards** menu, run other wizards.

Step 5 To continue configuring your ASA, see the documents available for your software version at Navigating the Cisco ASA Series Documentation.

Configure the ASA FirePOWER Module

Use ASDM to install licenses, configure the module security policy, and send traffic to the module.

Note You can alternatively use the Firepower Management Center to manage the ASA FirePOWER module. See the ASA FirePOWER Module Quick Start Guide for more information.

1	Configure FirePOWER Licensing, on page 14.
2	Configure the FirePOWER Security Policy, on page 15.
3	Send ASA Traffic to the FirePOWER Module, on page 15.

Configure FirePOWER Licensing

The ASA FirePOWER module uses a separate licensing mechanism from the ASA. No licenses are pre-installed, but the box includes a PAK on a printout that lets you obtain a license activation key for the following licenses:

- **Control and Protection**—Control is also known as "Application Visibility and Control (AVC)" or "Apps". Protection is also known as "IPS". In addition to the activation key for these licenses, you also need "right-to-use" subscriptions for automated updates for these features.

  The **Control** (AVC) updates are included with a Cisco support contract.

  The **Protection** (IPS) updates require you to purchase the IPS subscription from http://www.cisco.com/go/ccw. This subscription includes entitlement to Rule, Engine, Vulnerability, and Geolocation updates. **Note:** This right-to-use subscription does not generate or require a PAK/license activation key for the ASA FirePOWER module; it just provides the right to use the updates.

Other licenses that you can purchase include the following:

- **Advanced Malware Protection (AMP)**
- **URL Filtering**

These licenses generate a PAK/license activation key for the ASA FirePOWER module, which you should receive in your email. See the Cisco Firepower System Feature Licenses for more information.

To install ASA FirePOWER licenses, perform the following steps.

Procedure

Step 1 Obtain the License Key for your chassis by choosing **Configuration** > **ASA FirePOWER Configuration** > **Licenses** and clicking **Add New License**.

The License Key is near the top; for example, 72:78:DA:6E:D9:93:35.

Step 2 Click **Get License** to launch the licensing portal. Alternatively, in your browser go to https://www.cisco.com/go/license.

Step 3 Enter the PAKs separated by commas in the **Get New Licenses** field, and click **Fulfill**.

Step 4 Provide the License Key and email address and other fields.

Step 5 Copy the resulting license activation key from either the website display or from the zip file attached to the licensing email that the system automatically delivers.

Step 6 Return to the ASDM **Configuration** > **ASA FirePOWER Configuration** > **Licenses** > **Add New License** screen.

Step 7 Paste the license activation key into the **License** box.

Step 8 Click **Verify License** to ensure that you copied the text correctly, and then click **Submit License** after verification.

Step 9 Click **Return to License Page**.

Configure the FirePOWER Security Policy

Configure the security policy for traffic that you send from the ASA to the FirePOWER module.

Procedure

Choose **Configuration** > **ASA FirePOWER Configuration** to configure the ASA FirePOWER security policy.

Use the ASA FirePOWER pages in ASDM for information to learn about the ASA FirePOWER security policy. You can click **Help** in any page, or choose **Help** > **ASA FirePOWER Help Topics**, to learn more about how to configure policies.

See also the ASA FirePOWER module configuration guide.

Send ASA Traffic to the FirePOWER Module

Configure the ASA to send traffic to the FirePOWER module. By default, no traffic is sent to the FirePOWER module. You can send all traffic or a subset of traffic to the module for next-generation firewall services.

Procedure

Step 1 Choose **Configuration** > **Firewall** > **Service Policy Rules**.

Step 2 Choose **Add** > **Service Policy Rule**

Step 3 Choose whether to apply the policy to a particular interface or apply it globally and click **Next**.

Step 4 Configure the traffic match. For example, you could match **Any Traffic** so that all traffic that passes your inbound access rules is redirected to the module. Or, you could define stricter criteria based on ports, ACL (source and destination criteria), or an existing traffic class. The other options are less useful for this policy. After you complete the traffic class definition, click **Next**.

Step 5 On the **Rule Actions** page, click the **ASA FirePOWER Inspection** tab.

Step 6 Check the **Enable ASA FirePOWER for this traffic flow** check box.

Step 7 (Optional) In the **If ASA FirePOWER Card Fails** area, click one of the following:

- **Permit traffic**—(Default) Sets the ASA to allow all traffic through, uninspected, if the module is unavailable.
- **Close traffic**—Sets the ASA to block all traffic if the module is unavailable.

Step 8 (Optional) Check **Monitor-only** to send a read-only copy of traffic to the module, i.e. passive mode.

Step 9 Click **Finish** and then **Apply**.

Repeat this procedure to configure additional traffic flows as desired.

Access the ASA CLI

You can use the ASA CLI to troubleshoot or configure the ASA instead of using ASDM. You can access the CLI by connecting to the console port. You can later configure SSH access to the ASA on any interface; SSH access is disabled by default. See the ASA general operations configuration guide for more information.

You can also connect to the ASA FirePOWER module internal console port from the ASA CLI. For details about the FirePOWER CLI, see the "Classic Device Command Reference" in the FMC configuration guide.

Procedure

Step 1 Connect your management computer to the console port. The ASA 5508-X and 5516-X ship with a USB A-to-B serial cable. Be sure to install any necessary USB serial drivers for your operating system (see the hardware guide). Use the following serial settings:

- 9600 baud
- 8 data bits
- No parity
- 1 stop bit

You connect to the ASA CLI. There are no user credentials required for console access by default.

Step 2 Access privileged EXEC mode.

enable

You are prompted to change the password the first time you enter the **enable** command.

Example:

```
ciscoasa> enable
Password:
The enable password is not set. Please set it now.
Enter Password: ******
Repeat Password: ******
```

```
ciscoasa#
```

All non-configuration commands are available in privileged EXEC mode. You can also enter configuration mode from privileged EXEC mode.

To exit privileged EXEC mode, enter the **disable**, **exit**, or **quit** command.

Step 3 Access global configuration mode.

configure terminal

Example:

```
ciscoasa# configure terminal
ciscoasa(config)#
```

You can begin to configure the ASA from global configuration mode. To exit global configuration mode, enter the **exit**, **quit**, or **end** command.

Step 4 (Optional) Access the ASA FirePOWER module console.

session sfr

Log in with the **admin** username and the password. The default password is **Admin123**. The first time you log in, you are prompted for a new password and for Management interface network settings. You can alternatively set the network settings using ASDM.

Exit the FirePOWER CLI by typing **Ctrl-Shift-6**, **X**.

Example:

```
ciscoasa# session sfr
Opening command session with module sfr.
Connected to module sfr. Escape character sequence is 'CTRL-^X'.

FP3 login: admin
Password: ********
Last login: Wed Mar 13 05:16:08 UTC 2019 on ttyS1

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Cisco Fire Linux OS v6.2.0 (build 42)
Cisco ASA5555 v6.2.0 (build 362)

>
```

What's Next?

- To continue configuring your ASA, see the documents available for your software version at Navigating the Cisco ASA Series Documentation.

- See the online help or the ASA FirePOWER module local management configuration guide or the FMC configuration guide for your version.