

Planning Your Upgrade

Before upgrading the Secure Firewall ASA, you should perform the following preparation:

- Check the upgrade path for the current version to the target version; ensure you plan for any intermediate versions required for each operating system.
- Check for guidelines and limitations that affect your intermediate and target versions, or that affect failover and clustering zero downtime upgrading.
- Download all software packages required from Cisco.com.
- Back up your configurations, especially if there is a configuration migration.

The following topics explain how to upgrade your ASA.

- Important Guidelines Before You Upgrade, on page 1
- ASA Upgrade Checklist, on page 6
- Compatibility, on page 7
- Upgrade Path, on page 25
- Download the Software from Cisco.com, on page 42
- Back Up Your Configurations, on page 50

Important Guidelines Before You Upgrade

Check for upgrade guidelines and limitations, and configuration migrations for each operating system.

ASA Upgrade Guidelines

Before you upgrade, check for migrations and any other guidelines.

Version-Specific Guidelines and Migrations

Depending on your current version, you might experience one or more configuration migrations, and have to consider configuration guidelines for all versions between the starting version and the ending version when you upgrade.

9.24 Guidelines

- **ASDM 7.24(1) requires Java 11**—ASDM 7.24(1) now requires Java 11. For the Oracle version, which is the version bundled with the ASA image, you will need to install Oracle JDK 11: https://www.oracle.com/java/technologies/javase/jdk11-archive-downloads.html. Later versions are not compatible. To minimize risk and ensure better compatibility and stability with Java, we are taking a phased approach to moving off of Java 8, starting with this move to Java 11. If you upgrade to the ASDM Launcher 1.9(10) or later that comes with 7.24(1), you can still launch earlier versions of ASDM.

  For the OpenJRE version, you do not need to install Java; it is built-in.

- **ASA Virtual cannot be downgraded from 9.24(1)**—After upgrading to 9.24(1), which includes a new Grub bootloader, you cannot downgrade to an earlier version. To upgrade to later versions, you will first have to upgrade to 9.24(1).

9.23 Guidelines

- **The ASA SSH stack was deprecated in 9.23**—You can no longer use the ASA SSH stack. The Cisco SSH stack is now the only stack. Because the Cisco SSH stack does not support EDDSA, before you upgrade you must change your configuration for a supported key pair:

  1. Generate the default key pair.

     crypto key generate {**ecdsa elliptic-curve** *size* | **rsa modulus** *size*}

     Do not add the **label** keyword; SSH only uses the default key pair (named Default-*type*-Key).

  2. If you configured the **ssh key-exchange hostkey eddsa** command, you need to remove it with the **no** form. If you use this command, you may get unexpected results.

9.22 Guidelines

- **Smart licensing default transport changed in 9.22**—In 9.22, the smart licensing default transport changed from Smart Call Home to Smart Transport. You can configure the ASA to use Smart Call Home if necessary using the **transport type callhome** command. When you upgrade to 9.22, the transport is automatically changed Smart Transport. If you downgrade, the transport is set back to Smart Call Home, and if you want to use Smart Transport, you need to specify **transport type smart**. Note also that the licensing URL for Smart Transport is https://smartreceiver.cisco.com (compared to tools.cisco.com), so be sure to allow that URL on upstream routers.

  Note Ensure your device can connect to the Smart License Authority. For known connectivity issues and workarounds refer to CSCwp10957 and CSCws62173.

- **For models with built-in-switches, subinterfaces can't use VLAN 1 in 9.22 and later**—For models with built-in switches, you cannot create a subinterface using VLAN 1. VLAN 1 is reserved for the logical VLAN interface for switch ports. If you upgrade a 1010 to 9.22(1) or later, and you have assigned VLAN 1 to a subinterface, you must first change the VLAN ID for your subinterface to a new VLAN. After upgrading, if present, VLAN 1 will be removed from the subinterface.

9.20 Guidelines

- **Smart licensing default transport changed in 9.20(4)**—In 9.20(4), the smart licensing default transport changed from Smart Call Home to Smart Transport. You can configure the ASA to use Smart Call Home if necessary using the **transport type callhome** command. When you upgrade to 9.20(4), the transport is automatically changed to Smart Transport. If you downgrade, the transport is set back to Smart Call Home, and if you want to use Smart Transport, you need to specify **transport type smart**. Note also that the licensing URL for Smart Transport is https://smartreceiver.cisco.com (compared to tools.cisco.com), so be sure to allow that URL on upstream routers.



Note Ensure your device can connect to the Smart License Authority. For known connectivity issues and workarounds refer to CSCwp10957 and CSCws62173.

- **OSPFv3 redistribute commands that specify a route-map that matches a prefix-list will be removed in 9.20(2)**—When you upgrade to 9.20(2), OSPFv3 **redistribute** commands where the specified **route-map** uses a **match ip address prefix-list** will be removed from the configuration. Although prefix lists have never been supported, the parser still accepted the command. Before upgrading, you should reconfigure OSPFv3 to use route maps that specify an ACL in the **match ip address** command.



Remember Redistribution of route maps with IPv4 prefix list on OSPFv2 is supported.

9.19 Guidelines

- **ASDM 7.19(1) requires Oracle Java version 8u261 or later**—Before you upgrade to ASDM 7.19, be sure to update Oracle Java (if used) to version 8u261 or later. This version supports TLSv1.3, which is required to upgrade the ASDM Launcher. OpenJRE is not affected.

9.18 Guidelines

- **ASDM signed-image support in 9.18(2)/7.18(1.152) and later**—The ASA now validates whether the ASDM image is a Cisco digitally signed image. If you try to run an older ASDM image with an ASA version with this fix, ASDM will be blocked and the message "%ERROR: Signature not valid for file disk0:/<filename>" will be displayed at the ASA CLI. ASDM release 7.18(1.152) and later are backwards compatible with all ASA versions, even those without this fix. (CSCwb05291, CSCwb05264)
- **9.18(1) upgrade issue if you enabled HTTPS/ASDM (with HTTPS authentication) and SSL on the same interface with the same port**—If you enable both SSL (**webvpn** > **enable** *interface*) and HTTPS/ASDM (**http**) access on the same interface, you can access AnyConnect from **https://***ip_address* and ASDM from **https://***ip_address***/admin**, both on port 443. However, if you also enable HTTPS authentication (**aaa authentication http console**), then you must specify a different port for ASDM access starting in 9.18(1). Make sure you change the port before you upgrade using the **http** command. (CSCvz92016)
- **ASDM Upgrade Wizard**—Due to ASD API migration, you must use ASDM 7.18 or later to upgrade to ASA 9.18 or later. Because ASDM is backwards compatible with earlier ASA versions, you can upgrade ASDM to 7.18 or later for any ASA version.

9.17 Guidelines

- **ASDM signed-image support in 9.17(1.13)/7.18(1.152) and later**—The ASA now validates whether the ASDM image is a Cisco digitally signed image. If you try to run an older ASDM image with an ASA version with this fix, ASDM will be blocked and the message "%ERROR: Signature not valid for file disk0:/<filename>" will be displayed at the ASA CLI. ASDM release 7.18(1.152) and later are backwards compatible with all ASA versions, even those without this fix. (CSCwb05291, CSCwb05264)
- **No support for Clientless SSL VPN in 9.17(1) and later**—Clientless SSL VPN is no longer supported.
  - **webvpn**—The following subcommands are removed:
    - **apcf**
    - **java-trustpoint**
    - **onscreen-keyboard**
    - **port-forward**
    - **portal-access-rule**
    - **rewrite**
    - **smart-tunnel**
  - **group-policy webvpn**—The following subcommands are removed:
    - **port-forward**
    - **smart-tunnel**
    - **ssl-clientless**
- **ASDM Upgrade Wizard**—Due to an internal change, starting in March 2022 the upgrade wizard will no longer work with pre-ASDM 7.17(1.152) versions. You must manually upgrade to 7.17(1.152) to use the wizard.

9.16 Guidelines

- **ASDM signed-image support in 9.16(3.19)/7.18(1.152) and later**—The ASA now validates whether the ASDM image is a Cisco digitally signed image. If you try to run an older ASDM image with an ASA version with this fix, ASDM will be blocked and the message "%ERROR: Signature not valid for file disk0:/<filename>" will be displayed at the ASA CLI. ASDM release 7.18(1.152) and later are backwards compatible with all ASA versions, even those without this fix. (CSCwb05291, CSCwb05264)
- **SNMPv3 users using MD5 hashing and DES encryption are no longer supported, and the users will be removed when you upgrade to 9.16(1)**—Be sure to change any user configuration to higher security algorithms using the **snmp-server user** command before you upgrade.
- **SSH host key action required in 9.16(1)**—In addition to RSA, we added support for the EDDSA and ECDSA host keys for SSH. The ASA tries to use keys in the following order if they exist: EDDSA, ECDSA, and then RSA. When you upgrade to 9.16(1), the ASA will fall back to using the existing RSA key. However, we recommend that you generate higher-security keys as soon as possible using the **crypto key generate** {**eddsa** | **ecdsa**} command. Moreover, if you explicitly configure the ASA to use the RSA key with the **ssh key-exchange hostkey rsa** command, you must generate a key that is 2048 bits or

higher. For upgrade compatibility, the ASA will use smaller RSA host keys only when the default host key setting is used. RSA support will be removed in a later release.

- **In 9.16 and later, certificates with RSA keys are not compatible with ECDSA ciphers**—When you use the ECDHE_ECDSA cipher group, configure the trustpoint with a certificate that contains an ECDSA-capable key.
- **ssh version command removed in 9.16(1)**—This command has been removed. Only SSH version 2 is supported.
- **When you upgrade to 9.16 or later, you might see a different certificate serial number**—In 9.16, the ASA started using OpenSSL, which causes negative values in certificates to be computed differently, so you may see a different serial number after upgrading. This change does not affect operation. (CSCvv30338)
- **SAMLv1 feature removed in 9.16(1)**—Support for SAMLv1 was removed.
- **No support for DH groups 2, 5, and 24 in 9.16(1)**—Support has been removed for the DH groups 2, 5, and 24 in SSL DH group configuration. The **ssl dh-group** command has been updated to remove the command options **group2**, **group5**, and **group24**.

Clustering Guidelines

There are no special requirements for Zero Downtime Upgrades for ASA clustering.



Note Zero Downtime *Downgrades* are not officially supported with clustering.

During a software upgrade of ASA cluster, the VPN load-balancing cluster does not form if members run different ASA versions. Perform one of these actions:

- Upgrade all members to the same version. The VPN load-balancing cluster re-forms automatically after all members run the same version. VPN load balancing is unavailable during the mixed-version window.
- For a hitless upgrade, temporarily remove the cluster keys from all members. Keep the interval without cluster keys as short as possible. Upgrade all members and then reconfigure the cluster keys on all members. VPN load balancing remains available during the upgrade.

This requirement applies to: ASA version 9.22.3.26, 9.20.4.49, 9.24.1.26, 9.18.4.94, 9.23.1.47, and 9.16.4.103. In these ASA versions, if you choose option 2, syslog 718089 is logged:

%ASA-1-718089: VPN LB cluster is running without authentication. Configure *cluster key* to secure the cluster.

Cluster encryption and cluster keys secure authentication between VPN load-balancing members and help in protecting the group from denial-of-service (DoS) and spoofing attacks.

Failover Guidelines

There are no special requirements for Zero Downtime Upgrades for failover with the following exceptions:

- Upgrade issue with GTP inspection—There could be some downtime during the upgrade, because the GTP data structures are not replicated to the new node.

FXOS Upgrade Guidelines

Before you upgrade, read the release notes for each FXOS version in your chosen upgrade path. Release notes contain important information about each FXOS release, including new features and changed functionality.

Upgrading may require configuration changes that you must address. For example, new hardware supported in an FXOS release might also require that you update the FXOS firmware.

FXOS release notes are available here: https://www.cisco.com/c/en/us/support/security/firepower-9000-series/products-release-notes-list.html.

ASA Upgrade Checklist

To plan your upgrade, use this checklist.

1. ASA model (Upgrade Path: ASA Appliances, on page 25): _____

   Current ASA version (Upgrade Path: ASA Appliances, on page 25): _____

2. Check the ASA/ASDM compatibility per model (ASA and ASDM Compatibility Per Model, on page 7).

   Target ASA version: _____

   Target ASDM version: _____

3. Check the upgrade path for the Firepower 2100 in Platform mode (Upgrade Path: ASA on Firepower 2100 in Platform Mode, on page 31). Are there intermediate versions required? Yes _____ No _____

   If yes, intermediate ASA version(s): _____

4. Download the target ASA/ASDM versions (Download ASA Software, on page 42).

Note ASDM is included in the image package for all Firepower and Secure Firewall platforms.

5. Is your ASA model a Firepower 4100 or 9300? Yes _____ No _____

   If yes:

   a. Current FXOS version: _____

   b. Check ASA/Firepower 4100 and 9300 compatibility (Firepower 4100/9300 Compatibility with ASA and Firewall Threat Defense, on page 12).

      Target FXOS version: _____

   c. Are there intermediate versions required? Yes _____ No _____

      If yes, intermediate FXOS versions: _____

      Make sure you plan to upgrade the ASA in step with the FXOS upgrades to stay compatible.

      Intermediate ASA versions required to stay compatible during the upgrade:

      _____

d. Download the target and intermediate FXOS version (Download FXOS for the Firepower 4100/9300, on page 49).

   Download the intermediate ASA versions (Download ASA Software, on page 42).

e. Do you use the Radware DefensePro decorator application? Yes _____ No _____

   If yes:

   1. Current DefensePro version: _____
   2. Check ASA/FXOS/DefensePro compatibility (Radware DefensePro Compatibility, on page 20).

      Target DefensePro version: _____
   3. Download the target DefensePro version.

6. Check upgrade guidelines for each operating system.
   - ASA Upgrade Guidelines, on page 1.
   - FXOS guidelines: see the FXOS Release Notes for each intermediate and target version.
7. Back up your configurations. See the configuration guide for each operating system for backup methods.

Compatibility

This section includes tables showing the compatibility between platforms, operating systems, and applications.

ASA and ASDM Compatibility Per Model

The following tables list ASA and ASDM compatibility for current versions and models. For older versions and models, see Cisco ASA Compatibility.

ASA 9.24

Releases in **bold** are the recommended versions.

Note

- ASDM versions are backwards compatible with all previous ASA versions, unless otherwise stated. For example, ASDM 7.22(1) can manage an ASA 5516-X on ASA 9.10(1).
- New ASA versions require the coordinating ASDM version or a later version; you cannot use an old version of ASDM with a new version of ASA. For example, you cannot use ASDM 7.23 with ASA 9.24. For ASA maintenance releases and interims, you can continue to use the current ASDM version, unless otherwise stated. For example, you can use ASA 9.24(1.2) with ASDM 7.24(1). If an ASA maintenance release has significant new features, then usually there will be a new ASDM version required.

Table 1: ASA and ASDM Compatibility: 9.24

ASA	ASDM	ASA Model										
		ASA Virtual	Secure Firewall 220	Firepower 1010 1010E 1120 1140 1150	Secure Firewall 1210CE 1210CP 1220CX	Secure Firewall 1230 1240 1250	Secure Firewall 3105 3110 3120 3130 3140	Firepower 4112 4115 4125 4145	Secure Firewall 4215 4225 4245	Secure Firewall 6160 6170	Firepower 9300	ISA 3000
9.24(1)	7.24(1)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
9.24(10)	7.24(10)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

ASA 9.23 and 9.22

Releases in **bold** are the recommended versions.

Note

- ASDM versions are backwards compatible with all previous ASA versions, unless otherwise stated. For example, ASDM 7.22(1) can manage an ASA 5516-X on ASA 9.10(1).
- New ASA versions require the coordinating ASDM version or a later version; you cannot use an old version of ASDM with a new version of ASA. For example, you cannot use ASDM 7.20 with ASA 9.22. For ASA maintenance releases and interims, you can continue to use the current ASDM version, unless otherwise stated. For example, you can use ASA 9.22(1.2) with ASDM 7.22(1). If an ASA maintenance release has significant new features, then usually there will be a new ASDM version required.

Table 2: ASA and ASDM Compatibility: 9.23 and 9.22

ASA	ASDM	ASA Model								
		ASA Virtual	Firepower 1010 1010E 1120 1140 1150	Secure Firewall 1210CE 1210CP 1220CX	Secure Firewall 1230 1240 1250	Secure Firewall 3105 3110 3120 3130 3140	Firepower 4112 4115 4125 4145	Secure Firewall 4215 4225 4245	Firepower 9300	ISA 3000
9.23(1)	7.23(1)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
9.22(3)	7.22(3)	**YES**	**YES**	**YES**	—	**YES**	**YES**	**YES**	**YES**	**YES**
9.22(2)	7.22(1)	**YES**	**YES**	**YES**	—	**YES**	**YES**	**YES**	**YES**	**YES**

ASA	ASDM	ASA Model								
		ASA Virtual	Firepower 1010 1010E 1120 1140 1150	Secure Firewall 1210CE 1210CP 1220CX	Secure Firewall 1230 1240 1250	Secure Firewall 3105 3110 3120 3130 3140	Firepower 4112 4115 4125 4145	Secure Firewall 4215 4225 4245	Firepower 9300	ISA 3000
9.22(1.1)	7.22(1)	YES	YES	YES	—	YES	YES	YES	YES	YES

ASA 9.20 and 9.19

Note

- ASA 9.20(x) was the final version for the Firepower 2100 series.
- ASA 9.18(x) was the final version for the Firepower 4110, 4120, 4140, 4150, and Security Modules SM-24, SM-36, and SM-44 for the Firepower 9300.
- ASDM versions are backwards compatible with all previous ASA versions, unless otherwise stated. For example, ASDM 7.19(1) can manage an ASA 5516-X on ASA 9.10(1). See the following exceptions:
  - For the Firepower 1010E, ASDM 7.19(1) is not supported. You must use 7.19(1.90)+ or 7.18(2.1).
- New ASA versions require the coordinating ASDM version or a later version; you cannot use an old version of ASDM with a new version of ASA. For example, you cannot use ASDM 7.18 with ASA 9.19. For ASA maintenance releases and interims, you can continue to use the current ASDM version, unless otherwise stated. For example, you can use ASA 9.20(1.5) with ASDM 7.20(1). If an ASA maintenance release has significant new features, then usually there will be a new ASDM version required.

Table 3: ASA and ASDM Compatibility: 9.20 and 9.19

ASA	ASDM	ASA Model								
		ASA Virtual	Firepower 1010 1120 1140 1150	Firepower 1010E	Firepower 2110 2120 2130 2140	Secure Firewall 3105 3110 3120 3130 3140	Firepower 4112 4115 4125 4145	Secure Firewall 4215 4225 4245	Firepower 9300	ISA 3000
9.20(4)	7.20(4)	YES	YES	YES	YES	YES	YES	YES	YES	YES
9.20(3)	7.20(2)	YES	YES	YES	YES	YES	YES	YES	YES	YES

ASA	ASDM	ASA Model								
		ASA Virtual	Firepower 1010 1120 1140 1150	Firepower 1010E	Firepower 2110 2120 2130 2140	Secure Firewall 3105 3110 3120 3130 3140	Firepower 4112 4115 4125 4145	Secure Firewall 4215 4225 4245	Firepower 9300	ISA 3000
9.20(2)	7.20(2)	YES	YES	YES	YES	YES	YES	YES	YES	YES
9.20(1)	7.20(1)	—	—	—	—	—	—	YES	—	—
9.19(1)	7.19(1)	YES	YES	—	YES	YES	YES	—	YES	YES

ASA 9.18 to 9.17

Note

- ASA 9.16(x) was the final version for the ASA 5506-X, 5506H-X, 5506W-X, 5508-X, and 5516-X.
- ASDM versions are backwards compatible with all previous ASA versions, unless otherwise stated. For example, ASDM 7.17(1) can manage an ASA 5516-X on ASA 9.10(1). See the following exceptions:
  - For the Firepower 1010E, ASDM 7.19(1) is not supported. You must use 7.19(1.90)+ or 7.18(2.1).
- New ASA versions require the coordinating ASDM version or a later version; you cannot use an old version of ASDM with a new version of ASA. For example, you cannot use ASDM 7.17 with ASA 9.18. For ASA maintenance releases and interims, you can continue to use the current ASDM version, unless otherwise stated. For example, you can use ASA 9.17(1.2) with ASDM 7.17(1). If an ASA maintenance release has significant new features, then usually there will be a new ASDM version required.
- ASA 9.17(1.13) and 9.18(2) and later requires ASDM 7.18(1.152) or later. The ASA now validates whether the ASDM image is a Cisco digitally signed image. If you try to run an older ASDM image than 7.18(1.152) with an ASA version with this fix, ASDM will be blocked and the message "%ERROR: Signature not valid for file disk0:/<filename>" will be displayed at the ASA CLI. (CSCwb05291, CSCwb05264)

Table 4: ASA and ASDM Compatibility: 9.18 to 9.17

ASA	ASDM	ASA Model							
		ASA Virtual	Firepower 1010 1120 1140 1150	Firepower 1010E	Firepower 2110 2120 2130 2140	Secure Firewall 3110 3120 3130 3140	Firepower 4110 4112 4115 4120 4125 4140 4145 4150	Firepower 9300	ISA 3000
9.18(4)	7.19(1)95	YES	YES	YES	YES	YES	YES	YES	YES
9.18(3)	7.18(1.152)	YES	YES	YES	YES	YES	YES	YES	YES
9.18(2.218)	7.18(2.1)	—	—	YES	—	—	—	—	—
9.18(2)	7.18(1.152)	YES	YES	—	YES	YES	YES	YES	YES
9.18(1)	7.18(1)	YES	YES	—	YES	YES	YES	YES	YES
9.17(1.13)	7.18(1.152)	YES	YES	—	YES	YES	YES	YES	YES
9.17(1)	7.17(1.155)	YES	YES	—	YES	YES	YES	YES	YES

ASA 9.16

Note

- ASA 9.16(x) was the final version for the ASA 5506-X, 5506H-X, 5506W-X, 5508-X, and 5516-X.
- ASA 9.14(x) was the final version for the ASA 5525-X, 5545-X, and 5555-X.
- ASDM versions are backwards compatible with all previous ASA versions, unless otherwise stated. For example, ASDM 7.15(1) can manage an ASA 5516-X on ASA 9.10(1).
- New ASA versions require the coordinating ASDM version or a later version; you cannot use an old version of ASDM with a new version of ASA. For example, you cannot use ASDM 7.15 with ASA 9.16. For ASA maintenance releases and interims, you can continue to use the current ASDM version, unless otherwise stated. For example, you can use ASA 9.16(1.15) with ASDM 7.16(1). If an ASA maintenance release has significant new features, then usually there will be a new ASDM version required.
- ASA 9.16(3.19) and later requires ASDM 7.18(1.152) or later. The ASA now validates whether the ASDM image is a Cisco digitally signed image. If you try to run an older ASDM image than 7.18(1.152) with an ASA version with this fix, ASDM will be blocked and the message "%ERROR: Signature not valid for file disk0:/<filename>" will be displayed at the ASA CLI. (CSCwb05291, CSCwb05264)

Table 5: ASA and ASDM Compatibility: 9.16

ASA	ASDM	ASA Model						
		ASA 5506-X 5506H-X 5506W-X 5508-X 5516-X	ASAv	Firepower 1010 1120 1140 1150	Firepower 2110 2120 2130 2140	Firepower 4110 4112 4115 4120 4125 4140 4145 4150	Firepower 9300	ISA 3000
9.16(4)	7.18(1.152)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
9.16(3.19)	7.18(1.152)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
9.16(3)	7.16(1.150)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
9.16(2)	7.16(1.150)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
9.16(1)	7.16(1)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

Firepower 4100/9300 Compatibility with ASA and Firewall Threat Defense

For the Firepower 4100/9300, you must maintain compatibility between FXOS and all ASA and Firewall Threat Defense logical devices. Upgrade FXOS before you upgrade the software. The **bold** versions in the following table are specially-qualified (enhanced testing) companion releases. Use these combinations whenever possible.

Note In most cases we recommend the latest FXOS build for each version. For Firewall Threat Defense minimum builds, see *Cisco Secure Firewall Threat Defense Compatibility Guide*.

For device models other than the Firepower 4100/9300, the FXOS compatibility work is done for you. In most cases, upgrading the software automatically upgrades FXOS. For the Secure Firewall 3100/4200 in multi-instance mode, the Firewall Management Center guides you through upgrading FXOS and then Firewall Threat Defense.

To upgrade:

- FXOS: From FXOS 2.2.2 and later, you can upgrade directly to any higher version. (FXOS 2.0.1–2.2.1 can upgrade as far as 2.8.1. For versions earlier than 2.0.1, you need to upgrade to each intermediate version.) Note that you cannot upgrade FXOS to a version that does not support your current logical device version. You will need to upgrade in steps: upgrade FXOS to the highest version that supports your current logical device; then upgrade your logical device to the highest version supported with that

FXOS version. For example, if you want to upgrade from FXOS 2.2/ASA 9.8 to FXOS 2.13/ASA 9.19, you would have to perform the following upgrades:

1. FXOS 2.2 → FXOS 2.11 (the highest version that supports 9.8)
2. ASA 9.8 → ASA 9.17 (the highest version supported by 2.11)
3. FXOS 2.11 → FXOS 2.13
4. ASA 9.17 → ASA 9.19

- Firewall Threat Defense: Interim upgrades may be required for Firewall Threat Defense, in addition to the FXOS requirements above. For the exact upgrade path, refer to the Firewall Management Center upgrade guide for your version.
- ASA: ASA lets you upgrade directly from your current version to any higher version, noting the FXOS requirements above.

Note FXOS 2.8(1.125)+ and later versions do not support ASA 9.14(1) or 9.14(1.10) for ASA SNMP polls and traps; you must use 9.14(1.15)+. Other releases, such as 9.13 or 9.12, are not affected.

Table 6: Firepower 4100/9300 Compatibility with ASA and Firewall Threat Defense

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.18.10	Firepower 4112	**9.24.10** (recommended) 9.24.1 9.23 9.22 9.20 9.19	**10.1** (recommended) 10.0 7.7 7.6 7.4 7.3
	Firepower 4145 Firepower 4125 Firepower 4115	**9.24.10** (recommended) 9.24.1 9.23	**10.1** (recommended) 10.0 7.7
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	9.22 9.20 9.19	7.6 7.4 7.3

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.18.0	Firepower 4112	**9.24.1** (recommended) 9.23 9.22 9.20 9.19	**10.0** (recommended) 7.7 7.6 7.4 7.3
	Firepower 4145 Firepower 4125 Firepower 4115 Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	**9.24.1** (recommended) 9.23 9.22 9.20 9.19	**10.0** (recommended) 7.7 7.6 7.4 7.3
2.17	Firepower 4112	**9.23** (recommended) 9.22 9.20 9.19 9.18	**7.7** (recommended) 7.6 7.4 7.3 7.2
	Firepower 4145 Firepower 4125 Firepower 4115 Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	**9.23** (recommended) 9.22 9.20 9.19 9.18	**7.7** (recommended) 7.6 7.4 7.3 7.2

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.16	Firepower 4112	**9.22** (recommended) 9.20 9.19 9.18 9.17	**7.6** (recommended) 7.4 7.3 7.2 7.1
	Firepower 4145 Firepower 4125 Firepower 4115	**9.22** (recommended) 9.20 9.19 9.18 9.17	**7.6** (recommended) 7.4 7.3 7.2 7.1
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
2.14(1)	Firepower 4112	**9.20** (recommended) 9.19 9.18 9.17 9.16 9.14	**7.4** (recommended) 7.3 7.2 7.1 7.0 6.6
	Firepower 4145 Firepower 4125 Firepower 4115	**9.20** (recommended) 9.19 9.18 9.17 9.16 9.14	**7.4** (recommended) 7.3 7.2 7.1 7.0 6.6
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.13	Firepower 4112	**9.19** (recommended) 9.18 9.17 9.16 9.14	**7.3** (recommended) 7.2 7.1 7.0 6.6
	Firepower 4145 Firepower 4125 Firepower 4115	**9.19** (recommended) 9.18 9.17 9.16 9.14	**7.3** (recommended) 7.2 7.1 7.0 6.6
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
2.12	Firepower 4112	**9.18** (recommended) 9.17 9.16 9.14	**7.2** (recommended) 7.1 7.0 6.6
	Firepower 4145 Firepower 4125 Firepower 4115	**9.18** (recommended) 9.17 9.16 9.14 9.12	**7.2** (recommended) 7.1 7.0 6.6 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.18** (recommended) 9.17 9.16 9.14 9.12	**7.2** (recommended) 7.1 7.0 6.6 6.4
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.11	Firepower 4112	**9.17** (recommended) 9.16 9.14	**7.1** (recommended) 7.0 6.6
	Firepower 4145 Firepower 4125 Firepower 4115	**9.17** (recommended) 9.16 9.14 9.12	**7.1** (recommended) 7.0 6.6 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.17** (recommended) 9.16 9.14 9.12 9.8	**7.1** (recommended) 7.0 6.6 6.4
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.10 **Note** For compatibility with 7.0.2+ and 9.16(3.11)+, you need FXOS 2.10(1.179)+.	Firepower 4112	**9.16** (recommended) 9.14	**7.0** (recommended) 6.6
	Firepower 4145 Firepower 4125 Firepower 4115	**9.16** (recommended) 9.14 9.12	**7.0** (recommended) 6.6 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.16** (recommended) 9.14 9.12 9.8	**7.0** (recommended) 6.6 6.4
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.9	Firepower 4112	9.14	6.6
	Firepower 4145 Firepower 4125 Firepower 4115	9.14 9.12	6.6 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	9.14 9.12 9.8	6.6 6.4
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.8	Firepower 4112	**9.14**	**6.6** **Note** 6.6.1+ requires FXOS 2.8(1.125)+.
	Firepower 4145 Firepower 4125 Firepower 4115	**9.14** (recommended) 9.12 **Note** Firepower 9300 SM-56 requires ASA 9.12(2)+	**6.6** (recommended) **Note** 6.6.1+ requires FXOS 2.8(1.125)+. 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.14** (recommended) 9.12 9.8	**6.6** (recommended) **Note** 6.6.1+ requires FXOS 2.8(1.125)+. 6.4 6.2.3
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.6(1.157) **Note** You can now run ASA 9.12+ and FTD 6.4+ on separate modules in the same Firepower 9300 chassis	Firepower 4145 Firepower 4125 Firepower 4115	**9.12** **Note** Firepower 9300 SM-56 requires ASA 9.12.2+	**6.4**
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.12** (recommended) 9.8	**6.4** (recommended) 6.2.3
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.6(1.131)	Firepower 9300 SM-48 Firepower 9300 SM-40	**9.12**	Not supported
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.12** (recommended) 9.8	
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.3(1.73)	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	9.8 **Note** 9.8(2.12)+ is required for flow offload when running FXOS 2.3(1.130)+.	**6.2.3** (recommended) **Note** 6.2.3.16+ requires FXOS 2.3.1.157+
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.3(1.66) 2.3(1.58)	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	9.8 **Note** 9.8(2.12)+ is required for flow offload when running FXOS 2.3(1.130)+.	
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.2	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.8**	Firewall Threat Defense versions are EoL
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

Radware DefensePro Compatibility

The following table lists the supported Radware DefensePro version for each security appliance and associated logical device.

Note Radware DefensePro 8.22.2 is the final version of Radware DefensePro that is supported on the Firepower 4100/9300 platforms. Firepower 4100/9300 platforms do not support any version later than 8.22.2.

Table 7: Radware DefensePro Compatibility

FXOS Version	ASA	Firewall Threat Defense	Radware DefensePro	Security Appliance Models
2.17	923(1)	7.7	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4112 Firepower 4115 Firepower 4125 Firepower 4145

FXOS Version	ASA	Firewall Threat Defense	Radware DefensePro	Security Appliance Models
2.16	9.22(1)	7.6	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4112 Firepower 4115 Firepower 4125 Firepower 4145
2.14(1)	9.20(1)	7.4(1)	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4112 Firepower 4115 Firepower 4125 Firepower 4145
2.13.0	9.19(1)	7.3	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4112 Firepower 4115 Firepower 4125 Firepower 4145
2.12.0	9.18(1)	7.2	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4110 Firepower 4112 Firepower 4115 Firepower 4120 Firepower 4125 Firepower 4140 Firepower 4145 Firepower 4150

FXOS Version	ASA	Firewall Threat Defense	Radware DefensePro	Security Appliance Models
2.11.1	9.17(1)	7.1	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4110 Firepower 4112 Firepower 4115 Firepower 4120 Firepower 4125 Firepower 4140 Firepower 4145 Firepower 4150
2.10.1	9.16(1)	7.0	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4110 Firepower 4112 Firepower 4115 Firepower 4120 Firepower 4125 Firepower 4140 Firepower 4145 Firepower 4150
2.10.1	9.16(1)	7.0	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4110 Firepower 4112 Firepower 4115 Firepower 4120 Firepower 4125 Firepower 4140 Firepower 4145 Firepower 4150

FXOS Version	ASA	Firewall Threat Defense	Radware DefensePro	Security Appliance Models
2.9.1	9.15(1)	6.7.0	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4110 Firepower 4112 Firepower 4115 Firepower 4120 Firepower 4125 Firepower 4140 Firepower 4145 Firepower 4150
2.8.1	9.14(1)	6.6.0	8.13.01.09-3 8.22.2	Firepower 9300 Firepower 4110 Firepower 4112 Firepower 4115 Firepower 4120 Firepower 4125 Firepower 4140 Firepower 4145 Firepower 4150
2.7(1)	9.13(1)	6.5	8.13.01.09-3	Firepower 9300 Firepower 4110 Firepower 4115 Firepower 4120 Firepower 4125 Firepower 4140 Firepower 4145 Firepower 4150

FXOS Version	ASA	Firewall Threat Defense	Radware DefensePro	Security Appliance Models
2.6(1)	9.12(1) 9.10(1)	6.4.0 6.3.0	8.13.01.09-3	Firepower 9300 Firepower 4110 Firepower 4115 Firepower 4120 Firepower 4125 Firepower 4140 Firepower 4145 Firepower 4150
2.4(1)	9.9(2) 9.10(1)	6.2.3 6.3	8.13.01.09-2	Firepower 9300 Firepower 4110 Firepower 4120 Firepower 4140 Firepower 4150
2.3(1)	9.9(1) 9.9(2)	6.2.2 6.2.3	8.13.01.09-2	Firepower 9300 Firepower 4110 (Firepower Threat Defense only) Firepower 4120 Firepower 4140 Firepower 4150
2.2(2)	9.8(1) 9.8(2) 9.8(3)	6.2.0 6.2.2	8.10.01.17-2	Firepower 9300 Firepower 4110 (Firepower Threat Defense only) Firepower 4120 Firepower 4140 Firepower 4150
2.2(1)	9.7(1) 9.8(1)	6.2.0	8.10.01.17-2	Firepower 9300 Firepower 4110 (Firepower Threat Defense only) Firepower 4120 Firepower 4140 Firepower 4150

FXOS Version	ASA	Firewall Threat Defense	Radware DefensePro	Security Appliance Models
2.1(1)	9.6(2) 9.6(3) 9.6(4) 9.7(1)	not supported	8.10.01.16-5	Firepower 9300 Firepower 4120 Firepower 4140 Firepower 4150
2.0(1)	9.6(1) 9.6(2) 9.6(3) 9.6(4)	not supported	8.10.01.16-5	Firepower 9300 Firepower 4120 Firepower 4140 Firepower 4150
1.1(4)	9.6(1)	not supported	1.1(2.32-3)	9300

Upgrade Path

For each operating system that you are upgrading, check the supported upgrade path. In some cases, you may have to install interim upgrades before you can upgrade to your final version.

Upgrade Path: ASA Appliances

What Version Should I Upgrade To?

On the Cisco Support & Download site, the suggested release is marked with a gold star. For example:

Figure 1: Suggested Release



View Your Current Version

To view your current version and model, use one of the following methods:

- ASDM: Choose **Home** > **Device Dashboard** > **Device Information**.
- CLI: Use the **show version** command.

Upgrade Guidelines

Be sure to check the upgrade guidelines for each release between your starting version and your ending version. You may need to change your configuration before upgrading in some cases, or else you could experience an outage. See ASA Upgrade Guidelines, on page 1.

For guidance on security issues on the ASA, and which releases contain fixes for each issue, see the ASA Security Advisories.

Upgrade Paths

This table provides upgrade paths for ASA.

Note ASA 9.20 was the final version for the Firepower 2100.

ASA 9.18 was the final version for the Firepower 4110, 4120, 4140, 4150, and Security Modules SM-24, SM-36, and SM-44 for the Firepower 9300.

ASA 9.16 was the final version for the ASA 5506-X, 5508-X, and 5516-X.

ASA 9.14 was the final version for the ASA 5525-X, 5545-X, and 5555-X.

ASA 9.12 was the final version for the ASA 5512-X, 5515-X, 5585-X, and ASASM.

ASA 9.2 was the final version for the ASA 5505.

ASA 9.1 was the final version for the ASA 5510, 5520, 5540, 5550, and 5580.

Table 8: Upgrade Path

Current Version	Interim Upgrade Version	Target Version
9.23	—	Any of the following: → 9.24
9.22	—	Any of the following: → 9.24 → 9.23
9.20	—	Any of the following: → 9.24 → 9.23 → 9.22
9.19	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20

Current Version	Interim Upgrade Version	Target Version
9.18	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19
9.17	—	Any of the following: → 9.24 → 9.22 → 9.20 → 9.19 → 9.18
9.16	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17
9.15	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16

Current Version	Interim Upgrade Version	Target Version
9.14	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16
9.13	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16
9.12	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16

Current Version	Interim Upgrade Version	Target Version
9.10	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16
9.9	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16
9.8	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16

Current Version	Interim Upgrade Version	Target Version
9.7	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16
9.6	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16
9.5	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16

Current Version	Interim Upgrade Version	Target Version
9.4	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16
9.3	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16
9.2	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16

Upgrade Path: ASA on Firepower 2100 in Platform Mode

To view your current version and model, use one of the following methods:

- ASDM: Choose **Home** > **Device Dashboard** > **Device Information**.
- CLI: Use the **show version** command.

This table provides upgrade paths for the ASA on the Firepower 2100 in Platform mode. Some versions require an intermediate upgrade before you can upgrade to a newer version. Recommended versions are in **bold**.

Be sure to check the upgrade guidelines for each release between your starting version and your ending version. You may need to change your configuration before upgrading in some cases, or else you could experience an outage. See ASA Upgrade Guidelines, on page 1.

For guidance on security issues on the ASA, and which releases contain fixes for each issue, see the ASA Security Advisories.

Note ASA 9.20 was the final version for the Firepower 2100.

Table 9: Upgrade Path

Current Version	Interim Upgrade Version	Target Version
9.19	—	Any of the following: → **9.20**
9.18	—	Any of the following: → **9.20** → **9.19**
9.17	—	Any of the following: → **9.20** → **9.19** → **9.18**
9.16	—	Any of the following: → **9.20** → **9.19** → **9.18** → 9.17

Current Version	Interim Upgrade Version	Target Version
9.15	—	Any of the following: → **9.20** → **9.19** → **9.18** → 9.17 → **9.16**
9.14	—	Any of the following: → **9.20** → **9.19** → **9.18** → 9.17 → **9.16**
9.13	→ 9.18	Any of the following: → **9.20** → **9.19**
9.13	—	Any of the following: → **9.18** → 9.17 → **9.16**
9.12	→ 9.18	Any of the following: → **9.20** → **9.19**
9.12	—	Any of the following: → **9.18** → 9.17 → **9.16**
9.10	→ 9.17	Any of the following: → **9.20** → **9.19** → **9.18**

Current Version	Interim Upgrade Version	Target Version
9.10	—	Any of the following: → 9.17 → **9.16**
9.9	→ 9.17	Any of the following: → **9.20** → **9.19** → **9.18**
9.9	—	Any of the following: → 9.17 → **9.16**
9.8	→ 9.17	Any of the following: → **9.20** → **9.19** → **9.18**
9.8	—	Any of the following: → 9.17 → **9.16**

Upgrade Path: ASA Logical Devices for the Firepower 4100/9300

To view your current version and model, use one of the following methods:

- Firepower Chassis Manager: Choose **Overview**, and look at the **Model** and **Version** fields at the top.
- CLI: For the version, use the **show version** command, and look at the Package-Vers: field. For the model, enter **scope chassis 1**, and then **show inventory**.
- FXOS: From FXOS 2.2.2 and later, you can upgrade directly to any higher version. (FXOS 2.0.1–2.2.1 can upgrade as far as 2.8.1. For versions earlier than 2.0.1, you need to upgrade to each intermediate version.) Note that you cannot upgrade FXOS to a version that does not support your current logical device version. You will need to upgrade in steps: upgrade FXOS to the highest version that supports your current logical device; then upgrade your logical device to the highest version supported with that FXOS version. For example, if you want to upgrade from FXOS 2.2/ASA 9.8 to FXOS 2.13/ASA 9.19, you would have to perform the following upgrades:

  1. FXOS 2.2 → FXOS 2.11 (the highest version that supports 9.8)
  2. ASA 9.8 → ASA 9.17 (the highest version supported by 2.11)

3. FXOS 2.11 → FXOS 2.13
4. ASA 9.17 → ASA 9.19

- Firewall Threat Defense: Interim upgrades may be required for Firewall Threat Defense, in addition to the FXOS requirements above. For the exact upgrade path, refer to the Firewall Management Center upgrade guide for your version.
- ASA: ASA lets you upgrade directly from your current version to any higher version, noting the FXOS requirements above.

Table 10: Firepower 4100/9300 Compatibility with ASA and Firewall Threat Defense

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.18.10	Firepower 4112	**9.24.10** (recommended) 9.24.1 9.23 9.22 9.20 9.19	**10.1** (recommended) 10.0 7.7 7.6 7.4 7.3
	Firepower 4145 Firepower 4125 Firepower 4115 Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	**9.24.10** (recommended) 9.24.1 9.23 9.22 9.20 9.19	**10.1** (recommended) 10.0 7.7 7.6 7.4 7.3
2.18.0	Firepower 4112	**9.24.1** (recommended) 9.23 9.22 9.20 9.19	**10.0** (recommended) 7.7 7.6 7.4 7.3
	Firepower 4145 Firepower 4125 Firepower 4115 Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	**9.24.1** (recommended) 9.23 9.22 9.20 9.19	**10.0** (recommended) 7.7 7.6 7.4 7.3

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.17	Firepower 4112	**9.23** (recommended) 9.22 9.20 9.19 9.18	**7.7** (recommended) 7.6 7.4 7.3 7.2
	Firepower 4145 Firepower 4125 Firepower 4115 Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	**9.23** (recommended) 9.22 9.20 9.19 9.18	**7.7** (recommended) 7.6 7.4 7.3 7.2
2.16	Firepower 4112	**9.22** (recommended) 9.20 9.19 9.18 9.17	**7.6** (recommended) 7.4 7.3 7.2 7.1
	Firepower 4145 Firepower 4125 Firepower 4115 Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	**9.22** (recommended) 9.20 9.19 9.18 9.17	**7.6** (recommended) 7.4 7.3 7.2 7.1

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.14(1)	Firepower 4112	**9.20** (recommended) 9.19 9.18 9.17 9.16 9.14	**7.4** (recommended) 7.3 7.2 7.1 7.0 6.6
	Firepower 4145 Firepower 4125 Firepower 4115 Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	**9.20** (recommended) 9.19 9.18 9.17 9.16 9.14	**7.4** (recommended) 7.3 7.2 7.1 7.0 6.6
2.13	Firepower 4112	**9.19** (recommended) 9.18 9.17 9.16 9.14	**7.3** (recommended) 7.2 7.1 7.0 6.6
	Firepower 4145 Firepower 4125 Firepower 4115 Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	**9.19** (recommended) 9.18 9.17 9.16 9.14	**7.3** (recommended) 7.2 7.1 7.0 6.6

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.12	Firepower 4112	**9.18** (recommended) 9.17 9.16 9.14	**7.2** (recommended) 7.1 7.0 6.6
	Firepower 4145 Firepower 4125 Firepower 4115	**9.18** (recommended) 9.17 9.16 9.14 9.12	**7.2** (recommended) 7.1 7.0 6.6 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.18** (recommended) 9.17 9.16 9.14 9.12	**7.2** (recommended) 7.1 7.0 6.6 6.4
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.11	Firepower 4112	**9.17** (recommended) 9.16 9.14	**7.1** (recommended) 7.0 6.6
	Firepower 4145 Firepower 4125 Firepower 4115	**9.17** (recommended) 9.16 9.14 9.12	**7.1** (recommended) 7.0 6.6 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.17** (recommended) 9.16 9.14 9.12 9.8	**7.1** (recommended) 7.0 6.6 6.4
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.10 **Note** For compatibility with 7.0.2+ and 9.16(3.11)+, you need FXOS 2.10(1.179)+.	Firepower 4112	**9.16** (recommended) 9.14	**7.0** (recommended) 6.6
	Firepower 4145 Firepower 4125 Firepower 4115	**9.16** (recommended) 9.14 9.12	**7.0** (recommended) 6.6 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.16** (recommended) 9.14 9.12 9.8	**7.0** (recommended) 6.6 6.4
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.9	Firepower 4112	9.14	6.6
	Firepower 4145 Firepower 4125 Firepower 4115	9.14 9.12	6.6 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	9.14 9.12 9.8	6.6 6.4
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.8	Firepower 4112	**9.14**	**6.6** **Note** 6.6.1+ requires FXOS 2.8(1.125)+.
	Firepower 4145 Firepower 4125 Firepower 4115	**9.14** (recommended) 9.12 **Note** Firepower 9300 SM-56 requires ASA 9.12(2)+	**6.6** (recommended) **Note** 6.6.1+ requires FXOS 2.8(1.125)+. 6.4
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.14** (recommended) 9.12 9.8	**6.6** (recommended) **Note** 6.6.1+ requires FXOS 2.8(1.125)+. 6.4 6.2.3
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.6(1.157) **Note** You can now run ASA 9.12+ and FTD 6.4+ on separate modules in the same Firepower 9300 chassis	Firepower 4145 Firepower 4125 Firepower 4115	**9.12** **Note** Firepower 9300 SM-56 requires ASA 9.12.2+	**6.4**
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.12** (recommended) 9.8	**6.4** (recommended) 6.2.3
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.6(1.131)	Firepower 9300 SM-48 Firepower 9300 SM-40	**9.12**	Not supported
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.12** (recommended) 9.8	
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.3(1.73)	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	9.8 **Note** 9.8(2.12)+ is required for flow offload when running FXOS 2.3(1.130)+.	**6.2.3** (recommended) **Note** 6.2.3.16+ requires FXOS 2.3.1.157+
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.3(1.66) 2.3(1.58)	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	9.8 **Note** 9.8(2.12)+ is required for flow offload when running FXOS 2.3(1.130)+.	
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		
2.2	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	**9.8**	Firewall Threat Defense versions are EoL
	Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24		

Note on Downgrades

Downgrade of FXOS images is not officially supported. The only Cisco-supported method of downgrading an image version of FXOS is to perform a complete re-image of the device.

Download the Software from Cisco.com

Download all software packages from Cisco.com before you start your upgrade. Depending on the operating system and whether you are using CLI or GUI, you should place the images on a server or on your management computer. See each installation procedure for details on supported file locations.

Note A Cisco.com login and Cisco service contract are required.

Download ASA Software

ASA software can be downloaded from Cisco.com. These tables include naming conventions and information about ASA packages.

- If you are using the ASDM Upgrade Wizard, you do not have to pre-download the software. If you are manually upgrading, for example for a failover upgrade, download the images to your local computer.

- For a CLI upgrade, you can put the software on many server types, including TFTP, HTTP, and FTP. See the **copy** command in the ASA command reference.
- For either CLI or ASDM, if your device has a USB port, you can download images onto a USB type A storage device that is formatted for FAT-32. You can then copy or select the file from the drive. When you insert the drive, it is referred to as **disk1**.



Note When you upgrade the ASA bundle, the ASDM image in the bundle replaces the previous ASDM bundle image on the ASA because they have the same name (**asdm.bin**). But if you manually chose a different ASDM image that you uploaded (for example, **asdm-7131.bin**), then you continue to use that image even after a bundle upgrade. To make sure that you are running a compatible version of ASDM, you should either upgrade ASDM before you upgrade the bundle, or you should reconfigure the ASA to use the bundled ASDM image (**asdm.bin**) just before upgrading the ASA bundle.

Table 11: Current Platforms

ASA Model	Download Location	Packages
ASA virtual	http://www.cisco.com/go/asav-software	
	ASA Software (Upgrade) Choose **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA virtual upgrade file has a filename like asa962-**smp-k8.bin**; use this upgrade file for all hypervisors. **Note:** The .zip (VMware), .vhdx (Hyper-V), and .qcow2 (KVM) files are only for initial deployment. **Note** To upgrade the ASA virtual for public cloud services such as Amazon Web Services, you can download the above image from Cisco.com (which requires a Cisco.com login and Cisco service contract) and perform the upgrade as described in this guide. There is no way to obtain an *upgrade* image from the public cloud service.
	ASDM Software (Upgrade) Choose **Adaptive Security Appliance (ASA) Device Manager** > *version*.	The ASDM software file has a filename like asdm-762**.bin**.
	REST API Software Choose **Adaptive Security Appliance REST API Plugin** > *version*.	The API software file has a filename like asa-restapi-132-**lfbff-k8.SPA**. To install the REST API, see the API quick start guide.
	ASA Device Package for Cisco Application Policy Infrastructure Controller (APIC) Choose **ASA for Application Centric Infrastructure (ACI) Device Packages** > *version*.	For APIC 1.2(7) and later, choose either the Policy Orchestration with Fabric Insertion, or the Fabric Insertion-only package. The device package software file has a filename like asa-device-pkg-1.2.7.10**.zip**. To install the ASA device package, see the "Importing a Device Package" chapter of the Cisco APIC Layer 4 to Layer 7 Services Deployment Guide.
Secure Firewall 200	See: https://www.cisco.com/go/asa-firepower-sw	
	ASA package Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The package has a filename like cisco-asa-csf200.9.24.1.**SPA**. This package includes ASA and ASDM.
	ASDM software (upgrade) To upgrade to a later version of ASDM using your current ASDM or the ASA CLI, choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	The ASDM software file has a filename like asdm-7241.**bin** for Oracle Java and asdm-openjre-7241.**bin** for OpenJRE.

ASA Model	Download Location	Packages
Firepower 1000	http://www.cisco.com/go/asa-firepower-sw	
	ASA, ASDM, and FXOS Software Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA package includes ASA, ASDM, and FXOS software. The ASA package has a filename like cisco-asa-fp1k.9.13.1**.SPA**.
	ASDM Software (Upgrade) Choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	Use this image to upgrade to a later version of ASDM using your current ASDM or the ASA CLI. The ASDM software file has a filename like asdm-7131**.bin**.
Secure Firewall 1200	http://www.cisco.com/go/asa-firepower-sw	
	ASA, ASDM, and FXOS Software Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA package includes ASA, ASDM, and FXOS software. The ASA package has a filename like cisco-asa-csf1200.9.22.1.3**.SPA**.
	ASDM Software (Upgrade) Choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	Use this image to upgrade to a later version of ASDM using your current ASDM or the ASA CLI. The ASDM software file has a filename like asdm-7221**.bin**.
Secure Firewall 3100	https://cisco.com/go/asa-secure-firewall-sw	
	ASA, ASDM, and FXOS Software Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA package includes ASA, ASDM, and FXOS software. The ASA package has a filename like cisco-asa-fp3k.9.17.1**.SPA**.
	ASDM Software (Upgrade) Choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	Use this image to upgrade to a later version of ASDM using your current ASDM or the ASA CLI. The ASDM software file has a filename like asdm-7171**.bin**.
Firepower 4100	http://www.cisco.com/go/firepower4100-software	
	ASA and ASDM Software Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA package includes both ASA and ASDM. The ASA package has a filename like cisco-asa.9.6.2**.SPA.csp**.
	ASDM Software (Upgrade) Choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	Use this image to upgrade to a later version of ASDM using your current ASDM or the ASA CLI. The ASDM software file has a filename like asdm-762**.bin**.
	REST API Software Choose your *model* > **Adaptive Security Appliance REST API Plugin** > *version*.	The API software file has a filename like asa-restapi-132-**lfbff-k8.SPA**. To install the REST API, see the API quick start guide.

ASA Model	Download Location	Packages
Secure Firewall 4200	https://cisco.com/go/asa-secure-firewall-sw	
	ASA, ASDM, and FXOS Software Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA package includes ASA, ASDM, and FXOS software. The ASA package has a filename like cisco-asa-fp4200.9.20.1**.SPA**.
	ASDM Software (Upgrade) Choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	Use this image to upgrade to a later version of ASDM using your current ASDM or the ASA CLI. The ASDM software file has a filename like asdm-7201**.bin**.
Secure Firewall 6100	See: https://cisco.com/go/asa-secure-firewall-sw	
	ASA package Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The package has a filename like cisco-asa-fp6100.9.24.1.**SPA**. This package includes ASA and ASDM.
	ASDM software (upgrade) To upgrade to a later version of ASDM using your current ASDM or the ASA CLI, choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	The ASDM software file has a filename like asdm-7241.**bin** for Oracle Java and asdm-openjre-7241.**bin** for OpenJRE.
Firepower 9300	http://www.cisco.com/go/firepower9300-software	
	ASA and ASDM Software Choose **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA package includes both ASA and ASDM. The ASA package has a filename like cisco-asa.9.6.2**.SPA.csp**.
	ASDM Software (Upgrade) Choose **Adaptive Security Appliance (ASA) Device Manager** > *version*.	Use this image to upgrade to a later version of ASDM using your current ASDM or the ASA CLI. The ASDM software file has a filename like asdm-762**.bin**.
	REST API Software Choose **Adaptive Security Appliance REST API Plugin** > *version*.	The API software file has a filename like asa-restapi-132-**lfbff-k8.SPA**. To install the REST API, see the API quick start guide.

ASA Model	Download Location	Packages
ISA 3000	http://www.cisco.com/go/isa3000-software	
	ASA Software Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA software file has a filename like asa962-**lfbff-k8.SPA**.
	ASDM Software Choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	The ASDM software file has a filename like asdm-762**.bin**.
	REST API Software Choose your *model* > **Adaptive Security Appliance REST API Plugin** > *version*.	The API software file has a filename like asa-restapi-132-**lfbff-k8.SPA**. To install the REST API, see the API quick start guide.

Table 12: Legacy Platforms

ASA Model	Download Location	Packages
ASA 5506-X, ASA 5508-X, and ASA 5516-X	http://www.cisco.com/go/asa-firepower-sw	
	ASA Software Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA software file has a filename like asa962-**lfbff-k8.SPA**.
	ASDM Software Choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	The ASDM software file has a filename like asdm-762**.bin**.
	REST API Software Choose your *model* > **Adaptive Security Appliance REST API Plugin** > *version*.	The API software file has a filename like asa-restapi-132-**lfbff-k8.SPA**. To install the REST API, see the API quick start guide
	ROMMON Software Choose your *model* > **ASA Rommon Software** > *version*.	The ROMMON software file has a filename like asa5500-firmware-1108**.SPA**.

ASA Model	Download Location	Packages
ASA 5512-X, ASA 5515-X, ASA 5525-X, ASA 5545-X, and ASA 5555-X	http://www.cisco.com/go/asa-software	
	ASA Software Choose your *model* > **Software on Chassis** > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA software file has a filename like asa962-**smp-k8.bin**.
	ASDM Software Choose your *model* > **Software on Chassis** > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	The ASDM software file has a filename like asdm-762**.bin**.
	REST API Software Choose your *model* > **Software on Chassis** > **Adaptive Security Appliance REST API Plugin** > *version*.	The API software file has a filename like asa-restapi-132-**lfbff-k8.SPA**. To install the REST API, see the API quick start guide
	ASA Device Package for Cisco Application Policy Infrastructure Controller (APIC) Choose your *model* > **Software on Chassis** > **ASA for Application Centric Infrastructure (ACI) Device Packages** > *version*.	For APIC 1.2(7) and later, choose either the Policy Orchestration with Fabric Insertion, or the Fabric Insertion-only package. The device package software file has a filename like asa-device-pkg-1.2.7.10**.zip**. To install the ASA device package, see the "Importing a Device Package" chapter of the Cisco APIC Layer 4 to Layer 7 Services Deployment Guide.

ASA Model	Download Location	Packages
ASA 5585-X	http://www.cisco.com/go/asa-software	
	ASA Software Choose your *model* > **Software on Chassis** > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA software file has a filename like asa962-**smp-k8.bin**.
	ASDM Software Choose your *model* > **Software on Chassis** > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	The ASDM software file has a filename like asdm-762**.bin**.
	REST API Software Choose your *model* > **Software on Chassis** > **Adaptive Security Appliance REST API Plugin** > *version*.	The API software file has a filename like asa-restapi-132-**lfbff-k8.SPA**. To install the REST API, see the API quick start guide.
	ASA Device Package for Cisco Application Policy Infrastructure Controller (APIC) Choose your *model* > **Software on Chassis** > **ASA for Application Centric Infrastructure (ACI) Device Packages** > *version*.	For APIC 1.2(7) and later, choose either the Policy Orchestration with Fabric Insertion, or the Fabric Insertion-only package. The device package software file has a filename like asa-device-pkg-1.2.7.10**.zip**. To install the ASA device package, see the "Importing a Device Package" chapter of the Cisco APIC Layer 4 to Layer 7 Services Deployment Guide.
Firepower 2100	http://www.cisco.com/go/asa-firepower-sw	
	ASA, ASDM, and FXOS Software Choose your *model* > **Adaptive Security Appliance (ASA) Software** > *version*.	The ASA package includes ASA, ASDM, and FXOS software. The ASA package has a filename like cisco-asa-fp2k.9.8.2**.SPA**.
	ASDM Software (Upgrade) Choose your *model* > **Adaptive Security Appliance (ASA) Device Manager** > *version*.	Use this image to upgrade to a later version of ASDM using your current ASDM or the ASA CLI. The ASDM software file has a filename like asdm-782**.bin**.

Download FXOS for the Firepower 4100/9300

FXOS packages for the Firepower 4100/9300 are available on the Cisco Support & Download site.

- Firepower 4100 series: http://www.cisco.com/go/firepower4100-software
- Firepower 9300: http://www.cisco.com/go/firepower9300-software

To find FXOS packages, select or search for your Firepower appliance model, then browse to the Firepower Extensible Operating System download page for the target version.

Note If you plan to use the CLI to upgrade FXOS, copy the upgrade package to a server that the Firepower 4100/9300 can access using SCP, SFTP, TFTP, or FTP.

Table 13: FXOS Packages for the Firepower 4100/9300

Package Type	Package
FXOS image	fxos-k9.*version*.**SPA**
Recovery (kickstart)	fxos-k9-**kickstart**.*version*.**SPA**
Recovery (manager)	fxos-k9-**manager**.*version*.**SPA**
Recovery (system)	fxos-k9-**system**.*version*.**SPA**
MIBs	fxos-**mibs**-fp9k-fp4k.*version*.**zip**
Firmware: Firepower 4100 series	fxos-k9-fpr4k-**firmware**.*version*.**SPA**
Firmware: Firepower 9300	fxos-k9-fpr9k-**firmware**.*version*.**SPA**

Back Up Your Configurations

We recommend that you back up your configurations and other critical files before you upgrade, especially if there is a configuration migration. Each operating system has a different method to perform backups. Check the ASA, ASDM, and FXOS configuration guides for more information.