Release Notes for Cisco Secure Firewall ASDM, 7.24(x)

First Published: 2025-12-03

Last Modified: 2025-12-03

Release Notes for Cisco Secure Firewall ASDM, 7.24(x)

This document contains release information for ASDM version 7.24(x) for the Secure Firewall ASA.

Important Notes

- **ASDM 7.24 requires Java 11**—ASDM 7.24 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, 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**—After upgrading to 9.24, 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.

- **For ASA Virtual on OCI, Arm instances may experience reduced throughput on legacy hypervisors (especially with SR-IOV enabled)**—See https://docs.oracle.com/en-us/iaas/Content/Compute/known-issues.htm for more information. Contact OCI for support.

- **ASDM Launcher in FIPS mode can take a long time to start**—It can take longer than three minutes to start the ASDM Launcher in FIPS mode due to a reverse DNS lookup failure. This delay occurs when your DNS server does not return a valid PTR record for a reverse DNS lookup, so ASDM falls back to the NetBIOS Name Service, which can add several minutes to the startup time.

System Requirements

ASDM requires a computer with a CPU with at least 4 cores. Fewer cores can result in high memory usage.

ASDM Java Requirements

You can install ASDM using Oracle JDK 11 (**asdm-*version*.bin**) or OpenJRE 11 (**asdm-openjre-*version*.bin**). For the Oracle version, you will need to install Oracle JDK 11: https://www.oracle.com/java/technologies/javase/jdk11-archive-downloads.html. Later versions are not compatible. You will have to use Java 8 for earlier versions of ASDM. For the OpenJRE version, you do not need to install Java; it is built-in.

The Oracle version of ASDM is included in the ASA package; if you want to use the OpenJRE version, you will need to copy it to the ASA and configure the ASA to use that version of ASDM.

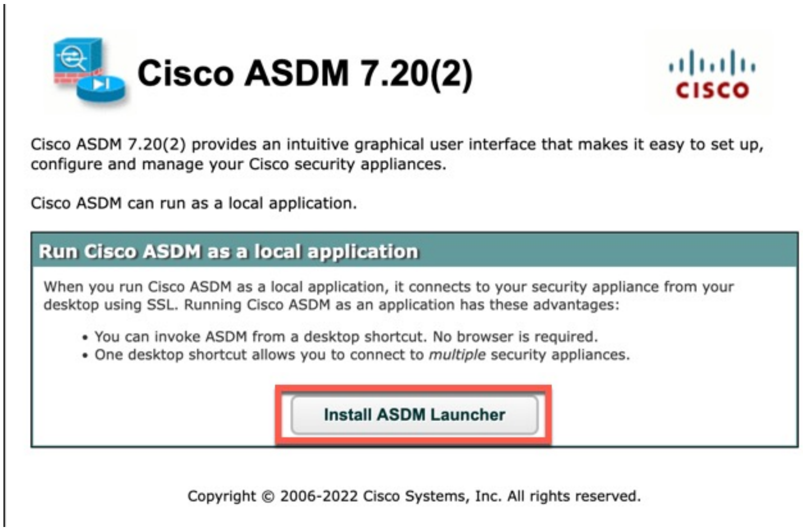
Note ASDM is not supported on Linux.

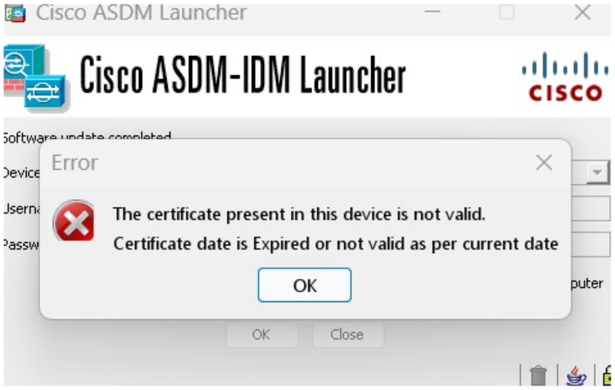
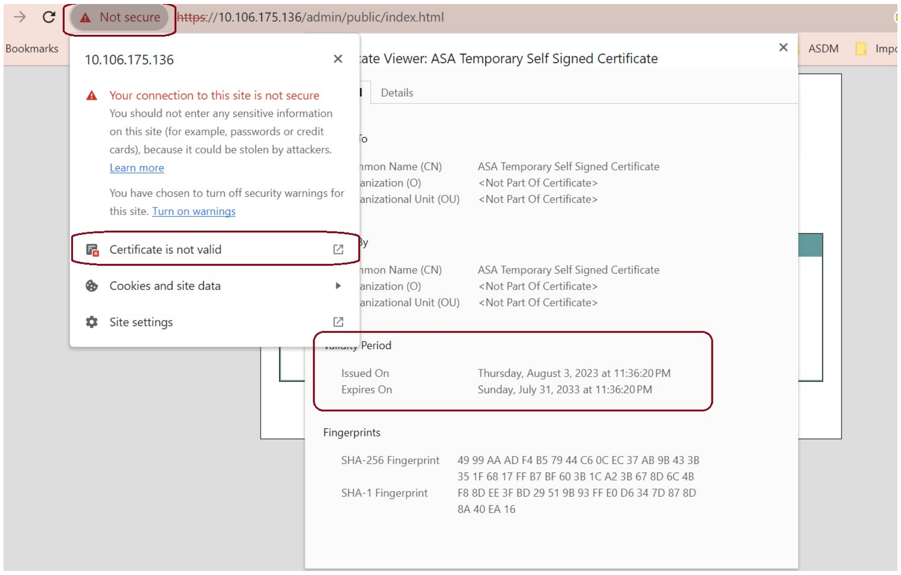
Table 1: ASDM Operating System and Browser Requirements

Operating System	Browser			Oracle JDK	OpenJRE
	Firefox	Safari	Chrome		
Microsoft Windows (English and Japanese): • 11 • 10 **Note** See Windows 10 in ASDM Compatibility Notes, on page 2 if you have problems with the ASDM shortcut. • 8 • 7 • Server 2016 and Server 2019 • Server 2012 R2 • Server 2012 • Server 2008	Yes	No support	Yes	11	11 **Note** No support for Windows 7 or 10 32-bit
Apple OS X 10.4 and later	Yes	Yes	Yes (64-bit version only)	11	11

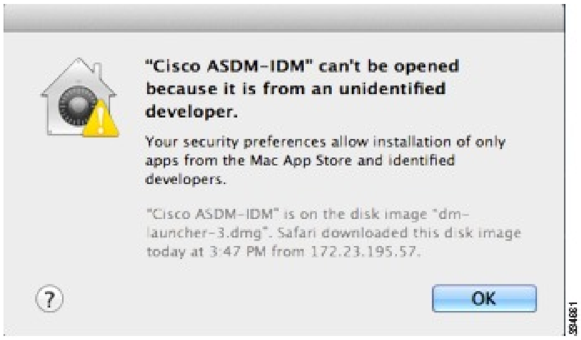
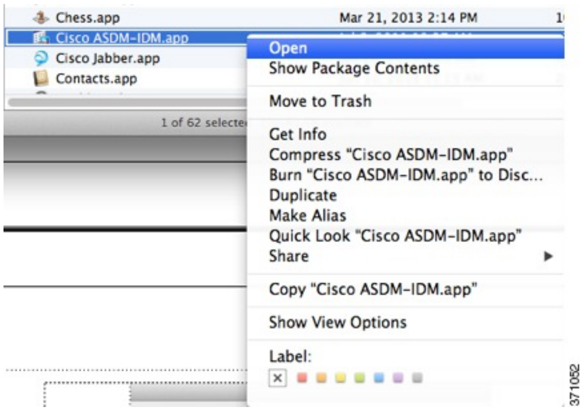
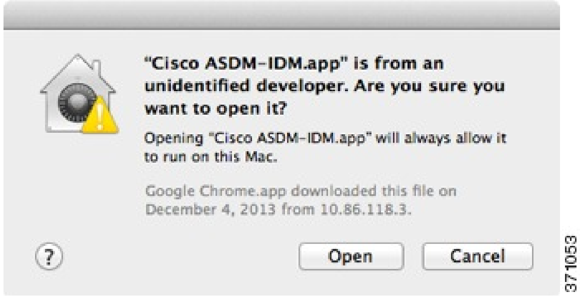
ASDM Compatibility Notes

The following table lists compatibility caveats for ASDM.

Conditions	Notes
ASDM Launcher compatibility with ASDM version	"**Unable to Launch Device Manager**" error message. If you upgrade to a new ASDM version and then get this error, you may need to re-install the latest Launcher. 1. Open the ASDM web page on the ASA: https://<asa_ip_address>. 2. Click **Install ASDM Launcher**. *Figure 1: Install ASDM Launcher*  Cisco ASDM 7.20(2) Cisco ASDM 7.20(2) provides an intuitive graphical user interface that makes it easy to set up, configure and manage your Cisco security appliances. Cisco ASDM can run as a local application. **Run Cisco ASDM as a local application** When you run Cisco ASDM as a local application, it connects to your security appliance from your desktop using SSL. Running Cisco ASDM as an application has these advantages: • You can invoke ASDM from a desktop shortcut. No browser is required. • One desktop shortcut allows you to connect to *multiple* security appliances. Copyright © 2006-2022 Cisco Systems, Inc. All rights reserved. 3. Leave the username and password fields empty (for a new installation), and click **OK**. With no HTTPS authentication configured, you can gain access to ASDM with no username and the **enable** password, which is blank by default. When you enter the **enable** command at the CLI for the first time, you are prompted to change the password; this behavior is not enforced when you log into ASDM. We suggest that you change the enable password as soon as possible so that it does not remain blank. **Note**: If you enabled HTTPS authentication, enter your username and associated password. Even without authentication, if you enter a username and password at the login screen (instead of leaving the username blank), ASDM checks the local database for a match.

Conditions	Notes
Self-signed certificate not valid due to a time and date mismatch with ASA	ASDM validates the self-signed SSL certificate, and if the ASA's date is not within the certificate's **Issued On** and **Expires On** date, ASDM will not launch. If there is a time and date mismatch, you will see the following error: ***Figure 2: Certificate Not Valid***  Error The certificate present in this device is not valid. Certificate date is Expired or not valid as per current date Cisco ASDM Launcher Cisco ASDM-IDM Launcher CISCO Software update completed OK Close **To fix the issue:** Set the correct time on the ASA and reload. To check the certificate dates, (example shown is Chrome): 1. Go to https://*device_ip*. 2. Click the **Not secure** text in the menu bar. 3. Click **Certificate is not valid** to open the Certificate Viewer. 4. Check the Validity Period. ***Figure 3: Certificate Viewer***  Not secure ~~https~~://10.106.175.136/admin/public/index.html 10.106.175.136 Your connection to this site is not secure You should not enter any sensitive information on this site (for example, passwords or credit cards), because it could be stolen by attackers. Learn more You have chosen to turn off security warnings for this site. Turn on warnings Certificate is not valid Cookies and site data Site settings ate Viewer: ASA Temporary Self Signed Certificate Details mon Name (CN) ASA Temporary Self Signed Certificate anization (O) <Not Part Of Certificate> anizational Unit (OU) <Not Part Of Certificate> mon Name (CN) ASA Temporary Self Signed Certificate anization (O) <Not Part Of Certificate> anizational Unit (OU) <Not Part Of Certificate> Period Issued On Thursday, August 3, 2023 at 11:36:20 PM Expires On Sunday, July 31, 2033 at 11:36:20 PM Fingerprints SHA-256 Fingerprint 49 99 AA AD F4 B5 79 44 C6 0C EC 37 AB 9B 43 3B 35 1F 68 17 FF B7 BF 60 3B 1C A2 3B 67 8D 6C 4B SHA-1 Fingerprint F8 8D EE 3F BD 29 51 9B 93 FF E0 D6 34 7D 87 8D 8A 40 EA 16

Conditions	Notes
Windows Active Directory directory access	In some cases, Active Directory settings for Windows users may restrict access to program file locations needed to successfully launch ASDM on Windows. Access is needed to the following directories: • Desktop folder • C:\Windows\System32C:\Users\<username>\.asdm • C:\Program Files (x86)\Cisco Systems If your Active Directory is restricting directory access, you need to request access from your Active Directory administrator.
Windows 10	"**This app can't run on your PC**" error message. When you install the ASDM Launcher, Windows 10 might replace the ASDM shortcut target with the Windows Scripting Host path, which causes this error. To fix the shortcut target: **1.** Choose **Start** > **Cisco ASDM-IDM Launcher**, and right-click the **Cisco ASDM-IDM Launcher** application. **2.** Choose **More** > **Open file location**. Windows opens the directory with the shortcut icon. **3.** Right click the shortcut icon, and choose **Properties**. **4.** Change the **Target** to: **C:\Windows\System32\wscript.exe invisible.vbs run.bat** **5.** Click **OK**.
OS X	On OS X, you may be prompted to install Java the first time you run ASDM; follow the prompts as necessary. ASDM will launch after the installation completes.

Conditions	Notes
OS X 10.8 and later	You need to allow ASDM to run because it is not signed with an Apple Developer ID. If you do not change your security preferences, you see an error screen.  **"Cisco ASDM-IDM" can't be opened because it is from an unidentified developer.** Your security preferences allow installation of only apps from the Mac App Store and identified developers. "Cisco ASDM-IDM" is on the disk image "dm-launcher-3.dmg". Safari downloaded this disk image today at 3:47 PM from 172.23.195.57. 1. To allow ASDM to run, right-click (or Ctrl-Click) the Cisco ASDM-IDM Launcher icon, and choose **Open**.  Chess.app Mar 21, 2013 2:14 PM Cisco ASDM-IDM.app Cisco Jabber.app Contacts.app 1 of 62 selecte Open Show Package Contents Move to Trash Get Info Compress "Cisco ASDM-IDM.app" Burn "Cisco ASDM-IDM.app" to Disc... Duplicate Make Alias Quick Look "Cisco ASDM-IDM.app" Share Copy "Cisco ASDM-IDM.app" Show View Options Label: 371052 2. You see a similar error screen; however, you can open ASDM from this screen. Click **Open**. The ASDM-IDM Launcher opens.  **"Cisco ASDM-IDM.app" is from an unidentified developer. Are you sure you want to open it?** Opening "Cisco ASDM-IDM.app" will always allow it to run on this Mac. Google Chrome.app downloaded this file on December 4, 2013 from 10.86.118.3.

Conditions	Notes
(ASA 5500 and ISA 3000) Requires Strong Encryption license (3DES/AES) on ASA **Note** Smart licensing models allow access with ASDM without the Strong Encryption license.	ASDM requires an SSL connection to the ASA. You can request a 3DES PAK license from Cisco: **1.** Go to https://www.cisco.com/go/license. **2.** Under **Traditional Licenses**, click **Access LRP**. **3.** Click **Get Licenses** and then choose **IPS, Crypto, Other...** from the drop-down list. **4.** Type **ASA** in to the **Search by Keyword** field. **5.** Select **Cisco ASA 3DES/AES License** in the **Product** list, and click **Next**. **6.** Enter the serial number of the ASA, and follow the prompts to request a 3DES/AES license for the ASA.
• Self-signed certificate or an untrusted certificate • IPv6 • Firefox and Safari	When the ASA uses a self-signed certificate or an untrusted certificate, Firefox and Safari are unable to add security exceptions when browsing using HTTPS over IPv6. See https://bugzilla.mozilla.org/show_bug.cgi?id=633001. This caveat affects all SSL connections originating from Firefox or Safari to the ASA (including ASDM connections). To avoid this caveat, configure a proper certificate for the ASA that is issued by a trusted certificate authority.
• SSL encryption on the ASA must include both RC4-MD5 and RC4-SHA1 or disable SSL false start in Chrome. • Chrome	If you change the SSL encryption on the ASA to exclude both RC4-MD5 and RC4-SHA1 algorithms (these algorithms are enabled by default), then Chrome cannot launch ASDM due to the Chrome “SSL false start” feature. We suggest re-enabling one of these algorithms (see the **Configuration** > **Device Management** > **Advanced** > **SSL Settings** pane); or you can disable SSL false start in Chrome using the **--disable-ssl-false-start** flag according to Run Chromium with flags.

Install an Identity Certificate for ASDM

When using Java 7 update 51 and later, the ASDM Launcher requires a trusted certificate. An easy approach to fulfill the certificate requirements is to install a self-signed identity certificate.

See Install an Identity Certificate for ASDM to install a self-signed identity certificate on the ASA for use with ASDM, and to register the certificate with Java.

Increase the ASDM Configuration Memory

ASDM supports a maximum configuration size of 512 KB. If you exceed this amount you may experience performance issues. For example, when you load the configuration, the status dialog box shows the percentage of the configuration that is complete, yet with large configurations it stops incrementing and appears to suspend operation, even though ASDM might still be processing the configuration. If this situation occurs, we recommend that you consider increasing the ASDM system heap memory. To confirm that you are experiencing memory exhaustion, monitor the Java console for the "java.lang.OutOfMemoryError" message.

In addition, we recommend reducing your configuration size if possible, for example, by removing unused objects.

Increase the ASDM Configuration Memory in Windows

To increase the ASDM heap memory size, edit the **run.bat** file by performing the following procedure.

Procedure

Step 1 Go to the ASDM installation directory, for example C:\Program Files (x86)\Cisco Systems\ASDM.

Step 2 Edit the **run.bat** file with any text editor.

Step 3 In the line that starts with "start javaw.exe", change the argument prefixed with "-Xmx" to specify your desired heap size. For example, change it to -Xmx768M for 768 MB or -Xmx1G for 1 GB.

For very large configurations, you may need to specify a heap size up to 2 GB.

Step 4 Save the **run.bat** file.

Increase the ASDM Configuration Memory in Mac OS

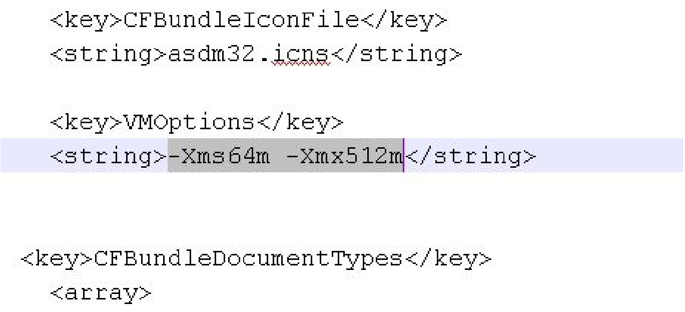
To increase the ASDM heap memory size, edit the **Info.plist** file by performing the following procedure.

Procedure

Step 1 Right-click the **Cisco ASDM-IDM** icon, and choose **Show Package Contents**.

Step 2 In the **Contents** folder, double-click the **Info.plist** file. If you have Developer tools installed, it opens in the **Property List Editor**. Otherwise, it opens in **TextEdit**.

Step 3 Under **Java** > **VMOptions**, change the string prefixed with "-Xmx" to specify your desired heap size. For example, change it to -Xmx768M for 768 MB or -Xmx1G for 1 GB.



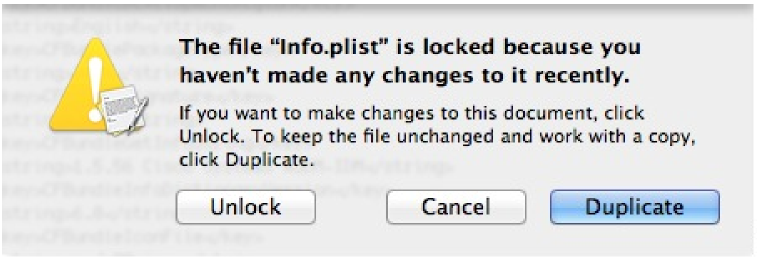
```
    <key>CFBundleIconFile</key>
    <string>asdm32.icns</string>

    <key>VMOptions</key>
    <string>-Xms64m -Xmx512m</string>


  <key>CFBundleDocumentTypes</key>
    <array>
```

For very large configurations, you may need to specify a heap size up to 2 GB.

Step 4 If this file is locked, you see an error such as the following:



The file "Info.plist" is locked because you haven't made any changes to it recently.

If you want to make changes to this document, click Unlock. To keep the file unchanged and work with a copy, click Duplicate.

Step 5 Click **Unlock** and save the file.

If you do not see the **Unlock** dialog box, exit the editor, right-click the **Cisco ASDM-IDM** icon, choose **Copy Cisco ASDM-IDM**, and paste it to a location where you have write permissions, such as the Desktop. Then change the heap size from this copy.

ASA and ASDM Compatibility

For information about ASA/ASDM software and hardware requirements and compatibility, including module compatibility, see Cisco Secure Firewall ASA Compatibility.

VPN Compatibility

For VPN compatibility, see Supported VPN Platforms, Cisco ASA 5500 Series.

New Features

This section lists new features for each release.

Note New, changed, and deprecated syslog messages are listed in the syslog message guide.

New Features in ASA 9.24(1)/ASDM 7.24(1)

Released: December 3, 2025

Feature	Description
Platform Features	
Secure Firewall 220	The Secure Firewall 220 is an affordable security appliance for branch offices and remote locations, balancing cost and features.
Secure Firewall 6160, 6170	The Secure Firewall 6160 and 6170 are ultra-high-end firewalls for demanding data center and telecom networks. It has exceptional price-to-performance, modular capability, and high throughput.

Feature	Description
ASA VirtualGrub bootloader upgraded with UEFI firmware and secure boot.	With the Grub bootloader upgrade from Grub 0.94 to Grub 2.12, we now support UEFI firmware with or without secure boot functionality, along with legacy BIOS mode. Secure boot functionality gives boot-level malware protection. New deployments also use GPT-partitioned images instead of MS-DOS-partitioned disks. If you upgrade, you cannot change to UEFI and secure boot; only new deployments can use the new options. **Note** After upgrading to 9.24, you cannot downgrade to an earlier version. To upgrade to later versions, you must first upgrade to 9.24.
ASA Virtual AWS dual-arm clustering	In dual-arm mode, after inspection, the ASA Virtual will NAT and forward outbound traffic from its outside interface directly to the internet via the Internet Gateway. Since outbound traffic is directly forwarded to the internet after inspection without making a round trip through the GWLB and the GWLB endpoint, the number of traffic hops is reduced by 2. This reduction is especially useful in providing a common egress path for a multi-VPC deployment.For dual-arm deployments, only egress traffic is supported.
ASA Virtual GCP clustering with autoscale	GCP clustering with autoscale is now supported for ASAv30, ASAv50, and ASAv100.
ASA VirtualOCI Ampere A1 ARM compute shape support	New shapes for OCI. **Note** For ASA Virtual on OCI, Arm instances may experience reduced throughput on legacy hypervisors (especially with SR-IOV enabled)—See https://docs.oracle.com/en-us/iaas/Content/Compute/known-issues.htm for more information. Contact OCI for support.
ASA VirtualKVM flow offload	Flow offload is now supported on the DPU for KVM.
ASA Virtual Nutanix support for AOS 6.8	Nutanix AOS 6.8 supports VPCs, similar toVPCs in public clouds.
ASA Virtual OpenStack support for Caracal	ASA Virtual deployment is supported on the Caracal release of OpenStack.
ASA Virtual MANA NIC Support	ASA Virtual supports MANA NIC hardware on Microsoft Azure for the following instances: • Standard_D8s_v5 • Standard_D16s_v5
Firewall Features	

Feature	Description
Application Visibility and Control for the Secure Firewall 6100	Application Visibility and Control (AVC) makes it possible for you to write access control rules based on applications rather than just IP addresses and ports. AVC downloads the Vulnerability Database (VDB), which creates network-service objects and groups that you can use in access control rules. The objects define various applications, and the groups define application categories, so you can easily block applications or entire classes of connections without specifying IP address and port. We introduced the following screens: **Configuration** > **Firewall** > **Advanced** > **Enable AVC**, **Monitoring** > **Properties** > **AVC** > **Status**, **Monitoring** > **Properties** > **AVC** > **Top N**, **Monitoring** > **Properties** > **AVC** > **App Category**, **Monitoring** > **Properties** > **AVC** > **Allowed/Blocked Applications**, **Monitoring** > **Properties** > **Service Policy**, **Monitoring** > **Properties** > **Network Object** > **Object Group Network Service** Supported platforms: Secure Firewall 6100
High Availability and Scalability Features	
No reboot required for changing the VPN mode	When changing the VPN mode between distributed and centralized, a reboot is no longer required. However, you now need to disable clustering on all nodes before changing the mode.
Data nodes can join the cluster concurrently	Formerly, the control node only allowed one data node to join the cluster at a time. If the configuration sync takes a long time, data nodes can take a long time to join. Concurrent join is enabled by default. If you have NAT and VPN distributed mode enabled, you cannot use concurrent join. Added/modified screens: • **Configuration** > **Device Management** > **High Availablility and Scalability** > **ASA Cluster** • **Monitoring** > **ASA Cluster** > **ASA Cluster Concurrent Join**
MTU ping test on cluster node join provides more information by trying smaller MTUs	When a node joins the cluster, it checks MTU compatibility by sending a ping to the control node with a packet size matching the cluster control link MTU. If the ping fails, it tries the MTU divided by 2 and keeps dividing by 2 until an MTU ping is successful. A notification is generated so you can fix the MTU to a working value and try again. We recommend increasing the switch MTU size to the recommended value, but if you can't change the switch configuration, a working value for the cluster control link will let you form the cluster. Added/modified screens: **Monitoring >** > **ASA Cluster** > **Cluster Summary**
Improved cluster control link health check with high CPU	When a cluster node CPU usage is high, the health check will be suspended, and the node will not be marked as unhealthy. You can configure at what CPU use threshold to suspend the health check. Added/modified screens: **Configuration** > **Device Management** > **High Availablility and Scalability** > **ASA Cluster**
Clustering on the Secure Firewall 6100	You can cluster up to 4 Secure Firewall 4200 nodes in Spanned EtherChannel or Individual interface mode.
Block depletion monitoring in clustering	When block depletion occurs, the ASA collects troubleshooting logs and sends out a syslog. For clustering, the node will leave the cluster so the other nodes can handle the traffic. The ASA can also force a crash and reload to recover from depletion.

Feature	Description
Dynamic PAT support for distributed site-to-site VPN mode	Distributed mode now supports dynamic PAT. However, interface PAT is still not supported.
Interface Features	
Recursive DNS Server (RDNSS) and DNS Search List (DNSSL) options to advertise a list of DNS servers and domains to IPv6 clients	You can now configure Recursive DNS Server (RDNSS) and DNS Search List (DNSSL) options to provide DNS servers and domains to SLAAC clients using router advertisements. New/modified screens: **Configuration** > **Device Setup** > **Interface Settings** > **Interfaces** > **Add Interface** > **IPv6**
Administrative, Monitoring, and Troubleshooting Features	
SSH X.509 certificate authentication	You can now use an X.509v3 certificate to authenticate a user for SSH (RFC 6187). **Note** This feature is not supported on the Firepower 4100/9300. New/Modified screens: • **Configuration** > **Device Management** > **Users/AAA** > **AAA Access** > **Authorization** • **Configuration** > **Device Management** > **Certificate Management** > **CA Certificates** > **Add/Edit Trustpoint** > **Advanced** • **Configuration** > **Device Management** > **Management Access** > **ASDM/HTTPS/Telnet/SSH** *Also in 9.20(4).*
AES-256-GCM SSH cipher	The ASA supports the AES-256-GCM cipher for SSH. It is enabled by default for **all** and **high** encryption levels. New/Modified screens: **Configuration** > **Device Management** > **Advanced** > **SSH Ciphers** *Also in 9.20(4).*
Linux kernel crash dump	The Linux kernel crash dump feature lets you debug kernel crash events and find the root cause. This feature is enabled by default. New/Modified commands: **show kernel crash-dump**, **kernel crash-dump**, **crashinfoforce kernel-dump**
Root Shell Access Support Using Consent Token on ASA Virtual	ASA Virtual supports a new Consent Token mechanism that allows authorized users to obtain one-time access to the Linux root shell for troubleshooting or diagnostic purposes — without requiring the administrator password. New/Modified commands: **consent-token generate-challenge shell-access**, **consent-token accept-response shell-access**
ASDM Features	

Feature	Description
ASDM 7.24 now requires Java 11	ASDM 7.24 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, you can still launch earlier versions of ASDM. For the OpenJRE version, you do not need to install Java; it is built-in.
ASDM certificate authentication	ASDM Launcher 1.9(10), which comes with ASDM 7.24, now supports user certificate authentication. Previously, this feature was only supported with Java Web Start (discontinued in 7.18). Because the ASA commands were not deprecated in 9.18, you can configure earlier ASA versions to use certificate authentication when using any ASDM version with ASDM Launcher 1.9(10). New/Modified screens: • ASDM Launcher login window. • **Configuration** > **Device Management** > **Management Access** > **ASDM/HTTPS/Telnet/SSH** • **Configuration** > **Site-to-Site VPN** > **Advanced** > **IPSec** > **Certificate to Connection Map** > **Rules** • **Configuration** > **Device Management** > **Management Access** > **HTTP Certificate Rule**
ASDM FIPS compliance	By default, ASDM starts in non-FIPS mode. To enable FIPS mode: • Windows—In the FIPS.conf file, change the **fips_mode** value to **true**. The FIPS.conf file is located in the installation directory of the ASDM Launcher. • MacOS—In the FIPS.plist file, change the **fipsMode** value to **true**. The FIPS.plist file is located in the Contents folder of the dm-launcher. FIPS mode is only supported with ASDM 7.24 and later. **Note** It can take longer than three minutes to start the ASDM Launcher in FIPS mode due to a reverse DNS lookup failure. This delay occurs when your DNS server does not return a valid PTR record for a reverse DNS lookup, so ASDM falls back to the NetBIOS Name Service, which can add several minutes to the startup time. New/Modified screens: ASDM Launcher login window.
New authentication method for the Upgrade Software from Cisco.com Wizard	The **Cisco.com Authentication** dialog box was replaced by the **Cisco.com Device Activation** dialog box using a newer authentication method for Cisco.com. New/Modified screens: **Tools** > **Check for ASA/ASDM Updates**
VPN Features	

Feature	Description
SGT over VTI	VTI tunnels now support Cisco TrustSec SGT tags. New/Modified screens: • **Configuration** > **Device Setup** > **Interface Settings** > **Interfaces** > **VTI/DVTI Interface** > **Advanced** > **Secure Group Tagging** • **Configuration** > **Site-to-Site VPN** > **Network (client) Access** > **Advanced** > **IPsec** > **IKE Parameters** > **Secure Group Tagging**
ECMP and BFD fault detection support for VTIs	One or more dynamic VTI interfaces can be part of an Equal-Cost Multi-Path (ECMP) zone. Using zones, traffic towards the spoke can be load-balanced. Bidirectional Forwarding Detection (BFD) link detection is faster, detecting faulty VTI links in few milliseconds or microseconds. New/Modified commands: **bfd template**, **vtemplate-bfd**, **vtemplate-zone-member**, **show zone**, **show conn all**, **show route** New/Modified screens for ECMP. There is no ASDM support for BFD on VTIs. • **Configuration** > **Site-to-Site VPN** > **Advanced** > **Tunnel Group** > **Add** > **Dynamic VTI** > • **Configuration** > **Site-to-Site VPN** > **Connection Profiles** > **Advanced** > **Tunnel Group** > **Add** > **Dynamic VTI** >
Loopback interface support for distributed site-to-site VPN	You can now create site-to-site VPN tunnels using loopback interfaces in distributed site-to-site mode. Unlike outside addresses that are tied to a location network, the loopback interfaces are not. This independence means you can move the address to another cluster and use routing protocols to propagate the new location to the upstream routers. The peer's traffic would then be sent to the new location.
IPsec flow offload and DTLS crypto accelerator for the Secure Firewall 6100	Secure Firewall 6100 supports AES-GCM-128 and AES-GCM-256 ciphers only.
IPsec flow offload for the ASA Virtual on KVM	IPsec flow offload is now supported on the DPU for KVM.

Upgrade the Software

This section provides the upgrade path information and a link to complete your upgrade.

Upgrade Link

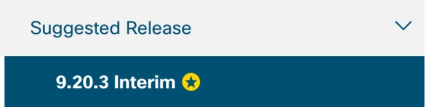
To complete your upgrade, see the ASA upgrade guide.

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 4: 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.

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 2: 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

Current Version	Interim Upgrade Version	Target Version
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
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

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

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

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

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

Current Version	Interim Upgrade Version	Target Version
9.2	—	Any of the following: → 9.24 → 9.23 → 9.22 → 9.20 → 9.19 → 9.18 → 9.17 → 9.16 → 9.12
9.1(2), 9.1(3), 9.1(4), 9.1(5), 9.1(6), or 9.1(7.4)	—	Any of the following: → 9.12
9.0(2), 9.0(3), or 9.0(4)	—	Any of the following: → 9.12

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

- 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 3: Firepower 4100/9300 Compatibility with ASA and Firewall Threat Defense

FXOS Version	Model	ASA Version	Firewall Threat Defense Version
2.18	Firepower 4112	**9.24** (recommended) 9.23 9.22 9.20 9.19	**10.x** (recommended) 7.7 7.6 7.4 7.3
	Firepower 4145 Firepower 4125 Firepower 4115	**9.24** (recommended) 9.23 9.22 9.20 9.19	**10.x** (recommended) 7.7 7.6 7.4 7.3
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		
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	**9.23** (recommended) 9.22 9.20 9.19 9.18	**7.7** (recommended) 7.6 7.4 7.3 7.2
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40		

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		

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.

Open and Resolved Bugs

The open and resolved bugs for this release are accessible through the Cisco Bug Search Tool. This web-based tool provides you with access to the Cisco bug tracking system, which maintains information about bugs and vulnerabilities in this product and other Cisco hardware and software products.

Note You must have a Cisco.com account to log in and access the Cisco Bug Search Tool. If you do not have one, you can register for an account. If you do not have a Cisco support contract, you can only look up bugs by ID; you cannot run searches.

For more information about the Cisco Bug Search Tool, see the Bug Search Tool Help & FAQ.

Open Bugs in Version 7.24(1)

There are no open bugs in this release.

Resolved Bugs in Version 7.24(1)

The following table lists select resolved bugs at the time of this Release Note publication.

Identifier	Headline
CSCut04399	ASDM hangs on MAC after upgrade to Java 8
CSCwi23799	ENH : ASDM does not accept VTI Interface for routes, CLI works
CSCwp26314	Secure firewall posture image is not available in the ASA device backup when generated from ASDM
CSCwq10546	Schema Validation Error Encountered While Editing AnyConnect/Secure Client Profiles
CSCwq40115	Need to remove compatibility popup added by CSCut04399 on ASDM
CSCwq70362	ASDM: Using the Secure Client VPN Wizard results in an incomplete configuration
CSCwq74936	ASDM fails to connect via ipv6 due to https hostname wrong error

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Related Documentation

For additional information on the ASA, see Navigating the Cisco Secure Firewall ASA Series Documentation.