# **Configure ASA 9.X Upgrade of Software Image by Use of ASDM or CLI**

## Contents

### Introduction

This document describes how to upgrade a software image on Cisco ASA 5500 Appliances with the Cisco Adaptive Security Device Manager.

## Prerequisites

#### Requirements

There are no specific requirements for this document.

#### **Components Used**

The information in this document is based on these software and hardware versions:

- Cisco ASA 5500 and ASA 5500-X 9.1(2) and later
- Cisco ASDM 7.1 and later

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

#### **Related Products**

This configuration can also be used with Cisco ASA 5500-X Series Security Appliance Software Version 9.x.

#### Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

#### **Download Software**

To download the required release version of ASA Software images and ASDM Software images, use these links:

- <u>Cisco ASA Software Release Download</u> (registered customers only)
- <u>Cisco ASDM Software Release Download</u> (registered customers only)

**Note**: Valid Cisco user credentials are needed to download this software from Cisco.com.

## **Compatibility Between ASA and ASDM**

The link shown is updated with the compatibility and Cisco-recommended ASDM release for each version of ASA.

ASA and ASDM Compatibility

## ASA Upgrade Path

The link shown provides the upgrade path for ASA. Some versions require an interim upgrade before you can upgrade to the latest version.

ASA Upgrade Path

### **Upgrade an ASA Software Image with the Use of ASDM 7.x**

Complete these steps to upgrade a software image on the ASA 5500 with the use of ASDM.

1. When ASA is in Single context mode, select Tools > Upgrade Software from Local Computer... from the Home window of the ASDM.

🖆 Cisco ASE	Cisco ASDM 7.1 for ASA - 10.106.45.231				
File View	e View Tools Wizards Window Help				
Home C		Command Line Interface Show Commands Ignored by ASDM on Device	Back 🕥 Forward 🢡 Help		
Add		Packet Tracer Ping	vall Dashboard		
		File Management			
		Upgrade Software from Local Computer Downgrade Software	1	Device Uptime: 0d 0h 2m 51s Device Type: ASA 5512	
		Backup Configurations Restore Configurations	Фок	Context Mode: Single Total Flash: 4096 MB	
		System Reload Administrator's Alert to Clientless SSL VPN Users		to forest first A	Datala
		Migrate Network Object Group Members	Aeroess sou verv: U	AnyConnect Clenc: 0	CCLOBA.
2		Preferences ASDM Java Console	age Core Usage Details		

When ASA is run in Multiple context mode, the Upgrade Software from Local Computer option under the Tools menu tab is available only from System context.

🔂 Cisco ASD	M 7.1	for ASA - 10.106.45.231   System	_	
File View	Tool	s Wizards Window Help		
Home G		Command Line Interface	🔿 Back 🚫 Forward	2 Help
Device List		Show Commands Ignored by ASDM on Device		<u> </u>
Add m		Packet Tracer		
Finds		Ping		
E. 10.10		Traceroute		Contexts
		File Management		
🖃 📴 Co		Check for ASA/ASDM Updates		
		Upgrade Software from Local Computer		
		Downgrade Software		
		System Reload		admin
		Preferences		
		ASDM Java Console		

2. Select ASA as the image type to upload from the drop-down list.

🔄 Upgrade Software		<b>—</b> ———————————————————————————————————
Upload a file from local c minutes. Please wait for	omputer to flash file system on the device. The upload pr the operation to finish.	ocess might take a few
Image to Upload:	ASA 👻	
Local File Path:	Application Profile Customization Framework (APCF) ASA	Browse Local Files
Flash File System Path:	ASDM Client Secure Desktop (CSD) Cisco AnyConnect VPN Client	Browse Flash
	Upload Image Close Help	

3. Click Browse Local Files... or type the path in the Local File Path field to specify the software image location on the PC.

#### 4. Click Browse Flash....

5. A Browse Flash dialog box displays, with the file name entered automatically. If the file name does not appear, enter it manually in the File Name field. Click **OK** when finished.

🧱 Upgrade Software	X
Upload a file from local of minutes. Please wait for	computer to flash file system on the device. The upload process might take a few the operation to finish.
Image to Upload:	ASA 🗸
Local File Path:	C:\Users\srmunaga\Downloads\asa916-smp-k8.bin Browse Local Files
Flash File System Path:	disk0:/asa916-smp-k8.bin Browse Flash
(	Upload Image Close Help

6. Once both the local and remote file names are specified, click Upload Image.

🔄 Upgrade Software		X
Upload a file from local minutes. Please wait for	computer to flash file system on the device. The upload pro r the operation to finish.	ocess might take a few
Image to Upload:	ASA 👻	
Local File Path:	C: \Users \srmunaga \Downloads \asa916-smp-k8.bin	Browse Local Files
Flash File System Path:	disk0:/asa916-smp-k8.bin	Browse Flash
5	Upload Image Close Help	
asa 🔤		83
i Image I the boo	has been uploaded to flash successfully. Do you wan't of image?	to set this innage as
	Yes No	

7. A status window displays while ASDM writes the image to flash. Once finished, an Information window displays that indicates a successful upload occurred and asks if the image is to be set as the boot image. Select **Yes**.

🔚 Upg	rade Software
Upload minute	a file from local computer to flash file system on the device. The upload process might take a few
Image	
Local F	Your device configuration is updated to use the new image.
Flash F	To use this ASA image, the ASA needs to be reloaded. Go to the menu item, Tools > System Reload to do this.
	Be sure that you upgrade the ASDM image to one that is compatible with the new ASA image.
	ОК

Click OK in the Information dialog box and then click Close in the Upload Image from Local PC dialog

box.

8. Choose Tools > System Reload from the **Home** window to reload the device.

🔁 Cisco AS	OM 7.	1 for ASA - 10.106.45.231		
<u>File</u> <u>View</u>	Too	ols Wizards <u>W</u> indow <u>H</u> elp		
Home Bevice List	2	<u>C</u> ommand Line Interface Show Commands <u>Ig</u> nored by ASDM on Device	Back 💽 Forward 🧖 Help	
Add		<u>P</u> acket Tracer Pi <u>ng</u> <u>T</u> raceroute	vall Dashboard	
		File <u>M</u> anagement Check f <u>o</u> r ASA/ASDM Updates <u>U</u> pgrade Software from Local Computer <u>D</u> owngrade Software	D	evice Uptime: evice Type:
		Backup Configurations Restore Configurations	фок т	ontext Mode: otal Flash:
		System <u>R</u> eload		
		<u>A</u> dministrator's Alert to Clientless SSL VPN Users <u>M</u> igrate Network Object Group Members	lientless SSL VPN: 0	AnyConnect Cl
		Preferences		
		ASDM Java Console	age Core Usage Details	

A new window appears that verifies the details of the reload. Select Save the running configuration at the time of reload and then choose a time to reload. Time choices include:

- Now Reboot the device immediately.
- Delay By Specify in how many minutes or hours from now to reload the device.
- Schedule at Specify a time and date to reload the device.

Additionally, specify if the device is to force a reload immediately when a scheduled reload fails. Check On Reload failure, force an immediate reload after and then specify a maximum hold time. This is the amount of time the security appliance waits to notify other subsystems before a shutdown or reboot. After this time elapses, a quick (forced) shutdown/reboot occurs. Click **Schedule Reload**.

🔁 System Reload	×
Schedule a system reload or cancel a pending one.	
Reload Scheduling	
Configuration State:	
Save the running configuration at time of reload	
Reload without saving the running configuration	
Reload Start Time:	
Now	
O Delay by: hh: mm or mmm	
Schedule at:	
Reload Message:	
On reload failure, force an immediate reload after:	
Schedule Reload	
Reload Status	
······································	
Cancel Reload Refresh Details	
Last Updated: 4/9/15 2:32:06 F	M⊣
Close Help	

Once the reload is in progress, a Reload Status window displays to indicate a reload is in process. An option to exit ASDM is also provided.

<b>Note</b> : Start ASDM again after the ASA reloads.	
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The second second
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Notification (4/9/15 9:08:35 AM):	
*** START GRACEFUL SHUTDOWN	
Notification (4/9/15 9:08:35 AM): Shutting down License Controller	
Notification (4/9/15 9:08:35 AM): Shutting down License Controller	
Notification (4/9/15 9:08:35 AM): Shutting down License Controller	
Notification (4/9/15 9:08:35 AM):	Ŧ
Don't show this dialog again. To view reload status in the future, go to Tools > System Reload and click the Details button.	
Refresh Force Immediate Reload Exit ASDM	]

х

## Upgrade the ASDM Image with the Use of ASDM 7.x.

Complete these steps to upgrade a software image on the ASA 5500 with the one of ASDM.

1. Select Tools > Upgrade Software from Local Computer... from the Home window of the ASDM.

Gisco ASDM 7.1 for ASA - 10.106.45.231							
<u>File</u> <u>View</u>	Io	ols Wigards Window Help	_				
Home C		<u>Command Line Interface</u> Show Commands Ignored by ASDM on Device	Back 🔿 Forward 🢡 Help				
Add		Packet Tracer Pi <u>ng</u>	val Dashboard				
		Traceroute					
	_	Check for ASA/ASDM Updates					
	_	Upgrade Software from Local Computer		Device Uptme: Od Oh 51m 1s			
		Downgrade Software	_	Context Mode: Single			
		Backup Configurations Regtore Configurations	Ф ок	Total Flash: 4096 MB			
L		System Reload					
ť –		Administrator's Alert to Clientless SSL VPN Users					
		Migrate Network Object Group Members	Bentless SSL VPN: 0	AnyConnect Client: 0	Detais		
		Preferences					
		ASDM Java Console	age Core Usage Details				

2. Select ASDM as the image type to upload from the drop-down list.

🔄 Upgrade Software							
Upload a file from local computer to flash file system on the device. The upload process might take a few minutes. Please wait for the operation to finish.							
Image to Upload:	ASDM 👻						
Local File Path:	Application Profile Customization Framework (APCF) ASA	Browse Local Files					
Flash File System Path:	ASDM	Browse Flash					
	Client Secure Desktop (CSD)						
	Cisco AnyConnect VPN Client						
(	Upload Image Close Help						

3. Click Browse Local Files... or type the path in the Local File Path field to specify the software image location on the PC.

Click Browse Flash....

A Browse Flash dialog window displays with the file name entered automatically. If the file name does not display, enter it manually in the File Name field. Click OK when finished.

🔄 Upgrade Software					
Upload a file from local computer to flash file system on the device. The upload process might take a few minutes. Please wait for the operation to finish.					
Image to Upload:	ASDM 👻				
Local File Path:	C: \Users \srmunaga \Downloads \asdm-741.bin Browse Local Files				
Flash File System Path:	disk0:/asdm-741.bin Browse Flash				
(	Upload Image Close Help				

4. Click **ok** when the image is updated with the new image.



5. Select File > Save Running Configuration to Flash from the Home window of the ASDM.

<b>i</b>	Cisco ASDM 7.1 for ASA - 10.106.45.231					
File	<u>View T</u> ools Wizards <u>W</u> indow <u>H</u> elp		-			
	<u>R</u> efresh ASDM with the Running Configuration on the Device Reset <u>D</u> evice to the Factory Default Configuration	FS	ok 🕐 Forward 🧳 Help			
	Show Running Configuration in New Window		ashboard			
	Save Running Configuration to Flash	Ctrl+S				
	Save Running Configuration to <u>T</u> FTP Server Save Running Configuration to Standby <u>U</u> nit Save Internal Log Buffer to Flash	Sa	ve Running Configuration to Flash			
	Print	Ctrl+P		Device Uptime:	0d 2h 27m 1s	
	Clear ASDM Cache			Context Mode:	ASA 5512 Single	
	Clear ASDM Password Cache		de or	Total Flash	4096 MB	
	Clear Internal Log Buffer		TON	TONOR FROM IS	4050110	
	Egit	Alt+F4				

Exit the ASDM and log in again to manage the ASA with the upgraded ASDM image.

## Upgrade the ASA and ASDM by an Image Download Directly from CCO

Complete these steps to upgrade an ASA and ASDM image directly from CCO.

1. Select Tools > Check for ASA/ASDM Updates... from the Home window of the ASDM.

📮 Cisco ASI	DM 7	1 for ASA - 10.106.45.23	1		
File View	Too	ols Wizards Window	Help		
Home G		Command Line Interfa	ored by ASDM on Device	Back 🜔 Forward 🢡 Help	
Add		Packet Tracer Ping		vall Dashboard	
		File Management Check for ASA/ASDM	Updates	_	
		Upgrade Software from Downgrade Software	n Local Computer		Device Uptime: 0d 0h 27m 5: Device Type: ASA 5512 Context Mode: Single
		Backup Configuration Restore Configuration	s s	Ф ок	Total Flash: 4096 MB
		System Reload Administrator's Alert t	o Clientless SSL VPN Users	lientiess SSL VPN: 0	AnyConnect Client: 0
		Migrate Network Obje	ct Group Members		
		ASDM Java Console	Incident Copper Union	age Core Usage Details	
			2000		

2. When the username and password prompt displays, provide the Cisco.com credentials and click Login.



3. The Cisco.com Upgrade Wizard dialog box displays. In the Overview section, click Next.

Cisco.com Upgrade Wizard	
Steps	Overview
1. Overview	Use this wizard to upgrade ASA and ASDM images.
2. Select Software	This wizard will allow you to upgrade software on your device.
3. Review Changes	···· ,·· ,·· ,·· ,·· ,·· ,·· ,·· ,·· ,·
4. Installation	
5. Results	
	To begin, click Next
	< Back Next > Cancel

4. In the Select Software section, check the software that needs to be upgraded. If both ASA and ASDM need to be upgraded, check both options.

Cisco.com Upgrade Wizard		<b>—</b> ×
Steps	Select Software	
1. Overview	Select the software you would li	ke to upgrade.
<ol> <li>Select Software</li> <li>Review Changes</li> <li>Installation</li> </ol>	ASA Current ASA version 9.1(2)	9.1.3 🔻
5. Results	ASDM Current ASDM version 7.1(3)0	7.1.6
	<back next=""></back>	Cancel

5. In the ASA version drop-down list, select the version to which the ASA upgrade has to be performed.

Cisco.com Upgrade Wizard					
Steps	Select Software		_		
1. Overview	Select the software you would li	ke to upgrade.			
2. Select Software	ASA	]			
4. Installation	Upgrade to	9.1.6			
5. Results	ASDM Current ASDM version 7.1(3)0	9.1.3 9.1.4 9.1.5 9.1.6 9.2.1 9.2.2.4 9.2.3 0.2.1			
	Click "NEXT" to continue.	5.5.1			
	< Back Next >	Cancel			

6. In the ASDM version drop-down list, select the version to which the ASDM upgrade has to be performed. Click Next when the appropriate versions have been selected.

Cisco.com Upgrade Wizard			×
Steps	Select Software		
1. Overview	Select the software you would li	ke to upgrade.	
2. Select Software	454		
3. Review Changes	Current ASA version 9.1(2)		
4. Installation	Upgrade to	9.1.6	-
5. Results	L	<u></u>	
	ASDM		
	Current ASDM version 7.1(3)0	-	
	Upgrade to	7.4.1	-
		7.2.1	A L
		7.2.2	
		7.3.1	
	Click "NEXT" to continue.	7.3.1.101	
		7.3.2	=
		7.3.2.102	
	< Back Next >	7.3.3	
		7.4.1	Ŧ

7. In the Review Changes section, review the changes and click Next.

Cisco.com Upgrade Wizard					
Steps 1. Overview 2. Select Software	Review Changes Review the changes that will be made by the wizard: 1) Download ASA 9, 1.6 from Cisco.com				
3. Review Changes	2) Upload ASA 9.1.6 to the device 3) Set ASA 9.1.6 as boot image				
4. Installation	4) Download ASDM 7.4.1 from Cisco.com				
5. Results	5) Upload ASDM 7.4.1 to the device 6) Set ASDM 7.4.1 as device manager image				
	After reviewing these actions, click "NEXT" to continue, or "BACK" to make changes.				
(	< Back Next > Canc	el			

8. The installation of the images starts and the overall progress can be seen as shown. Once completed, click Finish.

In the Results section, check the Save configuration and reload device now option. Click Finish.

Cisco.com Upgrade Wizard	
Steps	Results
1. Overview	The installation completed successfully.
2. Select Software	Changes will take effect next time the device is reloaded. It is
3. Review Changes	changes his take effect lext and the device is reloaded. This
4. Installation	Save configuration and reload device now
5. Results	
	Click "FINISH" to exit the wizard and send any configuration
	< Back Next > Finish Cancel

9. The Reload Status dialog box displays while the device reloads.

🔄 Reload Status	×
Notification (4/9/15 2:29:38 PM): Shutting down License Controller	*
Notification (4/9/15 2:29:38 PM): Shutting down License Controller	
Notification (4/9/15 2:29:39 PM): Shutting down File system	
Notification (4/9/15 2:29:39 PM):	-
*** SHUTDOWN NOW	=
*** Message to all terminals:	
*** Upgrading system image	•
Don't show this dialog again. To view reload status in the future, go to Tools > Sy Reload and click the Details button.	ystem
Refresh Force Immediate Reload Exit ASD	M

10. Click Exit ASDM and log in again once the device comes up after reload.

### Use CLI to Upgrade a Software Image and ASDM Image

A TFTP server is required to upgrade or downgrade a software image, as well as an ASDM image for a ASA. Refer to <u>TFTP Server Selection and Use</u> to learn more about TFTP server selection.

The copy tftp flash command enables a software image to download into the Flash memory of the firewall by TFTP. Use the copy tftp flash command with any security appliance model. The image downloaded can now be used on the next reboot by a change of the boot system variable to point to this image.

This is the output from the copy tftp flash command:

```
copy tftp[:[[//location] [/tftp_pathname]]] [[flash/disk0][:[image | asdm]]]
```

For multiple context mode, perform these steps in the system execution space.

#### **Note**: For ASA, keyword disk0 replaces flash in the **copy** command.

If the command is used without the location or pathname optional parameters, then the location and filename are obtained from the user interactively by a series of questions similar to those presented by Cisco IOS® software. If only a colon is entered, parameters are taken from the tftp-server command settings. If other optional parameters are supplied, then these values are used in place of the associated tftp-server command setting. If any of the optional parameters, such as a colon and anything after it are supplied, the command runs without a prompt for user input.

The location is either an IP address or a name that resolves to an IP address by the security appliance name resolution mechanism, which is currently static mapped by the name and names commands. The security appliance must know how to reach this location by its routing table information. This information is determined by the IP address, the route, or the **RIP** commands. This depends on your configuration.

The pathname can include any directory names besides the actual last component of the path to the file on the server. The pathname cannot contain spaces. If a directory name has spaces, set to the directory in the TFTP server instead of in the copy tftp flash command. And if your TFTP server is configured to point to a directory on the system from which you download the image, only use the IP address of the system and the image filename. The TFTP server receives the command and determines the actual file location from its root directory information. The server then downloads the TFTP image to the security appliance.

These commands are needed to upgrade the software image, as well as the ASDM image, and make it as a boot image at the next reload.

<#root>
ASA
#copy tftp [[flash:/disk0:][software image name/asdm image name]]
!--- Command to set an image as bootup or specify the
!--- ASDM image file.
ASA(config)
#boot system [flash:/disk0:]/[software image name]
!--- Save active configuration to the Flash.
ASA
#write memory
!--- Reboot the security appliance and load
!--- with the new boot image as per the configuration file.

ASA

#reload

#### Example:

<#root> ASA-5512# copy tftp: disk0: Address or name of remote host []? 172.16.31.1 Source filename []? asa916-smp-k8.bin Destination filename [asa916-smp-k8.bin]? Writing file disk0:/asa916-smp-k8.bin... 38043648 bytes copied in 32.290 secs (1188864 bytes/sec) ASA-5512# sh disk0 --#-- --length-- ----date/time----- path 191 38191104 Nov 21 2014 21:07:48 asa912-smp-k8.bin 192 17906032 Apr 08 2015 22:33:44 asdm-713.bin 193 26350916 Apr 09 2015 06:28:20 asdm-741.bin 194 38043648 May 10 2015 02:14:06 asa916-smp-k8.bin 4118732800 bytes total (3556712448 bytes free) !--- Command to set "asa916-smp-k8.bin" as the boot image. ASA-5512(config) # boot system disk0:/asa916-smp-k8.bin !--- Command to set "asdm-741.bin" as the ASDM image. ASA-5512(config) # asdm image disk0:/asdm-741.bin ASA-5512 # write memory ASA-5512 # reload

Note: When you try to upgrade the image on the ASA from an FTP server, use the copy ftp flash command. This command allows parameters, such as remote IP address and source file name to be

specified. This procedure is similar to TFTP. However, one limitation is that you cannot modify the remote IP/source interface (like you can with TFTP). In TFTP mode, options specified with the tftp-server command can be pulled and executed. But with FTP, there is no such option. By default, the source interface is always the outside, which cannot be modified. That is, the FTP server is reachable from the outside interface.

## Verify

Use this section to confirm the software upgrade was successful.

The <u>Cisco CLI Analyzer</u> (<u>registered</u> customers only) supports certain show commands. Use the Cisco CLI Analyzer to view an analysis of the show command output.

After the ASA reloads and successfully logged into ASDM again, verify the version of the image that runs on the device. See the General tab on the Home window for this information.

Cisco ASDM 7.4 for ASA - 10.106.45.231	
File View Tools Wizards Window Help	
Home 🖓 Configuration 🔯 Monitoring 🔚 Save 🔇 Refresh 🔇 Back 🔇 Forward 🦓 Help	
Device List 🗇 🕂 🗡	Home
🕈 Add  📋 Delete 🚿 Connect	E Device Dashboard Firewall Dashboard
Find: Go	Device Information General License
	Host Name: ASA-5512
	ASA Version: 9.1(6) Device Uptime: 0d 0h 11m 6s
	ASDM Version: 7.4(1) Device Type: ASA 5512
	Firewall Mode: Routed Context Mode: Single
	Environment Status: 🖶 OK Total Flash: 4096 MB

These CLI commands are used to verify the upgrade:

- 1. Show version This shows the current image with which the ASA is booted.
- 2. Show bootvar This shows the priority of the image to be used after reload.
- 3. Show asdmimage This shows the current ASDM image used by the ASA.

#### Troubleshoot

There is currently no specific information available to troubleshoot this configuration.

#### **Related Information**

- <u>Release Notes</u>
- <u>Cisco ASA New Features by Release</u>
- <u>Cisco ASA Compatibility</u>
- Planning Your Upgrade
- Upgrade an Active/Standby Failover Configuration