

Cisco Firepower 4100/9300 FXOS Compatibility

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This document lists software and hardware compatibility information for the Firepower eXtensible Operating System (FXOS), Cisco Firepower 9300 and Cisco Firepower 4100 series security appliances, and supported logical devices.

Software and Hardware Compatibility

The following table lists the supported FXOS versions and security appliance models.



Note Firepower 1000 and Firepower 2100 series appliances utilize FXOS only as an underlying operating system that is included in the ASA and threat defense unified image bundles. Refer to the ASA Compatibility and Threat Defense Compatibility guides for information about Firepower 1000/2100 series compatibility.

Table 1: Software and Hardware Compatibility

FXOS Release	Security Appliance Model								
	9300	4110	4112	4115	4120	4125	4140	4145	4150
1.1.1	YES	NO	NO	NO	NO	NO	NO	NO	NO
1.1.2	YES	NO	NO	NO	NO	NO	NO	NO	NO
1.1.3	YES	NO	NO	NO	NO	NO	NO	NO	NO
1.1.4	YES	YES	NO	NO	YES	NO	YES	NO	NO
2.0.1	YES	YES	NO	NO	YES	NO	YES	NO	YES Note: Requires ASA 9.6(2) or FTD 6.1
2.1.1	YES	YES	NO	NO	YES	NO	YES	NO	YES
2.2.1	YES	YES	NO	NO	YES	NO	YES	NO	YES
2.2.2	YES	YES	NO	NO	YES	NO	YES	NO	YES

FXOS Release	Security Appliance Model								
	9300	4110	4112	4115	4120	4125	4140	4145	4150
2.3.1	YES	YES	NO	NO	YES	NO	YES	NO	YES
2.4.1	YES	YES	NO	NO	YES	NO	YES	NO	YES
2.6.1	YES	YES	NO	YES Note: Requires ASA 9.12(1) or FTD 6.4 or later	YES	YES Note: Requires ASA 9.12(1) or FTD 6.4 or later	YES	YES Note: Requires ASA 9.12(1) or FTD 6.4 or later	YES
2.7.1	YES	YES	NO	YES	YES	YES	YES	YES	YES
2.8.1	YES	YES	YES Note: Requires ASA 9.14(1) or FTD 6.6 or later	YES	YES	YES	YES	YES	YES
2.9.1	YES	YES	YES	YES	YES	YES	YES	YES	YES
2.10.1	YES	YES	YES	YES	YES	YES	YES	YES	YES
2.11.1	YES	YES	YES	YES	YES	YES	YES	YES	YES
2.12.0	YES	YES	YES	YES	YES	YES	YES	YES	YES

Firepower 4100/9300 Compatibility with ASA and Threat Defense

The following table lists compatibility between the ASA or threat defense applications with the Firepower 4100/9300.

The FXOS versions with (EoL) appended have reached their end of life (EoL), or end of support.



Note The **bold** versions listed below are specially-qualified companion releases. You should use these software combinations whenever possible because Cisco performs enhanced testing for these combinations.



Note Firepower 1000/2100 appliances utilize FXOS only as an underlying operating system that is included in the ASA and threat defense unified image bundles.

Table 2: ASA or Threat Defense, and Firepower 4100/9300 Compatibility

FXOS Version	Model	ASA Version	Threat Defense Version
Note FXOS 2.12(0.31)+ does 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 that are paired with 2.12(0.31)+, such as 9.13 or 9.12, are not affected.	Firepower 4112	9.18(x) (recommended)	7.2.0 (recommended)
		9.17(x)	7.1.0
		9.16(x)	7.0.0
		9.15(1)	6.7.0
		9.14(x)	6.6.x
	Firepower 4145	9.18(x) (recommended)	7.2.0 (recommended)
	Firepower 4125	9.17(x)	7.1.0
	Firepower 4115	9.16(x)	7.0.0
	Firepower 9300 SM-56	9.15(1)	6.7.0
	Firepower 9300 SM-48	9.14(x)	6.6.x
	Firepower 9300 SM-40	9.13(1)	6.5.0
		9.12(x)	6.4.0
	Firepower 4150	9.18(x) (recommended)	7.2.0 (recommended)
	Firepower 4140	9.17(x)	7.1.0
	Firepower 4120	9.16(x)	7.0.0
	Firepower 4110	9.15(1)	6.7.0
	Firepower 9300 SM-44	9.14(x)	6.6.x
	Firepower 9300 SM-36	9.13(x)	6.5.0
	Firepower 9300 SM-24	9.12(x)	6.4.0
		9.10(x)	6.3.0
	9.9(x)		
	9.8(x)		

FXOS Version	Model	ASA Version	Threat Defense Version
Note FXOS 2.11(1.154)+ does 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 that are paired with 2.11(1.154)+, such as 9.13 or 9.12, are not affected.	Firepower 4112	9.17(x) (recommended)	7.1.0 (recommended)
		9.16(x)	7.0.0
		9.15(1)	6.7.0
		9.14(x)	6.6.x
	Firepower 4145 Firepower 4125 Firepower 4115	9.17(x) (recommended)	7.1.0 (recommended)
		9.16(x)	7.0.0
		9.15(1)	6.7.0
		9.14(x)	6.6.x
		9.13(1)	6.5.0
		9.12(x)	6.4.0
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110	9.17(x) (recommended)	7.1.0 (recommended)
		9.16(x)	7.0.0
		9.15(1)	6.7.0
		9.14(x)	6.6.x
		9.13(x)	6.5.0
		9.12(x)	6.4.0
		9.10(x)	6.3.0
		9.9(x)	
	Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	9.8(x)	
		9.13(x)	6.5.0
9.12(x)		6.4.0	
9.10(x)		6.3.0	
Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24	9.9(x)		
	9.13(x)	6.5.0	
	9.12(x)	6.4.0	
	9.10(x)	6.3.0	
Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24	9.9(x)		
	9.13(x)	6.5.0	
	9.12(x)	6.4.0	
	9.10(x)	6.3.0	

FXOS Version	Model	ASA Version	Threat Defense Version
Note FXOS 2.10(1.159)+ does 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 that are paired with 2.10(1.159)+, such as 9.13 or 9.12, are not affected.	Firepower 4112	9.16(x) (recommended) 9.15(1) 9.14(x)	7.0.0 (recommended) 6.7.0 6.6.x
	Firepower 4145	9.16(x) (recommended) 9.15(1) 9.14(x)	7.0.0 (recommended) 6.7.0 6.6.x
	Firepower 4125		
	Firepower 4115		
	Firepower 9300 SM-56	9.13(1)	6.5.0
	Firepower 9300 SM-48	9.12(x)	6.4.0
	Firepower 9300 SM-40		
	Firepower 4150	9.16(x) (recommended) 9.15(1) 9.14(x) 9.13(x) 9.12(x) 9.10(x) 9.9(x) 9.8(x)	7.0.0 (recommended) 6.7.0 6.6.x 6.5.0 6.4.0 6.3.0
	Firepower 4140		
	Firepower 4120		
	Firepower 4110		
	Firepower 9300 SM-44		
	Firepower 9300 SM-36		
	Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Threat Defense Version
Note FXOS 2.9(1.131)+ does 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 that are paired with 2.9(1.131)+, such as 9.13 or 9.12, are not affected.	Firepower 4112	9.15(1) (recommended) 9.14(x)	6.7.0 (recommended) 6.6.x
	Firepower 4145	9.15(1) (recommended) 9.14(x) 9.13(1) 9.12(x)	6.7.0 (recommended) 6.6.x 6.5.0 6.4.0
	Firepower 4125		
	Firepower 4115		
	Firepower 9300 SM-56		
	Firepower 9300 SM-48	9.15(1) (recommended) 9.14(x) 9.13(x) 9.12(x) 9.10(x) 9.9(x) 9.8(x)	6.7.0 (recommended) 6.6.x 6.5.0 6.4.0 6.3.0
	Firepower 9300 SM-40		
	Firepower 4150		
	Firepower 4140		
	Firepower 4120		
	Firepower 4110		
	Firepower 9300 SM-44		
	Firepower 9300 SM-36		
	Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Threat Defense Version
2.8(1.105)+	Firepower 4112	9.14(x)	6.6.x
Note FXOS 2.8(1.125)+ does 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 that are paired with 2.8(1.125)+, such as 9.13 or 9.12, are not affected.	Firepower 4145	9.14(x) (recommended)	6.6.x (recommended)
	Firepower 4125	9.13(1)	Note 6.6.1+ requires FXOS 2.8(1.125)+.
	Firepower 4115	9.12(x)	
	Firepower 9300 SM-56	Note Firepower 9300 SM-56 requires ASA 9.12(2)+	6.5.0
	Firepower 9300 SM-48		6.4.0
	Firepower 9300 SM-40		
	Firepower 4150	9.14(x) (recommended)	6.6.x (recommended)
	Firepower 4140	9.13(x)	Note 6.6.1+ requires FXOS 2.8(1.125)+.
	Firepower 4120	9.12(x)	
	Firepower 4110	9.10(x)	6.5.0
Firepower 9300 SM-44	9.9(x)	6.4.0	
Firepower 9300 SM-36	9.8(x)	6.3.0	
Firepower 9300 SM-24	9.6(4)	6.2.3	
			6.2.0
2.7(1.92)+	Firepower 4145	9.13(1) (recommended)	6.5.0 (recommended)
	Firepower 4125	9.12(x)	6.4.0
	Firepower 4115	Note Firepower 9300 SM-56 requires ASA 9.12.2+	
	Firepower 9300 SM-56		
	Firepower 9300 SM-48		
	Firepower 9300 SM-40		
	Firepower 4150	9.13(1) (recommended)	6.5.0 (recommended)
	Firepower 4140	9.12(x)	6.4.0
	Firepower 4120	9.10(1)	6.3.0
	Firepower 4110	9.9(x)	6.2.3
	Firepower 9300 SM-44	9.8(x)	6.2.2
	Firepower 9300 SM-36	9.6(4)	6.2.0
	Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	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 Firepower 9300 SM-56 Firepower 9300 SM-48 Firepower 9300 SM-40	9.12(x) Note Firepower 9300 SM-56 requires ASA 9.12.2+	6.4.0
	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110 Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24	9.12(x) (recommended) 9.10(1) 9.9(x) 9.8(x) 9.6(4) Note 9.7(x) is not supported.	6.4.0 (recommended) 6.3.0 6.2.3 6.2.2 6.2.0 6.1.0
2.6(1.131)	Firepower 9300 SM-48 Firepower 9300 SM-40 Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110 Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24	9.12(x) 9.12(x) (recommended) 9.10(1) 9.9(x) 9.8(x) 9.6(4) Note 9.7(x) is not supported.	Not supported
2.4(1.214)+ Note FXOS 2.4(1.238)+ is required for hardware bypass. For more information, see the Important Notes section of the Cisco Firepower 4100/9300 FXOS Release Notes, 2.4(1) .	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110 Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24	9.10(1) (recommended) 9.9(x) 9.8(x) 9.6(3), 9.6(4) Note 9.7(x) is not supported.	6.3.0 (recommended) 6.2.3 6.2.2 6.2.0 6.1.0

FXOS Version	Model	ASA Version	Threat Defense Version
2.4(1.101)	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110 Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24	9.10(1) (recommended) 9.9(x) 9.8(x) 9.6(3), 9.6(4) Note 9.7(x) is not supported.	Not supported
2.3(1.73)+	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110 Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24	9.9(x) (recommended) 9.8(x) 9.7(x) 9.6(3), 9.6(4) 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+ 6.2.2 6.2.0 6.1.0 Note 6.2.2.2+ is required for flow offload when running FXOS 2.3(1.130)+.
2.3(1.66) 2.3(1.58) 2.3(1.56) Note FXOS 2.3(1.56), which was briefly available on Cisco.com, is no longer supported. For more information, see the Cisco FXOS Release Notes, 2.3(1).	Firepower 4150 Firepower 4140 Firepower 4120 Firepower 4110 Firepower 9300 SM-44 Firepower 9300 SM-36 Firepower 9300 SM-24	9.9(x) (recommended) 9.8(x) 9.7(x) 9.6(3), 9.6(4) Note 9.8(2.12)+ is required for flow offload when running FXOS 2.3(1.130)+.	6.2.2 (recommended) 6.2.2 6.2.0 6.1.0 Note 6.2.2.2+ is required for flow offload when running FXOS 2.3(1.130)+.

FXOS Version	Model	ASA Version	Threat Defense Version
2.2(2)	Firepower 4150	9.8(x) (recommended)	6.2.2 (recommended) 6.2.0 Note 6.2.2+ is required for flow offload when running FXOS 2.2(2.91)+.
	Firepower 4140		
	Firepower 4120		
	Firepower 4110		
	Firepower 9300 SM-44		
	Firepower 9300 SM-36 Firepower 9300 SM-24		
2.2(1)	Firepower 4150	9.8(1) (recommended) 9.7(x) Note 9.7(1.15)+ is required for flow offload.	6.2.0 (recommended) Note 6.2.0.3+ is required for flow offload.
	Firepower 4140		
	Firepower 4120		
	Firepower 4110		
	Firepower 9300 SM-44		
	Firepower 9300 SM-36 Firepower 9300 SM-24		
2.1(1) (EoL)	Firepower 4150	9.7(x) (recommended) 9.6(2), 9.6(3), 9.6(4)	6.2.0 (recommended) 6.1.0
	Firepower 4140		
	Firepower 4120		
	Firepower 4110		
	Firepower 9300 SM-44		
	Firepower 9300 SM-36 Firepower 9300 SM-24		
2.0(1)	Firepower 4150	9.6(2), 9.6(3), 9.6(4) (recommended) 9.6(1)	6.1.0 (recommended) 6.0.1
	Firepower 4140		
	Firepower 4120		
	Firepower 4110		
	Firepower 9300 SM-44		
	Firepower 9300 SM-36 Firepower 9300 SM-24		

FXOS Version	Model	ASA Version	Threat Defense Version
1.1(4)	Firepower 4140 Firepower 4120 Firepower 4110	9.6(1)	6.0.1 (recommended)
	Firepower 9300 SM-36 Firepower 9300 SM-24	9.6(1) (recommended) 9.5(2), 9.5(3)	
1.1(3)	Firepower 9300 SM-36 Firepower 9300 SM-24	9.5(2), 9.5(3) (recommended) 9.4(2)	Not supported
1.1(2)	Firepower 9300 SM-36 Firepower 9300 SM-24	9.4(2) (recommended) 9.4(1)	Not supported
1.1(1) (EoL)	Firepower 9300 SM-36 Firepower 9300 SM-24	9.4(1) (recommended)	Not supported

Radware DefensePro Compatibility

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

Table 3: Radware DefensePro Compatibility

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

FXOS Version	ASA	Threat Defense	Radware DefensePro	Security Appliance Models
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
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
2.3(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
2.4(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
2.6(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

FXOS Version	ASA	Threat Defense	Radware DefensePro	Security Appliance Models
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
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
2.9.1	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

FXOS Version	ASA	Threat Defense	Radware DefensePro	Security Appliance Models
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
2.11.1	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
2.12.0	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

Network Module Support

The following table lists supported single-wide and double-wide network modules on the Firepower 9300 and Firepower 4100 security appliances.

**Note**

- The FXOS CLI output may show the base PID of the network module, which doesn't contain the 4K/9K prefix. For example, if you use the the FXOS CLI to view information about the FPR9K-NM-8X10G network module, it may appear as `Model : FPR-NM-8X10G`.
- For instructions on how to verify your firmware package version and to upgrade the firmware if necessary, see the Cisco Firepower 4100/9300 FXOS Firmware Upgrade Guide (<https://www.cisco.com/c/en/us/td/docs/security/firepower/fxos/firmware-upgrade/fxos-firmware-upgrade.html>).
- For instructions on how to upgrade FXOS on your Firepower 4100/9300, see the Cisco Firepower 4100/9300 Upgrade Guide (https://www.cisco.com/c/en/us/td/docs/security/firepower/fxos/upgrade/b_FXOSUpgrade.html).

Network Module	Firepower 9300	Firepower 4100 series
Firepower 8-port 10G Network Module single-wide	FPR9K-NM-8X10G	FPR4K-NM-8X10G
Firepower 4-port 40G Network Module single-wide	FPR9K-NM-4X40G	FPR4K-NM-4X40G
Firepower 2-port 100G Network Module double-wide	FPR9K-DNM-2X100G (FXOS 1.1.4 and later) Note: Requires firmware package 1.0.10 or later	Not supported
Firepower 6-port 1G SX Network Module single-wide, FTW	Not supported	FPR4K-NM-6X1SX-F (FXOS 2.0.1 and later)
Firepower 6-port 10G SR Network Module single-wide, FTW	FPR9K-NM-6X10SR-F (FXOS 2.0.1 and later)	FPR4K-NM-6X10SR-F (FXOS 2.0.1 and later)
Firepower 6-port 10G LR Network Module single-wide, FTW	FPR9K-NM-6X10LR-F (FXOS 2.0.1 and later)	FPR4K-NM-6X10LR-F (FXOS 2.0.1 and later)
Firepower 2-port 40G SR Network Module single-wide, FTW	FPR9K-NM-2X40G-F (FXOS 2.0.1 and later)	FPR4K-NM-2X40G-F (FXOS 2.0.1 and later)
Firepower 8-port 1G Network Module single-wide, FTW	Not supported	FPR-NM-8X1G-F (FXOS 2.1.1 and later; Firepower Threat Defense 6.2 and later)
Firepower 2-port 100G Network Module single-wide	FPR9K-NM-2X100G (FXOS 2.4.1 and later)	Not supported
Firepower 4-port 100G Network Module single-wide	FPR9K-NM-4X100G (FXOS 2.4.1 and later)	Not supported

Power Supply Support

The following table lists supported power supply modules on the Firepower 9300 and 4100 security appliances.

Table 4: Power Supply Support

Power Supply	Firepower Model								
	9300	4110	4112	4115	4120	4125	4140	4145	4150
AC	YES	YES	YES	YES	YES	YES	YES	YES	YES
DC	YES	YES	YES	YES	YES	YES	YES	YES	YES
HVDC	YES Note	NO Requires FXOS version 2.1.1 or later	NO	NO	NO	NO	NO	NO	NO

Note: For more detailed information about the power supply modules in the 4100 series security appliances, see “Power Supply Modules” in the Cisco Firepower 4100 Series Hardware Installation Guide (http://www.cisco.com/c/en/us/td/docs/security/firepower/4100/hw/guide/b_install_guide_4100.html). For more detailed information about the power supply modules in your 9300 security appliance, see “Power Supply Modules” in the Cisco Firepower 9300 Hardware Installation Guide (http://www.cisco.com/c/en/us/td/docs/security/firepower/9300/hw/guide/b_install_guide_9300.html).

Security Module Compatibility

Prior to 2.6, all security modules in the Firepower 9300 have to match.

In 2.6 and later, you can mix different types of security modules with the following caveats:

- Clustering is not supported on mixed modules in 2.6 and 2.7. However, in 2.8 and later, you can use mixed modules when using multi-instance clustering (a cluster with one container instance on each module). Native clustering still requires all the modules to be the same type.
- High Availability is only supported between same-type modules; but the two chassis can include mixed modules. For example, each chassis has an SM-36, SM-40, and SM-44. You can create HA pairs between the SM-36 modules, between the SM-40 modules, and between the SM-44 modules.

The following table lists supported security modules on the Firepower 9300.

Table 5: Security Module Compatibility

Security Module and Product ID	Description	FXOS Version
SM-24 (FPR9K-SM-24)	24-physical core security module with two SSDs (NEBS-compliant)	1.1.1 and later
SM-36 (FPR9K-SM-36)	36-physical core security module with two SSDs	1.1.1 and later
SM-40 (FPR9K-SM-40)	40-physical core security module with two SSDs	2.6.1 and later Note: Requires ASA 9.12(1) or FTD 6.4 and later
SM-44 (FPR9K-SM-44)	44-physical core security module with two SSDs	2.0.1 and later Note: Requires ASA 9.6(2) or FTD 6.1 and later
SM-48 (FPR9K-SM-48)	48-physical core security module with two SSDs	2.6.1 and later Note: Requires ASA 9.12(1) or FTD 6.4 and later
SM-56 (FPR9K-SM-56)	56-physical core security module with two SSDs	2.6.1 and later Note: Requires ASA 9.12(2) or FTD 6.4 and later

ASA and Threat Defense Clustering External Hardware Support

Clustering will work with both Cisco and non-Cisco switches from other major switching vendors with no known interoperability issues if they comply with the following requirements and recommendations.

Switch Requirements

- All third party switches must be compliant to the IEEE standard (802.3ad) Link Aggregation Control Protocol.
- EtherChannel bundling must be completed within 45 seconds when connected to Firepower devices and 33 seconds when connected to ASA devices.
- On the cluster control link, the switch must provide fully unimpeded unicast and broadcast connectivity at Layer 2 between all cluster members.
- On the cluster control link, the switch must not impose any limitations on IP addressing or the packet format above Layer 2 headers.
- On the cluster control link, the switch interfaces must support jumbo frames and be configurable for an MTU above 1600.

Switch Recommendations

- The switch should provide uniform traffic distribution over the EtherChannel's individual links.
- The switch should have an EtherChannel load-balancing algorithm that provides traffic symmetry.
- The EtherChannel load balance hash algorithm should be configurable using the 5-tuple, 4-tuple, or 2-tuple to calculate the hash.



Note For the Firepower 9300 cluster, intra-chassis clustering can operate with any switch because Firepower 9300-to-switch connections use standard interface types.



Note Some switches, such as the Nexus series, do not support LACP rate fast when performing in-service software upgrades (ISSUs), so we do not recommend using ISSUs with clustering.

Additional Resources

See the following additional resources:

- [Navigating the Cisco Firepower 4100/9300 FXOS Documentation](#) (documentation roadmap)
- [Cisco Firepower 4100/9300 FXOS Release Notes](#)
- [Cisco ASA Compatibility](#)
- [Cisco Firepower Compatibility](#)
- [Cisco's Next Generation Firewall Product Line Software Release and Sustaining Bulletin](#)