Installing and Removing the ASA 5585-X IPS SSP

Contents

This chapter describes the Cisco ASA 5585-X IPS SSP, and contains the following sections:

Warning   **Only trained and qualified personnel should install, replace, or service this equipment.** Statement 49

Installation Notes and Caveats

Pay attention to the following installation notes and caveats before installing the ASA 5585-X IPS SSP:

- Read the safety warnings in the *Regulatory Compliance and Safety Information for the Cisco ASA 5585-X Adaptive Security Appliance* document and follow proper safety procedures when performing the steps in this guide.
- The ASA 5585-X IPS SSP is supported in ASA 8.2(4.4) and later as well as ASA 8.4(2) and later. It is not supported in ASA 8.3(*x*).
- The ASA 5585-X IPS SSP does not require any cabling. If you have an ASA 5585-X IPS SSP, you can use the ASA 5585-X IPS SSP nonmanagement interfaces as additional network interfaces.
- Read through the entire guide before beginning any of the installation procedures.

Introducing the ASA 5585-X IPS SSP

You can install the Cisco Intrusion Prevention System Security Services Processor
(ASA 5585-X IPS SSP) in the ASA-5585-X adaptive security appliance. The ASA 5585-X is a 2RU, two-slot chassis. The Security Services Processor (ASA 5585-X SSP) resides in slot 0 (the bottom slot) and the ASA 5585-X IPS SSP resides in slot 1 (the top slot). All port numbers are numbered from right to left beginning with 0.

The ASA 5585-X series with the IPS SSP comes in four models:

- ASA 5585-X IPS-10 with IPS SSP-10
- ASA 5585-X IPS-20 with IPS SSP-20
- ASA 5585-X IPS-40 with IPS SSP-40
- ASA 5585-X IPS-60 with IPS SSP-60

In addition to world-class performance, the ASA 5585-X deploys encrypted traffic inspection, port density (up to 20 interfaces depending on the model), and feature performance matching, that is, performance parity between firewall and IPS functions. All ASA 5585-X series adaptive security appliances ship with a core SSP (ASA 5585-X SSP); the ASA 5585-X IPS SSP is optional. You must have the core SSP to run the ASA 5585-X IPS SSP.

⬥

Note   Online insertion and removal (OIR) of the security services processors is not supported at this time. SFP/SFP+, power supply module, and fan module OIR is supported.

IDM

The ASA 5585-X IPS SSP supports the Intrusion Prevention System Device Manager (IDM). The IDM delivers security management and monitoring through an intuitive, easy-to-use web-based management interface. The IDM is a Java Web Start application that enables you to configure and manage your ASA 5585-X IPS SSP. The IDM is bundled with IPS software. You can access it through Internet Explorer or Firefox web browsers.

IME

The Intrusion Prevention System Manager Express (IME) also supports the ASA 5585-X IPS SSP. The IME is a network management application that provides system health, events, and collaboration monitoring in addition to reporting and configuration for up to ten sensors. The IME monitors sensor health using customizable dashboards and provides security alerts through RSS feed integration from the Cisco Security Intelligence Operations site. It monitors global correlation data, which you can view in events and reports. It monitors events and lets you sort views by filtering, grouping, and colorization. The IME also supports tools such as ping, trace route, DNS lookup, and whois lookup for selected events. It contains a flexible reporting network. It embeds the IDM configuration component to allow for a seamless integration between the monitoring and configuration of IPS devices. Within the IME you can set up your sensors, configure policies, monitor IPS events, and generate reports. The IME works in single application mode—the entire application is installed on one system and you manage everything from that system.

ASA 5585-X SSP-10 With IPS SSP-10

The ASA 5585-X SSP-10 with IPS SSP-10 provides firewall, VPN support, intrusion prevention system protection, and 20 interfaces (2 SFP/SFP+ and 18 copper Gigabit Ethernet). The SSP-10 with IPS SSP-10 has one power supply module and one fan module. You can replace the fan module with

another power supply module for a redundant power supply configuration. The SSP-10 with IPS SSP-10 has two CPUs, six DIMM modules, two embedded crypto accelerator, and two dual-port 10-GB uplinks for the SFP/SFP+ interfaces.

ASA 5585-X SSP-20 With IPS SSP-20

The ASA 5585-X SSP-20 with IPS SSP-20 provides firewall, VPN support, intrusion prevention system protection, and 20 interfaces (2 SFP/SFP+ and 18 copper Gigabit Ethernet). The SSP-20 with IPS SSP-20 has one power supply module and one fan module. You can replace the fan module with another power supply module for a redundant power supply configuration. The SSP-20 with IPS SSP-20 has two CPUs, 12 DIMM modules, four embedded crypto accelerators, and two dual-port 10-GB uplinks for the SFP/SFP+ interfaces.

ASA 5585-X SSP-40 With IPS SSP-40

The ASA 5585-X SSP-40 with IPS SSP-40 provides firewall, VPN support, intrusion prevention system protection, and 20 interfaces (4 SFP/SFP+ and 16 copper Gigabit Ethernet). The SSP-40 with IPS SSP-40 has one power supply module and one fan module. You can replace the fan module with another power supply module for a redundant power supply configuration. The SSP-40 with IPS SSP-40 has four CPUs, 12 DIMM modules, six embedded crypto accelerators, and four dual-port 10-GB uplinks for the SFP/SFP+ interfaces.

ASA 5585-X SSP-60 With IPS SSP-60

The ASA 5585-X SSP-60 with IPS SSP-60 provides firewall, VPN support, intrusion prevention system protection, and 20 interfaces (4 SFP/SFP+ and 16 copper Gigabit Ethernet). The SSP-60 with IPS SSP-60 ships with two power supply modules; however, the SSP-60 with IPS SSP-60 can function with only one power supply module. Although the SSP-60 with IPS SSP-60 can also operate with only one power supply module, we recommend that you install two power supply modules for extended reliability since the power supply modules operate in load-sharing mode. If one fails in this configuration, the other power supply module can still handle the full load until the failed power supply module is replaced. The SSP-60 with IPS SSP-60 has four CPUs, 24 DIMM modules, eight embedded crypto accelerators, and four dual-port 10-GB uplinks for the SFP/SFP+ interfaces.

⚠ **Caution**   If you remove a power supply or fan module, replace it immediately to prevent disruption of service.

Specifications

Table 5-1 lists the specifications for the ASA 5585-X IPS SSP.

Table 5-1   *ASA 5585-X IPS SSP Specifications*

Height	1.70 in
Width	17.00 in
Depth	15.50 in
Weight	11.50 lb
Temperature	Operating 32 to 104°F (0 to 40°C) Nonoperating -40°F to 167°F (-40°C to 75°C)
Relative humidity (noncondensing)	Operating 10% to 90% Nonoperating 5% to 95%

Hardware and Software Requirements

The ASA 5585-X IPS SSP has the following hardware and software requirements:

- Cisco ASA 5585-X adaptive security appliance
  - ASA 5585-X SSP-10 with IPS SSP-10
  - ASA 5585-X SSP-20 with IPS SSP-20
  - ASA 5585-X SSP-40 with IPS SSP-40
  - ASA 5585-X SSP-60 with IPS SSP-60
- Cisco Adaptive Security Appliance Software ASA 8.2(4.4) and later
- Cisco Adaptive Security Appliance Software ASA 8.4(2) and later

> **Note** The ASA 5585-X IPS SSP is not supported in ASA 8.3(*x*).

- Cisco Intrusion Prevention System Software 7.1(1)E4 and later
- 3DES-enabled

Front Panel Features

This section describes the front features and indicators of the ASA 5585-X IPS SSP. The SFP and SFP+ modules are optional and not included with the ASA 5585-X IPS SSP. You can purchase them separately. For 10 Gb, you need SFP+. For 1 Gb, you need SFP. The two ports are the same, but you can only use 10 Gb if you buy a license. Otherwise, the ports are restricted to 1 Gb. The ports are always 10 GB-enabled for the IPS SSP-40 and IPS SSP-60. The interfaces are called TenGigabitEthernet 1/*x* whether they are 10 GB-enabled or not.

Figure 5-1 shows the front view of the IPS SSP-10 and IPS SSP-20.

> **Note** The illustration shows IPS SSP-10, but it applies to both the -10 and -20 models.

Figure 5-1   *IPS SSP-10 Front Panel View*
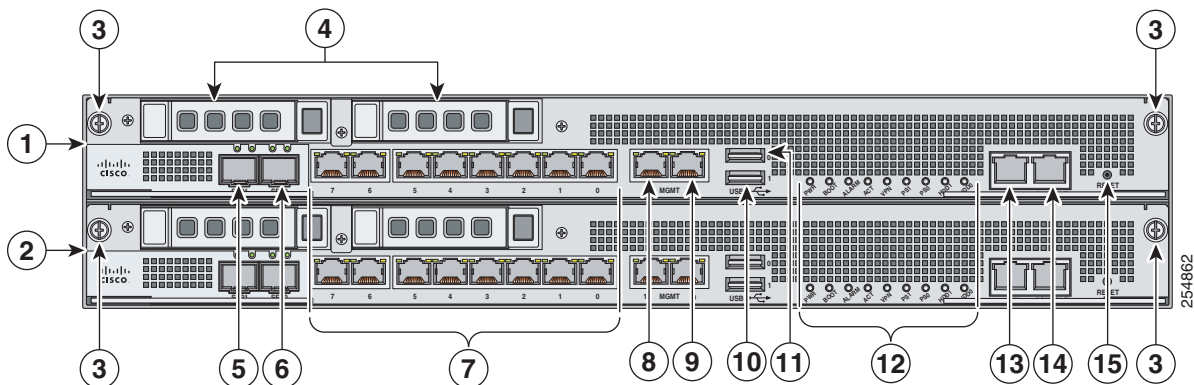
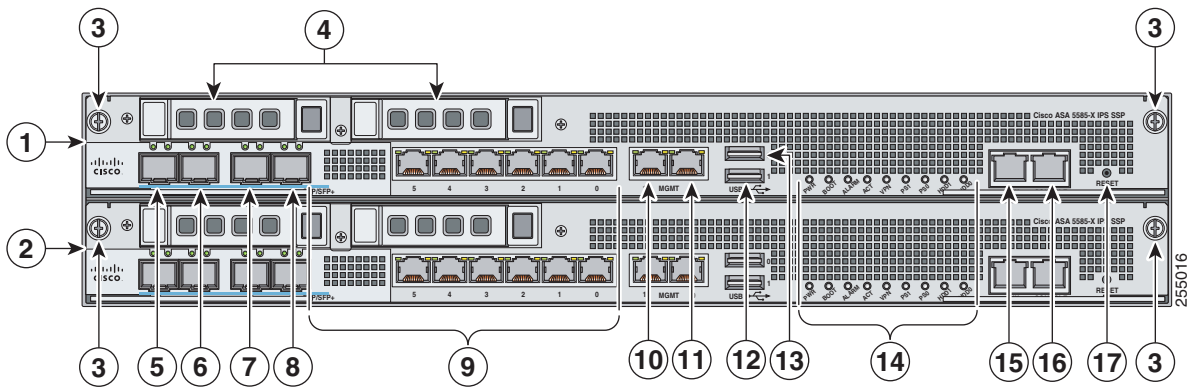| 1	ASA 5585-X IPS SSP (Slot 1)	9	Management 0/0 (GigabitEthernet RJ45)
2	SSP (Slot 0)	10	USB port
3	SSP/ASA 5585-X IPS SSP Removal Screws	11	USB port
4	Reserved bays for hard disk drives[1]	12	Front panel indicators
5	TenGigabitEthernet 0/1 (10-Gb fiber, SFP, or SFP+)	13	Auxiliary port (RJ45)
6	TenGigabitEthernet 0/0 (1-Gb fiber, SFP, or SFP+)	14	Console port (RJ45)
7	GigabitEthernet 1/0 through 1/7, from right to left (1-Gb copper, RJ45)	15	Eject[2]
8	Management 0/1 (GigabitEthernet RJ45)		

1. Hard disk drives are not supported at this time. The hard disk drive bays are empty.

2. Reserved for future use for OIR.

Figure 5-2 shows the front view of IPS SSP-40 and IPS SSP-60.

Note   The illustration shows IPS SSP-40, but it applies to both the -40 and the -60 models.

Figure 5-2   *IPS SSP-40 Front Panel View*


1	ASA 5585-X IPS SSP (slot 1)	10	Management 1/1 (GigabitEthernet RJ45)
2	SSP (slot 0)	11	Management 1/0 (GigabitEthernet RJ45)
3	SSP/ASA 5585-X IPS SSP removal screws	12	USB port
4	Reserved bays for hard disk drives[1]	13	USB port

5	TenGigabitEthernet 1/9 ((10-Gb fiber, SFP, or SFP+)	14	Front panel indicators
6	TenGigabitEthernet 1/8 (1-Gb fiber, SFP, or SFP+)	15	Auxiliary port (RJ45)
7	TenGigabitEthernet 1/7 (10-Gb fiber, SFP, or SFP+)	16	Console port (RJ45)
8	TenGigabitEthernet 0/6 (SSP in slot 2) TenGigabitEthernet 1/6 (ASA 5585-X IPS SSP in slot 1) (1-Gb fiber, SFP, or SFP+)	17	Eject[2]
9	GigabitEthernet 0/0 through 0/5 (SSP in slot 2) GigabitEthernet 1/0 through 1/5 (ASA 5585-X IPS SSP in slot 1) (from right to left, 1-Gb copper, RJ45)		

1. Hard disk drives are not supported at this time. The hard disk drive bays are empty.

2. Reserved for future use for OIR.

Figure 5-3 shows the front panel indicators.

Figure 5-3   *ASA 5585-X IPS SSP Front Panel Indicators*
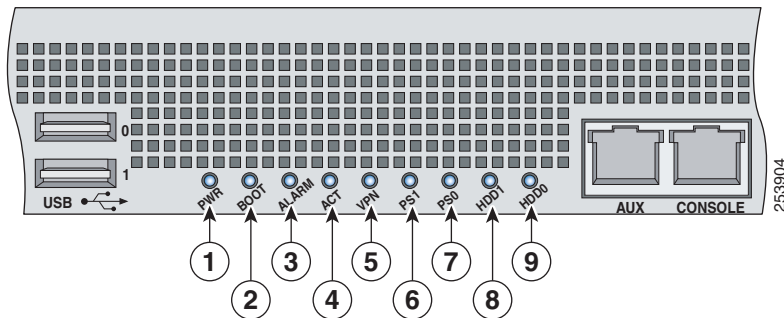
1	PWR	2	BOOT
3	ALARM	4	ACT
5	VPN	6	PS1
7	PS0	8	HDD1
9	HDD2		

Table 5-2 describes the front panel indicators on the ASA 5585-X IPS SSP.

Table 5-2   ASA 5585-X IPS SSP Front Panel Indicators

Indicator	Description
PWR	Indicates whether the system is off or on: • Off—No power. • Green—System has power.
BOOT	Indicates how the power-up diagnostics are proceeding: • Flashing green—Power-up diagnostics are running or the system is booting. • Green—System has passed power-up diagnostics. • Amber—Power-up diagnostics failed.
ALARM[1]	Indicates whether a component has failed: • Off—No alarm. • Flashing yellow—Critical alarm. Major failure of hardware component or software module, temperature over the limit, power out of tolerance, or OIR is ready to remove the module.[2].
ACT	Indicates the status of an HA pair: • Green—Status of an HA pair.
VPN	Indicates whether a VPN tunnel has been established: • Green—VPN tunnel is established.
PS1	Indicates the state of the power supply module installed on the right when facing the back panel: • Off—No power supply module present or no AC input. • Green—Power supply module present, on, and good. • Amber—Power or fan module off or failed.
PS0	Indicates the state of the power module installed on the left when facing the back panel: • Off—No power supply module present or no AC input. • Green—Power supply module present, on, and good. • Amber—Power or fan module off or failed.

Table 5-2   *ASA 5585-X IPS SSP Front Panel Indicators (continued)*

Indicator	Description
HDD1	N/A Indicates activity on the hard disk drive:[3] • Off—No hard disk drive present. • Flashing green—hard disk drive activity. • Amber—hard disk drive failure.
HDD2	N/A Indicates activity on the hard disk drive:[3] • Off—No hard disk drive present. • Flashing green—hard disk drive activity. • Amber—hard disk drive failure.

1. The Cisco ASA software does not support the ALARM indicator initially; support will be added at a later date.

2. OIR is not available at this time.

3. The hard disk drive bays are reserved for future use.

Table 5-3 shows the Ethernet port indicators.

Table 5-3   *Ethernet Port Indicators*

Indicator	Description
Gigabit Ethernet (RJ45)	• Left side: – Green—Physical activity – Flashing green—Network activity • Right side: – Not lit—10 Mbps – Green—100 Mbps – Amber—1000 Mbps

Table 5-3   Ethernet Port Indicators (continued)

Indicator	Description

10-Gigabit Ethernet Fiber (SFP+)/1-Gigabit Ethernet Fiber (SFP)	• Left side:
	  – Off—No 10-Gigabit Ethernet physical link
	  – Green—10-Gigabit Ethernet physical link
	  – Flashing green[1]—Network activity
	• Right side:
	  – Off—No 1-Gigabit Ethernet physical link
	  – Green—1-Gigabit Ethernet physical link
	  – Flashing green[1]—Network activity

Management port	• Right side:
	  – Green—Link to network
	• Left side
	  – Flashing green—Linked with activity on the network

1. Flashing green is in proportion to the percentage of number of packets or bytes received.

Memory Requirements

The ASA-5585-X has up to 6 DIMM modules per CPU. DIMM population is platform-dependent as seen in the following memory configurations:

- ASA 5585-X SSP-10 with IPS SSP-10—12-GB DRAM.
- ASA 5585-X SSP-20 with IPS SSP-20—24-GB DRAM.
- ASA 5585-X SSP-40 with IPS SSP-40—36-GB DRAM.
- ASA 5585-X SSP-60 with IPS SSP-60—72-GB DRAM.

SFP/SFP+ Modules

The SFP/SFP+ module is a hot-swappable input/output device that plugs into the SFP/SFP+ ports and provides Gigabit Ethernet connectivity. The SFP and SFP+ modules are optional and not included with the ASA 5585-X IPS SSPASA 5585-X. You can purchase them separately. For 1 Gb, you need SFP. For 10Gb, you need SFP+. The two ports are the same, but you can only use 10 Gb if you buy a license for the SSP-10 and IPS-20. Otherwise, the ports are restricted to 1 Gb. The ports are always 10 Gb-enabled for the SSP-40 and IPS-60. The interfaces are called TenGigabitEthernet 0/*x* for the SSP and TenGigabitEthernet 1/*x* for the ASA 5585-X IPS SSP whether they are 10 Gb-enabled or not.

Table 5-4 lists the SFP/SFP+ modules that the ASA 5585-X IPS SSP supportsASA 5585-X supports.

Table 5-4   SFP/SFP+ Modules

1G SFP Module	
GLC-SX-MM	1000 Base-SX SFP module
GLC-SX-MMD	1000BASE-SX short wavelength, with DOM
GLC-LH-SM	1000 Base-LX/LH SFP module
GLC-LH-SMD	1000BASE-LX/LH long-wavelength, with DOM
GLC-T	1000BASE-T standard
10G SFP+ Module	
SFP-10G-ER	10G ER SFP+ module
SFP-10G-SR	10G SR SFP+ module
SFP-10G-LRM	10G LRM SFP+ module
SFP-10G-LR	10G LR SFP+ module
SFP-H10GB-ACU7M	10GBASE-CU SFP+ Cable 7 Meter, active
SFP-H10GB-ACU10M	10GBASE-CU SFP+ Cable 10 Meter, active
SFP-H10GB-CU1M	10GBASE-CU SFP+ cable 1 meter, passive
SFP-H10GB-CU3M	10GBASE-CU SFP+ cable 3 meter, passive
SFP-H10GB-CU5M	10GBASE-CU SFP+ cable 5 meter, passive

Installing the ASA 5585-X IPS SSP

The ASA 5585-X comes with a core SSP already installed (SSP-10, SSP-20, SSP-40, or SSP-60). You can install an optional ASA 5585-X IPS SSP (IPS SSP-10, IPS SSP-20, IPS SSP-40, or IPS SSP-60).

Note   The ASA 5585-X IPS SSP must be at the same level as the ASA 5585-X SSP model; for example, if you have the ASA 5585-X with SSP-10, you can only install the IPS SSP-10.

The ASA 5585-X IPS SSP will not run without the core SSP installed. You must install the ASA 5585-X IPS SSP in the upper slot (slot 1) and the core SSP in the bottom slot (slot 0). You must power off the ASA 5585-X to remove and install SSPs. The SSPs are not hot-swappable.
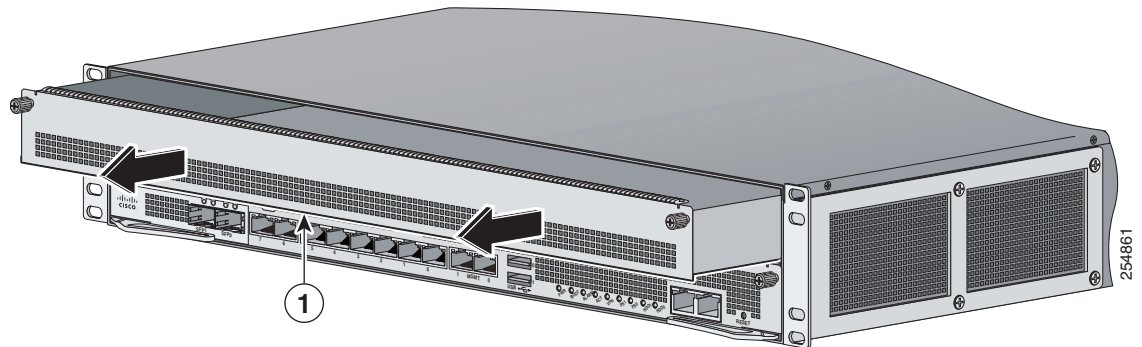
To install the ASA 5585-X IPS SSP in the ASA 5585-X for the first time, follow these steps:

Step 1   Power off the ASA 5585-X.

**Step 2**   Remove the power cable from the ASA 5585-X.

Step 3   From the front panel of the ASA 5585-X, loosen the captive screws on the upper left and right of the slot tray (slot 1), and remove it. Store it in a safe place for future use.

> ✎
>
> **Note**   You must install slot trays in all empty slots to maintain the proper air flow. This prevents EMI, which can disrupt other equipment.

Step 4   Install the ASA 5585-X IPS SSP by lining it up with the module slot making sure the ejection levers are extended.
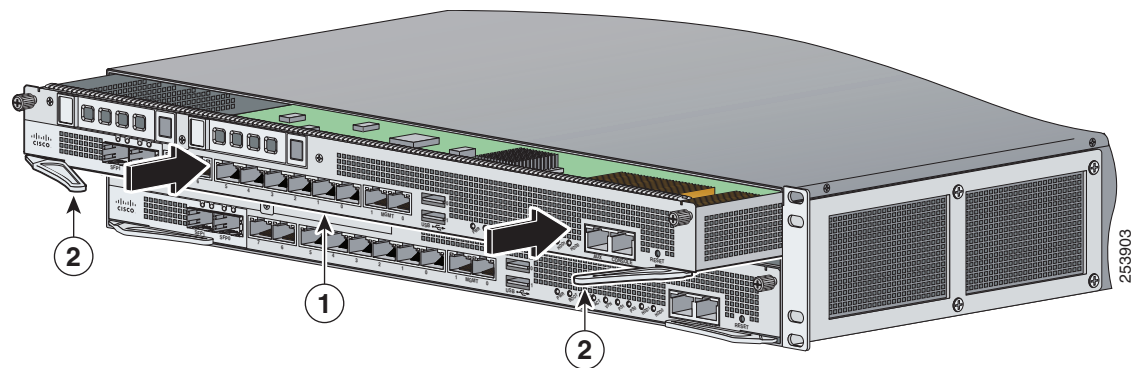
1	ASA 5585-X IPS SSP	**2**	Ejection levers

Step 5   Slide the ASA 5585-X IPS SSP in to the slot until it is seated and push the ejection levers back in to place.

Step 6   Tighten the screws.

Step 7   Reconnect the power cable to the ASA 5585-X.

Step 8   Power on the ASA 5585-X.

Step 9   Verify that the PWR indicator on the front panel is green. You can also verify that the ASA 5585-X IPS SSP is online using the **show module 1** command.

Step 10   Initialize the ASA 5585-X IPS SSP.

Step 11   Configure the ASA 5585-X IPS SSP to receive IPS traffic.

For More Information

- For more information about ESD, see Preventing Electrostatic Discharge Damage, page 2-3.
- For the procedure for verifying that the ASA 5585-X IPS SSP is properly installed, see Verifying the Status of the ASA 5585-X IPS SSP, page 5-13.
- For the procedure for using the **setup** command to initialize the ASA 5585-X IPS SSP, see Appendix B, "Initializing the Sensor."
- For the procedure for configuring the ASA 5585-X IPS SSP to receive IPS traffic, refer to Configuring the ASA 5585-X IPS SSP.
- For detailed information about the ASA 5585-X, refer to *Cisco ASA 5585-X Adaptive Security Appliance Hardware Installation Guide*.

Installing SFP/SFP+ Modules

The IPS SSP-10 and IPS SSP-20 have two SFP/SFP+ ports. The IPS SSP-40 and IPS SSP-60 have four SFP/SFP+ ports. If you are using the fiber ports, you need an SFP+ module for 10-Gigabit Ethernet (a license may be required) or an SFP module for 1-Gigabit Ethernet (SFP or SFP+ modules are not included).

Note Make sure the ASA software version that is installed on your ASA 5585-X supports the network module. Refer to the Release Notes for your ASA software version to verify that the network module is supported.

Note Only SFP/SFP+ modules certified by Cisco are supported on the adaptive security appliance 5585-X.

Caution Protect your SFP/SFP+ modules by inserting clean dust plugs into the SFP/SFP+ modules after the cables are extracted from them. Be sure to clean the optic surfaces of the fiber cables before you plug them back into the optical bores of another SFP/SFP+ module. Avoid getting dust and other contaminants into the optical bores of your SFP/SFP+ modules. The optics do not operate correctly when obstructed with dust.
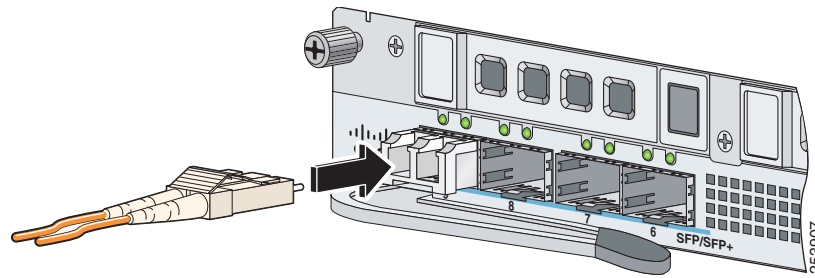
Warning **Because invisible laser radiation may be emitted from the aperture of the port when no cable is connected, avoid exposure to laser radiation and do not stare into open apertures. Statement 70**

To connect to the SFP/SFP+ port if you are using fiber ports, follow these steps:

Step 1   Install the SFP/SFP+ module.
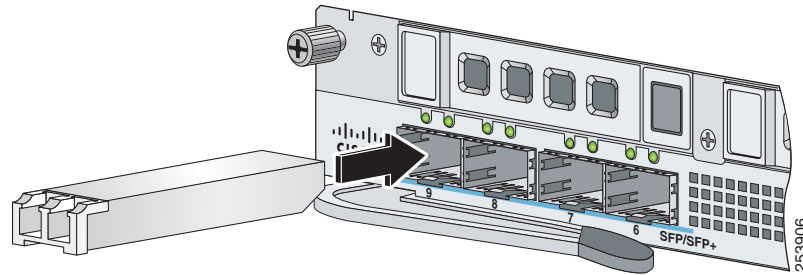
Step 2   Connect one end of the LC cable to the SFP/SFP+.

Step 3   Connect the other end of the LC cable to a network device, such as a router or switch.

For More Information

For a table listing the supported SFP/SFP+ modules, see SFP/SFP+ Modules, page 5-9.

Verifying the Status of the ASA 5585-X IPS SSP

You can use the **show module 1** command to verify that the ASA 5585-X IPS SSP is up and running.

The following values are valid for the Status field:

- `Initializing`—The ASA 5585-X IPS SSP is being detected and the control communication is being initialized by the system.

- `Up`—The ASA 5585-X IPS SSP has completed initialization by the system.

- `Unresponsive`—The system encountered an error communicating with the ASA 5585-X IPS SSP.

- `Reloading`—The ASA 5585-X IPS SSP is reloading.

- `Shutting Down`—The ASA 5585-X IPS SSP is shutting down.

- `Down`—The ASA 5585-X IPS SSP is shut down.

- `Recover`—The ASA 5585-X IPS SSP is attempting to download a recovery image.

To verify the status of the ASA 5585-X IPS SSP, follow these steps:

Step 1   Log in to the adaptive security appliance.

Step 2   Verify the status of the ASA 5585-X IPS SSP:

```
asa# show module 1

Mod Card Type                                      Model              Serial No.
--- -------------------------------------------- ------------------ -----------
  1 ASA 5585-X IPS Security Services Processor-2 ASA5585-SSP-IPS20  ABC1234D56E

Mod MAC Address Range                Hw Version   Fw Version   Sw Version
--- ------------------------------ ------------ ------------ ----------------
  1 0001.0001.0001 to 0001.0001.000c  1.0          2.0(7)0      7.2(1)E4

Mod SSM Application Name           Status           SSM Application Version
--- ---------------------------- ---------------- ---------------------------
  1 IPS                          Up               7.2(1)E4

Mod Status             Data Plane Status     Compatibility
--- ----------------- -------------------- -------------
  1 Up                Up
```

If the status reads Up, the ASA 5585-X IPS SSP has been properly installed.

Removing and Replacing the ASA 5585-X IPS SSP

To remove and replace the ASA 5585-X IPS SSP in the ASA 5585-X, follow these steps:

Step 1   Shut down the ASA 5585-X IPS SSP.

```
asa# hw-module module 1 shutdown
Shutdown module in slot 1? [confirm]
```

Step 2   Press **Enter** to confirm.

Step 3   Verify that the ASA 5585-X IPS SSP is shut down by checking the indicators.

Step 4   Power off the ASA 5585-X.

Step 5   Remove the power cable from the ASA 5585-X.

Step 6   From the front panel of the ASA 5585-X, loosen the captive screws on the upper left and right of the ASA 5585-X IPS SSP in slot 1.

Step 7   Grasp the ejection levers at the left and right bottom of the module slot and pull them out.
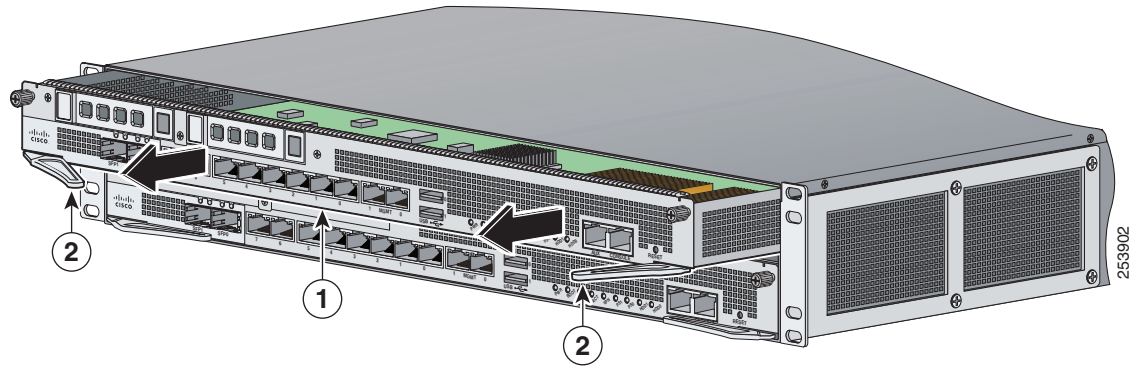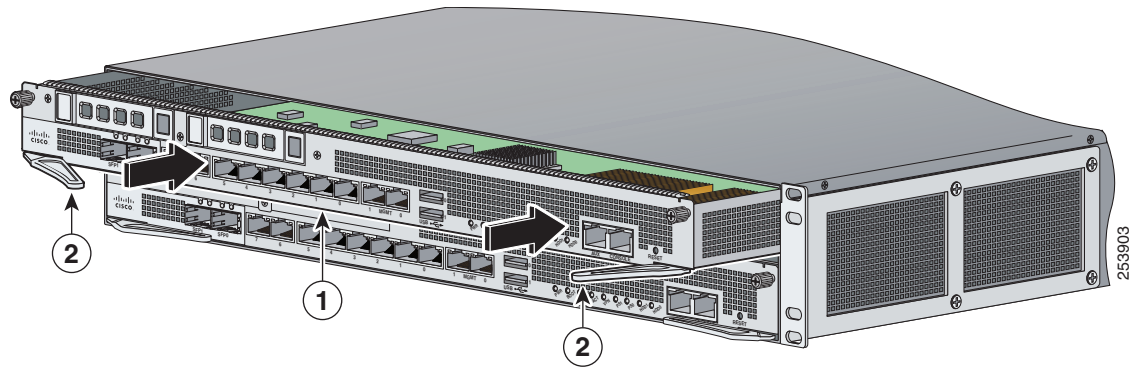

1	ASA 5585-X IPS SSP	**2**	Ejection levers

Step 8   Grasp the sides of the ASA 5585-X IPS SSP and pull it all the way out of the chassis and set it aside.

> **Note**   If you are not replacing the ASA 5585-X IPS SSP immediately, install the blank slot tray. You must install slot trays in all empty slots to maintain the proper air flow. This prevents EMI, which can disrupt other equipment.

Step 9   If you are replacing the ASA 5585-X IPS SSP, install it by lining it up with the module slot making sure the ejection levers are extended.

1	ASA 5585-X IPS SSP	**2**	Ejection levers

> **Note**   The ASA 5585-X IPS SSP must be at the same level as the ASA 5585-X SSP model; for example, if you have the ASA 5585-X SSP-10, you can only install the ASA 5585-X IPS SSP-10.

Step 10   Slide the ASA 5585-X IPS SSP in to the slot until it is seated, and push the ejection levers back in to place.

Step 11   Replace the screws.

Step 12   Reconnect the power cable to the ASA 5585-X.

Step 13   Power on the ASA 5585-X.

Step 14   Verify that the PWR indicator on the front panel is green. You can also verify that the
ASA 5585-X IPS SSP is online using the **show module 1** command.

For More Information

- For the procedure for using the **show module 1** command, see Verifying the Status of the ASA 5585-X IPS SSP, page 5-13.

- For detailed information about the ASA 5585-X, refer to *Cisco ASA 5585-X Adaptive Security Appliance Hardware Installation Guide*.