



Release Notes for Cisco Intrusion Prevention System 7.3(5)E4

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IPS File List



Note

Use the 4520 files to update the IPS 4520-XL.

The following files are part of Cisco IPS 7.3(5)E4:

- Readme
 - IPS-7-3-5-E4_ReadMe.txt
- SHA512 checksums for 7.3(5)E4
- Service Pack Upgrade Files
 - IPS-4345-K9-7.3-5-E4.pkg
 - IPS-4360-K9-7.3-5-E4.pkg
 - IPS-4510-K9-7.3-5-E4.pkg
 - IPS-4520-K9-7.3-5-E4.pkg
 - IPS-SSP_10-K9-7.3-5-E4.pkg
 - IPS-SSP_20-K9-7.3-5-E4.pkg
 - IPS-SSP_40-K9-7.3-5-E4.pkg
 - IPS-SSP_60-K9-7.3-5-E4.pkg
 - IPS-SSP_5512-K9-7.3-5-E4.pkg
 - IPS-SSP_5515-K9-7.3-5-E4.pkg
 - IPS-SSP_5525-K9-7.3-5-E4.pkg
 - IPS-SSP_5545-K9-7.3-5-E4.pkg
 - IPS-SSP_5555-K9-7.3-5-E4.pkg
- System Image Files
 - IPS-4345-K9-sys-1.1-a-7.3-5-E4.img
 - IPS-4360-K9-sys-1.1-a-7.3-5-E4.img
 - IPS-4510-K9-sys-1.1-a-7.3-5-E4.img
 - IPS-4520-K9-sys-1.1-a-7.3-5-E4.img
 - IPS-SSP_10-K9-sys-1.1-a-7.3-5-E4.img
 - IPS-SSP_20-K9-sys-1.1-a-7.3-5-E4.img
 - IPS-SSP_40-K9-sys-1.1-a-7.3-5-E4.img
 - IPS-SSP_60-K9-sys-1.1-a-7.3-5-E4.img
 - IPS-SSP_5512-K9-sys-1.1-a-7.3-5-E4.aip
 - IPS-SSP_5515-K9-sys-1.1-a-7.3-5-E4.aip

- IPS-SSP_5525-K9-sys-1.1-a-7.3-5-E4.aip
- IPS-SSP_5545-K9-sys-1.1-a-7.3-5-E4.aip
- IPS-SSP_5555-K9-sys-1.1-a-7.3-5-E4.aip
- Recovery Image Files
 - IPS-4345-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-4360-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-4510-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-4520-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-SSP_10-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-SSP_20-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-SSP_40-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-SSP_60-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-SSP_5512-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-SSP_5515-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-SSP_5525-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-SSP_5545-K9-r-1.1-a-7.3-5-E4.pkg
 - IPS-SSP_5555-K9-r-1.1-a-7.3-5-E4.pkg
- CSM Service Pack File
 - IPS-CSM-K9-7.3-5-E4.zip

Supported Platforms

Cisco IPS 7.3(5)E4 is supported on the following platforms:

- IPS 4345
- IPS 4345-DC
- IPS 4360
- IPS 4510
- IPS 4520
- IPS 4520-XL
- ASA 5512-X IPS SSP
- ASA 5515-X IPS SSP
- ASA 5525-X IPS SSP
- ASA 5545-X IPS SSP
- ASA 5555-X IPS SSP
- ASA 5585-X IPS SSP-10
- ASA 5585-X IPS SSP-20
- ASA 5585-X IPS SSP-40
- ASA 5585-X IPS SSP-60

Supported Servers

The following FTP servers are supported for IPS software updates:

- WU-FTPD 2.6.2 (Linux)
- Solaris 2.8
- Sambar 6.0 (Windows 2000)
- Serv-U 5.0 (Windows 2000)
- MS IIS 5.0 (Windows 2000)

ROMMON and TFTP

ROMMON uses TFTP to download an image and launch it. TFTP does not address network issues such as latency or error recovery. It does implement a limited packet integrity check so that packets arriving in sequence with the correct integrity value have an extremely low probability of error. But TFTP does not offer pipelining so the total transfer time is equal to the number of packets to be transferred times the network average RTT. Because of this limitation, we recommend that the TFTP server be located on the same LAN segment as the sensor. Any network with an RTT less than a 100 milliseconds should provide reliable delivery of the image. Be aware that some TFTP servers limit the maximum file size that can be transferred to ~32 MB.

IPS Management and Event Viewers

Use the following tools for configuring Cisco IPS 7.3(5)E4 sensors:

- Cisco IDM 7.3.5
IDM 7.3.5 is included within the IPS 7.3(5)E4 files.
IDM 7.3.5 is included within IME 7.2.7.
IDM 7.3.5 requires JRE 1.6 or later.
You can use IDM 7.3.5 to configure IPS 7.3 sensors.
- Cisco IME 7.2.7
You can use IME 7.2.7 or later to configure IPS 6.1, 6.2, 7.0, 7.1, 7.2 and 7.3 sensors.
- IPS CLI included in IPS 7.3(5)E4.
- Cisco ASDM 6.3.4 and later.

Use the following tools for monitoring Cisco IPS 7.3(5)E4 sensors:

- IDM 7.3.5
- IME 7.2.7
- CSM 4.6 SP1 or later
You can use CSM 4.6 SP1 to manage the following IPS sensors:
 - IPS 4345
 - IPS 4345-DC
 - IPS 4360

- IPS 4510
- IPS 4520
- IPS 4520-XL
- ASA 5585-X IPS SSP-10
- ASA 5585-X IPS SSP-20
- ASA 5585-X IPS SSP-40
- ASA 5585-X IPS SSP-60
- ASA 5512-X IPS SSP
- ASA 5515-X IPS SSP
- ASA 5525-X IPS SSP
- ASA 5545-X IPS SSP
- ASA 5555-X IPS SSP

**Note**

You may need to configure viewers that are already configured to monitor the earlier version sensors to accept a new SSL certificate for the Cisco IPS 7.3 sensors.

For More Information

For the procedure to apply IPS 7.3(5)E4 to sensors using CSM 4.4 SP1 or later, see [Applying IPS 7.3\(5\)E4 to sensors using CSM 4.6 SP1 or Later, page 10](#).

New and Changed Information

Cisco IPS 7.3(5)E4 contains the following new and changed information:

- IDM 7.3.5
- Signature update S900
- The ASA 5585-X IPS SSP series and ASA 5500-X IPS SSP series are added back to the IPS 7.3 line.
- This release supports functionality related to Enhanced Security and Manageability.
- To use automatic signature upgrades in 7.3(5), you must accept a EULA at the link that is emailed to the registered Cisco account used to configure the automatic upgrade service.
- You need IPS 7.3(5) to use auto update, global correlation, and network participation after migration of the SHA-2 Certificates on the Cisco web sites.

AC Power Supply in the IPS 4300 Series V01 and V02 Chassis

The Cisco IPS 4300 series sensors with the AC power supply can restore the previous power state of the system if AC power is lost. Earlier IPS 4300s (V01) require you to turn on the power with the power switch. Newer IPS 4300s (V02) automatically turn on when you plug in the power cable.

To determine your version, do one of the following:

- At the CLI, enter the **show inventory** command and look for V01 or V02 in the output.
- On the back of the chassis, look at the VID PID label for V01 or V02.

The V01 chassis has the following limitations (these limitations do not apply to the V02 chassis):

- The sensor requires 50 seconds from the time that AC power is applied before the power state can be updated and stored. This means that any changes to the power state within the first 50 seconds of applying AC power will not be observed if AC power is removed within that time.
- The sensor requires 10 seconds from the time it is placed into standby mode before the power state can be updated and stored. This means any changes to the power state within the first 10 seconds of entering standby mode (including the standby mode itself) will not be observed if AC power is removed within that time.

For More Information

For information on the AC power supplies in the IPS 4300 series sensors, refer to [Installing the IPS 4345 and IPS 4360](#).

Obtaining Software

You can find major and minor updates, service packs, signature and signature engine updates, system and recovery files, firmware upgrades, and Readmes on the Download Software site on Cisco.com. Signature updates are posted to Cisco.com approximately every week, more often if needed. Service packs are posted to Cisco.com in a release train format, a new release every three months. Major and minor updates are also posted periodically. Check Cisco.com regularly for the latest IPS software.

You must have an account with cryptographic access before you can download software. You set this account up the first time you download IPS software from the Download Software site.



Note

You must be logged in to Cisco.com to download software. You must have an active IPS maintenance contract and a Cisco.com password to download software. You must have a sensor license to apply signature updates.

Downloading Cisco IPS Software

To download software on Cisco.com, follow these steps:

- Step 1** Log in to [Cisco.com](#).
- Step 2** From the Support drop-down menu, choose **Download Software**.
- Step 3** Under Select a Software Product Category, choose **Security Software**.
- Step 4** Choose **Intrusion Prevention System (IPS)**.
- Step 5** Enter your username and password.
- Step 6** In the Download Software window, choose **IPS Appliances > Cisco Intrusion Prevention System** and then click the version you want to download.



Note

You must have an IPS subscription service license to download software.

- Step 7** Click the type of software file you need. The available files appear in a list in the right side of the window. You can sort by file name, file size, memory, and release date. And you can access the Release Notes and other product documentation.
- Step 8** Click the file you want to download. The file details appear.

- Step 9** Verify that it is the correct file, and click **Download**.
- Step 10** Click **Agree** to accept the software download rules. The File Download dialog box appears. The first time you download a file from Cisco.com, you must fill in the Encryption Software Export Distribution Authorization form before you can download the software.
- a. Fill out the form and click **Submit**. The Cisco Systems Inc. Encryption Software Usage Handling and Distribution Policy appears.
 - b. Read the policy and click **I Accept**. The Encryption Software Export/Distribution Form appears.
- If you previously filled out the Encryption Software Export Distribution Authorization form, and read and accepted the Cisco Systems Inc. Encryption Software Usage Handling and Distribution Policy, these forms are not displayed again.
- Step 11** Open the file or save it to your computer.
- Step 12** Follow the instructions in the Readme or the Release Notes to install the update.
-

Upgrading to IPS 7.3(5)E4

This section describes how to upgrade the IPS 4345, IPS 4360, IPS 4510, IPS 4520, IPS 4520-XL, ASA 5500-X IPS SSP series, and ASA 5585-X IPS SSP series, and contains the following topics:

- [Upgrade Notes and Caveats, page 7](#)
- [Upgrading the Sensor, page 8](#)

Upgrade Notes and Caveats

Pay attention to the following upgrade notes and caveats when upgrading to IPS 7.3(5)E4:

- You cannot upgrade to 7.3(5)E4 if the sensor license was generated for 6.0.x versions and earlier. The upgrade fails and the following message is displayed:


```
Error: execUpgradeSoftware : This license is a IPS version 6.0 or earlier license
which is not compatible with platforms running 7.1.X IPS Versions. Please install a
IPS version 6.1 or later license type. Refer to 7.3.X IPS version README or IPS
documents for the details of generating a new license.
```
- Anomaly detection has been disabled by default. If you did not configure the operation mode manually before the upgrade, it defaults to inactive after you upgrade to IPS 7.3(5)E4. If you configured the operation mode to detect, learn, or inactive, the tuned value is preserved after the upgrade.
- You must have a valid maintenance contract per sensor to download software upgrades from Cisco.com.
- You must be running the following versions to upgrade the following platforms to IPS 7.3(5)E4:
 - For the IPS 4300 series sensors and ASA 5500-X IPS SSP, you must be running IPS 7.1(3)E4 or later
 - For the IPS 4500 series sensors, you must be running IPS 7.1(4)E4 or later
 - For the ASA 5585-X IPS SSP series, you must be running IPS 7.1(1)E4 or later.
- This service pack automatically reboots the sensor to apply the changes. During reboot, inline network traffic is disrupted.

- You cannot uninstall 7.3(5)E4. To revert to a previous version, you must reimage the sensor using the appropriate system image file. All configuration settings are lost.
- To use automatic signature upgrades in 7.3(5), you must accept a EULA at the link that is emailed to the registered Cisco account used to configure the automatic upgrade service.

For More Information

- For the procedure to download software from Cisco.com, see [Obtaining Software, page 6](#).
- For the procedure for using the **upgrade** command to upgrade the sensor, see [Upgrading the Sensor, page 8](#).
- For the procedure for installing the IPS 4345 and IPS 4560 system images, see [Installing the IPS 4345 and IPS 4360 System Image, page 11](#).
- For the procedure installing the IPS 4510 and IPS 4520 system images, see [Installing the IPS 4510 and IPS 4520 System Image, page 14](#).
- For the procedure for installing the ASA 5500-X IPS SSP system image, see [Installing the ASA 5500-X IPS SSP System Image, page 16](#).
- For the procedure for installing the ASA 5585-X IPS SSP system image, see [Installing the ASA 5585-X IPS SSP System Image, page 18](#).

Upgrading the Sensor

Use the **upgrade** *source-url* command to apply service pack, signature update, engine update, minor version, major version, or recovery partition file upgrades.

The following options apply:

- *source-url*—Specifies the location of the source file to be copied:
 - ftp:—Source URL for an FTP network server. The syntax for this prefix is:
ftp://[[username@]location][relativeDirectory]/filename
ftp://[[username@]location][absoluteDirectory]/filename



Note You are prompted for a password.

- scp:—Source URL for the SCP network server. The syntax for this prefix is:
scp://[[username@]location][relativeDirectory]/filename
scp://[[username@]location][absoluteDirectory]/filename



Note You are prompted for a password. You must add the remote host to the SSH known hosts list.

- http:—Source URL for the web server. The syntax for this prefix is:
http://[[username@]location][directory]/filename



Note The directory specification should be an absolute path to the desired file.

- https:—Source URL for the web server. The syntax for this prefix is:
https://[[username@]location][directory]/filename



Note The directory specification should be an absolute path to the desired file. The remote host must be a TLS trusted host.

Upgrading the Sensor

To upgrade the sensor, follow these steps:

Step 1 Download the appropriate file to an FTP, SCP, HTTP, or HTTPS server that is accessible from your sensor.

Step 2 Log in to the CLI using an account with administrator privileges.

Step 3 Enter configuration mode.

```
sensor# configure terminal
```

Step 4 Upgrade the sensor.

```
sensor(config)# upgrade url/IPS-4360-K9-7.3-5-E4.pkg
```

The URL points to where the update file is located, for example, to retrieve the update using FTP, enter the following:

```
sensor(config)# upgrade ftp://username@ip_address//directory/IPS-4360-K9-7.3-5-E4.pkg
```

Step 5 Enter the password when prompted.

```
Enter password: *****
```

Step 6 Enter **yes** to complete the upgrade.



Note Major updates, minor updates, and service packs may force a restart of the IPS processes or even force a reboot of the sensor to complete installation.



Note The operating system is reimaged and all files that have been placed on the sensor through the service account are removed.

Step 7 Verify your new sensor version.

```
sensor# show version
```

```
Application Partition:
```

```
Cisco Intrusion Prevention System, Version 7.3(5)E4
```

```
Host:
```

```
  Realm Keys                key1.0
```

```
Signature Definition:
```

```
  Signature Update          S842.0        2015-7-17
```

```
  Threat Profile Version    9
```

```
OS Version:                2.6.29.1
```

```
Platform:                  IPS-4360
```

```
Serial Number:             FGL165141E4
```

```
No license present
```

```
Sensor up-time is 2 min.
```

Using 14353M out of 15943M bytes of available memory (90% usage) system is using 32.5M out of 160.0M bytes of available disk space (20% usage) application-data is using 85.5M out of 376.4M bytes of available disk space (24% usage) boot is using 63.6M out of 70.2M bytes of available disk space (95% usage) application-log is using 494.0M out of 513.0M bytes of available disk space (96% usage)

MainApp	C-2015_01_07_00_42_7_3_2_6	(Release)	2015-01-07T00:50:27-0600
Running			
AnalysisEngine	C-2015_01_07_00_42_7_3_2_6	(Release)	2015-01-07T00:50:27-0600
Running			
CollaborationApp	C-2015_01_07_00_42_7_3_2_6	(Release)	2015-01-07T00:50:27-0600
Running			
CLI	C-2015_01_07_00_42_7_3_2_6	(Release)	2015-01-07T00:50:27-0600

Upgrade History:

IPS-K9-7.3-5-E4 16:43:07 UTC Tue Jul 7 2015

Recovery Partition Version 1.1 - 7.3(5)E4

Host Certificate Valid from: 01-Jul-2015 to 01-Feb-2017

sensor#

For More Information

For a list of the specific IPS upgrade filenames, see [IPS File List, page 2](#).

Applying IPS 7.3(5)E4 to sensors using CSM 4.6 SP1 or Later



Note

We recommend that you upgrade to CSM 4.6 SP1 (Service Pack 1) to manage sensors running IPS 7.3(5)E4.

To apply the 7.3(5)E4 service pack to sensors using CSM 4.6 SP1 or later, follow these steps:

- Step 1** Download the service pack ZIP file, IPS-CSM-K9-7.3-5-E4.zip, to the <CSM-install-dir>/MDC/ips/updates directory.
- Step 2** Launch the IPS Update Wizard from **Tools > Apply IPS Update**.
- Step 3** Select Sensor Updates from the drop down menu, and then select the IPS-CSM-K9-7.3-5-E4.zip file.
- Step 4** Click **Next**.
- Step 5** Select the device(s) to which you want to apply the service pack, then click **Finish**.
- Step 6** Create a deployment job and deploy to sensor(s) using Deployment Manager. You can launch Deployment Manager from **Tools > Deployment Manager**.
- Step 7** Click **Deploy** in the popup and follow the instructions.

Reimaging the Sensor

This section describes how to reimage the sensor using the system image, and contains the following topics:

- [Installing the IPS 4345 and IPS 4360 System Image, page 11](#)
- [Installing the IPS 4510 and IPS 4520 System Image, page 14](#)
- [Installing the ASA 5500-X IPS SSP System Image, page 16](#)
- [Installing the ASA 5585-X IPS SSP System Image, page 18](#)

Installing the IPS 4345 and IPS 4360 System Image

You can install the IPS 4345 and IPS 4360 system image by using the ROMMON on the appliance to TFTP the system image on to the compact flash device.


Note

This procedure is for IPS 4345, but is also applicable to IPS 4360. The system image for IPS 4360 has “4360” in the filename.

To install the IPS 4345 and IPS 4360 system image, follow these steps:

- Step 1** Download the IPS 4345 system image file to the tftp root directory of a TFTP server that is accessible from your IPS 4345.


Note

Make sure you can access the TFTP server location from the network connected to the Ethernet port of your IPS 4345.

- Step 2** Boot the IPS 4345.

Booting system, please wait...

```
CISCO SYSTEMS
Embedded BIOS Version 1.0(5)0 09/14/04 12:23:35.90
```

```
Low Memory: 631 KB
High Memory: 2048 MB
PCI Device Table.
Bus Dev Func VendID DevID Class Irq
00 00 00 8086 2578 Host Bridge
00 01 00 8086 2579 PCI-to-PCI Bridge
00 03 00 8086 257B PCI-to-PCI Bridge
00 1C 00 8086 25AE PCI-to-PCI Bridge
00 1D 00 8086 25A9 Serial Bus 11
00 1D 01 8086 25AA Serial Bus 10
00 1D 04 8086 25AB System
00 1D 05 8086 25AC IRQ Controller
00 1D 07 8086 25AD Serial Bus 9
00 1E 00 8086 244E PCI-to-PCI Bridge
00 1F 00 8086 25A1 ISA Bridge
00 1F 02 8086 25A3 IDE Controller 11
00 1F 03 8086 25A4 Serial Bus 5
00 1F 05 8086 25A6 Audio 5
02 01 00 8086 1075 Ethernet 11
03 01 00 177D 0003 Encrypt/Decrypt 9
```

```

03 02 00 8086 1079 Ethernet 9
03 02 01 8086 1079 Ethernet 9
03 03 00 8086 1079 Ethernet 9
03 03 01 8086 1079 Ethernet 9
04 02 00 8086 1209 Ethernet 11
04 03 00 8086 1209 Ethernet 5

```

```

Evaluating BIOS Options ...
Launch BIOS Extension to setup ROMMON

```

```
Cisco Systems ROMMON Version (1.0(5)0) #1: Tue Sep 14 12:20:30 PDT 2004
```

```

Platform IPS-4345-K9
Management0/0

```

```
MAC Address: 0000.c0ff.ee01
```

- Step 3** Press **Break** or **Esc** at the following prompt while the system is booting to interrupt boot. Press the spacebar to begin boot immediately.



Note You have ten seconds to press **Break** or **Esc**.

```

Use BREAK or ESC to interrupt boot.
Use SPACE to begin boot immediately.

```

The system enters ROMMON mode. The `rommon>` prompt appears.

- Step 4** Check the current network settings.

```
rommon> set
```

```

ROMMON Variable Settings:
ADDRESS=0.0.0.0
SERVER=0.0.0.0
GATEWAY=0.0.0.0
PORT=Management0/0
VLAN=untagged
IMAGE=
CONFIG=

```

The variables have the following definitions:

- Address—Local IP address of the IPS 4345.
- Server—TFTP server IP address where the application image is stored.
- Gateway—Gateway IP address used by the IPS 4345.
- Port—Ethernet interface used for the IPS 4345 management.
- VLAN—VLAN ID number (leave as untagged).
- Image—System image file/path name.
- Config—Unused by these platforms.



Note Not all values are required to establish network connectivity. The address, server, gateway, and image values are required. If you are not sure of the settings needed for your local environment, contact your system administrator.

- Step 5** If necessary, change the interface used for the TFTP download.



Note The default interface used for TFTP downloads is Management 0/0, which corresponds to the MGMT interface of the IPS 4345.

```
rommon> PORT=interface_name
```

Step 6 If necessary, assign an IP address for the local port on the IPS 4345.

```
rommon> ADDRESS=ip_address
```



Note Use the same IP address that is assigned to the IPS 4345.

Step 7 Assign the TFTP server IP address.

```
rommon> SERVER=ip_address
```

Step 8 If necessary, assign the gateway IP address.

```
rommon> GATEWAY=ip_address
```

Step 9 Verify that you have access to the TFTP server by pinging it from your local Ethernet port with one of the following commands:

```
rommon> ping server_ip_address
rommon> ping server
```

Step 10 If necessary define the path and filename on the TFTP file server from which you are downloading the image.

```
rommon> IMAGE=path file_name
```



Caution Make sure that you enter the **IMAGE** command in all uppercase. You can enter the other ROMMON commands in either lower case or upper case, but the **IMAGE** command specifically must be all uppercase.

UNIX Example

```
rommon> IMAGE=system_images IPS-4345-K9-sys-1.1-a-7.3-5-E4.img
```



Note The path is relative to the default tftpboot directory of the UNIX TFTP server. Images located in the default tftpboot directory do not have any directory names or slashes in the **IMAGE** specification.

Windows Example

```
rommon> IMAGE=system_images IPS-4345-K9-sys-1.1-a-7.3-5-E4.img
```

Step 11 Enter **set** and press **Enter** to verify the network settings.



Note You can use the **sync** command to store these settings in NVRAM so they are maintained across boots. Otherwise, you must enter this information each time you want to boot an image from ROMMON.

Step 12 Download and install the system image.

```
rommon> tftp
```

**Caution**

To avoid corrupting the system image, do not remove power from the IPS 4345 while the system image is being installed.

**Note**

If the network settings are correct, the system downloads and boots the specified image on the IPS 4345. Be sure to use the IPS 4345 image.

For More Information

- For the procedure for locating software, see [Obtaining Software, page 6](#).
- For a list of supported TFTP servers, see [Supported Servers, page 4](#).
- For a list of the specific IPS software files, see [IPS File List, page 2](#).
- For the procedure for initializing the sensor with the **setup** command, see [Initializing the Sensor, page 27](#).

Installing the IPS 4510 and IPS 4520 System Image

You can install the IPS 4510 and IPS 4520 system image by using the ROMMON on the appliance to TFTP the system image onto the compact flash device.

**Note**

The following procedure references the IPS 4510 but it also refers to the IPS 4520.

To install the IPS 4510 system image, follow these steps:

Step 1 Download the IPS 4510 system image file to the tftp root directory of a TFTP server that is accessible from your IPS 4510.

**Note**

Make sure you can access the TFTP server location from the network connected to the Management port of your IPS 4510.

Step 2 Boot the IPS 4510.

Step 3 Press **Break** or **Esc** at the following prompt while the system is booting to interrupt boot. Press the spacebar to begin boot immediately.

**Note**

You have ten seconds to press **Break** or **Esc**.

```
Use BREAK or ESC to interrupt boot.
Use SPACE to begin boot immediately.
```

The system enters ROMMON mode. The `rommon>` prompt appears.

Step 4 Check the current network settings.

```
rommon> set

ROMMON Variable Settings:
ADDRESS=0.0.0.0
SERVER=0.0.0.0
GATEWAY=0.0.0.0
PORT=Management0/0
VLAN=untagged
IMAGE=
CONFIG=
LINKTIMEOUT=20
PKTTIMEOUT=2
RETRY=20
```

The variables have the following definitions:

- Address—Specifies the local IP address of the IPS 4510.
- Server—Specifies the TFTP server IP address where the application image is stored.
- Gateway—Specifies the gateway IP address used by the IPS 4510.
- Port—Specifies the Ethernet interface used for IPS 4510 management.
- VLAN—Specifies the VLAN ID number (leave as untagged).
- Image—Specifies the system image file/path name.
- Config—Unused by these platforms.



Note Not all values are required to establish network connectivity. The address, server, gateway, and image values are required. If you are not sure of the settings needed for your local environment, contact your system administrator.

Step 5 If necessary, assign an IP address for the local port on the IPS 4510.

```
rommon> ADDRESS=ip_address
```



Note Use the same IP address that is assigned to the IPS 4510.

Step 6 If necessary, assign the TFTP server IP address.

```
rommon> SERVER=ip_address
```

Step 7 If necessary, assign the gateway IP address.

```
rommon> GATEWAY=ip_address
```

Step 8 Verify that you have access to the TFTP server by pinging it from your local Ethernet port with one of the following commands:

```
rommon> ping server_ip_address
rommon> ping server
```

Step 9 If necessary define the path and filename on the TFTP file server from which you are downloading the image.

```
rommon> IMAGE=path/file_name
```

UNIX Example

```
rommon> IMAGE=/system_images/IPS-4510-K9-sys-1.1-a-7.3-5-E4.img
```



Note The path is relative to the UNIX TFTP server default tftpboot directory. Images located in the default tftpboot directory do not have any directory names or slashes in the IMAGE specification.

Windows Example

```
rommon> IMAGE=\system_images\IPS-4510-K9-sys-1.1-a-7.3-5-E4.img
```

Step 10 Enter **set** and press **Enter** to verify the network settings.



Note You can use the **sync** command to store these settings in NVRAM so they are maintained across boots. Otherwise, you must enter this information each time you want to boot an image from ROMMON.

Step 11 Download and install the system image.

```
rommon> tftp
```

**Caution**

To avoid corrupting the system image, do not remove power from the IPS 4510 while the system image is being installed.

**Note**

If the network settings are correct, the system downloads and boots the specified image on the IPS 4510. Be sure to use the IPS 4510 image.

For More Information

- For the procedure for locating software, see [Obtaining Software, page 6](#).
- For a list of supported TFTP servers, see [Supported Servers, page 4](#).
- For a list of the specific IPS software files, see [IPS File List, page 2](#).
- For the procedure for initializing the sensor with the **setup** command, see [Initializing the Sensor, page 27](#).

Installing the ASA 5500-X IPS SSP System Image

**Note**

Be sure the TFTP server that you specify can transfer files up to 60 MB in size.

To install the system image on the ASA 5500-X IPS SSP, follow these steps:

- Step 1** Download the IPS system image file corresponding to your ASA platform to the tftp root directory of a TFTP server that is accessible from your adaptive security appliance.



Note Make sure you can access the TFTP server location from the network connected to the Ethernet port of the adaptive security appliance.

- Step 2** Log in to the adaptive security appliance.

- Step 3** Enter enable mode.

```
asa> enable
```

- Step 4** Copy the IPS image to the disk0 flash of the adaptive security appliance.

```
asa# copy tftp://192.0.2.0/directory/IPS-5545-K9-sys-1.1-a-7.3-5-E4.aip disk0:
```

- Step 5** Image the ASA 5500-X IPS SSP.

```
asa# sw-module module ips recover configure image
disk0:/IPS-SSP_5545-K9-sys-1.1-a-7.3-5-E4.aip
```

- Step 6** Execute the recovery. This transfers the image from the TFTP server to the ASA 5500-X IPS SSP and restarts it.

```
asa# sw-module module ips recover boot
```

- Step 7** Periodically check the recovery until it is complete.

```
asa# show module
```

Mod	Card	Type	Model	Serial No.
0		Cisco ASA 5545 Appliance with 8 GE ports, 1	ASA5545	ABC1234D56E
1		IPS 5545 Intrusion Protection System	IPS5545	ABC1234D56E

Mod	MAC Address Range	Hw Version	Fw Version	Sw Version
0	503d.e59c.6dc1 to 503d.e59c.6dca	1.0		8.6.1
ips	503d.e59c.6dcb to 503d.e59c.6dcb	N/A	N/A	7.3(5)E4

Mod	SSM Application Name	Status	SSM Application Version
1	IPS	Up	7.3(5)E4

Mod	Status	Data Plane Status	Compatibility
0	Up Sys	Not Applicable	
1	Up	Up	

```
asa#
```



Note The Status field in the output indicates the operational status of the ASA 5500-X IPS SSP. An ASA 5500-X IPS SSP operating normally shows a status of “Up.” While the adaptive security appliance transfers an application image to the ASA 5500-X IPS SSP, the Status field in the output reads “Recover.” When the adaptive security appliance completes the image transfer and restarts the ASA 5500-X IPS SSP, the newly transferred image is running.



Note To debug any errors that may happen in the recovery process, use the **debug module-boot** command to enable debugging of the system reimaging process.

Step 8 Session to the ASA 5500-X IPS SSP and initialize it with the **setup** command.

For More Information

- For the procedure for locating software, see [Obtaining Software, page 6](#).
- For a list of supported TFTP servers, see [Supported Servers, page 4](#).
- For a list of the specific IPS software files, see [IPS File List, page 2](#).
- For the procedure for initializing the sensor with the **setup** command, see [Initializing the Sensor, page 27](#).

Installing the ASA 5585-X IPS SSP System Image

This section describes how to install the ASA 5585-X IPS SSP system image using the **hw-module** command or ROMMON, and contains the following topics:

- [Using the hw-module Command, page 18](#)
- [Using ROMMON, page 20](#)

Using the hw-module Command

To install the system image, transfer the software image from a TFTP server to the ASA 5585-X IPS SSP using the adaptive security appliance CLI. The adaptive security appliance can communicate with the ROMMON application of the ASA 5585-X IPS SSP to transfer the image.



Note Be sure the TFTP server that you specify can transfer files up to 60 MB in size.



Note This process can take approximately 15 minutes to complete, depending on your network and the size of the image.

To install the ASA 5585-X IPS SSP software image, follow these steps:

Step 1 Download the ASA 5585-X IPS SSP system image file to the tftp root directory of a TFTP server that is accessible from your adaptive security appliance.



Note Make sure you can access the TFTP server location from the network connected to the Ethernet port of your adaptive security appliance.

Step 2 Log in to the adaptive security appliance.

Step 3 Enter enable mode.

```
asa# enable
```

Step 4 Configure the recovery settings for the ASA 5585-X IPS SSP.

```
asa (enable)# hw-module module 1 recover configure
```



Note If you make an error in the recovery configuration, use the **hw-module module 1 recover stop** command to stop the system reimaging and then you can correct the configuration.

Step 5 Specify the TFTP URL for the software image.

```
Image URL [tftp://0.0.0.0/]:
```

Example

```
Image URL [tftp://0.0.0.0/]: tftp://192.0.2.0/IPS-SSP_40-K9-sys-1.1-a-7.3-5-E4.img
```

Step 6 Specify the command and control interface of the ASA 5585-X IPS SSP.



Note The port IP address is the management IP address of the ASA 5585-X IPS SSP.

```
Port IP Address [0.0.0.0]:
```

Example

```
Port IP Address [0.0.0.0]: 10.89.149.231
```

Step 7 Leave the VLAN ID at 0.

```
VLAN ID [0]:
```

Step 8 Specify the default gateway of the ASA 5585-X IPS SSP.

```
Gateway IP Address [0.0.0.0]:
```

Example

```
Gateway IP Address [0.0.0.0]: 10.89.149.254
```

Step 9 Execute the recovery. This transfers the software image from the TFTP server to the ASA 5585-X IPS SSP and restarts it.

```
asa# hw-module module 1 recover boot
```

Step 10 Periodically check the recovery until it is complete.



Note The status reads `Recovery` during recovery and reads `Up` when installation is complete.

```
asa# show module 1 details
Getting details from the Service Module, please wait...
ASA 5585-X IPS Security Services Processor-10 with 8GE
Model:                ASA5585-SSP-IPS40
Hardware version:    1.0
Serial Number:       JAF1350ABSL
Firmware version:    2.0(1)3
Software version:    7.3(5)E4
MAC Address Range:   8843.e12f.5414 to 8843.e12f.541f
App. name:           IPS
App. Status:         Up
App. Status Desc:    Normal Operation
```

```

App. version:      7.3(5)E4
Data plane Status: Up
Status:           Up
Mgmt IP addr:     192.0.2.0
Mgmt Network mask: 255.255.255.0
Mgmt Gateway:    10.89.148.254
Mgmt Access List: 10.0.0.0/8
Mgmt Access List: 64.0.0.0/8
Mgmt web ports:   443
Mgmt TLS enabled  true
asa#

```



Note The Status field in the output indicates the operational status of the ASA 5585-X IPS SSP. An ASA 5585-X IPS SSP operating normally shows a status of “Up.” While the adaptive security appliance transfers the software image to the ASA 5585-X IPS SSP, the Status field in the output reads “Recover.” When the adaptive security appliance completes the software image transfer and restarts the ASA 5585-X IPS SSP, the newly transferred image is running.



Note To debug any errors that may happen during this process, use the **debug module-boot** command to enable debugging of the software installation process.

- Step 11** Session to the ASA 5585-X IPS SSP.
- Step 12** Enter `cisco` three times and your new password twice.
- Step 13** Initialize the ASA 5585-X IPS SSP with the **setup** command.

For More Information

- For the procedure for locating software, see [Obtaining Software, page 6](#).
- For a list of supported TFTP servers, see [Supported Servers, page 4](#).
- For a list of the specific IPS software files, see [IPS File List, page 2](#).
- For the procedure for initializing the sensor with the **setup** command, see [Initializing the Sensor, page 27](#).

Using ROMMON

You can install the ASA 5585-X IPS SSP system image by using the ROMMON on the adaptive security appliance to TFTP the system image onto the ASA 5585-X IPS SSP.

To install the ASA 5585-X IPS SSP system image, follow these steps:

- Step 1** Download the ASA 5585-X IPS SSP system image file to the tftp root directory of a TFTP server that is accessible from your adaptive security appliance.



Note Make sure you can access the TFTP server location from the network connected to the Ethernet port of your adaptive security appliance.

Step 2 Boot the ASA 5585-X IPS SSP.

Booting system, please wait...

```
CISCO SYSTEMS
Embedded BIOS Version 0.0(2)10 11:16:38 04/15/10
Com KbdBuf SMM UsbHid Msg0 Prompt Pmrt Cache1 LowM ExtM HugeM Cache2 Flg Siz0 Amrt PMM
PnpDsp Smbios Lpt0 Npx1 Apm Lp1 Acpi Typ Dbg Enb Mp MemReduce MemSync1 CallRoms MemSync2
DriveInit
```

```
Total memory : 12 GB
Total number of CPU cores : 8
Com Lp1 Admgr2 Brd10 Plx2 OEM0=7EFF5C74
Cisco Systems ROMMON Version (1.0(12)10) #0: Thu Apr 8 00:12:33 CDT 2010
```

```
Use BREAK or ESC to interrupt boot.
Use SPACE to begin boot immediately.
Boot interrupted.
```

```
Management0/0
Link is UP
MAC Address: 5475.d029.7fa9
```

Step 3 Press **Break** or **Esc** at the following prompt while the system is booting to interrupt boot. Press the spacebar to begin boot immediately.

Note You have ten seconds to press **Break** or **Esc**.

```
Use BREAK or ESC to interrupt boot.
Use SPACE to begin boot immediately.
```

The system enters ROMMON mode. The `rommon>` prompt appears.

Step 4 Check the current network settings.

```
rommon #0> set
ROMMON Variable Settings:
ADDRESS=0.0.0.0
SERVER=0.0.0.0
GATEWAY=0.0.0.0
PORT=Management0/0
VLAN=untagged
IMAGE=
CONFIG=
LINKTIMEOUT=20
PKTTIMEOUT=4
RETRY=20
```

The variables have the following definitions:

- Address—Specifies the local IP address of the ASA 5585-X IPS SSP.
- Server—Specifies the TFTP server IP address where the application image is stored.
- Gateway—Specifies the gateway IP address used by the ASA 5585-X IPS SSP.
- Port—Specifies the Ethernet interface used for the ASA 5585-X IPS SSP management.
- VLAN—Specifies the VLAN ID number (leave as untagged).
- Image—Specifies the system image file/path name.
- Config—Specifies the unused by these platforms.



Note Not all values are required to establish network connectivity. The address, server, gateway, and image values are required. If you are not sure of the settings needed for your local environment, contact your system administrator.

Step 5 If necessary, change the interface used for the TFTP download.



Note The default interface used for TFTP downloads is Management 0/0, which corresponds to the management interface of the ASA 5585-X IPS SSP.

```
rommon> PORT=interface_name
```

Step 6 If necessary, assign an IP address for the local port on the ASA 5585-X IPS SSP.

```
rommon> ADDRESS=ip_address
```



Note Use the same IP address that is assigned to the ASA 5585-X IPS SSP.

Step 7 If necessary, assign the TFTP server IP address.

```
rommon> SERVER=ip_address
```

Step 8 If necessary, assign the gateway IP address.

```
rommon> GATEWAY=ip_address
```

Step 9 Verify that you have access to the TFTP server by pinging it from your local Ethernet port with one of the following commands.

```
rommon> ping server_ip_address
rommon> ping server
```

Step 10 If necessary define the path and filename on the TFTP file server from which you are downloading the image.

```
rommon> IMAGE=path/file_name
```



Caution Make sure that you enter the **IMAGE** command in all uppercase. You can enter the other ROMMON commands in either lower case or upper case, but the **IMAGE** command specifically must be all uppercase.

UNIX Example

```
rommon> IMAGE=/system_images/IPS-SSP_10-K9-sys-1.1-a-7.3-5-E4.img
```



Note The path is relative to the default tftpboot directory of the UNIX TFTP server. Images located in the default tftpboot directory do not have any directory names or slashes in the IMAGE specification.

Windows Example

```
rommon> IMAGE=\system_images\IPS-SSP_10-K9-sys-1.1-a-7.3-5-E4.img
```

Step 11 Enter **set** and press **Enter** to verify the network settings.



Note You can use the **sync** command to store these settings in NVRAM so they are maintained across boots. Otherwise, you must enter this information each time you want to boot an image from ROMMON.

Step 12 Download and install the system image.

```
rommon> tftp
```



Note If the network settings are correct, the system downloads and boots the specified image on the ASA 5585-X IPS SSP. Be sure to use the ASA 5585-X IPS SSP image.



Caution

To avoid corrupting the system image, do not remove power from the ASA 5585-X IPS SSP while the system image is being installed.

For More Information

- For the procedure for locating software, see [Obtaining Software, page 6](#).
- For a list of supported TFTP servers, see [Supported Servers, page 4](#).
- For a list of the specific IPS software files, see [IPS File List, page 2](#).
- For the procedure for initializing the sensor with the **setup** command, see [Initializing the Sensor, page 27](#).

Licensing the Sensor

You can install the license key through the CLI, IDM, or IME. This section describes how to obtain and install the license key, and contains the following topics:

- [Using the IDM or IME, page 23](#)
- [Using the CLI, page 24](#)
- [Licensing the ASA 5500-X IPS SSP, page 27](#)


Using the IDM or IME



Note

In addition to a valid Cisco.com username and password, you must also have a Cisco Services for IPS service contract before you can apply for a license key.

To obtain and install the license key, follow these steps:

-
- Step 1** Log in to the IDM or the IME using an account with administrator privileges.
- Step 2** For the IDM choose **Configuration > Sensor Management > Licensing**. For the IME choose **Configuration > *sensor_name* > Sensor Management > Licensing**.
- Step 3** The Licensing pane displays the status of the current license. If you have already installed your license, you can click **Download** to save it if needed.
- Step 4** Obtain a license key by doing one of the following:
- Click the **Cisco.com** radio button to obtain the license from Cisco.com. The IDM or the IME contacts the license server on Cisco.com and sends the server the serial number to obtain the license key. This is the default method. Go to Step 5.
 - Click the **License File** radio button to use a license file. To use this option, you must apply for a license key at this URL: www.cisco.com/go/license. The license key is sent to you in e-mail and you save it to a drive that the IDM or the IME can access. This option is useful if your computer cannot access Cisco.com. Go to Step 7.
- Step 5** Click **Update License**, and in the Licensing dialog box, click **Yes** to continue. The Status dialog box informs you that the sensor is trying to connect to Cisco.com. An Information dialog box confirms that the license key has been updated.
- Step 6** Click **OK**.
- Step 7** Log in to Cisco.com.
- Step 8** Go to www.cisco.com/go/license.
- Step 9** Fill in the required fields. Your license key will be sent to the e-mail address you specified.
-
-  **Caution** You must have the correct IPS device serial number and product identifier (PID) because the license key only functions on the device with that number.
-
- Step 10** Save the license key to a hard-disk drive or a network drive that the client running the IDM or the IME can access.
- Step 11** Log in to the IDM or the IME.
- Step 12** For the IDM choose **Configuration > Sensor Management > Licensing**. For the IME choose **Configuration > *sensor_name* > Sensor Management > Licensing**.
- Step 13** Under Update License, click the **License File** radio button.
- Step 14** In the Local File Path field, specify the path to the license file or click **Browse Local** to browse to the file.
- Step 15** Browse to the license file and click **Open**.
- Step 16** Click **Update License**.
-

Using the CLI



Note

You cannot install an older license key over a newer license key.

Use the **copy** *source-url license_file_name license-key* command to copy the license key to your sensor.

The following options apply:

- *source-url*—The location of the source file to be copied. It can be a URL or keyword.
- *destination-url*—The location of the destination file to be copied. It can be a URL or a keyword.
- **license-key**—The subscription license file.
- *license_file_name*—The name of the license file you receive.

The exact format of the source and destination URLs varies according to the file. Here are the valid types:

- **ftp**:—Source URL for an FTP network server. The syntax for this prefix is:

```
ftp://[[username@]location][relativeDirectory]/filename
```

```
ftp://[[username@]location][absoluteDirectory]/filename
```



Note You are prompted for a password.

- **scp**:—Source URL for the SCP network server. The syntax for this prefix is:

```
scp://[[username@]location][relativeDirectory]/filename
```

```
scp://[[username@]location][absoluteDirectory]/filename
```



Note You are prompted for a password. You must add the remote host to the SSH known hosts list.

- **http**:—Source URL for the web server. The syntax for this prefix is:

```
http://[[username@]location][directory]/filename
```



Note The directory specification should be an absolute path to the desired file.

- **https**:—Source URL for the web server. The syntax for this prefix is:

```
https://[[username@]location][directory]/filename
```



Note The directory specification should be an absolute path to the desired file. The remote host must be a TLS trusted host.

Installing the License Key

To install the license key, follow these steps:

Step 1 Log in to [Cisco.com](https://www.cisco.com).

Step 2 Apply for the license key at this URL: www.cisco.com/go/license.



Note In addition to a valid Cisco.com username and password, you must also have a Cisco Services for IPS service contract before you can apply for a license key.

Step 3 Fill in the required fields. Your Cisco IPS Signature Subscription Service license key will be sent by email to the e-mail address you specified.



Note You must have the correct IPS device serial number and product identifier (PID) because the license key only functions on the device with that number.

Step 4 Save the license key to a system that has a Web server, FTP server, or SCP server.

Step 5 Log in to the CLI using an account with administrator privileges.

Step 6 Copy the license key to the sensor.

```
sensor# copy scp://user@192.168.1.2/24://tftpboot/dev.lic license-key
Password: *****
```

Step 7 Verify the sensor is licensed.

```
sensor# show version
Application Partition:

Cisco Intrusion Prevention System, Version 7.3(5)E4

Host:
  Realm Keys          key1.0
Signature Definition:
  Signature Update    S842.0          2014-12-17
  Threat Profile Version 9
OS Version:          2.6.29.1
Platform:            IPS-4360
Serial Number:       FGL165141E4
Licensed, expires: 21-Nov-2015 UTC
Sensor up-time is 2 min.
```

Using 14353M out of 15943M bytes of available memory (90% usage) system is using 32.5M out of 160.0M bytes of available disk space (20% usage) application-data is using 85.5M out of 376.4M bytes of available disk space (24% usage) boot is using 63.6M out of 70.2M bytes of available disk space (95% usage) application-log is using 494.0M out of 513.0M bytes of available disk space (96% usage)

```
MainApp          C-2015_01_07_00_42_7_3_2_6  (Release)  2015-01-07T00:50:27-0600
Running
AnalysisEngine   C-2015_01_07_00_42_7_3_2_6  (Release)  2015-01-07T00:50:27-0600
Running
CollaborationApp C-2015_01_07_00_42_7_3_2_6  (Release)  2015-01-07T00:50:27-0600
Running
CLI              C-2015_01_07_00_42_7_3_2_6  (Release)  2015-01-07T00:50:27-0600
```

Upgrade History:

```
IPS-K9-7.3-5-E4  16:43:07 UTC Tue Jan 20 2015
```

Recovery Partition Version 1.1 - 7.3(5)E4

Host Certificate Valid from: 01-Feb-2015 to 01-Feb-2017

sensor#

Licensing the ASA 5500-X IPS SSP

For the ASA 5500-X series adaptive security appliances with the IPS SSP, the ASA requires the IPS Module license. To view your current ASA licenses, in ASDM choose **Home > Device Dashboard > Device Information > Device License**. For more information about ASA licenses, refer to the licensing chapter in the configuration guide. After you obtain the ASA IPS Module license, you can obtain and install the IPS license key.

For More Information

- For more information about getting started using the ASA 5500-X IPS SSP, refer to the [Cisco IPS Module on the ASA Quick Start Guide](#).
- For the procedures for obtaining and installing the IPS License key, see [Licensing the Sensor, page 23](#).

Initializing the Sensor

This section describes how to initialize the sensor using the **setup** command, and contains the following sections:

- [Understanding Initialization, page 27](#)
- [Simplified Setup Mode, page 28](#)
- [System Configuration Dialog, page 28](#)
- [Basic Sensor Setup, page 30](#)
- [Advanced Setup for the IPS Appliance, page 33](#)
- [Advanced Setup for the ASA 5500-X IPS SSP, page 38](#)
- [Advanced Setup for the ASA 5585-X IPS SSP, page 42](#)
- [Verifying Initialization, page 46](#)

Understanding Initialization



Note

You must be administrator to use the **setup** command.

After you install the sensor on your network, you must use the **setup** command to initialize it so that you can communicate with it over the network. You cannot use the IDM or the IME to configure the sensor until you initialize the sensor using the **setup** command.

With the **setup** command, you configure basic sensor settings, including the hostname, IP interfaces, access control lists, global correlation servers, and time settings. You can continue using advanced setup in the CLI to enable Telnet, configure the web server, and assign and enable virtual sensors and interfaces, or you can use the Startup Wizard in the IDM or the IME. After you configure the sensor with the **setup** command, you can change the network settings in the IDM or the IME.



Caution

You must have a valid sensor license for global correlation features to function. You can still configure and display statistics for the global correlation features, but the global correlation databases are cleared and no updates are attempted. Once you install a valid license, the global correlation features are reactivated.

Simplified Setup Mode

The sensor automatically calls the **setup** command when you connect to the sensor using a console cable and the sensor basic network settings have not yet been configured. The sensor does not call automatic setup under the following conditions:

- When initialization has already been successfully completed.
- If you have recovered or downgraded the sensor.
- If you have set the host configuration to default after successfully configuring the sensor using automatic setup.

When you enter the **setup** command, an interactive dialog called the System Configuration Dialog appears on the system console screen. The System Configuration Dialog guides you through the configuration process. The values shown in brackets next to each prompt are the default values last set.

System Configuration Dialog

When you enter the **setup** command, an interactive dialog called the System Configuration Dialog appears on the system console screen. The System Configuration Dialog guides you through the configuration process. The values shown in brackets next to each prompt are the current values.

You must go through the entire System Configuration Dialog until you come to the option that you want to change. To accept default settings for items that you do not want to change, press **Enter**.

To return to the EXEC prompt without making changes and without going through the entire System Configuration Dialog, press **Ctrl-C**. The System Configuration Dialog also provides help text for each prompt. To access the help text, enter **?** at a prompt.

When you complete your changes, the System Configuration Dialog shows you the configuration that you created during the setup session. It also asks you if you want to use this configuration. If you enter **yes**, the configuration is saved. If you enter **no**, the configuration is not saved and the process begins again. There is no default for this prompt; you must enter either **yes** or **no**.

You can configure daylight savings time either in recurring mode or date mode. If you choose recurring mode, the start and end days are based on week, day, month, and time. If you choose date mode, the start and end days are based on month, day, year, and time. Choosing disable turns off daylight savings time.



Note

You only need to set the date and time in the System Configuration Dialog if the system is an appliance and is NOT using NTP.



Note

The System Configuration Dialog is an interactive dialog. The default settings are displayed.

Example 1 shows a sample System Configuration Dialog.

Example 1 Sample System Configuration Dialog

```

--- Basic Setup ---

--- System Configuration Dialog ---

At any point you may enter a question mark '?' for help.
User ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '['].

Current time: Wed Nov 11 21:19:51 2014

Setup Configuration last modified:

Enter host name[sensor]:
Enter IP interface[192.168.1.2/24,192.168.1.1]:
Modify current access list?[no]:
Current access list entries:
    [1] 0.0.0.0/0
Delete:
Permit:
Use DNS server for Global Correlation?[no]:
    DNS server IP address[171.68.226.120]:
Use HTTP proxy server for Global Correlation?[no]:
    HTTP proxy server IP address[128.107.341.169]:
    HTTP proxy server Port number[8080]:
Modify system clock settings?[no]:
    Modify summer time settings?[no]:
        Use USA SummerTime Defaults?[yes]:
        Recurring, Date or Disable?[Recurring]:
        Start Month[march]:
        Start Week[second]:
        Start Day[sunday]:
        Start Time[02:00:00]:
        End Month[november]:
        End Week[first]:
        End Day[sunday]:
        End Time[02:00:00]:
        DST Zone[]:
        Offset[60]:
    Modify system timezone?[no]:
        Timezone[UTC]:
        UTC Offset[0]:
    Use NTP?[no]: yes
        NTP Server IP Address[]:
        Use NTP Authentication?[no]: yes
            NTP Key ID[]: 1
            NTP Key Value[]: 8675309
Participation in the SensorBase Network allows Cisco to collect aggregated statistics
about traffic sent to your IPS.
SensorBase Network Participation level?[off]: full

If you agree to participate in the SensorBase Network, Cisco will collect aggregated
statistics about traffic sent to your IPS.
This includes summary data on the Cisco IPS network traffic properties and how this
traffic was handled by the Cisco appliances. We do not collect the data content of traffic
or other sensitive business or personal information. All data is aggregated and sent via
secure HTTP to the Cisco SensorBase Network servers in periodic intervals. All data shared
with Cisco will be anonymous and treated as strictly confidential.

```

The table below describes how the data will be used by Cisco.

Participation Level = "Partial":

- * Type of Data: Protocol Attributes (e.g. TCP max segment size and options string)
Purpose: Track potential threats and understand threat exposure
- * Type of Data: Attack Type (e.g. Signature Fired and Risk Rating)
Purpose: Used to understand current attacks and attack severity
- * Type of Data: Connecting IP Address and port
Purpose: Identifies attack source
- * Type of Data: Summary IPS performance (CPU utilization memory usage, inline vs. promiscuous, etc)
Purpose: Tracks product efficacy

Participation Level = "Full" additionally includes:

- * Type of Data: Victim IP Address and port
Purpose: Detect threat behavioral patterns

Do you agree to participate in the SensorBase Network?[no]:

Basic Sensor Setup

To perform basic sensor setup using the **setup** command, follow these steps:

Step 1 Log in to the sensor using an account with administrator privileges.



Note Both the default username and password are **cisco**.

Step 2 The first time you log in to the sensor you are prompted to change the default password. Passwords must be at least eight characters long and be strong, that is, not be a dictionary word. After you change the password, basic setup begins.

Step 3 Enter the **setup** command. The System Configuration Dialog is displayed.

Step 4 Specify the hostname. The hostname is a case-sensitive character string up to 64 characters. Numbers, “_” and “-” are valid, but spaces are not acceptable. The default is sensor.

Step 5 Specify the IP interface. The IP interface is in the form of IP Address/Netmask, Gateway: X.X.X.X/nn, Y.Y.Y.Y, where X.X.X.X specifies the sensor IP address as a 32-bit address written as 4 octets separated by periods, nn specifies the number of bits in the netmask, and Y.Y.Y.Y specifies the default gateway as a 32-bit address written as 4 octets separated by periods.

Step 6 Enter **yes** to modify the network access list:

- a. If you want to delete an entry, enter the number of the entry and press **Enter**, or press **Enter** to get to the Permit line.
- b. Enter the IP address and netmask of the network you want to add to the access list.



Note For example, 10.0.0.0/8 permits all IP addresses on the 10.0.0.0 network (10.0.0.0-10.255.255.255) and 10.1.1.0/24 permits only the IP addresses on the 10.1.1.0 subnet (10.1.1.0-10.1.1.255). If you want to permit access to a single IP address than the entire network, use a 32-bit netmask. For example, 10.1.1.1/32 permits just the 10.1.1.1 address.

- c. Repeat Step b until you have added all networks that you want to add to the access list, and then press **Enter** at a blank permit line to go to the next step.

- Step 7** You must configure a DNS server or an HTTP proxy server for global correlation to operate:
- a. Enter **yes** to add a DNS server, and then enter the DNS server IP address.
 - b. Enter **yes** to add an HTTP proxy server, and then enter the HTTP proxy server IP address and port number.



Caution

You must have a valid sensor license for global correlation features to function. You can still configure and display statistics for the global correlation features, but the global correlation databases are cleared and no updates are attempted. Once you install a valid license, the global correlation features are reactivated.

- Step 8** Enter **yes** to modify the system clock settings:

- a. Enter **yes** to modify summertime settings.



Note Summertime is also known as DST. If your location does not use Summertime, go to Step m.

- b. Enter **yes** to choose the USA summertime defaults, or enter **no** and choose recurring, date, or disable to specify how you want to configure summertime settings. The default is recurring.
- c. If you chose recurring, specify the month you want to start summertime settings. Valid entries are january, february, march, april, may, june, july, august, september, october, november, and december. The default is march.
- d. Specify the week you want to start summertime settings. Valid entries are first, second, third, fourth, fifth, and last. The default is second.
- e. Specify the day you want to start summertime settings. Valid entries are sunday, monday, tuesday, wednesday, thursday, friday, and saturday. The default is sunday.
- f. Specify the time you want to start summertime settings. The default is 02:00:00.



Note The default recurring summertime parameters are correct for time zones in the United States. The default values specify a start time of 2:00 a.m. on the second Sunday in March, and a stop time of 2:00 a.m. on the first Sunday in November. The default summertime offset is 60 minutes.

- g. Specify the month you want summertime settings to end. Valid entries are january, february, march, april, may, june, july, august, september, october, november, and december. The default is november.
- h. Specify the week you want the summertime settings to end. Valid entries are first, second, third, fourth, fifth, and last. The default is first.
- i. Specify the day you want the summertime settings to end. Valid entries are sunday, monday, tuesday, wednesday, thursday, friday, and saturday. The default is sunday.
- j. Specify the time you want summertime settings to end. The default is 02:00:00.
- k. Specify the DST zone. The zone name is a character string up to 24 characters long in the pattern [A-Za-z0-9()+:./-]+\$.
- l. Specify the summertime offset. Specify the summertime offset from UTC in minutes (negative numbers represent time zones west of the Prime Meridian). The default is 60.
- m. Enter **yes** to modify the system time zone.
- n. Specify the standard time zone name. The zone name is a character string up to 24 characters long.

- o. Specify the standard time zone offset. Specify the standard time zone offset from UTC in minutes (negative numbers represent time zones west of the Prime Meridian). The default is 0.
- p. Enter **yes** if you want to use NTP. To use authenticated NTP, you need the NTP server IP address, the NTP key ID, and the NTP key value. If you do not have those at this time, you can configure NTP later. Otherwise, you can choose unauthenticated NTP.

Step 9 Enter **off**, **partial**, or **full** to participate in the SensorBase Network Participation:

- **Off**—No data is contributed to the SensorBase Network.
- **Partial**—Data is contributed to the SensorBase Network, but data considered potentially sensitive is filtered out and never sent.
- **Full**—All data is contributed to the SensorBase Network except the attacker/victim IP addresses that you exclude.

The SensorBase Network Participation disclaimer appears. It explains what is involved in participating in the SensorBase Network.

Step 10 Enter **yes** to participate in the SensorBase Network.

The following configuration was entered.

```

service host
network-settings
host-ip 192.168.1.2/24, 192.168.1.1
host-name sensor
telnet-option disabled
sshd-fallback disabled
access-list 10.0.0.0/8
ftp-timeout 300
no login-banner-text
dns-primary-server enabled
address 171.68.226.120
exit
dns-secondary-server disabled
dns-tertiary-server disabled
http-proxy proxy-server
address 128.107.341.170
port 8080
exit
time-zone-settings
offset -360
standard-time-zone-name CST
exit
summertime-option recurring
offset 60
summertime-zone-name CDT
start-summertime
month march
week-of-month second
day-of-week sunday
time-of-day 02:00:00
exit
end-summertime
month november
week-of-month first
day-of-week sunday
time-of-day 02:00:00
exit
ntp-option enabled
ntp-keys 1 md5-key 8675309
ntp-servers 10.10.1.2 key-id 1
exit
    
```



```
service global-correlation
network-participation full
exit
```

- [0] Go to the command prompt without saving this config.
- [1] Return to setup without saving this config.
- [2] Save this configuration and exit setup.
- [3] Continue to Advanced setup.

Step 11 Enter **2** to save the configuration (or **3** to continue with advanced setup using the CLI).

```
Enter your selection[2]: 2
Configuration Saved.
```

Step 12 If you changed the time setting, enter **yes** to reboot the sensor.

Advanced Setup for the IPS Appliance



Note The currently supported Cisco IPS appliances are the IPS 4345, IPS 4360, IPS 4510, and IPS 4520.



Note Adding new subinterfaces is a two-step process. You first organize the interfaces when you edit the virtual sensor configuration. You then choose which interfaces and subinterfaces are assigned to which virtual sensors.

To continue with advanced setup for the appliance, follow these steps:

- Step 1** Log in to the appliance using an account with administrator privileges.
- Step 2** Enter the `setup` command. The System Configuration Dialog is displayed. Press **Enter** or the spacebar to skip to the menu to access advanced setup.
- Step 3** Enter **3** to access advanced setup.
- Step 4** Specify the Telnet server status. The default is disabled.
- Step 5** Specify the SSHv1 fallback setting. The default is disabled.
- Step 6** Specify the web server port. The web server port is the TCP port used by the web server (1 to 65535). The default is 443.



Note If you change the web server port, you must specify the port in the URL address of your browser when you connect to the IDM in the following format: `https://appliance_ip_address:port` (for example, `https://10.1.9.201:1040`).



Note The web server is configured to use TLS/SSL encryption by default. Setting the port to 80 does not disable the encryption.

Step 7 Enter **yes** to modify the interface and virtual sensor configuration and to see the current interface configuration.

```
Current interface configuration
Command control: Management0/0
Unassigned:
Promiscuous:
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/2
GigabitEthernet0/3

Virtual Sensor: vs0
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: sig0

Virtual Sensor: vs1
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: sig0

Virtual Sensor: vs2
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: sig0

[1] Edit Interface Configuration
[2] Edit Virtual Sensor Configuration
[3] Display configuration
Option:
```

Step 8 Enter **1** to edit the interface configuration.



Note The following options let you create and delete interfaces. You assign the interfaces to virtual sensors in the virtual sensor configuration. If you are using promiscuous mode for your interfaces and are not subdividing them by VLAN, no additional configuration is necessary.

```
[1] Remove interface configurations.
[2] Add/Modify Inline Vlan Pairs.
[3] Add/Modify Promiscuous Vlan Groups.
[4] Add/Modify Inline Interface Pairs.
[5] Add/Modify Inline Interface Pair Vlan Groups.
[6] Modify interface default-vlan.
Option:
```

Step 9 Enter **2** to add inline VLAN pairs and display the list of available interfaces.



Caution The new VLAN pair is not automatically added to a virtual sensor.

```
Available Interfaces
[1] GigabitEthernet0/0
[2] GigabitEthernet0/1
[3] GigabitEthernet0/2
[4] GigabitEthernet0/3
Option:
```

Step 10 Enter **1** to add an inline VLAN pair to GigabitEthernet 0/0, for example.

```
Inline Vlan Pairs for GigabitEthernet0/0
None
```

Step 11 Enter a subinterface number and description.

```
Subinterface Number:
Description[Created via setup by user asmith]:
```

Step 12 Enter numbers for VLAN 1 and 2.

```
Vlan1[]: 200
Vlan2[]: 300
```

Step 13 Press **Enter** to return to the available interfaces menu.



Note Entering a carriage return at a prompt without a value returns you to the previous menu.

```
[1] GigabitEthernet0/0
[2] GigabitEthernet0/1
[3] GigabitEthernet0/2
[4] GigabitEthernet0/3
Option:
```



Note At this point, you can configure another interface, for example, GigabitEthernet 0/1, for inline VLAN pair.

Step 14 Press **Enter** to return to the top-level interface editing menu.

```
[1] Remove interface configurations.
[2] Add/Modify Inline Vlan Pairs.
[3] Add/Modify Promiscuous Vlan Groups.
[4] Add/Modify Inline Interface Pairs.
[5] Add/Modify Inline Interface Pair Vlan Groups.
[6] Modify interface default-vlan.
Option:
```

Step 15 Enter **4** to add an inline interface pair and see these options.

```
Available Interfaces
GigabitEthernet0/1
GigabitEthernet0/2
GigabitEthernet0/3
```

Step 16 Enter the pair name, description, and which interfaces you want to pair.

```
Pair name: newPair
Description[Created via setup by user asmith]:
Interface1[]: GigabitEthernet0/1
Interface2[]: GigabitEthernet0/2
Pair name:
```

Step 17 Press **Enter** to return to the top-level interface editing menu.

```
[1] Remove interface configurations.
[2] Add/Modify Inline Vlan Pairs.
[3] Add/Modify Promiscuous Vlan Groups.
[4] Add/Modify Inline Interface Pairs.
[5] Add/Modify Inline Interface Pair Vlan Groups.
[6] Modify interface default-vlan.
```

Option:

Step 18 Press **Enter** to return to the top-level editing menu.

```
[1] Edit Interface Configuration
[2] Edit Virtual Sensor Configuration
[3] Display configuration
```

Option:

Step 19 Enter **2** to edit the virtual sensor configuration.

```
[1] Remove virtual sensor.
[2] Modify "vs0" virtual sensor configuration.
[3] Create new virtual sensor.
```

Option:

Step 20 Enter **2** to modify the virtual sensor configuration, vs0.

```
Virtual Sensor: vs0
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: sig0
```

No Interfaces to remove.

```
Unassigned:
Promiscuous:
[1] GigabitEthernet0/3
[2] GigabitEthernet0/0
Inline Vlan Pair:
[3] GigabitEthernet0/0:1 (Vlans: 200, 300)
Inline Interface Pair:
[4] newPair (GigabitEthernet0/1, GigabitEthernet0/2)
Add Interface:
```

Step 21 Enter **3** to add inline VLAN pair GigabitEthernet0/0:1.

Step 22 Enter **4** to add inline interface pair NewPair.

Step 23 Press **Enter** to return to the top-level virtual sensor menu.

```
Virtual Sensor: vs0
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: sig0
Inline Vlan Pair:
GigabitEthernet0/0:1 (Vlans: 200, 300)
Inline Interface Pair:
newPair (GigabitEthernet0/1, GigabitEthernet0/2)
```

```
[1] Remove virtual sensor.
[2] Modify "vs0" virtual sensor configuration.
[3] Create new virtual sensor.
```

Option: GigabitEthernet0/1, GigabitEthernet0/2)

Add Interface:

Step 24 Press **Enter** to return to the top-level interface and virtual sensor configuration menu.

```
[1] Edit Interface Configuration
[2] Edit Virtual Sensor Configuration
[3] Display configuration
```

Option:

Step 25 Enter **yes** if you want to modify the default threat prevention settings.



Note The sensor comes with a built-in override to add the deny packet event action to high risk rating alerts. If you do not want this protection, disable automatic threat prevention.

```
Virtual sensor newVs is configured to prevent high risk threats in inline mode. (Risk
Rating 90-100)
Virtual sensor vs0 is configured to prevent high risk threats in inline mode. (Risk Rating
90-100)
Do you want to disable automatic threat prevention on all virtual sensors?[no]:
```

Step 26 Enter **yes** to disable automatic threat prevention on all virtual sensors.

Step 27 Press **Enter** to exit the interface and virtual sensor configuration.

```
The following configuration was entered.
service host
network-settings
host-ip 192.168.1.2/24,192.168.1.1
host-name sensor
telnet-option disabled
sshd1-fallback disabled
ftp-timeout 300
no login-banner-text
exit
time-zone-settings
offset 0
standard-time-zone-name UTC
exit
summertime-option disabled
ntp-option disabled
exit
service web-server
port 342
exit
service interface
physical-interfaces GigabitEthernet0/0
admin-state enabled
subinterface-type inline-vlan-pair
subinterface 1
description Created via setup by user asmith
vlan1 200
vlan2 300
exit
exit
physical-interfaces GigabitEthernet0/1
admin-state enabled
exit
physical-interfaces GigabitEthernet0/2
admin-state enabled
exit
physical-interfaces GigabitEthernet0/0
admin-state enabled
exit
inline-interfaces newPair
description Created via setup by user asmith
interface1 GigabitEthernet0/1
interface2 GigabitEthernet0/2
exit
exit
service analysis-engine
virtual-sensor newVs
description Created via setup by user cisco
```

```
signature-definition newSig
event-action-rules rules0
anomaly-detection
anomaly-detection-name ad0
operational-mode inactive
exit
physical-interface GigabitEthernet0/0
exit
virtual-sensor vs0
physical-interface GigabitEthernet0/0 subinterface-number 1
logical-interface newPair
service event-action-rules rules0
overrides deny-packet-inline
override-item-status Disabled
risk-rating-range 90-100
exit
exit
```

```
[0] Go to the command prompt without saving this config.
[1] Return back to the setup without saving this config.
[2] Save this configuration and exit setup.
```

Step 28 Enter **2** to save the configuration.

```
Enter your selection[2]: 2
Configuration Saved.
```

Step 29 Reboot the appliance.

```
sensor# reset
Warning: Executing this command will stop all applications and reboot the node.
Continue with reset? []:
```

Step 30 Enter **yes** to continue the reboot.

Step 31 Apply the most recent service pack and signature update. You are now ready to configure your appliance for intrusion prevention.

Advanced Setup for the ASA 5500-X IPS SSP

To continue with advanced setup for the ASA 5500-X IPS SSP, follow these steps:

Step 1 Session in to the IPS using an account with administrator privileges.

```
asa# session ips
```

Step 2 Enter the **setup** command. The System Configuration Dialog is displayed. Press **Enter** or the spacebar to skip to the menu to access advanced setup.

Step 3 Enter **3** to access advanced setup.

Step 4 Specify the Telnet server status. You can disable or enable Telnet services. The default is disabled.

Step 5 Specify the SSHv1 fallback setting. The default is disabled.

Step 6 Specify the web server port. The web server port is the TCP port used by the web server (1 to 65535). The default is 443.



Note If you change the web server port, you must specify the port in the URL address of your browser when you connect to the IDM. Use the following format: `https://ips_ssp_ip_address:port` (for example, `https://10.1.9.201:1040`).



Note The web server is configured to use TLS/SSL encryption by default. Setting the port to 80 does not disable the encryption.

Step 7 Enter **yes** to modify the interface and virtual sensor configuration.

```
Current interface configuration
Command control: Management0/0
Unassigned:
Monitored:
  PortChannel 0/0

Virtual Sensor: vs0
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: sig0

[1] Edit Interface Configuration
[2] Edit Virtual Sensor Configuration
[3] Display configuration
Option:
```

Step 8 Enter **1** to edit the interface configuration.



Note You do not need to configure interfaces on the ASA 5500-X IPS SSP. You should ignore the modify interface default VLAN setting. The separation of traffic across virtual sensors is configured differently for the ASA 5500-X IPS SSP than for other sensors.

```
[1] Modify interface default-vlan.
Option:
```

Step 9 Press **Enter** to return to the top-level interface and virtual sensor configuration menu.

```
[1] Edit Interface Configuration
[2] Edit Virtual Sensor Configuration
[3] Display configuration
Option:
```

Step 10 Enter **2** to edit the virtual sensor configuration.

```
[1] Remove virtual sensor.
[2] Modify "vs0" virtual sensor configuration.
[3] Create new virtual sensor.
Option:
```

Step 11 Enter **2** to modify the virtual sensor vs0 configuration.

```
Virtual Sensor: vs0
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: sig0
```

```
No Interfaces to remove.
```

```
Unassigned:
Monitored:
  [1] PortChannel 0/0
Add Interface:
```

Step 12 Enter **1** to add PortChannel 0/0 to virtual sensor vs0.



Note Multiple virtual sensors are supported. The adaptive security appliance can direct packets to specific virtual sensors or can send packets to be monitored by a default virtual sensor. The default virtual sensor is the virtual sensor to which you assign PortChannel 0/0. We recommend that you assign PortChannel 0/0 to vs0, but you can assign it to another virtual sensor if you want to.

Step 13 Press **Enter** to return to the main virtual sensor menu.

Step 14 Enter **3** to create a virtual sensor.

```
Name[ ]:
```

Step 15 Enter a name and description for your virtual sensor.

```
Name[ ]: newVs
Description[Created via setup by user cisco]: New Sensor
Anomaly Detection Configuration
  [1] ad0
  [2] Create a new anomaly detection configuration
Option[2]:
```

Step 16 Enter **1** to use the existing anomaly-detection configuration, ad0.

```
Signature Definition Configuration
  [1] sig0
  [2] Create a new signature definition configuration
Option[2]:
```

Step 17 Enter **2** to create a signature-definition configuration file.

Step 18 Enter the signature-definition configuration name, **newSig**.

```
Event Action Rules Configuration
  [1] rules0
  [2] Create a new event action rules configuration
Option[2]:
```

Step 19 Enter **1** to use the existing event-action-rules configuration, rules0.



Note If PortChannel 0/0 has not been assigned to vs0, you are prompted to assign it to the new virtual sensor.

```
Virtual Sensor: newVs
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: newSig
Monitored:
  PortChannel0/0

[1] Remove virtual sensor.
[2] Modify "newVs" virtual sensor configuration.
[3] Modify "vs0" virtual sensor configuration.
[4] Create new virtual sensor.
```


Option:

Step 20 Press **Enter** to exit the interface and virtual sensor configuration menu.

Modify default threat prevention settings?[no]:

Step 21 Enter **yes** if you want to modify the default threat prevention settings.



Note The sensor comes with a built-in override to add the deny packet event action to high risk rating alerts. If you do not want this protection, disable automatic threat prevention.

```
Virtual sensor newVs is configured to prevent high risk threats in inline mode. (Risk
Rating 90-100)
Virtual sensor vs0 is configured to prevent high risk threats in inline mode.(Risk Rating
90-100)
Do you want to disable automatic threat prevention on all virtual sensors?[no]:
```

Step 22 Enter **yes** to disable automatic threat prevention on all virtual sensors.

The following configuration was entered.

```
service host
network-settings
host-ip 192.168.1.2/24,192.168.1.1
host-name asa-ips
telnet-option disabled
sshv1-fallback disabled
access-list 10.0.0.0/8
access-list 64.0.0.0/8
ftp-timeout 300
no login-banner-text
exit
time-zone-settings
offset 0
standard-time-zone-name UTC
exit
summertime-option disabled
ntp-option disabled
exit
service web-server
port 342
exit
service analysis-engine
virtual-sensor newVs
description New Sensor
signature-definition newSig
event-action-rules rules0
anomaly-detection
anomaly-detection-name ad0
exit
physical-interfaces PortChannel0/0
exit
exit
service event-action-rules rules0
overrides deny-packet-inline
override-item-status Disabled
risk-rating-range 90-100
exit
exit
```

[0] Go to the command prompt without saving this config.
 [1] Return back to the setup without saving this config.

[2] Save this configuration and exit setup.

Step 23 Enter **2** to save the configuration.

```
Enter your selection[2]: 2
Configuration Saved.
```

Step 24 Reboot the ASA 5500-X IPS SSP.

```
asa-ips# reset
Warning: Executing this command will stop all applications and reboot the node.
Continue with reset? []:
```

Step 25 Enter **yes** to continue the reboot.

Step 26 After reboot, log in to the sensor, and display the self-signed X.509 certificate (needed by TLS).

```
asa-ips# show tls fingerprint
SHA1: 64:9B:AC:DE:21:62:0C:D3:57:2E:9B:E5:3D:04:8F:A7:FD:CD:6F:27
```

Step 27 Write down the certificate fingerprints. You need the fingerprints to check the authenticity of the certificate when using HTTPS to connect to this ASA 5500-X IPS SSP with a web browser.

Step 28 Apply the most recent service pack and signature update. You are now ready to configure the ASA 5500-X IPS SSP for intrusion prevention.

Advanced Setup for the ASA 5585-X IPS SSP

To continue with advanced setup for the ASA 5585-X IPS SSP, follow these steps:

Step 1 Session in to the ASA 5585-X IPS SSP using an account with administrator privileges.

```
asa# session 1
```

Step 2 Enter the **setup** command. The System Configuration Dialog is displayed. Press **Enter** or the spacebar to skip to the menu to access advanced setup.

Step 3 Enter **3** to access advanced setup.

Step 4 Specify the Telnet server status. You can disable or enable Telnet services. The default is disabled.

Step 5 Specify the SSHv1 fallback setting. The default is disabled.

Step 6 Specify the web server port. The web server port is the TCP port used by the web server (1 to 65535). The default is 443.



Note If you change the web server port, you must specify the port in the URL address of your browser when you connect to IDM. Use the following format: `https://ips_ssp_ip_address:port` (for example, `https://10.1.9.201:1040`).



Note The web server is configured to use TLS/SSL encryption by default. Setting the port to 80 does not disable the encryption.

Step 7 Enter **yes** to modify the interface and virtual sensor configuration.

```
Current interface configuration
```

```

Command control: Management0/0
Unassigned:
Monitored:
  PortChannel0/0

Virtual Sensor: vs0
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: sig0

[1] Edit Interface Configuration
[2] Edit Virtual Sensor Configuration
[3] Display configuration
Option:

```

Step 8 Enter **1** to edit the interface configuration.



Note You do not need to configure interfaces on the ASA 5585-X IPS SSP. You should ignore the modify interface default VLAN setting. The separation of traffic across virtual sensors is configured differently for the ASA 5585-X IPS SSP than for other sensors.

```

[1] Modify interface default-vlan.
Option:

```

Step 9 Press **Enter** to return to the top-level interface and virtual sensor configuration menu.

```

[1] Edit Interface Configuration
[2] Edit Virtual Sensor Configuration
[3] Display configuration
Option:

```

Step 10 Enter **2** to edit the virtual sensor configuration.

```

[1] Remove virtual sensor.
[2] Modify "vs0" virtual sensor configuration.
[3] Create new virtual sensor.
Option:

```

Step 11 Enter **2** to modify the virtual sensor vs0 configuration.

```

Virtual Sensor: vs0
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: sig0

```

No Interfaces to remove.

```

Unassigned:
Monitored:
  [1] PortChannel0/0
Add Interface:

```

Step 12 Enter **1** to add PortChannel 0/0 to virtual sensor vs0.



Note Multiple virtual sensors are supported. The adaptive security appliance can direct packets to specific virtual sensors or can send packets to be monitored by a default virtual sensor. The default virtual sensor is the virtual sensor to which you assign PortChannel 0/0. We recommend that you assign PortChannel 0/0 to vs0, but you can assign it to another virtual sensor if you want to.

Step 13 Press **Enter** to return to the main virtual sensor menu.

Step 14 Enter **3** to create a virtual sensor.

Name[]:

Step 15 Enter a name and description for your virtual sensor.

```
Name[]: newVs
Description[Created via setup by user cisco]: New Sensor
Anomaly Detection Configuration
  [1] ad0
  [2] Create a new anomaly detection configuration
Option[2]:
```

Step 16 Enter **1** to use the existing anomaly-detection configuration, ad0.

```
Signature Definition Configuration
  [1] sig0
  [2] Create a new signature definition configuration
Option[2]:
```

Step 17 Enter **2** to create a signature-definition configuration file.

Step 18 Enter the signature-definition configuration name, **newSig**.

```
Event Action Rules Configuration
  [1] rules0
  [2] Create a new event action rules configuration
Option[2]:
```

Step 19 Enter **1** to use the existing event action rules configuration, rules0.



Note If PortChannel 0/0 has not been assigned to vs0, you are prompted to assign it to the new virtual sensor.

```
Virtual Sensor: newVs
Anomaly Detection: ad0
Event Action Rules: rules0
Signature Definitions: newSig
Monitored:
  PortChannel0/0

  [1] Remove virtual sensor.
  [2] Modify "newVs" virtual sensor configuration.
  [3] Modify "vs0" virtual sensor configuration.
  [4] Create new virtual sensor.
Option:
```

Step 20 Press **Enter** to exit the interface and virtual sensor configuration menu.

```
Modify default threat prevention settings?[no]:
```

Step 21 Enter **yes** if you want to modify the default threat prevention settings.



Note The sensor comes with a built-in override to add the deny packet event action to high risk rating alerts. If you do not want this protection, disable automatic threat prevention.

```
Virtual sensor newVs is configured to prevent high risk threats in inline mode. (Risk
Rating 90-100)
```

Virtual sensor vs0 is configured to prevent high risk threats in inline mode. (Risk Rating 90-100)

Do you want to disable automatic threat prevention on all virtual sensors?[no]:

Step 22 Enter **yes** to disable automatic threat prevention on all virtual sensors.

The following configuration was entered.

```

service host
network-settings
host-ip 10.1.9.201/24,10.1.9.1
host-name sensor
telnet-option disabled
sshd1-fallback disabled
access-list 10.0.0.0/8
access-list 64.0.0.0/8
ftp-timeout 300
no login-banner-text
exit
time-zone-settings
offset 0
standard-time-zone-name UTC
exit
summertime-option disabled
ntp-option disabled
exit
service web-server
port 342
exit
service analysis-engine
virtual-sensor newVs
description New Sensor
signature-definition newSig
event-action-rules rules0
anomaly-detection
anomaly-detection-name ad0
exit
physical-interfaces PortChannel0/0
exit
exit
service event-action-rules rules0
overrides deny-packet-inline
override-item-status Disabled
risk-rating-range 90-100
exit
exit

```

[0] Go to the command prompt without saving this config.

[1] Return back to the setup without saving this config.

[2] Save this configuration and exit setup.

Step 23 Enter **2** to save the configuration.

```

Enter your selection[2]: 2
Configuration Saved.

```

Step 24 Reboot the ASA 5585-X IPS SSP.

```

ips-ssp# reset
Warning: Executing this command will stop all applications and reboot the node.
Continue with reset? []:

```

Step 25 Enter **yes** to continue the reboot.

Step 26 After reboot, log in to the sensor, and display the self-signed X.509 certificate (needed by TLS).

```
ips-ssp# show tls fingerprint
SHA1: 64:9B:AC:DE:21:62:0C:D3:57:2E:9B:E5:3D:04:8F:A7:FD:CD:6F:27
```

Step 27 Write down the certificate fingerprints. You need the fingerprints to check the authenticity of the certificate when using HTTPS to connect to this ASA 5585-X IPS SSP with a web browser.

Step 28 Apply the most recent service pack and signature update. You are now ready to configure your ASA 5585-X IPS SSP for intrusion prevention.

Verifying Initialization



Note The following **show configuration** output is an example of what your configuration may look like. It will not match exactly because of the optional setup choices.

To verify that you initialized your sensor, follow these steps:

Step 1 Log in to the sensor.

Step 2 View your configuration.

```
sensor# show configuration
! -----
! Current configuration last modified Fri Oct 10 09:41:17 2014
! -----
! Version 7.3(5)
! Host:
!   Realm Keys                key1.0
! Signature Definition:
!   Signature Update          S741.0   2013-09-10
!   Threat Profile Version    2
! -----
service interface
exit
! -----
service authentication
exit
! -----
service event-action-rules rules0
exit
! -----
service host
network-settings
host-ip 10.106.1.4/24,10.106.1.1
host-name sensor
telnet-option enabled
access-list 0.0.0.0/0
dns-primary-server disabled
exit
time-zone-settings
offset 0
standard-time-zone-name UTC
exit
exit
! -----
service logger
```

```

exit
! -----
service network-access
exit
! -----
service notification
exit
! -----
service signature-definition sig0
exit
! -----
service ssh-known-hosts
exit
! -----
service trusted-certificates
exit
! -----
service web-server
exit
! -----
service anomaly-detection ad0
exit
! -----
service external-product-interface
exit
! -----
service health-monitor
exit
! -----
service global-correlation
exit
! -----
service aaa
exit
! -----
service analysis-engine
exit

sensor#

```



Note You can also use the **more current-config** command to view your configuration.

Step 3 Display the self-signed X.509 certificate (needed by TLS).

```

sensor# show tls fingerprint
SHA1: 64:9B:AC:DE:21:62:0C:D3:57:2E:9B:E5:3D:04:8F:A7:FD:CD:6F:27

```

Step 4 Write down the certificate fingerprints. You need the fingerprints to check the authenticity of the certificate when connecting to this sensor with a web browser.

Logging In to the IDM

The IDM is a web-based, Java Web Start application that enables you to configure and manage your sensor. The web server for the IDM resides on the sensor. You can access it through Internet Explorer or Firefox web browsers.



Note The IDM is already installed on the sensor.

To log in to the IDM, follow these steps:

Step 1 Open a web browser and enter the sensor IP address. A Security Alert dialog box appears.

`https://sensor_ip_address`



Note The default IP address is 192.168.1.2/24, 192.168.1.1, which you change to reflect your network environment when you initialize the sensor. When you change the web server port, you must specify the port in the URL address of your browser when you connect to the IDM in the format `https://sensor_ip_address:port` (for example, `https://192.0.2.1:1040`).

Step 2 Click **Yes** to accept the security certificate. The Cisco IPS Device Manager Version window appears.

Step 3 To launch the IDM, click **Run IDM**. The JAVA loading message box appears, and then the Warning - Security dialog box appears.

Step 4 To verify the security certificate, check the Always trust content from this publisher check box, and click **Yes**. The JAVA Web Start progress dialog box appears, and then the IDM on *ip_address* dialog box appears.

Step 5 To create a shortcut for the IDM, click **Yes**. The Cisco IDM Launcher dialog box appears.



Note You must have JRE 1.5 (JAVA 5) installed to create shortcuts for the IDM. If you have JRE 1.6 (JAVA 6) installed, the shortcut is created automatically.

Step 6 To authenticate the IDM, enter your username and password, and click **OK**. Both the default username and password are **cisco**. You were prompted to change the password during sensor initialization. The IDM begins to load. If you change panes from Home to Configuration or Monitoring before the IDM has completed initialization, a Status dialog box appears with the following message:

Please wait while IDM is loading the current configuration from the sensor.

The main window of the IDM appears.



Note If you created a shortcut, you can launch the IDM by double-clicking the IDM shortcut icon. You can also close the The Cisco IPS Device Manager Version window. After you launch the IDM, it is not necessary for this window to remain open.

Installing or Upgrading the IME

This section describes how to install and upgrade the IME, and how to migrate data from IEV or a previous version of IME.

Cisco IEV, Cisco IOS IPS, and CSM

If you have a version of Cisco IPS Event Viewer installed, the Install wizard prompts you to remove it before installing the IME.

The IME event monitoring is also supported in IOS-IPS versions that support the Cisco IPS 5.x/6.x signature format. We recommend IOS-IPS 12.4(15)T4 if you intend to use the IME to monitor an IOS IPS device. Some of the new IME functionality including health monitoring is not supported.

**Caution**

Do not install the IME on top of existing installations of CSM. You must uninstall CSM before installing the IME.

Installation Notes and Caveats**Note**

If you are using Windows 7 or Windows Server 2008, and an IME version earlier than 7.1.1, uninstall IME before upgrading it. Otherwise, just upgrade from your current IME version.

Observe the following when installing or upgrading the IME:

- You can install the IME over all versions of the IME but not over IEV. All alert database and user settings are preserved.
- The IME detects previous versions of IEV and prompts you to manually remove the older version before installing the IME or to install the IME on another system. The installation program then stops.
- Make sure you close any open instances of the IME before upgrading to a new version of the IME.
- Disable any anti-virus or host-based intrusion detection software before beginning the installation, and close any open applications. The installer spawns a command shell application that may trigger your host-based detection software, which causes the installation to fail.
- You must be administrator to install the IME.
- The IME coexists with other instances of the MySQL database. If you have a MySQL database installed on your system, you do NOT have to uninstall it before installing the IME.

Installing or Upgrading the IME

To install the IME, follow these steps:

-
- Step 1** From the Download Software site on Cisco.com, download the IME executable file to your computer, or start the IDM in a browser window, and under Cisco IPS Manager Express, click **download** to install the IME executable file. IME-7.2.5.exe is an example of what the IME executable file might look like.
 - Step 2** Double-click the executable file. The Cisco IPS Manager Express - InstallShield Wizard appears. You receive a warning if you have a previous version of Cisco IPS Event Viewer installed. Acknowledge the warning, and exit installation. Remove the older version of IEV, and then continue the IME installation.
 - Step 3** Click **Next** to start the IME installation.
 - Step 4** Accept the license agreement and click **Next**.
 - Step 5** Click **Next** to choose the destination folder, click **Install** to install the IME, and then click **Finish** to exit the wizard. The Cisco IME and Cisco IME Demo icons are now on your desktop.



Note The first time you start the IME, you are prompted to set up a password.

Migrating IEV Data

To migrate IEV 5.x events to the IME, you must exit the installation and manually export the old events by using the IEV 5.x export function to move the data to local files. After installing the IME, you can import these files to the new IME system.



Note The IME does not support import and migration functions for IEV 4.x.

To export event data from IEV 5.x to a local file:

-
- Step 1** From IEV 5.x, choose **File > Database Administration > Export Database Tables**.
 - Step 2** Enter the file name and select the table(s).
 - Step 3** Click **OK**. The events in the selected table(s) are exported to the specified local file.
-

Importing IEV Event Data In to IME

To import event data in to the IME, follow these steps:

-
- Step 1** From the IME, choose **File > Import**.
 - Step 2** Select the file exported from IEV 5.x and click **Open**. The contents of the selected file are imported in to the IME.
-

For More Information

For more information about the IME, refer to [Cisco Intrusion Prevention System Manager Express Installation Guide for IPS 7.3](#).

Cisco Security Intelligence Operations

The Cisco Security Intelligence Operations site on Cisco.com provides intelligence reports about current vulnerabilities and security threats. It also has reports on other security topics that help you protect your network and deploy your security systems to reduce organizational risk.

You should be aware of the most recent security threats so that you can most effectively secure and manage your network. Cisco Security Intelligence Operations contains the top ten intelligence reports listed by date, severity, urgency, and whether there is a new signature available to deal with the threat.

Cisco Security Intelligence Operations contains a Security News section that lists security articles of interest. There are related security tools and links.

You can access Cisco Security Intelligence Operations at this URL:

<http://tools.cisco.com/security/center/home.x>

Cisco Security Intelligence Operations is also a repository of information for individual signatures, including signature ID, type, structure, and description.

You can search for security alerts and signatures at this URL:

<http://tools.cisco.com/security/center/search.x>

Restrictions and Limitations

The following restrictions and limitations apply to the Cisco IPS 7.3(5)E4 software and the products that run it:

- IME 7.2.7 is the only supported IME release for IPS 7.3(5)E4.
- After upgrading to 7.3(5)E4, you cannot create a hostname that contains '/'(slash) character.
- Due to a limitation in IPS, you only need to configure the primary DNS IP address and to avoid configuring secondary/tertiary DNS IP addresses. In a scenario where only the primary DNS IP address is configured either with a working or non-working DNS IP address, IPS works smoothly with the working DNS IP address and doesn't work with non-working DNS IP address as expected. If a secondary/tertiary DNS IP address is configured on IPS, then you need to disable the secondary/tertiary DNS IP addresses through the CLI first and then perform **/etc/init.d/cids restart** on the IPS device to configure Auto Update.

- Reassemble timeout of 10 seconds:

There are 1000 datagram slots, and with the reduced 10 second timeout, 1000/10=100 dgrams/sec can be achieved. Each datagram is at least 2 packets, and hence, with the revised fix for CSCun76930 IPS should handle at least 200pps, assuming all fragments are reassembled.

Workaround: Depending on the your network, you can tune a parameter from the service user prompt to handle up to 1000pps.

File to be modified: sensorApp.conf

Path: /usr/cids/idsRoot/etc

To add:

[FragProcessorSettings]

ReAssembleTimeOut=1

- Based on lab testing, We observed that the IPS could comfortably handle upto 400pps. The IDM has been built and tested with JAVA 7 Update 45 and earlier. The IDM is not compatible with JAVA 7 Update 51. For IDM to function, you must use the older version of Java. Refer to CSCum55433 if you must use Java 7u51 and there is no option to use earlier versions.
- While executing the **autoupgradenow** command, you cannot use the IDM, IME or the CLI or start any new sessions until the upgrade is complete.
- IPS 7.3(5)E4 supports TLS 1.0 and later. If the peer uses an older SSL version, the connection cannot be established. All management applications using the IPS Web server, such as the IDM or CSM, are affected by this change. If the management application does not support TLS1.0 or later, the management connectivity is lost after upgrading to IPS 7.3(5) because it does not support TLS versions earlier than TLS1.0.
- If the client does not support SSHv2 or if SSHv2 is disabled, the management connectivity is lost after upgrading from IPS 7.1(x)E4 to IPS 7.3(5)E4 because SSHv1 is disabled by default in IPS 7.3(5) and later.

- LACP has been tested only on the IPS sensor and the Nexus 7000 switch and the Catalyst 6000 switch. Other combinations of IPS sensors and switches have not been tested. It is unknown if the solution will work as expected with other switches. Also, VPC/VSS configurations are NOT supported.
- Link state mirroring applies to the inline interface pair configuration only. Detecting that the peer interface is up or down and setting the state of the link may take up to 3.5 seconds.
- The IPS 4520 is the only platform that supports the dual configuration. You can add another 4520 module to an existing 4520 or you can order the 4520-XL with two modules already installed. Mixing 4510s and 4520s is not a valid configuration.
- To support the immediate automatic update feature, a default update schedule with a start time of 00:00:00 and interval of 24 hours has been set. You must enable the automatic update settings before issuing an immediate automatic update. Disable the automatic update schedule if you do not want to use the default scheduled update.
- The ASA 5512-X IPS SSP and the ASA 5515-X IPS SSP do not support the Regex accelerator card and the String XL engines.
- Applying any signature template erases any existing tunings associated with the targeted signature definition file. The ASA 5512-X IPS SSP and ASA 5515-X IPS SSP do not support signature templates (signature threat profiles).
- The ASA 5512-X IPS SSP and ASA 5515-X IPS SSP do not support HTTP advanced decoding.
- Enabling HTTP advanced decoding can have a significantly negative performance and memory impact on the sensor.
- Use the **show statistics virtual-sensor | include load** command (CLI) or look at the statistics for the virtual sensor at **Configuration > Sensor Monitoring > Support Information > Statistics (IDM/IME)** to determine the load value over a longer period of time. The **show statistics analysis-engine** command (CLI) and the statistics for the Analysis Engine show values over a shorter period of time. If you compare the output, the values will appear to be inconsistent due to the different time periods. To get an accurate comparison between them, compare the processing load percentage from the statistics for the virtual sensor and the one-minute averaged value from the statistics for the Analysis Engine.
- TACACS+ authentication is not supported in IPS 7.3(5)E4.
- The CLI timeout feature is applicable only for sessions established through SSH, Telnet, and the console. Service account logins are not affected.
- Anomaly detection does not support IPv6 traffic; only IPv4 traffic is directed to the anomaly detection processor.
- IPv6 does not support the following event actions: Request Block Host, Request Block Connection, or Request Rate Limit.
- Global correlation does not support IPv6.
- There is no support for IPv6 on the management (command and control) interface.
- ICMP signature engines do not support ICMPv6, they are IPv4-specific, for example, the Traffic ICMP signature engine. ICMPv6 is covered by the Atomic IP Advanced signature engine.
- CSM and MARS do not support IPv6.
- When deploying an IPS sensor monitoring two sides of a network device that does TCP sequence number randomization, we recommend using a virtual sensor for each side of the device.

- For IPS 5.0 and later, you can no longer remove the **cisco** account. You can disable it using the **no password cisco** command, but you cannot remove it. To use the **no password cisco** command, there must be another administrator account on the sensor. Removing the **cisco** account through the service account is not supported. If you remove the **cisco** account through the service account, the sensor most likely will not boot up, so to recover the sensor you must reinstall the sensor system image.
- After you upgrade any IPS software on your sensor, you must restart the IDM to see the latest software features.
- The IDM does not support any non-English characters, such as the German umlaut or any other special language characters. If you enter such characters as a part of an object name through IDM, they are turned into something unrecognizable and you will not be able to delete or edit the resulting object through IDM or the CLI. This is true for any string that is used by the CLI as an identifier, for example, names of time periods, inspect maps, server and URL lists, and interfaces.
- When the SensorApp is reconfigured, there is a short period when the SensorApp is unable to respond to any queries. Wait a few minutes after reconfiguration is complete before querying the SensorApp for additional information.
- The IDM and IME launch MySDN from the last browser window you opened, which is the default setting for Windows. To change this default behavior, in Internet Explorer, choose **Tools > Internet Options**, and then click the **Advanced** tab. Scroll down and uncheck the **Reuse windows for launching shortcuts** check box.

Caveats

This section lists the resolved and unresolved caveats, and contains the following topics:

- [Resolved Caveats, page 53](#)
- [Unresolved Caveats, page 54](#)

Resolved Caveats

The following known issues are resolved in the 7.3(5)E4 release:

- CSCUw28572—IPS fails to encrypt RADIUS password in access-request
- CSCUw84972—Evaluation of cids for NTP_October_2015
- CSCUw94570—Insufficient log information for ASD auto update errors
- CSCUv89632—IPS Radius authentication fails if nas-id string contains #
- CSCUt41184—CIDS needs to support sha-2 hashes
- CSCUx28072—IPS signature update process locks down
- CSCUx41422—Evaluation of cids for OpenSSL December 2015 vulnerabilities
- CSCUx19256—Evaluation of CVE-2015-5600

Unresolved Caveats

The following relevant issues are unresolved in the IPS 7.3(5)E4 release:

- CSCux21817—IPS signature updates fail with error "IpAddrException badAddrString"
- CSCux86395—January 2016 OpenSSH Vulnerabilities
- CSCux95190—Evaluation of cids for NTP_January_2016
- CSCux98382—client/server Hello delay causing SSL connection to IPS to fail
- CSCuy07438—Evaluation of cids for OpenSSL January 2016

Related Documentation

Refer to the following URLs for related documentation:

- For a complete list of Cisco IPS 7.3 documentation and where to find it, refer to the documentation roadmap found at this URL:

http://www.cisco.com/en/US/docs/security/ips/7.3/roadmap/roadmap7_3.html

- For all IPS documentation, refer to this URL:

http://www.cisco.com/en/US/products/hw/vpndevc/ps4077/tsd_products_support_series_home.html

- For a complete list of the Cisco ASA 5500 series documentation and where to find it, refer to the documentation roadmap found at this URL:

<http://www.cisco.com/en/US/docs/security/asa/roadmap/asaroadmap.html>

Obtaining Documentation, Using the Cisco Bug Search Tool, and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: <http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>.

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