



Text Part Number: 78-7142-01

Installing the Virtual Private Network Module for Cisco 1700 Series Routers

This document describes how to install the Virtual Private Network (VPN) module in your Cisco 1720 or Cisco 1750 router. Table 1 describes the Cisco parts to which this document applies.

Table 1 Cisco 1700 Series VPN Module

Cisco Part Number	Description
MOD1700-VPN=	VPN module for Cisco 1700 series routers

This document contains the following sections:

- Before You Begin, page 2
- Installing the VPN Module in a Cisco 1720 Router, page 4
- Installing the VPN Module in a Cisco 1750 Router, page 10
- Related Documentation, page 19
- Cisco Connection Online, page 22
- Documentation CD-ROM, page 22

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Before You Begin

This section describes important safety information and the tools required to install the VPN module. Read this section before installing the VPN module in a Cisco 1720 or 1750 router.

Tools and Equipment Required

The following items are required to install the VPN module:

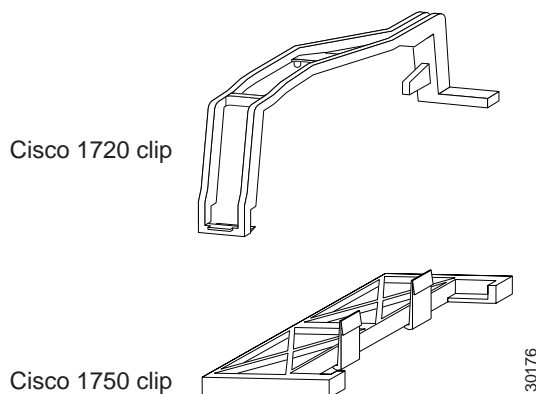
- Number 1 Phillips screwdriver
- VPN module and associated parts

VPN Module Parts

Included with the VPN module are the following parts required for installation:

- Two metal standoffs
- Four screws
- Two retention clip—one for the Cisco 1720 router and one for the Cisco 1750 router as shown in Figure 1.

Figure 1 Retention Clips



Safety Warnings



Warning Before working on a system that has an on/off switch, turn OFF the power and unplug the power cord.



Warning Before opening the chassis, disconnect the telephone-network cables to avoid contact with telephone-network voltages.



Warning Do not work on the system or connect or disconnect cables during periods of lightning activity.



Warning Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is off and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected.



Warning Read the installation instructions before you connect the system to its power source.



Warning Ultimate disposal of this product should be handled according to all national laws and regulations.



Warning Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.



Warning Only trained and qualified personnel should be allowed to install or replace this equipment.



Warning Hazardous network voltages are present in WAN ports regardless of whether power to the router is OFF or ON. To avoid electric shock, use caution when working near WAN ports. When detaching cables, detach the end away from the router first.

Preventing Electrostatic Discharge Damage

Before installing an VPN module, read the electrostatic discharge (ESD) instructions in this section. ESD is a discharge of stored static electricity that can damage equipment and impair electrical circuitry. It occurs when electronic components are improperly handled and can result in complete or intermittent failures.

Following are guidelines for preventing ESD damage:

- Before opening the chassis, turn the router power switch to off (O).
- Disconnect the power cable to the router.
- Always use an ESD-preventive wrist or ankle strap and ensure that it makes good skin contact.
- Avoid contact between equipment and clothing. The wrist or ankle strap protects the equipment only from ESD voltages on the body; ESD voltages on clothing can still cause damage.
- Handle printed circuit cards by the edges only; avoid touching the components, traces, or any connector pins.
- Place a removed card component on an antistatic surface or in a static shielding bag.
- Do not remove the wrist or ankle strap until the installation is complete.



Caution To avoid damaging the equipment, periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 megohms (Mohms).



Warning During this procedure, wear grounding wrist straps to avoid ESD damage to the router. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.

Installing the VPN Module in a Cisco 1720 Router

This section describes how to install the VPN module in a Cisco 1720 router. It contains the following sections:

- Opening the Cisco 1720 Chassis
- Installing the VPN Module
- Closing the Cisco 1720 Chassis

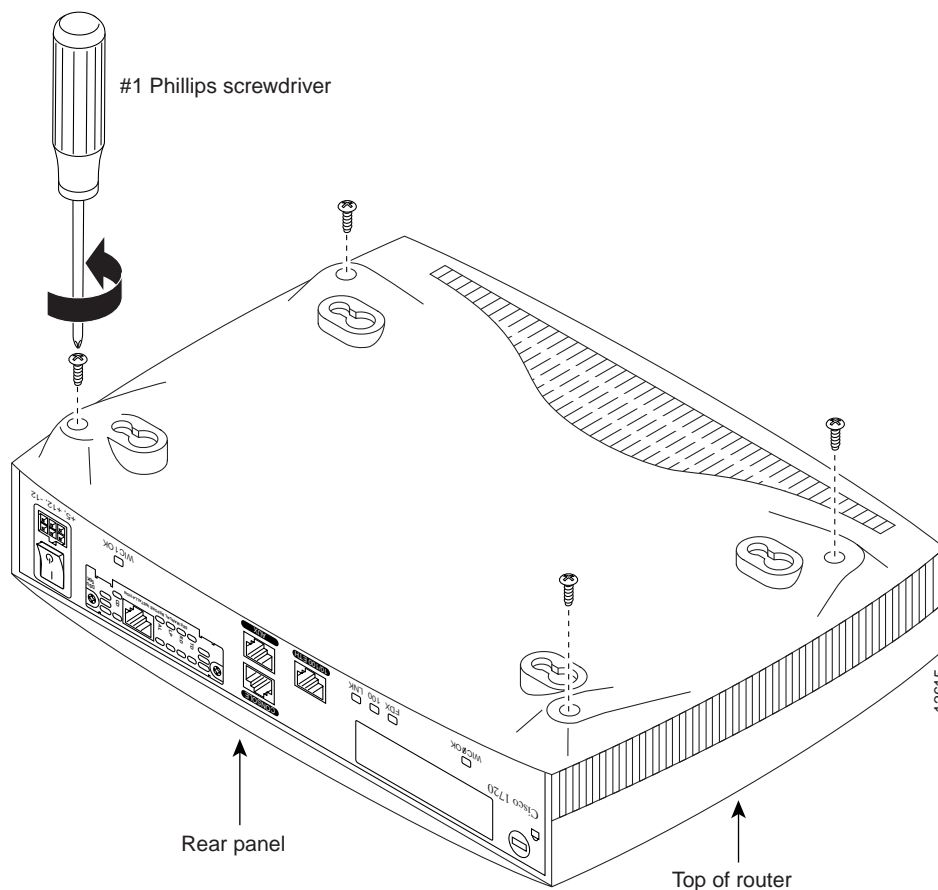
Opening the Cisco 1720 Chassis

In order to install the VPN module in a Cisco 1720 router, you must open the router chassis. Opening the chassis requires a number one Phillips screwdriver.

Follow these steps to open the chassis:

- Step 1** Make sure the router is turned off and is disconnected from the power supply.
- Step 2** Turn the router upside down, and rest the top of the router on a flat surface.
- Step 3** Use the Phillips screwdriver to remove the four screws that hold the top and bottom of the chassis together, as shown in Figure 2.

Figure 2 Removing the Chassis Screws



- Step 4** Turn the router back to its original position (top up).
- Step 5** Gently pull the top of the router (which is facing up toward you) up and away from the bottom of the router.
- At this point, you might have to disconnect the fan inside the top of the router chassis from the motherboard. Do this by disconnecting the fan cable from the connector (labeled FAN) on the motherboard.
- Step 6** Place the router bottom on an antistatic mat, and begin installing the VPN module.

Installing the VPN Module

Follow the steps in this section to install the VPN module.

- Step 1** Using one of the screws provided, attach the standoff to the top side of the 1720 router motherboard.
- Locate the small hole in the motherboard just to the right of the Flash memory at the right-front corner of the motherboard (when facing the front of the router). Figure 3 shows the location of the standoff at the bottom of the dotted line.
 - Turn the motherboard over and attach the standoff to it using one of the screws provided as shown in Figure 4.

Figure 3 Cisco 1720 Motherboard—VPN Module Location

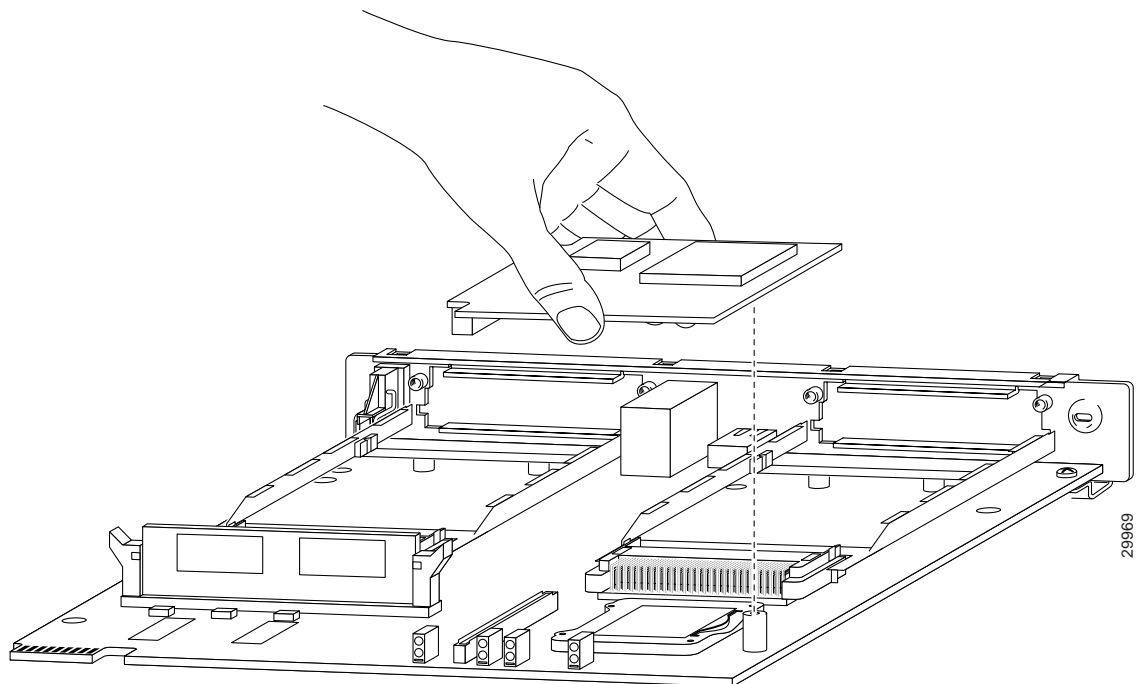
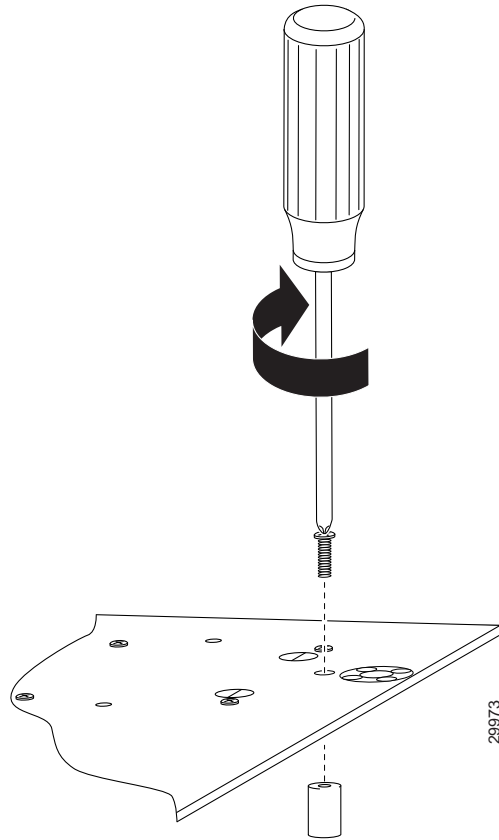


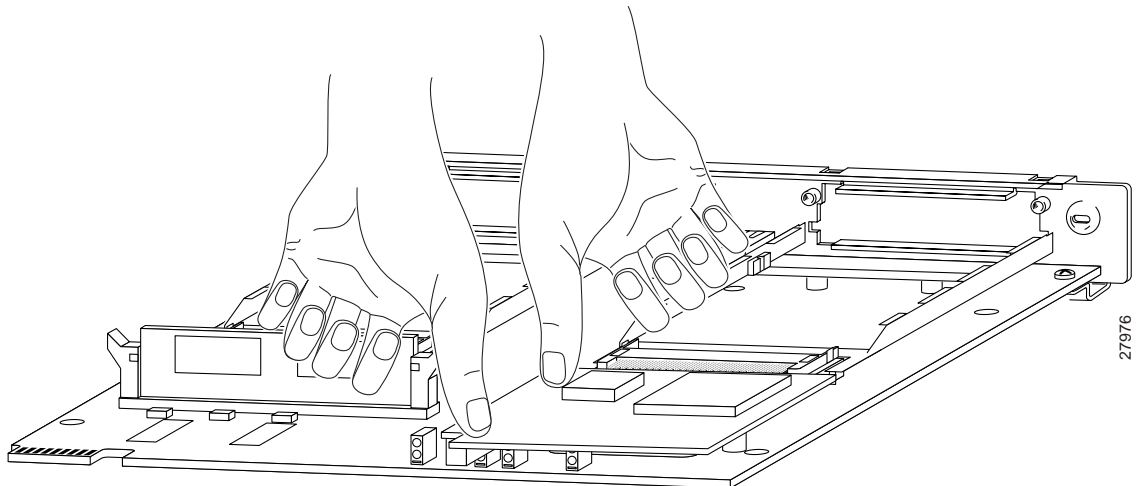
Figure 4 **Securing the Standoff to the 1720 Motherboard**



Step 2 The VPN module plugs into a socket just to the left of the Flash memory at the right-front corner of the motherboard (when facing the front of the router). Figure 3 shows the location of the VPN module socket.

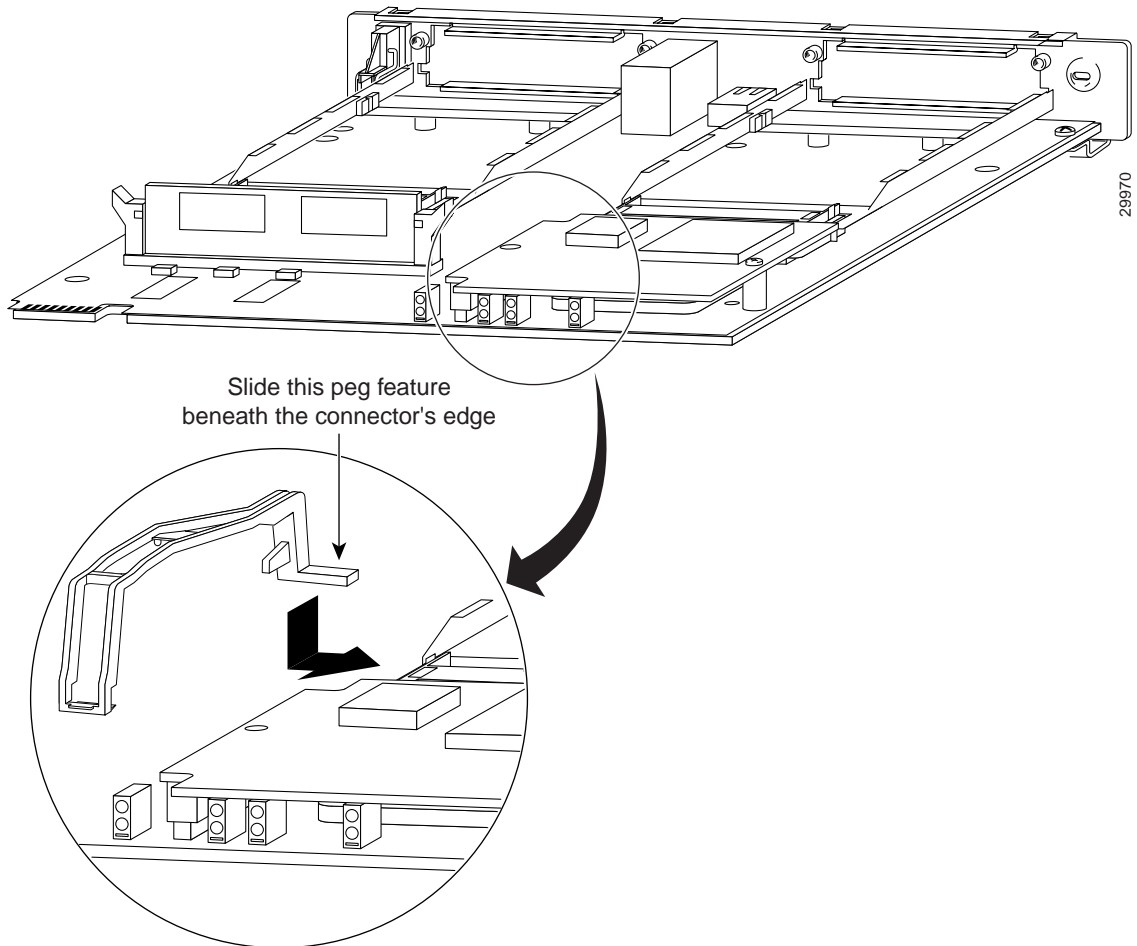
Step 3 Pushing down with both thumbs as shown in Figure 5, plug the VPN module into the socket.

Figure 5 **Plugging in the VPN Module**



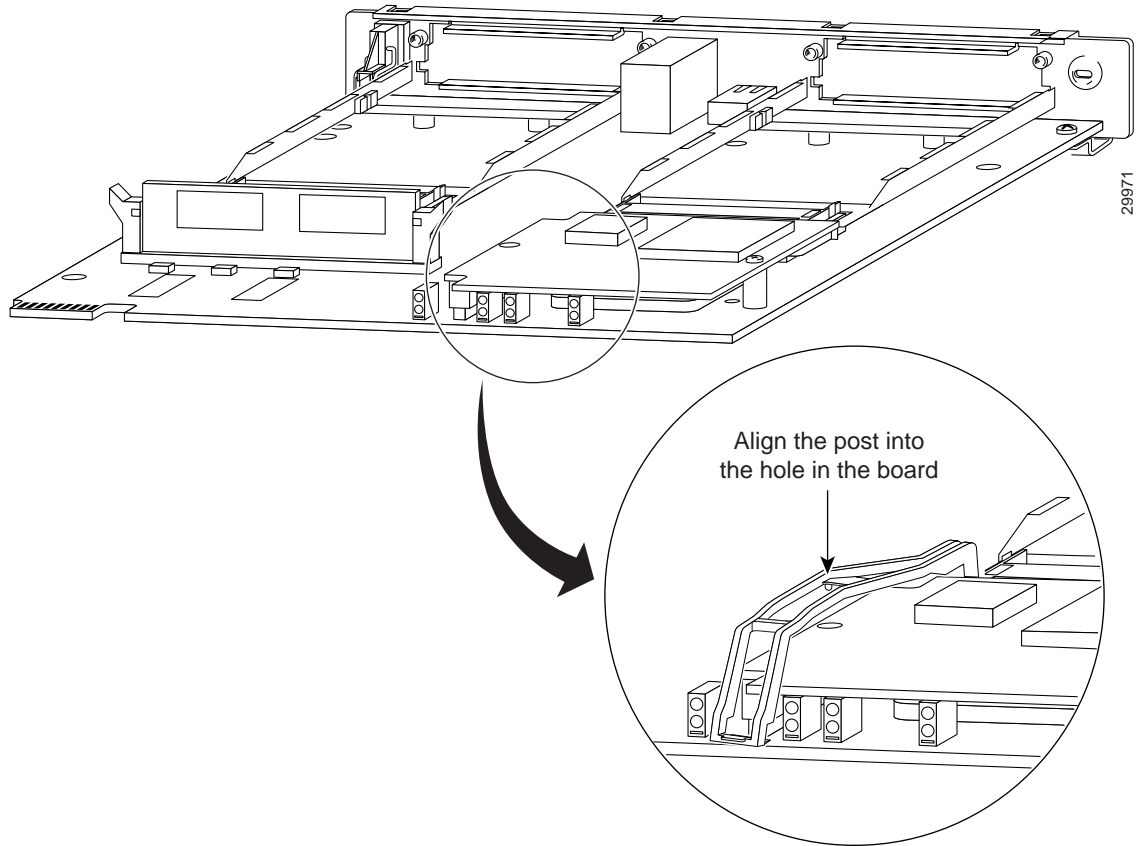
- Step 4** Using a remaining screw, secure the standoff to the VPN module.
- Step 5** To secure the VPN board connection in the socket, you must attach a retention clip.
- (a) The retention clip for the 1720 router slides over the VPN module where it connects to the socket and clips to the side of the router motherboard. The horizontal tab slides underneath the WIC 0 socket as shown in Figure 6.

Figure 6 Retention Clip Location



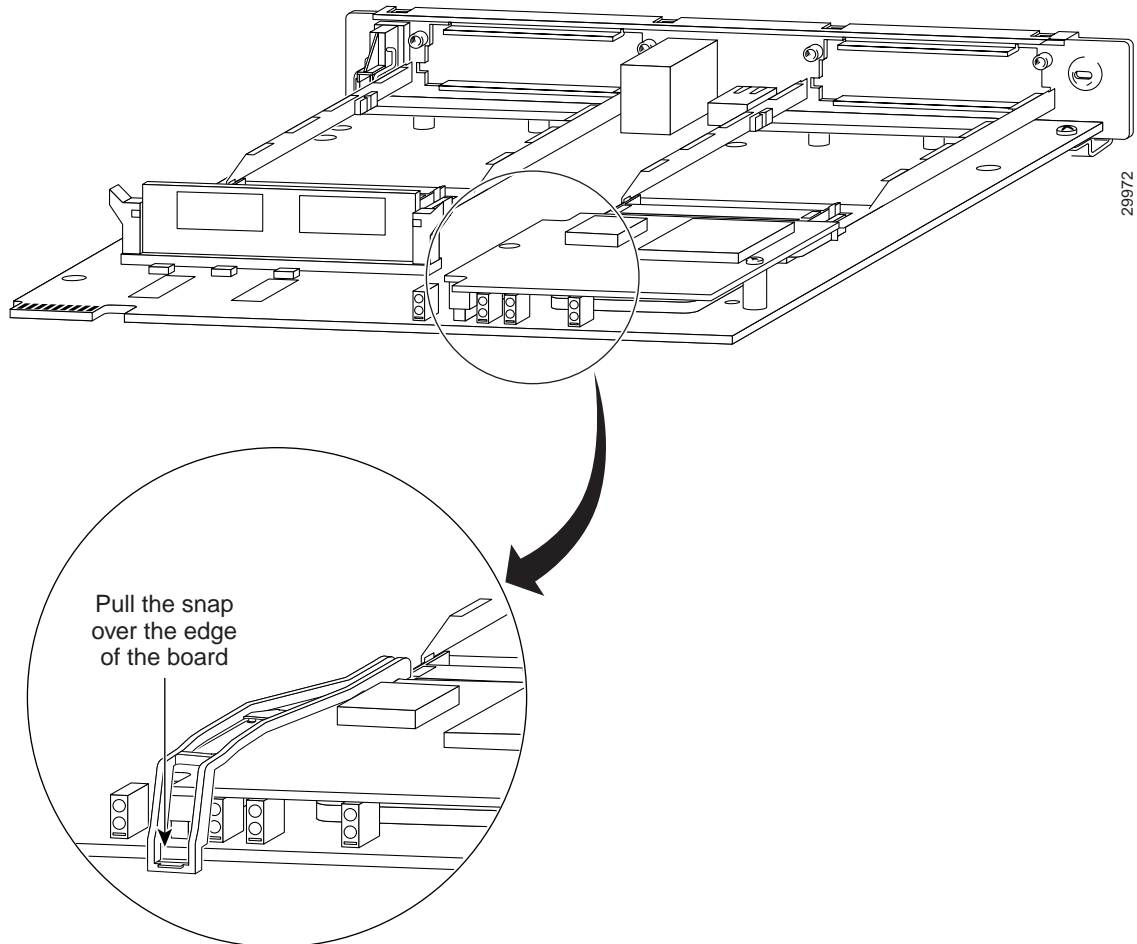
- (b) Align the post in the middle of the clip with the hole in the center of the socket-side of the VPN card as shown in Figure 7.

Figure 7 **Aligning the Retention Clip Center Post**



- (c) Attach the retention clip to the motherboard as shown in Figure 8.

Figure 8 Attaching the Retention Clip to the 1720 Motherboard

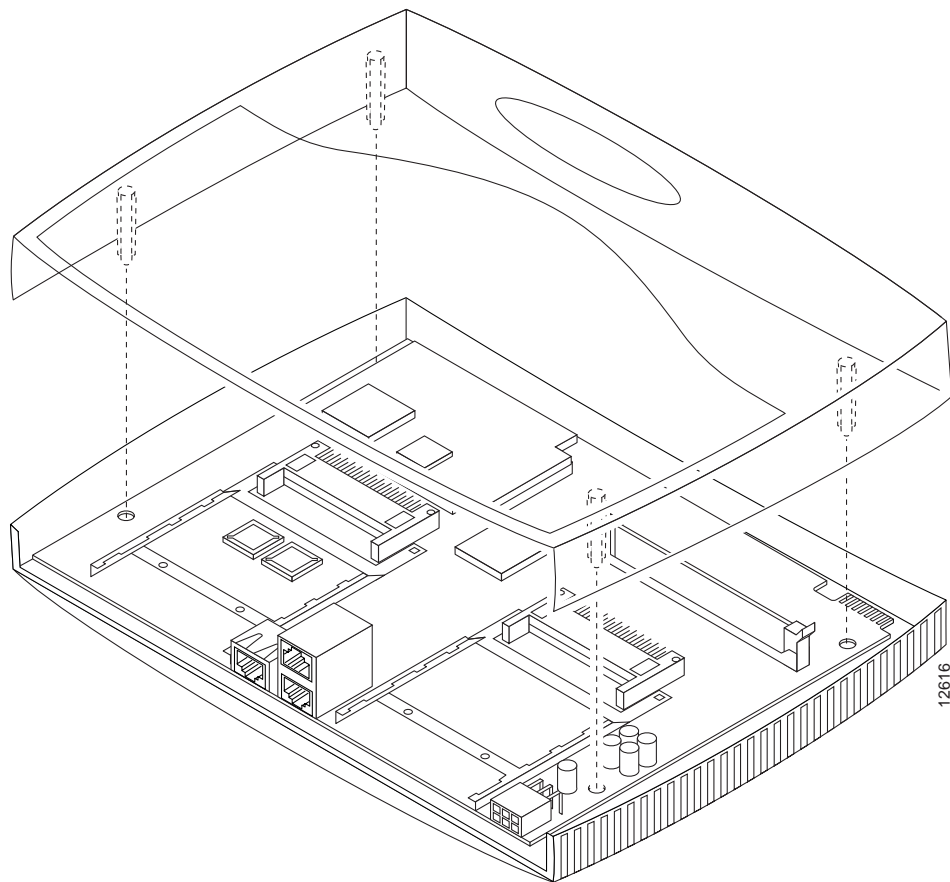


Closing the Cisco 1720 Chassis

After installing the VPN module on the motherboard, follow these steps to close the chassis:

- Step 1** If you disconnected the fan from the motherboard as described in the “Opening the Cisco 1720 Chassis” section, reconnect the fan cable to the connector labeled FAN on the motherboard.
- Step 2** Locate the posts that protrude from the inside of the chassis cover and the corresponding openings on the chassis bottom.
- Step 3** Line up the posts with the corresponding openings, as shown in Figure 9, and carefully slide the posts into the openings, using caution not to damage the router motherboard with the posts.
- Step 4** Replace the screws that you removed when opening the chassis. (See Figure 2.)

Figure 9 Closing the Cisco 1720 Chassis



Installing the VPN Module in a Cisco 1750 Router

This section describes how to install the VPN module in a Cisco 1750 router. It contains the following sections:

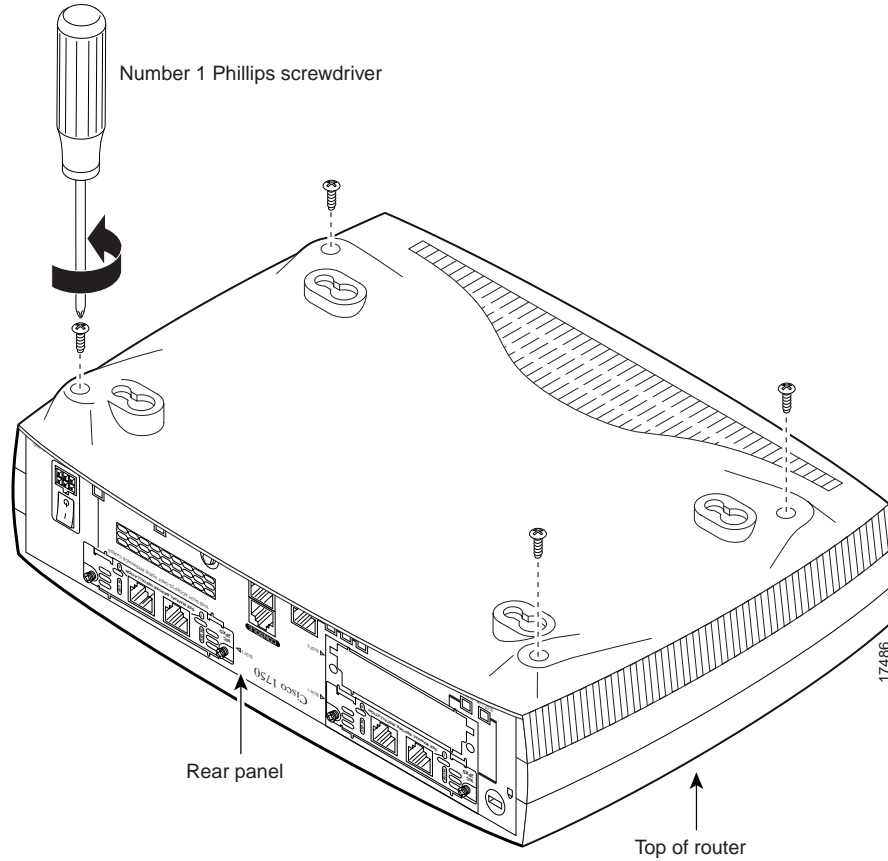
- Opening the Cisco 1750 Chassis
- Installing the VPN Module
- Closing the Cisco 1750 Chassis

Opening the Cisco 1750 Chassis

To install the VPN module, you must open the chassis. Opening the chassis requires a number one Phillips screwdriver.

Follow these steps to open the chassis:

- Step 1** Make sure the router is turned off and is disconnected from the power supply.
- Step 2** Turn the router upside down, and rest the top of the router on a flat surface.
- Step 3** Use the Phillips screwdriver to remove the four screws that hold the top and bottom of the chassis together, as shown in Figure 10.

Figure 10 Removing the Cisco 1750 Chassis Screws

Step 4 Turn the router back to its original position (top up).

Step 5 Gently pull the top of the router (facing toward you) up and away from the bottom of the router.

At this point, disconnect the fan, which is inside the top of the router chassis, from the motherboard. Do this by disconnecting the fan cable from the connector (labeled FAN) on the motherboard.

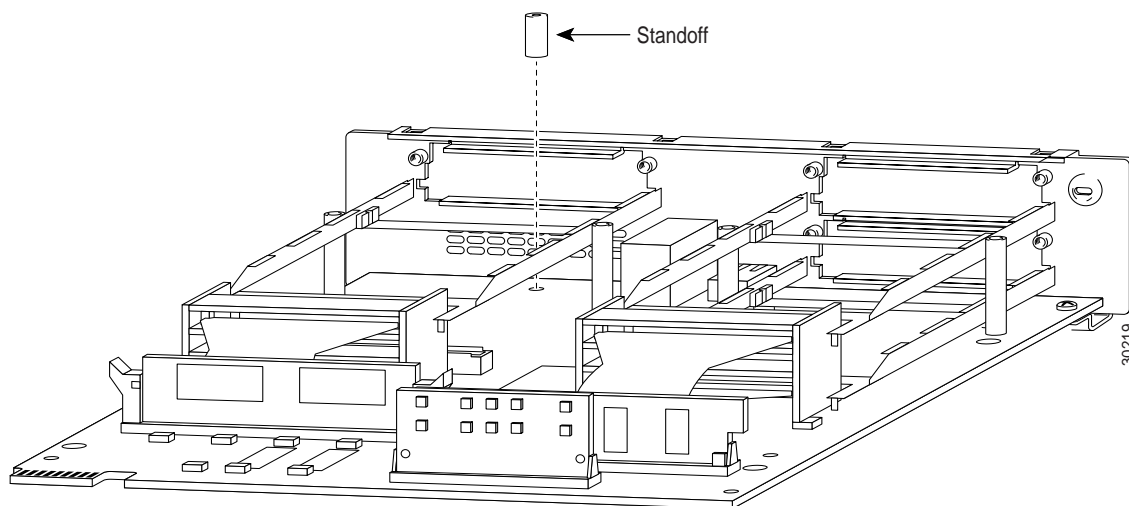
Step 6 Place the router bottom on an antistatic mat and begin installing the VPN module.

Installing the VPN Module

Follow the steps in this section to install the VPN module.

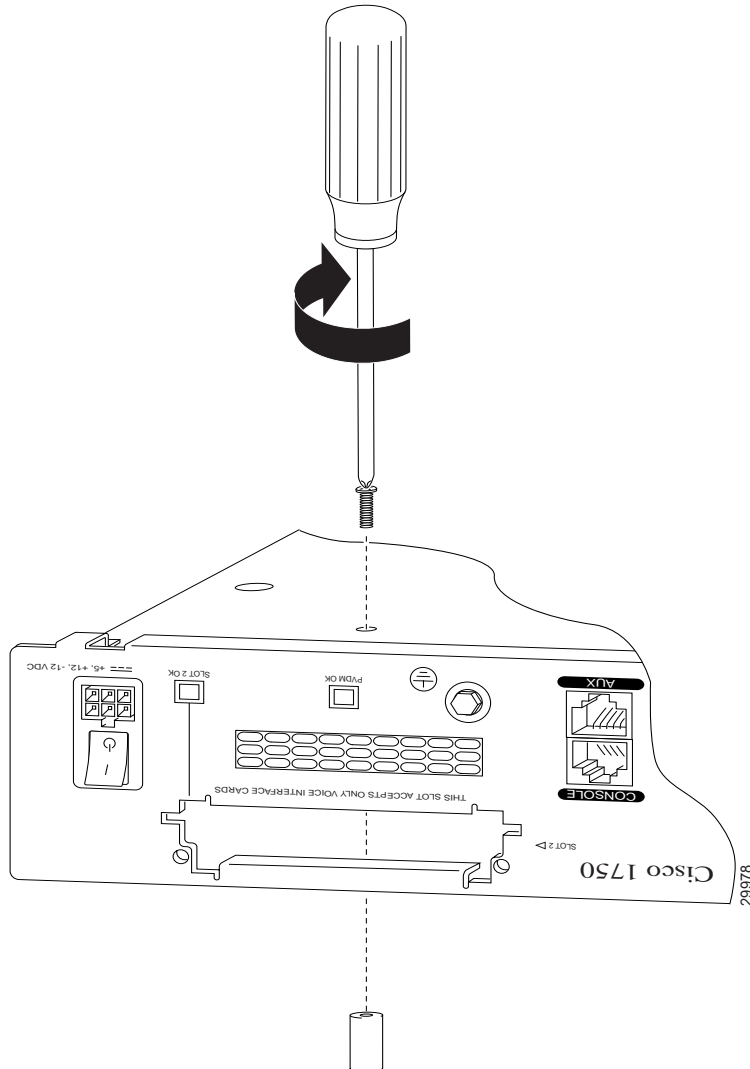
- Step 1** The VPN module plugs into a socket under slot 2. If there is a VIC in slot 2, you must remove it.
- (a) Loosen the screws that secure the VIC to the backplane of the router.
 - (b) Carefully slide the VIC out of the back of the router.
- Step 2** Using one of the screws provided, attach the standoff to the 1720 motherboard.
- (a) First, locate the hole in the motherboard under slot 2, toward the rear of the router; as shown in Figure 11.

Figure 11 Cisco 1750 Standoff Location



- (b) Turn the motherboard over and attach the standoff to it using one of the screws provided as shown in Figure 12.

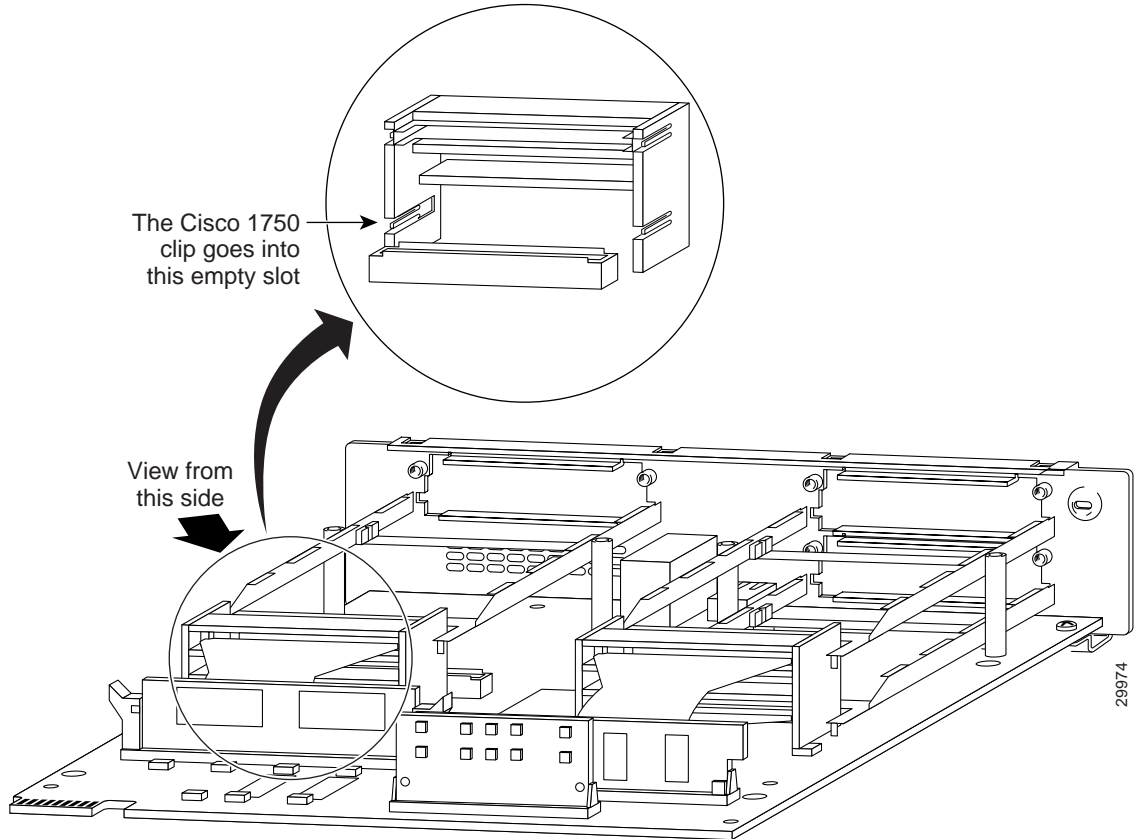
Figure 12 **Securing the Standoff to the 1750 Motherboard**



Step 3 Install the 1750 VPN module retention clip.

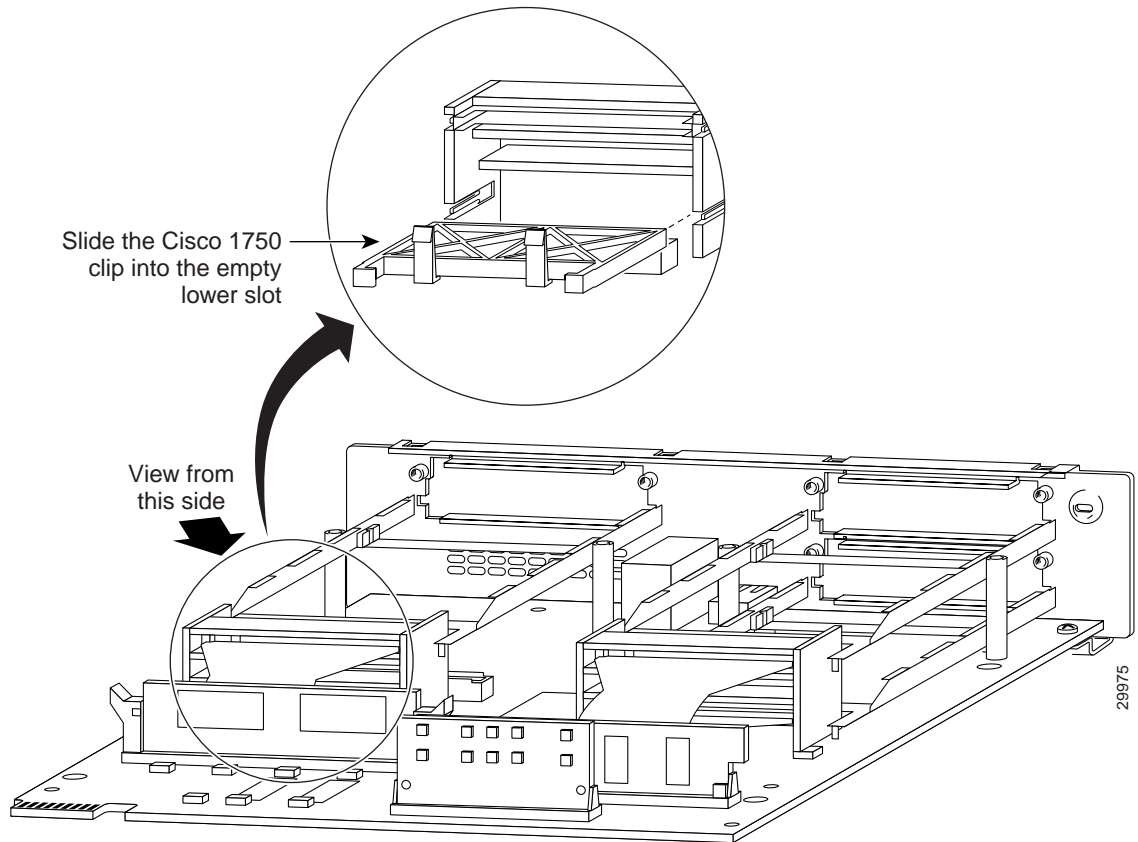
- (a) The 1750 retention clip slides into the empty slot in the plastic bracket that holds the VIC slot 2 socket as shown in Figure 13.

Figure 13 Cisco 1750 Retention Clip Location



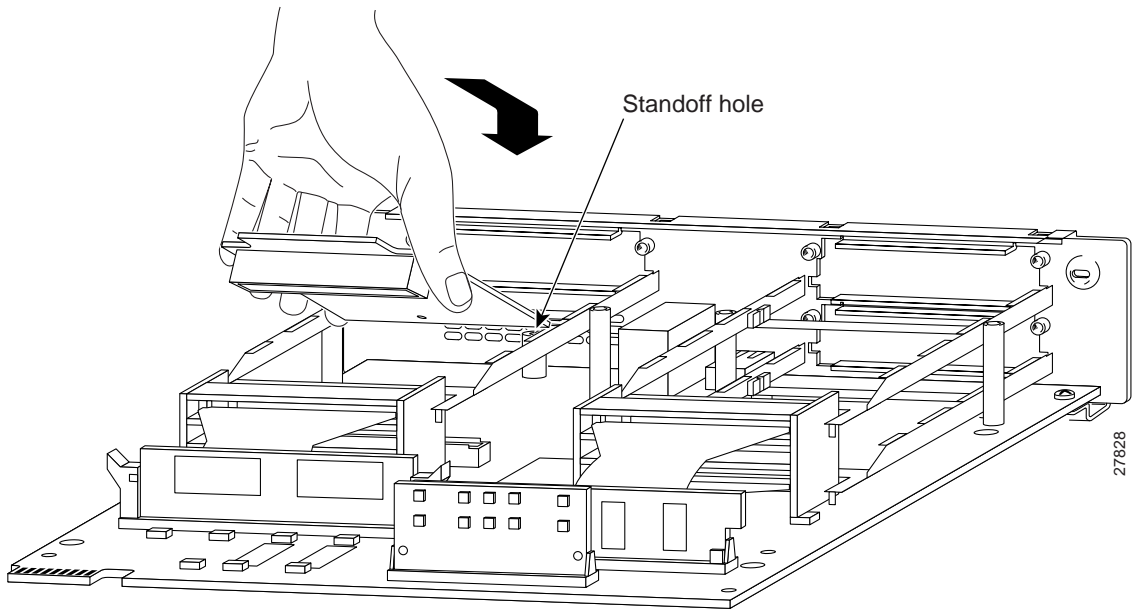
- (b) Slide the clip into the empty slot with the tabs facing forward as shown in Figure 14. Place your thumbs on the horizontal tabs and push the clip into the slot until it is fully seated.

Figure 14 Installing the 1750 Retention Clip



Step 4 Locate the VPN module socket and slide the VPN module underneath the VIC card guide as shown in Figure 15.

Figure 15 Cisco 1750 Motherboard—VPN module Location



Step 5 Pushing down with both thumbs as shown in Figure 16, plug the VPN module into the socket. The vertical tabs on the retention clip should snap over the top of the VPN module securing it into the socket as shown in Figure 17.

Figure 16 Plugging the VPN module

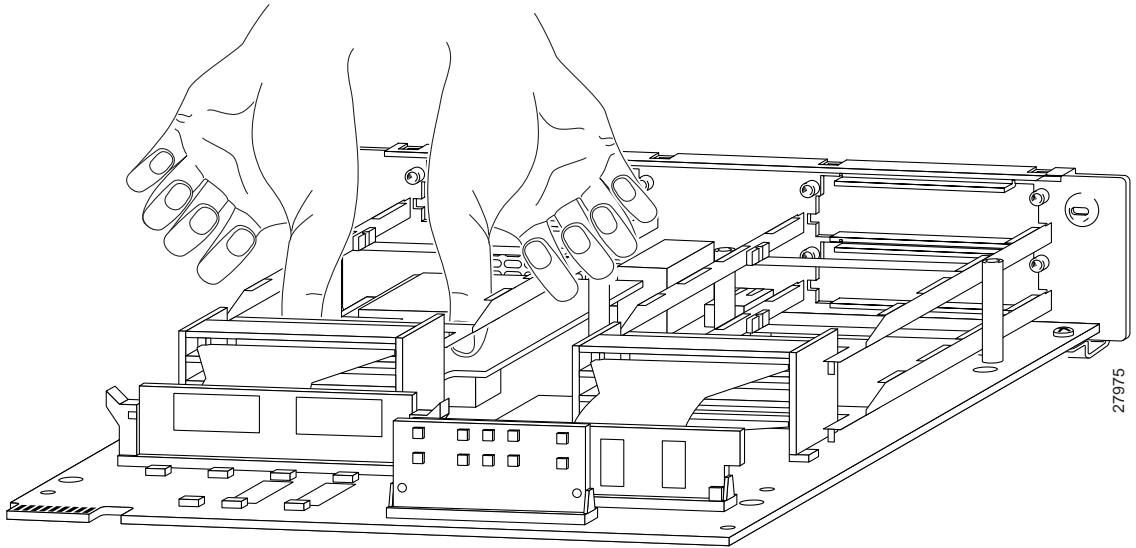
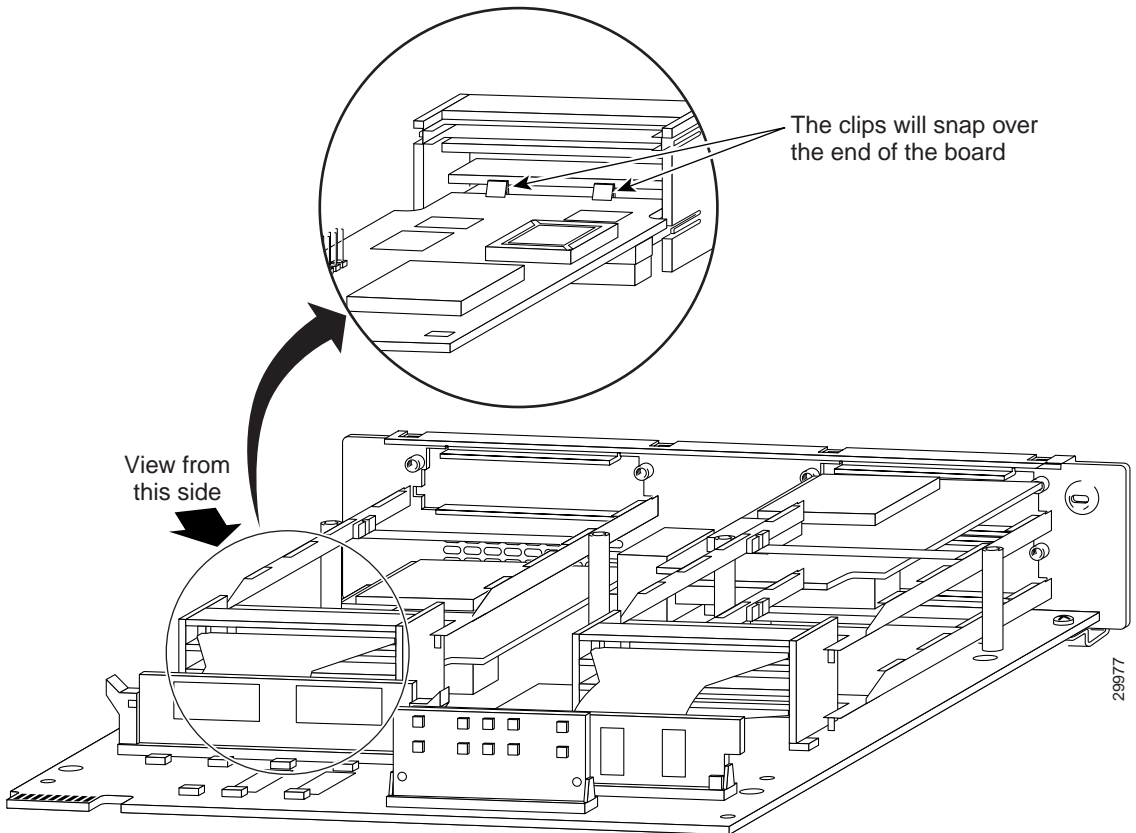


Figure 17 Securing the VPN module



- Step 6** Using a remaining screw, secure the standoff to the VPN module.
- Step 7** If you removed a VIC from slot 2 in Step 2, reinsert it into slot 2.
- (a) Hold the card by the edges on either side of the card front panel, and line up the card edges with the guides inside the card slot.
 - (b) Insert the card into the slot and gently push it into the router until the front panel of the card is flush with the rear panel of the router.
 - (c) Tighten the screws.
- Step 8** Using the remaining screw, secure the standoff to the VPN module.

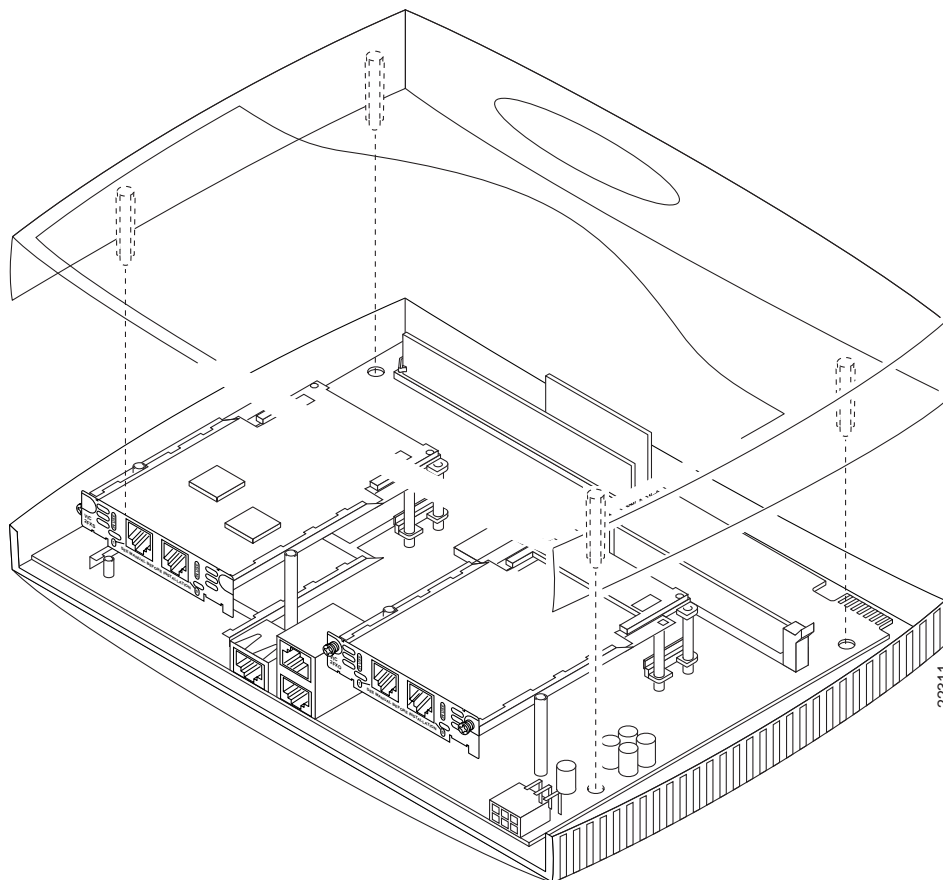
Closing the Cisco 1750 Chassis

After installing the VPN module on the motherboard, close the chassis by following these steps:

- Step 1** If you disconnected the fan from the motherboard as described in the “Opening the Cisco 1750 Chassis” section, reconnect the fan cable to the connector labeled FAN on the motherboard.
- Step 2** Locate the posts that protrude from the inside of the chassis cover and the corresponding openings on the chassis bottom.
- Step 3** Line up the posts with the corresponding openings, as shown in Figure 18, and carefully slide the posts into the openings. Be careful not to damage the router motherboard with the posts.

Step 4 Replace the screws that you removed when opening the chassis. (See Figure 10.)

Figure 18 Closing the Cisco 1750 Chassis



Related Documentation

This section describes additional documentation related to the VPN module or to your Cisco 1720 or 1750 router.

For information about new Cisco IOS commands related to the VPN module, refer to the Cisco IOS Release 12.1(1)XC feature modules listed in the section below titled “Feature Modules.”

For information about your Cisco 1720 or Cisco 1750 routers, refer to the section below titled “Platform-Specific Documents.”

For information about Cisco IOS Release 12.1, refer to the section below titled “Release-Specific Documents.”

Printed manuals and electronic documents are available, except for feature modules, which are available online on CCO and the Documentation CD-ROM.

Feature Modules

Feature modules describe new features supported by Release 12.1(1)XC and are updates to the Cisco IOS documentation set. A feature module consists of a brief overview of the feature, benefits, configuration tasks, and a command reference. As updates, the feature modules are available online only. Feature module information is incorporated in the next printing of the Cisco IOS documentation set.

To reach the Release 12.1(1)XC feature modules:

- From CCO, click on this path (under the heading **Service & Support**):

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: New Feature Documentation: New Features in 12.1-Based Limited Lifetime Releases: New Features in Release 12.1X: New Features in Release 12.1(1)X

- From the Documentation CD-ROM, click on this path:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: New Feature Documentation: New Features in 12.1-Based Limited Lifetime Releases: New Features in Release 12.1X: New Features in Release 12.1(1)X

Platform-Specific Documents

Cisco 1720 Router

These documents are available for the Cisco 1720 router on CCO and the Documentation CD-ROM:

- *Installing Your Cisco 1720 Router*
- *Cisco 1720 Router Hardware Installation Guide*
- *Cisco 1700 Router Software Configuration Guide*
- *Regulatory Compliance and Safety Information*
- *Configuration Notes*
- *Release Notes for the Cisco 1720 Router*
- *WAN Interface Cards Hardware Installation Guide*

On CCO at:

Technical Documents: Documentation Home Page: Access Servers and Access Routers: Modular Access Routers: Cisco 1720 Router

On the Documentation CD-ROM at:

Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 1720 Router

Cisco 1750 Router

These documents are available for the Cisco 1750 router on CCO and the Documentation CD-ROM:

- *Cisco 1750 Router Hardware Installation Guide*
- *Safety Information for Cisco 1600 and 1700 Routers*
- *Cisco 1750 Router Voice over IP Configuration Guide*

- *Voice-over-IP Quick Start Guide*
- *Release Notes for the Cisco 1750 Router*

On CCO at:

Technical Documents: Documentation Home Page: Access Servers and Access Routers: Modular Access Routers: Cisco 1750 Router

On the Documentation CD-ROM at:

Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 1750 Router

Release-Specific Documents

The following documents are specific to Release 12.1. They are located on CCO and the Documentation CD-ROM:

- Release Notes for Cisco IOS Release 12.1
 - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.1* from CCO, click on this path (under the heading **Service & Support**):

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Release Notes: Cross-Platform Release Notes
 - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.1* on the Documentation CD-ROM, click on this path:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Release Notes: Cross-Platform Release Notes
- Product bulletins, field notices, and other release-specific documents

To reach these documents from CCO, click on this path (under the heading **Service & Support**):

Technical Documents: Product Bulletins
- *Caveats for Cisco IOS Release 12.1 T*

The documents *Caveats for Cisco IOS Release 12.1* and *Caveats for Cisco IOS Release 12.1 T* contain caveats applicable to all platforms for all maintenance releases of Release 12.1.

 - To reach the caveats document from CCO, click on this path (under the heading **Service & Support**):

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Caveats
 - To reach the caveats document on the Documentation CD-ROM, click on this path:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Caveats

Note If you have an account with CCO, you can use Bug Navigator II to find caveats of any severity for any release. You can reach Bug Navigator II on CCO at **Software Center: Cisco IOS Software: BUG TOOLKIT: Cisco Bug Navigator II**, or at <http://www.cisco.com/support/bugtools/bugtool.shtml>.

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CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: <http://www.cisco.com>
- WWW: <http://www-europe.cisco.com>
- WWW: <http://www-china.cisco.com>
- Telnet: [cco.cisco.com](telnet://cco.cisco.com)
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

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This document is to be used in conjunction with the documents listed in the “Related Documentation” section.

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