



CHAPTER 1

Overview

This chapter provides physical and functional overviews of the PA-8E port adapter. The chapter contains the following sections:

- [Port Adapter Overview, page 1-1](#)
- [Ethernet 10BaseT Overview, page 1-2](#)
- [PA-8E LEDs, page 1-4](#)
- [Cables, Connectors, and Pinouts, page 1-5](#)
- [Port Adapter Slot Locations on the Supported Platforms, page 1-6](#)
- [Identifying Interface Addresses, page 1-14](#)

Port Adapter Overview

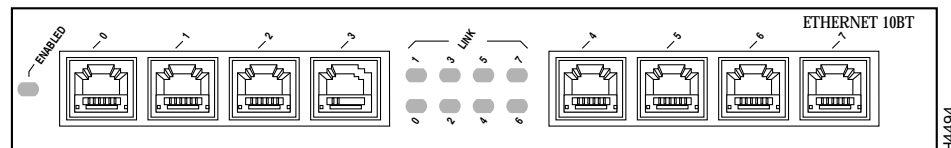
The PA-8E, shown in [Figure 1-1](#), provides up to eight IEEE 802.3 Ethernet 10BaseT interfaces. Each Ethernet 10BaseT interface allows a maximum bandwidth of 10 Mbps, for a maximum aggregate bandwidth of 80 Mbps. All eight ports run at line (wire) speed.



Note

Cisco 7500 series routers support full-duplex mode on PA-8E.

Figure 1-1 PA-8E—Faceplate View



The PA-8E can be installed in the following slots on the hardware platforms described in this document:

- VIP (in the Cisco 7000 series and Cisco 7500 series routers)—Port adapter slot 0 and port adapter slot 1
- Catalyst RSM/VIP2 (in a Catalyst 5000 family switch)—Port adapter slot 0 and port adapter slot 1
- Cisco 7304 PCI Port Adapter Carrier Card (in the Cisco 7304 router)—router module slots 2 through 5
- Cisco 7200 series routers and Cisco 7200 VXR routers—Port adapter slot 1 and slot 2 of the Cisco 7202 router; port adapter slot 1 through slot 4 of the Cisco 7204 router and Cisco 7204VXR router; port adapter slot 1 through slot 6 of the router and Cisco 7206VXR router
- Cisco 7100 series routers—Port adapter slot 3 in the Cisco 7120 series router, and port adapter slot 4 in the Cisco 7140 series router
- Cisco uBR7200 series universal broadband routers—Port adapter slot 1 of the Cisco uBR7223 router; port adapter slot 1 and slot 2 of the Cisco uBR7246 router and Cisco uBR7246 VXR router
- Cisco 7201 router—Port adapter slot 1
- Cisco 7301 router—Port adapter slot 1
- Cisco 7401ASR router—Port adapter slot 1

Port adapters have a handle attached, but this handle is not always shown in the figures to allow a full view of detail on the port adapter faceplate.

Ethernet 10BaseT Overview

The term *Ethernet* is commonly used for all carrier sense multiple access/collision detect (CSMA/CD) LANs that generally conform to Ethernet specifications, including IEEE 802.3. Ethernet Version 2 and IEEE 802.3 were based on and developed shortly after Ethernet Version 1. The slight differences between Ethernet and IEEE 802.3 are implemented in hardware, and both are supported automatically by the Ethernet 10BaseT port adapter without any hardware configuration changes. Ethernet and IEEE 802.3 are the most widely used LAN protocols. They are well suited to applications in which a local communication medium must carry sporadic, occasionally heavy traffic at high peak data rates.

Stations on a CSMA/CD LAN can access the network at any time. Before sending data, the station listens to the network to see if it is already in use. If the network is in use, the station waits until the network is not in use, and then transmits. A collision occurs when two stations listen for network traffic, and do not hear any, and then transmit simultaneously. When this happens, both transmissions are damaged, and the stations must retransmit. The stations detect the collision and use backoff algorithms to determine when they should retransmit.

Both Ethernet and IEEE 802.3 are broadcast networks, which means that all stations see all transmissions. Each station must examine received frames to determine whether it is the intended destination. If the destination is correct, it passes the frames to a higher protocol layer for processing. IEEE 802.3 specifies several different physical layers, and Ethernet defines only one.

Each IEEE 802.3 physical layer protocol has a name that summarizes its characteristics in the format *speed/signaling method/segment length*, where *speed* is the LAN speed in Mbps, *signaling method* is the signaling method used (either *Baseband* or *Broadband*), and *segment length* is the maximum length between stations in hundreds of meters.

IEEE 802.3 10BaseT Specifications

Table 1-1 summarizes the characteristics of IEEE 802.3 Ethernet and Ethernet Version 2 for 10BaseT.

Table 1-1 IEEE 802.3 and 10BaseT Ethernet Version 2 Physical Characteristics

Parameter	IEEE 802.3 Ethernet	10BaseT Ethernet Version 2
Data rate (Mbps)	10	10
Signaling method	Baseband	Baseband
Maximum segment length (m)	500	100 (UTP)
Media	50-ohm coaxial (thick)	UTP
Topology	Bus	Star

Table 1-2 lists the cabling specifications for 10-Mbps transmission over UTP and foil twisted-pair (FTP) cables.

Table 1-2 Cable Specifications for 10-Mbps 10BaseT

Parameter	RJ-45
Cable specification	Category 5 UTP ¹ , 22 to 24 AWG ²
Maximum segment length	100 m (328 ft.) for 10BaseT
Maximum network length	200 m (656 ft) (with 1 repeater)

1. Cisco Systems does not supply Category 5 UTP RJ-45 cables; these cables are available commercially.
2. AWG = American Wire Gauge. This gauge is specified by the EIA/TIA-568 standard.



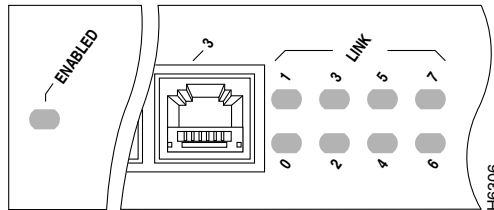
Note

The IEEE 802.3 Ethernet specifications call the PA-8E an end station, and the PA-8E has a built-in transceiver. The PA-8E interfaces connect directly to a hub or repeater.

PA-8E LEDs

The PA-8E has one status LED for each port, and an ENABLED LED, standard on all port adapters. After system initialization, the ENABLE LED lights to indicate that the PA-8E has been enabled for operation. The LEDs are shown in [Figure 1-2](#).

Figure 1-2 PA-8E LEDs—Horizontal Orientation



The following conditions must be met before the ENABLED LED lights:

- PA-8E is correctly connected and receiving power.
- A valid microcode version has been downloaded successfully.
- The bus recognizes the PA-8E or PA-8E-equipped VIP or Catalyst RSM/VIP2.

If any of these conditions is not met, or if the initialization fails for other reasons, the ENABLED LED does not light. When an RJ-45 port is active, its link LED lights when the PA-8E receives a carrier signal from the network.

Table 1-3 lists LED colors and indications.

Table 1-3 PA-8E LEDs

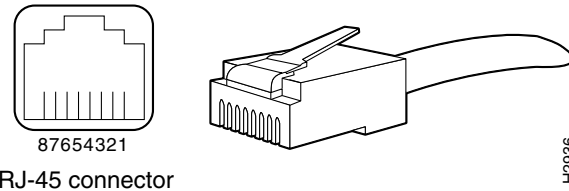
LED Label	Color	State	Meaning
ENABLED	Green	On	Port adapter is enabled for operation.
0 through 7	Red	On	Indicates port is active, receiving a carrier signal from the network.

Cables, Connectors, and Pinouts

The interface connectors on the PA-8E are eight individual RJ-45 receptacles. You can use all eight connectors simultaneously. Each connector supports IEEE 802.3 and Ethernet 10BaseT interfaces compliant with appropriate standards. The RJ-45 connectors require external transceivers. Cisco Systems does not supply Category 5 UTP RJ-45 cables; these cables are available commercially.

Figure 1-3 shows the RJ-45 connectors. Table 1-4 lists the pinouts and signals for the RJ-45 connectors.

Figure 1-3 PA-8E RJ-45 Connector—Plug and Receptacle



Warning

The ports labeled “Ethernet,” “10BaseT,” “Token Ring,” “Console,” and “AUX” are safety extra-low voltage (SELV) circuits. SELV circuits should only be connected to other SELV circuits. Because the BRI circuits are treated like telephone-network voltage, avoid connecting the SELV circuit to the telephone network voltage (TNV) circuits.

Table 1-4 PA-8E RJ-45 Connector Pinout

Pin	Description
1	Transmit Data + (TxD+)
2	TxD–
3	Receive Data + (RxD+)
6	RxD–



Note

Referring to the RJ-45 pinout in Table 1-4, proper common-mode line terminations should be used for the unused Category 5, UTP cable pairs 4/5 and 7/8. Common-mode termination reduces the contributions to electromagnetic interference (EMI) and susceptibility to common-mode sources. Wire pairs 4/5 and 7/8 are actively terminated in the RJ-45 port circuitry in the PA-8E.

Depending on your PA-8E RJ-45 interface connector requirements, use the pinouts in [Figure 1-4](#) and [Figure 1-5](#).

Figure 1-4 *Straight-Through Cable Pinout—PA-8E RJ-45 Connection to a Hub or Repeater*

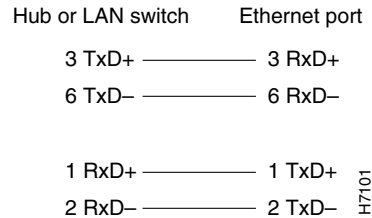
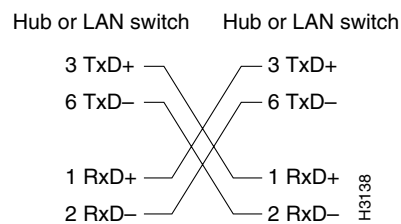


Figure 1-5 *Crossover Cable Pinout—PA-8E RJ-45 Connections Between Hubs and Repeaters*



Port Adapter Slot Locations on the Supported Platforms

This section discusses port adapter slot locations on the supported platforms. The illustrations that follow summarize slot location conventions on each platform:

- [Catalyst RSM/VIP2 Slot Numbering, page 1-7](#)
- [Cisco 7100 Series Routers Slot Numbering, page 1-8](#)
- [Cisco 7200 Series Routers and Cisco 7200 VXR Routers Slot Numbering, page 1-8](#)
- [Cisco uBR7200 Series Router Slot Numbering, page 1-9](#)
- [Cisco 7201 Router Slot Numbering, page 1-10](#)
- [Cisco 7301 Router Slot Numbering, page 1-11](#)
- [Cisco 7304 PCI Port Adapter Carrier Card Slot Numbering, page 1-11](#)
- [Cisco 7401ASR Router Slot Numbering, page 1-12](#)
- [Cisco 7000 Series Routers and Cisco 7500 Series Routers VIP Slot Numbering, page 1-13](#)

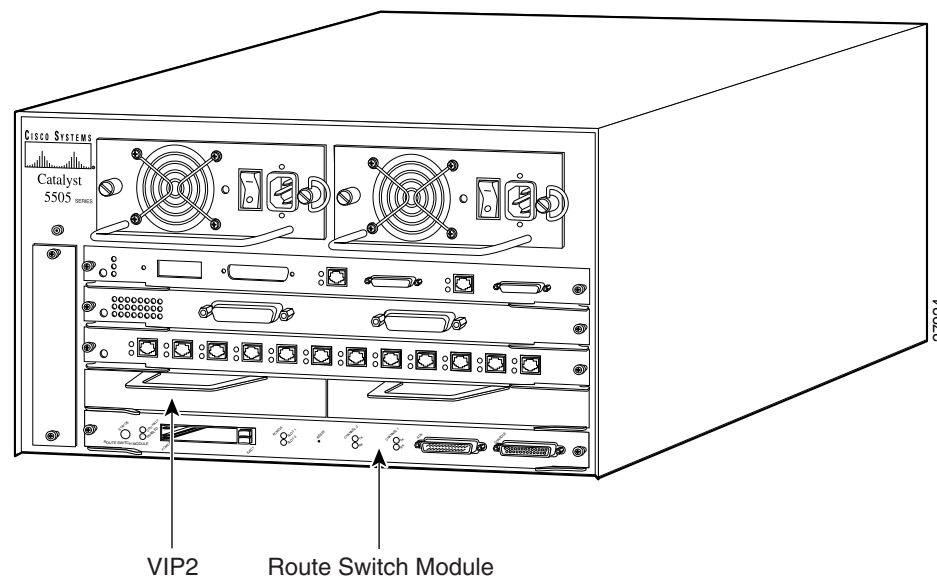
Catalyst RSM/VIP2 Slot Numbering

The Catalyst RSM/VIP2 can be installed in any slot in a Catalyst 5000 family switch except the top slots, which contain the supervisor engine modules. The Catalyst RSM/VIP2 does not use interface processor slot numbering; therefore, slots are not numbered. The PA-8E can be installed into either port adapter slot 0 or slot 1 on a Catalyst RSM/VIP2. Figure 1-6 shows a Catalyst RSM/VIP2 with two port adapters installed.

**Note**

The Catalyst 5500 switch has 13 slots. Slot 1 is reserved for the supervisor engine module. If a redundant supervisor engine module is used, it would go in slot 2; otherwise, slot 2 can be used for other modules. Slot 13 is a dedicated slot, reserved for the ATM Switch Processor (ASP) module. Refer to the *Catalyst 5000 Series Route Switch Module Installation and Configuration Note* for any additional slot restrictions for the Catalyst RSM/VIP2.

Figure 1-6 Catalyst 5000 Family Switch with Port Adapters Installed on Catalyst RSM/VIP2



Cisco 7100 Series Routers Slot Numbering

The PA-8E can be installed in port adapter slot 3 in Cisco 7120 series routers, and in port adapter slot 4 in Cisco 7140 series routers. [Figure 1-7](#) shows the slot numbering on a Cisco 7120 series router. [Figure 1-8](#) shows the slot numbering on a Cisco 7140 series router.

Figure 1-7 Port Adapter Slots in the Cisco 7120 Series Router

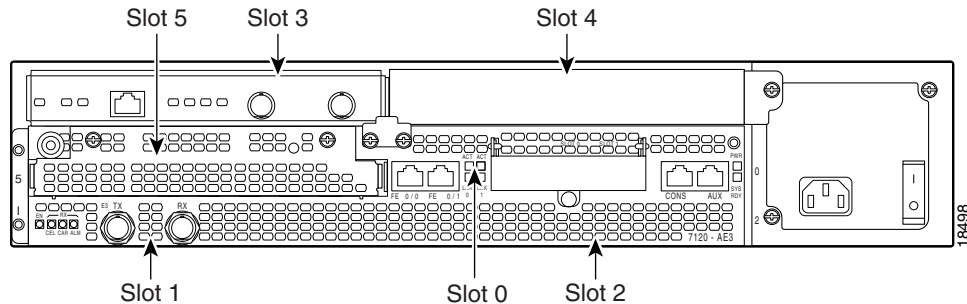
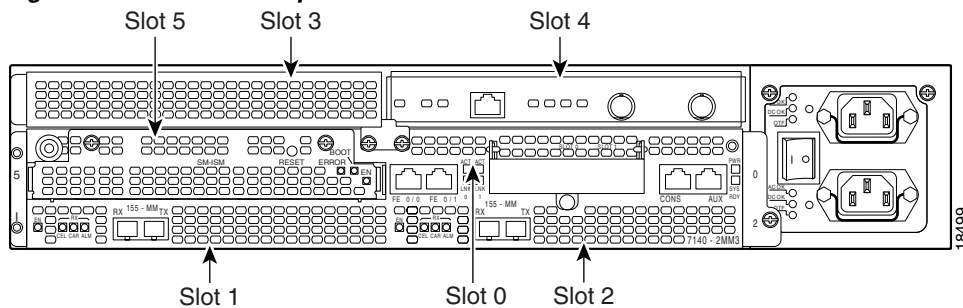


Figure 1-8 Port Adapter Slots in the Cisco 7140 Series Router



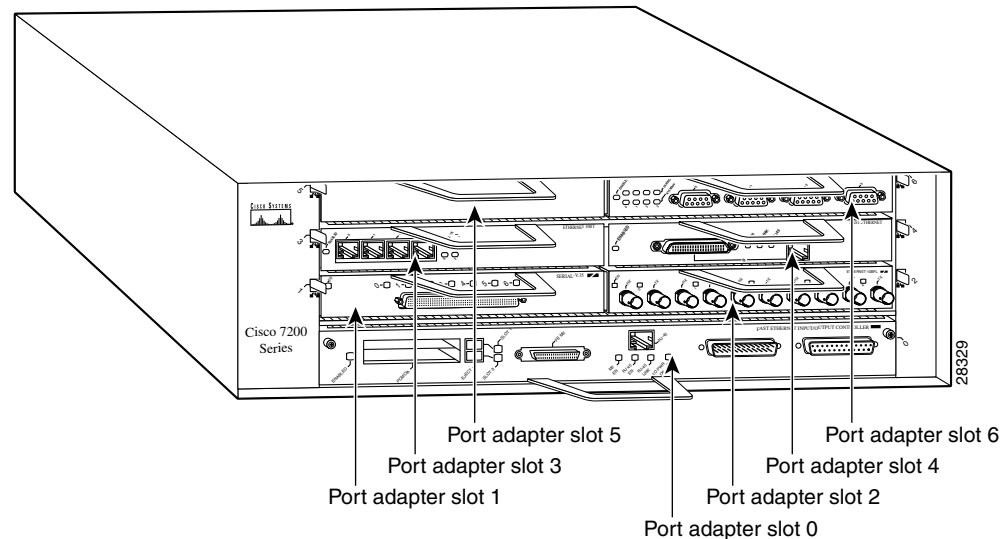
Cisco 7200 Series Routers and Cisco 7200 VXR Routers Slot Numbering

Cisco 7202 routers have two port adapter slots. The slots are numbered from left to right. You can place a port adapter in either of the slots (slot 1 or slot 2). The Cisco 7202 router is not shown.

Cisco 7204 routers and Cisco 7204VXR routers have four slots for port adapters, and one slot for an input/output (I/O) controller. The slots are numbered from the lower left to the upper right, beginning with slot 1 and continuing through slot 4. You can place a port adapter in any of the slots (slot 1 through slot 4). Slot 0 is always reserved for the I/O controller. The Cisco 7204 router and Cisco 7204VXR are not shown.

Cisco 7206 routers and Cisco 7206VXR routers (including the Cisco 7206 and Cisco 7206VXR routers as router shelves in a Cisco AS5800 Universal Access Server) have six slots for port adapters, and one slot for an input/output (I/O) controller. The slots are numbered from the lower left to the upper right, beginning with slot 1 and continuing through slot 6. You can place a port adapter in any of the six slots (slot 1 through slot 6). Slot 0 is always reserved for the I/O controller. [Figure 1-9](#) shows the slot numbering on a Cisco 7206 router. The Cisco 7206VXR router is not shown.

Figure 1-9 Port Adapter Slots in the Cisco 7206 Router

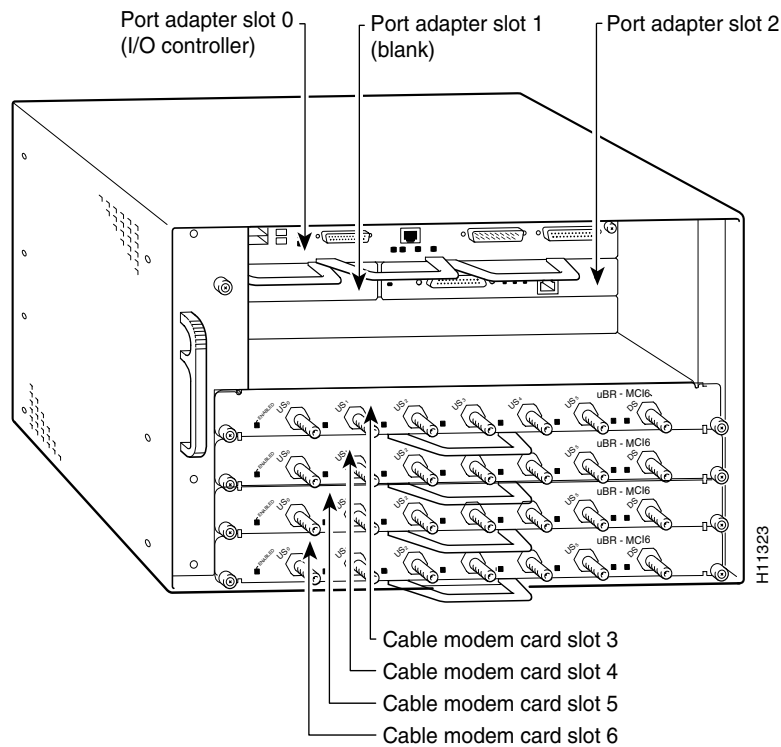


Cisco uBR7200 Series Router Slot Numbering

The Cisco uBR7223 router has one port adapter slot (slot 1). Slot 0 is always reserved for the I/O controller—if present. The Cisco uBR7223 router is not shown.

The Cisco uBR7246 router and Cisco uBR7246VXR router have two port adapter slots (slot 1 and slot 2). Slot 0 is always reserved for the I/O controller—if present. [Figure 1-10](#) shows the slot numbering of port adapters on a Cisco uBR7246 router or Cisco uBR7246VXR router.

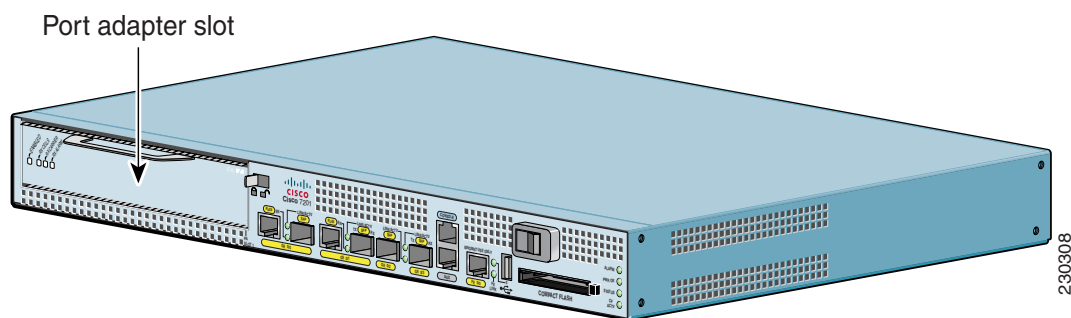
Figure 1-10 Port Adapter Slots in the Cisco uBR7246 and Cisco uBR7246VXR Routers



Cisco 7201 Router Slot Numbering

Figure 1-11 shows the front view of a Cisco 7201 router with a port adapter installed. There is only one port adapter slot (slot 1) in a Cisco 7201 router.

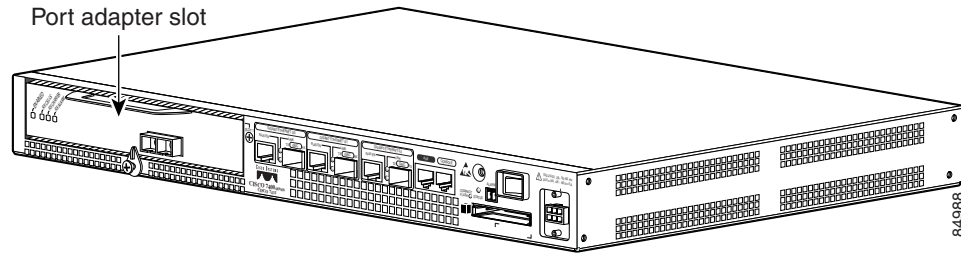
Figure 1-11 Port Adapter Slot in the Cisco 7201 Router



Cisco 7301 Router Slot Numbering

Figure 1-12 shows the front view of a Cisco 7301 router with a port adapter installed. There is only one port adapter slot (slot 1) in a Cisco 7301 router.

Figure 1-12 Port Adapter Slot in the Cisco 7301 Router



Cisco 7304 PCI Port Adapter Carrier Card Slot Numbering

The Cisco 7304 PCI Port Adapter Carrier Card installs in Cisco 7304 router module slots 2 through 5. Figure 1-13 shows a Cisco 7304 PCI Port Adapter Carrier Card with a port adapter installed. The Cisco 7304 PCI Port Adapter Carrier Card accepts one single-width port adapter.

Figure 1-14 shows the module slot numbering on a Cisco 7304 router. The port adapter slot number is the same as the module slot number. Slot 0 and slot 1 are reserved for the NPE module or NSE module.

Figure 1-13 Cisco 7304 PCI Port Adapter Carrier Card—Port Adapter Installed

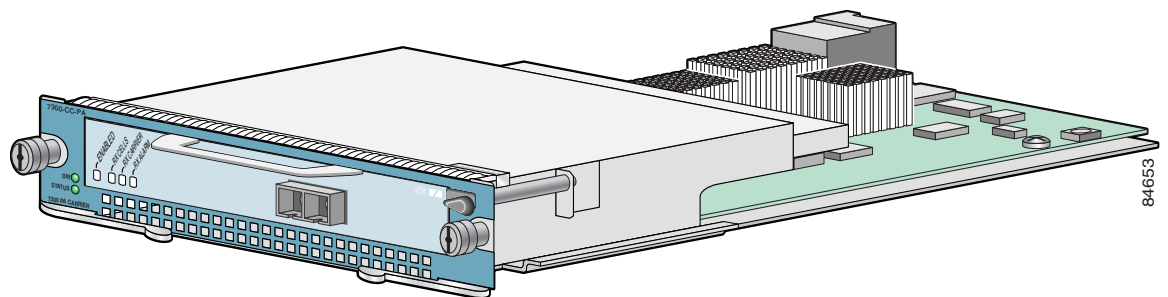
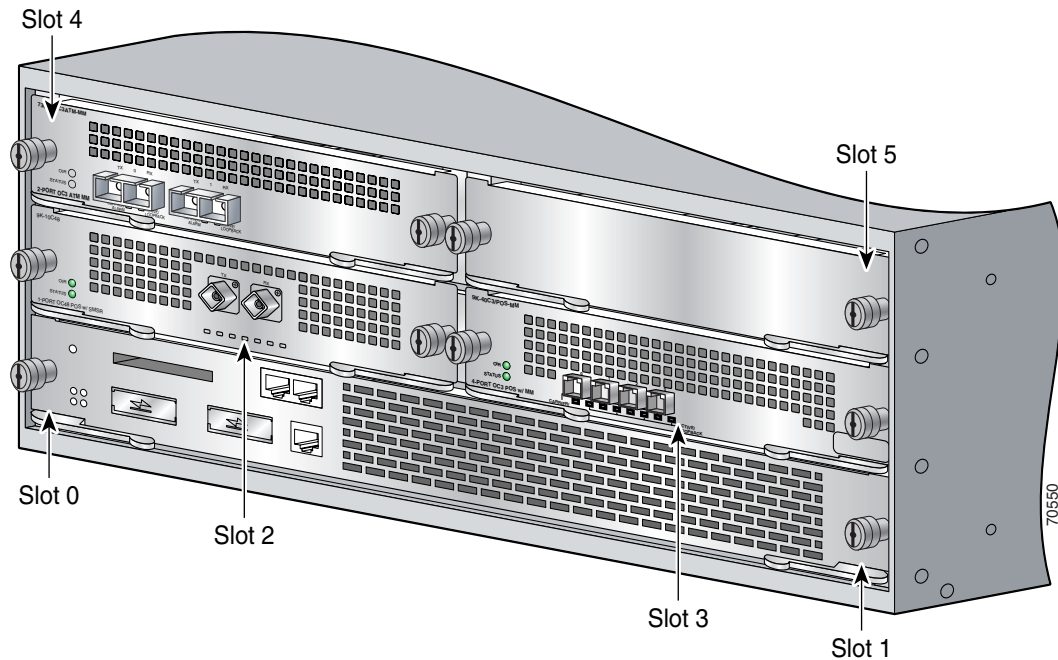


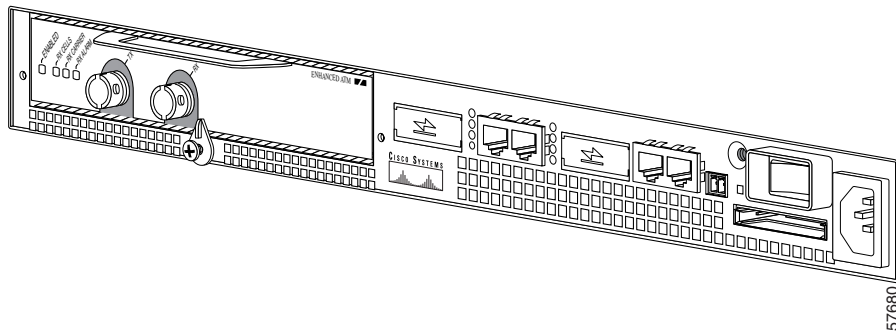
Figure 1-14 Module Slots on the Cisco 7304 Router



Cisco 7401ASR Router Slot Numbering

Figure 1-15 shows the front view of a Cisco 7401ASR router with a port adapter installed. There is only one port adapter slot (slot 1) in a Cisco 7401ASR router.

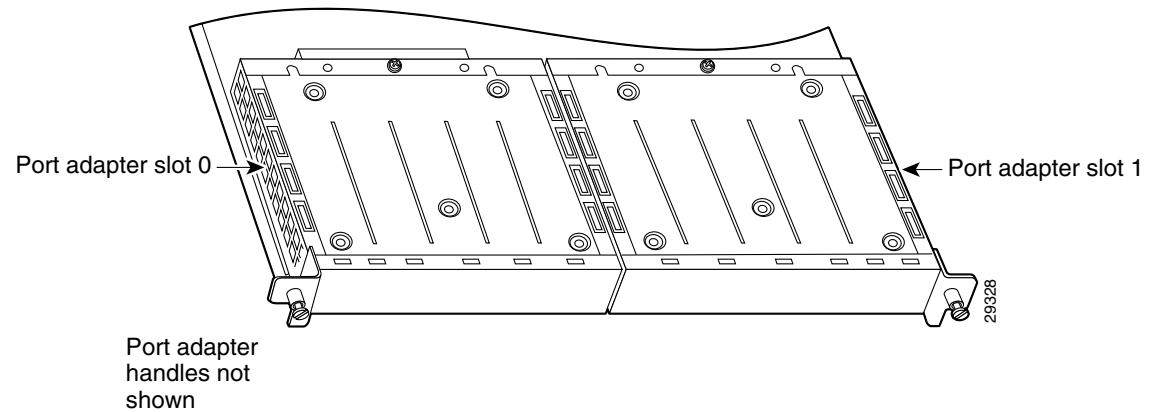
Figure 1-15 Port Adapter Slot in the Cisco 7401ASR Router



Cisco 7000 Series Routers and Cisco 7500 Series Routers VIP Slot Numbering

Port adapters are supported on the VIPs (versatile interface processors) used in Cisco 7000 series and Cisco 7500 series routers. In the Cisco 7010 router and Cisco 7505 router, the VIP motherboard is installed horizontally in the VIP slot. In the Cisco 7507 router and Cisco 7513 router, the VIP motherboard is installed vertically in the VIP slot. A port adapter can be installed in either bay (port adapter slot 0 or 1) on the VIP. The bays are numbered from left to right on the VIP. [Figure 1-16](#) shows the slot numbering on a VIP.

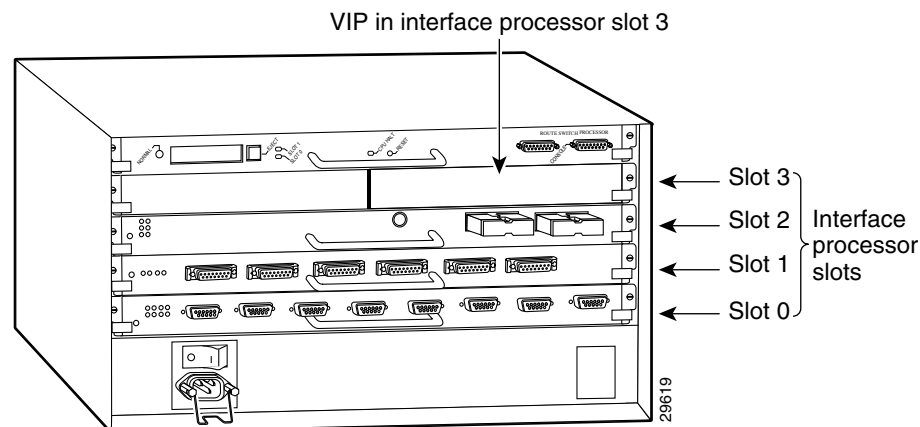
Figure 1-16 VIP Slot Locations—Horizontal Orientation



Cisco 7010 routers have three slots for port adapters, and two slots for Route Switch Processors (RSPs). The slots are numbered from bottom to top. You can place a port adapter in any of the VIP interface slots (slot 0 through 2). Slots 3 and 4 are always reserved for RSPs. The Cisco 7010 router is not shown.

Cisco 7505 routers have four slots for port adapters, and one slot for an RSP. The slots are numbered from bottom to top. You can place a port adapter in any of the VIP interface slots (slot 0 through 3). One slot is always reserved for the RSP. [Figure 1-17](#) shows the slot numbering on a Cisco 7505 router.

Figure 1-17 VIP Slots in the Cisco 7505 Router



Cisco 7507 routers have five slots for port adapters, and two slots for RSPs. The slots are numbered from left to right. You can place a port adapter in any of the VIP interface slots (slot 0, 1, 4, 5, or 6). Slots 2 and 3 are always reserved for RSPs. The Cisco 7507 router is not shown.

Cisco 7513 routers have eleven slots for port adapters, and two slots for RSPs. The slots are numbered from left to right. You can place a port adapter in any of the VIP interface slots (slots 0 through 5, or slots 9 through 12). Slots 6 and 7 are always reserved for RSPs. The Cisco 7513 router is not shown.

Identifying Interface Addresses

This section describes how to identify interface addresses for the PA-8E in supported platforms. Interface addresses specify the actual physical location of each interface on a router or switch.

Interfaces on the PA-8E installed in a router maintain the same address regardless of whether other port adapters are installed or removed. However, when you move a port adapter to a different slot, the first number in the interface address changes to reflect the new port adapter slot number.

Interfaces on the PA-8E installed in a VIP or FlexWAN module maintain the same address regardless of whether other interface processors or modules are installed or removed. However, when you move a VIP or FlexWAN module to a different slot, the interface processor or module slot number changes to reflect the new interface processor or module slot.



Note

Interface ports are numbered from left to right starting with 0.

The following subsections describe the interface address formats the supported platforms:

- [Catalyst RSM/VIP2 Interface Addresses, page 1-15](#)
- [Cisco 7100 Series Routers Interface Addresses, page 1-16](#)
- [Cisco 7200 Series Routers and Cisco 7200 VXR Routers Interface Addresses, page 1-16](#)
- [Cisco uBR7200 Series Routers Interface Addresses, page 1-16](#)
- [Cisco 7201 Router Interface Addresses, page 1-16](#)
- [Cisco 7301 Router Interface Addresses, page 1-17](#)
- [Cisco 7304 PCI Port Adapter Carrier Card Interface Addresses, page 1-17](#)
- [Cisco 7401ASR Router Interface Addresses, page 1-17](#)
- [Cisco 7000 Series Routers and Cisco 7500 Series Routers VIP Interface Addresses, page 1-17](#)

Table 1-5 summarizes the interface address formats for the supported platforms.

Table 1-5 Identifying Interface Addresses

Platform	Interface Address Format	Numbers	Syntax
Catalyst RSM/VIP2 in Catalyst 5000 family switches	Port-adapter-slot-number/interface-port-number	Port adapter slot— 0 or 1 Interface port—0 through 7	0/1
Cisco 7120 series router	Port-adapter-slot-number/interface-port-number	Port adapter slot—always 3 Interface port—0 through 7	3/1
Cisco 7140 series router	Port-adapter-slot-number/interface-port-number	Port adapter slot—always 4 Interface port—0 through 7	4/0

Table 1-5 Identifying Interface Addresses (continued)

Platform	Interface Address Format	Numbers	Syntax
Cisco 7200 series routers and Cisco 7200 VXR routers	Port-adapter-slot-number/interface-port-number	Port adapter slot—1 through 6 (depends on the number of slots in the router) ¹ Interface port—0 through 7	1/0
Cisco 7201 router	Port-adapter-slot-number/interface-port-number	Port adapter slot—always 1 Interface port—0 through 7	1/0
Cisco uBR7223 router	Port-adapter-slot-number/interface-port-number	Port adapter slot—always 1 ¹ Interface port—0 through 7	1/0
Cisco uBR7246 and Cisco uBR7246VXR routers	Port-adapter-slot-number/interface-port-number	Port adapter slot—always 1 or 2 ¹ Interface port—0 through 7	1/2
Cisco 7301 router	Port-adapter-slot-number/interface-port-number	Port adapter slot—always 1 Interface port—0 through 7	1/0
Cisco 7304 PCI Port Adapter Carrier Card in Cisco 7304 routers	Module-slot-number/interface-port-number	Module slot—2 through 5 Interface port—0 through 7	3/0
Cisco 7401ASR router	Port-adapter-slot-number/interface-port-number	Port adapter slot—always 1 Interface port—0 through 7	1/0
VIP in Cisco 7000 series routers or Cisco 7500 series routers	Interface-processor-slot-number/port-adapter-slot-number/interface-port-number	Interface processor slot—0 through 12 (depends on the number of slots in the router) Port adapter slot—0 or 1 Interface port—0 through 7	3/1/0

1. Port adapter slot 0 is reserved for the Fast Ethernet port on the I/O controller (if present).

Catalyst RSM/VIP2 Interface Addresses

In Catalyst 5000 family switches, the Catalyst RSM/VIP2 can be installed in any slot except the top slots, which contain the supervisor engine modules. The Catalyst RSM/VIP2 in a Catalyst 5000 family switch does not use interface processor slot numbering; therefore, the slots in which it is installed are not numbered. A port adapter can be installed into either port adapter slot 0 or slot 1 on a Catalyst RSM/VIP2. See [Figure 1-5](#).

The interface address is composed of a two-part number in the format *port-adapter-slot number/interface-port number*. See [Table 1-5](#). For example, if the eight-port PA-8E is installed in a VIP in interface processor slot 1, port adapter slot 1, the interface addresses would be 1/1/0, 1/1/1, 1/1/2, 1/1/3, 1/1/4, 1/1/5, 1/1/6, and 1/1/7 (interface processor slot 1, port adapter slot 1, and interfaces 0, 1, 2, 3, 4, 5, 6, and 7).

Cisco 7100 Series Routers Interface Addresses

In Cisco 7120 series router, port adapters are installed in port adapter slot 3. See [Figure 1-7](#). In the Cisco 7140 series router, port adapters are installed in port adapter slot 4. See [Figure 1-8](#).

The interface address is composed of a two-part number in the format *port-adapter-slot-number/interface-port-number*. See [Table 1-5](#). For example, if an eight-port PA-8E is installed on a Cisco 7120 router, the interface addresses would be 3/0 through 3/7 (port adapter slot 3, and interfaces 0,1, 2, 3, 4, 5, 6, and 7). If an eight-port PA-8E is installed on a Cisco 7140 router, the interface addresses would be 4/0 through 4/7 (port adapter slot 4, and interfaces 0,1, 2, 3, 4, 5, 6, and 7).

Cisco 7200 Series Routers and Cisco 7200 VXR Routers Interface Addresses

In Cisco 7200 series routers and Cisco 7200 VXR routers, port adapter slots are numbered from the lower left to the upper right, beginning with slot 1 and continuing through slot 2 for the Cisco 7202, slot 4 for the Cisco 7204 and Cisco 7204VXR, and slot 6 for the Cisco 7206 and Cisco 7206VXR. Port adapters can be installed in any available port adapter slot from 1 through 6 (depending on the number of slots in the router). (Slot 0 is reserved for the I/O controller.) See [Figure 1-9](#).

The interface address is composed of a two-part number in the format *port-adapter-slot-number/interface-port-number*. See [Table 1-5](#). For example, if an eight-port PA-8E is installed in slot 1 of a Cisco 7200 series router, the interface addresses would be 1/0 through 1/7 (port adapter slot 1 and interfaces 0 through 7).

Cisco uBR7200 Series Routers Interface Addresses

In the Cisco uBR7223 router, only one slot accepts port adapters and it is numbered slot 1.

In the Cisco uBR7246 router and Cisco uBR7246VXR router, port adapters can be installed in two port adapter slots (slot1 and slot 2). Slot 0 is always reserved for the I/O controller—if present. See [Figure 1-10](#).

The interface address is composed of a two-part number in the format *port-adapter-slot-number/interface-port-number*. See [Table 1-5](#). For example, if an eight-port PA-8E is installed in slot 1 of a Cisco uBR7223 series router, the interface addresses would be 1/0 through 1/7. If an eight-port PA-8E is installed in slot 2 of a Cisco uBR7246 or Cisco uBR7246VXR router, the interface addresses would be 2/0 through 2/7.

Cisco 7201 Router Interface Addresses

In the Cisco 7201 router, only one slot accepts port adapters and it is numbered as slot 1. See [Figure 1-11](#).

The interface address is composed of a two-part number in the format *port-adapter-slot-number/interface-port-number*. See [Table 1-5](#). For example, if an eight-port PA-8E is installed in a Cisco 7201 router, the interface addresses would be 1/0 through 1/7.

Cisco 7301 Router Interface Addresses

In the Cisco 7301 router, only one slot accepts port adapters and it is numbered as slot 1. See [Figure 1-12](#).

The interface address is composed of a two-part number in the format *port-adapter-slot-number/interface-port-number*. See [Table 1-5](#). For example, if an eight-port PA-8E is installed in a Cisco 7301 router, the interface addresses would be 1/0 through 1/7.

Cisco 7304 PCI Port Adapter Carrier Card Interface Addresses

In the Cisco 7304 router, port adapters are installed in a Cisco 7304 PCI port adapter carrier card, which installs in Cisco 7304 router module slots 2 through 5. The port adapter slot number is the same as the module slot number. See [Figure 1-13](#) and [Figure 1-14](#).

The interface address is composed of a two-part number in the format *module-slot-number/interface-port-number*. See [Table 1-5](#). For example, if an eight-port PA-8E is installed in the Cisco 7304 PCI port adapter carrier card in Cisco 7304 router module slot 3, the interface addresses would be 3/0 through 3/7.

Cisco 7401ASR Router Interface Addresses

In the Cisco 7401ASR router, only one slot accepts port adapters and it is numbered as slot 1. See [Figure 1-15](#).

The interface address is composed of a two-part number in the format *port-adapter-slot-number/interface-port-number*. See [Table 1-5](#). For example, if an eight-port PA-8E is installed in a Cisco 7401ASR router, the interface addresses would be 1/0 through 1/7.

Cisco 7000 Series Routers and Cisco 7500 Series Routers VIP Interface Addresses

In Cisco 7000 series routers and Cisco 7500 series routers, port adapters are installed on a versatile interface processor (VIP), which installs in interface processor slots 0 through 12 (depending on the number of slots in the router). The port adapter can be installed in either bay (port adapter slot 0 or 1) on the VIP. See [Figure 1-16](#) and [Figure 1-17](#).

The interface address for the VIP is composed of a three-part number in the format *interface-processor-slot-number/port-adapter-slot-number/interface-port-number*. See [Table 1-5](#).

The first number identifies the slot in which the VIP is installed (slot 0 through 12, depending on the number of slots in the router).

The second number identifies the bay (port adapter slot) on the VIP in which the port adapter is installed (0 or 1). The bays are numbered from left to right on the VIP.

The third number identifies the physical port number (interface port number) on the port adapter. The port numbers always begin at 0 and are numbered from left to right. The number of additional ports depends on the number of ports on the port adapter. The PA-8E is an eight-port port adapter, therefore the port can be 0 through 7.

For example, if an eight-port PA-8E is installed in a VIP in interface processor slot 3, port adapter slot 1, the interface addresses would be 3/1/0 through 3/1/7 (interface processor slot 3, port adapter slot 1, and interfaces 0, 1, 2, 3, 4, 5, 6, and 7).

**Note**

Although the processor slots in the 7-slot Cisco 7000 and Cisco 7507 and the 13-slot Cisco 7513 and Cisco 7576 are vertically oriented and those in the 5-slot Cisco 7010 and Cisco 7505 are horizontally oriented, all Cisco 7000 series and Cisco 7500 series routers use the same method for slot and port numbering.
