Preparing for Installation

This chapter describes the general equipment, safety, and site preparation requirements for installing the PA-A1 ATM port adapter. This chapter contains the following sections:

Required Tools and Equipment

You need the following tools and parts to install a port adapter. If you need additional equipment, contact your service representative for ordering information.

- Catalyst RSM/VIP2 (for installation in Catalyst 5000 family switches). For information about the specific VIP2 models that support the PA-A1 ATM, see the "Software and Hardware Requirements" section on page 2-1.
- PA-A1 ATM(=) port adapter
- VIP2 or VIP4 (for installation in Cisco 7000 series or Cisco 7500 series chassis only). For information about the specific VIP2 or VIP4 models that support the PA-A1 ATM, see the "Software and Hardware Requirements" section on page 2-1
- ATM interface cable to connect the PA-A1 ATM with the ATM network.
- Number 1 Phillips and a 3/16-inch flat-blade screwdriver (for VIP2 or VIP4 installation only)
- Number 2 Phillips screwdriver
- Your own electrostatic discharge (ESD)-prevention equipment or the disposable grounding wrist strap included with all upgrade kits, field-replaceable units (FRUs), and spares
- Antistatic mat
- Antistatic container

Software and Hardware Requirements

Table 2-1 lists the recommended minimum Cisco IOS software release required to use the PA-A1 ATM in supported router or switch platforms.

Table 2-1   PA-A1 ATM Software Requirements

Platform	Recommended Minimum Cisco IOS Release
Catalyst 5000 family switches with RSM[1] [2]	
• VIP2-15(=) or VIP2-40(=)	Cisco IOS Release 11.1(9)CA1 or a later release of Cisco IOS Release 11.1 CA Cisco IOS Release 11.2(7)P or a later release of Cisco IOS Release 11.2 P
Cisco 7100 series	
• Cisco 7120 series and Cisco 7140 series	Cisco IOS Release 12.0(4)XE or a later release of Cisco IOS Release 12.0 XE Cisco IOS Release 12.0(5)T or a later release of Cisco IOS Release 12.0 T
Cisco 7200 series[3]	
• Cisco 7204VXR and Cisco 7206VXR	Cisco IOS Release 12.0(2)XE2 or a later release of Cisco IOS Release 12.0 XE Cisco IOS Release 12.0(3)T or a later release of Cisco IOS Release 12.0 T Cisco IOS Release 12.2(4)B or a later release of Cisco IOS Release 12.2 B
• Cisco 7204 and Cisco 7206	Cisco IOS Release 11.1(10)CA or a later release of Cisco IOS Release 11.1 CA Cisco IOS Release 11.2(7)P or a later release of Cisco IOS Release 11.2 P Cisco IOS Release 12.2(4)B or a later release of Cisco IOS Release 12.2 B
• Cisco 7202	Cisco IOS Release 11.1(19)CC1 or a later release of Cisco IOS Release 11.1 CC Cisco IOS Release 11.3(4)AA or a later release of Cisco IOS Release 11.3 AA Cisco IOS Release 12.2(4)B or a later release of Cisco IOS Release 12.2 B
• Cisco 7206 router shelf	Cisco IOS Release 11.3(2)AA or a later release of Cisco IOS Release 11.3 AA Cisco IOS Release 12.2(4)B or a later release of Cisco IOS Release 12.2 B
Cisco uBR7200 series	
• Cisco uBR7246 and Cisco uBR7223	Cisco IOS Release 11.3(7)NA or a later release of Cisco IOS Release 11.3 NA Cisco IOS Release 12.0(3)T or a later release of Cisco IOS Release 12.0 T
VIP2 or VIP4 in the Cisco 7000 series and Cisco 7500 series[4] [5]	
• With VIP2-15(=) or VIP2-40(=)	Cisco IOS Release 11.1(9)CA1 or a later release of Cisco IOS Release 11.1 CA Cisco IOS Release 11.2(7)P or a later release of Cisco IOS Release 11.2 P
• With VIP2-50(=)	Cisco IOS Release 11.1(14)CA or a later release of Cisco IOS Release 11.1 CA
• With VIP4-50(=)	Cisco IOS Release 12.0(10)S or a later release of Cisco IOS Release 12.0 S
• With VIP4-80(=)	Cisco IOS Release 12.0(10)S or a later release of Cisco IOS Release 12.0 S

1. The VIP2-15 has 1 MB of SRAM and 16 MB of DRAM. The VIP2-40 has 2 MB of SRAM and 32 MB of DRAM.

2. On the Catalyst RSM/VIP2, only a single PA-A1 ATM can be used. (A blank port adapter is installed in the adjacent port adapter slot.) No other port adapter can be installed in the adjacent port adapter slot alongside the PA-A1-ATM.

3. Cisco IOS Release 11.2(7a)P or a later release of 11.2 P supports half-duplex and binary synchronous communications (bisync) operation on the PA-A1 ATM port adapter in Cisco 7200 series routers.

4. On the VIP2, only a single PA-A1 ATM can be used. (A blank port adapter is installed in the adjacent port adapter slot.) No Other port adapter can be installed in the adjacent port adapter slot alongside the PA-A1 ATM.

5. The specific VIP2 models recommended for the PA-A1 ATM in all Cisco 7500 series routers, and in Cisco 7000 series routers using the RSP7000 and RSP7000CI, are VIP2-40(=), which has 2 MB of SRAM and 32 MB of DRAM, and VIP2-50(=), which has 4 to 8 MB of SRAM and 32 to 128 MB of SDRAM; however, the PA-A1 ATM is also supported by the VIP2-15(=) and VIP2-20(=) models, but we do not recommend its use with these VIP2 models.

Caution   The VIP2 and VIP4 require that the Cisco 7000 series router has the RSP7000 and RSP7000CI installed. The VIP2 and VIP4 will *not* operate properly with the Route Processor (RP), Switch Processor (SP), or Silicon Switch Processor (SSP) installed in the Cisco 7000 series router.

In the Cisco 7200 series routers, there are specific configuration guidelines that must be observed for high-bandwidth port adapters such as the PA-A1 ATM port adapter. For port adapter hardware and memory configuration guidelines for the Cisco 7200 series routers (including the Cisco 7206 and Cisco 7206VXR as router shelves in a Cisco AS5800 Universal Access Server), refer to the document *Cisco 7200 Series Port Adapter Hardware Configuration Guidelines* that shipped with your Cisco 7200 series router.

Checking Hardware and Software Compatibility

To check the minimum software requirements of Cisco IOS software with the hardware installed on your router, Cisco maintains the Software Advisor tool on Cisco.com. This tool does not verify whether modules within a system are compatible, but it does provide the minimum IOS requirements for individual hardware modules or components.

Note   Access to this tool is limited to users with Cisco.com login accounts.

To access Software Advisor, click **Login** at Cisco.com and go to **Technical Support Help—Cisco TAC**: **Tool Index**: **Software Advisor**. You can also access the tool by pointing your browser directly to http://www.cisco.com/cgi-bin/support/CompNav/Index.pl.

Choose a product family or enter a specific product number to search for the minimum supported software release needed for your hardware.

Safety Guidelines

This section provides safety guidelines that you should follow when working with any equipment that connects to electrical power or telephone wiring.

Safety Warnings

Safety warnings appear throughout this publication in procedures that, if performed incorrectly, might harm you. A warning symbol precedes each warning statement.

Warning   This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the Regulatory Compliance and Safety Information document that accompanied this device.

Waarschuwing   Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen. Voor vertalingen van de waarschuwingen die in deze publicatie verschijnen, kunt u het document *Regulatory Compliance and Safety Information* (Informatie over naleving van veiligheids- en andere voorschriften) raadplegen dat bij dit toestel is ingesloten.

Varoitus   Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista. Tässä julkaisussa esiintyvien varoitusten käännökset löydät laitteen mukana olevasta *Regulatory Compliance and Safety Information* -kirjasesta (määräysten noudattaminen ja tietoa turvallisuudesta).

Attention   Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions d'avertissements figurant dans cette publication, consultez le document *Regulatory Compliance and Safety Information* (Conformité aux règlements et consignes de sécurité) qui accompagne cet appareil.

Warnung   Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewußt. Übersetzungen der in dieser Veröffentlichung enthaltenen Warnhinweise finden Sie im Dokument *Regulatory Compliance and Safety Information* (Informationen zu behördlichen Vorschriften und Sicherheit), das zusammen mit diesem Gerät geliefert wurde.

Avvertenza   Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti. La traduzione delle avvertenze riportate in questa pubblicazione si trova nel documento *Regulatory Compliance and Safety Information* (Conformità alle norme e informazioni sulla sicurezza) che accompagna questo dispositivo.

Advarsel   Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du vare oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker. Hvis du vil se oversettelser av de advarslene som finnes i denne publikasjonen, kan du se i dokumentet *Regulatory Compliance and Safety Information* (Overholdelse av forskrifter og sikkerhetsinformasjon) som ble levert med denne enheten.

Aviso   **Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes. Para ver as traduções dos avisos que constam desta publicação, consulte o documento** *Regulatory Compliance and Safety Information* **(Informação de Segurança e Disposições Reguladoras) que acompanha este dispositivo.**

¡Advertencia!   **Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes. Para ver una traducción de las advertencias que aparecen en esta publicación, consultar el documento titulado** *Regulatory Compliance and Safety Information* **(Información sobre seguridad y conformidad con las disposiciones reglamentarias) que se acompaña con este dispositivo.**

Varning!   **Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador. Se förklaringar av de varningar som förekommer i denna publikation i dokumentet** *Regulatory Compliance and Safety Information* **(Efterrättelse av föreskrifter och säkerhetsinformation), vilket medföljer denna anordning.**

Single-Mode Transmitter Warning

The single-mode transmitter in the PA-A1 ATM uses a small laser to transmit the light signal to the network ring. Keep the transmit port covered whenever a cable is not connected to it. Although multimode transceivers typically use LEDs for transmission, it is good practice to keep open ports covered and to avoid staring into open ports or apertures.

Following is an example of the warning label that appears on the product:

CLASS 1 LASER PRODUCT
LASERPRODUKT DER KLASSE 1

PRODUIT LASER DE CLASSE 1
クラス 1　レーザ製品
PRODUCTO LASER CLASE 1

H6655

Warning   **Invisible laser radiation may be emitted from the aperture ports of the single-mode ATM port adapter when no fiber cable is connected.** *Avoid exposure and do not stare into open apertures.*

Warning   **Class 1 laser product.**

Electrical Equipment Guidelines

Follow these basic guidelines when working with any electrical equipment:

- Before beginning any procedures requiring access to the chassis interior, locate the emergency power-off switch for the room in which you are working.

- Disconnect all power and external cables before moving a chassis; do not work alone when potentially hazardous conditions exist.

- Never assume that power has been disconnected from a circuit; always check.

- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe; carefully examine your work area for possible hazards such as moist floors, ungrounded power extension cables, and missing safety grounds.

Telephone Wiring Guidelines

Use the following guidelines when working with any equipment that is connected to telephone wiring or to other network cabling:

- Never install telephone wiring during a lightning storm.

- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

- Use caution when installing or modifying telephone lines.

Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) damage, which can occur when electronic cards or components are improperly handled, results in complete or intermittent failures. Port adapters and processor modules comprise printed circuit boards that are fixed in metal carriers. Electromagnetic interference (EMI) shielding and connectors are integral components of the carrier. Although the metal carrier helps to protect the board from ESD, use a preventative antistatic strap during handling.

Following are guidelines for preventing ESD damage:

- Always use an ESD wrist or ankle strap and ensure that it makes good skin contact.

- Connect the equipment end of the strap to an unfinished chassis surface.

- When installing a component, use any available ejector levers or captive installation screws to properly seat the bus connectors in the backplane or midplane. These devices prevent accidental removal, provide proper grounding for the system, and help to ensure that bus connectors are properly seated.

- When removing a component, use any available ejector levers or captive installation screws to release the bus connectors from the backplane or midplane.

- Handle carriers by available handles or edges only; avoid touching the printed circuit boards or connectors.

- Place a removed component board-side-up on an antistatic surface or in a static shielding container. If you plan to return the component to the factory, immediately place it in a static shielding container.

- Avoid contact between the printed circuit boards and clothing. The antistatic strap only protects components from ESD voltages on the body; ESD voltages on clothing can still cause damage.

- Never attempt to remove the printed circuit board from the metal carrier.

⚠

Caution   For safety, periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 megohms (Mohm).

FCC Class A Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

You can determine whether your equipment is causing interference by turning it off. If the interference stops, it was probably caused by the Cisco equipment or one of its peripheral devices. If the equipment causes interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.

- Move the equipment to one side or the other of the television or radio.

- Move the equipment farther away from the television or radio.

- Plug the equipment into an outlet that is on a different circuit from the television or radio. (That is, make certain the equipment and the television or radio are on circuits controlled by different circuit breakers or fuses.)

✎

Note   The PA-A1 ATM port adapter has been designed to meet the FCC Class A requirements. Modifications to this product not authorized by Cisco Systems, Inc. could void the various approvals and negate your authority to operate the product.

■ **FCC Class A Compliance**