



Cisco 6100 with NI-1 DOH to Direct Connect Conversion Procedures

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This document presents the procedures to convert from a Digital Off-Hook (DOH) configuration to a Direct Connect with a POTS splitter configuration. Converting to a Direct Connect with a POTS splitter configuration has the following possible effects on your system:

- Converts dual-port to quad-port *x*TU-C modules
- Ensures that your Cisco 6100 with NI-1 system can accommodate higher density *x*TU-C modules
- Achieves better DS3 performance and reliability

A Direct Connect with a POTS splitter configuration uses the following POTS splitters:

- Cisco 6120—Use with dual-port CAP or DMT-2 ATU-C modules or quad-port flexi ATU-C modules
- Siecor ADSL POTS Splitter Rack-Mount Shelf—Use with quad-port flexi ATU-C modules



Note In a Direct Connect with a POTS splitter configuration using a Cisco 6120 and quad-port ATU-C modules, it is necessary to install an additional Cisco 6120 chassis. The additional Cisco 6120 chassis expands the system to accommodate 128 ports.

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Conversion Prerequisites

This section provides the following prerequisites needed to convert a Cisco 6100 with NI-1 DOH configuration to a Direct Connect with a POTS splitter configuration:

- Required Tools and Equipment, page 2
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Note

For additional site requirements, refer to the *Cisco 6100 with NI-1 Direct Connect Installation Guide*.

Required Tools and Equipment

Table 1 lists the tools and equipment required to convert a Cisco 6100 with NI-1 DOH configuration to a Direct Connect with a POTS splitter configuration.


Table 1 *Tool and Equipment Requirements Checklist*

Check	Tools and Equipment
	Hardware Components
	xTU-C modules (optional—for use if upgrading the current xTU-C modules) <ul style="list-style-type: none"> • Dual-port CAP ATU-C modules • Dual-port DMT-2 ATU-C modules • Quad-port flexi ATU-C modules
	DS3 STM ¹ (optional—for use when installing a subtended network)—Version 6100-ST-3-DS3=
	DS3 subtending I/O card (optional—for use when installing a subtended network)—Version 6100-ST-IO-3-DS3=
	System I/O card—Version 6100-SYS-IO-3=
	POTS splitter—Required when installing quad-port flexi ATU-C modules in the Cisco 6100 <ul style="list-style-type: none"> • Two Cisco 6120 chassis • Siecor POTS splitter

Table 1 *Tool and Equipment Requirements Checklist (continued)*

Check	Tools and Equipment
	POTS modules—Required when installing quad-port flexi ATU-C modules in the Cisco 6100 <ul style="list-style-type: none"> • Additional CAP POTS modules or DMT POTS modules for the Cisco 6120 • POTS modules for the Siecor POTS splitter
	Direct Connect NEBS Compliance Kit <ul style="list-style-type: none"> • EMI gaskets • ESD shield for system I/O card • Ferrites • Front cover • Ground lug bracket • Ground lug • Labels <ul style="list-style-type: none"> – CLEI code – 800 level – Ground symbol • Nuts • Standoff screws • Thermal shield • Tie wraps
	Cisco 6100 Thermal Upgrade Kit—Required when installing dual-port DMT-2 ATU-C or quad-port flexi ATU-C modules in the Cisco 6100 <ul style="list-style-type: none"> • Fan tray <ul style="list-style-type: none"> – Fan chassis – Three fans – Air filter • Thermal guard • Cisco 6100 chassis ventilation cover • New power rating label
	Cables to connect the Cisco 6100 to the Cisco 6120
	Software Components
	ViewRunner for Windows or ViewRunner for HP OpenView Release 3.0.0
	Tools
	A 3/16-inch flat-head screwdriver
	A Phillips-head screwdriver
	A one-quarter inch socket driver or wrench

Table 1 *Tool and Equipment Requirements Checklist (continued)*

Check	Tools and Equipment
	Necessary equipment for ESD protection—Required whenever you handle Cisco DSLAM ² equipment, which includes the chassis, modules, and cards
	Mounting screws—To mount the Cisco 6100, Cisco 6120, and fan tray to the rack
	Standoff screws
	Backplane screws—Included on the backplane
	Plastic ESD shield for the DS3 subtending I/O card—Included with the card
	Wire wrapping tool
	Wire stripper
	Wire for connections <ul style="list-style-type: none"> • 24 to 28 AWG³ solid—Used for the fan tray (P2) to Cisco 6100 chassis (P14) connection • 12 AWG black and red copper solid or stranded—Used for Cisco 6100 chassis power connections • 14 to 18 AWG black and red copper solid or stranded—Used for fan tray power connections • 12 AWG or thicker green or green with yellow stripes copper stranded—Used for the Cisco 6100 chassis grounding • 14 AWG or thicker green or green with yellow stripes copper stranded—Used for the fan tray grounding
	Ferrites that yield an impedance of 200 ohms +/-20 percent at 100 MHz
	 <p>Note Ferrites are shipped with the NI-1 module. However, more ferrites are needed when cabling the power connections, the DS3 subtending I/O card, and the system I/O card.</p>
	Tie wraps
	Coaxial cable <ul style="list-style-type: none"> • Type 734A or equivalent • Type 735A or equivalent
	Fiber cable—Used to connect the OC-3c NI-1 module

1. STM = subtend host module
2. DSLAM = digital subscriber line access multiplexer
3. AWG = American Wire Gauge

Two people are needed for lifting, installing, and removing a chassis and some of its components (for example, the rear cover).

**Note**

The Cisco 6100 with NI-1 system has no internal user-serviceable parts. However, you can add or remove a chassis module or a fan module without removing power from the system (hot swapping).

**Warning**

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

Space Requirements

The Cisco 6100 with NI-1 system fits in a 23-inch wide rack. See Table 2 for individual rack space requirements.

Table 2 Rack Space Requirements

Component	Rack Space	Height	Depth
Cisco 6100 chassis	9 RUs ¹	15.75 in. (40.00 cm)	12 in. (30.48 cm)
POTS splitter <ul style="list-style-type: none"> • Cisco 6120 • Siecor POT splitter 	4 RUs	7 in. (17.78 cm)	12 in. (30.48 cm)
Fan tray ²	2 RUs	3.5 in. (8.89 cm)	12 in. (30.48 cm)

1. RU = rack unit. One RU is equal to 1.75 inches (4.45 cm).
2. Leave 1 RU of space under the fan tray. This space allows for the intake plenum and for cabling back to front for the OC-3c NI-1 module.

Power Requirements

The central office (CO) power source or rectifier supplies external power to the system as –48 VDC from the fuse and alarm panel. Power connections from the fuse and alarm panel are wired separately to the Cisco 6100 chassis and the fan tray. Connections for single- and dual-power feeds are provided. The power input connections are redundant, and only one is absolutely necessary for system operation. The nominal voltage is –48 VDC; the minimum operating value is –36 VDC; and the maximum operating value is –60 VDC.

Before you connect the system to a power source, verify that the power source is properly grounded and it falls within the internal power supply rating.

Depending on your configuration type, calculate the typical power required for each Cisco 6100 Series component. After you calculate the typical power, determine the minimum fuse value for each component that is wired to the fuse and alarm panel. Use Table 3 to calculate the minimum fuse rating that is necessary for each of your Cisco 6100 with NI-1 system components.

**Note**

The power rating label that is supplied on the rear of each chassis and fan tray indicates the maximum fuse value for the chassis or the fan tray.

Table 3 Fuse Calculation for the Cisco 6100 with NI-1 System Components

Component	Instructions	Calculation
Cisco 6100 Chassis^{1,2}		
1a	If you are using dual-port CAP ATU-C modules, multiply 8.5W by the total number of modules in the Cisco 6100.	
1b	If you are using dual-port DMT-2 ATU-C modules, multiply 9.5W by the total number of modules in the Cisco 6100.	
1c	If you are using flexi ATU-C modules, multiply 13.5W by the total number of modules in the Cisco 6100.	
1d	Add the amounts for lines 1a through 1c.	
2	Enter 10W for the DS3 STM for the subtending host (if you are installing a subtended network).	
3	Enter 51W for the DS3 or OC-3c NI-1 module.	
4	Enter 9W for the system controller module.	
5	Add lines 1d, 2, 3, and 4. This is the typical power required for the Cisco 6100.	
6	Divide line 5 by 48. This is the nominal current for the Cisco 6100.	
7	Multiply line 6 by 1.25. This is the minimum fuse rating needed to operate the Cisco 6100 in your system.	
Fan Tray		
8	A 1.25A fuse is required for each fan tray that is wired to the fuse and alarm panel. A fan tray must be installed under a Cisco 6100 chassis when either dual-port DMT-2 ATU-C or quad-port flexi ATU-C modules are installed in the chassis.	

1. For a Direct Connect configuration, the maximum number of Cisco 6100 chassis is two per rack.
2. Complete this section for each subtending host.

Software Requirements

This section provides the following software requirements needed for the ViewRunner management software:

- ViewRunner for HP OpenView, page 6
- ViewRunner for Windows, page 8

ViewRunner for HP OpenView

ViewRunner for HP OpenView is the Element Management System (EMS) for the Cisco 6100 with NI-1 system. ViewRunner for HP OpenView is built on the industry-leading Hewlett-Packard OpenView Simple Network Management Protocol (SNMP) system and uses an Oracle Relational Database Management System as an underlying data storage.

ViewRunner for HP OpenView comprises three sets of applications.

- ViewRunner database applications
- ViewRunner server applications
- ViewRunner client applications

A single workstation can support both server and client applications, and multiple workstations can be configured as clients to a single server. Table 4 summarizes the operating system versions, HP OpenView versions, and Oracle versions that are supported with this release.

Table 4 *ViewRunner for HP OpenView Platform and Solaris Support*

	Solaris 2.6
	HPOV 5.01
Oracle 7.3.2	No
Oracle 7.3.3	No
Oracle 7.3.4	Yes

Three packages make up the full installation of ViewRunner for HP OpenView. The packages are described in Table 5.

Table 5 *ViewRunner for HP OpenView Package Information*

Name	Description
CSCOVrdb	ViewRunner for HP OpenView database install This package creates or updates the Oracle database that is used by ViewRunner. In addition to creating the Oracle database, the package installs the database start-up scripts into an install directory that you specify during installation.
CSCOVrovs	ViewRunner for HP OpenView server install This package installs and upgrades the ViewRunner server application. The default install directory is /opt/CSCOVrovs if you are installing ViewRunner for the first time. If you are upgrading to this new release of ViewRunner, the install directory remains as it was when you installed the previous version.
CSCOVrovc	ViewRunner for HP OpenView client install This package installs the ViewRunner client application. The default install directory is /opt/CSCOVrovc if you are installing ViewRunner or HP OpenView for the first time. If you are upgrading to this release of ViewRunner, the install directory remains as it was when you installed the previous version.

Install the ViewRunner for HP OpenView software packages listed in Table 5 in the following order:

- Oracle database that ViewRunner (CSCOVrdb) will use
- ViewRunner server package (CSCOVrovs)
- ViewRunner client package (CSCOVrovc)



Tips

For additional information about ViewRunner for HP OpenView, refer to the *ViewRunner for HP OpenView Installation and Administration Guide*.

ViewRunner for Windows

ViewRunner for Windows supports the following operating systems:

- Windows 95
- Windows 98
- Windows NT



Tips

For additional information about ViewRunner for Windows, refer to the *ViewRunner for Windows Installation and Administration Guide*.

Rack-Mounting Requirements



Warning

Two people are required to lift the chassis. Grasp the chassis underneath the lower edge and lift with both hands. To prevent injury, keep your back straight and lift with your legs, not your back.



Warning

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

Cisco recommends that you mount the Cisco 6100 with NI-1 system in a rack. Ensure that vertical hole spacing on the rack rails meets standard EIA-310-C requirements—1 inch (2.54 cm) spacing. All portions of the rack are equal to or less than the NEBS maximum allowances of 12 inches (30.48 cm).

When you install the Cisco 6100 with NI-1 system in a rack, be sure to allow enough room to access the backplane of the unit for wiring and cabling purposes. The majority of the connectors are located on the backplane.

General Safety Precautions and Maintenance Guidelines

This section covers the following topics:

- General Safety Precautions, page 9
- Hot-Swapping Modules, page 13
- Installation and Replacement Suggestions, page 14

General Safety Precautions

Before working on the equipment, be aware of standard safety guidelines and the hazards involved in working with electrical circuitry to prevent accidents. Adhere to the following cautions and warnings for safe and hazard-free installation.



Note

To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information for the Cisco 6100 Series System* document.



Tips

In the following warnings, the terms *cover panel* and *safety cover* refer to the Cisco 6100 chassis front cover.



Caution

Proper ESD protection is required whenever you handle Cisco DSLAM equipment. Installation and maintenance personnel should be properly grounded using ground straps to eliminate the risk of ESD damage to the equipment. Modules are subject to ESD damage whenever they are removed from the chassis.



Caution

If the power connections are improperly connected and power is applied while the modules are installed, the modules and chassis could be damaged.



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.



Warning

The customer 48 volt power system must provide reinforced insulation between the primary AC power and the 48 VDC output.



Warning

There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



Warning

Two people are required to lift the chassis. Grasp the chassis underneath the lower edge and lift with both hands. To prevent injury, keep your back straight and lift with your legs, not your back.



Warning

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

—This unit should be mounted at the bottom of the rack if it is the only unit in the rack.

—When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

—If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.



Warning

Class 1 laser product.



Warning

Use copper conductors only.



Warning

A readily accessible two-poled disconnect device must be incorporated in the fixed wiring.



Warning

The DS3 ports are not intended to be connected to cables that run outside the building where it is installed. For any connections outside the building, the DS3 ports must be connected to a network termination unit (NTU). NTU devices should comply with appropriate national safety standards such as UL 1950, CSA 950, EN 60950, IEC 950, and AS 3260.



Warning

Never install telephone wiring during an electrical storm.



Warning

Do not reach into a vacant slot or chassis while you install or remove a module or a fan. Exposed circuitry could constitute an energy hazard.













Warning

Ethernet cables must be shielded when used in a central office environment.



Warning

An exposed wire lead from a DC-input power source can conduct harmful levels of electricity. Be sure that no exposed portion of the DC-input power source wire extends from the terminal block plug.

-  **Warning** Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.
-  **Warning** When installing the unit, the ground connection must always be made first and disconnected last.
-  **Warning** This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.
-  **Warning** This equipment needs to be grounded. Use a green and yellow 12 to 14 American Wire Gauge (AWG) ground wire to connect the host to earth ground during normal use.
-  **Warning** Incorrect connection of this or connected equipment to a general purpose outlet could result in a hazardous situation.
-  **Warning** Read the installation instructions before you connect the system to its power source.
-  **Warning** Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
-  **Warning** The ISDN connection is regarded as a source of voltage that should be inaccessible to user contact. Do not attempt to tamper with or open any public telephone operator (PTO)-provided equipment or connection hardware. Any hardwired connection (other than by a nonremovable, connect-one-time-only plug) must be made only by PTO staff or suitably trained engineers.
-  **Warning** Do not stare into the beam or view it directly with optical instruments.
-  **Warning** Do not work on the system or connect or disconnect cables during periods of lightning activity.



Warning

Systems using a Cisco 6100 chassis must connect to the network through a POTS splitter to provide the secondary lightning protection required by Network Equipment Building Systems (NEBS).



Warning

Use caution when installing or modifying telephone lines.



Warning

This unit has more than one power supply connection; all connections must be removed completely to completely remove power from the unit.



Warning

To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.



Warning

To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 104°F (40°C).



Warning

Metal objects heat up when connected to power and ground, and can cause serious burns.



Warning

Secure all power cabling when installing this unit to avoid disturbing field-wiring connections.



Warning

The power supply circuitry for the equipment can constitute an energy hazard. Before you install or replace the equipment, remove all jewelry (including rings, necklaces, and watches). Metal objects can come into contact with exposed power supply wiring or circuitry inside the DSLAM equipment. This could cause the metal objects to heat up and cause serious burns or weld the metal object to the equipment.



Warning

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




Warning

This unit is intended for installation in restricted access areas. A restricted access area is where access can only be gained by service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.



Warning

Connect the unit only to DC power source that complies with the Safety Extra-Low Voltage (SELV) requirements in IEC 60950 based safety standards.

-  **Warning** This product requires short-circuit (overcurrent) protection, to be provided as part of the building installation. Install only in accordance with national and local wiring regulations.
-  **Warning** Care must be given to connecting units to the supply circuit so that wiring is not overloaded.
-  **Warning** Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
-  **Warning** Do not use a telephone to report a gas leak in the vicinity of the leak.
-  **Warning** Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
-  **Warning** Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
-  **Warning** Do not use this product near water; for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool.
-  **Warning** During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.

Hot-Swapping Modules

The modules support hot swapping. Hot swapping allows you to remove and replace the modules without disconnecting the system power. When the system detects that you have added or removed a module, it automatically runs diagnostic and discovery routines, and acknowledges the presence or absence of the module.

Installation and Replacement Suggestions

The following examples list recommended installation and replacement practices for the Cisco 6100 Series system cards and modules.



Caution

Any card or module that is only partially connected to the backplane can disrupt system operation.

- Do not force the card into or onto the chassis backplane connectors. This action can damage the pins on the connectors if they are not aligned properly with the card.
- Do not force the module into its slot. This action can damage the pins on the backplane if they are not aligned properly with the module.
- Ensure that the card is straight and parallel to the chassis backplane when you install the card onto the connectors. The pins on the connectors can be damaged if the card is not installed correctly.
- Ensure that the module is straight and not at an angle when you install the module in the slot. Installing the module at an angle can damage the module. Use the guide rails to install the module correctly.
- Fully depress the ejector tabs to ensure that the module connector mates with the backplane correctly. Firmly seat the module in the slot.

DOH to Direct Connect with a POTS Splitter Configuration Conversion Procedures

The following sections detail the conversion procedures for converting your system from a DOH configuration to a Direct Connect with a POTS splitter configuration.



Warning

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



Note

Before installing and cabling the equipment, be aware of standard safety practices and the hazards involved in working with electrical circuitry to prevent accidents. See the “General Safety Precautions and Maintenance Guidelines” section on page 8 for all cautions and warnings that are necessary to ensure a safe and hazard-free installation.

To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information for the Cisco 6100 Series System* document.

Conversion Checklist

When you upgrade a DOH configuration to a Direct Connect with a POTS splitter configuration, be sure that you follow the installation procedures in the proper sequence. Table 6 is a checklist of the conversion steps in the order in which they should occur. Detailed conversion instructions are detailed in the sections following Table 6.




Caution

Proper ESD protection is required whenever you handle Cisco DSLAM equipment. Installation and maintenance personnel should be properly grounded using ground straps to eliminate the risk of ESD damage to the equipment. Modules are subject to ESD damage whenever they are removed from the chassis.

Table 6 *Conversion Step Checklist*

Check	Conversion Procedure
	1. Upgrade the ViewRunner management software to Release 3.0.0 and applicable patches.
	2. Upgrade the Cisco 6100 with NI-1 system node software to Release 3.0.0.
	3. Update vrmapping.conf file.
	4. Run the Migration Wizard in the ViewRunner management software.
	5. Remove the power from the system.
	6. Disconnect the Cisco 6120 from the MDF ¹ .
	7. Remove the system I/O card (if applicable).
	8. Remove the DS3 subtending I/O card (if applicable).
	9. Disconnect the Cisco 6100 and Cisco 6110 power connections.
	10. Disconnect the Cisco 6110 controller.
	11. Disconnect the DOH data switching bus.
	12. Disconnect the Cisco 6110 from the Cisco 6120.
	13. Disconnect the Cisco 6110 chassis ground and logic ground.
	14. Disconnect the Cisco 6120 chassis ground (if applicable).
	15. Disconnect the Cisco 6100 chassis ground (if applicable).
	16. Remove the Cisco 6110 chassis.
	17. Remove the DS3 STM and ATU-C modules from the Cisco 6100 chassis (if applicable).
	18. Measure the rack space and prepare the rack.
	19. Stabilize the rack.
	20. Install the POTS splitter (if applicable).
	21. Install the fan tray in the rack (if applicable).
	22. Install the thermal guard on the Cisco 6100 chassis (if applicable).
	23. Install the blank faceplates in the open slots.
	24. Replace the ground lugs on the Cisco 6100 and Cisco 6120 chassis.

Table 6 *Conversion Step Checklist (continued)*

Check	Conversion Procedure
	25. Ground the Cisco 6100 chassis, fan tray, and POTS splitter.
	26. Connect the Cisco 6100 chassis to the POTS splitter.
	27. Attach the Cisco 6100 power connections to the fuse and alarm panel.
	28. Attach the fan tray power connections to the fuse and alarm panel, if applicable.
	29. Connect the alarm contacts, if applicable.
	Note The fan tray alarm contacts (P14, pins 7 and 8) on the chassis must be connected to the fan tray so that the alarms can be transmitted to the ViewRunner management software.
	30. Install the system I/O card, if applicable.
	31. Connect the POTS splitter to the MDF.
	32. Pull the modules away from the backplane connection.
	33. Verify that the DIP switches are set to the OFF position (if applicable).
	34. Install the DS3 subtending I/O card, if applicable.
	35. Cable the system I/O card to the DS3 subtending I/O card, if applicable.
	36. Install the thermal shields in the Cisco 6100 chassis.
	37. Apply the power to the system.
	38. Verify that the fan tray is operational, if applicable.
	39. Change the dual-port CAP ATU-C module jumpering for Direct Connect.
	40. Install the new modules.
	41. Reseat the modules.
	42. Connect the NI-1 module to the network.
	43. Attach the Cisco 6100 chassis ventilation cover.
	44. Attach the new power rating label.
	45. Install the new Cisco 6100 front cover and EMI gaskets.
	46. Connect the ViewRunner system to the Cisco 6100.
	47. Close the optional rear cover.
	48. Replace current CLEI, 800 level, and ground symbol labels on the Cisco 6100 and Cisco 6120 chassis.
	49. Run the connection test procedures.

1. MDF = main distribution frame

Conversion Procedures

The following sections detail the conversion procedures for upgrading your system from a DOH configuration to a Direct Connect with a POTS splitter configuration.

Upgrade the ViewRunner Management Software and Patches

You need to upgrade the ViewRunner management software to Release 3.0.0 and applicable patches. Refer to the *ViewRunner for Windows Installation and Administration Guide* or *ViewRunner for HP OpenView Installation and Administration Guide* for upgrade procedures.

Upgrade the Cisco 6100 with NI-1 System Node Software

You need to upgrade the Cisco 6100 with NI-1 system node software to Release 3.0.0 using either ViewRunner for Windows or ViewRunner for HP OpenView. Refer to the *ViewRunner for Windows User Guide* or *ViewRunner for HP OpenView User Guide* for upgrade procedures.



Note

When selecting the node software images to download, select the images that apply to both the DOH configuration and Direct Connect configuration.

Update vrmapping.conf File

You will need to update the vrmapping.conf file to reflect the new port mapping. See “Port Mapping Table” section on page 87 for port mapping information when using the one-to-two cable. If you are using a different cable set, refer to the *Cisco 6100 with NI-1 Direct Connect Installation Guide* for more port mapping information.

The following text is an example of port mapping for a DOH to Direct Connect conversion:

```
# Port Mapping for DOH to DC conversion (and PVC mapping)
# (LCC ChassisID-Slot-port), (MUX Slot-Port), subVci/netVpi/netVci
# Begin Mapping
0-1-1, 1-1, 0/1/32, 1/1/33, 2/1/34, 3/1/35
0-1-3, 2-1, 0/1/40, 1/1/41, 2/1/42, 3/1/43
0-1-4, 2-2, 0/1/44, 1/1/45, 2/1/46, 3/1/47
0-2-1, 3-1, 0/1/48, 1/1/49, 2/1/50, 3/1/51
0-2-2, 3-2, 0/1/52, 1/1/53, 2/1/54, 3/1/55
0-2-3, 4-1, 0/1/56, 1/1/57, 2/1/58, 3/1/59
0-2-4, 4-2, 0/1/60, 1/1/61, 2/1/62, 3/1/63
0-3-1, 5-1, 0/1/64, 1/1/65, 2/1/66, 3/1/67
0-3-2, 5-2, 0/1/68, 1/1/69, 2/1/70, 3/1/71
0-3-3, 6-1, 0/1/72, 1/1/73, 2/1/74, 3/1/75
0-3-4, 6-2, 0/1/76, 1/1/77, 2/1/78, 3/1/79
0-4-1, 7-1, 0/1/80, 1/1/81, 2/1/82, 3/1/83
0-4-2, 7-2, 0/1/84, 1/1/85, 2/1/86, 3/1/87
0-4-3, 8-1, 0/1/88, 1/1/89, 2/1/90, 3/1/91
0-4-4, 8-2, 0/1/92, 1/1/93, 2/1/94, 3/1/95
0-9-1, 21-1, 0/1/96, 1/1/97, 2/1/98, 3/1/99
0-9-2, 21-2, 0/1/100, 1/1/101, 2/1/102, 3/1/103
0-9-3, 22-1, 0/1/104, 1/1/105, 2/1/106, 3/1/107
0-9-4, 22-2, 0/1/108, 1/1/109, 2/1/110, 3/1/111
0-6-1, 23-1, 0/1/112, 1/1/113, 2/1/114, 3/1/115
0-6-2, 23-2, 0/1/116, 1/1/117, 2/1/118, 3/1/119
0-6-3, 24-1, 0/1/120, 1/1/121, 2/1/122, 3/1/123
0-6-4, 24-2, 0/1/124, 1/1/125, 2/1/126, 3/1/127
0-7-1, 25-1, 0/1/128, 1/1/129, 2/1/130, 3/1/131
0-7-2, 25-2, 0/1/132, 1/1/133, 2/1/134, 3/1/135
0-7-3, 26-1, 0/1/136, 1/1/137, 2/1/138, 3/1/139
0-8-1, 27-1, 0/1/144, 1/1/145, 2/1/146, 3/1/147
0-8-3, 28-1, 0/1/152, 1/1/153, 2/1/154, 3/1/155
0-8-4, 28-2, 0/1/156, 1/1/157, 2/1/158, 3/1/159
0-15-1, 31-1, 0/1/224, 1/1/225, 2/1/226, 3/1/227
0-15-2, 31-2, 0/1/228, 1/1/229, 2/1/230, 3/1/231
0-15-3, 32-1, 0/1/232, 1/1/233, 2/1/234, 3/1/235
0-15-4, 32-2, 0/1/236, 1/1/237, 2/1/238, 3/1/239
0-16-1, 33-1, 0/1/240, 1/1/241, 2/1/242, 3/1/243
0-16-2, 33-2, 0/1/244, 1/1/245, 2/1/246, 3/1/247
0-16-3, 34-1, 0/1/248, 1/1/249, 2/1/250, 3/1/251
0-16-4, 34-2, 0/1/252, 1/1/253, 2/1/254, 3/1/255
0-13-1, 35-1, 0/1/256, 1/1/257, 2/1/258, 3/1/259
0-13-2, 35-2, 0/1/260, 1/1/261, 2/1/262, 3/1/263
0-13-3, 36-1, 0/1/264, 1/1/265, 2/1/266, 3/1/267
0-13-4, 36-2, 0/1/268, 1/1/269, 2/1/270, 3/1/271
0-18-1, 37-1, 0/1/272, 1/1/273, 2/1/274, 3/1/275
0-18-2, 37-2, 0/1/276, 1/1/277, 2/1/278, 3/1/279
0-18-3, 38-1, 0/1/280, 1/1/281, 2/1/282, 3/1/283
0-18-4, 38-2, 0/1/284, 1/1/285, 2/1/286, 3/1/287
0-19-1, 13-1, 0/1/288, 1/1/289, 2/1/290, 3/1/291
0-19-2, 13-2, 0/1/292, 1/1/293, 2/1/294, 3/1/295
0-19-3, 14-1, 0/1/296, 1/1/297, 2/1/298, 3/1/299
0-19-4, 14-2, 0/1/300, 1/1/301, 2/1/302, 3/1/303
0-20-1, 15-1, 0/1/304, 1/1/305, 2/1/306, 3/1/307
0-20-2, 15-2, 0/1/308, 1/1/309, 2/1/310, 3/1/311
0-20-3, 16-1, 0/1/312, 1/1/313, 2/1/314, 3/1/315
0-20-4, 16-2, 0/1/316, 1/1/317, 2/1/318, 3/1/319
0-21-1, 17-1, 0/1/320, 1/1/321, 2/1/322, 3/1/323
0-21-2, 17-2, 0/1/324, 1/1/325, 2/1/326, 3/1/327
0-21-3, 18-1, 0/1/328, 1/1/329, 2/1/330, 3/1/331
0-21-4, 18-2, 0/1/332, 1/1/333, 2/1/334, 3/1/335
0-14-1, 19-1, 0/1/336, 1/1/337, 2/1/338, 3/1/339
0-14-2, 19-2, 0/1/340, 1/1/341, 2/1/342, 3/1/343
```

```

0-14-3, 20-1, 0/1/344, 1/1/345, 2/1/346, 3/1/347
0-14-4, 20-2, 0/1/348, 1/1/349, 2/1/350, 3/1/351
# End Mapping

```

Run the Migration Wizard in ViewRunner

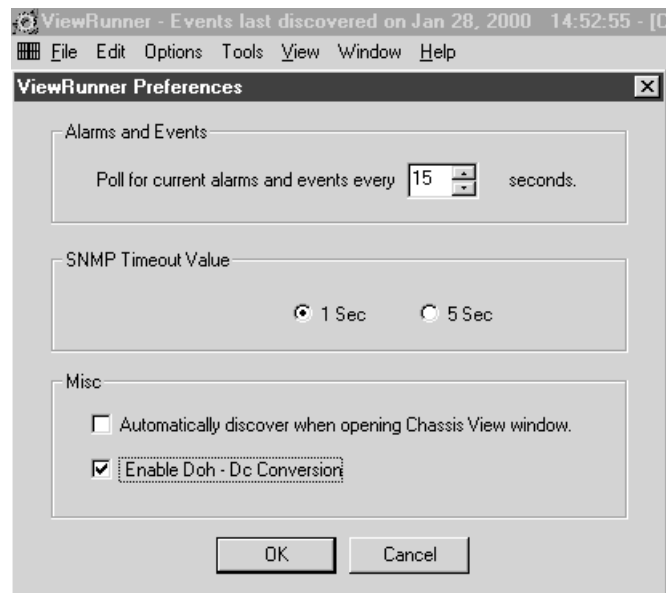
The ViewRunner management software Migration Wizard automatically migrates DOH subscribers to a Direct Connect with a POTS splitter configuration. The Migration Wizard first copies the subscribers and their provisioned configuration settings to the system controller module. The Migration Wizard then downloads the module's configuration to each affected module. Once software download is complete, the Migration Wizard restores all subscribers and their provisioned settings.

ViewRunner for Windows

Now that you have downloaded the system software onto all of the selected Cisco 6100 with NI-1 system components, you can begin the DOH to Direct Connect with a POTS splitter migration. Complete the following steps:

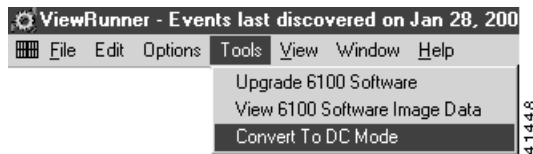
- Step 1 Disconnect the LIM controller module, as follows:
 - a. Open the chassis front cover.
 - b. Lift up the ejector tab to disconnect the module from the backplane.
 - c. Carefully slide the module forward and away from the backplane connection.
- Step 2 Disconnect the J45, J46, and J47 Cisco 6100 backplane cables.
- Step 3 Choose ViewRunner preferences from the Options menu.
- Step 4 Click the box next to the **Enable Doh-Dc Conversion** field, as shown in Figure 1.

Figure 1 ViewRunner Toolbar Menu—Enable Doh-DC Conversion



Step 5 Choose **Convert to DC Mode** from the **Tools** menu, shown in Figure 2.

Figure 2 ViewRunner Toolbar Menu—Selecting Convert to DC Mode



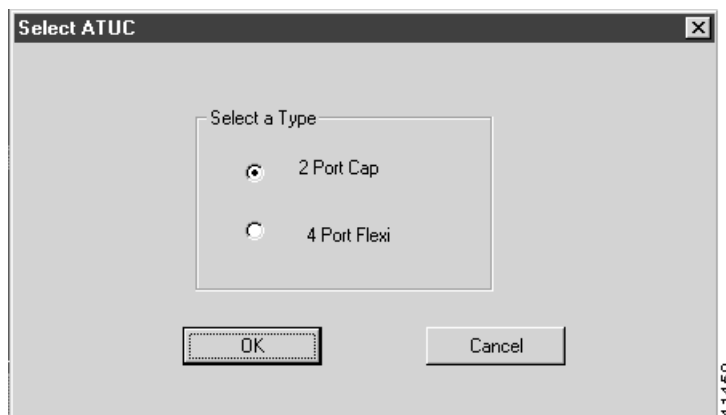
An alert window appears, shown in Figure 3. Click **OK**.

Figure 3 Subscriber Deletion Alert



Step 6 Click the circle next to the type of ATU-C modules to which you want to migrate, as shown in Figure 4. Click **OK**.

Figure 4 Select ATU-C Module Type



Note Mixing dual-port and quad-port xTU-C modules while running the conversion is not an option. You must have either all dual-port or quad-port xTU-C modules installed.

Step 7 Click **Start** to start the conversion.

The migration software deletes the DOH-related components such as the Cisco 6110 chassis, logical pool, and xTU-C modules. This process takes several minutes.

Step 8 Click **Finish** when the conversion is complete.

The **Finish** button is no longer dimmed after the wizard completes the deletion process.

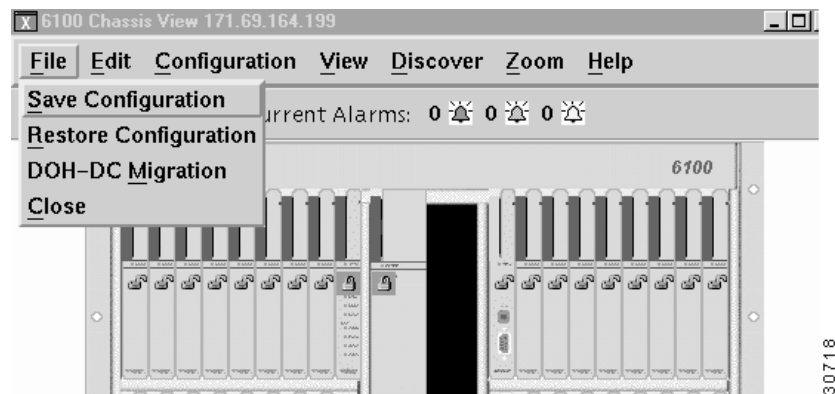
- Step 9 Choose Discover 6100 from the Edit menu.
- Step 10 Clear any alarms as necessary. Refer to the *Cisco 6100 Series with NI-1 Alarm Summary Guide* for alarm details.

ViewRunner for HP OpenView

Now that you have downloaded the system software onto all of the selected Cisco 6100 with NI-1 system components, you can begin the DOH to Direct Connect with a POTS splitter migration. Complete the following steps:

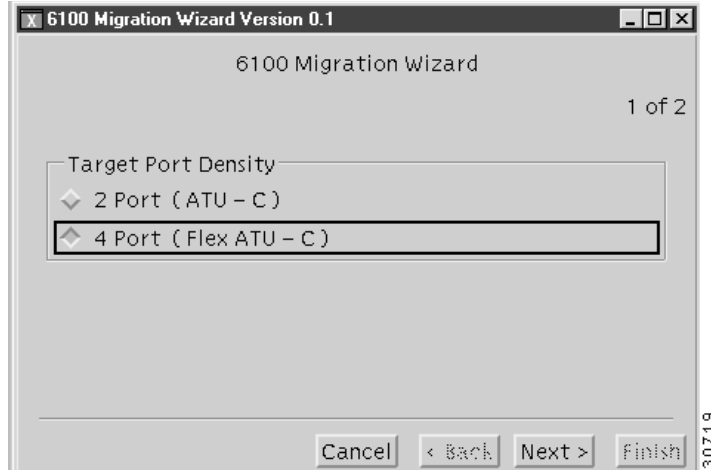
- Step 1 Open the vrconstants.conf file.
- Step 2 Change the DOH_TO_DC flag to 1.
- Step 3 Restart the ViewRunner server.
- Step 4 Choose DOH-DC Migration from the File menu, shown in Figure 5.

Figure 5 ViewRunner Toolbar Menu—Selecting DOH - DC Migration



The **6100 Migration Wizard** window 1 of 2 opens, shown in Figure 6.

Figure 6 6100 Migration Wizard Window 1 of 2



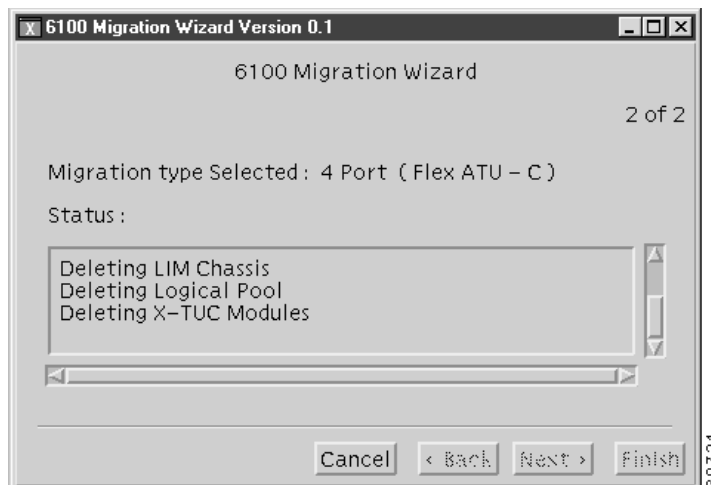
- Step 5** Click the diamond next to the **Target Port Density** field to which you want to migrate. As shown in Figure 6, choosing 2 Port (dual-port) requires an ATU-C module, and choosing 4 Port (quad-port) requires a flexi ATU-C module.



Note Mixing dual-port and quad-port xTU-C modules while running the migration wizard is not an option. You must have either all dual-port or quad-port xTU-C modules installed.

- Step 6** Click **Next** to continue. The **6100 Migration Wizard** window 2 of 2 opens.
- Step 7** Click **Next** to start migration. The migration software deletes the DOH-related components such as the Cisco 6110 chassis, logical pool, and xTU-C modules. This process takes several minutes.

Figure 7 6100 Migration Wizard Window 2 of 2



- Step 8** Click **Finish** when the Migration Wizard has completed deleting the DOH-related components. The **Finish** button is no longer dimmed after the wizard completes the deletion process.
- Step 9** Open the **Chassis View** and click the **Discover** icon for each migrated Cisco 6100 with NI-1 system. Each system that has been migrated from DOH should show active (green tabs) dual- or quad-port modules and no Cisco 6110 chassis.
- Step 10** Clear any alarms as necessary. Refer to the *Cisco 6100 Series with NI-1 Alarm Summary Guide* for alarm details.
- Step 11** Disconnect the J45, J46, and J47 Cisco 6100 backplane cables.
- Step 12** Disconnect the LIM controller module, as follows:
- a. Open the chassis front cover.
 - b. Lift up the ejector tab to disconnect the module from the backplane.
 - c. Carefully slide the module forward and away from the backplane connection.
-

Remove the Power

The system should not be powered while you install and connect the Cisco 6100 system hardware components.

Remove power to the system with one of the following methods:

- Remove the fuses from the fuse and alarm panel
- Turn off the breakers in the fuse and alarm panel

Disconnect the Cisco 6120 from the MDF

Complete the following steps to disconnect the Cisco 6120 from the MDF:

- Step 1** Disconnect the xDSL subscriber line connectors (J11 to J14) from the MDF.
- Step 2** Disconnect the voice lines by connectors (J7 to J10) from the MDF.
-

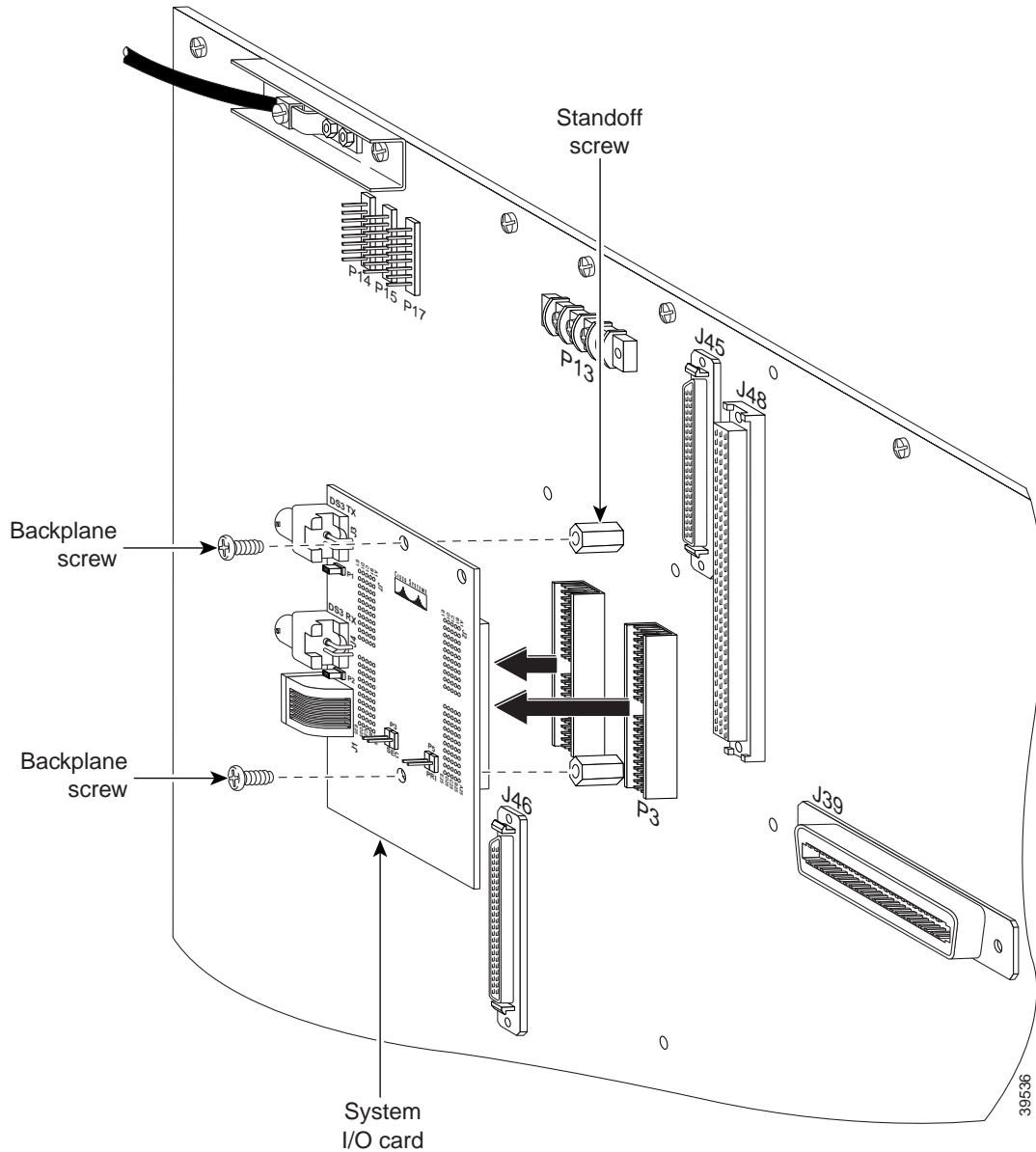
Remove the System I/O Card

If the system I/O card version is not 6100-SYS-IO-3=, you will need to remove and replace the system I/O card. Complete the following steps to remove the system I/O card from the Cisco 6100 chassis backplane:

- Step 1** Open the optional rear cover, if your system has one.
- Step 2** Disconnect the ViewRunner system from the Cisco 6100 by removing the Ethernet cable from the RJ-45 connector on the system I/O card.
- Step 3** Remove the coaxial cables from the two DS3 BNC connectors (J3 [TX] and J4 [RX]) for the system I/O card on the Cisco 6100 chassis backplane.

- Step 4** Use a Phillips-head screwdriver to remove the two backplane screws that attach the system I/O card to the backplane. Keep these backplane screws for use when you install the plastic ESD shield.
- Step 5** Lift and disconnect the system I/O card from connectors P3 and P9, two 2-mm HM module connectors on the Cisco 6100 backplane. Figure 8 shows the system I/O card removal.

Figure 8 System I/O Card Removal



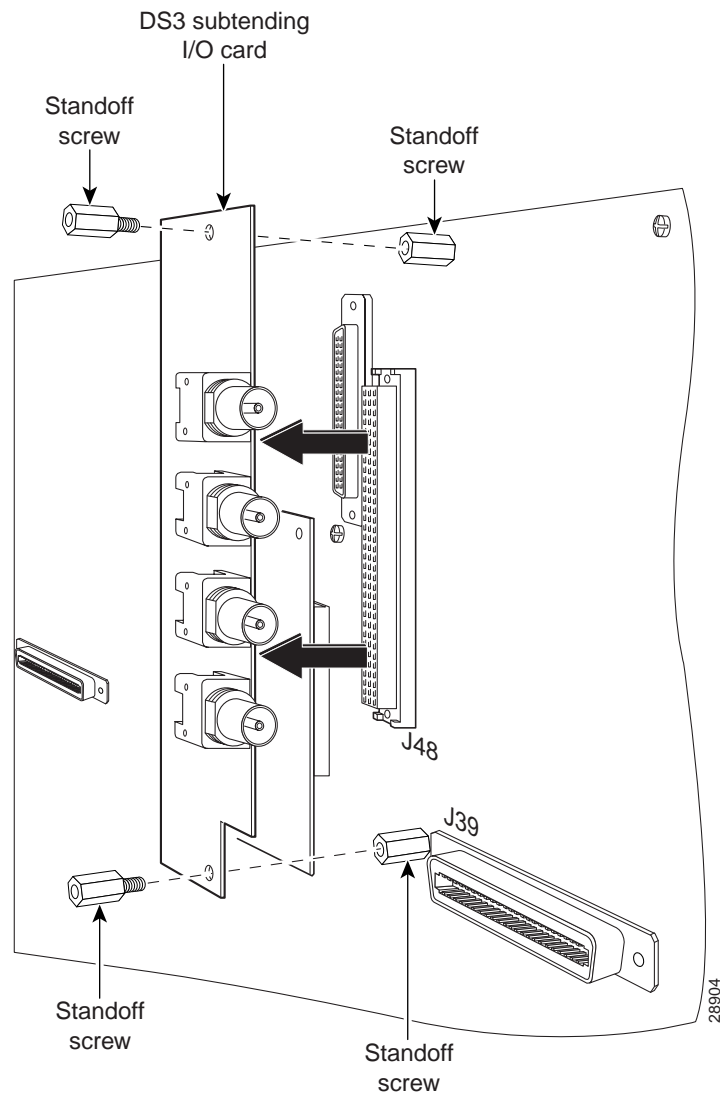
Remove the DS3 Subtending I/O Card

If you have subtending Cisco 6100 chassis in your rack configuration and the DS3 subtending I/O card version is not 6100-ST-IO-3-DS3=, you will need to remove and replace the DS3 subtending I/O card on the back of each subtended node chassis backplane. Complete the following steps to remove the DS3 subtending I/O card from the Cisco 6100 chassis backplane:

- Step 1** Use a Phillips-head screwdriver to remove the two backplane screws that hold the plastic ESD shield over the DS3 subtending I/O card. Keep these backplane screws and the plastic ESD shield for use when you replace the DS3 subtending I/O card.

Figure 9 shows the DS3 subtending I/O card removal.

Figure 9 DS3 Subtending I/O Card Removal



- Step 2** Remove the coaxial cables from the four DS3 BNC connectors (TX1, RX1, TX2, and RX2) on the DS3 subtending I/O card.

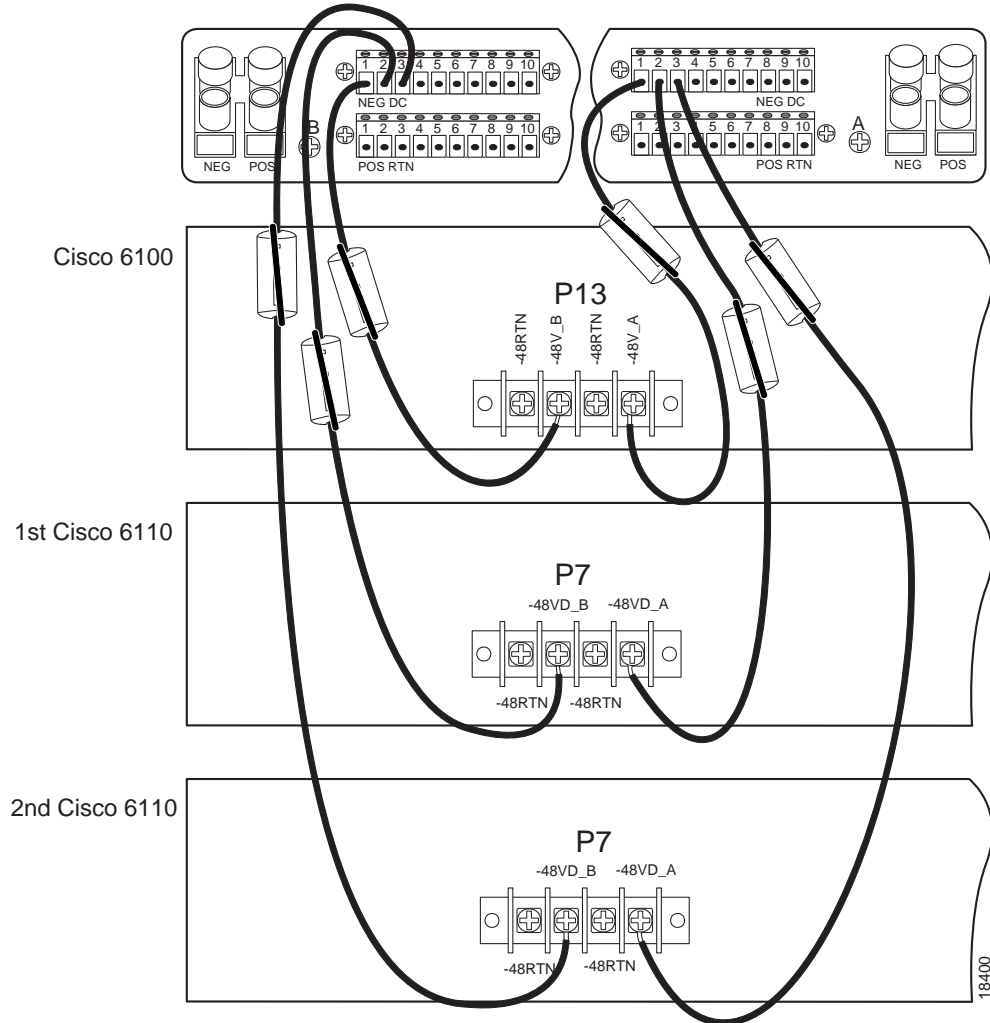
- Step 3** Use a one-quarter inch socket driver or wrench to remove the two additional standoff screws that are attached to the DS3 subtending I/O card.
 - Step 4** Lift and disconnect the DS3 subtending I/O card from connector J48, a 96-pin DIN connector on the subtending host chassis backplane.
-

Disconnect the Cisco 6100 and Cisco 6110 Power Connections

Complete the following steps to disconnect the Cisco 6100 and Cisco 6110 power connections:

- Step 1** Use a socket driver or a Phillips-head screwdriver to remove the clear cover over the Cisco 6100 power connections.
- Step 2** Use a socket driver or a Phillips-head screwdriver to remove the clear cover over the Cisco 6110 power connections.
- Step 3** Disconnect the power input connection wires connecting the Cisco 6100 chassis to the fuse and alarm panel (POS RTN and NEG DC connections) as shown in Figure 10.
You will replace these wires with a larger gauge wire later in the procedures.

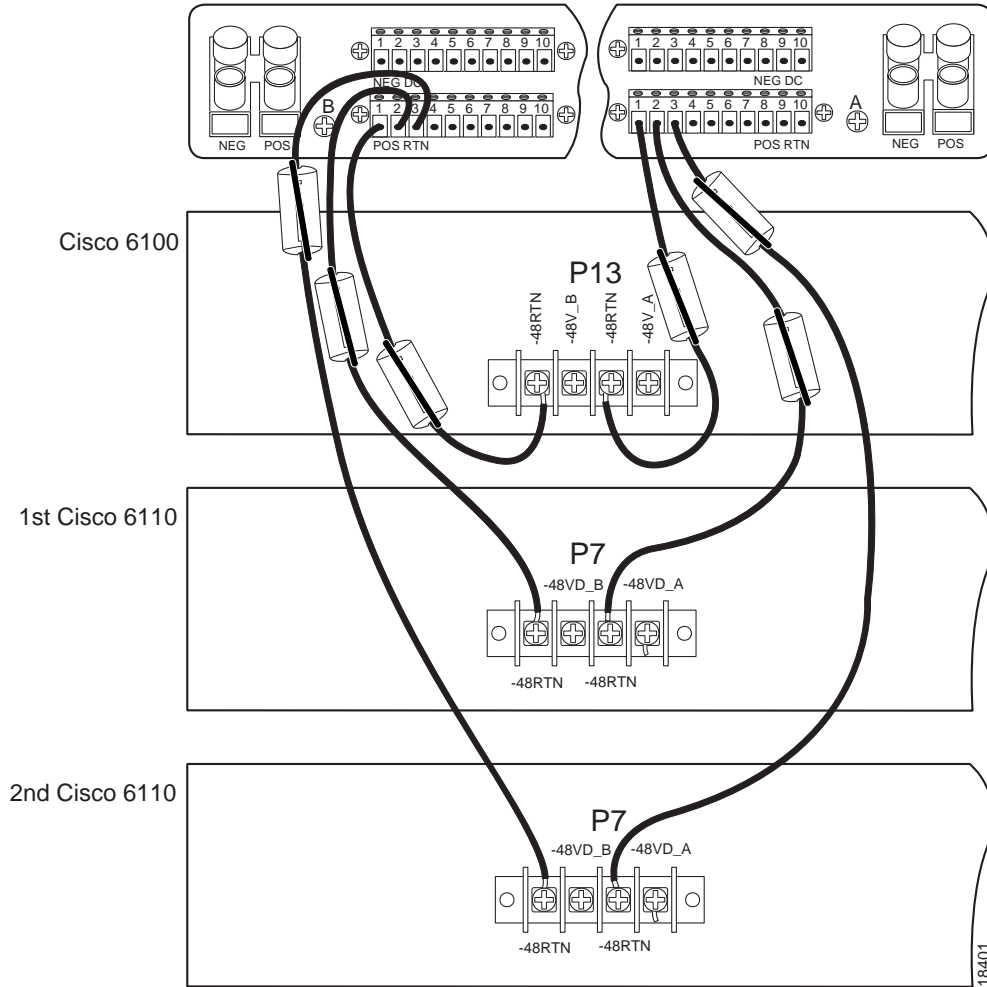
Figure 10 Power Input Connections for the Cisco 6100 and Cisco 6110



- Step 4** Disconnect the power input connection wires connecting the Cisco 6110 chassis to the fuse and alarm panel (POS RTN and NEG DC connections) as shown in Figure 10.

- Step 5** Disconnect the power return connection wires connecting the Cisco 6100 chassis to the fuse and alarm panel (POS RTN and NEG DC connections) as shown in Figure 11.

Figure 11 Power Return Connections for the Cisco 6100 and Cisco 6110



- Step 6** Disconnect the power return connection wires that connect the Cisco 6100 chassis to the fuse and alarm panel (POS RTN and NEG DC connections) as shown in Figure 11.

Disconnect the Cisco 6110 Controller

Complete the following steps to disconnect the Cisco 6110 controller:

-
- Step 1** Disconnect the 26-pin SCSI cable which connects the J47 connector on the Cisco 6100 to the J29 connector on the Cisco 6110.
- Step 2** Disconnect a higher Cisco 6110 in a configuration (at connector J30) from a lower Cisco 6110 (at connector J29), which are connected in a chained fashion, until you disconnect all Cisco 6110 chassis if your configuration contains more than one Cisco 6110 chassis.
-

Disconnect the DOH Data Switching Bus

Complete the following steps to disconnect the DOH data switching bus:

-
- Step 1** Remove the cable connecting the J45 connector on the Cisco 6100 to the highest Cisco 6110 at the J25 connector.
- Step 2** Remove the cable connecting the J46 connector on the Cisco 6100 to the highest Cisco 6110 at the J26 connector.
- Step 3** Remove the cable connecting successive Cisco 6110 chassis from the J27 and J28 connectors if you are using more than one Cisco 6110 chassis in your configuration.
-

Disconnect the Cisco 6110 from the Cisco 6120

Disconnect the Champ cables from the Cisco 6110 (connectors J21 through J24) to the Cisco 6120 (connectors J3 through J6). Table 7 shows the corresponding Cisco 6110 and Cisco 6120 connectors.

Table 7 Cisco 6110 and Cisco 6120 Corresponding Connectors

Cisco 6110 Connector	Cisco 6120 Connector
J21	J3
J22	J5
J23	J6
J24	J4

Disconnect the Cisco 6110 Chassis Ground and Logic Ground

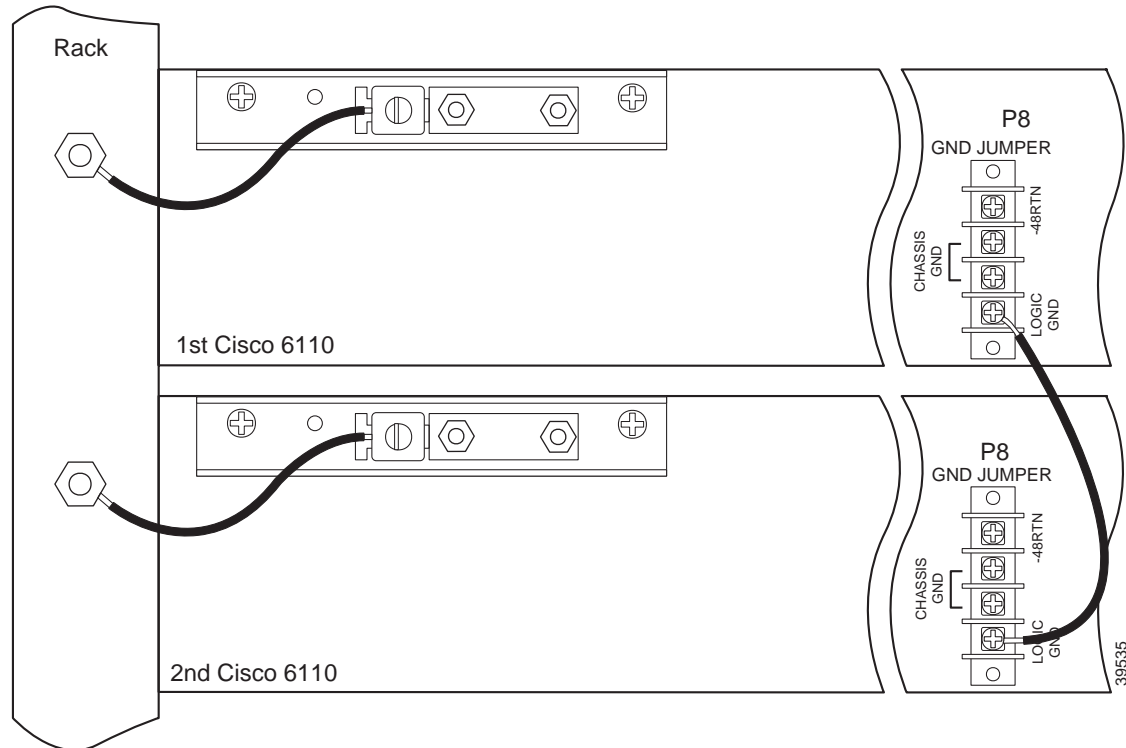
To unground the Cisco 6110 chassis perform the following procedures during installation:

- Disconnect the Logic Ground on the Cisco 6110
- Disconnect the Chassis Ground to the Rack
- Disconnect the Logic Ground to the Chassis Ground

Disconnect the Logic Ground on the Cisco 6110

If you are using more than one Cisco 6110 chassis, disconnect logic ground (connector P8) between the Cisco 6100 chassis (see the right side of Figure 12).

Figure 12 Grounding the Cisco 6110



Disconnect the Chassis Ground to the Rack

Complete the following steps to disconnect the grounding lug on the Cisco 6110 from the rack:

-
- Step 1** Use a 3/16-inch flat-head screwdriver to loosen the screw on the rack.
 - Step 2** Unhook the end of the copper wire that is around the screw on the rack.
 - Step 3** Loosen the compression screw provided on the grounding lug of the Cisco 6100. The grounding lugs are located in the upper left corner of each chassis (viewed from the rear).
 - Step 4** Remove the other end of the copper wire which is under the compression screw.
 - Step 5** Repeat Steps 1 through 5 for each Cisco 6110.

The left side of Figure 12 shows how the Cisco 6110 is grounded to the rack.

Disconnect the Logic Ground to the Chassis Ground

If you used ground jumper P8 on the Cisco 6110 chassis to jumper logic ground to chassis ground, or chassis ground to -48V, disconnect the return jumpers. These grounding options are not shown in Figure 12.

Disconnect the Cisco 6120 Chassis Ground

If you are moving the Cisco 6120 chassis up or down in the rack to accommodate a fan tray or an additional Cisco 6120 chassis, complete the following steps to disconnect the Cisco 6120 chassis ground connection:

-
- Step 1 Use a 3/16-inch flat-head screwdriver to loosen the screw on the rack.
 - Step 2 Unhook the end of the copper wire that is around the screw on the rack.
 - Step 3 Loosen the compression screw provided on the grounding lug of the Cisco 6120.
 - Step 4 Remove the other end of the wire.
 - Step 5 Tighten the compression screw.
-

Disconnect the Cisco 6100 Chassis Ground

If you are moving the Cisco 6100 chassis up or down in the rack to accommodate a fan tray or an additional Cisco 6120 chassis or have 14 AWG copper wire to connect the Cisco 6100 chassis ground, complete the following steps to disconnect the Cisco 6100 chassis ground connection:

-
- Step 1 Use a 3/16-inch flat-head screwdriver to loosen the screw on the rack.
 - Step 2 Unhook the end of the copper wire that is around the screw on the rack.
 - Step 3 Loosen the compression screw provided on the grounding lug of the Cisco 6100.
 - Step 4 Remove the other end of the wire.
 - Step 5 Tighten the compression screw.
-

Remove the Cisco 6110

Complete the following steps to remove the Cisco 6110 from the rack:

-
- Step 1 Remove the modules from the Cisco 6110.
 - a. Lift up the ejector tab. This action disconnects the module from the backplane.
 - b. Carefully slide the module out of the slot.



Note To prevent damage to the modules that are removed from the Cisco 6110, place the modules upright in a tray.

- Step 2** Use a Phillips-head screwdriver to remove the mounting screws that bolt the Cisco 6110 chassis in the rack.
 - Step 3** Gently remove the Cisco 6110 chassis from the rack.
-

Remove Select Modules from the Cisco 6100

If the DS3 STM version is not 6100-ST-3-DS3=, you will need to remove and replace the DS3 STM in the chassis. If you are migrating from dual-port to quad-port ATU-C modules, you need to remove the ATU-C modules as well.

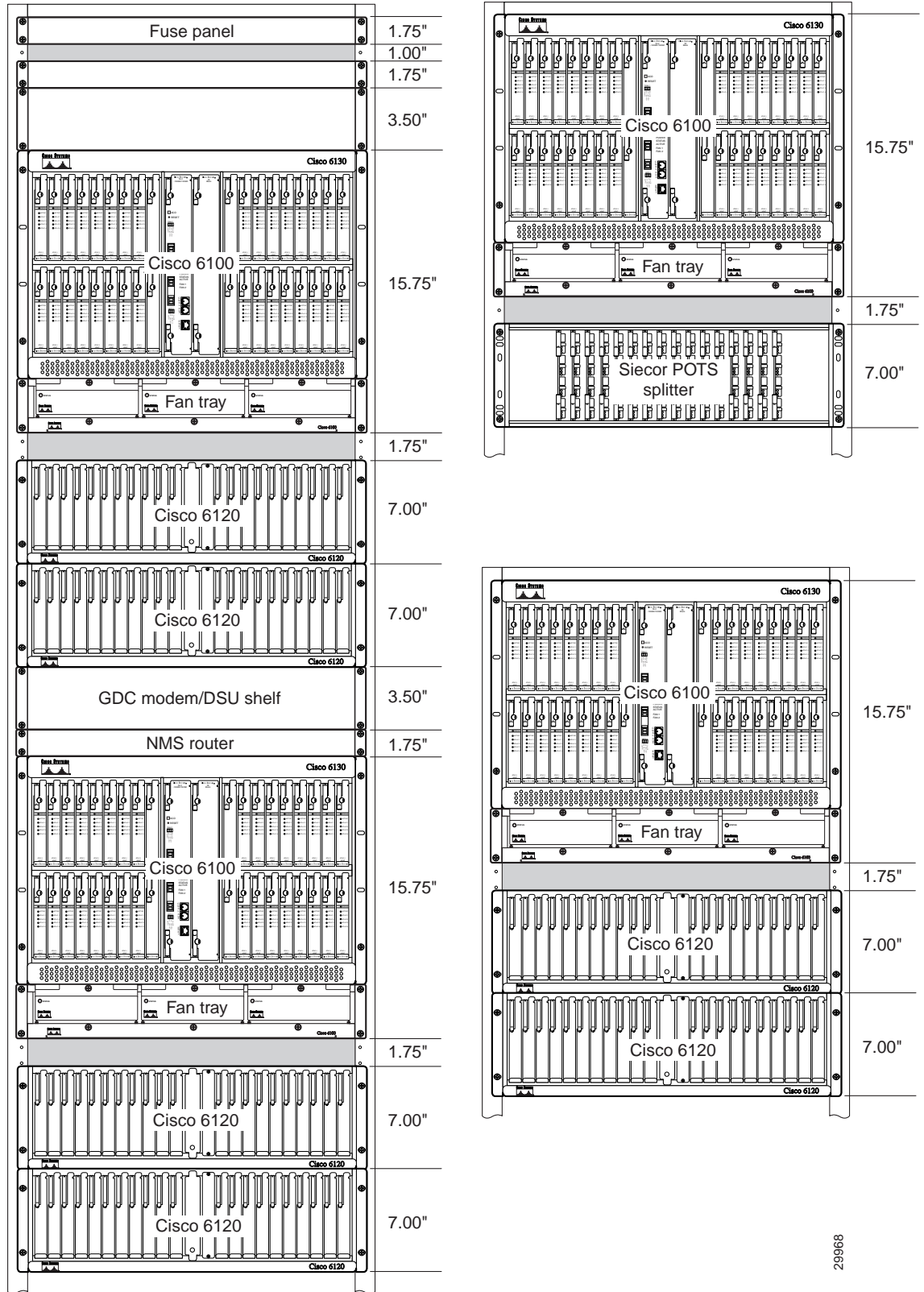
Complete the following steps to remove the select modules from the Cisco 6100 chassis:

- Step 1** Lift up the ejector tab(s). This action disconnects the module from the backplane.
 - Step 2** Carefully slide the module out of the slot.
 - Step 3** Repeat Steps 1 and 2 for each ATU-C module (if applicable) and the DS3 STM.
-

Measure the Rack Space and Prepare the Rack

When upgrading your system from a DOH configuration to a Direct Connect with a POTS splitter configuration, you may have to move the hardware components in the rack to accommodate the fan tray and a second Cisco 6120. Figure 13 shows several hardware component locations in a Direct Connect with a POTS splitter configuration using quad-port ATU-C modules.

Figure 13 Direct Connect Configuration Components



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**Warning**

Two people are required to lift the chassis. Grasp the chassis underneath the lower edge and lift with both hands. To prevent injury, keep your back straight and lift with your legs, not your back.

Complete the following steps to measure the rack space and prepare the rack:

- Step 1** Use Table 8 to calculate the rack space necessary for your Cisco 6100 system configuration. The total amount of rack space should not exceed 42 RUs. If your total configuration exceeds 42 RUs, either replan your configuration or use more than one rack to house the Cisco 6100 with NI-1 system components.

Table 8 *Rack Space Calculation for the Direct Connect with a POTS Splitter Configuration*

Line	Instructions	Calculation
1	Total number of Cisco 6100 chassis in the rack—Maximum is two chassis per rack (include subtending host and subtended node chassis).	
2	Total number of fan trays in the rack ¹ —Use when installing either dual-port DMT-2 ATU-C or quad-port flexi ATU-C modules in the chassis.	
3	Total number of POTS splitters ² in the rack.	
4	Multiply 9 RUs by the total number of Cisco 6100 chassis on line 1.	
5	Add 1 RU for intake plenum (1 RU for each Cisco 6100 chassis on line 1).	
6	Multiply 2 RUs by the total number of fan trays on line 2.	
7	Multiply 4 RUs by the total number of Cisco 6120 chassis on line 3.	
8	Add lines 4 through 7 for the total number of RUs needed with your Direct Connect with a POTS splitter configuration using Cisco 6100 chassis.	

1. If you are using multiple Cisco 6100 chassis in your configuration, a fan tray is required to be installed under each chassis.
2. Either a Cisco 6120 or a Siecor ADSL POTS Splitter Rack-Mount Shelf can be used in a Direct Connect with a POTS splitter configuration.

Step 2 Close and secure the Cisco 6100 rear cover (if applicable).

Step 3 Move the Cisco 6100 chassis up or down in the rack to accommodate the fan tray and additional Cisco 6120 chassis, as necessary.

- a. Use a Phillips-head screwdriver to remove the mounting screws that bolt the Cisco 6100 chassis in the rack.
- b. Gently move the Cisco 6100 chassis up or down in the rack to accommodate the fan tray and the additional Cisco 6120. The top of the fan tray should be flush with the bottom of the chassis.
- c. Use the mounting screws and a Phillips-head screwdriver to bolt the Cisco 6100 in the rack.

- Step 4** Move the existing Cisco 6120 chassis up or down in the rack to accommodate the fan tray and additional Cisco 6120, as necessary.
- a. Use a Phillips-head screwdriver to remove the mounting screws that bolt the Cisco 6120 chassis in the rack.
 - b. Gently move the Cisco 6120 chassis up or down in the rack to accommodate the additional Cisco 6120 chassis, as shown in Figure 13.
 - c. Use the mounting screws and a Phillips-head screwdriver to bolt the Cisco 6120 in the rack.
-

Stabilize the Rack

Before you install the fan tray and second Cisco 6120 chassis needed for a Direct Connect with a POTS splitter configuration, you need to stabilize the rack for the new hardware components.

Verify that your Cisco 6100 with NI-1 system is installed from the bottom to the top of the rack so the rack remains stable. If your system is not installed from the bottom to the top of the rack, make the necessary adjustments to the rack as discussed in the “Install the POTS Splitter” section on page 36.



Warning

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
 - When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
 - If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
-

Install the POTS Splitter

In a Direct Connect with a POTS splitter configuration using quad-port ATU-C modules, it is necessary to expand the system to accommodate 128 ports in one of the following ways:

- Verify that a total of two Cisco 6120 chassis are installed in the rack
- Remove the current Cisco 6120 and install a Siecor POTS splitter

The following sections detail the installation procedures for each POTS splitter.

Install the Additional Cisco 6120

Complete the following steps to install the Cisco 6120 in the rack:



Warning

Two people are required to lift the chassis. Grasp the chassis underneath the lower edge and lift with both hands. To prevent injury, keep your back straight and lift with your legs, not your back.



Note

The Cisco 6120 chassis ships with a retaining bar in place. Verify that the retaining bar is secure before lifting the chassis. The retaining bar prevents the modules from falling out of the chassis.

Step 1 Position one Cisco 6120, which occupies 4 RUs of space, in the rack. See Figure 13 for the correct placement of the Cisco 6120.

The Cisco 6120 does not dissipate heat; therefore, the bottom of the rack is the best location for the Cisco 6120.

Step 2 Use six mounting screws and a Phillips-head screwdriver to bolt the Cisco 6120 in the rack.

Step 3 Remove the retaining bar.

Step 4 Repeat Steps 1 through 3 for each Cisco 6120 as necessary.

Install the Siecor POTS Splitter

For installation procedures for the Siecor POTS splitter, refer to the *Siecor ADSL POTS Splitter Rack-Mount Shelf Central Office Version* document.

See Figure 13 for the correct placement of the Siecor POTS splitter.



Warning

Two people are required to lift the chassis. Grasp the chassis underneath the lower edge and lift with both hands. To prevent injury, keep your back straight and lift with your legs, not your back.

Install the Fan Tray

If you are installing dual-port DMT-2 or quad-port flexi ATU-C modules in this configuration, you must have a fan tray installed directly below the Cisco 6100 chassis.



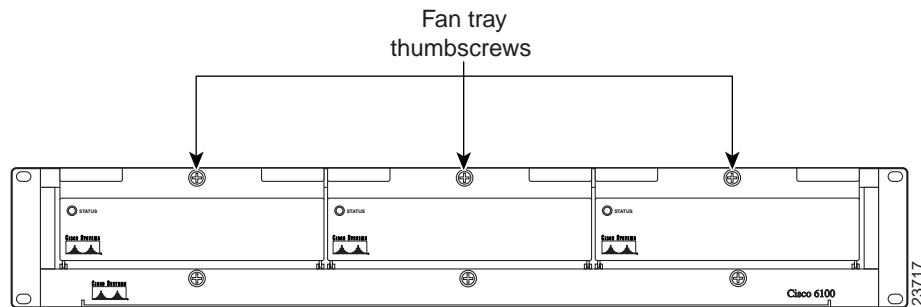
Note

If you are using more than one Cisco 6100 chassis in a Direct Connect with a POTS splitter configuration, you must install a fan tray under each chassis.

Complete the following steps to install the fan tray in the rack:

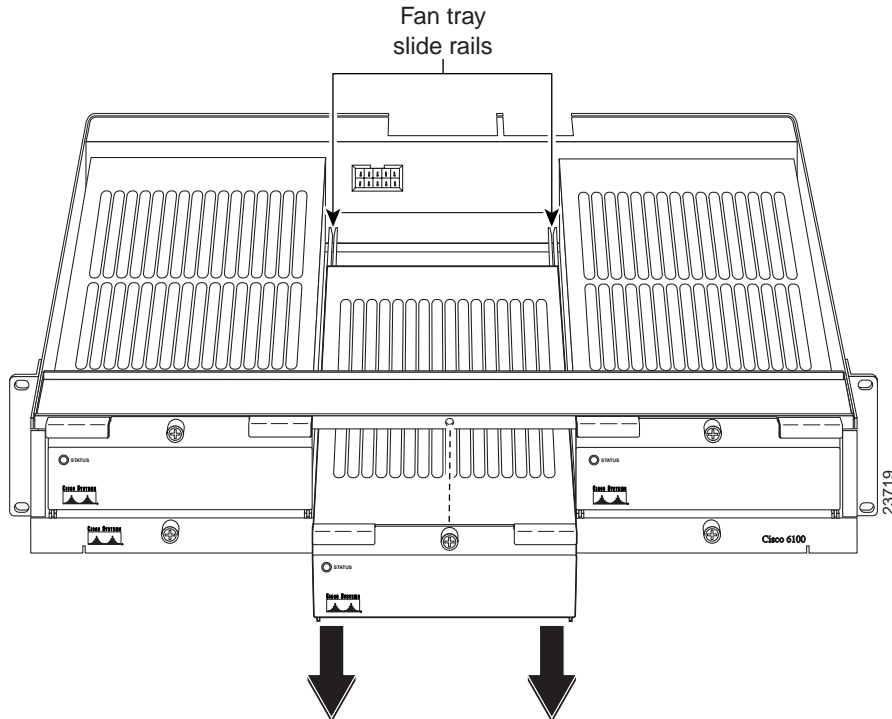
- Step 1 Place the fan tray chassis on a flat and stable surface (for example, a table top).
- Step 2 Locate the first fan module and unscrew the thumbscrew that holds the fan module in place (the screw at the top of each fan module), as shown in Figure 14.

Figure 14 Fan Tray Thumbscrews



- Step 3** Carefully remove the fan module by pulling it toward you. The fan module is located on slide rails for easy removal and installation. (See Figure 15.)

Figure 15 Removing the Fan Module from the Fan Tray



- Step 4** Place the fan module on a flat and stable surface (for example, a table top) until you are ready to reinsert it into the fan tray.
- Step 5** Repeat Steps 2 through 4 for each fan module.
- Step 6** Position the fan tray chassis, which occupies 2 RUs of space, above the POTS splitter. Allow an additional 1 RU of space between the fan tray and the POTS splitter. This space allows for the intake plenum.
- Step 7** Use four mounting screws and a Phillips-head screwdriver to bolt the fan tray in the rack above the POTS splitter. See Figure 13 for the correct placement of the fan tray.
- Step 8** Align a fan module with the fan tray slide rails inside the fan tray.
- Step 9** Slide the fan module into the fan tray.
- Step 10** Tighten the thumbscrew above the fan module.
- Step 11** Repeat Steps 8 through 10 for each fan module.



Note For information about fan module and air filter replacement, refer to the *Cisco 6100 Series System Fan Tray Configuration Notes*.

Install the Thermal Guard on the Cisco 6100

A thermal guard is required when using the Cisco 6100 chassis with dual-port DMT-2 or quad-port flexi ATU-C modules.



Warning

Two people are required to lift the chassis. Grasp the chassis underneath the lower edge and lift with both hands. To prevent injury, keep your back straight and lift with your legs, not your back.



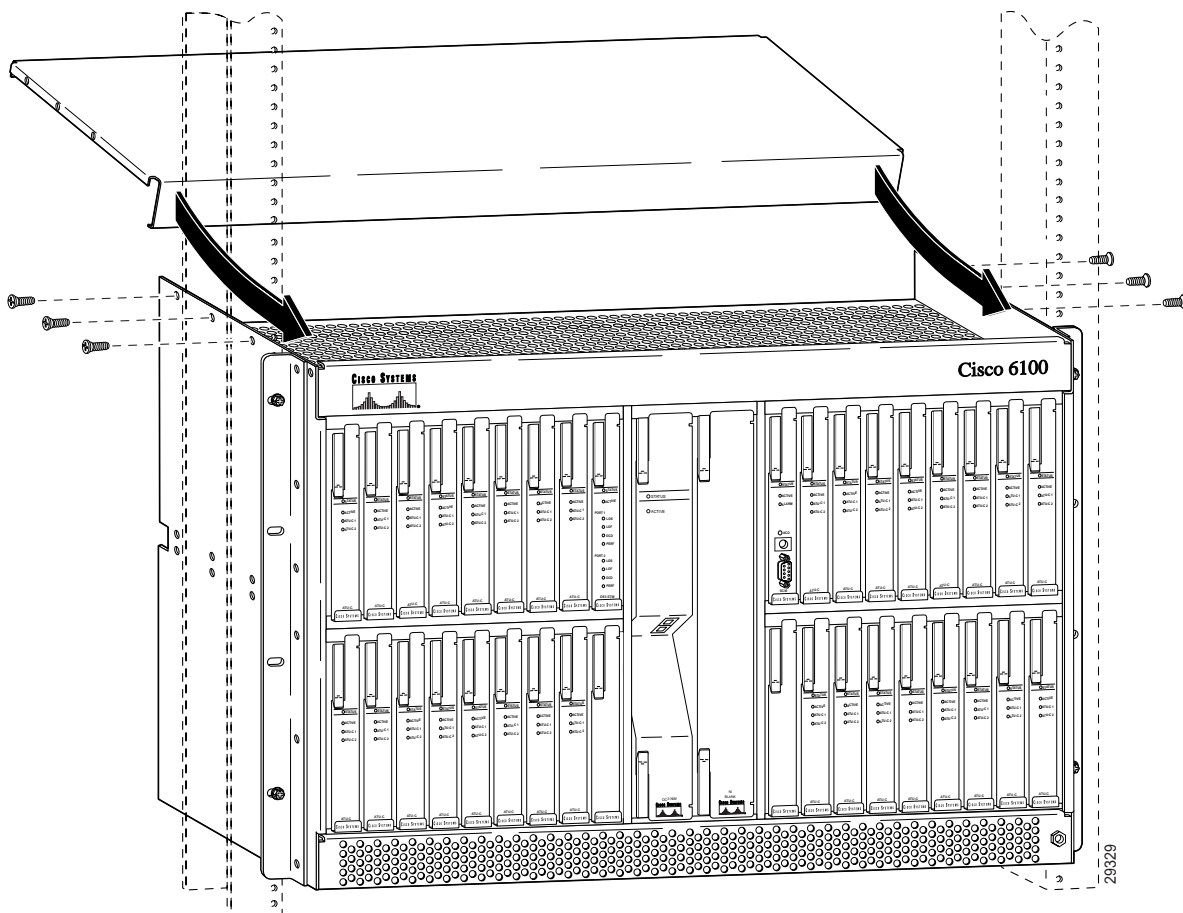
Note

If you are using a side-by-side racks to house your configuration, you need to remove the Cisco 6100 chassis from the rack to install the thermal guard. You cannot properly secure the thermal guard with the screws if the racks are side-by-side.

Complete the following steps to install the thermal guard on the Cisco 6100 chassis while it is in the rack:

- Step 1** Angle the thermal guard above the chassis, as shown in Figure 16.

Figure 16 Thermal Guard Angle Over Cisco 6100



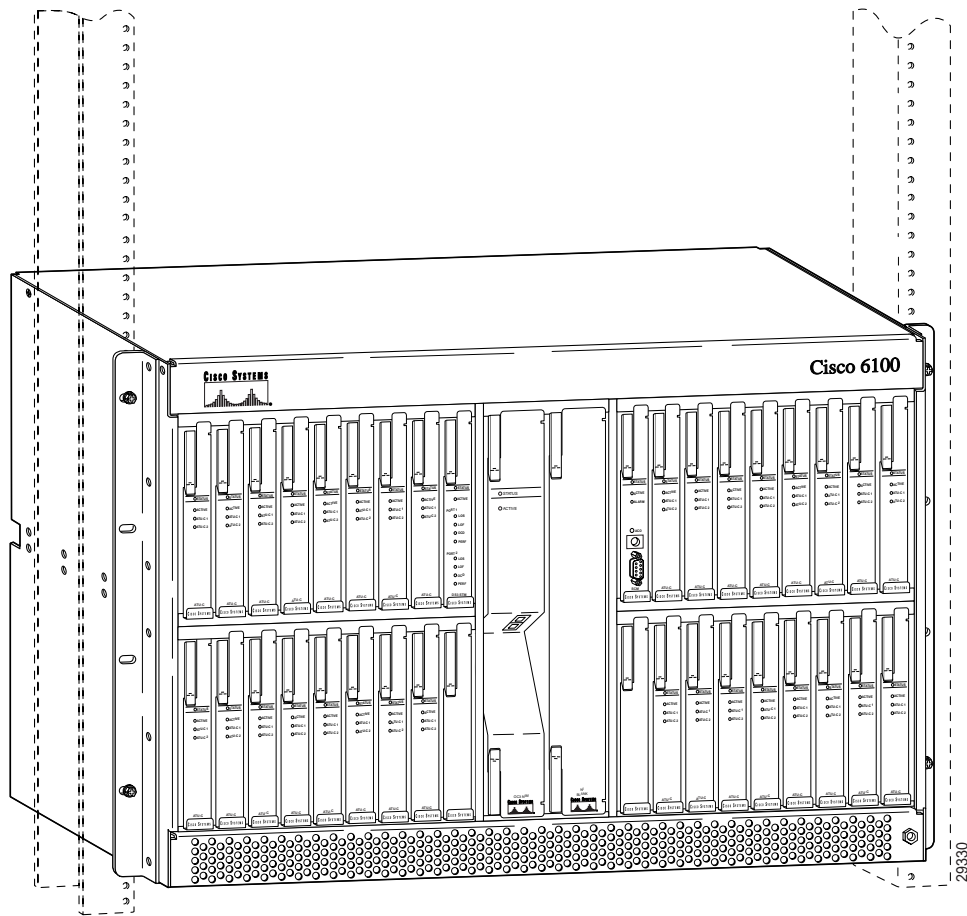
- Step 2** Place the lip of the thermal guard under the lip of the Cisco 6100 chassis.
- Step 3** Gently push the back of the thermal guard onto the chassis.
- Step 4** Use six screws (three on each side of the chassis) to secure the thermal guard to the chassis, as shown in Figure 16.



Note If you are installing the thermal guard while the chassis is in the rack, you might not be able to secure the thermal guard with all six screws. If this is the case, only the rear screw on each side is required to secure the thermal guard.

Figure 17 shows an installed thermal guard.

Figure 17 Thermal Guard Installed on Cisco 6100 Chassis



Install the Blank Faceplates

Blank faceplates should occupy any empty slots in either the Cisco 6100 or the Cisco 6120 chassis. The blank faceplate installation is similar to the module installation.

Complete the following steps to install the blank faceplates in the Cisco 6100 or Cisco 6120:

-
- Step 1** Open or remove the Cisco 6100 front cover.
 - Step 2** Vertically align the blank faceplate edge with the module guides at the top and bottom of the slot.
 - Step 3** Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the blank faceplate into the slot.
 - Step 4** Push on the faceplate to fully seat the module.
 - Step 5** Press down on the ejector tab to secure the faceplate.
-

Replace the Grounding Lugs

Grounding lugs are located in the upper left corners of the Cisco 6100 and Cisco 6120 and are used to ground the chassis to the rack. The one-hole lugs should be replaced by two-hole lugs and a longer bracket. Figure 18 shows the original grounding lugs.

Figure 18 Original Grounding Lugs

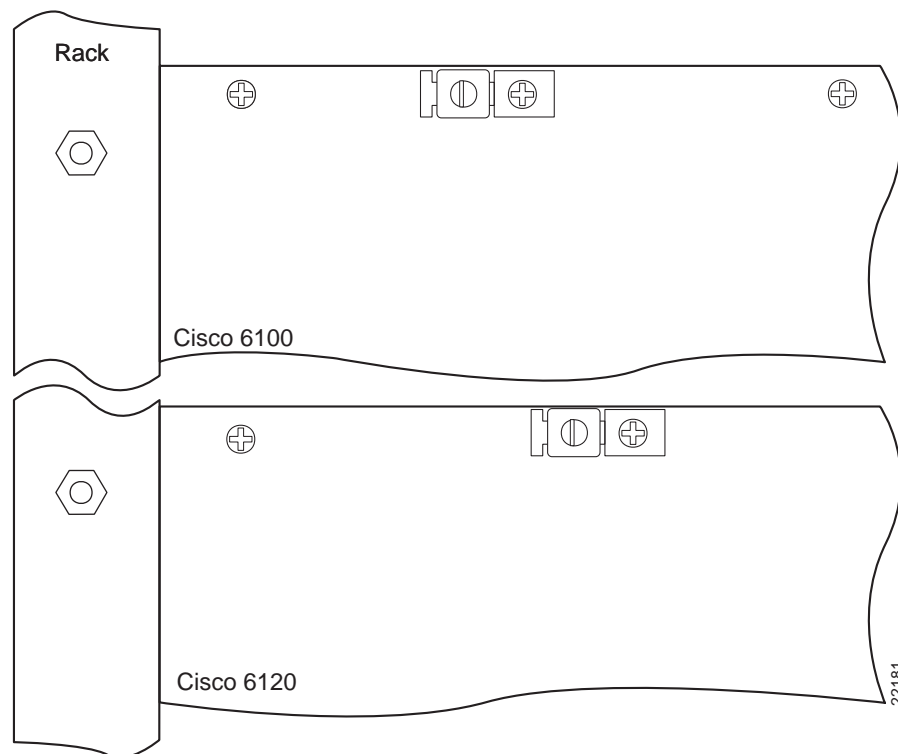
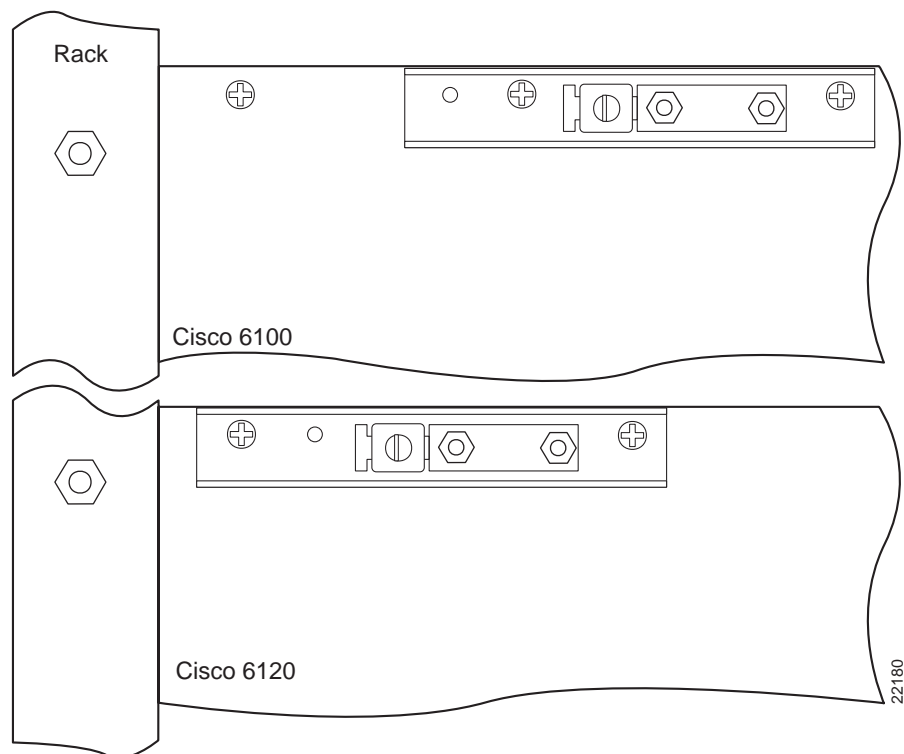


Figure 19 shows the replacement grounding lugs on both chassis.

Figure 19 Replacement Grounding Lugs



Replace the Cisco 6100 Grounding Lugs

Complete the following steps to replace the grounding lugs on the Cisco 6100 chassis:

-
- Step 1** Use a Phillips-head screwdriver to remove the screw that holds the original grounding lug to the chassis.
 - Step 2** Remove the grounding lug.
 - Step 3** Use a Phillips-head screwdriver to remove the screw to the right of the original grounding lug (viewing the chassis from the back).
 - Step 4** Use the two screws removed in Step 1 and Step 3 to attach the new, longer bracket to the Cisco 6100 chassis. These screws will be located in the second and third holes from the upper left corner of the chassis.
 - Step 5** Use a one-quarter inch driver or wrench and two nuts to attach the two-hole lug to the bracket.
-

Replace the Cisco 6120 Grounding Lugs

Complete the following steps to replace the grounding lugs on the Cisco 6120 chassis:

-
- Step 1** Use a Phillips-head screwdriver to remove the screw that holds the original grounding lug to the chassis.
 - Step 2** Remove the grounding lug.

- Step 3** Use a Phillips-head screwdriver to remove the screw to the right of the original grounding lug (viewing the chassis from the back).
- Step 4** Use the two screws removed in Step 1 and Step 3 to attach the new, longer bracket to the Cisco 6120 chassis. These screws will be located in the first and second holes from the upper left corner of the chassis.
- Step 5** Use a one-quarter inch driver or wrench and two nuts to attach the two-hole lug to the bracket.

Ground the Cisco 6100, Fan Tray, and POTS Splitter

Complete the following steps to connect the grounding lug on the Cisco 6100, fan tray, and POTS splitter directly to the rack:



Caution

Do not reuse the wire you removed in the “Disconnect the Cisco 6100 Chassis Ground” section on page 31. It is necessary to upgrade the wire for the Cisco 6100 to 12 AWG or thicker.

- Step 1** Remove all paint or oxidation from the rack at the point of the grounding connection.
- Step 2** Measure enough wire to connect the Cisco 6100 to the rack. Use 12 American Wire Gauge [AWG] or thicker green or green with yellow stripes stranded copper wire for the Cisco 6100 chassis grounding. Use 14 AWG or thicker green or green with yellow stripes stranded copper wire for the fan tray and POTS splitter grounding. (See Figure 20 for grounding wire location.)



Tips

Make sure your wire is as short as possible to make the connection.

- Step 3** Use a wire stripper to remove the casing from both ends of the wires.
- Step 4** Use a 3/16-inch flat-head screwdriver to loosen the screw on the rack.
- Step 5** Hook one end of the copper wire around the screw on the rack.
- Step 6** Tighten the rack screw over the copper wire.
- Step 7** Use a flat-head screwdriver to loosen the compression screw that is provided on the grounding lug of the Cisco 6100.

The grounding lugs are located in the upper left corner of each chassis (viewed from the rear).

- Step 8** Insert the other end of the copper wire under the compression screw.
- Step 9** Tighten the compression screw over the copper wire.
- Step 10** Repeat Steps 1 through 9 for the fan tray and the POTS splitter (Cisco 6120).

For grounding procedures for the Siecor POTS splitter, refer to the *Siecor ADSL POTS Splitter Rack-Mount Shelf Central Office Version* document.

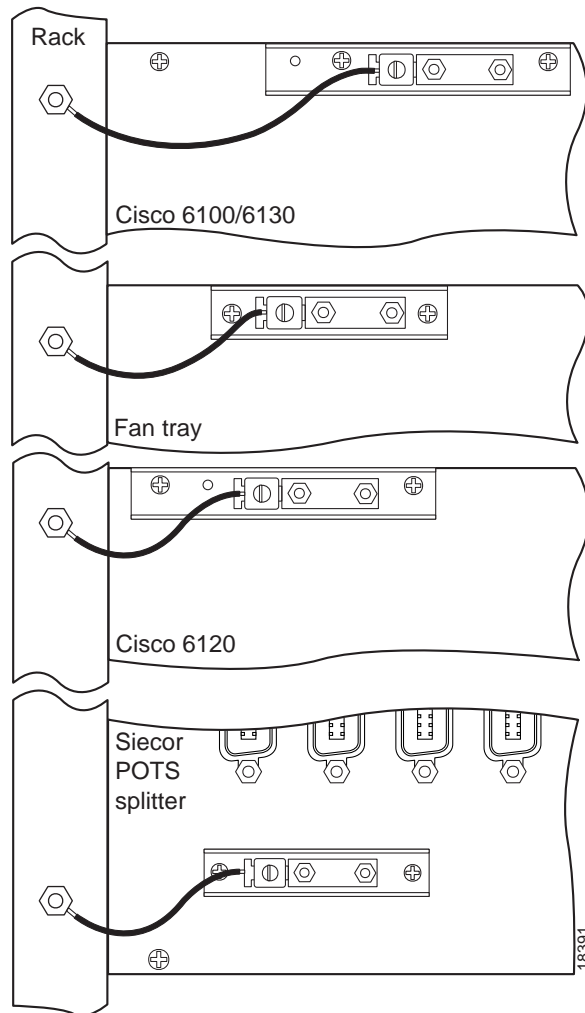


Note

Do not ground the components in a rack by chaining them together.

The left side of Figure 20 shows how to ground the Cisco 6100, fan tray, and POTS splitter to the rack.

Figure 20 *Grounding the Cisco 6100, Fan Tray, and POTS Splitter*



Connect the Cisco 6100 to the POTS Splitter

You can use the following POTS splitters in a Direct Connect with POTS splitter configuration:

- Cisco 6120
- Siecor ADSL POTS Splitter Rack-Mount Shelf

The following sections detail the cabling procedures to connect the Cisco 6100 to each POTS splitter. These connections are for xDSL data flow between the Cisco 6100 and the POTS splitter.

Connect the Cisco 6100 to the Cisco 6120

Cisco recommends using the one-to-two cables for all new installations when connecting one Cisco 6100 chassis to one or two Cisco 6120 chassis.

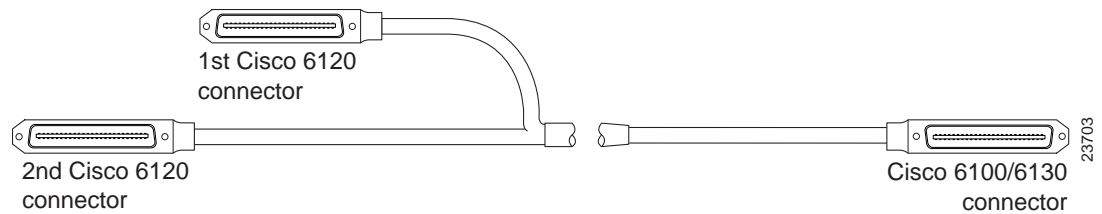


Note

When you use the one-to-two cable, refer to the *Cisco 6100 with NI-1 Direct Connect Installation Guide* for port mapping information.

Figure 21 shows the one-to-two cable.

Figure 21 One-to-Two Cable



Complete the following steps to connect the Cisco 6100 to the Cisco 6120:

- Step 1** Open the optional rear cover, if your system has one.
- Step 2** Determine which 50-pin Champ cables you will use. You can use the following cables when you are cabling the Cisco 6100 to the Cisco 6120:
- One-to-one cables—Used to connect the Cisco 6100 to the Cisco 6120 for systems using dual-port CAP ATU-C modules. This cable is not recommended if you plan to expand your system to quad-port xTU-C modules.
 - One-to-two cables—Used to connect one Cisco 6100 to two Cisco 6120 chassis for systems using dual-port and quad-port ATU-C modules.



Note

If you are using dual-port ATU-C modules, use 64-port chassis cables. However, if you plan to expand your system to quad-port xTU-C modules for future releases, you can use 128-port chassis cables to make future expansion easier. The 128-port chassis cables are recommended for all new installations.

If you are intermixing the modules, see to the *Cisco 6100 with NI-1 Direct Connect Installation Guide* for cable part numbers.

- Step 3** Connect the Champ cables from the Cisco 6100 (connectors J39 through J44) to the Cisco 6120 (connectors J1 through J6).

Table 9 lists the backplane connectors and the part numbers for the one-to-two cables. In this configuration, 64 POTS splitter ports are used in each Cisco 6120, for a total of 128 ports.



Note If you are using the one-to-one cables, refer to the *Cisco 6100 with NI-1 Direct Connect Installation Guide* for the cabling diagrams and cable part numbers.

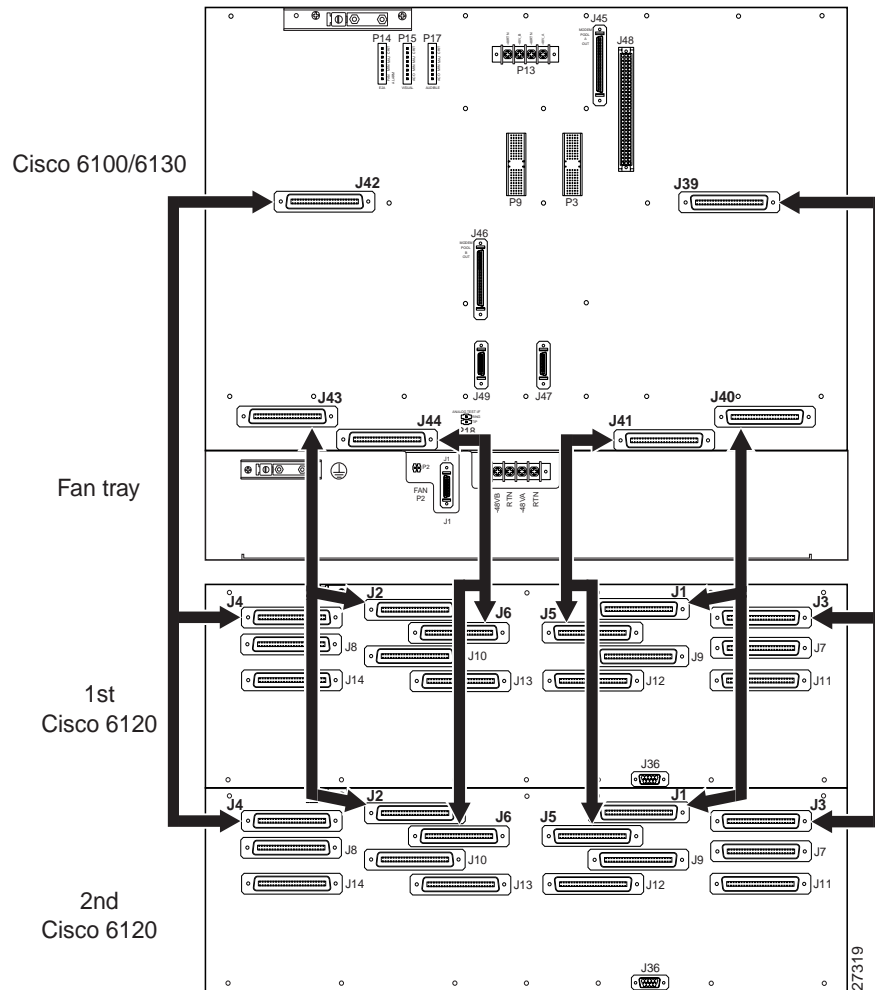
Table 9 Connectors and Part Numbers for One-to-Two Cables—Cisco 6100 to Two Cisco 6120 Chassis Connection

Backplane Connector					Cisco Part Number	
Cisco 6100	First Cisco 6120 Connector		Second Cisco 6120 Connector		Kit	Subassembly
	Backplane	Cable	Backplane	Cable		
J39	J3	P3A	J3	P3B	CAB-MC128-PSC80	72-1767-01 ¹
J40	J1	P1A	J1	P1B	CAB-MC128-PSC80	72-1767-01
J41	J5	P5A	J5	P5B	CAB-MC128-PSC80	72-1767-01
J42	J4	P4A	J4	P4B	CAB-MC128-PSC80	72-1768-01 ²
J43	J2	P2A	J2	P2B	CAB-MC128-PSC80	72-1769-01 ³
J44	J6	P6A	J6	P6B	CAB-MC128-PSC80	72-1770-01 ⁴

1. This cable can be used for Cisco 6130 connectors J39, J40, and J41.
2. This cable is specifically for Cisco 6130 connector J42.
3. This cable is specifically for Cisco 6130 connector J43.
4. This cable is specifically for Cisco 6130 connector J44.

Figure 22 shows the cabling between one Cisco 6100 and two Cisco 6120 chassis.

Figure 22 Cisco 6100 to Two Cisco 6120 Chassis Cabling Diagram with One-to-Two Cables



Tips

If you use 64 POTS splitter ports, tie wrap the second Cisco 6120 connector to the rack. When you expand your system to 128 POTS splitter ports, the second Cisco 6120 connector will attach to a second Cisco 6120.

Connect the Cisco 6100 to the Siecor POTS Splitter

Use the cables described in the *Cisco 6100 with NI-1 Direct Connect Installation Guide* to cable the Cisco 6100 to the Siecor POTS splitter. For cabling procedures for the Siecor POTS splitter, refer to the *Siecor ADSL POTS Splitter Rack-Mount Shelf Central Office Version* document.

Attach the Cisco 6100 Power Connections


Caution

To prevent the system from powering up, do not install the fuses at this time. If the fuses are already installed in the fuse and alarm panel, remove them. You can replace the fuses after the system is installed and connected.

You can wire the power connections from the Cisco 6100 to the fuse and alarm panel for either dual- or single-power feed.


Note

The clear cover was removed in the “Disconnect the Cisco 6100 and Cisco 6110 Power Connections” section on page 26.


Note

Connect each Cisco 6100 with NI-1 system component to a separate fuse. Do not power the components in the rack by chaining them together.

Refer to the *Cisco 6100 with NI-1 Direct Connect Installation Guide* for the calculation tables that are necessary to determine the minimum fuse rating for each component that is wired to the fuse and alarm panel. Refer to the power rating label on the back of the Cisco 6100 to determine the maximum fuse rating.

Attach Cisco 6100 Power Connections for a Dual-Power Feed

Complete the following steps to attach the Cisco 6100 power connections (P13) to the fuse and alarm panel for a dual-power feed:


Caution

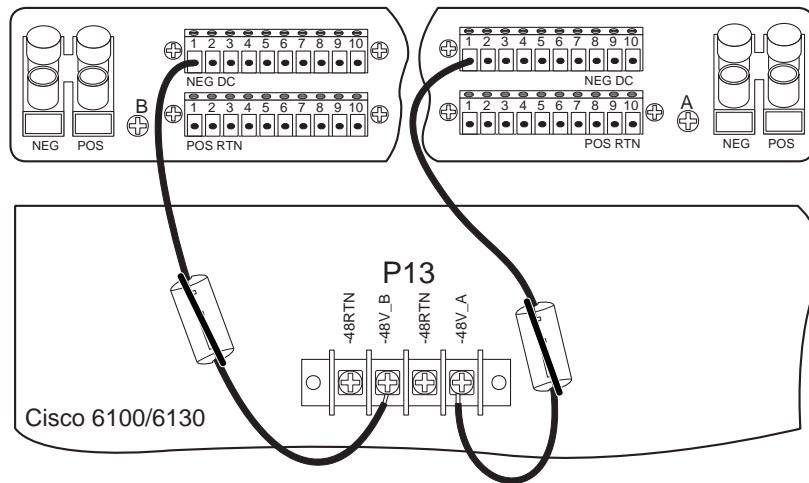
Do not reuse the wire you removed in the “Disconnect the Cisco 6100 and Cisco 6110 Power Connections” section on page 26. It is necessary to upgrade to 12 AWG wire.

Step 1

Measure enough wire (12 AWG black and red copper solid or stranded wire) to connect each of the Cisco 6100 power input connections to the fuse and alarm panel.

Figure 23 shows the Cisco 6100 power input connections wired to the fuse and alarm panel.

Figure 23 Power Input Connections for the Cisco 6100—Dual-Power Feed



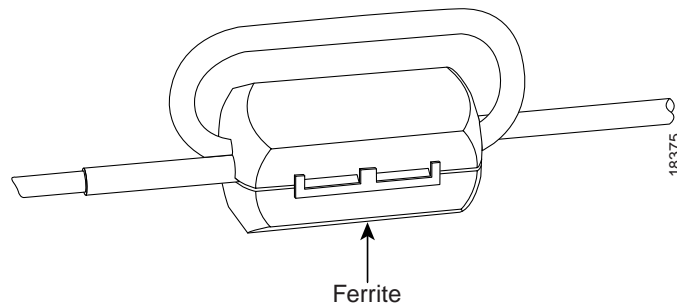
Note Figure 23 shows the wires looped through a ferrite. If you use thicker wire, it will not be necessary to loop the wire through the ferrite.

- Step 2** Use a wire stripper to remove the casing from both ends of the wires.
- Step 3** Use a Phillips-head screwdriver to attach a wire to the `-48V_A` power input connection on the Cisco 6100 (P13).
- Step 4** Loop the wire through the ferrite as shown in Figure 24. If you use thicker wire, it will not be necessary to loop the wire through the ferrite.



Note Looping the wire secures the ferrite.

Figure 24 Wire Looped through Ferrite

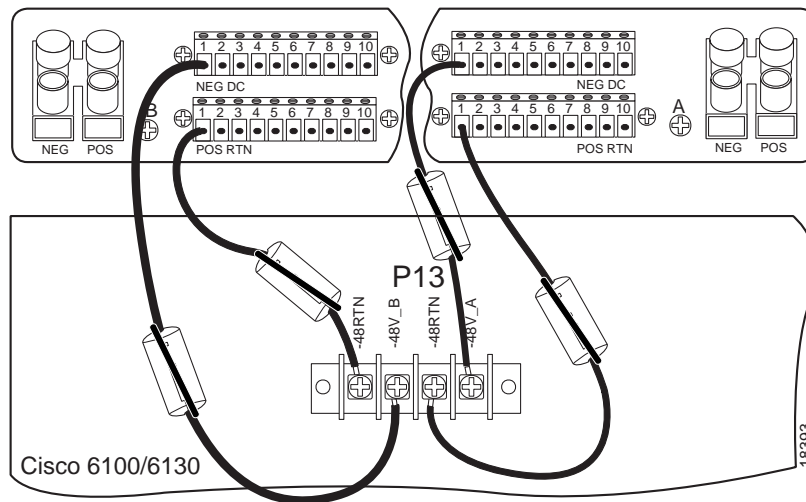


- Step 5** Attach the wire to a fuse and alarm panel NEG (negative) DC connector.
- Step 6** Use a Phillips-head screwdriver to attach a wire to the `-48V_B` power input connection on the Cisco 6100 (P13).

- Step 7** Loop the wire through the ferrite as shown in Figure 24. If you use thicker wire, it will not be necessary to loop the wire through the ferrite.
- Step 8** Attach the wire to a fuse and alarm panel NEG DC connector.
- Step 9** Measure enough wire (12 AWG black and red copper solid or stranded wire) to connect each of the Cisco 6100 power return connections to the fuse and alarm panel.

Figure 25 shows the Cisco 6100 power return connections wired to the fuse and alarm panel for a dual-power feed.

Figure 25 Power Return Connections for the Cisco 6100—Dual-Power Feed



Note Figure 25 shows the wires looped through a ferrite. If you use thicker wire, it will not be necessary to loop the wire through the ferrite.

- Step 10** Use a wire stripper to remove the casing from both ends of the wires.
- Step 11** Use a Phillips-head screwdriver to attach a wire to a –48V power return connection (–48RTN) on the Cisco 6100 (P13).
- Step 12** Loop the wire through the ferrite as shown in Figure 24. If you use thicker wire, it will not be necessary to loop the wire through the ferrite.
- Step 13** Attach the wire to a fuse and alarm panel POS (positive) RTN connector.
- Step 14** Repeat Steps 9 through 13 for the remaining –48V power return connection (–48RTN).
- Step 15** Use a socket driver or a Phillips-head screwdriver to attach the clear cover over the Cisco 6100 power connections.

Attach Cisco 6100 Power Connections for a Single-Power Feed

Complete the following steps to attach the Cisco 6100 power connections (P13) to the fuse and alarm panel for a single-power feed:



Caution

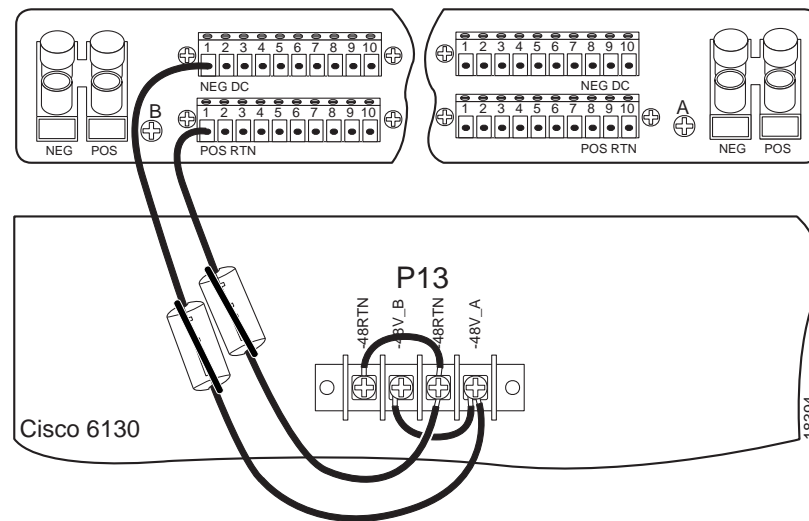
Do not reuse the wire you removed in the “Disconnect the Cisco 6100 and Cisco 6110 Power Connections” section on page 26. It is necessary to upgrade to 12 AWG wire.

Step 1

Measure enough wire (12 AWG black and red copper solid or stranded wire) to connect each of the Cisco 6100 power connections to the fuse and alarm panel.

Figure 26 shows the Cisco 6100 power connections wired to the fuse and alarm panel for a single-power feed.

Figure 26 Power Connections for the Cisco 6100—Single-Power Feed



Note

Figure 26 shows the wires looped through a ferrite. If you use thicker wire, it will not be necessary to loop the wire through the ferrite.

Step 2

Use a wire stripper to remove the casing from both ends of the wires.

Step 3

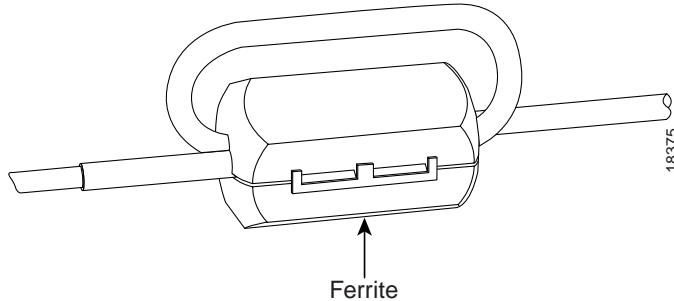
Use a Phillips-head screwdriver, to attach a wire to the `-48V_B` power input connection on the Cisco 6100 (P13).

- Step 4** Loop the wire through the ferrite as shown in Figure 27. If you use thicker wire, it will not be necessary to loop the wire through the ferrite.



Note Looping the wire secures the ferrite.

Figure 27 Wire Looped through Ferrite



- Step 5** Attach the wire to the fuse and alarm panel NEG DC connector.
- Step 6** Use a Phillips-head screwdriver to attach a wire to a -48RTN power return connection on the Cisco 6100 (P13). See Figure 26 for correct placement.
- Step 7** Loop the wire through the ferrite as shown in Figure 27. If you use thicker wire, it will not be necessary to loop the wire through the ferrite.
- Step 8** Attach the wire to the fuse and alarm panel POS RTN connector. See Figure 26 for correct placement.
- Step 9** Use a Phillips-head screwdriver to attach a wire to connect the -48V_A and -48V_B power input connections to each other.
- Step 10** Use a Phillips-head screwdriver to attach a wire to connect the -48RTN power return connections to each other.
- Step 11** Use a socket driver or a Phillips-head screwdriver to attach the clear cover over the Cisco 6100 power connections.

Attach Fan Tray Power Connections

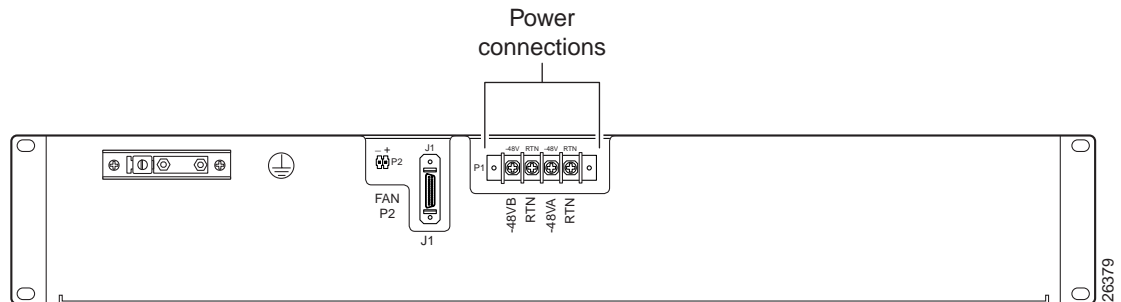
Power is fed from the fuse and alarm panel to the fan tray by a terminal block connector with four dual power connections (P1) located at the top of the fan tray backplane. Figure 28 shows the location of the power connection (P1) on the fan tray.



Note

The fuse and alarm panel and wires are not provided by Cisco Systems, Inc.

Figure 28 Fan Tray Power Connection Location



Note

Connect each Cisco 6100 with NI-1 system component to a separate fuse. Do not power the components in the rack by chaining them together.

Refer to the *Cisco 6100 with NI-1 Direct Connect Installation Guide* for the calculation tables that are necessary to determine the minimum fuse rating for each component that is wired to the fuse and alarm panel. Refer to the power rating label on the back of the Cisco 6100 to determine the maximum fuse rating.

You can wire the power connections from the fuse and alarm panel to the fan tray for either dual- or single-power feed.

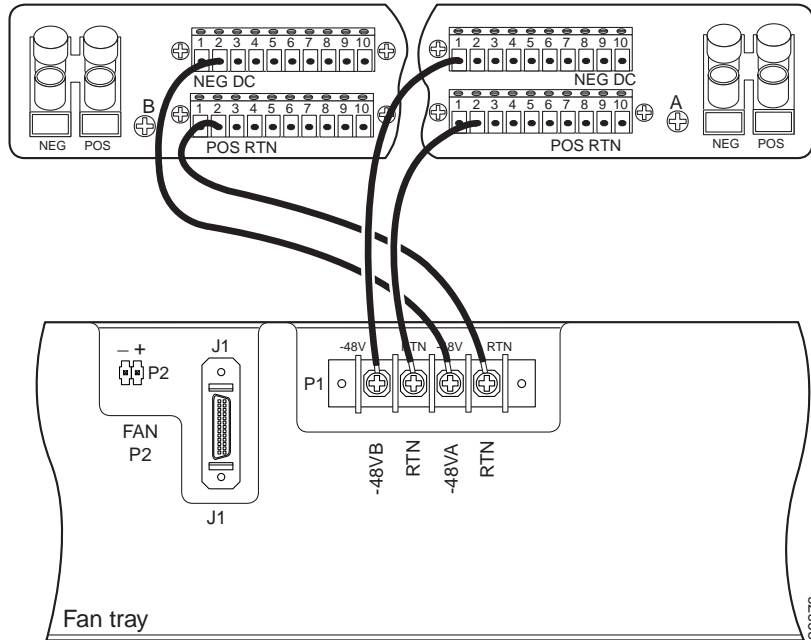
Attach Fan Tray Power Connections for a Dual-Power Feed

Complete the following steps to attach the fan tray power connections to the fuse and alarm panel for a dual-power feed:

- Step 1** Use a socket driver or a Phillips-head screwdriver to remove the clear cover over the fan tray power connections.
- Step 2** Measure enough wire (14 to 18 AWG copper solid or stranded wire) to connect each of the fan tray power connections to the fuse and alarm panel.

Figure 29 shows the power connections from the fan tray to the fuse and alarm panel for a dual-power feed.

Figure 29 Power Connections for the Fan Tray—Dual-Power Feed



- Step 3** Use a wire stripper to remove the casing from both ends of the wires.
- Step 4** Use a Phillips-head screwdriver to attach a wire to the –48VA power input connection on the fan tray (P1).
- Step 5** Attach the wire to the fuse and alarm panel NEG DC connector. See Figure 29 for correct placement.
- Step 6** Use a Phillips-head screwdriver to attach a wire to the –48VB power input connection on the fan tray (P1).
- Step 7** Attach the wire to the fuse and alarm panel NEG DC connector. See Figure 29 for correct placement.
- Step 8** Use a Phillips-head screwdriver to attach a wire to an RTN power return connection on the fan tray (P1).
- Step 9** Attach the wire to a fuse and alarm panel POS RTN connector.
- Step 10** Repeat Steps 8 and 9 for the remaining RTN power return connection.
- Step 11** Use a socket driver or a Phillips-head screwdriver to attach the clear cover over the fan tray power connections.

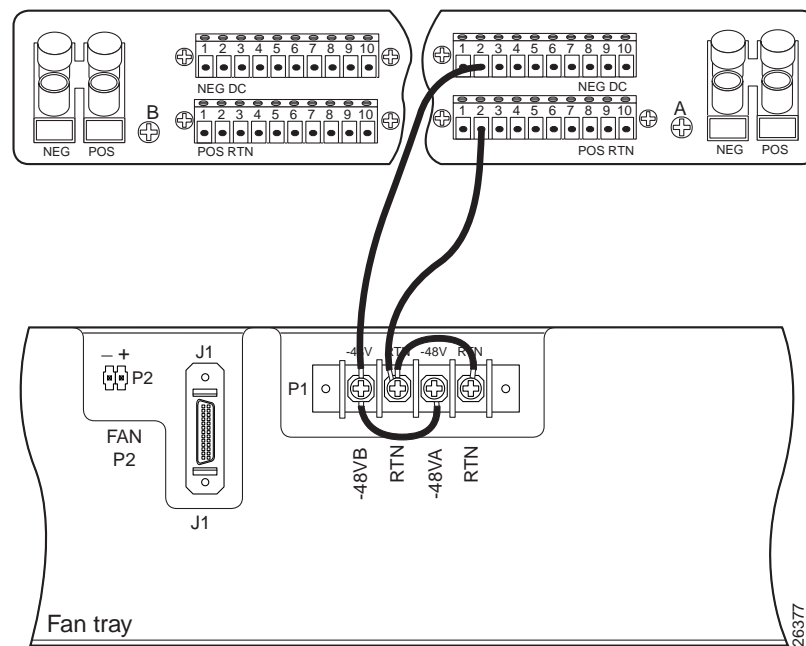
Attach Fan Tray Power Connections for a Single-Power Feed

Complete the following steps to attach the fan tray power connections to the fuse and alarm panel for a single-power feed:

- Step 1** Use a socket driver or a Phillips-head screwdriver to remove the clear cover over the fan tray power connections.
- Step 2** Measure enough wire (14 to 18 AWG copper solid or stranded wire) to connect each of the fan tray power connections to the fuse and alarm panel.

Figure 30 shows the power connections from the fan tray to the fuse and alarm panel for a single-power feed.

Figure 30 Power Connections for the Fan Tray—Single-Power Feed



- Step 3** Use a wire stripper to remove the casing from both ends of the wires.
- Step 4** Use a Phillips-head screwdriver to attach a wire to the –48VA power input connection on the fan tray (P1).
- Step 5** Attach the wire to the fuse and alarm panel NEG DC connector.
- Step 6** Use a Phillips-head screwdriver to attach a wire to an RTN power return connection on the fan tray (P1). See Figure 30 for correct placement.
- Step 7** Attach the wire to the fuse and alarm panel POS RTN connector. See Figure 30 for correct placement.
- Step 8** Use a Phillips-head screwdriver to attach a wire to connect the –48VA and –48VB power input connections to each other.

- Step 9** Use a Phillips-head screwdriver to attach a wire to connect the RTN power return connections to each other.
- Step 10** Use a socket driver or a Phillips-head screwdriver to attach the clear cover over the fan tray power connections.

Connect the Alarm Contacts

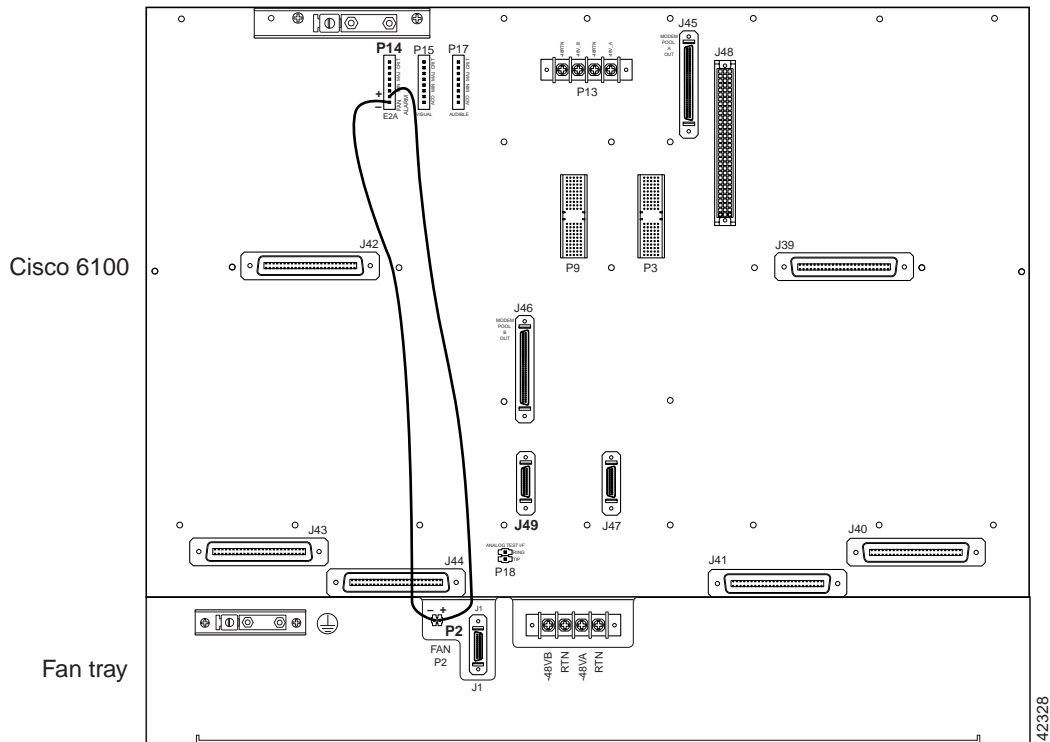
You must connect the fan tray alarm contacts so that the fan tray alarms can be transmitted to the ViewRunner management software.

Complete the following steps to connect the fan tray alarm contacts:

- Step 1** Measure enough wire (24 to 28 AWG solid wire) to connect each of the fan tray alarm contacts on the Cisco 6100 to the fan tray. See Figure 31 for location.

Figure 31 shows how the fan tray two-position header (P2) connects to the fan tray alarm contacts (P14, pins 7 and 8) on the Cisco 6100 backplane.

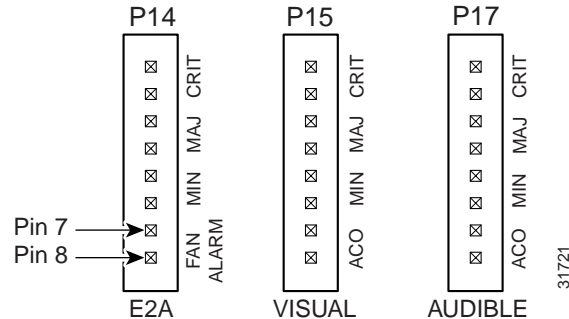
Figure 31 Wiring the Fan Tray Alarm Contacts



42328

See Figure 32 for a close view of the alarm contact pinouts. For pinout descriptions, see the *Cisco 6100 with NI-1 Direct Connect Installation Guide*.

Figure 32 Alarm Contact Pinouts—Close-up



- Step 2** Use a wire stripper to remove the casing from both ends of the wires.
- Step 3** Wire P2 on the backplane of the fan tray to P14 (pin 7) on the backplane of the Cisco 6100 to connect the Fan Alarm+ contact. Use a wire wrapping tool to attach the wire to the contacts.
- Step 4** Wire P2 on the backplane of the fan tray to P14 (pin 8) on the backplane of the Cisco 6100 to connect the Fan Alarm– contact. Use a wire wrapping tool to attach the wire to the contacts.

Install the System I/O Card



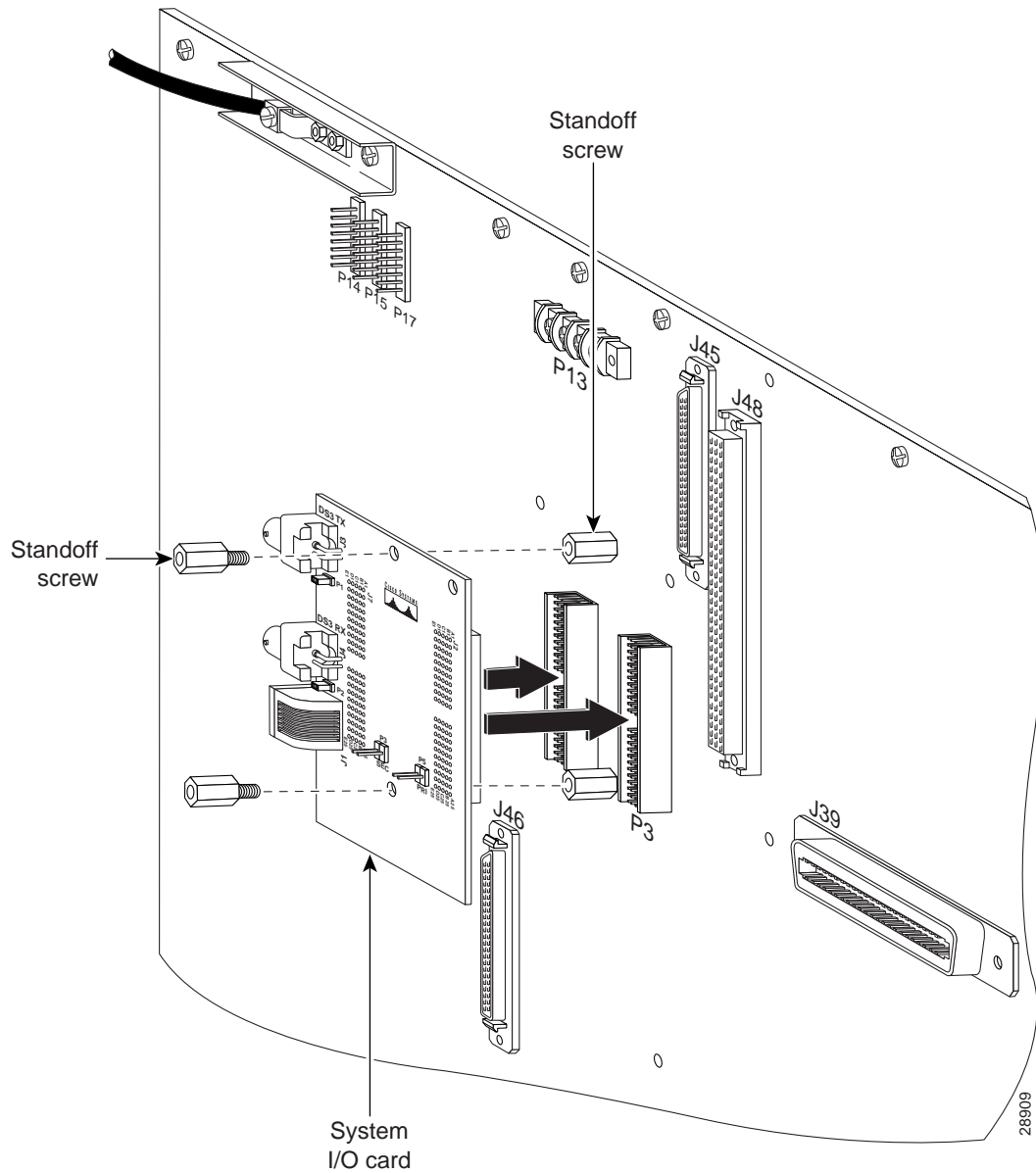
Note Verify that the system I/O card is version 6100-SYS-IO-3. If you have the incorrect version, your configuration will not work properly.

If you removed the system I/O card in the “Remove the System I/O Card” section on page 23, complete the following steps to install the system I/O card on the Cisco 6100 chassis backplane:

- Step 1** Locate the two standoff screws that are between connectors P3 and P9 on the chassis backplane. Tighten the standoff screws using a one-quarter inch socket driver or wrench.
- Step 2** Position and align the holes on the system I/O card over the two standoff screws on the chassis backplane and gently press the system I/O card onto the Cisco 6100 connectors P3 and P9 on the chassis backplane.

Figure 33 shows the system I/O card replacement procedures.

Figure 33 System I/O Card Replacement



Step 3 Use a one-quarter inch socket driver or wrench to screw two additional standoff screws into the screw holes in the system I/O card and into the original standoff screws on the chassis backplane. Tighten the standoff screws using the one-quarter inch socket driver or wrench.



Caution

Be careful when you remove the standoff screws and reinsert the screws into the screw holes on the backplane so that the backplane circuitry does not become damaged.

Connect the POTS Splitter to the MDF

The following sections detail the cabling procedures to connect the POTS splitter to the MDF. You can use one of the following POTS splitters:

- Cisco 6120
- Siecor ADSL POTS Splitter Rack-Mount Shelf

Connect the Cisco 6120 to the MDF

Complete the following steps to connect the Cisco 6120 to the MDF:


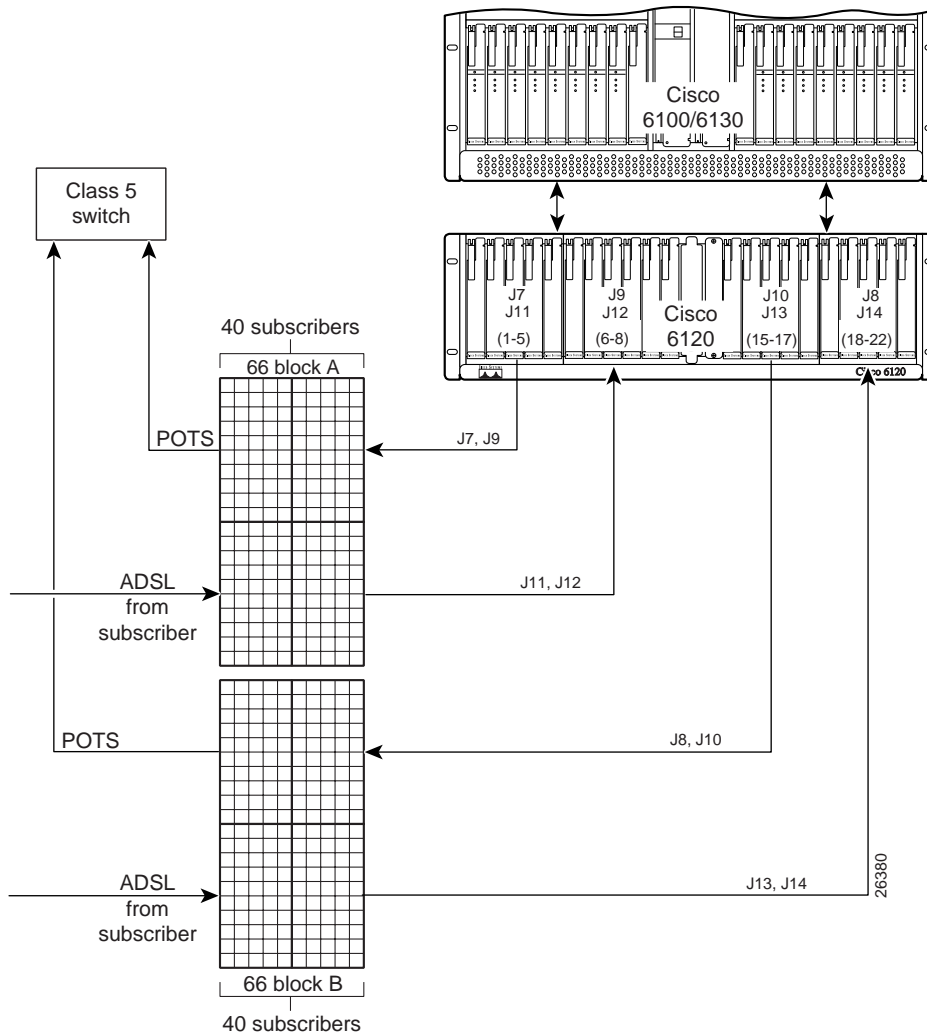
-
- Step 1** Determine the 50-pin Champ cables you will use. You can use the following cables when you are cabling the Cisco 6120 to the MDF:
- One-to-one cables—Used to connect the Cisco 6120 to the MDF.
 - Two-to-two cables—Used to clearly associate the mapping between the wire pairs and the Cisco 6100 or Cisco 6120 ports. These cables attach to the Cisco 6120 MDF connections (J11 to J14) and the Cisco 6120 POTS connections (J7 to J10).
 - Cables that are built according to the specifications for a Nortel NT-T100 series cable.
-  **Note** Refer to the *Cisco 6100 with NI-1 Direct Connect Installation Guide* for more information on cabling diagrams, cable part numbers, and port mapping information.
-
- Step 2** Connect the xDSL subscriber line connectors (J11 to J14) to the MDF.
- Step 3** Connect the voice lines by connectors (J7 to J10) to the MDF for distribution to the Public Switched Telephone Network (PSTN). Figure 34 shows the connectors used to link the Cisco 6120 to the Class 5 switch (through the MDF).

Figure 34 Cisco 6120 Connection to the MDF



Connect the Siecor POTS Splitter to the MDF

Use the cables that are described in the *Cisco 6100 with NI-1 Direct Connect Installation Guide* to cable the Siecor POTS splitter to the MDF. For cabling procedures for the Siecor POTS splitter, refer to the *Siecor ADSL POTS Splitter Rack-Mount Shelf Central Office Version* document.

Pull the Modules Away

Complete the following steps to pull the remaining modules in the Cisco 6100 chassis away from the chassis backplane connection:



Caution

If the power connections are improperly connected and power is applied while the modules are installed, the modules and chassis could be damaged.

- Step 1** Open the chassis front cover.
- Step 2** Lift up the ejector tab. This action disconnects the module from the backplane.
- Step 3** Carefully slide the module forward and away from the backplane connection.
- Step 4** Repeat Steps 1 through 3 for the remaining modules in the Cisco 6100 chassis.



Note

If you are not migrating from dual-port to quad-port ATU-Cs, you also need to pull the ATU-C modules from the backplane connection.

Verify DIP Switches

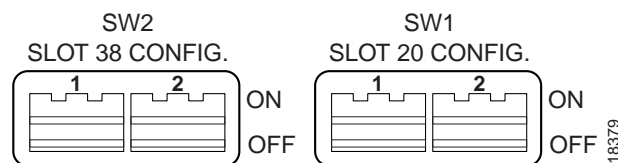
Verify that all of the DIP switches are set on SW1 and SW2 to the OFF position (Figure 35). The dip switches are located in the lower left corner of the backplane.



Warning

Systems using a Cisco 6100 chassis *must* connect to the network through a POTS splitter.

Figure 35 xDSL Protection DIP Switches (in OFF position)



Install the DS3 Subtending I/O Card

**Note**

Verify that the DS3 subtending I/O card is version 6100-ST-IO-3-DS3. If you have the incorrect version, your configuration will not work properly.

If you removed the DS3 subtending I/O card in the “Remove the DS3 Subtending I/O Card” section on page 25, complete the following steps to install the DS3 subtending I/O card on the Cisco 6100 backplane:

**Note**

Screws for mounting the DS3 subtending I/O card are already on the backplane. The standoff screws are shipped with the card.

**Caution**

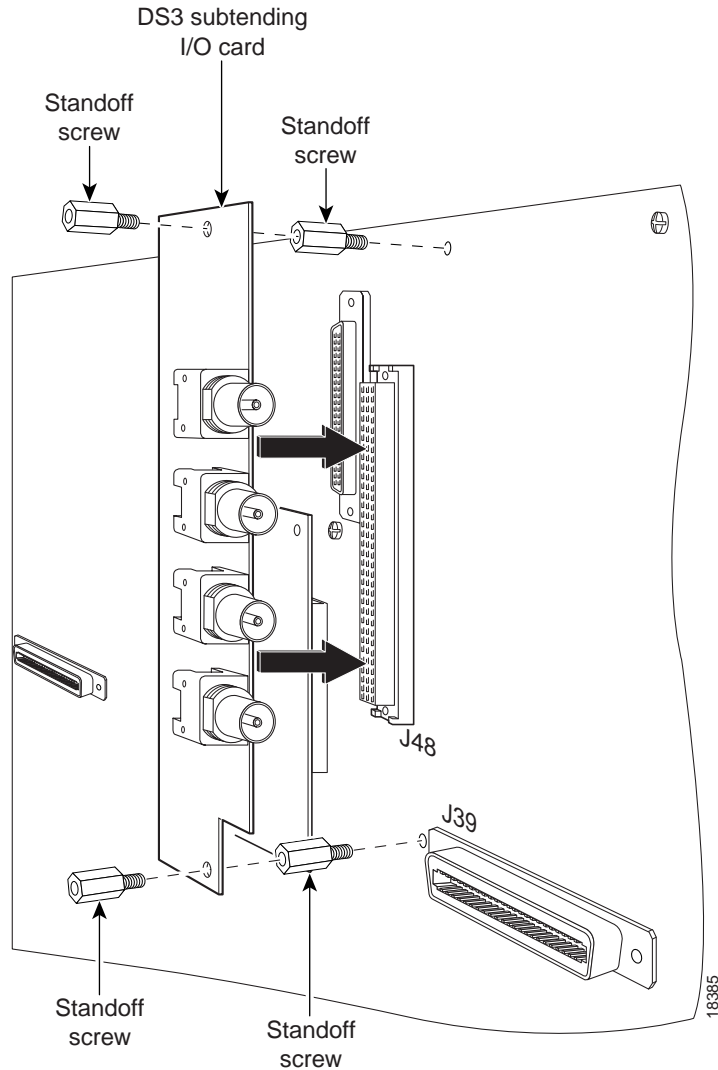
Proper ESD protection is required each time you handle Cisco DSLAM equipment. Installation and maintenance personnel should be properly grounded using ground straps to eliminate the risk of ESD damage to the equipment. Modules are subject to ESD damage each time they are removed from the chassis.

Step 1

Locate the two backplane screws that are above and below the Cisco 6100 connector J48 on a subtending host chassis backplane. Use a Phillips-head screwdriver to remove the two backplane screws. Keep these backplane screws for use when you install the plastic ESD shield.

Figure 36 shows Step 1 through Step 4.

Figure 36 DS3 Subtending I/O Card Installation



- Step 2** Use a one-quarter inch socket driver or wrench to screw two standoff screws into the locations formerly occupied by the two screws you removed in Step 1. Tighten the standoff screws using the one-quarter inch socket driver or wrench.



Caution

Be careful when you remove the standoff screws and reinsert the screws into the screw holes on the backplane so that the backplane circuitry does not become damaged.

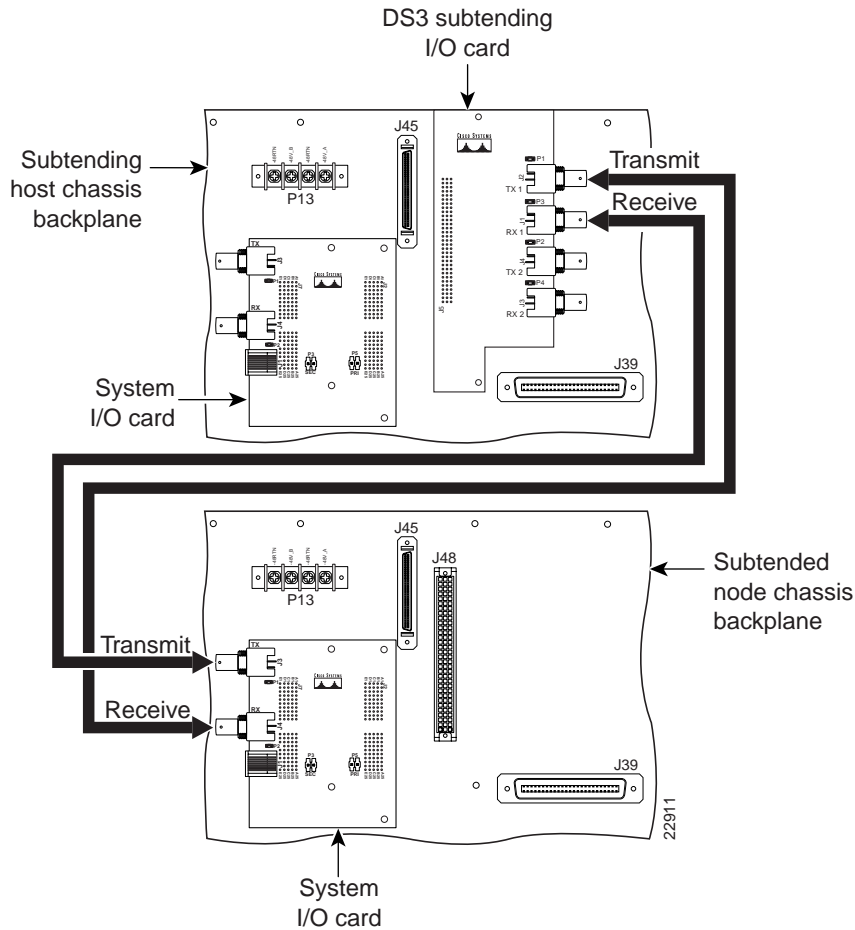
- Step 3** Position and align the holes on the DS3 subtending I/O card over the two standoff screws and gently press the DS3 subtending I/O card into the Cisco 6100 connector J48 on the subtending host chassis backplane.
- Step 4** Use a one-quarter inch socket driver or wrench to screw two additional standoff screws into the screw holes in the DS3 subtending I/O card and into the original standoff screws added in Step 2. Tighten the standoff screws using the one-quarter inch socket driver or wrench.

Cable the System I/O Card to the DS3 Subtending I/O Card

If you removed the DS3 subtending I/O card in the “Remove the DS3 Subtending I/O Card” section on page 25, complete the following steps to cable the system I/O card to the DS3 subtending I/O card:

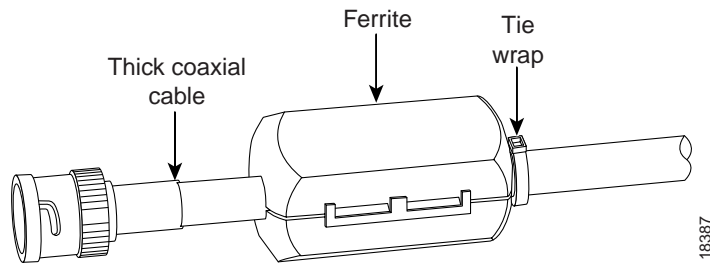
- Step 1** Attach one end of a coaxial cable (type 734A, type 735A, or equivalent) to the transmit DS3 BNC connector (TX1) for the DS3 subtending I/O card on the subtending host chassis backplane. Figure 37 shows cabling for a subtended network configuration.

Figure 37 Cabling for Subtended Network Configuration



- Step 2** Add ferrites to the coaxial cables that you use to cable the DS3 subtending I/O card to the system I/O card. If you are using
- Thick type 734A coaxial cable or equivalent, run the cable through a ferrite and clamp the ferrite shut, as shown in Figure 38. Attach the ferrite as close as possible to the transmit DS3 BNC connector (TX1) on the DS3 subtending I/O card. Tie wrap the cable directly behind the ferrite.

Figure 38 *Thick Coaxial Cable Through Ferrite*



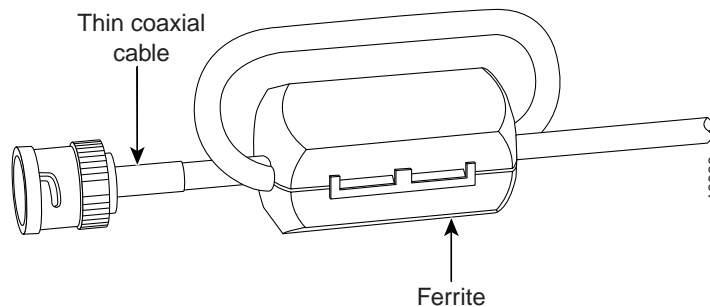
- Thin type 735A coaxial cable or equivalent, run the cable through the ferrite one time, loop the cable back through the ferrite, and clamp the ferrite shut, as shown in Figure 39. Attach the ferrite as close as possible to the transmit DS3 BNC connector (TX1) on the DS3 subtending I/O card.



Note The minimum bend radius for thin type 735A coaxial cable or equivalent is one-quarter of an inch. If the minimum bend radius exceeds one-quarter of an inch, the cable might not work properly.

Looping the wire secures the ferrite.

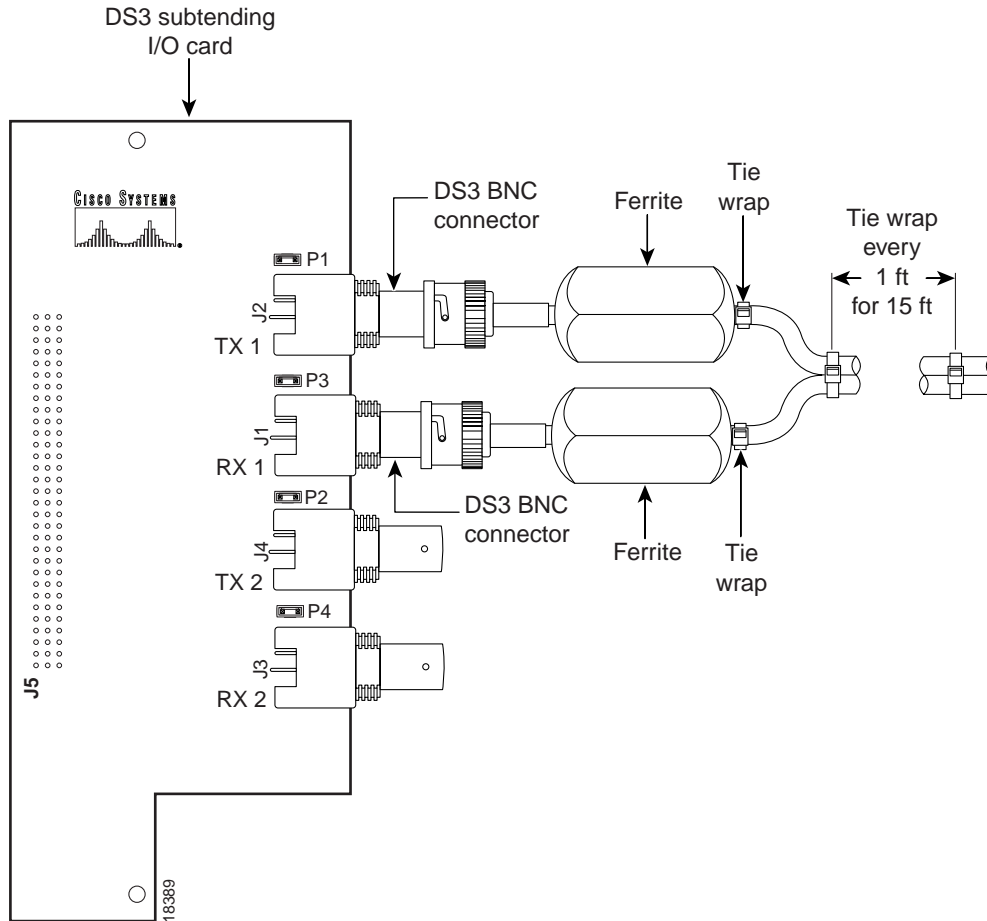
Figure 39 *Thin Coaxial Cable Through Ferrite*



- Step 3** Attach a ferrite as close as possible to the remaining end of the cable (see Figure 38 or Figure 39 for ferrite installation). Tie wrap the cable directly behind the ferrite, as necessary.
- Step 4** Attach the end of the cable that is used in Step 3 to the receive DS3 BNC connector (RX) for the system I/O card on the subtended node chassis backplane.
- Step 5** Attach one end of a coaxial cable to the receive DS3 BNC connector (RX1) for the DS3 subtending I/O card on the subtending host chassis backplane.
- Step 6** Attach the ferrite as close as possible to the receive DS3 BNC connector (RX1) on the DS3 subtending I/O card (see Figure 38 or Figure 39 for ferrite installation). Tie wrap the cable directly behind the ferrite, as necessary.

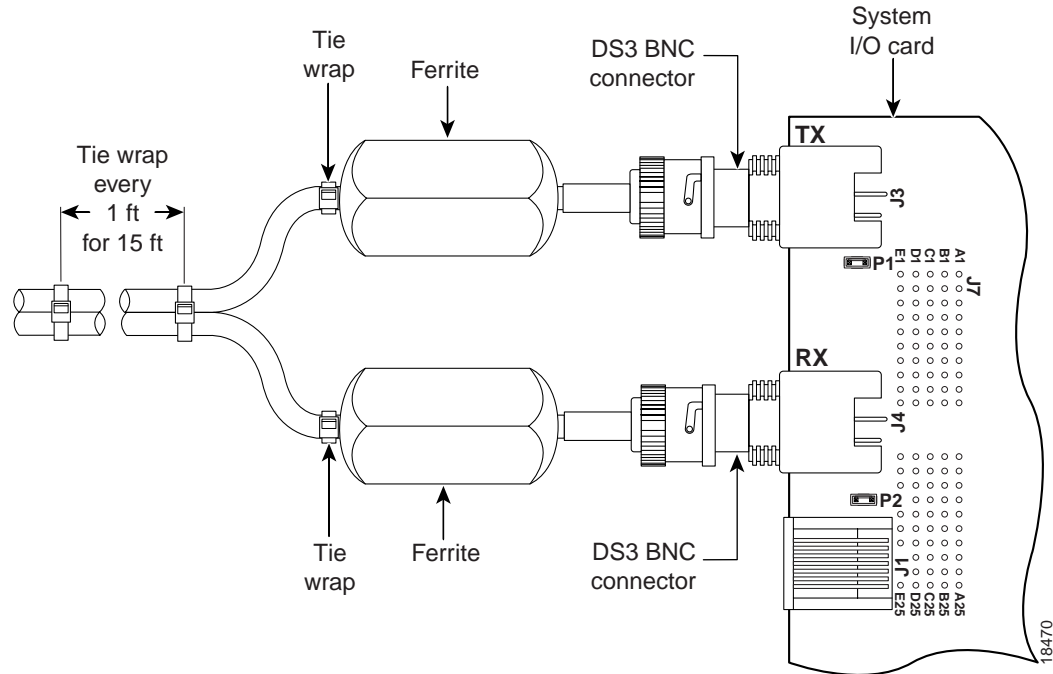
- Step 7** Attach a ferrite as close as possible to the remaining end of the cable (see Figure 38 or Figure 39 for ferrite installation). Tie wrap the cable directly behind the ferrite, as necessary.
- Step 8** Attach the end of the cable that is used in Step 7 to the transmit DS3 BNC connector (TX) for the system I/O card on the subtended node chassis backplane.
- Step 9** Tie wrap the transmit and receive cables coming from the DS3 subtending I/O card where the cables meet after coming from the ferrites and every 1 foot thereafter for a total of 15 feet, as shown in Figure 40.

Figure 40 Ferrite Close to DS3 BNC Connectors on DS3 Subtending I/O Card



- Step 10** Tie wrap the transmit and receive cables coming from the system I/O card where the cables meet after coming from the ferrites and every 1 foot thereafter for a total of 15 feet, as shown in Figure 41.

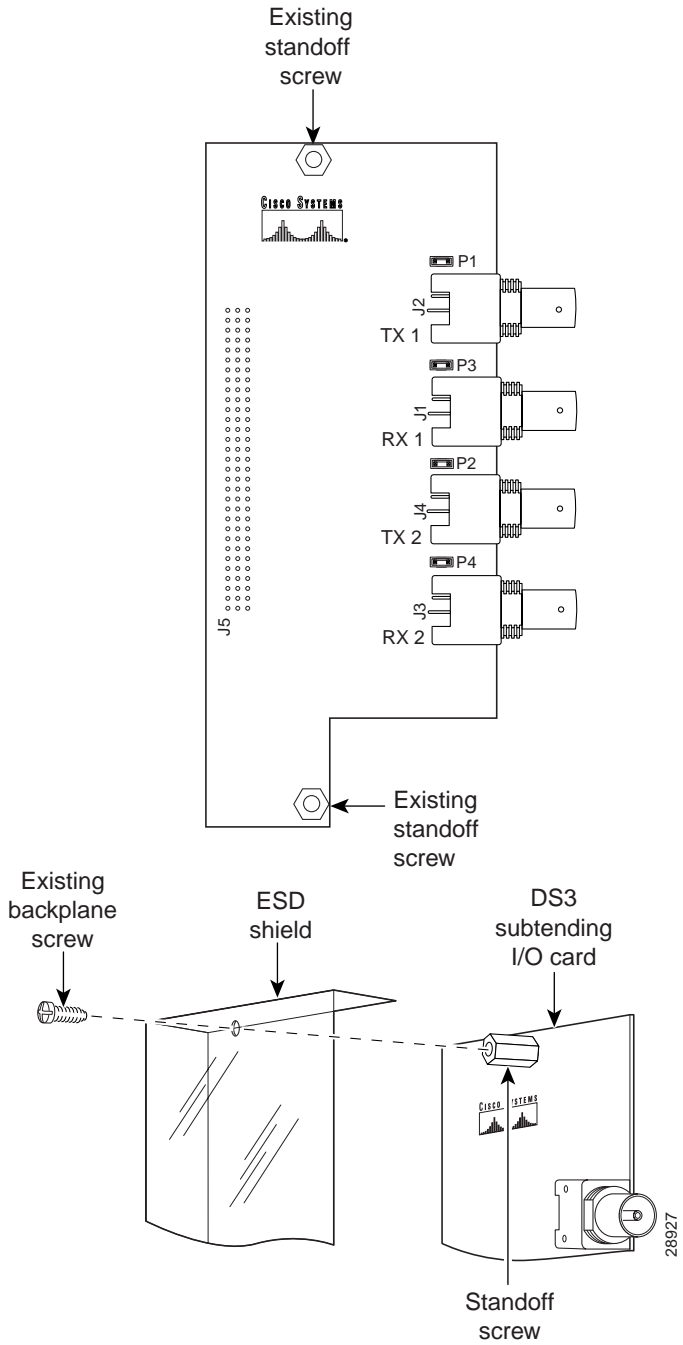
Figure 41 Ferrites Close to DS3 BNC Connectors on System I/O Card



Note If you have one subtending host chassis with two subtended node chassis, the second subtended node chassis connects to the TX2 and RX2 DS3 BNC connectors on the DS3 subtending I/O card.

- Step 11** Install the plastic ESD shield over the DS3 subtending I/O card using the following steps:
- Position the holes in the plastic ESD shield over the existing standoff screws installed on the DS3 subtending I/O card.
 - Use a Phillips-head screwdriver and the backplane screws you removed in the Step 1 to attach the plastic ESD shield to the DS3 subtending I/O card (see Figure 42).

Figure 42 Plastic ESD Shield Installation



Step 12 Repeat Steps 1 through 11 for each subtending host chassis to subtended node chassis connection.

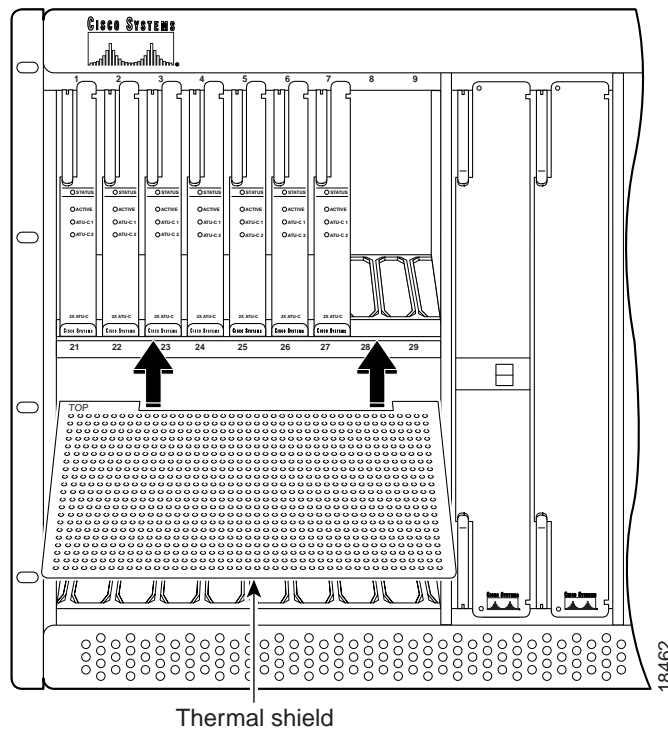
Install the Thermal Shields in the Cisco 6100 Chassis

A thermal shield is required between the two shelves of the Cisco 6100 chassis to meet NEBS compliance. Complete the following steps to install the thermal shield between the chassis shelves:

- Step 1** Insert the thermal shield in the space between the upper and lower shelves. The shield orientation should be with the notch in the back and offset to the right, knife edge toward the rear of the chassis, rounded edges away from the rear of the chassis, and the arrow on the shield up.

Figure 43 shows the placement of the thermal shield in the chassis.

Figure 43 Cisco 6100 Chassis Thermal Shield Installation



- Step 2** Insert the right rear corner of the thermal shield first to create a gap. Continue to push the shield between the guide plates as far as possible.



Note Some force is required to separate the guide plates during insertion.

- Step 3** Use the second shield or a flat head screw driver to push the thermal shield in until it drops onto the lower module guides.

- Step 4** Repeat the Step 1 through Step 3 for the right side of the chassis.

Apply the Power

Complete the following steps to apply power to the Cisco 6100 with NI-1 system:

-
- Step 1** Verify that there are no modules installed in any of the Cisco 6100 chassis.
- Step 2** Apply power to the system with one of the following methods:
- Install the fuses in the fuse and alarm panel
 - Reinsert the fuses in the fuse and alarm panel, if you removed them when attaching the Cisco 6100 power connections.
 - Turn on the breakers in the fuse and alarm panel



Caution

If the power connections are improperly connected and power is applied while the modules are installed, the modules and chassis could be damaged.

-
- Step 3** Verify that the power connections from the Cisco 6100 to the fuse and alarm panel are wired as shown in Figure 25 or Figure 26.
- Step 4** Verify that the power connections from the fan tray to the fuse and alarm panel are wired as shown in Figure 29 or Figure 30.
- Step 5** Check the polarity of the –48 VDC connections to each chassis by attaching a voltmeter with the minus lead on –48RTN and the plus lead on –48V_A. Ensure that the meter reads between –36 VDC and –60 VDC. If your voltmeter shows a positive voltage, the power inputs might be reversed. If the voltmeter shows a negative voltage that is out of the –36 VDC to –60 VDC range, check the power supply for failure or check for a blown fuse in the fuse and alarm panel.
-

Verify Fan Tray Operation

Verify that the fans are operational by locating the LED on the front of each fan. If the LED is

- Green—The fan is operational.
- Not green—The fan is not operational and the fan tray is in alarm mode. Refer to the *Cisco 6100 Series with NI-1 Alarm Summary Guide* for corrective action.

The fans should be operational before you install the modules.



Caution

It is important that the Cisco 6100 cooling fans run continuously.



Warning

The power supply circuitry for the Cisco DSLAM equipment can constitute an energy hazard. Before you install or replace the equipment, remove all jewelry (including rings, necklaces, and watches). Metal objects can come into contact with exposed power supply wiring or circuitry inside the DSLAM equipment. This could cause the metal objects to heat up and cause serious burns or weld the metal object to the equipment.

**Warning**

Do not reach into a vacant slot or chassis while you install or removing a module or a fan. Exposed circuitry could constitute an energy hazard.

Change the Dual-Port CAP ATU-C Jumpering

If you use dual-port CAP ATU-C modules in the Cisco 6100 chassis, you need to change the jumper blocks from a DOH configuration to a Direct Connect configuration.

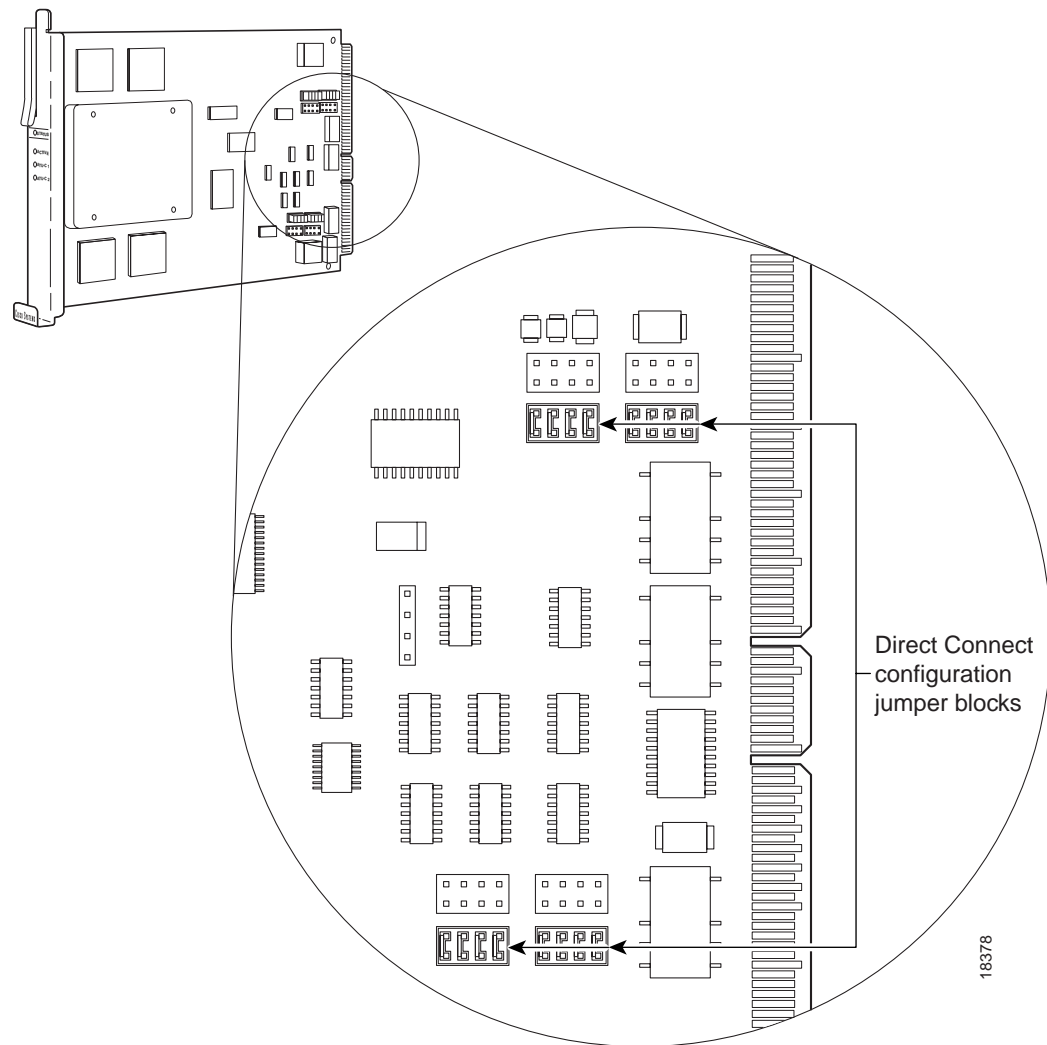
**Note**

The DMT-2 or flexi ATU-C modules do not contain jumper blocks.

Complete the following steps to change the jumper block location on the CAP ATU-C modules:

- Step 1** Locate the jumper blocks on the right side of each CAP ATU-C module. (See Figure 44.)

Figure 44 Direct Connect Jumper Blocks



18378

- Step 2** Remove the jumper blocks and place them on the CAP ATU-C module in the proper location.
- Step 3** Repeat Steps 1 and 2 for each CAP ATU-C module in the chassis.
-

Install the New Modules



Caution

Proper ESD protection is required each time you handle Cisco DSLAM equipment. Installation and maintenance personnel should be properly grounded using ground straps to eliminate the risk of ESD damage to the equipment. Modules are subject to ESD damage each time they are removed from the chassis.



Note

If you are migrating from dual-port to quad-port ATU-Cs, you need to install the new flexi ATU-C modules.

Install the Cisco 6100 Series modules in the following order to verify the power connection and to ensure that the ViewRunner discovery feature works properly. Refer to the *ViewRunner for Windows Direct Connect Provisioning Guide* or the *ViewRunner for HP OpenView Direct Connect Provisioning Guide* for more information on the discovery feature.

- Quad-port flexi ATU-C modules
- DS3 STM
- POTS modules



Caution

Installing the modules in the chassis with the power leads reversed can damage the modules.



Warning

The power supply circuitry for the Cisco DSLAM equipment can constitute an energy hazard. Before you install or replace the equipment, remove all jewelry (including rings, necklaces, and watches). Metal objects can come into contact with exposed power supply wiring or circuitry inside the DSLAM equipment. This could cause the metal objects to heat up and cause serious burns or weld the metal object to the equipment.



Warning

Do not reach into a vacant slot or chassis while you install or remove a module or a fan. Exposed circuitry could constitute an energy hazard.



Note

All modules must be fully seated in the chassis. A push on the faceplate of each module is required for the module to be fully seated.

To install all of the modules, complete the following steps. It is important that you accomplish each step completely before moving on to the next step.

Step 1 Install the flexi ATU-C modules in the Cisco 6100.

- a. Vertically align the module edge with the module guides at the top and bottom of the Cisco 6100 slot.

The ATU-C modules are installed in slots 1 through 8, 13 through 28, and 31 through 38.

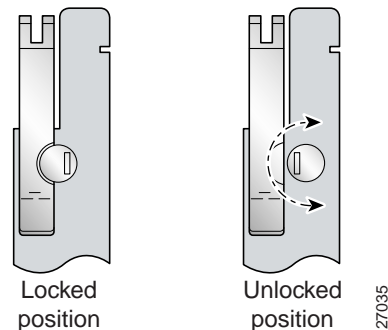
- b. Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
- c. Push on the faceplate of each module to fully seat the module.
- d. Press down on the ejector tab to secure the module and connect it to the backplane.
- e. Lock the flexi ATU-C modules.



Note It is not necessary to lock the flexi ATU-C modules.

Use a flat-head screwdriver to turn the locking tab so that it overlaps the flexi ATU-C module to prevent inadvertent dislodging. Figure 45 shows how to position the locking tab.

Figure 45 Locking the Flexi ATU-C Module



- f. Install the remaining ATU-C modules using the same procedure.

Step 2 Install a DS3 STM (version 6100-ST-3-DS3) in the Cisco 6100.

- a. Vertically align the module edge with the module guides at the top and bottom of slot 9 of the Cisco 6100 chassis.
- b. Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
- c. Push on the faceplate of each module to fully seat the module.
- d. Press down on the ejector tab to secure the module and connect it to the backplane.

Step 3 Install the POTS splitter modules in the Cisco 6120.

- a. Vertically align the module edge with the module guides at the top and bottom of slot 1 on the Cisco 6120.

The POTS modules are installed in slots 1 through 10 and 13 through 22 of the Cisco 6120.

- b. Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.

- c. Push on the faceplate of each module to fully seat the module.
- d. Press down on the ejector tab to secure the module and connect it to the backplane.
- e. Install the remaining POTS modules using the same procedure.

Reseat Select Modules



Caution

Proper ESD protection is required each time you handle Cisco DSLAM equipment. Installation and maintenance personnel should be properly grounded using ground straps to eliminate the risk of ESD damage to the equipment. Modules are subject to ESD damage each time they are removed from the chassis.



Note

If you are not migrating from dual-port to quad-port ATU-Cs, you also need to reseat the ATU-C modules.

To reseat the modules, complete the following steps. It is important that you accomplish each step completely before moving on to the next step.



Note

All modules must be fully seated in the chassis. A push on the faceplate of each module is required for the module to be fully seated.

Step 1

Reseat the x TU-C modules in the Cisco 6100, if applicable.

- a. Verify that the jumper blocks are in the correct position on the dual-port CAP ATU-C modules (see the “Change the Dual-Port CAP ATU-C Jumpering” section on page 71).
- b. Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
- c. Push on the faceplate of each module to fully seat the module.
- d. Press down on the ejector tab to secure the module and connect it to the backplane.
- e. Reseat the remaining x TU-C modules using the same procedure.

Step 2

Reseat the NI-1 module in the Cisco 6100.

- a. Lift up on the ejector tabs and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
- b. Push on the faceplate of each module to fully seat the module.
- c. Press down on the ejector tabs to secure the module and connect it to the backplane.

Step 3

Reseat the system controller module in the Cisco 6100.

- a. Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
- b. Push on the faceplate of each module to fully seat the module.
- c. Press down on the ejector tab to secure the module and connect it to the backplane. This causes each module in the Cisco 6100 to reset.

- Step 4** Verify that the STATUS LEDs on all modules are solid green (where applicable).
This self-test procedure takes several minutes. Verify that there are no alarms on the system controller module (ALARM LED off). If the STATUS LEDs are not green after the self-test, refer to the *Cisco 6100 with NI-1 Direct Connect Installation Guide* for troubleshooting procedures.
- Step 5** Perform a software update using the ViewRunner software if the STATUS LEDs on the xTU-C modules or the NI-1 module are flashing.
Refer to the *ViewRunner for Windows Direct Connect Provisioning Guide* or the *ViewRunner for HP OpenView Direct Connect Provisioning Guide* for software upgrade procedures.
-

Connect the NI-1 Module to the Network

This section provides installation procedures for the OC-3c and DS3 network connections.

OC-3c Network Connection Installation

Complete the following steps to connect the OC-3c NI-1 module to the network using an OC-3c connection:



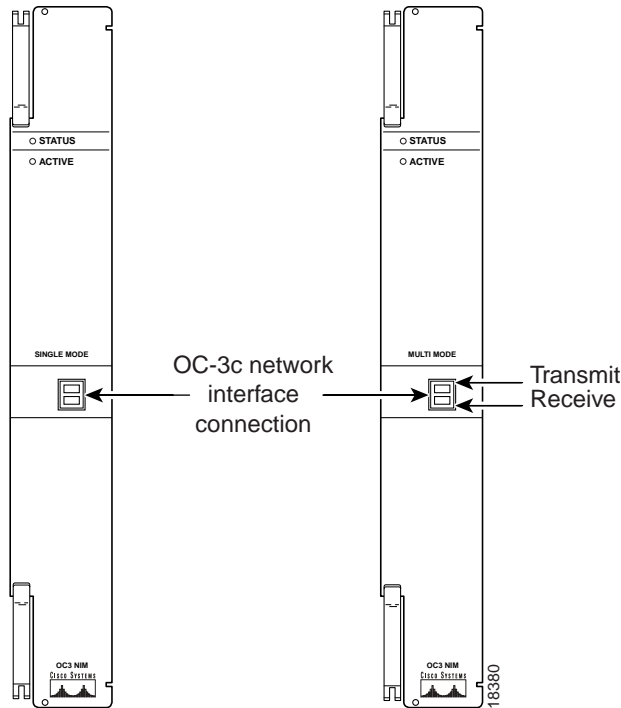
Warning

Do not stare into the beam or view it directly with optical instruments.

- Step 1** Verify that the OC-3c NI-1 module is in slot 10 of the Cisco 6100 chassis.
- Step 2** Remove the fiber that was temporarily installed to loop back the interface in the “Install the New Modules” section on page 72.
- Step 3** Pull the OC-3c NI-1 module transmit and receive cables from the ATM switch through the 1 RU of space between the fan tray and the POTS splitter.

- Step 4** Attach the transmit optical fiber to the receive connector in the inset on the faceplate of the OC-3c NI-1 modules. See Figure 46 for the OC-3c network interface connection location.

Figure 46 OC-3c Network Interface Connection



The transmit connector is the one closest to the top of the faceplate. The receive connector is closest to the bottom of the faceplate. The connector IDs are silkscreened inside the inset.

- Step 5** Attach the receive optical fiber to the transmit connector in the inset on the faceplate of the OC-3c NI-1 modules.
- Step 6** Allow enough slack in the cable so that the fan tray can be opened and the fans can be maintained.
- Step 7** Coil the fiber loosely within the 1 RU of space to take out slack.

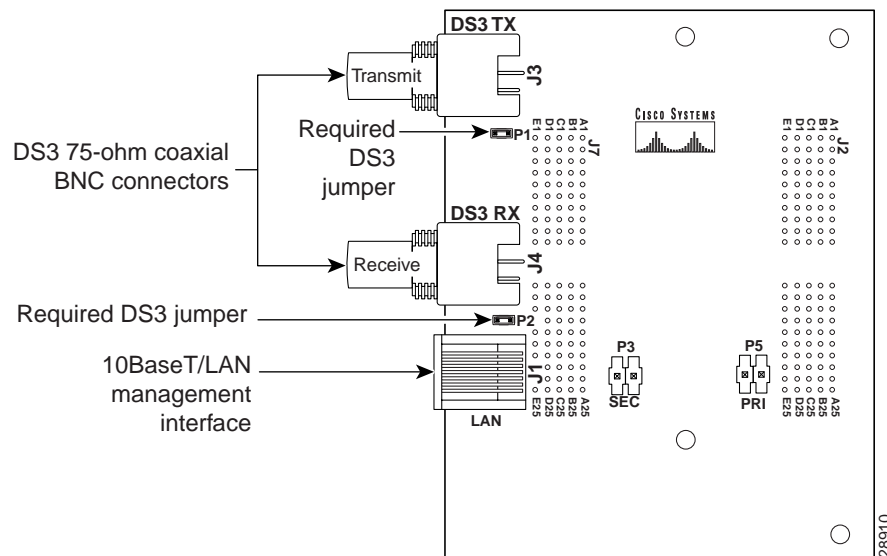
DS3 Network Connection Installation

Complete the following steps to connect the DS3 NI-1 module to the network:

- Step 1** Verify that the DS3 NI-1 module is installed in slot 10 of the Cisco 6100 chassis to ensure that the DS3 NI-1 module connections are active.

The DS3 NI-1 module connections are on the system I/O card, which is located on the backplane of the Cisco 6100 chassis. These connections attach to the ATM switch. Two 75-ohm DS3 Bayonet-Neill-Concelman (BNC) connectors are provided for DS3 transmit (J3) and receive (J4). See Figure 47 for the location of the DS3 BNC connectors.

Figure 47 DS3 Network Interface Connection Locations



Note There are two DS3 jumpers on the system I/O card. The DS3 jumpers connect the BNC shield to the chassis ground. Both the receive DS3 jumper (P2) and the transmit DS3 jumper (P1) are installed on the system I/O card when it ships.

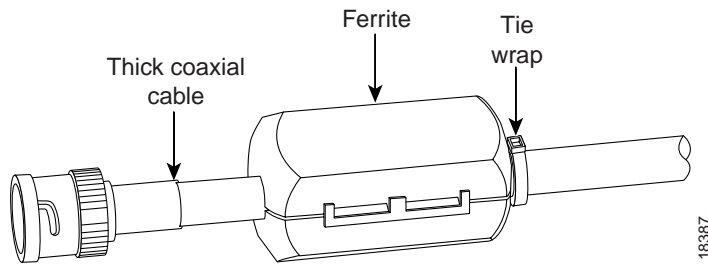
- Step 2** Remove the short coaxial cable between the DS3 transmit and receive connectors that you attached when you installed the system controller module in the “Install the New Modules” section on page 72.
- Step 3** Attach one end of a coaxial cable (type 734A, type 735A, or equivalent) to the transmit DS3 BNC connector (J3) for the system I/O card on the chassis backplane.



Note Currently only the internal clock on the DS3 NI-1 module is used. The clock is hard-coded in the system software.

- Step 4** Add ferrites to the coaxial cables that you use to cable the system I/O card to the ATM switch. If you are using
- Thick type 734A coaxial cable or equivalent, run the cable through a ferrite and clamp the ferrite shut, as shown in Figure 48. Attach the ferrite as close as possible to the transmit DS3 BNC connector (J3) on the system I/O card. Tie wrap the cable directly behind the ferrite.

Figure 48 *Thick Coaxial Cable Through Ferrite*



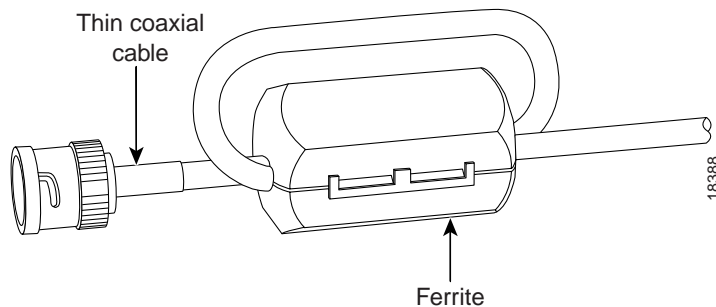
- Thin type 735A coaxial cable or equivalent, run the cable through the ferrite one time, loop the cable back through the ferrite, and clamp the ferrite shut, as shown in Figure 49. Attach the ferrite as close as possible to the transmit DS3 BNC connector (J3) on the system I/O card.



Note The minimum bend radius for thin type 735A coaxial cable or equivalent is one-quarter of an inch. If the minimum bend radius exceeds one-quarter of an inch, the cable might not work properly.

Looping the wire secures the ferrite.

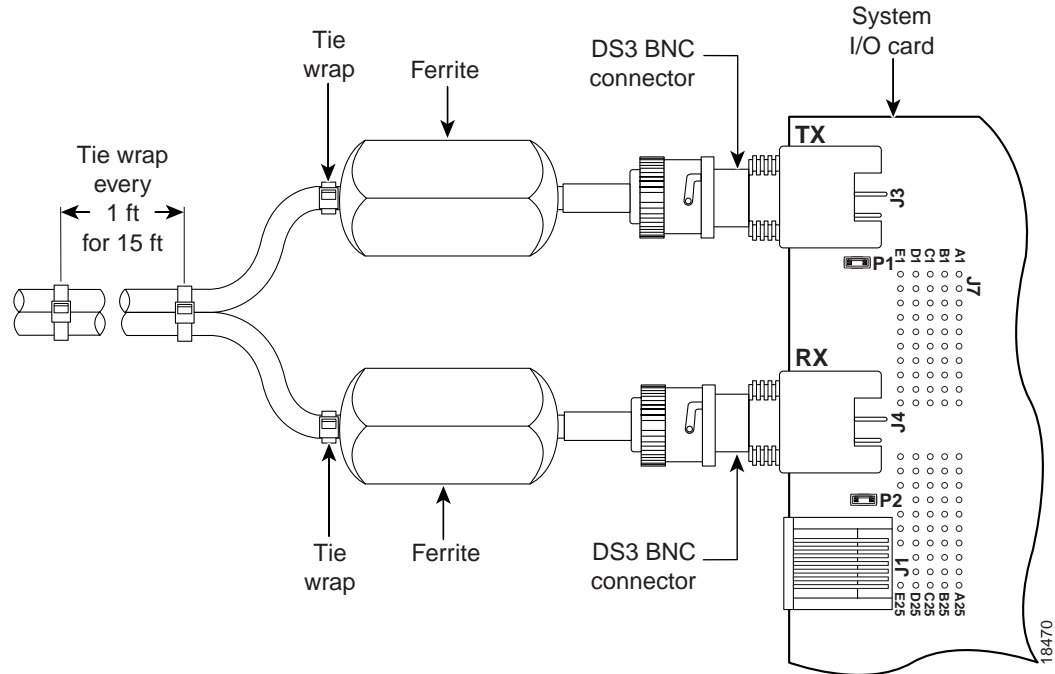
Figure 49 *Thin Coaxial Cable Through Ferrite*



- Step 5** Attach the end of the cable that is used in Step 3, which originates at the transmit DS3 BNC connector, to the ATM switch.
- Step 6** Attach one end of a coaxial cable (type 734A, type 735A, or equivalent) to the receive DS3 BNC connector (J4) for the system I/O card on the Cisco 6100 backplane.
- Step 7** Attach the ferrite as close as possible to the receive DS3 BNC connector on the system I/O card (see Figure 48 or Figure 49 for ferrite installation). Tie wrap the cable directly behind the ferrite, as necessary.
- Step 8** Attach the end of the cable that is used in Step 6, which originates at the receive DS3 BNC connector, to the ATM switch.

- Step 9** Tie wrap the transmit and receive cables coming from the system I/O card where the cables meet after coming from the ferrites and every 1 foot thereafter for a total of 15 feet, as shown in Figure 50.

Figure 50 Ferrites Close to DS3 BNC Connectors on a System I/O Card

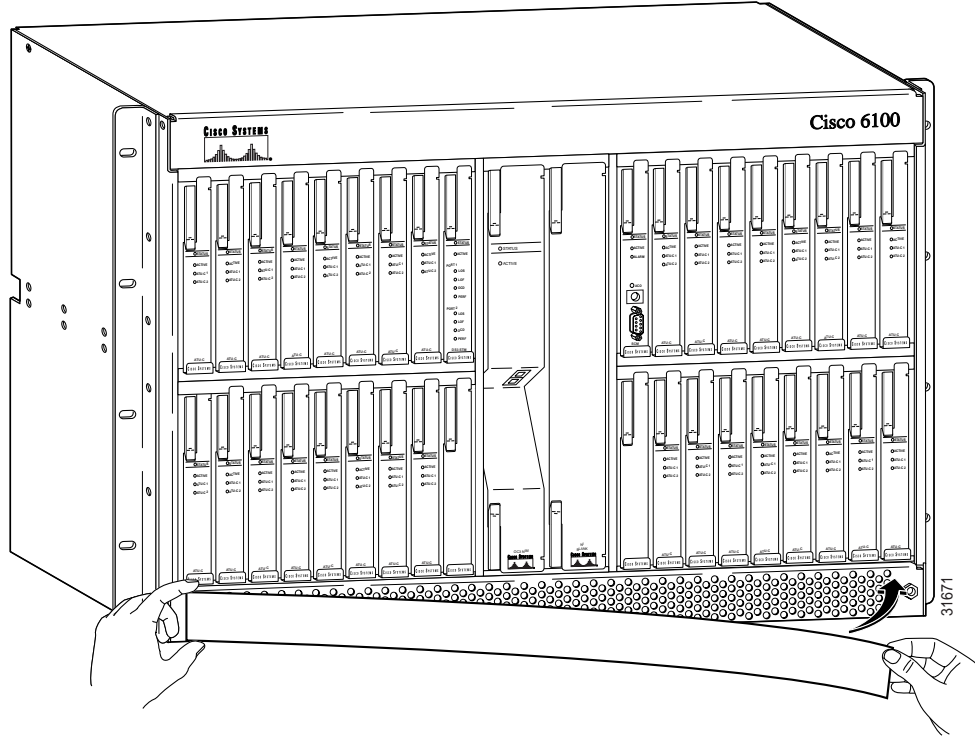


Attach Cisco 6100 Chassis Ventilation Cover

Complete the following steps to attach the Cisco 6100 chassis ventilation cover:

- Step 1** Peel the backing off the Cisco 6100 chassis ventilation cover.
- Step 2** Attach the ventilation cover over the open vents on the bottom of the chassis, as shown in Figure 51.

Figure 51 Attaching the Cisco 6100 Chassis Ventilation Cover



Attach New Power Rating Label

Complete the following steps to attach the new power rating label:

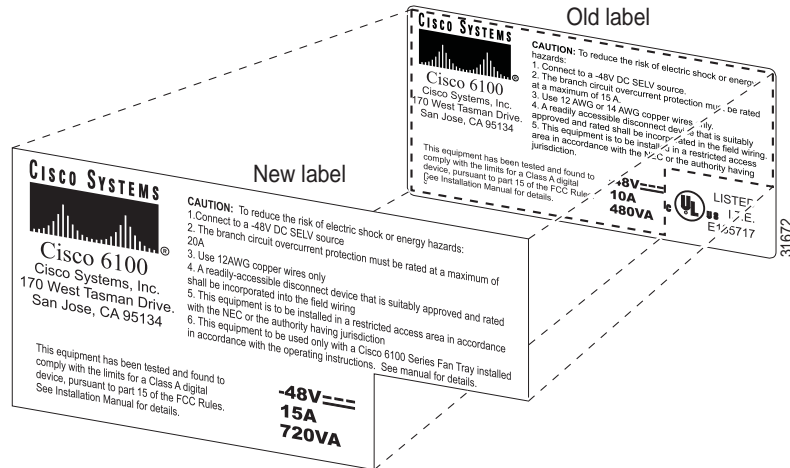
- Step 1** Locate the power rating label on your current chassis. It is located on the backplane plastic cover.
- Step 2** Peel the backing off the new power rating label.
- Step 3** Attach the new power rating label directly over the current power rating on your chassis, as shown in Figure 52.

Ensure that the 'C' on the current power rating is not covered by the new label.



Note If you cannot locate your current power rating label, please attach the new power rating label to the backplane plastic cover.

Figure 52 Attaching the New Power Rating Label

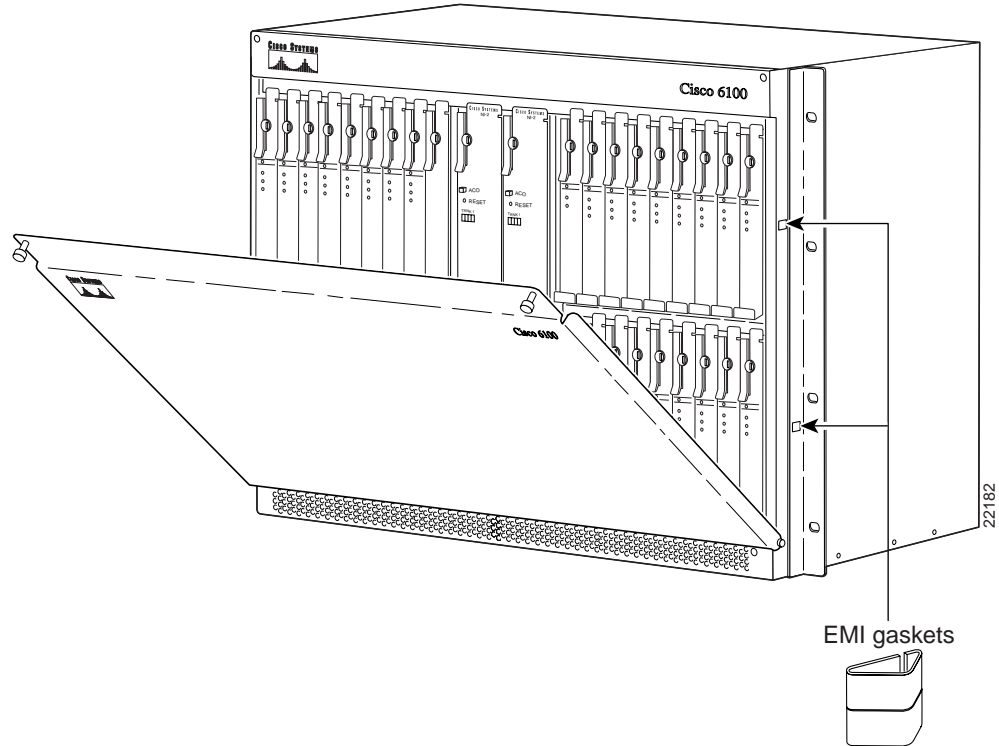


Install the Cisco 6100 Front Cover and EMI Gaskets

The Cisco 6100 front cover needs to be attached and closed. Complete the following steps to replace the front cover of the Cisco 6100 chassis with a new stiffened cover and EMI gaskets:

- Step 1** Attach the new stiffened front cover at the base of the lower shelf of the chassis, as shown in Figure 53.

Figure 53 Front Cover Replacement with Gaskets



- Step 2** Add two EMI gaskets to either side of the chassis frame in the positions shown in Figure 53.
- Step 3** Use the two thumbscrews in the upper corners of the cover to close it firmly over the front of the chassis.

Connect the ViewRunner System to the Cisco 6100

Complete the following steps to connect the ViewRunner system to the Cisco 6100:

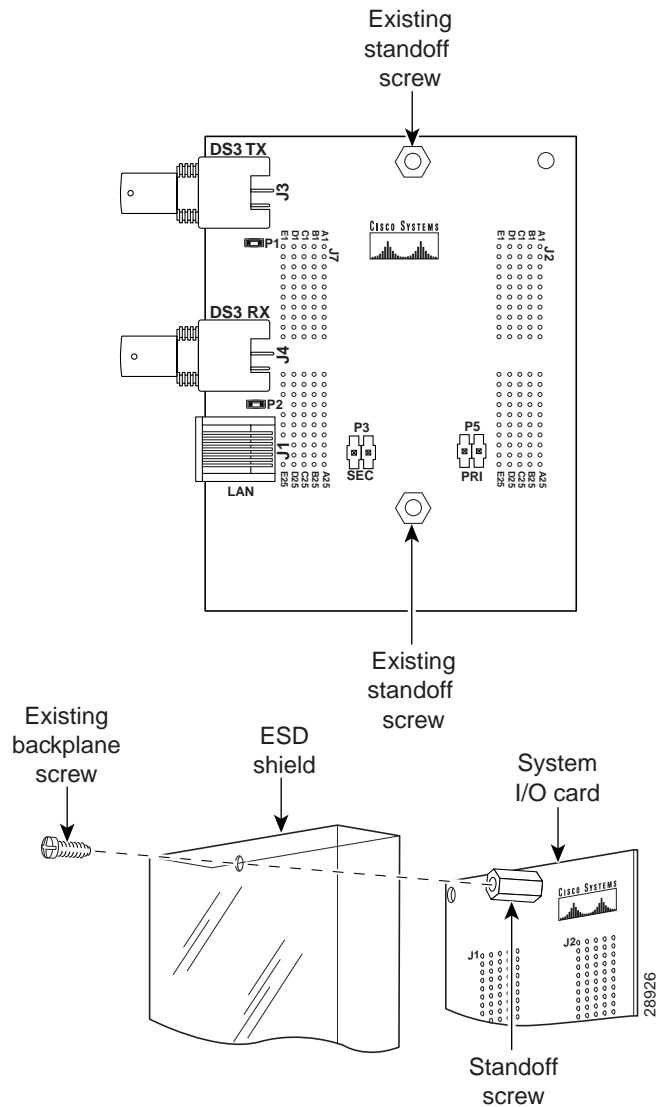
- Step 1** Connect one end of the Ethernet cable to the RJ-45 (10BaseT Ethernet/LAN) connector on the system I/O card.
- Step 2** Connect the other end of the Ethernet cable to one of the following:
- A PC running ViewRunner for Windows software.
 - A UNIX system running ViewRunner for OpenView software.
 - Your Ethernet LAN.



Note If you are connecting the Ethernet cable to a PC, you need a crossover cable.

- Step 3** Install the plastic ESD shield over the system I/O card using the following steps:
- Position the holes in the plastic ESD shield over the existing standoff screws installed on the system I/O card.
 - Use a Phillips-head screwdriver and the backplane screws to attach the plastic ESD shield to the system I/O card (see Figure 54). You removed these backplane screws in the “Remove the System I/O Card” section on page 23.

Figure 54 Plastic ESD Shield Installation



Tips

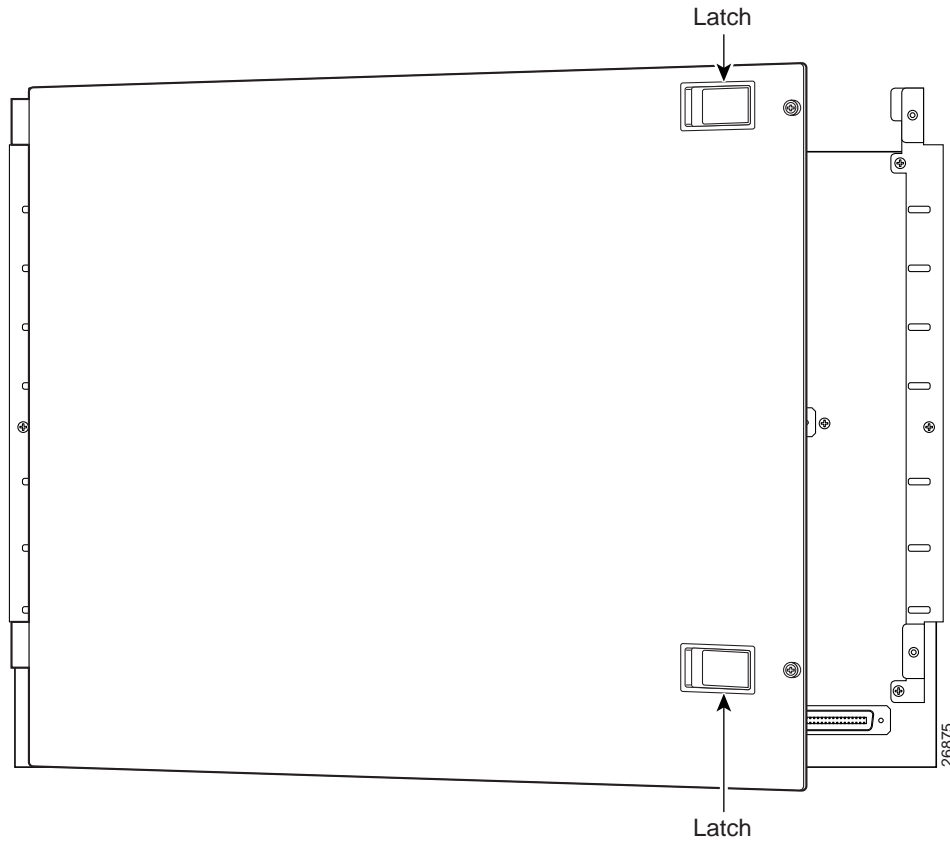
For step-by-step instructions for provisioning a Direct Connect configuration, refer the *ViewRunner for Windows Direct Connect Provisioning Guide* or the *ViewRunner for HP OpenView Direct Connect Provisioning Guide*.

Close the Rear Cover

Complete the following steps to close the optional rear cover:

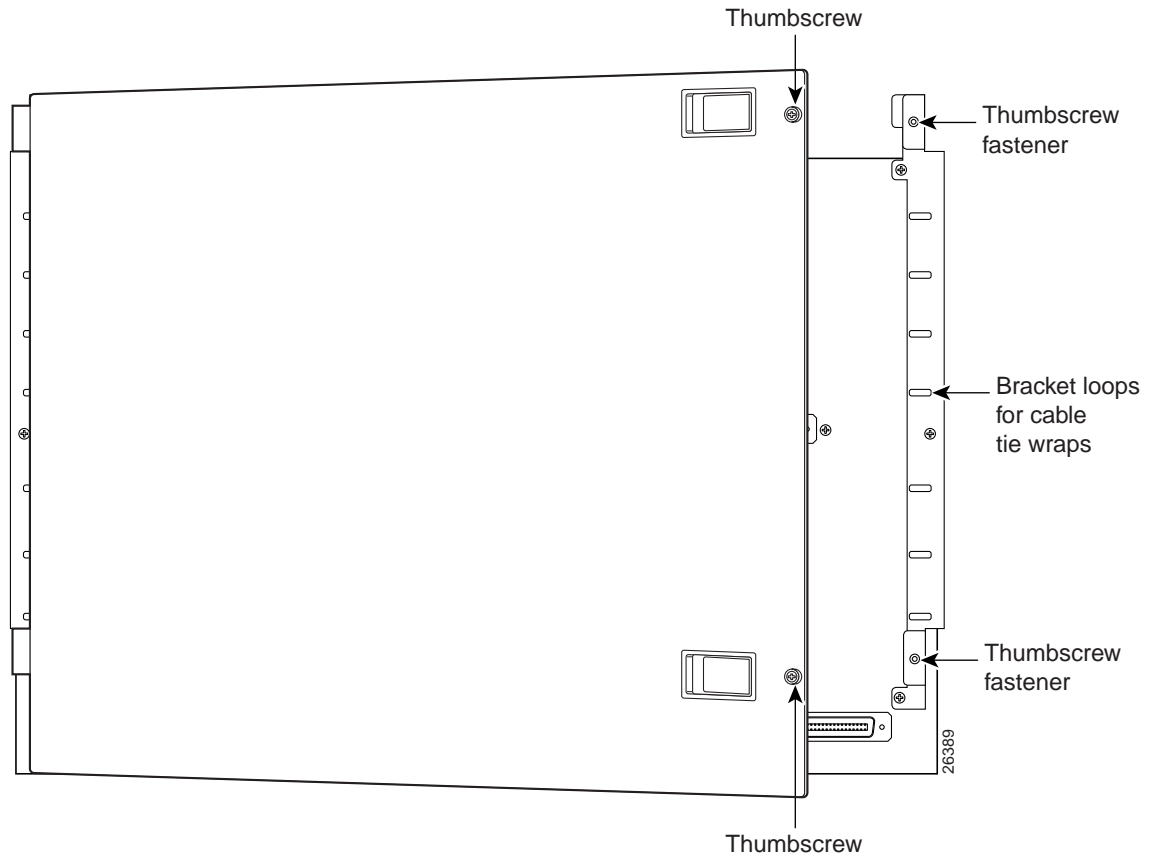
-
- Step 1** Use the tie wraps provided in the accessory kit to attach cables to the cover-mounting bracket loops, as necessary.
 - Step 2** Lift the two latches on the rear cover (as shown in Figure 55) as you close the rear cover. The rear cover closes left to right (seen from the rear of the chassis).

Figure 55 Securing the Rear Cover with the Latches



- Step 3** Release the latches after the rear cover is in place.
- Step 4** Align the two thumbscrews that are located on the rear cover with two thumbscrew fasteners on the bracket (see Figure 56). Tighten the thumbscrews to secure the rear cover.

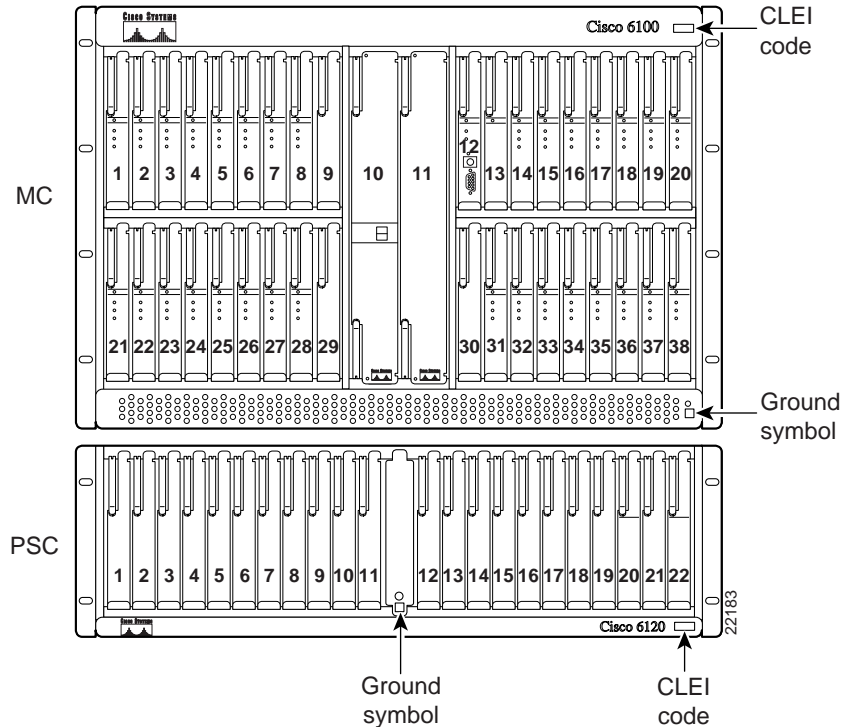
Figure 56 Securing the Rear Cover with Two Thumbscrews



Replace Labels and CLEI Codes

The grounding symbols, CLEI codes, and Cisco 6120 800 number labels included in the kit need to replace the current labels on each chassis. Figure 57 shows the positions of the labels being replaced.

Figure 57 Label Replacements



Replace the CLEI, 800 Level, and Ground Symbol Labels on the Cisco 6100 Chassis

Complete the following steps to replace the proper labels on the Cisco 6100:

-
- Step 1** Replace the original CLEI code label in the upper right corner of the Cisco 6100 with the new CLEI code label SLMT7H0BRA.
 - Step 2** Replace the 800-04390-02 label on the right side of the chassis with the new 800-04390-03 label.
 - Step 3** Replace the original ground symbol label in the lower right corner of the chassis with the new one.
-

Replace the CLEI, 800 Level, and Ground Symbol Labels on the Cisco 6120 Chassis

Complete the following steps to replace the proper labels on the Cisco 6120.

-
- Step 1** Replace the original CLEI code label in the lower right corner of the Cisco 6120 with the new CLEI code label SLMT9K0BRA.
 - Step 2** Replace the 800-04325-03 label on the right side of the chassis with the new 800-04325-04 label.
 - Step 3** Replace the original ground symbol label in the lower center of the chassis with the new one.
-

Run the Connection Test Procedures

To verify that the system is connected and running properly, follow the connection test procedures in the *Cisco 6100 with NI-1 Direct Connect Installation Guide*.

Port Mapping Table

Table 10 maps the Cisco 6100 ports, the Cisco 6120 ports for two Cisco 6120 chassis, and the wire pairs when using the one-to-two cables (see Table 9 on page -46) for a Direct Connect with a POTS splitter configuration. The corresponding cable kit number is CAB-MC128-PSC80. You can use the one-to-two cables to connect one Cisco 6100 to two Cisco 6120 chassis for systems using quad-port ATU-C modules.

Table 10 *Port Mapping for One-to-Two Cables in a Direct Connect with a POTS Splitter Configuration*

Cisco 6100 Slot/Line	Cisco 6120 Slot/Line		Champ Pins		Cisco 6120 MDF/POTS Connection
	Cisco 6120 Chassis 1	Cisco 6120 Chassis 2	Tip	Ring	
1/1	1/1	—	9	34	J11/J7
1/2	1/2	—	10	35	
1/3	—	1/1	9	34	
1/4	—	1/2	10	35	
2/1	1/3	—	11	36	
2/2	1/4	—	12	37	
2/3	—	1/3	11	36	
2/4	—	1/4	12	37	
3/1	2/1	—	5	30	
3/2	2/2	—	6	31	
3/3	—	2/1	5	30	
3/4	—	2/2	6	31	
4/1	2/3	—	7	32	
4/2	2/4	—	8	33	
4/3	—	2/3	7	32	
4/4	—	2/4	8	33	
5/1	3/1	—	1	26	
5/2	3/2	—	2	27	
5/3	—	3/1	1	26	
5/4	—	3/2	2	27	
6/1	3/3	—	3	28	
6/2	3/4	—	4	29	
6/3	—	3/3	3	28	
6/4	—	3/4	4	29	
7/1	4/1	—	18	43	
7/2	4/2	—	19	44	
7/3	—	4/1	18	43	
7/4	—	4/2	19	44	
8/1	4/3	—	20	45	
8/2	4/4	—	21	46	
8/3	—	4/3	20	45	
8/4	—	4/4	21	46	

Table 10 *Port Mapping for One-to-Two Cables in a Direct Connect with a POTS Splitter Configuration (continued)*

Cisco 6100 Slot/Line	Cisco 6120 Slot/Line		Champ Pins		Cisco 6120 MDF/POTS Connection
	Cisco 6120 Chassis 1	Cisco 6120 Chassis 2	Tip	Ring	
13/1	19/1	—	18	43	J14/J8
13/2	19/2	—	19	44	
13/3	—	19/1	18	43	
13/4	—	19/2	19	44	
14/1	19/3	—	20	45	
14/2	19/4	—	21	46	
14/3	—	19/3	20	45	
14/4	—	19/4	21	46	
15/1	20/1	—	1	26	
15/2	20/2	—	2	27	
15/3	—	20/1	1	26	
15/4	—	20/2	2	27	
16/1	20/3	—	3	28	
16/2	20/4	—	4	29	
16/3	—	20/3	3	28	
16/4	—	20/4	4	29	
17/1	21/1	—	5	30	
17/2	21/2	—	6	31	
17/3	—	21/1	5	30	
17/4	—	21/2	6	31	
18/1	21/3	—	7	32	
18/2	21/4	—	8	33	
18/3	—	21/3	7	32	
18/4	—	21/4	8	33	
19/1	22/1	—	9	34	
19/2	22/2	—	10	35	
19/3	—	22/1	9	34	
19/4	—	22/2	10	35	
20/1	22/3	—	11	36	
20/2	22/4	—	12	37	
20/3	—	22/3	11	36	
20/4	—	22/4	12	37	

Table 10 *Port Mapping for One-to-Two Cables in a Direct Connect with a POTS Splitter Configuration (continued)*

Cisco 6100 Slot/Line	Cisco 6120 Slot/Line		Champ Pins		Cisco 6120 MDF/POTS Connection
	Cisco 6120 Chassis 1	Cisco 6120 Chassis 2	Tip	Ring	
21/1	5/1	—	22	47	J11/J7
21/2	5/2	—	23	48	
21/3	—	5/1	22	47	
21/4	—	5/2	23	48	
22/1	5/3	—	24	49	
22/2	5/4	—	25	50	
22/3	—	5/3	24	49	
22/4	—	5/4	25	50	
23/1	6/1	—	6	31	J12/J9
23/2	6/2	—	7	32	
23/3	—	6/1	6	31	
23/4	—	6/2	7	32	
24/1	6/3	—	8	33	
24/2	6/4	—	9	34	
24/3	—	6/3	8	33	
24/4	—	6/4	9	34	
25/1	7/1	—	2	27	
25/2	7/2	—	3	28	
25/3	—	7/1	2	27	
25/4	—	7/2	3	28	
26/1	7/3	—	4	29	
26/2	7/4	—	5	30	
26/3	—	7/3	4	29	
26/4	—	7/4	5	30	
27/1	8/1	—	1	26	
27/2	8/2	—	10	35	
27/3	—	8/1	1	26	
27/4	—	8/2	10	35	
28/1	8/3	—	11	36	
28/2	8/4	—	12	37	
28/3	—	8/3	11	36	
28/4	—	8/4	12	37	

Table 10 *Port Mapping for One-to-Two Cables in a Direct Connect with a POTS Splitter Configuration (continued)*

Cisco 6100 Slot/Line	Cisco 6120 Slot/Line		Champ Pins		Cisco 6120 MDF/POTS Connection	
	Cisco 6120 Chassis 1	Cisco 6120 Chassis 2	Tip	Ring		
31/1	15/1	—	1	26	J13/J10	
31/2	15/2	—	10	35		
31/3	—	15/1	1	26		
31/4	—	15/2	10	35		
32/1	15/3	—	11	36		
32/2	15/4	—	12	37		
32/3	—	15/3	11	36		
32/4	—	15/4	12	37		
33/1	16/1	—	2	27		
33/2	16/2	—	3	28		
33/3	—	16/1	2	27		
33/4	—	16/2	3	28		
34/1	16/3	—	4	29		
34/2	16/4	—	5	30		
34/3	—	16/3	4	29		
34/4	—	16/4	5	30		
35/1	17/1	—	6	31		
35/2	17/2	—	7	32		
35/3	—	17/1	6	31		
35/4	—	17/2	7	32		
36/1	17/3	—	8	33		
36/2	17/4	—	9	34		
36/3	—	17/3	8	33		
36/4	—	17/4	9	34		
37/1	18/1	—	22	47		J14/J8
37/2	18/2	—	23	48		
37/3	—	18/1	22	47		
37/4	—	18/2	23	48		
38/1	18/3	—	24	49		
38/2	18/4	—	25	50		
38/3	—	18/3	24	49		
38/4	—	18/4	25	50		

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