



# Cisco 6130 with NI-1 Thermal Upgrade Kit Installation Procedures

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**January 31, 2000**

These release notes present upgrade information to ensure that your Cisco 6130 with NI-1 chassis can accommodate higher density xTU-C modules.

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## Installation Prerequisites

This section provides the following prerequisites needed to install the thermal upgrade kit for your Cisco 6130 with NI-1 chassis:


- Tool and Equipment Requirements, page 2
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## Tool and Equipment Requirements

Table 1 lists the tools and equipment required to install and remove the Cisco 6100 Series system components.

**Table 1** *Tools and Equipment Requirements Checklist*

Check	Tools and Equipment
	<b>Hardware Components</b>
	Cisco 6130 with NI-1 Thermal Upgrade Kit. <ul style="list-style-type: none"> <li>• Cisco 6130 chassis ventilation cover</li> <li>• New power rating label</li> </ul>
	<b>Tools</b>
	A 3/16-inch flat-head screwdriver.
	A Phillips-head screwdriver.
	A one-quarter inch socket driver or wrench.
	Necessary equipment for ESD protection—Required whenever you handle Cisco DSLAM <sup>1</sup> equipment, which includes the chassis, modules, and cards.
	Wire-wrapping tool.
	Wire stripper.
	Wire for connections. <ul style="list-style-type: none"> <li>• 12 AWG black and red copper solid or stranded—Used for Cisco 6130 with NI-1 chassis power connections</li> <li>• 12 AWG or thicker green or green with yellow stripes copper stranded—Used for the Cisco 6130 with NI-1 chassis grounding</li> </ul>
	Ferrites that yield an impedance greater than 200 ohms +/- 20 percent at 100 MHz.
	 <b>Note</b> Ferrites are shipped with the network interface module. However, more ferrites are needed when cabling the power connections, the DS3 subtending I/O card, and the system I/O card.
	Tie wraps.
	Coaxial cable. <ul style="list-style-type: none"> <li>• Type 734A or equivalent</li> <li>• Type 735A or equivalent</li> </ul>

1. DSLAM = digital subscriber line access multiplexer

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

**Note**

The Cisco 6100 Series system has no internal user-serviceable parts. However, you can add or remove a module or a fan without removing power from the system.

**Warning**

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

## Space Requirements

The Cisco 6100 Series 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 6130 chassis	9 RUs <sup>1</sup>	15.75 in. (40.00 cm)	12 in. (30.48 cm)
POTS splitter <ul style="list-style-type: none"> <li>• Cisco 6120</li> <li>• Siecor POTS splitter</li> </ul>	4 RUs	7 in. (17.78 cm)	12 in. (30.48 cm)
Fan tray <sup>2</sup>	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 network interface 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 6130 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 that it falls within the internal power supply rating. For the internal power supply rating for the Cisco 6130 chassis, refer to the power supply label on the back of the chassis.

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 necessary for each of your Cisco 6100 Series system components.

**Note**

The power rating label 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 Series System Components

Component	Instructions	Calculation
<b>Cisco 6130 with NI-1 Chassis<sup>1,2</sup></b>		
1a	If you are using DMT-2 ATU-C modules, multiply 12W by the total number of modules in the Cisco 6130.	
1b	If you are using flexi ATU-C modules, multiply 16.5W by the total number of modules in the Cisco 6130.	
1c	If you are using STU-C modules, multiply 8W by the total number of modules in the Cisco 6130.	
1d	Add the amounts for lines 1a through 1c.	
2	Enter 11W for the DS3 STM <sup>3</sup> for the subtending host (if you are installing a subtended network).	
3	Enter 48W for the DS3 or OC-3c network interface module.	
4	Enter 7W for the system controller module.	
5	Add lines 1d, 2, 3, and 4. This is the typical power required for the Cisco 6130 with NI-1 chassis.	
6	Divide line 5 by 48. This is the nominal current for the Cisco 6130 with NI-1 chassis.	
7	Multiply line 6 by 1.25. This is the minimum fuse rating needed to operate the Cisco 6130 in your system.	
<b>Fan Tray</b>		
8	A 1.25A fuse is required for each fan tray wired to the fuse and alarm panel. A fan tray must be installed under a Cisco 6130 with NI-1 chassis.	

1. For a Direct Connect configuration, the maximum number of Cisco 6130 chassis is two per rack.
2. Complete this section for each subtending host.
3. STM = subtend host module.

**Caution**


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Do not use fuses that exceed 30A.

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## 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 strongly recommends that you mount the Cisco 6100 Series system in a rack. Ensure that vertical hole spacing on the rack rails meets standard EIA-310-C requirements of 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 Series 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

Before working on the equipment, be aware of standard safety practices 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.



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.



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

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

Use copper conductors only.



Warning

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



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

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

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

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Warning

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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.

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Warning

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Care must be given to connecting units to the supply circuit so that wiring is not overloaded.

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Warning

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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.

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## Installing the Cisco 6130 with NI-1 Thermal Upgrade Kit

The following sections detail the installation procedures for upgrading your Cisco 6130 with NI-1 chassis to accommodate higher density xTU-C modules.



Warning

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

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Note

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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” section on page 5 for all cautions and warnings necessary to ensure a safe and hazard-free installation.

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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.

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## Installation Checklist

When you upgrade your Cisco 6130 with NI-1 chassis, be sure that you follow the installation procedures in the proper sequence. Table 4 is a checklist of the installation steps in the order in which they should occur.



### 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 4** *Installation Checklist*

Check	Installation Procedure
	1. Remove the power from the system.
	2. Disconnect the Cisco 6130 power connections.
	3. Disconnect the Cisco 6130 chassis ground.
	4. Ground the Cisco 6130.
	5. Attach the Cisco 6130 power connections to the fuse and alarm panel.
	6. Pull all of the modules away from the backplane connection.
	7. Apply the power to the system.
	8. Verify that the fan tray is operational.
	9. Reseat all of the modules.
	10. Attach the Cisco 6130 chassis ventilation cover.
	11. Attach the new power rating label.
	12. Verify that the Cisco 6130 front door is closed.
	13. Close the rear door (if applicable).
	14. Run the connection test procedures.

## Installation Procedures

The following sections detail the installation procedures for the Cisco 6130 with NI-1 thermal upgrade kit. This kit is required when using a Cisco 6130 with NI-1 chassis with higher density xTU-C modules in your system.

### Remove Power

The system should not be powered while you install and connect the Cisco 6130 with NI-1 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 6130 with NI-1 Chassis Power Connections

To disconnect the Cisco 6130 with NI-1 chassis power connections, complete the following steps:



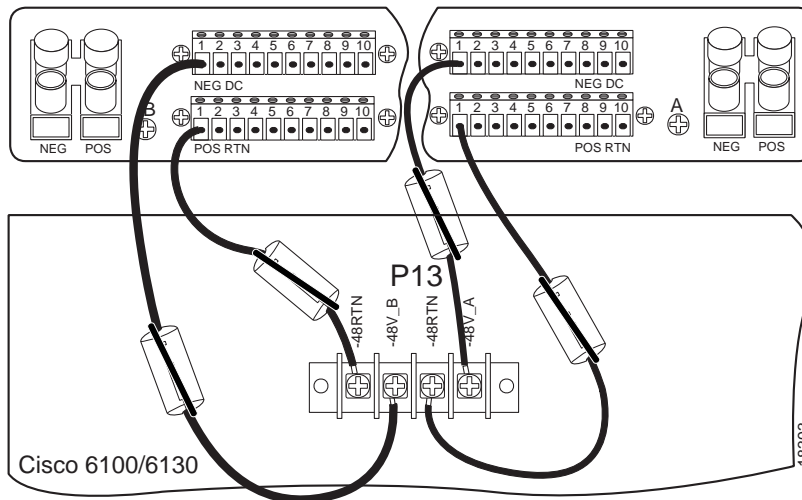
**Note**

If you do not have 12 AWG wire installed, you will replace these wires with a larger gauge wire later in the procedures. If you already have 12 AWG or larger wire installed, you can skip this step.

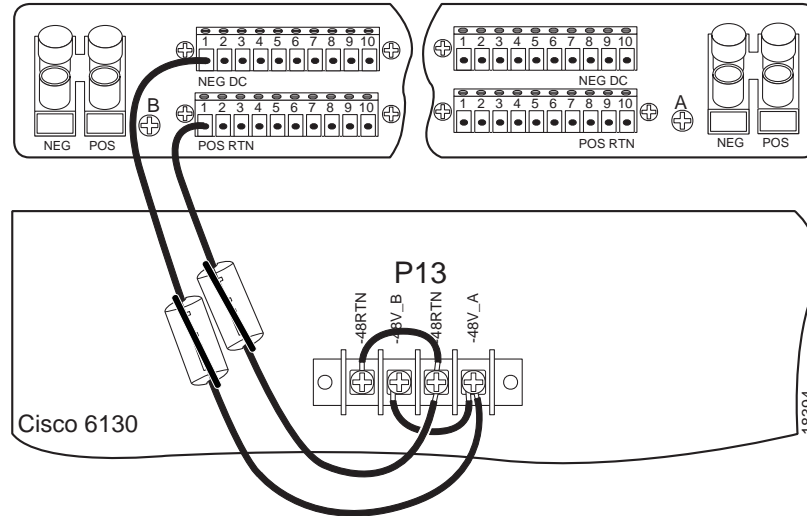
- Step 1** Use a socket driver or a Phillips-head screwdriver to remove the clear cover over the Cisco 6130 with NI-1 chassis power connections.
- Step 2** Disconnect the wires connecting the Cisco 6130 with NI-1 chassis to the fuse and alarm panel (POS RTN and NEG DC connections) as shown in Figure 1 (dual-power feed) and Figure 2 (single-power feed).

These wires will be replaced with a higher gauge wire later in the procedures.

*Figure 1 Power Return Connections for the Cisco 6130 with NI-1 Chassis—Dual-Power Feed*



**Figure 2** Power Connections for the Cisco 6130 with NI-1 Chassis—Single-Power Feed



## Disconnect the Cisco 6130 with NI-1 Chassis Ground

To disconnect the Cisco 6130 with NI-1 chassis ground connection, complete the following steps:



### Note

If you do not have 12 AWG wire installed, you will replace these wires with a larger gauge wire later in the procedures. If you already have 12 AWG or larger wire installed, you can skip this step.

- 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 6130 with NI-1 chassis.
- Step 4** Remove the other end of the wire.
- Step 5** Tighten the compression screw.

## Ground the Cisco 6130 with NI-1 Chassis

Complete the following steps to connect the grounding lug on the Cisco 6130 chassis directly to the rack:

**Note**

Do not reuse the wire removed in the “Disconnect the Cisco 6130 with NI-1 Chassis Ground” section on page 11, unless it is 12 AWG or larger. If you already have 12 AWG or larger wire installed, you can skip this step.

- Step 1** Verify that all paint or oxidation is removed from the rack at the point of the grounding connection.
- Step 2** Measure enough wire (12 AWG or thicker green or green with yellow stripes stranded copper wire) to connect the Cisco 6130 with NI-1 chassis to the rack. (See Figure 3 for grounding wire location.)

**Note**

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

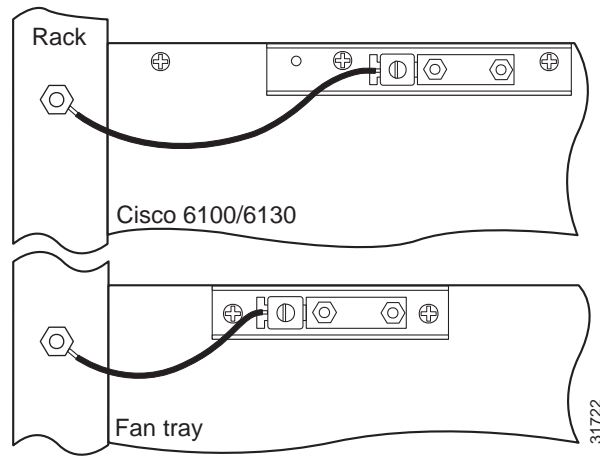
- Step 3** Use a wire stripper to remove the casing from both ends of the wires.
- Step 4** Use a 3/16-inch flat-head screwdriver to loosen the screw on the rack.
- Step 5** Hook one end of the copper wire around the screw on the rack.
- Step 6** Tighten the rack screw over the copper wire.
- Step 7** Loosen the compression screw provided on the grounding lug of the Cisco 6130 with NI-1 chassis. 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.

**Note**

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

The left side of Figure 3 shows how to ground the Cisco 6130 with NI-1 chassis.

**Figure 3** *Grounding the Cisco 6130 with NI-1 Chassis*



## Attach Cisco 6130 with NI-1 Chassis 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 wired.

You can wire the power connections from the Cisco 6130 with NI-1 chassis to the fuse and alarm panel for either dual- or single-power feed.



### Note

The clear cover was removed in the “Disconnect the Cisco 6130 with NI-1 Chassis Power Connections” section on page 10.



### Note

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

### Attach Cisco 6130 with NI-1 Chassis Power Connections for a Dual-Power Feed

Complete the following steps to attach the Cisco 6130 with NI-1 chassis power connections (P13) to the fuse and alarm panel for a dual-power feed:



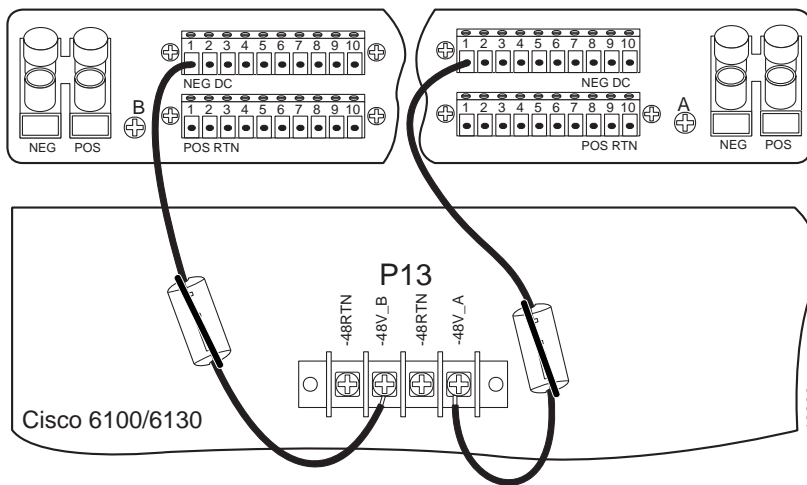
**Note**

Do not reuse the wire you removed in the “Disconnect the Cisco 6130 with NI-1 Chassis Power Connections” section on page 10, unless it is 12 AWG or larger. If you already have 12 AWG or larger wire installed, you can skip this step.

- Step 1** Measure enough wire (12 AWG black and red copper solid or stranded wire) to connect each of the Cisco 6130 power input connections to the fuse and alarm panel.

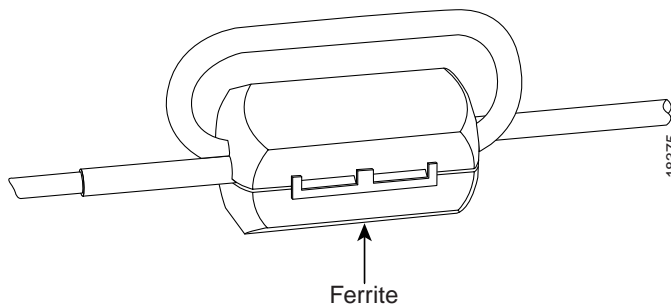
Figure 4 shows the Cisco 6130 with NI-1 chassis power input connections wired to the fuse and alarm panel.

**Figure 4 Power Input Connections for the Cisco 6130 with NI-1 Chassis—Dual-Power Feed**



- 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 6130 (P13).
- Step 4** Loop the wire through the ferrite as shown in Figure 5.

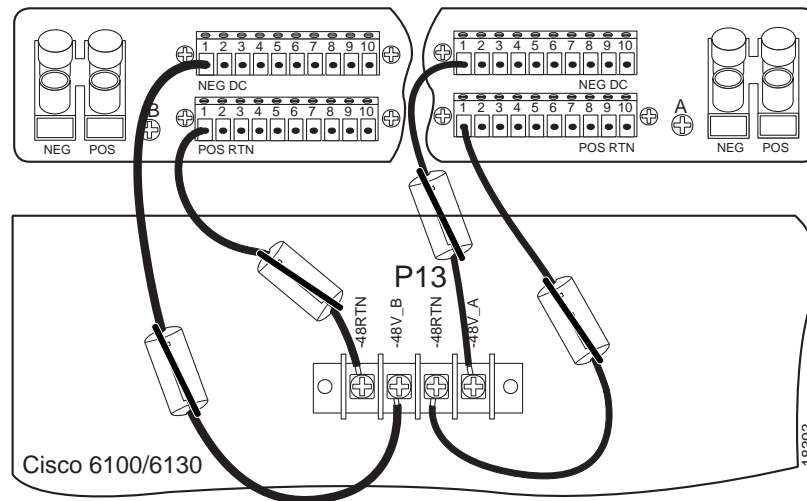
**Figure 5 Wire Looped through Ferrite**



- 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 6130 (P13).
- Step 7** Loop the wire through the ferrite as shown in Figure 5.
- 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 6130 with NI-1 chassis power return connections to the fuse and alarm panel.

Figure 6 shows the Cisco 6130 with NI-1 chassis power return connections wired to the fuse and alarm panel for a dual-power feed.

**Figure 6** Power Return Connections for the Cisco 6130 with NI-1 Chassis—Dual-Power Feed



- 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 6130 with NI-1 chassis (P13).
- Step 12** Loop the wire through the ferrite as shown in Figure 5.
- 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 6130 with NI-1 chassis power connections.

## Attach Cisco 6130 with NI-1 Chassis Power Connections for a Single-Power Feed

Complete the following steps to attach the Cisco 6130 with NI-1 chassis power connections (P13) to the fuse and alarm panel for a single-power feed:



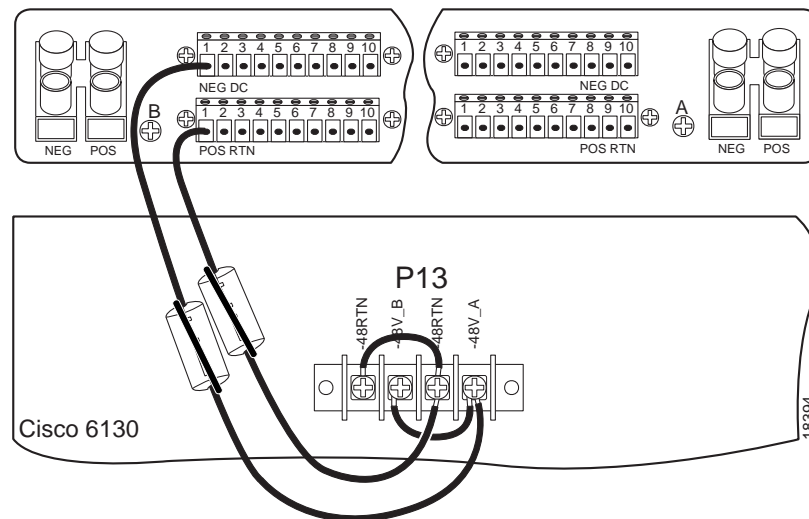
### Note

Do not reuse the wire you removed in the “Disconnect the Cisco 6130 with NI-1 Chassis Power Connections” section on page 10, unless it is 12 AWG or larger. If you already have 12 AWG or larger wire installed, you can skip this step.

- Step 1** Measure enough wire (12 AWG black and red copper solid or stranded wire) to connect each of the Cisco 6130 power connections to the fuse and alarm panel.

Figure 7 shows the Cisco 6130 power connections wired to the fuse and alarm panel for a single-power feed.

**Figure 7** Power Connections for the Cisco 6130 with NI-1 Chassis—Single-Power Feed

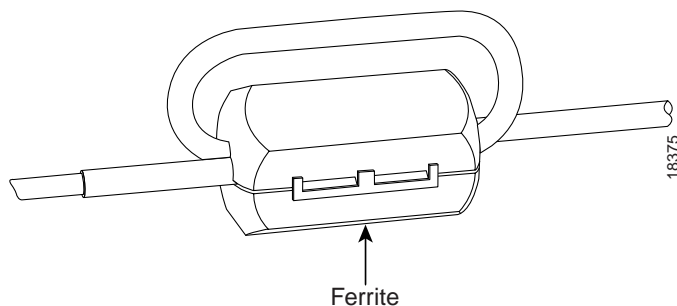


- Step 2** Use a wire stripper to remove the casing from both ends of the wires.
- Step 3** Use a Phillips-head screwdriver, to attach a wire to the -48V\_A power input connection on the Cisco 6130 (P13).



- Step 4** Loop the wire through the ferrite as shown in Figure 8.

**Figure 8** 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 6130 (P13). See Figure 7 for correct placement.
- Step 7** Loop the wire through the ferrite as shown in Figure 8.
- Step 8** Attach the wire to the fuse and alarm panel POS RTN connector. See Figure 7 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 6130 with NI-1 chassis power connections.

## Pull All Modules Away

Complete the following steps to pull the modules 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 door.
- 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 Step 2 through Step 3 for each module in the Cisco 6130 with NI-1 chassis.

## Apply Power

To apply power to the Cisco 6100 Series system, complete the following steps:

- 
- Step 1** Verify that there are no modules installed in any of the Cisco 6130 with NI-1 chassis or POTS splitters.
- 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 in the “Remove Power” section on page 9.
  - Turn on the breakers in the fuse and alarm panel




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**Note** You will need to upgrade the fuses. Refer to the “Power Requirements” section on page 3 for fuse requirements.

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

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- Step 3** Verify that the power connections from the Cisco 6130 with NI-1 chassis to the fuse and alarm panel are wired as shown in Figure 4 or Figure 7.
- Step 4** 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.
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## 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.




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**Caution** It is important that the Cisco 6130 with NI-1 chassis cooling fans run continuously.

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**Warning**

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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.

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**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.

## Reseat the 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.

To reseat all of 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.

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- Step 1** Reseat the xTU-C modules in the Cisco 6130 with NI-1 chassis.
- Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
  - Push on the faceplate of each module to fully seat the module.
  - Press down on the ejector tab to secure the module and connect it to the backplane.
  - Reseat the remaining xTU-C modules using the same procedure.
- Step 2** Reseat the network interface module in the Cisco 6130 with NI-1 chassis.
- Lift up on the ejector tabs and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
  - Push on the faceplate of each module to fully seat the module.
  - Press down on the ejector tabs to secure the module and connect it to the backplane.
- Step 3** Reseat the POTS modules in the Cisco 6120.
- Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
  - Push on the faceplate of each module to fully seat the module.
  - Press down on the ejector tab to secure the module and connect it to the backplane.
  - Reseat the remaining POTS modules using the same procedure.
- Step 4** Reseat the DS3 subtend host module (STM) in the Cisco 6130 with NI-1 chassis (if applicable).
- Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
  - Push on the faceplate of each module to fully seat the module.
  - Press down on the ejector tab to secure the module and connect it to the backplane.

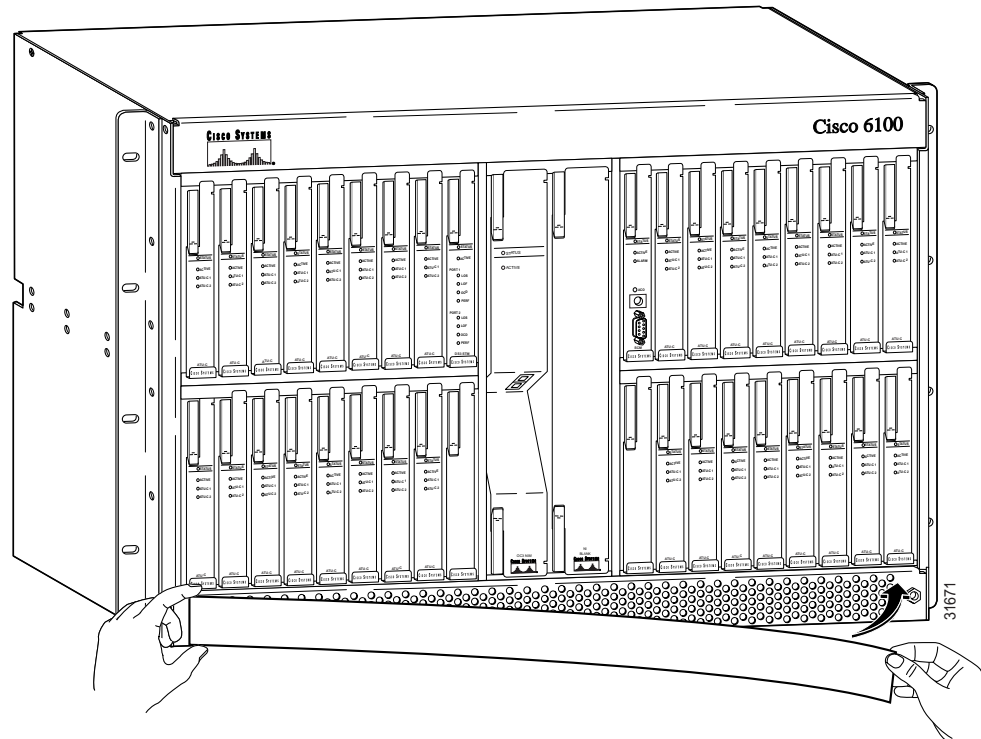
- Step 5** Reseat the system controller module in the Cisco 6130 with NI-1 chassis.
- a. Lift up on the ejector tab and gently apply pressure to the bottom of the faceplate while pushing the module into the slot.
  - b. Push on the faceplate of each module to fully seat the module.
  - c. Press down on the ejector tab to secure the module and connect it to the backplane. This causes each module in the Cisco 6130 with NI-1 chassis to reset.
- Step 6** 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 6130 with NI-1 Direct Connect Installation Guide* for troubleshooting procedures.
- Step 7** Perform a software update using the ViewRunner software if the STATUS LEDs on the xTU-C modules or the network interface 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.
-

## Attach Cisco 6130 with NI-1 Chassis Ventilation Cover

Complete the following steps to attach the Cisco 6130 with NI-1 chassis ventilation cover:

- Step 1 Peel the backing off the Cisco 6130 with NI-1 chassis ventilation cover.
- Step 2 Attach the ventilation cover over the open vents on the bottom of the chassis, as shown in Figure 9.

*Figure 9 Attaching the Cisco 6130 with NI-1 Chassis Ventilation Cover*



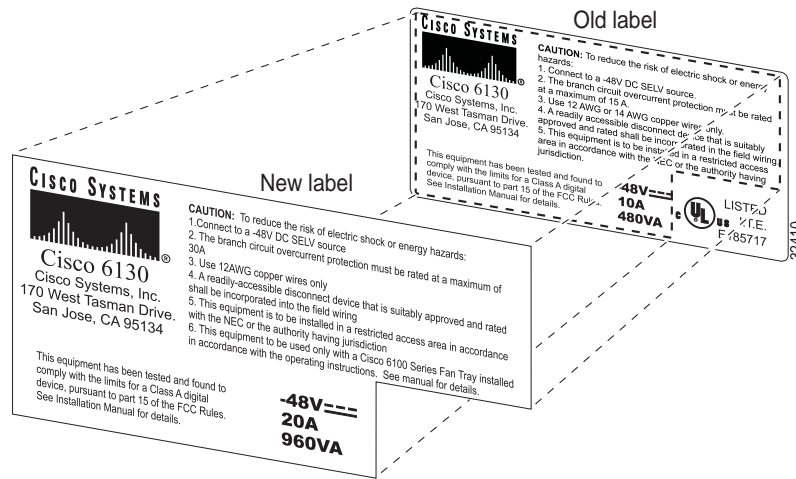
## Attach New Power Rating Label

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 10.

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

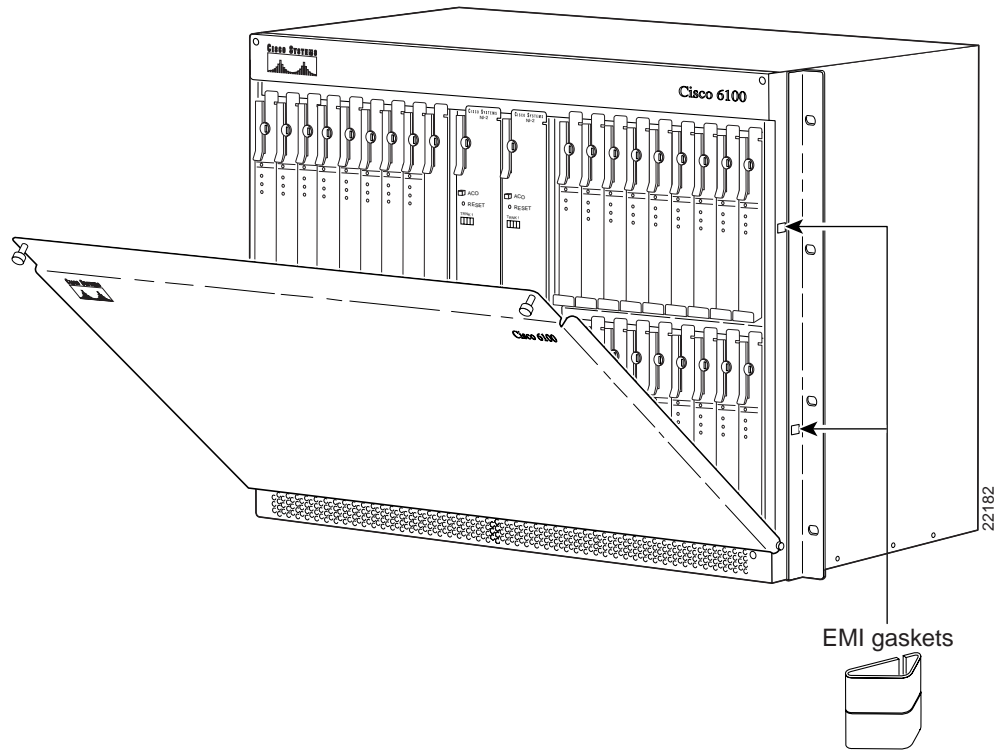
**Figure 10** Attaching the New Power Rating Label



## Close Cisco 6130 with NI-1 Chassis Front Door

Verify that the Cisco 6130 with NI-1 chassis front door is attached to the chassis and closed (see Figure 11).

*Figure 11 Cisco 6130 with NI-1 Chassis with Front Door Installation*

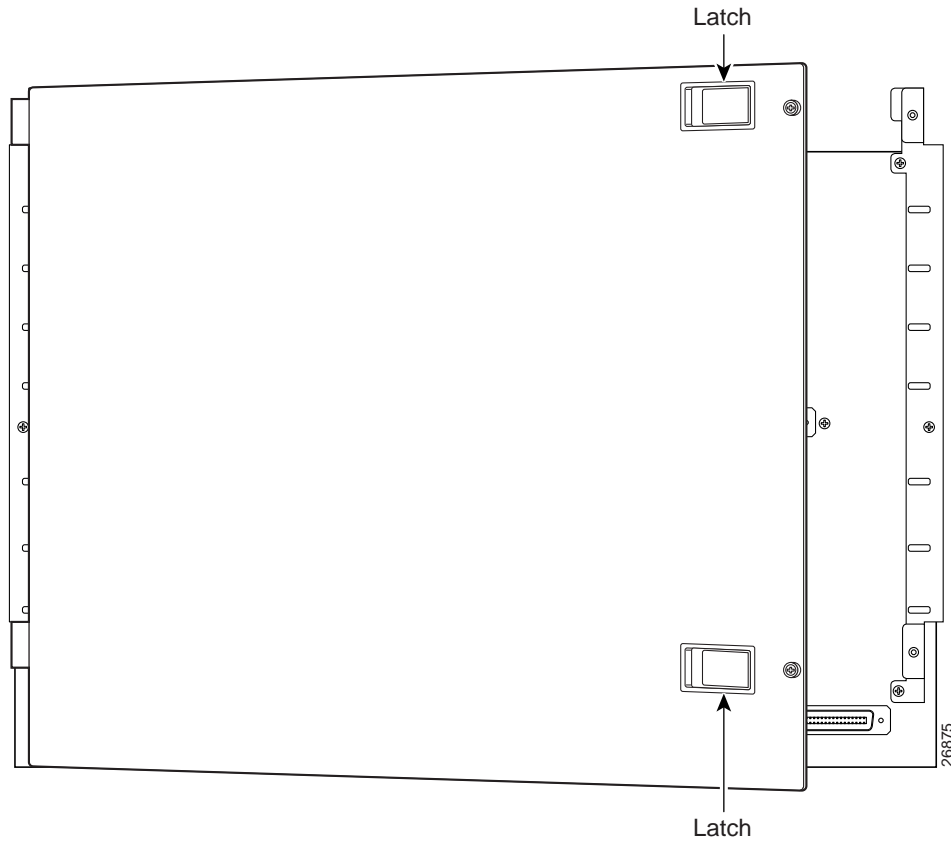


## Close the Rear Door

Complete the following steps to close the optional rear door:

- Step 1** Use the tie wraps provided in the accessory kit to attach cables to the door-mounting bracket loops, as necessary.
- Step 2** Lift the two latches on the rear door (as shown in Figure 12) as you close the rear door. The rear door closes left to right (seen from the rear of the chassis).

*Figure 12 Securing the Rear Door with the Latches*

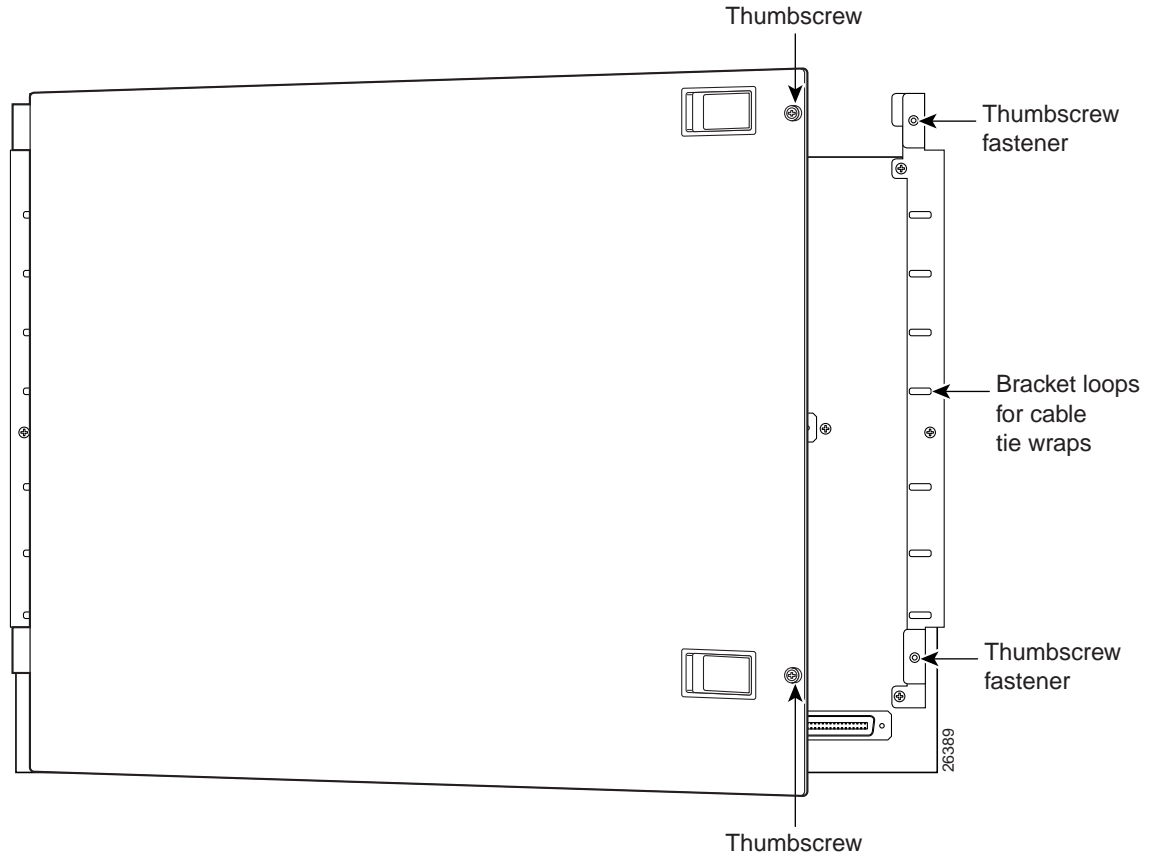


- Step 3** Release the latches after the rear door is in place.



- Step 4** Align the two thumbscrews located on the rear door with two thumbscrew fasteners on the bracket (see Figure 13). Tighten the thumbscrews to secure the rear door.

*Figure 13 Securing the Rear Door with Two Thumbscrews*



## Run the Connection Test Procedures

To verify that the system is connected and running properly, follow the connection test procedures in the *Cisco 6130 with NI-1 Direct Connect Installation Guide*.

## Related Documentation

The following sections list the CO and customer premises equipment (CPE) publications that relate to the Cisco DSL product family.

### CO Publications

A complete list of all released Cisco 6100 Series systems with NI-1 related documentation is available on the World Wide Web at

[http://www.cisco.com/univercd/cc/td/doc/product/dsl\\_prod/c6100/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/dsl_prod/c6100/index.htm).

The following ViewRunner management software is used to provision and manage the Cisco 6100 Series system with NI-1. A complete list of all released ViewRunner documentation is available on the World Wide Web.

- ViewRunner for Windows  
[http://www.cisco.com/univercd/cc/td/doc/product/dsl\\_prod/vrmgtsw/vr4w/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/dsl_prod/vrmgtsw/vr4w/index.htm)
- ViewRunner for HP OpenView  
[http://www.cisco.com/univercd/cc/td/doc/product/dsl\\_prod/vrmgtsw/vr4ov/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/dsl_prod/vrmgtsw/vr4ov/index.htm)

### CPE Publications

The Cisco CPE, also known as the Cisco 600 Series, is part of the Cisco end-to-end DSL product family. CPE comprises modems and routers at the customer site primarily used by home office and corporate LAN personnel. Most CPE uses the Cisco Broadband Operating System (CBOS) as its operating system. CBOS provides a comprehensive command set and web interface that allow you to configure your Cisco CPE modem or router.

A complete list of all released Cisco 600 Series documentation is available on the World Wide Web at [http://www.cisco.com/univercd/cc/td/doc/product/dsl\\_prod/c600s/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/dsl_prod/c600s/index.htm).

## Cisco Connection Online

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

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



#### Note

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

## Documentation CD-ROM

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