

Removing and Replacing FRUs

This chapter describes procedures for removing and replacing the field-replaceable units (FRUs) from the controller.

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Installing AC Power Supplies

Note Do not install the power supplies with the chassis cover off.

Procedure

Step 1 Ensure that the chassis power switch on the chassis is in the Standby position.

It is not required to place the chassis power switch in the Standby position, if you want to hot-swap a single power supply.

Step 2 Insert the power supply module into the appropriate slot(s).

Note
Make sure that the retention latch is firmly placed. You can verify that the power supply module is firmly latched by gently pulling the power supply handle.

Step 3 Insert the power supply cables firmly into the power supplies.

Note
Ensure that both power supplies are inserted firmly and the power cords are in place.

Step 4 If you have changed the chassis power switch to the Standby position in **Step 1**, press the power switch to the **On** position. The power supply LEDs are illuminated (green).

Removing AC Power Supplies

Procedure

Step 1 Ensure that the chassis power switch is in the Standby position.

Note
It is not required to place the chassis power switch in the Standby position, if you want to hot-swap a single power supply.

Step 2 Unplug the power cable from the power supply.

Step 3 Press the retaining latch toward the pull handle.

Grasp the handle with one hand, and pull the power supply out of the slot while supporting the weight of the power supply with the other hand.

Step 4 Repeat **Step 1** to **Step 3**, to remove the other AC power supply.

Removing DC Input Power Supplies

The DC power supply has a terminal block that is installed into the power supply terminal block header.



Warning **Before performing any of the following procedures, ensure that power is removed from the DC circuit.**

Statement 1003



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

Statement 1030

Procedure

Step 1 Turn off the circuit breaker from the power source.

Step 2 Ensure that the chassis power switch is in the Standby position.

Note
It is not required to place the chassis power switch in the Standby position if you want to hot-swap a single power supply.

Step 3 Remove the plastic cover from the terminal block.

Step 4 Unscrew the two terminal block screws on the unit and remove the wires from the power supply.

Step 5 Press the power supply retaining latch towards the pull handle.

Grasp the handle with one hand, and pull the power supply out of the slot while supporting the weight of the power supply with the other hand.

Installing DC Input Power Supplies

Warning **Before performing any of the following procedures, ensure that power is removed from the DC circuit.**

Statement 1003

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

Statement 1030

Note Do not install the power supplies with the chassis cover off.

This section describes how to install the DC power supply input power leads to the DC input power supply. Before you begin, read these important notices:

The color coding of the DC input power supply leads depends on the color coding of the DC power source at your site. Ensure that the lead color coding you choose for the DC input power supply matches the lead color coding used at the DC power source and verify that the power source is connected to the negative (–) terminal and to the positive (+) terminal on the power supply.

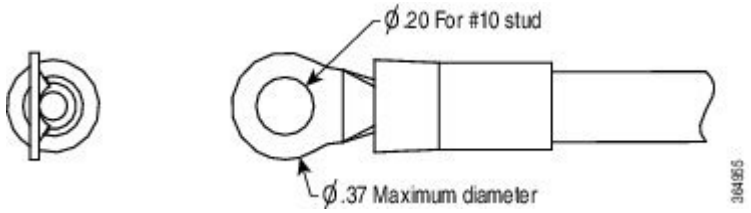
- Ensure that the chassis ground is connected on the chassis before you begin installing the DC power supply. Follow the steps provided in the **Chassis Ground Connection** section.
- For DC input power cables, the wire gauge is based on the National Electrical Code (NEC) and local codes for 26 amp service at nominal DC input voltage (– 40/– 72 VDC). One pair of cable leads, source DC (–) and source DC return (+), are required for each power distribution unit (PDU). These cables are available from any commercial cable vendor. All DC input power cables for the chassis should be 10 gauge wire and cable lengths should match within 10 percent of deviation.
- Each DC input power cable is terminated at the PDU by a cable lug, as shown in the following figure.

Warning **Use copper conductors only.**

Statement 1025

Note DC input power cables must be connected to the PDU terminal studs in the proper positive (+) and negative (–) polarity. In some cases, the DC cable leads are labeled, which is a relatively safe indication of the polarity. However, you must verify the polarity by measuring the voltage between the DC cable leads. When making the measurement, the positive (+) lead and the negative (–) lead must always match the (+) and (–) labels on the power distribution unit.

Figure 1: DC Input Power Cable Lug



Note To avoid hazardous conditions, all components in the area where DC input power is accessible must be properly insulated. Therefore, before installing the DC cable lugs, be sure to insulate the lugs according to the manufacturer's instructions.

Wiring the DC Input Power Source

Warning **Before performing any of the following procedures, ensure that power is removed from the DC circuit.**

Statement 1003

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

Statement 1030

Warning **When installing or replacing the unit, always connect the ground connection first and disconnected last.**

Statement 1046

Warning **Hazardous voltage or energy may be present on power terminals. Always replace cover when terminals are not in service. Be sure uninsulated conductors are not accessible when cover is in place.**

Statement 1086

Procedure

Step 1 Turn off the circuit breaker from the power source.

Step 2 Ensure that the chassis power switch is in the Standby position.

Note
It is not required to place the chassis power switch in the Standby position, if you want to hot-swap a single power supply.

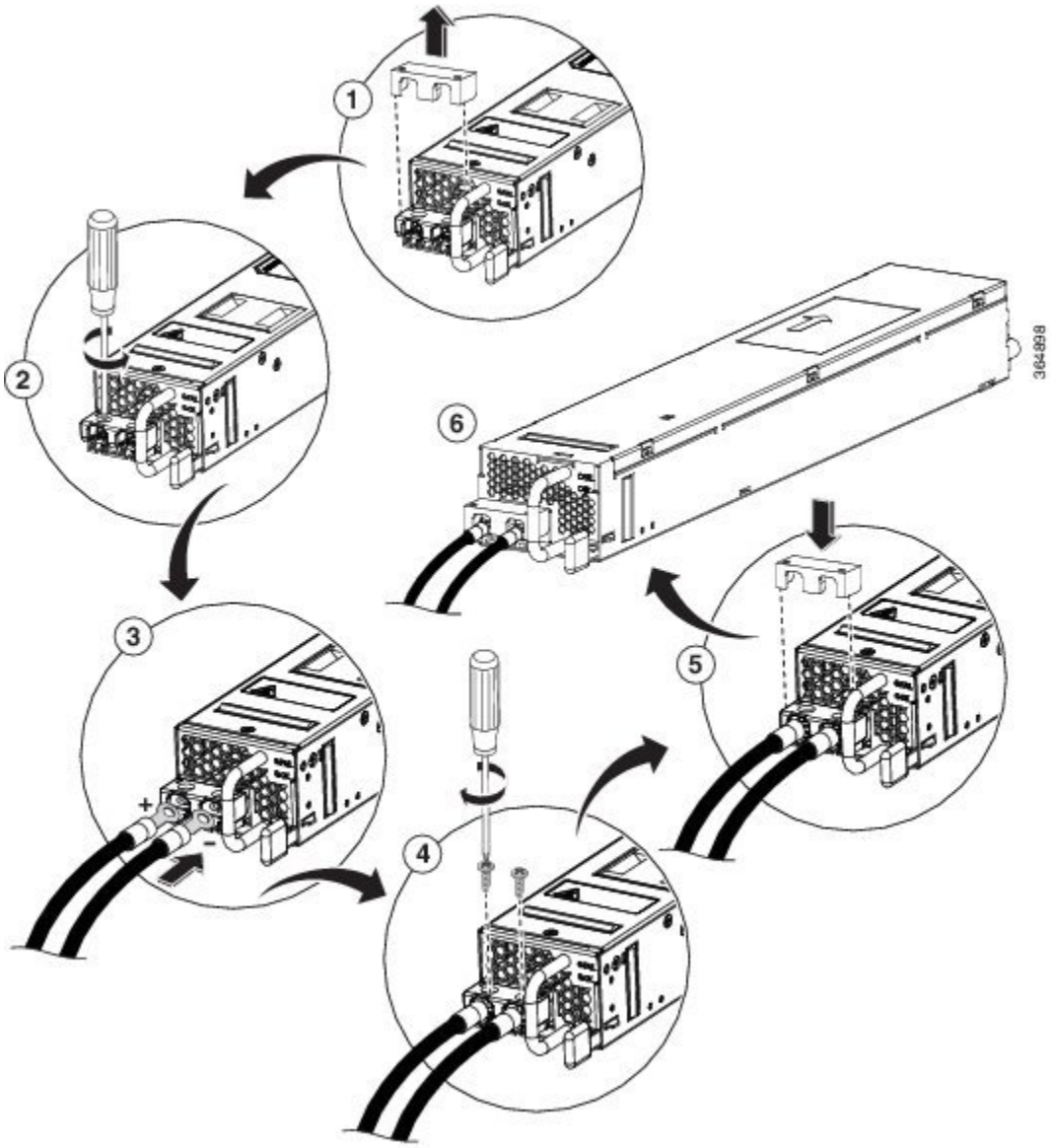
Step 3 Remove the plastic cover from the terminal block.

Caution
Before you continue to install the terminal block ground wires, stop and perform Step 4.

Step 4 Prevent any contact with metal lead on the ground wire and the plastic cover.

Wrap the positive and negative lead cables with sleeving. Insulate the lug with shrink sleeving for each lead wire if using noninsulated crimp terminals. Sleeving is not required for insulated terminals.

Figure 2: DC Power Supply Terminal Block Ground Cable Lugs



Note
This illustration shows the DC power supply for the s.

Step 5 For easier cable-management, insert the negative lead cable first.

Replace the ground lug with a cable in the following order:

- Wire terminal
- Screw with captive washer

Step 6 Tighten the M3 Screw with captive washer to recommended torque of 5 in-lbs for the positive stud and wire.

Note

Secure the wires coming in from the terminal block so that casual contact does not disturb the wire connections.

Step 7 Replace the terminal block plastic cover.

The plastic cover is slotted and keyed to fit correctly over the terminal block.

Step 8 Turn on the circuit breaker at the power source.

Step 9 If you have changed the chassis power switch to the Standby position in step 2.

Turn the power switch to the On position.

The power supply LEDs illuminate green.

Removing and Replacing USB Flash Memory Stick

The contains the USB ports for a flash memory stick to store configurations or Cisco IOS XE consolidated packages.



Caution Do not remove a USB flash memory stick when issuing a file access command or a read/write operation to the flash memory stick when it is processing. The controller might reload or the USB flash memory stick may get damaged.

To remove and then replace a USB flash memory stick, follow these steps:

Procedure

Step 1 Pull the flash memory stick from the USB port.

Step 2 To replace a Cisco USB flash memory stick, insert the module into USB port 0 or 1.

The flash memory stick can be inserted only in one way, and can be inserted or removed regardless of whether the controller is powered up or not.

Remove and replace the battery

This information supports compliance with the European Union requirement for replaceable batteries.

- The product was not designed specifically to have its battery replaced at the installation site.
- When practical, use the normal repair or product-return process to resolve battery problems.

Caution When removing or installing an internal module, wear an ESD-protective wrist strap that contacts your skin securely. Attach the equipment end of the strap to an unpainted metal surface on the chassis.

Note To gain access to battery, remove the 22X screws (12X top, 5X each side).

Remove the battery

Use this procedure to remove the battery safely from the router chassis.

Note Take appropriate electrostatic-discharge precautions before touching the battery or the device.

Wear an ESD-protective wrist strap that maintains firm skin contact. Connect its clip to an unpainted part of the chassis frame so unwanted static voltage can travel safely to ground. Verify that the strap and cord work correctly to protect against static damage and electrical shock.

Warning Statement 1015—Battery handling

To lower the possibility of fire, explosion, or the escape of flammable liquid or gas:

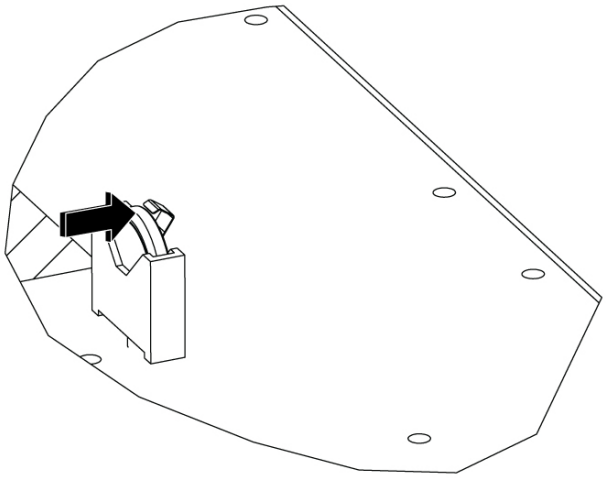
- Install only the same battery type or a manufacturer-approved equivalent.
- Do not disassemble, crush, or puncture the battery; do not use a sharp object to extract it; do not short its external terminals; and do not place it in a fire.
- Do not use a battery that is distorted or swollen.

Procedure

Step 1 Review the safety warnings and disconnect the power supplies before replacing any module.

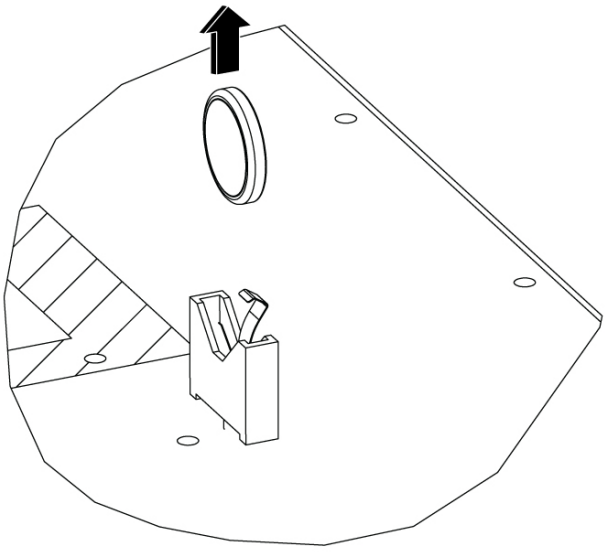
Step 2 Pull the battery-retention arm away from the battery.

Figure 3: Pull back the latch arm



Step 3 Lift the battery out of its holder.

Figure 4: Remove the battery



The battery is removed from the chassis.

Replace the battery

Use this procedure to install the replacement battery and restore normal device operation.

Before you begin

Observe the appropriate electrostatic-discharge precautions before handling the device or battery.

Use a CR2032 battery. Install the same battery type or a manufacturer-approved equivalent, such as one of these parts:

- RENATA 100272
- VARTA MICROBATTERY INC 06032 101 501
- Panasonic CR-2032L/BN

Position and seat the approved replacement battery in its chassis holder.

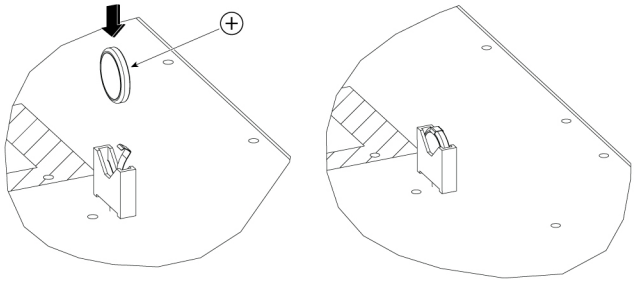
Procedure

Step 1 Review the safety warnings and disconnect the power supplies before replacing any module.

Step 2 Position the battery so that its positive side matches the illustrated orientation.

Step 3 Press the battery into the holder until the latch returns over the battery and secures it.

Figure 5: Install the battery



The replacement battery is seated in the holder and retained by the latch.

Repacking the Controller

If your system is damaged, you must repack it for return shipment.

Before you return the controller or move it to a different location, repack the system using the original packaging material.