



Replacing a Power Filter Unit

Up to two -48 VDC Power Filter Unit (PFU) assemblies can be installed in the ASR 5000 chassis. Two PFUs provide load-balancing and redundancy. The PFUs are located in the lower-rear of the chassis.



Caution

Although a single PFU can provide power for a fully loaded chassis, it is strongly recommended that two PFUs always remain installed for load-balancing and redundancy.



Caution

During installation, maintenance, and/or removal, wear a grounding wrist strap to avoid ESD damage to the components. Failure to do so could result in damage to sensitive electronic components and potentially void your warranty.

This chapter provides instructions for replacing a PFU in the event of failure. It includes the following sections:

- [Determining that a PFU has Failed, page 1](#)
- [Removing the Failed PFU, page 2](#)
- [Installing the Replacement PFU, page 4](#)
- [What to do with the Failed PFU, page 7](#)

Determining that a PFU has Failed

The chassis can use one of several mechanisms to indicate a PFU failure. The first indicator is when the POWER LED on the PFU is off. If the LED is off and a starPowerState SNMP trap is generated with a value of Failed (2), the PFU must be replaced.

If you do not receive this trap, try the following suggestions to diagnose the cause:

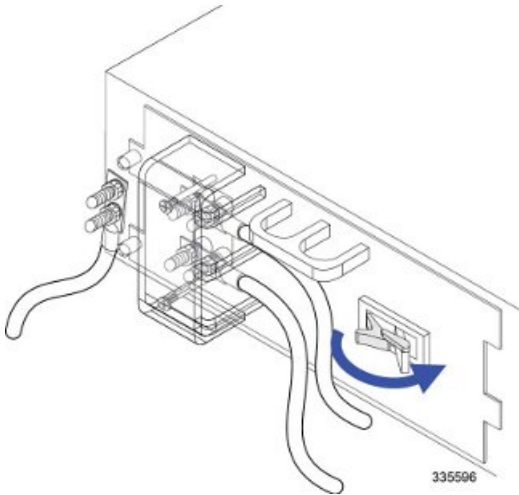
- Verify that the power switch is in the ON position.
- Verify that the RTN and -VDC lugs are attached according to the instructions provided in this document.
- Verify that the ground lug is attached according to the instructions provided in this document.
- Verify that the power source is on and is supplying the correct voltage and sufficient current.

- Check the cables from the power source to the rack for continuity.
- If a fuse panel is installed between the Power Distribution Frame (PDF) and the chassis, verify that the fuses are intact.
- If a fuse panel is installed between the PDF and the chassis, check the cables from the fuse panel to the chassis for continuity.

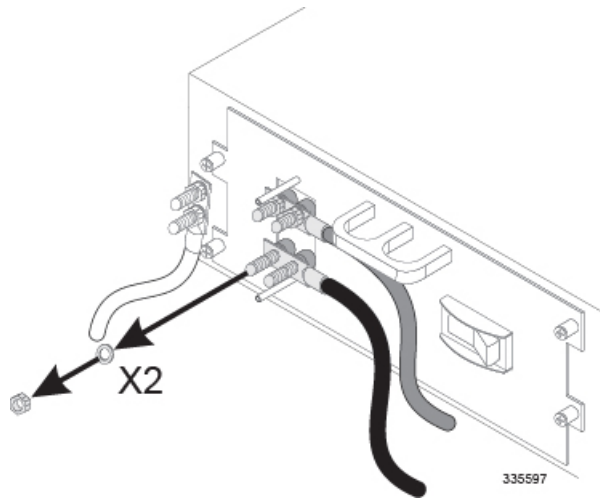
Removing the Failed PFU

In the event of a PFU failure, follow these instructions to safely remove the PFU from the chassis.

- Step 1** Power down the PFU by flipping the circuit breaker on the PFU to the OFF position. If the circuit breaker on your PFU is equipped with a locking clip, move the clip to the right to unlock the circuit breaker's actuator.



- Step 2** Shut down the power source to the failed PFU.
- To avoid the risk of electric shock, verify that the power source is completely shut down before proceeding to the next step.
- Vor dem naechsten Schritt Spannungsversorgung abschalten, um einen elektrischen Schlag zu vermeiden.
- Step 3** Use a Phillips #2 screwdriver to remove the plastic cover from the power terminals.
- Step 4** Remove the cable from the -VDC terminals as described below. The -VDC terminals are the two terminals located at the bottom of the PFU.
- a) Use a 9/16-inch nut driver or socket wrench to remove the nuts and washers that secure the cable to the PFU.

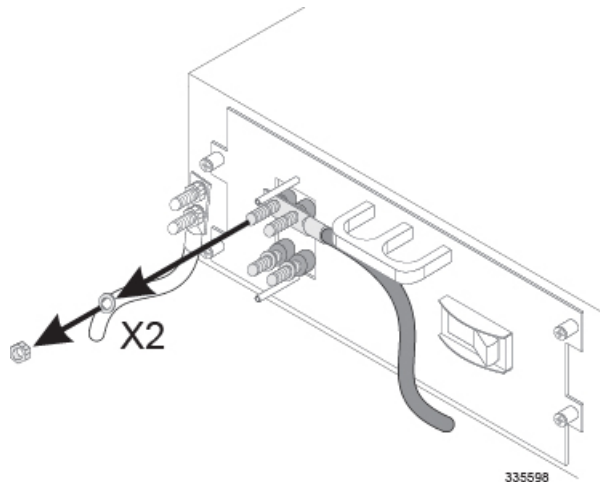


b) Slide the power cable off the terminals.

Step 5

Remove the cables from both RTN terminals as described below. The RTN terminals are the two terminals located directly above the -VDC terminals.

a) Use a 9/16-inch nut driver or socket wrench to remove the nuts and washers that secure the cable to the PFU.



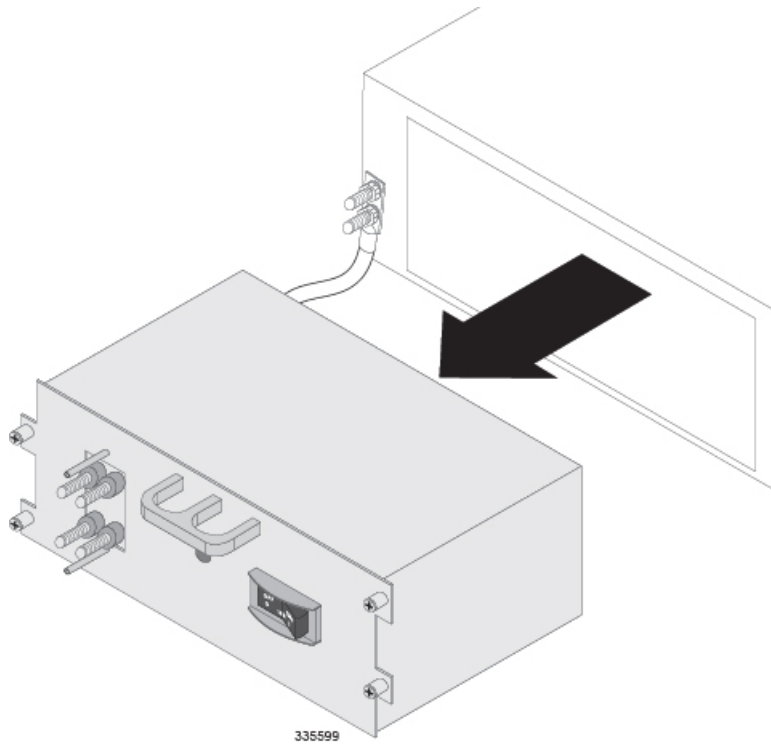
b) Slide the return cable off the terminals.

Step 6

Use a Phillips #2 screwdriver to loosen the four screws that secure the PFU to the chassis.

Step 7

Grasp the handle on the PFU and gently pull it toward you. The PFU should easily slide out of the chassis.

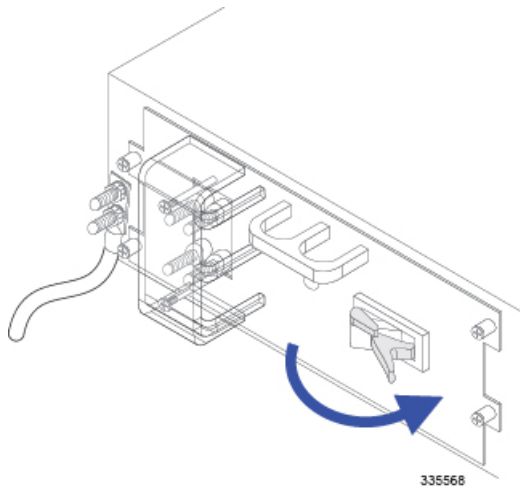


Step 8 Proceed to [Installing the Replacement PFU](#), on page 4.

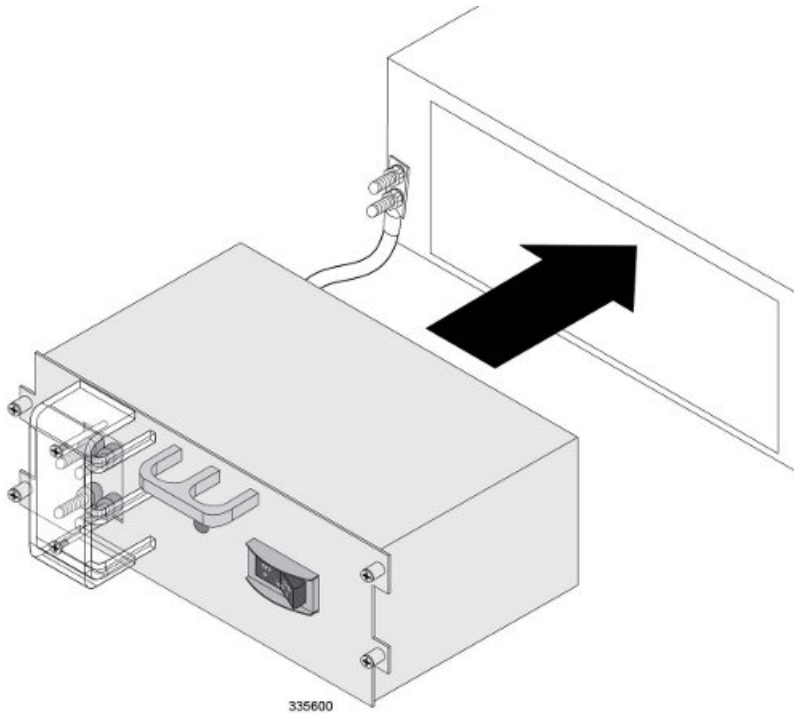
Installing the Replacement PFU

Follow the instructions below to install the replacement PFU in the chassis.

Step 1 Flip the circuit breaker actuator on the replacement PFU to the OFF position. If the circuit breaker on your PFU is equipped with a locking clip, lock the circuit breaker in place. Move the breaker's locking clip to the right until the clip's inside tang is recessed in the breaker's actuator opening.



Step 2 Slide the PFU assembly into the PFU bay until it is flush against the chassis.



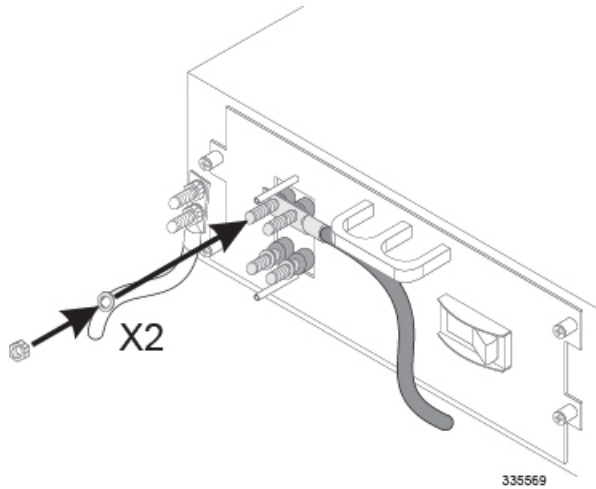
Step 3 Use a Phillips #2 screwdriver to tighten each of the four screws on the PFU to secure it to the chassis.

Step 4 Use a Phillips #2 screwdriver to remove the plastic cover from the power terminals. Each of the four power terminals is shipped with one nut and two washers. The 165A PFU has one lock-washer and one flat washer.

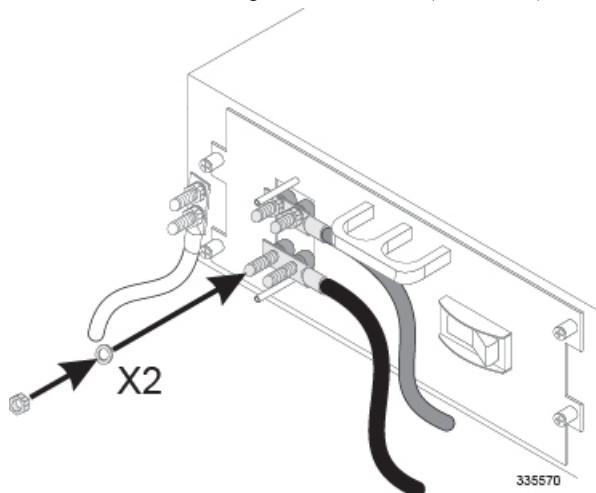
To avoid electric shock, ensure that the power source is off before attaching power cables to the PFU(s) installed in the chassis.

Spannungsversorgung abschalten vor Anschluss der Kabel an die Netzteile, um einen elektrischen Schlag zu vermeiden.

- Step 5** Use a Phillips #2 screw driver to remove the plastic cover from the power terminals.
- Step 6** Use a 9/16-inch nut driver or socket wrench to remove the nut and the lock-washer on the PFU from each of the four terminals.
- Step 7** Fasten the lug attached to the power return cable to the PFU:
- Insert the lug over the two terminals labeled RTN. These are the two top terminals on the PFU.
 - Secure the lug to the RTN terminals using two of the four washers and two of the four nuts that were removed in step 3. The nuts on the PFU should be torqued to 50 in-lb. (5.65 N-m).



- Step 8** Fasten the lug attached to the power feed cable to the PFU:
- Insert the lug over the two terminals labeled -VDC. These are the two bottom terminals on the PFU.
 - Secure the lug to the -VDC terminals with the remaining two washers and nuts you removed in step 7. The nuts on the PFU should be torqued to 50 in-lb. (5.65 N-m).



To avoid the risk of fire, take proper precautions to ensure that the power feed and return lugs are not touching.
Um einen Kurzschluss zu vermeiden, dürfen sich die beiden Stromkabel nicht beruehren.

- Step 9** Reinstall the plastic terminal cover.

Caution To avoid the risk of electric shock and/or potential damage to the system, never operate the chassis without the plastic terminal cover.

In addition, the power and return lugs must not protrude past the edge of the plastic terminal covers. Any portion of the lug that is exposed must be covered with shrink wrap.

Step 10 Apply power to the PFUs using the information and instructions in the *Applying Power to the Chassis* section of the *Applying Power and Verifying the Installation* chapter of this guide.

What to do with the Failed PFU

If the failed PFU is still under warranty, return it to the vendor for repair.

If the failed PFU is out of warranty, contact Cisco to determine if it can be sent in for repair at an additional cost.



Important Disposal of this product should be performed in accordance with all national laws and regulations.

Refer to the support area of <http://www.cisco.com> for up-to-date product documentation pertaining to installation, configuration, and maintenance. A valid username and password is required to use this site. Please contact your local sales or service representative for additional information.



Important For additional information on the RMA process, see the *RMA Shipping Procedures* appendix.
