Replacing NCS 5000 Router Components

This chapter describes how to replace modules in the Cisco NCS 5000 Series routers. This chapter includes the following sections:

Replacing a Fan Module

(For NCS 5001, NCS 5002, and NCS 5011) The fan tray is designed to be removed and replaced while the system is operating without causing an electrical hazard or damage to the system if the replacement is performed within five minutes. If you do not have the appropriate replacement fan module, leave the original fan module in its slot to preserve the designed airflow for the router until you have the replacement fan module.

Warning The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing. **Statement 263**

Note

- Only one fan tray can be removed and replaced each time without disrupting the system.
- (For NCS 5001, NCS 5002, and NCS 5011) Once you remove the fan tray, it must be replaced within 5 minutes.

Replacing a 1 (RU) Fan Module

The fan tray is designed to be removed and replaced while the system is operating without causing an electrical hazard or damage to the system if the replacement is performed within five minutes. If you do not have the appropriate replacement fan tray, leave the original fan tray in its slot to preserve the designed airflow for the router until you have the replacement fan module.

Before you begin

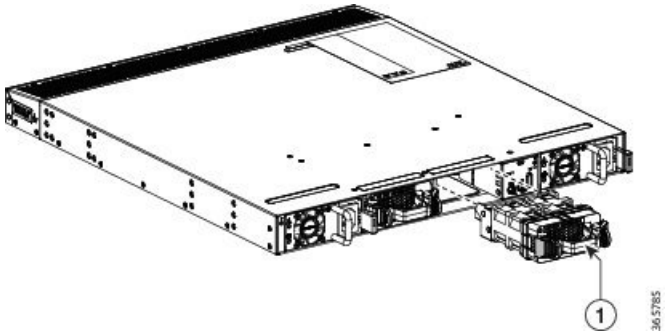
- Verify that you have an ESD wrist strap or other device to prevent ESD damage for components that you touch.
- Verify that you have an antistatic surface or bag for placing the fan module that you remove from the chassis.
- Verify that the replacement fan module has the correct direction of airflow (it has the same coloring as the other fan and power supply modules in the same chassis).

Procedure

Step 1 Remove the fan module that you are replacing as follows:

a) On the fan module that you are removing, press the two sides of the fan module handle next to where it connects to the fan module and pull on the handles enough to unseat the module from its connectors.

Figure 1: Replacing Fan Tray on NCS 5001



b) Holding the handle, pull the module out of the chassis and set it on an antistatic surface or in a antistatic bag.

Caution Do not touch the electrical connectors on the back side of the module and prevent anything else from coming into contact with and damaging the connectors.

Step 2 Install the replacement fan module as follows:

a) Holding the fan module by its handle, align the back of the fan module (the side with the electrical connectors) to the open fan slot in the chassis.
b) Slide the fan module into the slot until it clicks in place.

Replacing a 2 (RU) Fan Module

Before you begin

- Verify that you have an ESD wrist strap or other device to prevent ESD damage for components that you touch.

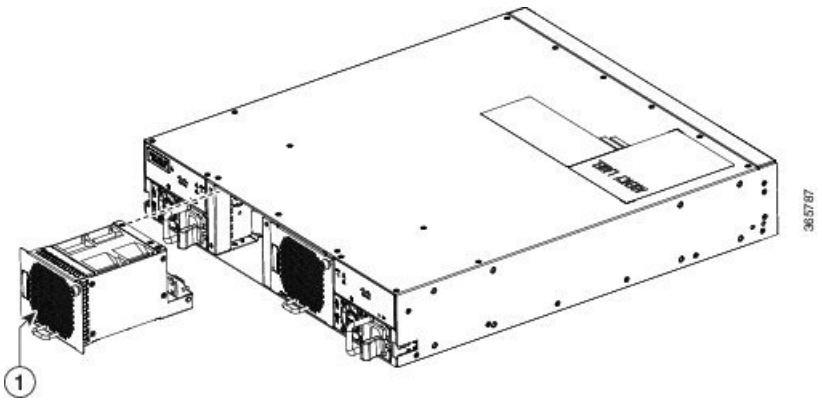
- Verify that you have an antistatic surface or bag for placing the fan module that you remove from the chassis.
- Verify that the replacement fan module has the correct direction of airflow (it has the same coloring as the other fan and power supply modules in the same chassis).

Procedure

Step 1 Remove the fan module that you are replacing as follows:

a) Loosen the captive screws on the fan module by turning them counterclockwise, using a flat-blade or number 2 Phillips screwdriver if required.

Figure 2: Replacing Fan Module on NCS 5002



b) Grasp the captive screws of the fan module and pull it outward.

c) Pull the fan module clear of the chassis and set it on an antistatic surface or repack it in packing materials.

Step 2 Install the replacement fan module as follows:

a) Hold the fan module with the sheet metal flange holding the connector on the bottom.

b) Place the fan module into the front chassis cavity so it rests on the chassis, and then push the fan module into the chassis as far as it can go until the captive screw makes contact with the chassis.

c) Tighten the captive screw.

d) Listen for the fans if the device is powered on. You should immediately hear them operating. If you do not hear them, ensure that the fan module is inserted completely in the chassis and the faceplate is flush with the outside surface of the chassis.

Replacing an AC Power Supply

You can replace an AC power supply during operations so long as there is another power supply installed and operating during the replacement. The router requires only one power supply for operations, so you can hot swap the redundant power supply during operations. If there is only one power supply installed in the chassis, you can replace it by installing the new power supply in the open power supply slot before removing the other power supply.

Before you begin

- Verify that you have an ESD wrist strap or other device to prevent ESD damage for components that you touch.
- Verify that you have an antistatic surface or bag for placing the power supply module that you remove from the chassis.
- Verify that the replacement power supply module has the correct direction of airflow (it has the same coloring as the other fan and power supply modules in the same chassis). Otherwise the router can overheat and shut down.
- If fan filters are used for port side exhaust, then filters must be removed before removing the power supply.

Procedure

Step 1 Remove the power supply as follows:

a) Pull the power cord out from the power receptacle on the power supply to be removed and verify that the OK LED turns off.

b) Remove the power supply from the chassis by pushing and holding its thumb latch to the left and pulling the power supply part way out of the chassis.

Figure 3: Replacing Power Supply Module on NCS 5001

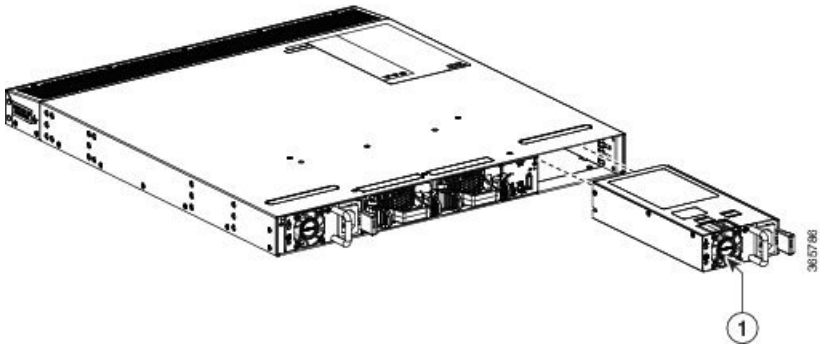
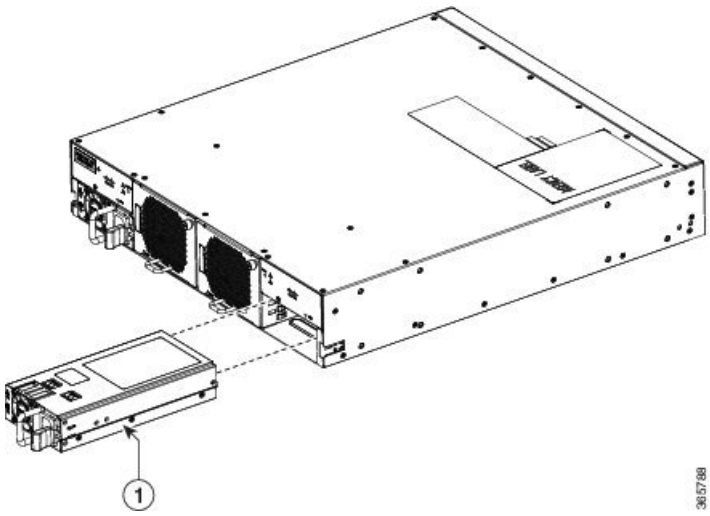


Figure 4: Replacing Power Supply Module on NCS 5002



c) Place your other hand under the power supply to support it while you slide it out of the chassis. Either place the power supply on an antistatic surface or pack it in its packing materials.

Step 2 Install the replacement power supply as follows:

a) Holding the replacement power supply with one hand underneath the module and the other hand holding the handle, align the back end of the power supply (the end with the electrical connections) to the open power supply slot and slide the power supply all the way into the slot until it clicks into place.
b) Test the installation by trying to pull the power supply out of the slot without using the release latch. If the power supply does not move out of place, it is secured in the slot. If the power supply moves, press it all the way into the slot until it clicks in place.

Step 3 Connect the new power supply to an AC power source as follows

a) Attach the power cable to the electrical outlet on the front of the power supply.
b) Connect the other end of the power cable to an AC power source.
c) Verify that the power supply is operational by checking that the power supply OK LED is green.

What to do next

Replace the filters after replacing the power supply.

Replacing a DC Power Supply

Note Before you begin the wiring procedure, turn off the DC power source from your facility's circuit breaker to avoid electric shock hazard.

Procedure

Step 1 Turn off the DC power at its source to avoid electric shock hazard.

Step 2 Remove the power cord from the power cord retainer.

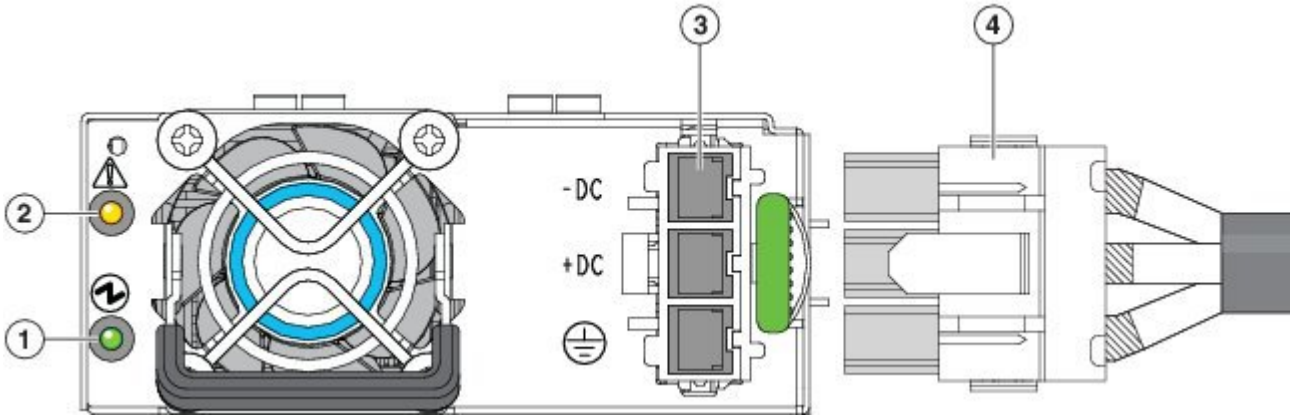
Step 3 Remove the power cord from the power connector.

Step 4 Press the release latch at the right side of the power supply module inward and slide the power supply out.

Step 5 Insert the new power supply into the power-supply slot, and gently push it into the slot.

Step 6 Connect the power cord to the power supply and to an DC power outlet. Turn on the power at the power source.

Figure 5: Connect Power Cord to DC Power Outlet



Step 7 Verify that the power supply OK LED is green.

Replacing the Air Filter for Port Side Intake

A replaceable air filter is located on the front of the chassis. How often the air filters should be replaced depends on the facility environment. In a dirty environment, or when you start getting frequent temperature alarms, you should always check the intake grills for debris, and then check the air filters to see if they need to be replaced.

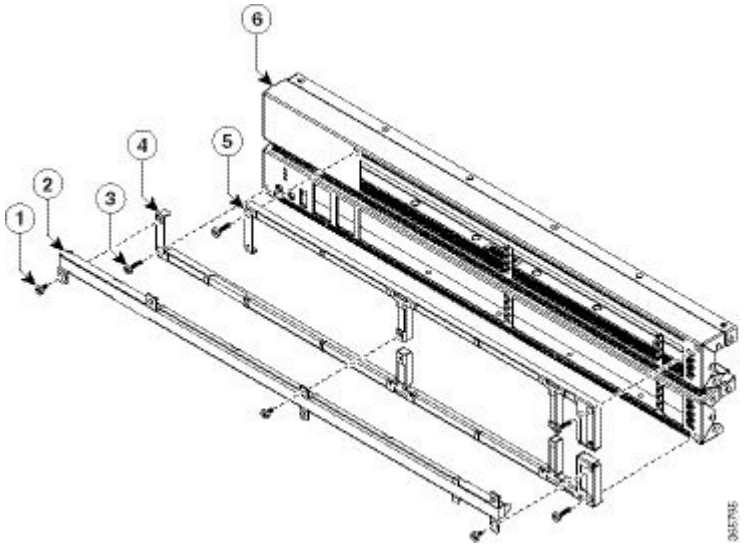
Note In general, we recommend that you inspect the air filter every three months and replace, if necessary, every 6 months.

Procedure

Step 1 Remove the air filter that you are replacing as follows:

a) Loosen the captive screws that secure the fan filter. The air filter attaches to the front of the chassis for port side inlet, in three parts (Piece A, Piece B and piece C as shown in the figure below). Remove piece C first, followed by piece B and then piece A.

Figure 6: Replacing port side inlet air filter



1	3x5 captive screws	2	Mid Panel (Piece C)
3	4x4 captive screws	4	Bottom Panel (Piece B)
5	Top Panel (Piece A)	6	Unit Faceplate

b) Slide out each of the air filter panels from the slot, and carefully set it aside.

Step 2 Install the air filter panels to the faceplate as follows:

a) Attach the upper filter panel to the lower filter panel using four long captive screws.
b) Attach the mid filter panel installed to the upper and lower filter panels using three short captive screws.

Note Screws to be tightened to 2.0 ± 0.5 in-lbs of torque.

Replacing Air Filter for Port Side Exhaust

Procedure

Step 1 To remove a power module air filter, follow these steps:

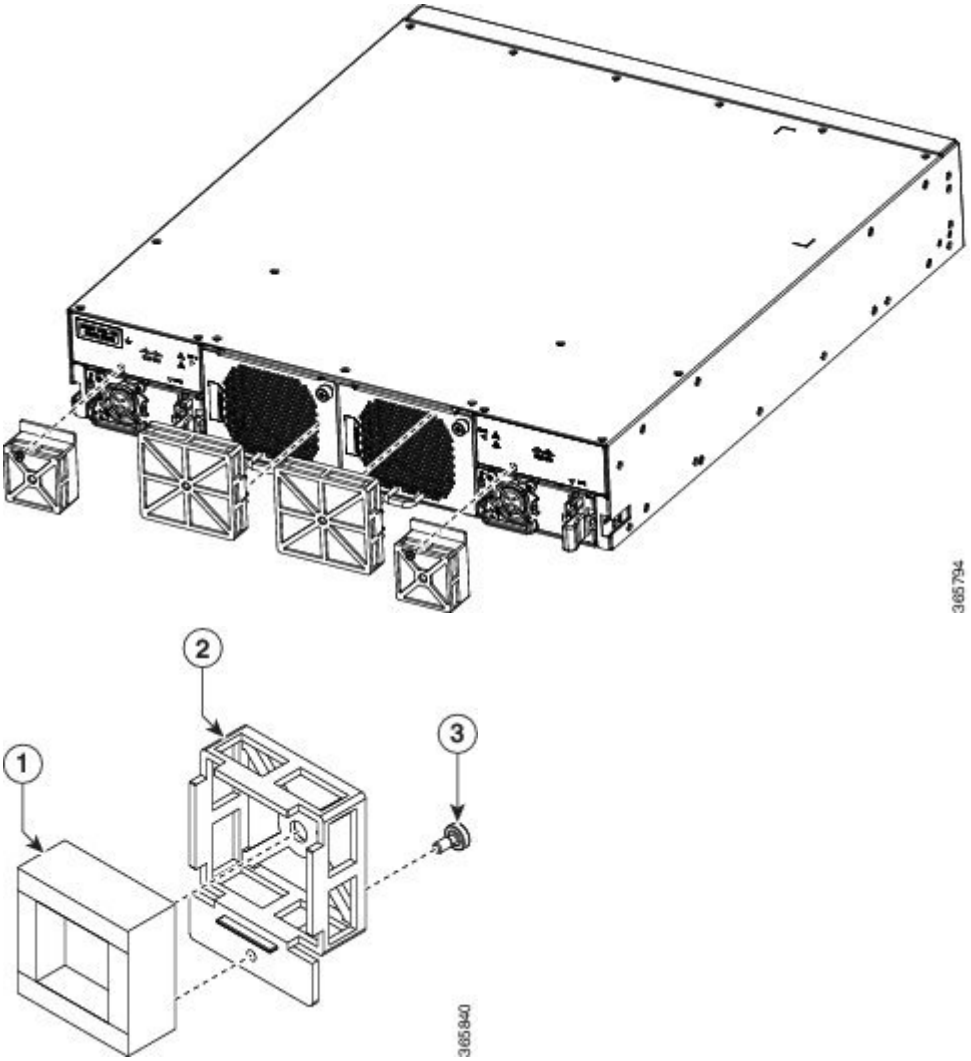
a) Place the screwdriver under the edge of the air filter clip-on holder.
b) Gently pry the holder loose with the screwdriver; it should pop off easily.
c) Remove the air filter from the front of the power module and set it carefully aside.

Step 2 To replace a power module air filter, follow these steps:

a) Place the air filter in position on the front of the power module.

b) Place the holder in position on the front of the power module over the air filter.
c) Press the holder firmly but gently until it snaps into place.
d) Slide in the power supply panel and tighten it using one screw.

Figure 7: Replacing the power module air filter



e) Gently snap in the fan filter into the clip-on holder.

Figure 8: Replacing the fan filter