

Replacing the T320 Cooling System Components

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Replacing a T320 Fan Tray

The T320 router has two front fan trays. The front fan trays install horizontally in the front of the chassis. Each front fan tray contains six fans. The two front fan trays are interchangeable, but the rear fan tray is not interchangeable with the front fan trays. The fan trays are hot-insertable and hot-removable.

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Removing a T320 Front Fan Tray

The upper front fan tray is located above the FPC card cage, and the lower front fan tray is located below the front air filter. Each fan tray weighs about 13.3 lb (6.0 kg).

To remove a front fan tray (see Figure 1):

1. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis. For more information about ESD, see Preventing Electrostatic Discharge Damage to an M Series, MX Series, or T Series Router.
2. If you are removing the lower fan tray:
 - a. Unwrap any PIC cables from the spools on the cable management system and remove the cables from the tray. Arrange the cables so that they do not block the front of the cable management system and tray, and secure them with temporary fasteners so that they are not supporting their own weight as they hang from the connector.



CAUTION: Do not let fiber-optic cable hang free from the connector. Do not allow fastened loops of cable to dangle, which stresses the cable at the fastening point.

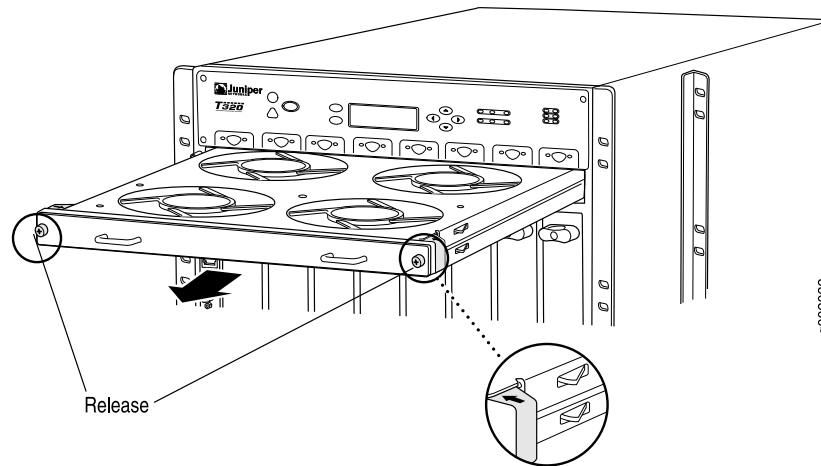
- b. Simultaneously pull the two releases on the cable management system. Lift it up and outward to lock it in place to access the lower fan tray.
 3. Loosen the captive screws on the corners of the fan tray faceplate.
 4. Grasp the handles and pull the fan tray halfway out of the chassis.



WARNING: To avoid injury, keep tools and your fingers away from the fans as you slide the fan tray out of the chassis. The fans might still be spinning.

5. When the fans stop spinning, place one hand under the fan tray to support it and pull the fan tray completely out of the chassis.

Figure 1: Removing a Front T320 Fan Tray

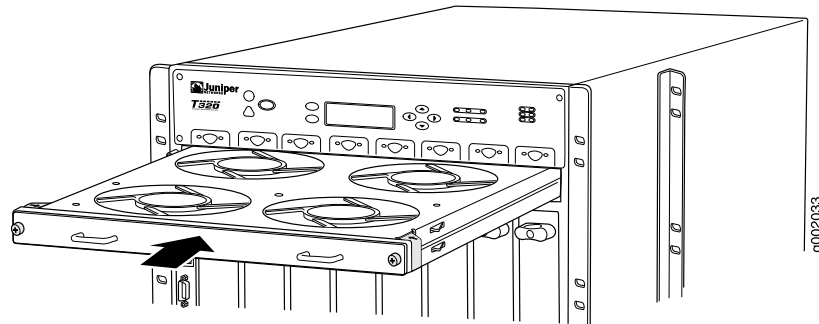


Installing a T320 Front Fan Tray

To install a front fan tray (see Figure 2):

1. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis. For more information about ESD, see Preventing Electrostatic Discharge Damage to an M Series, MX Series, or T Series Router.
2. Grasp the fan tray by its handles and insert it straight into the chassis.
3. Tighten the captive screws on each side of the fan tray faceplate to secure it in the chassis.
4. If you are installing the lower fan tray, follow these steps:
 - a. Unlock the cable management system and lower it to the fully lowered position.
 - b. Rearrange the PIC cables in the cable management system. For more information about proper cable arrangement, see Maintaining T320 PICs and PIC Cables.

Figure 2: Installing a Front T320 Fan Tray



Removing a T320 Rear Fan Tray

The rear fan tray is mounted vertically on the right side of the rear of the chassis. The rear fan tray contains five fans. The fan tray weighs about 7.3 lb (3.3 kg).



CAUTION: To maintain proper cooling, do not operate the router with the rear fan tray removed for more than one minute.

To remove the rear fan tray (see Figure 3):

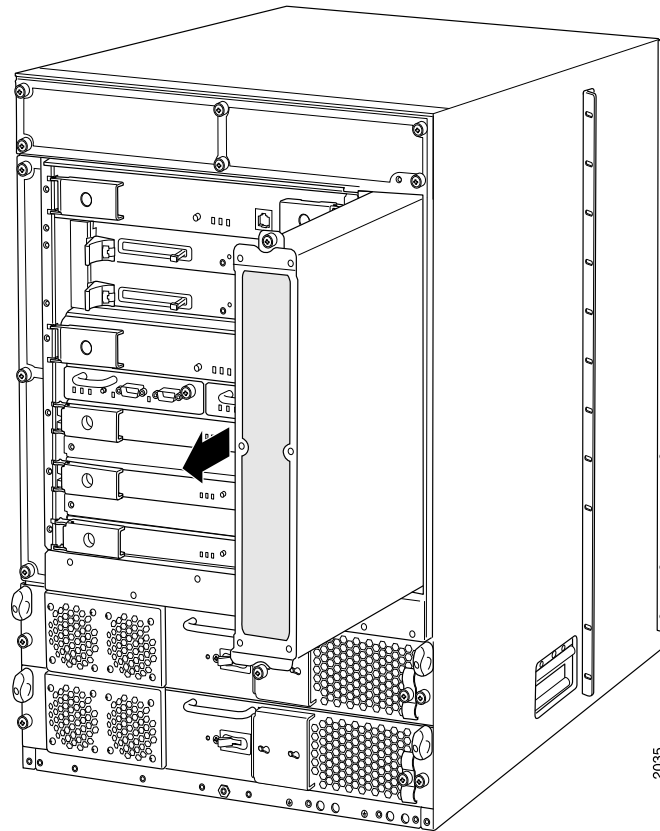
1. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis. For more information about ESD, see Preventing Electrostatic Discharge Damage to an M Series, MX Series, or T Series Router.
2. Loosen the captive screws on the top and bottom of the fan tray faceplate, using a Phillips (+) screwdriver, number 2.
3. Grasp the handles and pull the fan tray halfway out of the chassis.



WARNING: To avoid injury, keep tools and your fingers away from the fans as you slide the fan tray out of the chassis. The fans might still be spinning.

4. When the fans stop spinning, grasp the handles and pull the fan tray completely out of the chassis.

Figure 3: Removing a Rear T320 Fan Tray

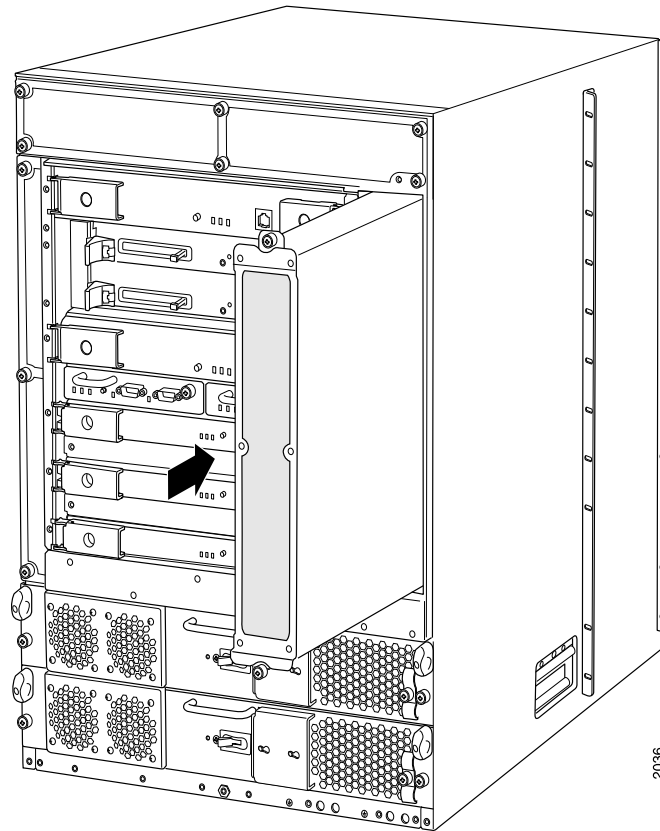


Installing a T320 Rear Fan Tray

To install a replacement rear fan tray (see Figure 4):

1. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis. For more information about ESD, see Preventing Electrostatic Discharge Damage to an M Series, MX Series, or T Series Router.
2. Grasp the fan tray by its handles and insert it straight into the chassis.
3. Tighten the captive screws on the fan tray faceplate to secure it in the chassis, using a Phillips (+) screwdriver, number 2.

Figure 4: Installing a Rear T320 Fan Tray



Replacing a T320 Air Filter

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Removing a Front T320 Air Filter

The front air filter, located below the FPC card cage in the front of the chassis, and installs horizontally. The front air filter weighs approximately 1 lb (0.5 kg). The air filters are hot-insertable and hot-removable.

To remove the front air filter (see Figure 5):

1. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis.
2. Unwrap any PIC cables from the spools on the cable management system, and remove the cables from the tray. Arrange the cables so that they do not block the front of the cable management system and tray, and secure them with

temporary fasteners so that they are not supporting their own weight as they hang from the connector.



CAUTION: Do not let fiber-optic cable hang free from the connector. Do not allow fastened loops of cable to dangle, which stresses the cable at the fastening point.

3. Simultaneously pull the two releases on the cable management system. Lift it up and outward to lock it in place to access the air filter.
4. Loosen the captive screws on the corners of the air filter faceplate.
5. Grasp the handles and pull the air filter straight out of the chassis.
6. Remove the filter element from the air filter frame (see Figure 6).

Figure 5: Removing the Front Air Filter

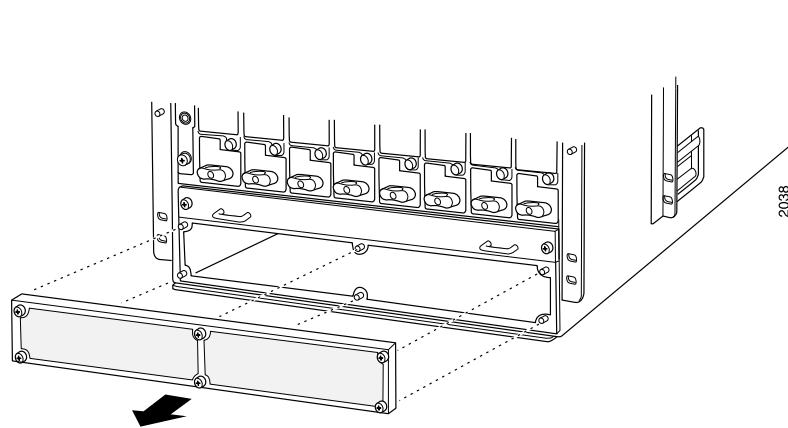
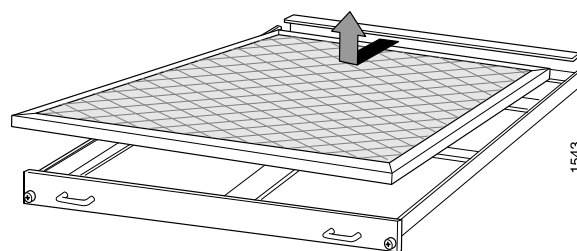


Figure 6: Replacing the Front Filter Element



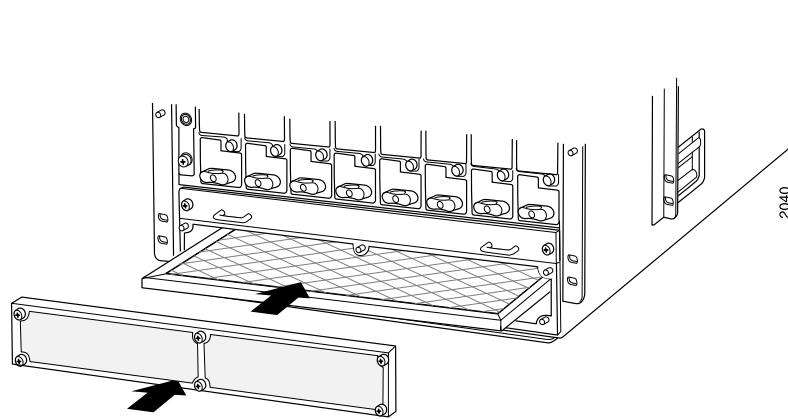
Installing a Front T320 Air Filter

To install the front air filter (see Figure 7):

1. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis.
2. Insert the filter element into the air filter frame.

3. Grasp the air filter by the handles on its faceplate, and slide it straight into the chassis.
4. Tighten the captive screws on the corners of the faceplate.
5. Unlock the cable management system, and lower it to the fully lowered position.
6. Rearrange the PIC cables in the cable management system.

Figure 7: Installing the Front Air Filter



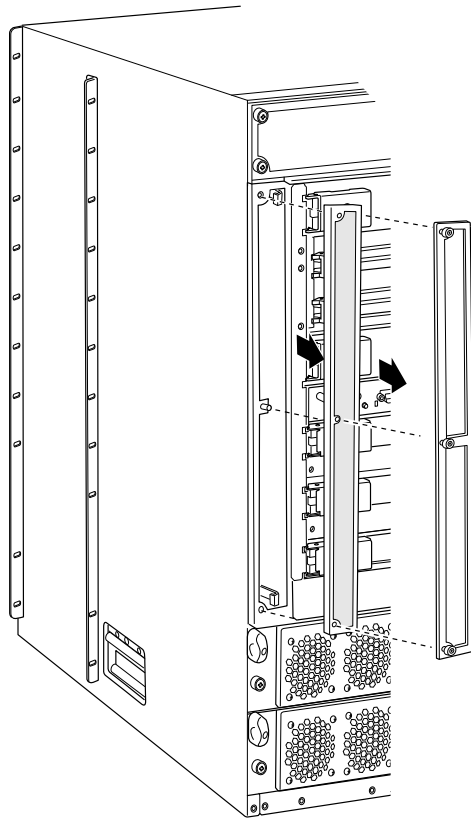
Removing a Rear T320 Air Filter

The rear air filter is located at the left rear edge of the chassis. The rear air filter weighs less than 1 lb (0.5 kg).

To remove the rear air filter:

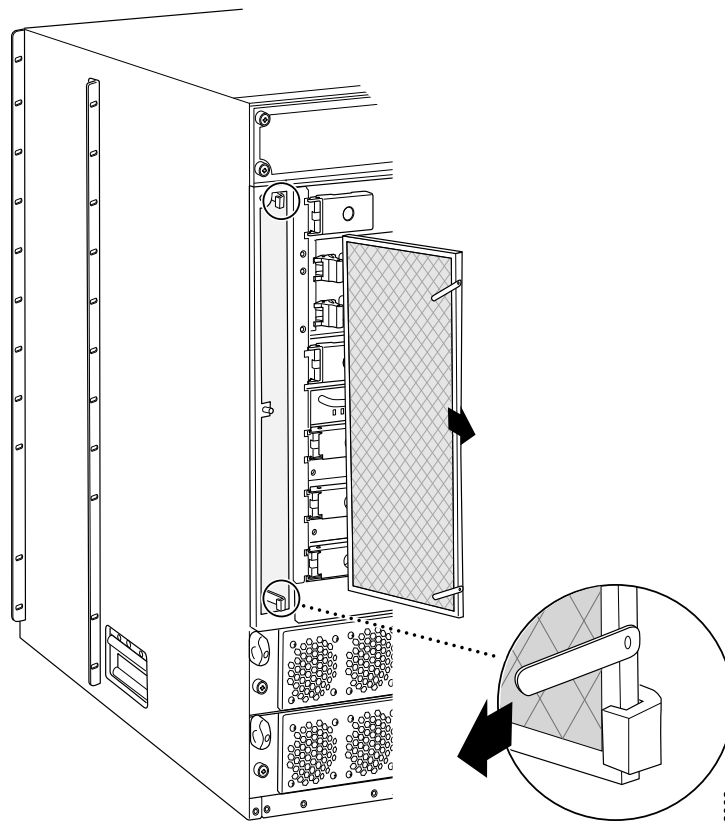
1. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis.
2. Loosen the captive screws at the top, center, and bottom of the air filter, using a Phillips (+) screwdriver, number 2.
3. Grasp the air filter cover by the captive screws, and pull firmly to remove the cover and honeycomb assembly from the chassis (see Figure 8).
4. Press the filter element inward until it clears the hooks at the top and bottom of the air filter slot, then push it to the left to unseat it.
5. Move the tabs on the filter element to a horizontal position.
6. Grasp the tabs on the filter element and carefully pull it straight out from the chassis (see Figure 9).

Figure 8: Removing the Rear Air Filter



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Figure 9: Removing the Rear Air Filter Element

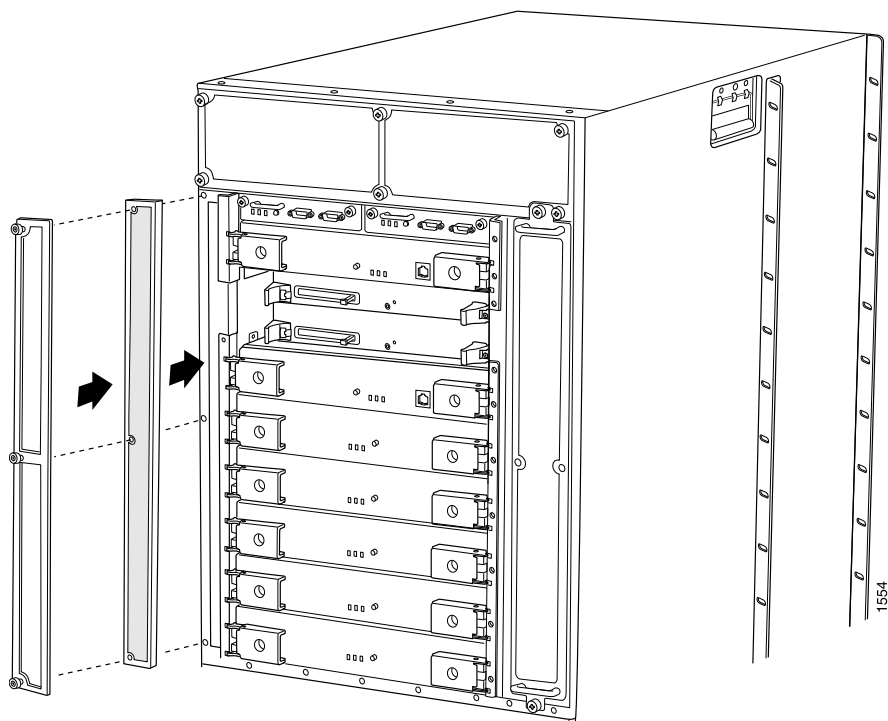


Installing a Rear T320 Air Filter

To install the rear air filter (see Figure 10):

1. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis.
2. Holding the filter by the tabs, carefully push the filter all the way into the air filter slot.
3. Holding the filter all the way in, push it to the right side of the slot until it is held in place behind the hooks.
4. Move the tabs to a vertical position.
5. Place the right edge of the honeycomb against the flange of the air filter slot.
6. Line up the holes at the top, center, and bottom of the honeycomb with the pins in the slot, and press the honeycomb into place.
7. Replace the air filter cover.
8. Firmly tighten the captive screws at the top, center, and bottom of the filter cover to secure it to the chassis, using a Phillips (+) screwdriver, number 2.

Figure 10: Installing the Rear Air Filter



- Related Topics**
- Preventing Electrostatic Discharge Damage to an M Series, MX Series, or T Series Router
 - Replacing the T320 Connections to Routing Engine Interface Ports
 - T320 Routing Engine Interface Cable and Wire Specifications
 - Maintaining the T320 Air Filters
 - T320 Cooling System Description
 - Troubleshooting the T320 Cooling System

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