



Replacing Upper or Lower Fan Tray

The upper fan tray draws air up through the chassis for cooling and ventilation. It then exhausts the heated air through the vents at the upper-rear of the chassis.

The lower fan tray draws air from the front and sides and pushes it through the chassis for cooling and ventilation.



Caution

Do not operate the chassis without the fan tray(s) installed. Doing so even for short periods of time may cause the system to overheat and result in component damage.

This chapter provides instructions for the removal and replacement of the upper and lower fan tray assemblies should there be a partial or complete failure of either one.



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 includes the following sections:

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- [Removing an Upper Fan Tray, page 3](#)
- [Installing an Upper Fan Tray, page 4](#)
- [Removing a Lower Fan Tray Assembly, page 4](#)
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Determining Whether a Fan Tray Needs Replacing

The system has several ways to indicate a fan tray failure. The first indicator is that the Status LED on the System Resource Card (SRC) turns red to indicate the failure of a chassis component.

If you see a red Status LED on the SRC, you can determine whether it is a fan tray failure via the CLI or by checking the Simple Network Management Protocol (SNMP) traps.

Using the CLI

To monitor chassis temperature and fan speed, issue the following CLI command in the Exec mode:

```
[local]host_name# show fans
```

The following is a sample output for this command:

```
Upper Fan Controller: State=All Running      Speed=Normal Temp=20 (C)
Lower Fan Controller: State=All Running      Speed=Normal Temp=20 (C)
```

Using SNMP Traps and MIB Objects

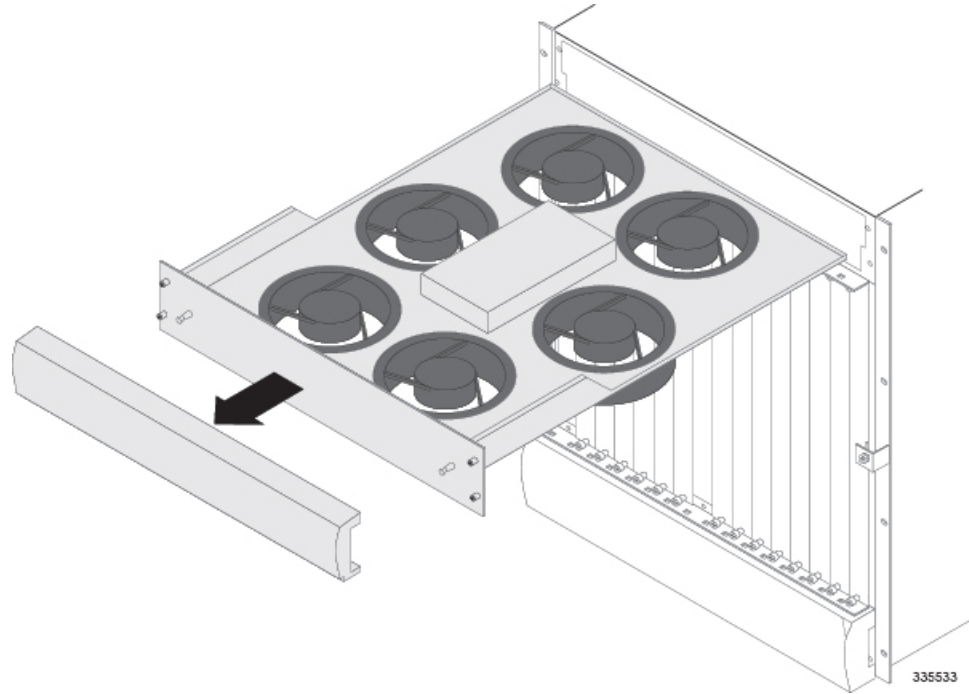
The system supports SNMP traps that are triggered for conditions that may indicate the need to change the fan tray. The system provides the traps listed in the table below.

Table 1: SNMP Traps for Fan Trays

SNMP Trap	Description
starFanFailed	One or more fans have failed on the indicated fan controller.
starFanRemoved	A fan tray has been removed.
starFanLocation	The physical location of the fan controller, upper or lower.
starFanFailures	The type of failure experienced:
	0: There are no errors. This is the normal operating condition.
	2: Multiple fans on the fan tray have failed.
	4: A single fan on the fan tray has failed.
	8: The redundant fan controller on the fan tray did not respond to the heartbeat signal.
	10: An error has occurred on the primary fan controller bus for the fan tray.
	20: An error has occurred on the redundant fan controller bus for the fan tray.
	40: An inter-bus communication error was experienced between the primary and redundant fan controllers on the fan tray.
80: The fan tray is not present.	
starFanSpeed	The speed of the fans controlled by this fan controller. The value normal(1) represents the normal operating speed of the fans. The value high(2) represents that the fans are running at a higher rate of speed.

Removing an Upper Fan Tray

Follow the instructions below to remove an upper fan tray from the chassis.



- Step 1** Remove the plastic bezel from the upper-front of the chassis by placing your fingers in the notches on the sides of the bezel and pulling it toward you.
- Step 2** Use a Phillips #1 screwdriver to loosen the four screws securing the fan tray.
- Step 3** Grasp the two bezel mounts on the front of the fan tray and pull toward you. The fan tray should easily slide out of the chassis.

The upper fan tray assembly contains multiple fans that are spinning at a high rate of speed when the system is powered on. If system is powered on, do not touch moving fans. To minimize the risk of personal injury and potential damage to equipment, follow these instructions.

- 1 Pull the fan tray towards you until the fan tray extends out of the chassis approximately two inches (5 cm).
- 2 Wait 30 seconds to allow fans to stop spinning.
- 3 Fully remove fan tray.

Die obere Lüfter Schublade enthält mehrere Lüfter. Verletzungsgefahr bei Berührung der Lüfter. Hohe Umdrehungszahl der Lüfter unter Stromanschluss. Vorsicht nicht berühren. Um persönliche Verletzungen und Geräteschaden zu verhüten bitte Anleitungen beachten.

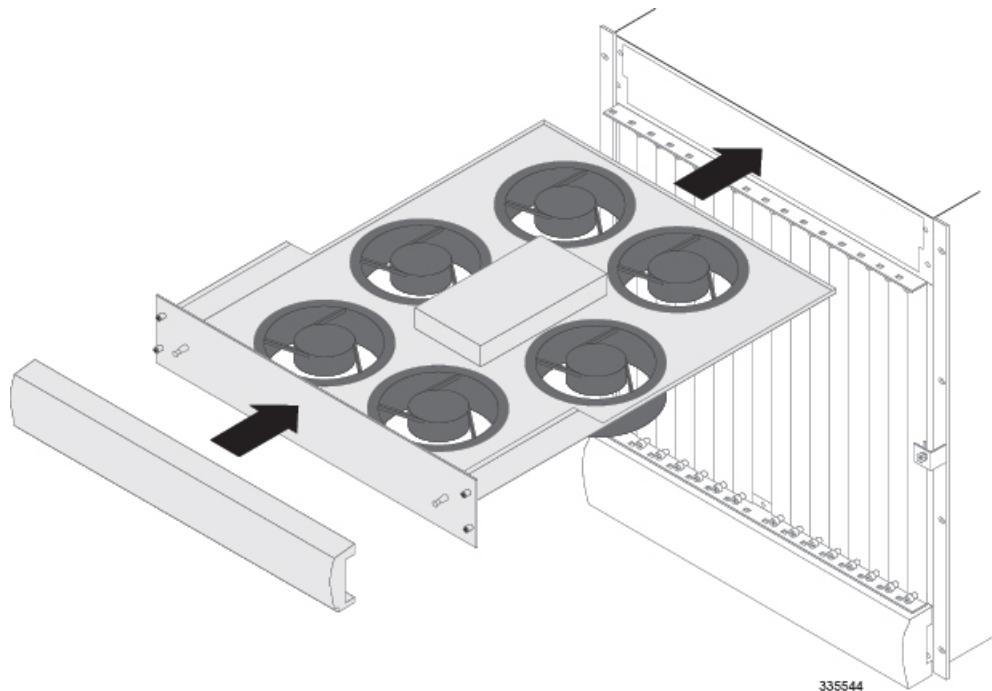
- 1 Schublade ca. 5cm herausziehen.
- 2 30 Sekunden warten bis die Lüfter zum stehen kommen.

3 Schublade erst jetzt komplett herausziehen.

Step 4 Proceed to [Installing an Upper Fan Tray](#), on page 4.

Installing an Upper Fan Tray

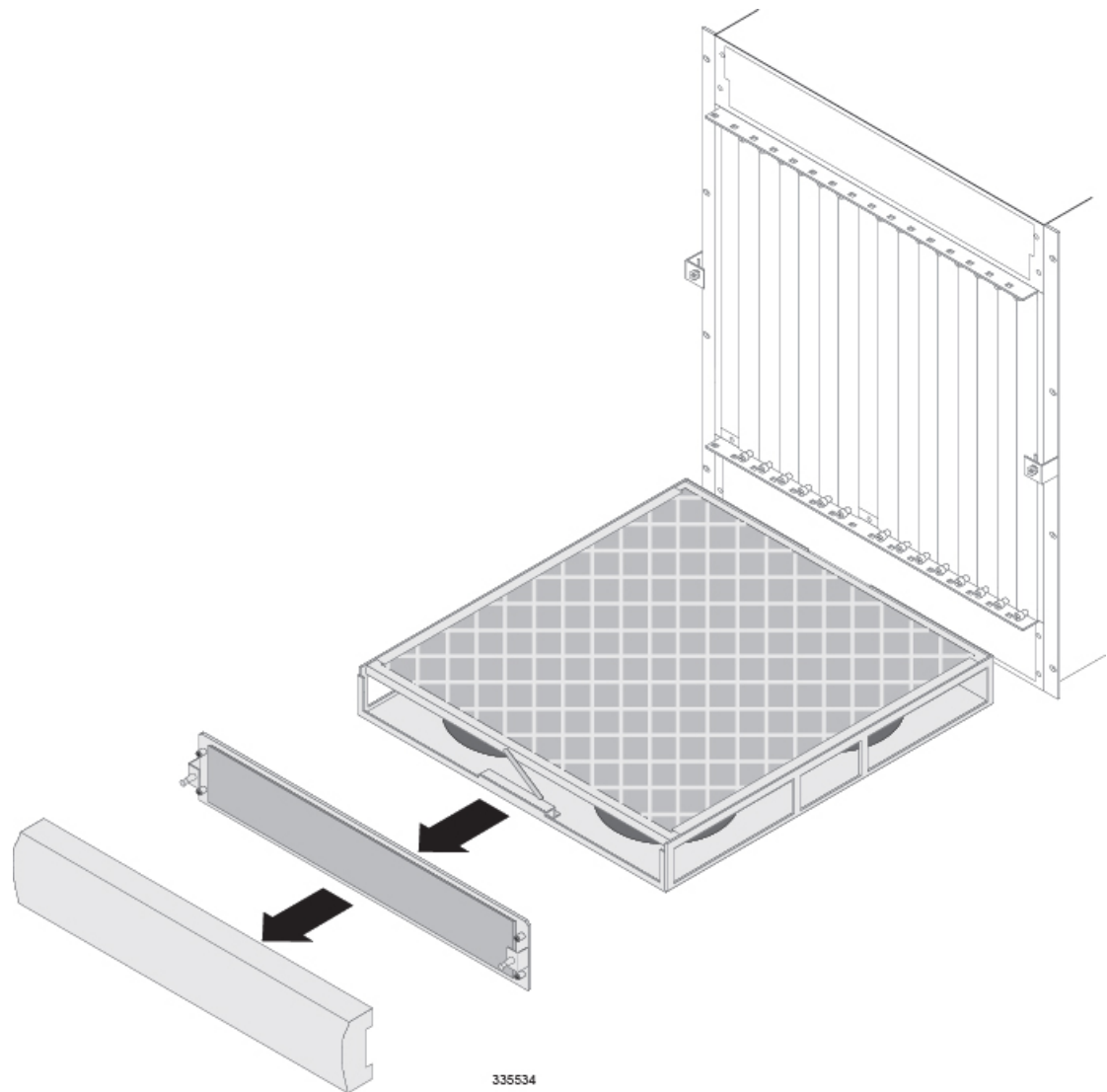
Follow the instructions below to install an upper fan tray.



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- Step 1** Hold the front of the fan tray by its sides and align it with the upper fan tray bay of the chassis.
- Step 2** Slowly slide the fan tray into the chassis along the guides until its face plate is flush against the chassis.
- Step 3** Use a Phillips #1 screwdriver to tighten the four screws on the face plate to secure the fan.
- Step 4** Replace the plastic bezel by aligning it over the bezel mounts that protrude from the fan tray and snapping the bezel in place.
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Removing a Lower Fan Tray Assembly

Follow the instructions below to remove a lower fan tray assembly from the chassis.



- Step 1** Unsnap the plastic bezel from the lower-front of the chassis by placing your fingers in the notches on its sides and pulling it toward you.
- Step 2** Use a Phillips #1 screwdriver to loosen the four captive screws that hold the fan tray cover/EMI shield in place. Pull the cover away from the chassis. **Do NOT use an electric or pneumatic torque driver to loosen these screws.**
- Step 3** Pull the fan tray toward you with the handle cut-out on the front of the fan tray assembly. The fan tray assembly should easily slide out of the chassis.

The upper fan tray assembly contains multiple fans that are spinning at a high rate of speed when the system is powered on. If system is powered on, do not touch moving fans. To minimize the risk of personal injury and potential damage to equipment, follow these instructions.

- 1 Pull the fan tray towards you until the fan tray extends out of the chassis approximately two inches (5 cm).
- 2 Wait 30 seconds to allow fans to stop spinning.

- 3 Fully remove the fan tray.

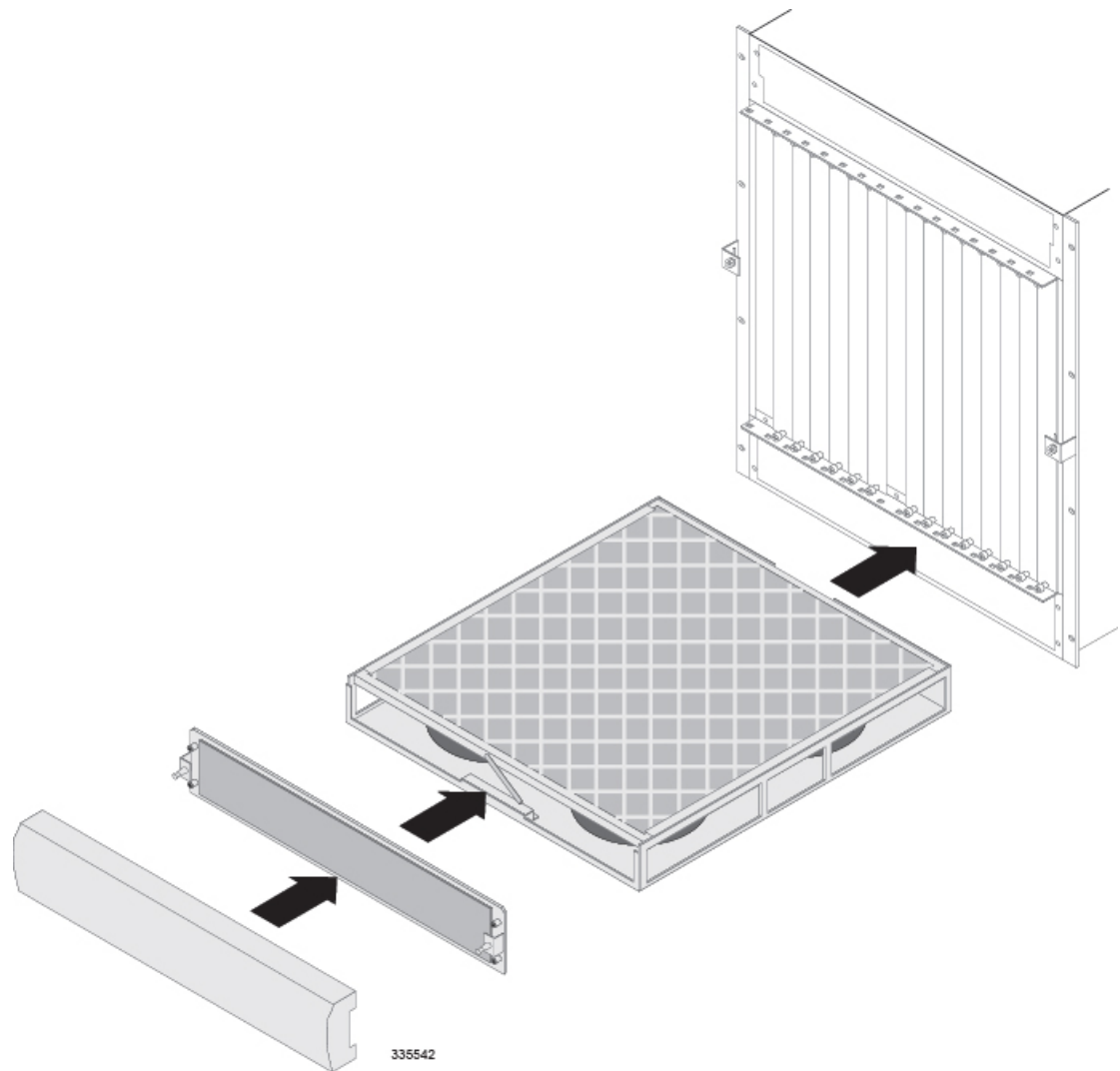
Die obere Lüfter Schublade enthaelt mehrere Lüfter. Verletzungsgefahr bei Beruehrung der Lüfter. Hohe Umdrehungszahl der Lüfter unter Stromanschluss. Vorsicht nicht beruehren. Um persoenliche Verletzungen und Geraeteschaeden zu verhueten bitte Anleitungen beachten.

- 1 Schublade ca. 5cm herausziehen.
- 2 30 Sekunden warten bis die Luefter zum stehen kommen.
- 3 Schublade erst jetzt komplett herausziehen.

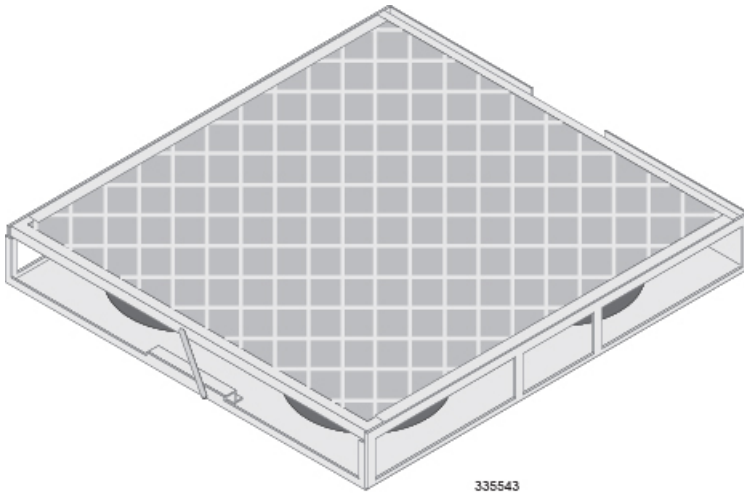
Step 4 Proceed to [Installing a Lower Fan Tray Assembly](#), on page 6.

Installing a Lower Fan Tray Assembly

Follow the instructions below to install a lower fan tray.



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- Step 1** Hold the front of the fan tray by its handle with one hand and use your other hand to align it with the lower fan tray bay of the chassis. The lower fan tray bay is located at the bottom front of the chassis.
- Step 2** Slowly slide the fan tray into the chassis along the guides until it is seated firmly in the chassis and can go no further.
- Step 3** Verify that the particulate filter is securely in place. Its front should be flush with the front of the fan tray assembly and its tab should be lowered to keep it in place.



- Step 4** Replace the fan tray bay cover/EMI shield. The perpendicular tabs on the cover should face away from the chassis and be positioned at the bottom. Use a Phillips #1 screwdriver to hand tighten the four captive screws in an alternating pattern – upper left, lower right, lower left, upper right (5 inch-lbf, 0.5 N-m). **Do NOT use an electric or pneumatic torque driver to tighten these screws.**
- Step 5** Replace the lower plastic bezel by aligning it over the bezel mounts that protrude from the fan tray bay cover and snapping the it in place.

What to do with the Failed Fan Tray

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

If the failed fan tray 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.