Dell PowerConnect W-6000 Fan Tray Installation Guide

The Dell PowerConnect W-6000 Fan Tray (HW-FT) provides air circulation for cooling the W-6000M3 modules in the PowerConnect W-6000 Controller chassis and is required for their normal operation. Normal operating temperature for the W-6000 chassis is between 0 to 40 ºC (32 to 104 ºF). If this temperature range is exceeded, the W-6000 will provide a warning through the software to alert users of the change. The following table describes these alarms and their thresholds:

Table 1 *Temperature Thresholds*

Alarm Severity	Threshold
Minor	40 ºC
Major	50 ºC
Critical	60 ºC

This chapter describes the general features and physical characteristics of the fan tray, and provides instructions for replacing the module if necessary.

Features

Built-in Redundancy

Three fans are provided in the fan tray. The module is designed to provide for cooling, even if one fan fails. Any two operating fans will provide enough airflow for proper cooling until the fan tray can be replaced.
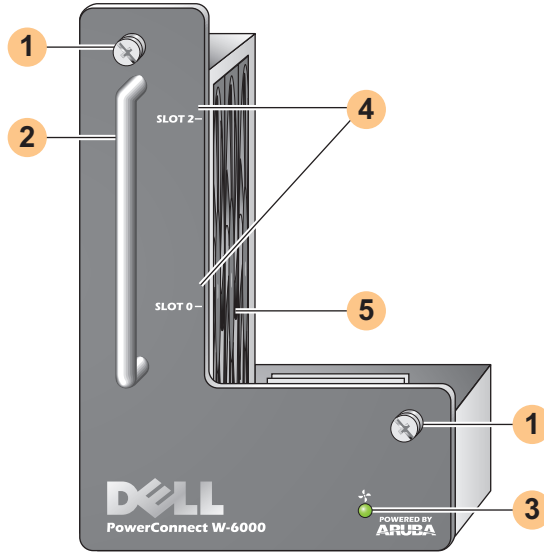
Hot Swap

Hot swapping should be performed by a trained technician. Hot swapping allows you to replace the fan tray without having to shut down the system. During the replacement operation, the chassis will continue to function without fans, though the procedure must be completed within one minute to resume proper cooling.

Physical Description

The fan tray slot is located on the left side of the W-6000 chassis and extends from the front of the chassis to the back.

Figure 1 *Dell W-6000 Series Fan Tray*

1. Module Fastening Screws: These captive screws are used for securing the module into the chassis fan tray slot.

2. Module Handle: This handle is used for removing or inserting the module into the chassis.

⚠ **CAUTION:** Do not use the fan tray handle to lift or move the W-6000. Serious damage could result.

3. Fan Status LED: During operation, the Fan Status LED provides the following information:

Table 2 *Fan Tray LED Behavior*

Status	Description
Off	The fan tray is not operating.
Green	The fan tray is receiving power and all three fans are operating properly.
Amber	One fan has failed, but the remaining two can provide proper cooling until the fan tray can be conveniently replaced.
Red	Two or more fans have failed. Replace the fan tray immediately.

📝 **NOTE:** In addition to the LEDs, the fan tray status and overall chassis temperature can be viewed using the CLI.

4. Slot Labels: When the fan tray is installed in the W-6000, these labels name the module slots to the immediate right of the fan tray.

5. Fans (on side): Three independent fans provide redundancy for cooling the W-6000 cards.

Replacing a Fan Tray

⚠ **CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

If hot swapping the fan tray, please be aware that there are time-critical aspects to parts of the procedure. To ensure proper preparation, please read through all the steps in the procedure before attempting the replacement.

Also, make sure you understand all the precautions in these steps as well as those on page 10.

Prepare the New Fan Tray

1. Unpack the new fan tray.
2. Inspect the new fan tray to verify that it is undamaged.
3. Place the new fan tray in a safe, accessible place near the chassis, ready for prompt insertion.
4. Locate a #2 Phillips or cross-head screwdriver.

Remove the Old Fan Tray

1. Loosen the fan tray's fastening screws.

   At the front of the W-6000, use the screwdriver to loosen both of the fastening screws on the faceplate of the installed fan tray. The screws loosen with counter-clockwise rotation, but are captive and cannot be fully removed.

2. Disengage the fan tray.

   Grasp the module handle firmly and draw the fan tray forward from its slot. There may be moderate resistance as the module comes free from its connections with the chassis backplane, but do not use excessive force.

   When the module is fully disengaged from the backplane, power to the working fans is lost and they will gradually stop spinning.

⚠ **CAUTION:** The fans will continue to spin for a short while, even though there is no power to them. Wait for the fans to stop spinning before removing the fan tray.

Also, when hot swapping, once the fans stop spinning, the W-6000 will continue to operate, though heat will begin to build in the operational components. From this point, there is a limited time (one minute) before installation of the new fan tray must be completed.

The one minute limit must be adhered to since the W-6000 does not have a thermal shutdown function. If you cannot replace the fan tray within one minute, shut down the controller.

3. Once disengaged, the fan tray should easily slide out of the chassis. Fully remove the fan tray and place it safely aside.

Insert the New Fan Tray

1. Pick up the new fan tray by the handle provided on its front panel.
2. Carefully insert the fan tray into the chassis fan tray slot.

   Align the rear of the fan tray with the guide rails in the chassis fan tray slot and slide it gently toward the backplane. The module should slide in easily most of the way.

3. Engage the fan tray.

As the fan tray reaches the back of the chassis, moderate resistance may be felt. Press firmly so the connectors at the back of the module engage with the backplane, but do not use excessive force.

When hot swapping the fan tray and when the connectors are properly engaged, power to the fans should be restored and they should start spinning.

4. Check the fans to verify all of them are working.

Once power has been restored to the fan tray, either by engaging the module to the backplane during hot-swap or by turning on system power after a cold-swap, the Fan Status LED should be green and you should be able to feel significant airflow blowing from the chassis vents at each fan position.

If the fans are all working, this ends the time critical portion of the hot-swap procedure.

If *one* of the fans in a newly hot-swapped fan tray does not work (yellow Fan Status LED), allow at least three minutes for the remaining fans to cool the chassis before attempting another hot-swap replacement.

> ⚠ **CAUTION:** If two or more fans in the newly hot-swapped fan tray do not work (the Fan Status LED is red), shut down the W-6000, replace the fan tray, and allow the W-6000 at least five minutes to cool before turning it back on.

5. Secure the fan tray.

Use the screwdriver to push in and tighten both of the fastening screws on the faceplate of the newly installed fan tray. Rotate the screws clockwise until moderate resistance is felt, but do not over-tighten.

Safety and Regulatory Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class A digital apparatus complies with Canadian ICES-003.
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