



Replacing a Power-Fan CRU in the ST2501 M2 Drive Module

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Revision History

Version and Date	Description of Changes
51343-00, Rev. A May 2011	Initial release of the document.

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Replacing a Power-Fan CRU in the ST2501 M2 Drive Module

Use one of these procedures to replace a failed power-fan CRU in the ST2501 M2 drive module. If your storage array uses AC power, use the procedure on page 1. If your storage array uses DC power, use the procedure on page 4.

Before you start to replace the power-fan CRU in the ST2501 M2 drive module, gather antistatic protection and the appropriate replacement power-fan CRU (AC power or DC power)



ATTENTION Possible equipment failure – Before starting this procedure, make sure that you have the correct power-fan CRU for your particular hardware configuration. If you are performing a hardware reconfiguration, make sure you have the correct replacement power-fan CRU to support the particular controller module or array module to which your ST2501 M2 drive module is to be attached. Using a power-fan CRU with the wrong power supply can cause your storage array to power down and stop working because of the power supply mismatch.

Replacing an AC Power-Fan Canister in the ST2501 M2 Drive Module

In this procedure, you will replace a failed AC power-fan canister with a new AC power-fan canister.

Before you start to replace the AC power-fan CRU in the drive module, gather antistatic protection and a replacement AC power-fan CRU.



ATTENTION Possible equipment damage – If you perform this procedure with the power turned on, you must complete it within three minutes to prevent the possibility of overheating the equipment.

You can determine whether you have a failed power-fan canister in two ways:

- The Recovery Guru directs you to replace a failed power-fan canister.
 - You locate the failed power-fan canister by checking the amber Power-Fan Service Action Required LED.
1. Gather support data through one of the following methods:
 - Use the storage management software to collect and save a support bundle of your storage array. From the Array Management Window, select **Advanced >> Troubleshooting >> Support Data >> Collect**. Then name and specify a location on your system where you want to store the support bundle.
 - Use the command line interface (CLI) to run the `save storageArray supportData` command to gather comprehensive support data about the storage array. For more information about this command, refer to *Command Line Interface and Script Commands*. Running this command can temporarily impact performance on your storage array.
 2. Did the Recovery Guru direct you to replace a failed power-fan CRU?
 - **Yes** – Go to step 3.
 - **No** – Run the Recovery Guru to identify the failed component.



ATTENTION Possible damage due to overheating – To avoid taking the wrong power-fan CRU offline, contact your Sun Customer Care Center representative before performing step 3.

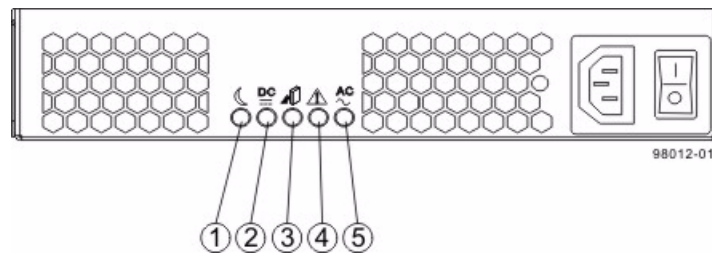
3. If the Recovery Guru has directed you to replace the power-fan CRU and the blue Power-Fan Service Action Allowed LED is not on, type this command on the command line, and press Enter:

```
SMcli <ctrl_IP1> -c "Set module [moduleID] powerfanCanister [left|right]
service Allowed Indicator=on;"
```

In this command:

- <ctrl_IP1> is the identifier of the controller to which the drive module is assigned.
 - [moduleID] is the identifier of the drive module that contains the power-fan CRU that you want to replace. Drive module ID values are 0 to 99. Be sure to type the square brackets around the identifier.
 - [left|right] is the identifier of the power-fan CRU you want to replace. Valid values are left or right. Be sure to type the square brackets around the value.
4. Put on antistatic protection.
 5. Unpack the new AC power-fan CRU.
 - a. Set the new power-fan CRU on a flat, static-free surface near the drive module.
 - b. Save all packing materials in case you need to return the power-fan CRU.
 6. Check the Power-Fan Service Action Required LED to locate the failed AC power-fan CRU (Figure 1).

Figure 1 LEDs on an AC Power-Fan CRU



1. Standby Power LED (Green)
2. Power-Fan Output DC Power LED (Green)
3. Power-Fan Service Action Allowed LED (Blue)
4. Power-Fan Service Action Required LED (Amber)
5. Power-Fan Input AC Power LED (Green)

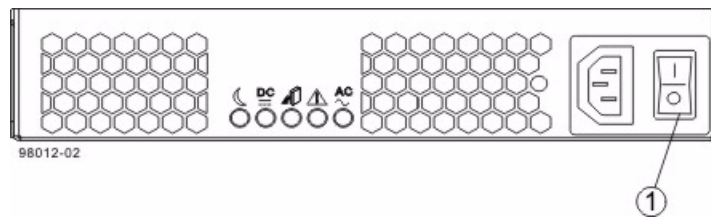


WARNING (W02) Risk of electrical shock – Before removing or installing a power supply, turn off the power switch, and unplug the power cord.

If a fault is detected, the amber Power-Fan Service Action Required LED is on. If you can safely remove the power-fan CRU, the blue Power-Fan Service Action Allowed LED is on.

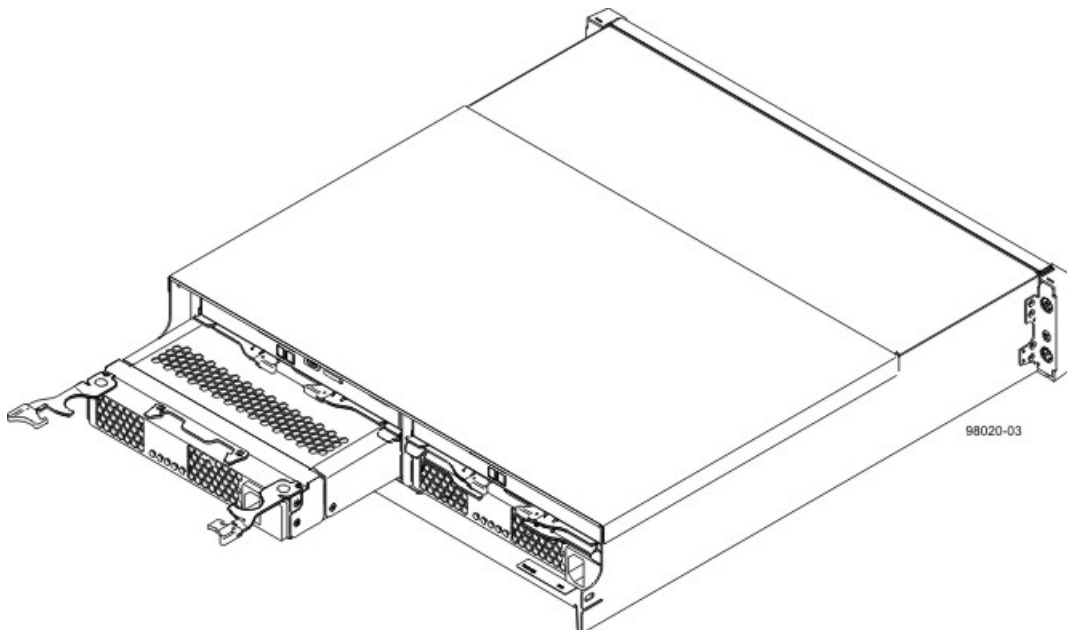
7. Turn off the AC Power switch on the AC power-fan canister that has failed (Figure 2).

Figure 2 AC Power Switch on the Drive Module



1. AC Power Switch
8. Remove the plastic strain relief from the AC power cord.
9. Unplug the AC power cord from the failed AC power-fan CRU.
10. Remove the power-fan CRU from the drive module.
 - a. Rotate the latches outward to disengage the power-fan CRU.
 - b. Use the latches as handles to pull the power-fan CRU out of the drive module.

Figure 3 Removing a Power-Fan CRU



11. Make sure that the AC Power switch on the replacement power-fan CRU is turned off, and plug in the AC power cord.
12. Slide the replacement power-fan CRU all the way into the drive module. Rotate the latches towards the center to lock the power-fan CRU into place.
13. Attach the plastic strain relief to the power cord, and make sure that it fits snugly up against the power-fan CRU.
14. Turn on the AC Power switch on the new power-fan CRU.
15. Check the Power-Fan Output DC Power LED, the Power-Fan Input AC Power LED, and the Power-Fan Service Action Required LED on the new power-fan CRU (Figure 1 on page 2).
16. Based on the LED status, perform one of these actions:

- **The Power-Fan Output DC Power LED and the Power-Fan Input AC Power LED are on and the Power-Fan Service Action Required LED is off** – Go to step 18.
 - **The Power-Fan Output DC Power LED and the Power-Fan Input AC Power LED are off or the Power-Fan Service Action Required LED is on** – Check that the power-fan CRU is installed correctly. Reinstall the power-fan CRU. Go to step 17.
17. Did this action correct the problem?
- **Yes** – Go to step 18.
 - **No** – If the problem has not been resolved, contact your Sun Customer Care Center representative.
18. Using the LEDs and the storage management software, check the status of all of the modules in the storage array.
19. Does any component have a Needs Attention status?
- **Yes** – Click the **Recovery Guru** toolbar button in the Array Management Window, and complete the recovery procedure. If the problem has not been resolved, contact your Sun Customer Care Center representative.
 - **No** – Go to step 20.
20. Remove the antistatic protection.
21. Gather support data on your updated storage array through one of the following methods:
- Use the storage management software to collect and save a support bundle of your storage array. From the Array Management Window, select **Advanced >> Troubleshooting >> Support Data >> Collect**. Then name and specify a location on your system where you want to store the support bundle.
 - Use the CLI to run the `save storageArray supportData` command to gather comprehensive support data about the storage array. For more information about this command, refer to *Command Line Interface and Script Commands*. Running this command can temporarily impact performance on your storage array.

Replacing a DC Power-Fan Canister in the ST2501 M2 Drive Module

In this procedure, you will replace a failed DC power-fan canister with a new DC power-fan canister.

Before you start to replace the power-fan CRU in the drive module, gather antistatic protection and a replacement DC power-fan CRU.



ATTENTION Possible equipment damage – If you perform this procedure with the power turned on, you must complete it within three minutes to prevent the possibility of overheating the equipment.

You can determine whether you have a failed power-fan canister in two ways:

The Recovery Guru directs you to replace a failed power-fan canister.

You locate the failed power-fan canister by checking the Power-Fan Service Action Required LED.



ATTENTION Possible hardware damage – To prevent electrostatic discharge damage to the module, use proper antistatic protection when handling module components.

1. Gather support data through one of these methods:
 - Use the storage management software to collect and save a support bundle of your storage array. From the Array Management Window, select **Advanced >> Troubleshooting >> Support Data >> Collect**. Then name and specify a location on your system where you want to store the support bundle.
 - Use the command line interface (CLI) to run the `save storageArray supportData` command to gather comprehensive support data about the storage array. For more information about this command, refer to *Command Line Interface and Script Commands*. Running this command can temporarily impact performance on your storage array.
2. Did the Recovery Guru direct you to replace a failed power-fan CRU?
 - **Yes** – Go to step 3.
 - **No** – Run the Recovery Guru to identify the failed component.



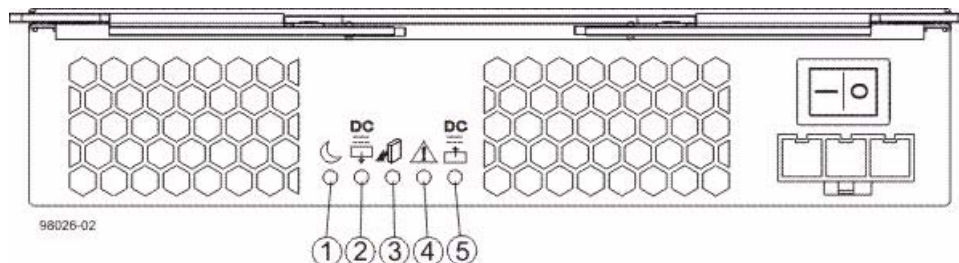
ATTENTION Possible damage due to overheating – To avoid taking the wrong power-fan CRU offline, contact your Sun Customer Care Center representative before performing step 3.

3. If the Recovery Guru has directed you to replace the power-fan CRU and the blue Power-Fan Service Action Allowed LED is not on, type this command on the command line, and press Enter:


```
SMcli <ctrl_IP1> -c "Set module [moduleID] powerfanCanister [left|right]
service Allowed Indicator=on;"
```

 In this command:
 - `<ctrl_IP1>` is the identifier of the controller to which the drive module is assigned.
 - `[moduleID]` is the identifier of the drive module that contains the power-fan CRU you want to replace. Drive module ID values are 0 to 99. Be sure to type the square brackets around the identifier.
 - `[left|right]` is the identifier of the power-fan CRU you want to replace. Valid values are `left` or `right`. Be sure to type the square brackets around the value.
4. Put on antistatic protection.
5. Unpack the new power-fan CRU.
 - a. Set the new power-fan CRU on a flat, static-free surface near the drive module.
 - b. Save all packing materials in case you need to return the power-fan CRU.
6. Check the Power-Fan Service Action Required LED to locate the failed DC power-fan CRU (Figure 4).

Figure 4 LEDs on a DC Power-Fan CRU



1. Standby Power LED (Green)
2. Power-Fan Output DC Power LED (Green)
3. Power-Fan Service Action Allowed LED (Blue)
4. Power-Fan Service Action Required LED (Amber)

5. Power-Fan Input DC Power LED (Green)



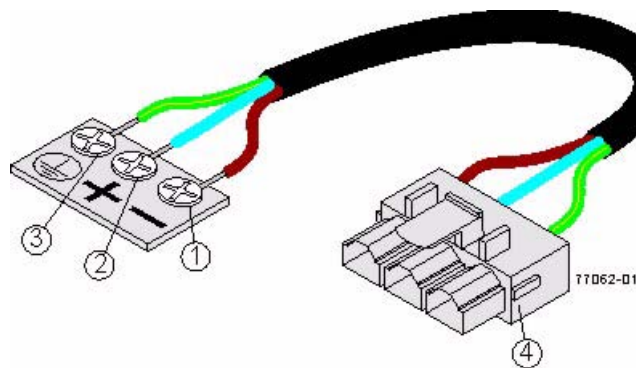
WARNING (W02) Risk of electrical shock – Before removing or installing a power supply, turn off the power switch, and unplug the power cord.

If a fault is detected, the amber Fan Service Action Required LED is on. If you can safely remove the power-fan CRU, the blue Fan Service Action Allowed LED is on.

7. Turn off the Power switch on the DC power-fan canister that has failed.



WARNING (W12) Risk of electrical shock – This unit has more than one power source. To remove all power from the unit, all DC MAINS must be disconnected by removing all power connectors (item 4 below) from the power supplies.



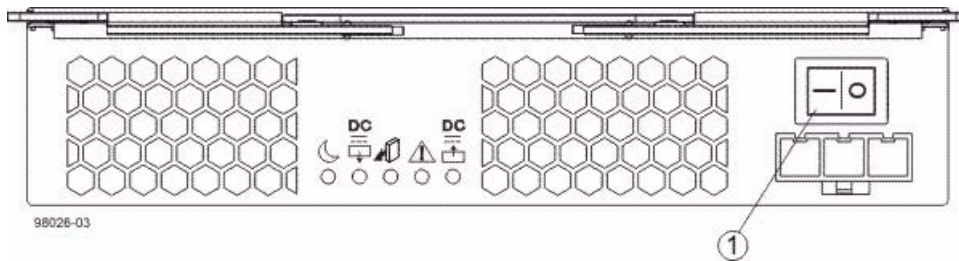
1. Supply (Negative), Brown Wire –48VDC
2. Return (Positive), Blue Wire
3. Ground, Green and Yellow Wire
4. DC Power Connector)



CAUTION (C05) Electrical grounding hazard – This equipment is designed to permit the connection of the DC supply circuit to the earthing conductor at the equipment.

8. Disconnect the two-pole 30-amp circuit breaker.
9. Turn off both of the DC Power switches on all DC-powered modules in the storage array.

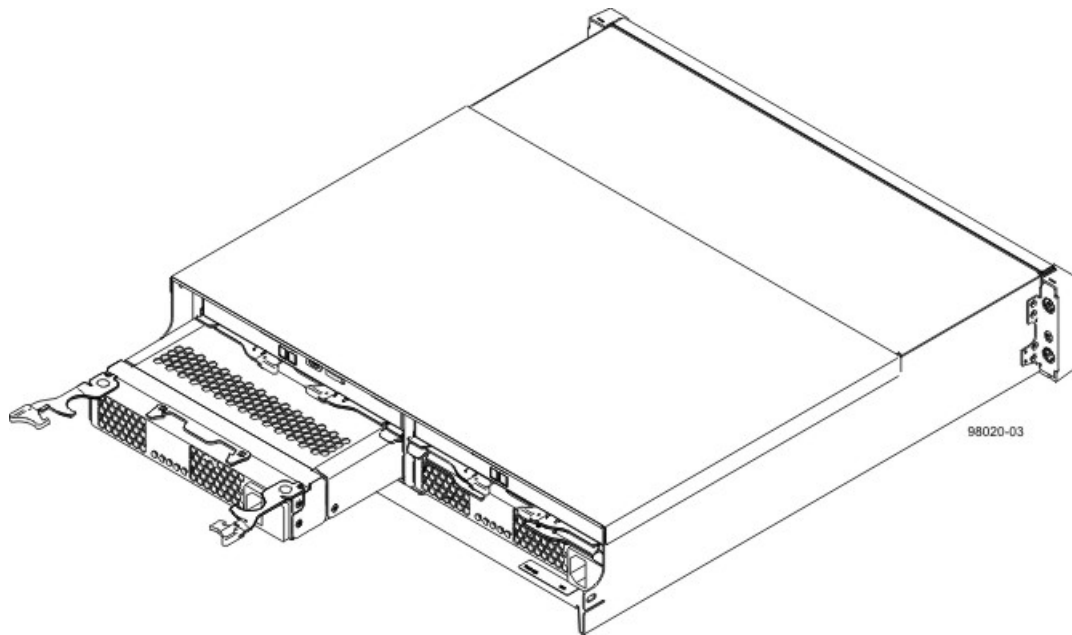
Figure 5 Power Switch on a DC Power-Fan CRU



1. DC Power switch

10. Remove the plastic strain relief from the DC power cord.
11. Unplug the DC power connector from the failed DC power-fan CRU.
12. Remove the power-fan CRU from the drive module.
 - a. Rotate the latches outward to disengage the power-fan CRU.
 - b. Use the latches as handles to pull the power-fan CRU out of the drive module.

Figure 6 Removing a DC Power-Fan CRU



13. Slide the replacement fan CRU all the way into the drive module. Rotate the latches towards the center to lock the power-fan CRU into place.
14. Make sure that the Power switch on the replacement power-fan CRU is turned off, and plug in the DC power cord.
15. Attach the plastic strain relief to the DC power cord, and make sure that it fits snugly up against the power-fan CRU.
16. Connect the two-pole 30-amp DC circuit breaker.
17. Turn on both of the Power switches on all of the DC-powered drive modules and DC-powered array modules in the storage array.
18. Check the Power-Fan Output DC Power LED, the Power-Fan Input DC Power LED, and the Power-Fan Service Action Required LED on the new power-fan CRU ([Figure 4](#) on page 5).
19. Based on the LED status, perform one of these actions:
 - **The Power-Fan Output DC Power LED and the Power-Fan Input DC Power LED are on and the Power-Fan Service Action Required LED is off** – Go to step 21.
 - **The Power-Fan Output DC Power LED or the Power-Fan Input DC Power LED is off or the Power-Fan Service Action Required LED is on** – Check that the power-fan CRU is installed correctly. Reinstall the fan CRU. Go to step 20.
20. Did this action correct the problem?
 - **Yes** – Go to step 21.
 - **No** – If the problem has not been resolved, contact your Sun Customer Care Center representative.

21. Using the LEDs and the storage management software, check the status of all of the modules in the storage array.
22. Does any component have a Needs Attention status?
 - **Yes** – Click the **Recovery Guru** toolbar button in the Array Management Window, and complete the recovery procedure. If the problem has not been resolved, contact your Sun Customer Care Center representative.
 - **No** – Go to step [23](#).
23. Remove the antistatic protection.
24. Gather support data on your updated storage array through one of these methods:
 - Use the storage management software to collect and save a support bundle of your storage array. From the Array Management Window, select **Advanced >> Troubleshooting >> Support Data >> Collect**. Then name and specify a location on your system where you want to store the support bundle.
 - Use the CLI to run the `save storageArray supportData` command to gather comprehensive support data about the storage array. For more information about this command, refer to *Command Line Interface and Script Commands*. Running this command can temporarily impact performance on your storage array.

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