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Control Processor Blade (CP8)

Replacement Procedure

Supporting Fabric OS v6.0.0 through v6.3.x (as compatible with supported hardware)

Supporting PowerConnect B-DCX-4S and PowerConnect B-DCX Backbone

53-1001806-01



Notes, Cautions, and Warnings

NOTE

A NOTE indicates important information that helps you make better use of your computer.



CAUTION

See the safety and regulatory information that shipped with your system. For additional regulatory information, see the Regulatory Compliance Homepage on www.dell.com at the following location: www.dell.com/regulatory_compliance.



CAUTION

A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.



DANGER

A DANGER indicates a potential for property damage, personal injury, or death.

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Regulatory Model Codes: Brocade DCX-4S, Brocade DCX

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Introduction

This document describes how to remove and replace a control processor (CP8) blade. Each PowerConnect B-DCX-4S and PowerConnect B-DCX has two CP8 blades. In the DCX-4S they are located in slots 4 and 5. In the DCX they are located in slots 6 and 7.

NOTE

If the new CP blade does not have the same firmware as the active CP blade, the new blade must be upgraded to the same firmware version.

Time and items required

The replacement procedure for the CP blade takes approximately 30 minutes. The following items are required for the CP blade replacement:

- ESD (electrostatic discharge) grounding strap
- Workstation computer
- Serial cable
- IP address of an FTP server for backing up the backbone configuration
- Phillips #2 screwdriver
- Replacement CP8 blade.

Verifying the necessity of replacement

Confirm that you need to replace the CP blade. The following events might indicate that a CP blade is faulty:

- The status LED on the CP blade is lit steady amber, or the power LED is not lit.
- The CP blade does not respond to Telnet commands, or the serial console is not available.
- The **slotShow** command does not show that the CP blade is enabled.
- The **haShow** command indicates an error.
- The clock is inaccurate, or the CP blade does not boot up or shut down normally.
- Any of the following messages display in the error log:

- “Slot unknown” message relating to a CP slot
- CP blade errors or I²C timeouts
- FRU: FRU_FAULTY messages for a CP blade
- Configuration loader messages or “Sys PCI config” messages
- Generic system driver messages (“FABSYS”)
- Platform system driver messages (“Platform”)
- EM messages that indicate a problem with a CP blade
- Function fail messages for the CP master

For more information about error messages, refer to the *Fabric OS Message Reference*.

Recording critical backbone information

Back up the backbone configuration before you replace a CP blade. Refer to the *Fabric OS Administrator’s Guide* for backup information.

ATTENTION

The instructions below reference specific slot numbers. these numbers will be different between the PowerConnect B-DCX-4S and PowerConnect B-DCX.

1. Log in to the functioning CP blade as admin, using the serial console connection.
2. Type **haShow** to determine which CP blade is active:

```
swDir:admin> haShow
Local CP (Slot 7, CP1) : Active
Remote CP (Slot 6, CP0) : Standby, Healthy
HA Enabled, Heartbeat Up, HA State Synchronized
```

3. If the functioning CP blade is performing as the active CP blade, go to [step 4](#). If the faulty CP blade is performing as the active CP blade, fail over the blades:

- a. Log in to the faulty CP blade as admin, using a serial console connection.

If you connect successfully to the faulty CP, continue to step b.

If you cannot connect to the faulty CP, remove the faulty CP blade for repair as follows:

- Turn the CP blade off and notify the backbone of a hot swap request by sliding the slider switch in the top ejector down to the off position ([Figure 1](#)).
- Wait until the active CP LED on the functioning CP blade is lit. Remove the faulty CP blade.

- b. Type **haFailover**. The functioning CP blade becomes the active CP blade.

- c. Wait until the status LED on the functioning CP blade is no longer lit.

- d. Type **haShow** from the functioning CP blade (the new active CP blade) to verify the failover.

Depending on the failure mode of the faulty CP blade, the haShow output may not show the “HA State Synchronized” message but may indicate that the system is in non-redundant mode.

This is an example of failing over a CP blade:

Fabric OS (cp1)

```
cp1 login: admin
Password:
swDir:admin> hashow
Local CP (Slot 7, CP1): Active
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
swDir:admin> hafailover
Local CP (Slot 7, CP1): Active
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
```

Warning: This command is being run on a redundant control processor(CP) system. If the above status does not indicate 'HA State synchronized', then the CPs are not synchronized and this operation will cause the active CP to reset. This will cause disruption to devices attached to both switch 0 and switch 1 and will require that existing Telnet sessions be restarted. To reboot a single logical switch on this system, use the switchreboot command while logged in to that logical switch.

Are you sure you want to fail over to the standby CP [y/n]?

```
swDir:admin> haShow
Local CP (Slot 7, CP1) : Standby, Healthy
Remote CP (Slot 6, CP0) : Active
HA Enabled, Heartbeat Up, HA State Synchronized
```

4. Type **firmwareShow** to note the firmware version of the active CP blade.
5. Type **haDisable** from the active CP blade to prevent failover or communication between the CP blades during the replacement.
6. Logged into the active CP, use the **configUpload** command to upload the backbone configuration to a specified FTP server. Enter information at the prompts.

NOTE

For FOS 6.2.0 and above, the format of the command will look different from the example below. See the *Fabric OS Command Reference Manual* and the *Fabric OS Administrator's Guide* for more information about the command.

This is a sample of backing up the configuration files:

```
swDir:admin> configUpload
Protocol (scp or ftp) [ftp]: ftp
Server Name or IP Address [host]: 123.456.78.90
User Name [None]: user
File Name [config.txt]: config.txt
Password: xxxxxxxx
upload complete
```

Once the upload is complete, stay logged in and move on to [“Removing a control processor blade \(CP8\).”](#)

Removing a control processor blade (CP8)

The PowerConnect B-DCX continues to operate while a CP blade is being replaced if the redundant CP blade is active and a failover does not occur. You can prevent failover by entering the **haDisable** command.

ATTENTION

The instructions below refer to the top and bottom of each blade in the vertical orientation as used in the PowerConnect B-DCX. For the PowerConnect B-DCX-4S, because the blades are horizontally oriented, top should be read as left and bottom should be read as right.

ATTENTION

Follow ESD precautions (see “ESD Precautions” in your chassis’ hardware reference manual).

NOTE

The CP8 blade is compatible only with the PowerConnect B-DCX-4S Backbone and the PowerConnect B-DCX Backbone.

1. Remove the chassis door (see the *Chassis Door Replacement Procedure* for your chassis).
2. Power off the faulty blade by sliding the slider switch in the top ejector down to the off position ([Figure 1](#)).
3. Disconnect all cables from the faulty (standby) CP.
4. Unscrew the thumb screw from both ejectors using the Phillips screwdriver.
5. Lever open both ejector handles simultaneously to approximately 45 degrees and pull the CP blade out of the chassis ([Figure 1](#) and [Figure 2](#)).

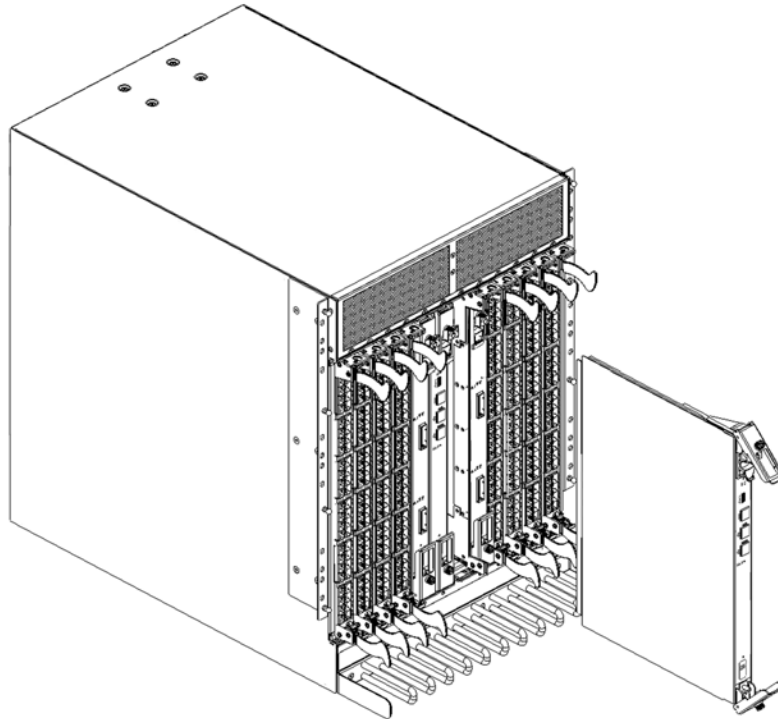


FIGURE 1 Control processor blade (CP8) in a DCX chassis

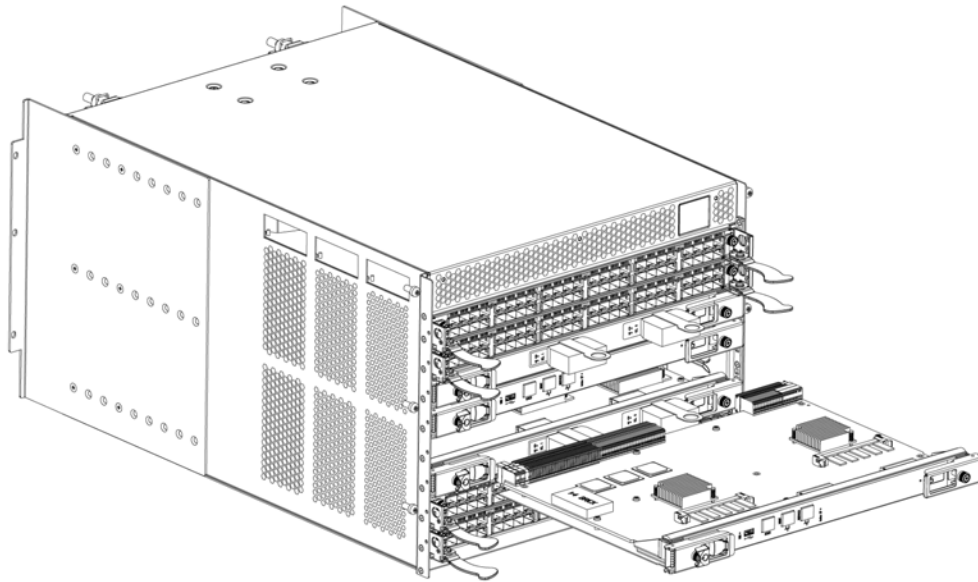


FIGURE 2 Control processor blade (CP8) in a DCX-4S chassis

Replacing a control processor blade (CP8)

ATTENTION

The instructions below refer to the top and bottom of each blade in the vertical orientation as used in the PowerConnect B-DCX. For the PowerConnect B-DCX-4S, because the blades are horizontally oriented, top should be read as left and bottom should be read as right.

ATTENTION

Follow ESD precautions (see “ESD Precautions” in your chassis’ hardware reference manual).



CAUTION

Use the same version of Fabric OS on both CP blades. Using different versions is not supported and might cause malfunctioning. If the replacement CP blade has a different version of Fabric OS, bring both blades to the same firmware version.

1. Open the ejector handles to approximately 45 degrees. For the DCX, orient the CP blade so that the handles are toward you and the flat metal side is on your left. For the DCX-4S, the flat metal side should be on the bottom.
2. Align the flat metal side of the CP blade inside the lower and upper blade guides in the slot. Slide the CP blade into the slot until it is firmly seated.
3. Tighten the thumb screw inside each handle using the Phillips screwdriver.
4. Turn the CP blade on by sliding the ON/OFF switch in the top handle up, to cover the thumb screw.
5. Verify that the power LED is green. If not, ensure that the CP blade has power and is firmly seated and that the ejectors are in the locked position.
6. Connect the cables to the new CP blade.

7. Verify the installation (“Verifying operation of the new CP blade”).
8. Replace the chassis door (see the *Chassis Door Replacement Procedure* for your chassis).
9. Remain logged in to the active CP and continue to “Verifying operation of the new CP blade.”

Verifying operation of the new CP blade

ATTENTION

The instructions below reference specific slot numbers. these numbers will be different between the PowerConnect B-DCX-4S and PowerConnect B-DCX.

To verify that boot and POST are complete on the new CP blade and that the CP blade has achieved failover redundancy, perform the following steps.

1. Type **slotShow**. The command output shows the new CP blade as “enabled”:

```
rsl8-st03-dcx-1:admin> slotShow
```

Slot	Blade Type	ID	Status
1	SW BLADE	16	ENABLED
2	SW BLADE	16	ENABLED
3	SW BLADE	16	ENABLED
4	SW BLADE	16	ENABLED
5	CR BLADE	17	ENABLED
6	CP BLADE	18	ENABLED
7	CP BLADE	18	ENABLED
8	CR BLADE	17	ENABLED
9	SW BLADE	16	ENABLED
10	SW BLADE	16	ENABLED
11	SW BLADE	16	ENABLED
12	SW BLADE	16	ENABLED

```
rsl8-st03-dcx-1:admin>
```

2. Determine the version by typing **firmwareShow**.

This example shows sample output for the **firmwareShow** command:

```
rsl8-st03-dcx-1:admin> firmwareShow
```

Slot	Name	Appl	Primary/Secondary Versions	Status
2	FS8-18	FOS	v6.1.0 v6.1.0	
4	FR4-18i	FOS	v6.1.0 v6.1.0	
6	CP0	FOS	v6.1.0 v6.1.0	ACTIVE *
		Co-FOS	v6.1.0 v6.1.0	
7	CP1	FOS	v6.1.0 v6.1.0	STANDBY
		Co-FOS	v6.1.0 v6.1.0	


```

10 FA4-18      FOS      v6.1.0
                v6.1.0
                SAS      v3.1.1
                v3.1.1
12 FR4-18i    FOS      v6.1.0
                v6.1.0

```

```
rsl8-st03-dcx-1:admin>
```

3. If the firmware versions for both CP blades are the same, skip to [step 11](#).
4. If the firmware version on the replacement blade does not match that on the active CP blade a warning message appears with the results of the `firmwaredownload` command. You must bring the replacement blade to the same firmware level as the active blade using the `firmwareDownload -s` command to bring it up to the proper level. Complete the following steps beginning with [step 5](#).

NOTE

The DCX-4S requires FOS 6.2.0 or later to be recognized. If the firmware on the replacement blade is earlier than 6.2.0, it must be brought up to the version on the active CP blade, which must be at least v6.2.0.

5. Log out of the active CP blade and log in to the standby CP blade.
6. Type `firmwareDownload -s` to download the firmware to the standby CP blade. The `-s` option also disables the `autoreboot`, so you will have to manually issue a `reboot` after the download finishes in order to initiate `firmwarecommit`. Enter all requested information (use default values).

```

rsl8-st03-dcx-1:admin> firmwaredownload -s
Server Name or IP Address: 192.168.100.1
User Name: user
File Name: /software/v6.1.0/release.plist
Password: *****
Do Auto-Commit after Reboot [Y]:
Reboot system after download [N]:
Firmwaredownload has started.
2007/07/03-14:59:21, [SULB-1001], 923,, WARNING, Brocade DCX, Firmwaredownload command has
started.
Start to install packages.....
dir #####
ldconfig #####
glibc #####
bash #####
readline #####
terminfo #####
termcap #####
setup #####

<output truncated>

tz #####
mtracer-tool #####
lkcdd #####
sysstat #####
Removing unneeded files, please wait ...
Finished removing unneeded files.

All packages have been downloaded successfully.
Firmwaredownload has completed successfully.
2007/07/03-15:05:56, [SULB-1002], 924,, INFO, Brocade DCX, Firmwaredownload command has
completed successfully.

```

7. Type **firmwareDownloadStatus** to verify that the firmware has been updated.
8. Ensure that you are still logged in to the standby CP blade (the blade for which you just changed the firmware level) and type **reboot**. The reboot of the standby CP will initiate a firmwarecommit to the secondary partition and log you out.
9. Log back in to standby CP blade and type **firmwareDownloadStatus** on the standby CP blade to validate a successful commit. This may take 10 minutes.
10. Log out of the standby CP blade and log in to the active CP blade.
11. Type **haEnable** to reenble HA on the active CP blade.

NOTE

For FOS 6.3.0 and later, haEnable will cause the standby CP blade to reboot. Wait until the power cycles and the POST completes before moving to the next step.

12. Type **haShow** and verify that the command output includes “HA Enabled Heartbeat Up”. If not, reenter the command until you have verified that redundancy is achieved.
13. Type **version** or **firmwareShow** to verify that the firmware version has been updated.
14. Pack the faulty CP blade in the packaging provided with the new CP blade, and contact the switch supplier to determine the return procedure.
15. Replace the chassis door (see the *Chassis Door Replacement Procedure* for your chassis).