Control Processor Blade

Replacement Procedure

Supporting Fabric OS v6.0.x through v6.4.x (as compatible with supported hardware)

Supporting Brocade 48000
This document provides instructions for replacing a control processor (CP) blade in the Brocade 48000 director.

The Brocade 48000 control processor blades (CP4) top ejectors have a slider switch that must be slid into the off position to turn the CP blade off. Once the slider switch is in the off position and the CP blade is off, unscrew the thumb screws holding the top and bottom ejectors in place. Then, pull out the top and bottom ejectors to release the CP blade from the chassis.

Each Brocade director has the following characteristics, in relation to CP blades:

- Two CP blades: one located in slot 5 and the other in slot 6.
- The configuration on the active CP blade is automatically mirrored to the standby CP blade; this document includes steps to ensure that the new CP blade boots up as the standby CP blade.
- The new CP blade automatically assumes the IP address and host name assigned to the slot.
- If the new CP blade does not have the same firmware as the active CP blade, it must be upgraded/downgraded to the same firmware version.
- The Brocade directors can continue to operate while a CP blade is replaced, if the other CP blade continues to operate and no failover occurs. You can prevent failover by entering the `haDisable` command. The active CP blade is determined by the most recent failover (verify this by entering the `haShow` command).
Figure 1 displays the Brocade 48000 CP blade in detail.

**FIGURE 1**   Brocade 48000 CP blade in detail view

![Brocade 48000 CP blade in detail view](image)

**TABLE 1**   Legend for Figure 1

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Control Processor Blade CP4</td>
</tr>
<tr>
<td>D</td>
<td>On/Off Slider Switch (in the On position)</td>
</tr>
<tr>
<td>E</td>
<td>On/Off Slider Switch (in the Off position)</td>
</tr>
<tr>
<td>F</td>
<td>Power LED</td>
</tr>
<tr>
<td>G</td>
<td>Status LED</td>
</tr>
<tr>
<td>H</td>
<td>RS-232 Modem Port</td>
</tr>
<tr>
<td>I</td>
<td>Console Port (10101)</td>
</tr>
<tr>
<td>J</td>
<td>Link Status LED</td>
</tr>
<tr>
<td>K</td>
<td>Link Speed LED</td>
</tr>
<tr>
<td>L</td>
<td>Active CP LED</td>
</tr>
</tbody>
</table>
**TABLE 1** Legend for Figure 1 (Continued)

M  Ethernet Port  
N  Ejector  
O  Thumb Screw (2 per CP2 and CP4 blade)  
P  CP Blade Identifier Label (only available on the CP4 blade)

Figure 2 displays a Brocade 48000 with the CP blades in the chassis.

**FIGURE 2** Brocade 48000 With CP blades

**TABLE 2** Legend for Figure 2

A  Brocade-SilkWorm Director Chassis  
B  Brocade-SilkWorm CP Blade (Brocade 48000 CP Blade displayed in Figure 2)  
C  On/Off Slider Switch (in the Off position)  
D  Ejector
Time required
The replacement procedure for the CP blade takes approximately 30 minutes. The procedure might take up to one hour depending on the director type.

Items required
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 Brocade-SilkWorm director configuration
- Phillips #2 screw driver
- Replacement Brocade 48000 CP blade (CP4)

Replacement procedures
For supported mixed blade configurations, refer to the Brocade-SilkWorm Director Migration Guide.

Refer to the following sections for the CP blade replacement procedures:

- Verifying the Necessity of Replacement ............................................ 7
- Recording Critical Switch Information ............................................. 8
- Removing a CP Blade ................................................................. 12
- Installing a CP Blade ................................................................. 13
- Verifying Operation of the New CP Blade ...................................... 14
- Downloading firmware from an FTP server ................................. 16
- Complete the replacement ......................................................... 19

To ensure adequate system pressure for cooling purposes, leave the faulty CP blade in the slot until you are ready to perform the replacement procedure.

To allow the current configuration to be copied to a new CP blade, that CP blade must be installed while the other CP blade is still operating.

Wear a grounded ESD strap when handling a CP blade. A grounding connection is available on the chassis, above the power connectors.

Hold CP blades by the edges of the metal pans, not by the ejector handles.

Disassembling any part of a CP blade voids the part warranty and regulatory certifications. There are no user-serviceable parts inside a CP blade.
Verifying the Necessity of Replacement

If you have not already done so, confirm that you need to replace the CP blade before continuing. The following events might indicate that a CP blade is faulty:

- The status LED on the CP blade is lit 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 that the CP blades have not achieved redundancy (after 30 minutes).
- The calendar 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 complete information about diagnostic and error messages, refer to the Diagnostic and System Error Messages Reference Manual.
Recording Critical Switch Information

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

To record critical switch information

1. Create a serial connection to the healthy CP blade:
   a. Disable any serial communication programs running on the workstation (such as synchronization programs).
   b. Connect a serial cable to the console port.
   c. Connect the other end of the serial cable to a serial port on the workstation.
      If necessary, you can remove the adapter on the serial cable to allow for a serial RJ-45 connection.
   d. Open the terminal emulator application and configure it as follows:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bits per second</td>
<td>9600</td>
</tr>
<tr>
<td>Databits</td>
<td>8</td>
</tr>
<tr>
<td>Parity</td>
<td>None</td>
</tr>
<tr>
<td>Stop bits</td>
<td>1</td>
</tr>
<tr>
<td>Flow control</td>
<td>None</td>
</tr>
</tbody>
</table>

   For most Windows systems   Parameter | Value
   For most UNIX systems

   e. When the terminal emulator application stops reporting information, press Enter.

2. Log in to the healthy CP blade as admin. The default password is “password:”

Fabric OS (swDir)
swDir login: admin
Password: xxxxxxxx

If you have multiple domains set up on the Brocade director, enter a switch number to log in to. Log in to the switch that houses the CP blade you want to change:

Fabric OS (cp0)
cp0 Console Login: admin
Password: xxxxxxxx
Enter Switch Number to Login <0 or 1>: 0
If you do not have multiple domains set up on the Brocade director, skip to step 3.

3. Type haShow to determine which CP blade is active:

SW0:admin> haShow
Local CP (Slot 6, CP1) : Active
Remote CP (Slot 5, CP0) : Standby, Healthy
HA Enabled, Heartbeat Up, HA State Synchronized

4. If the healthy CP blade is performing as the active CP blade, continue with step 6 on page 10. If the faulty CP blade is performing as the active CP blade, fail over the blades as described in the following sequence.
   a. Create a serial connection to the faulty CP blade (repeat step 1 on page 8).
      If the faulty CP has a faulty serial port, then you can either continue with step b using a telnet connection or remove the faulty CP blade for repair as follows:
Turn the CP blade off and notify the Brocade director of a hot swap request by sliding the slider switch in the top ejector down to the off position (see Figure 1 on page 4).

Then, wait until the active CP LED on the healthy CP blade is lit. You can remove the CP for repair.

b. Log in to the faulty blade as admin.

If you have multiple domains set up on the Brocade director, enter a switch number to log in to. You should log in to the switch to which the CP blade you want to change belongs. Refer to step 2 on page 8 for examples for a single domain and multiple domain setup.

c. Type haFailover. The healthy CP blade becomes the active CP blade.

d. Wait until the status LED on the healthy CP blade is no longer lit (indicates failover is complete).

e. Type haShow from the serial console for the healthy 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.

Following is an example of failing over a CP blade in a multiple domain director:

Fabric OS (cp0)
cp0 Console Login: admin
Password: xxxxxxxx
Enter Switch Number to Login <0 or 1>: 0
SW0:admin> haShow
Local CP (Slot 6, CP1) : Active
Remote CP (Slot 5, CP0) : Standby, Healthy
HA Enabled, Heartbeat Up, HA State Synchronized
SW0:admin> haFailover
Local CP (Slot 6, CP1) : Active
Remote CP (Slot 5, CP0) : Standby, Healthy
HA Enabled, Heartbeat Up, HA State Synchronized
Warning: This command is being run on a control processor (CP)
based system. If the above status does not indicate HA State synchronized then 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 just reboot a logical switch on this system, sue command switchreboot on the logical switch you intend to reboot.

Are you sure you want to reboot the active CP [y/n]? y
SW0:admin> haShow
Local CP (Slot 6, CP1) : Standby, Healthy
Remote CP (Slot 5, CP0) : Active
HA Enabled, Heartbeat Up, HA State Synchronized
Following is an example of failing over a CP blade in a single domain director:

Fabric OS (swDir)
swDir login: admin
Password: xxxxxxxx
swDir:admin>haShow
Local CP (Slot 6, CP1): Active
Remote CP (Slot 5, CP0): Standby, Healthy
HA Enabled, Heartbeat Up, HA State Synchronized
SW1:admin> haFailover
Local CP (Slot 6, CP1) : Active
Remote CP (Slot 5, CP0) : Standby, Healthy
HA Enabled, Heartbeat Up, HA State Synchronized
Warning: This command is being run on a control processor (CP)
based system. If the above status does not indicate HA State synchronized then 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 just reboot a logical switch on this system, use command switchreboot on the logical switch you intend to reboot.

```
Are you sure you want to reboot the active CP [y/n]? y
SW1:admin> haShow
Local CP (Slot 6, CP1): Standby, Healthy
Remote CP (Slot 5, CP0): Active
HA Enabled, Heartbeat Up, HA State Synchronized
```

5. Type **version** to record the version of the active CP blade.

6. Type **haDisable** from the active CP blade to prevent failover or communication between the CP blades during the replacement.

7. From the serial console for the healthy (and active) CP blade, back up the current configuration. If the director is set up with a single domain, you should complete this step but do not need to complete step 8 on page 10. If the director is set up with multiple domains, back up switch 0 first, as described in this step. Then continue to step 8 on page 10 to back up logical switch 1.

   **To back up logical switch 0**
   
   a. Type **configUpload** to upload the switch configuration to a specified FTP server.
   
   b. Enter the requested information at the prompts.

8. Log in to logical switch 1 and back up the current configuration for logical switch 1:

   a. From the serial console for the healthy CP blade, type **login**.
   
   b. Log in as admin and type 1 to log in to logical switch 1.
   
   c. Type **configUpload**.
   
   d. Type the requested 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.

Following is a sample of backing up the configuration for logical switches 0 and 1 (see step 7 on page 10 and step 8 on page 10):

```
SW0: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
SW0:admin> login
cp0 login: admin
Password: xxxxxxxx
Enter Switch Number to Login <0 or 1>: 1
SW0: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: xxxx
upload complete
Removing a CP Blade

Brocade 48000 directors continue to operate while a CP blade is being replaced if the redundant CP blade is active and a failover does not occur (this is the purpose of using the `haDisable` command in this procedure).

The core section within the Brocade 48000 director CP blades provides internal routing bandwidth that is always active on both CP blades. Do not remove the faulty CP blade until the replacement CP blade is ready to be installed.

**WARNING:** Do not replace the real time clock battery on a CP blade. There is danger of explosion if the battery is incorrectly replaced or discarded. Contact the switch supplier if the real time clock begins to lose time.

To remove a CP blade

1. Disconnect all cables (modem, serial, Ethernet) from the faulty CP blade.
2. Turn the CP blade off (which also notifies the active CP of a hot swap request) by sliding the slider switch in the top ejector down to the off position (see Figure 1 on page 4).
3. Wait for the power LED to turn off in response to the hot-swap request before uninstalling the CP blade.
4. Unscrew the thumb screw from both ejectors using the Phillips screw driver.
5. Lever open both ejector handles simultaneously to approximately 45 degrees and pull the CP blade out of the chassis (see Figure 2 on page 5).
Installing a CP Blade

_Do not force the installation._ If the CP blade does not slide in easily, ensure that it is correctly oriented and aligned in the blade guides before continuing.

To ensure proper cooling, do not route cables in front of the exhaust vent (located at the top on the port side of the chassis).

**WARNING:** 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.

To install a new CP blade in the empty blade slot (#5 or #6)

1. Open the _ejector_ handles to approximately 45 degrees; then, orient the CP blade so that the handles are toward you and the flat metal side is on your left.
2. Align the flat metal side of the CP blade inside the lower and upper blade guides in the slot; then, slide the CP blade into the slot until it is firmly seated.
3. No action required. Skip to the next step, _step 4_.
4. Tighten the _thumb screw_ inside each handle using the Phillips screw driver.
5. Turn the CP blade on by sliding the ON/OFF switch in the top handle up, to cover the _thumb screw_.
6. Verify that the _power LED_ is green (might require a few seconds). If not, ensure that the CP blade has power and is firmly seated and that the _ejectors_ are in the locked position.
7. Connect the modem, serial, and Ethernet cables as required to the new CP blade.
   The new CP blade automatically assumes the IP address and host name assigned to the slot.
8. Verify the installation (see “Verifying Operation of the New CP Blade,” next).
Verifying Operation of the New CP Blade

To verify that boot and POST are complete on the new CP blade (a minimum of three minutes), and that the CP blades have achieved failover redundancy (or HA sync).

1. Wait until the status LEDs on both CP blades are no longer lit.

   **NOTE**
   The status LEDs on the active CP blade displays amber until the active CP blade is fully operational, and the status LED on the standby CP blade displays amber until the CP blades have achieved failover redundancy.

2. Type `slotShow`.

   The command output shows the new CP blade as “enabled”:

   ```
   Slot   Blade Type   ID    Status
   ---------------------------------
   1     SW BLADE   17     ENABLED
   2     SW BLADE   17     ENABLED
   3     SW BLADE   17     ENABLED
   4     SW BLADE   17     ENABLED
   5     CP BLADE   16     ENABLED
   6     CP BLADE   16     ENABLED
   7     SW BLADE   17     ENABLED
   8     SW BLADE   17     ENABLED
   9     SW BLADE   17     ENABLED
   10    SW BLADE   17     ENABLED
   ```

   swDir:admin> slotShow

3. Determine the version by typing `version` or `firmwareShow`.

   The following examples show sample output for the `version` and `firmwareShow` commands:

   ```
   SW1:admin> version
   Kernel:     2.4.19
   Fabric OS:  v5.0.1
   Made on: Mon Feb 7 10:57:57 2005
   Flash:      Tue Feb 8 08:34:52 2005
   BootProm:   4.5.2
   
   SW1:admin> firmwareShow
   Local CP (Slot 5, CP1): Active
   Primary partition:   v5.0.1
   Secondary Partition: v5.0.1
   Remote CP (Slot 6, CP0): Standby
   Primary partition:   v5.0.1
   Secondary Partition: v5.0.1
   ```

4. If the firmware versions for both partitions on both CP blades are the same, skip to step 12.

5. 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 firmwareShow command. You must bring the replacement blade to the same firmware level as the active blade. Check with the switch supplier for supported versions. Complete the following steps beginning with step 6.

6. Log out of the active CP blade and log in to the standby CP blade.
7. 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):

```
SW1:admin> firmwareDownload -s
Server Name or IP Address: 192.168.100.1
User Name: user
File Name: /software/v5.0.1/release.plist
Password: ********
Do Auto-Commit after Reboot [Y]:
Reboot system after download [N]:
Firmwaredownload has started.
2005/03/07-14:59:21, [SULB-1001], 923,, WARNING, SilkWorm 48000, Firmwaredownload command has started.
Start to install packages.....
```

```
    dir                                               
    ldconfig                                          
    glibc                                             
    bash                                             
    readline                                          
    terminfo                                         
    termcap                                          
    setup                                            
    [some output truncated...]
    tz                                               
    mtracer-tool                                     
    lkcld                                            
    sysstat                                          
Removing unneeded files, please wait ...
Finished removing unneeded files.
```

All packages have been downloaded successfully.
Firmwaredownload has completed successfully.
2005/03/07-15:05:56, [SULB-1002], 924,, INFO, SilkWorm 48000, Firmwaredownload command has completed successfully.

8. Type `firmwareDownloadStatus` to verify that the firmware downloaded successfully.

9. 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.

10. 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.

11. Log out of the standby CP blade and log in to the active CP blade.

12. Type `haEnable` to reenable HA on the active CP blade.

13. Type `haShow` and verify that the command output includes “HA Enabled Heartbeat Up”. If not, wait a minute and reenter the command, until you have verified that redundancy is achieved.

14. Type `version` or `firmwareShow` to verify that the firmware version has been updated.

15. Pack the old CP blade in the packaging provided with the new CP blade, and contact the switch supplier to determine the return procedure.
Downloading firmware from an FTP server

1. Log in to the standby CP blade as **admin**. If you need to know the IP address of the standby blade, run `ipaddrshow`.

   You should remain logged in to the active CP blade in order to monitor it.

2. Use one of the following options:

   a. If the firmware level on the standby blade is only one level down from the level on the active blade, run `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 to initiate firmwarecommit. Enter all requested information (use default values).

   b. If the firmware level on the standby blade is more than one level down from the level on the active blade, run `firmwareDownload -sf` to download the firmware to the standby CP blade. See step c for specifics about which versions to use for upgrading.

   The `-f` option allows you to download a level of firmware that is two levels above what is on the standby CP blade.

   The `-s` option also disables the autoreboot, so you will have to manually issue a reboot after the download finishes to initiate firmwarecommit. Enter all requested information (use default values). There are caveats to using the `-f` option. Read the following information carefully.

   c. There are special considerations to using the `-f` option. Read the following information carefully.

**ATTENTION**

If the level of firmware on the standby CP blade is more than two levels below the active CP blade, you will have to perform multiple firmware downloads. If your final target level is Fabric OS version 6.2.x, you can safely upgrade to that level. If you are upgrading to Fabric OS version 6.3.0 or above, you should arrange your multiple firmware downloads to skip version 6.2.x. See the following table. The “target version” in the table is the version that is on your active CP blade.

**TABLE 3** Steps for upgrading through multiple versions of Fabric OS

<table>
<thead>
<tr>
<th>If you are at Fabric OS version</th>
<th>and your target version is</th>
<th>do these upgrade steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0.x</td>
<td>6.2.x</td>
<td>use <code>firmwareDownload -sf</code> to upgrade directly to 6.2.x</td>
</tr>
<tr>
<td></td>
<td>6.3.x</td>
<td>use <code>firmwareDownload -s</code> to upgrade to 6.1.x, then use <code>firmwareDownload -sf</code> to upgrade directly to 6.3.x</td>
</tr>
<tr>
<td></td>
<td>6.4.x</td>
<td>use <code>firmwareDownload -s</code> to upgrade to 6.1.x, then use <code>firmwareDownload -sf</code> to upgrade directly to 6.3.x, then use <code>firmwareDownload -s</code> to upgrade to 6.4.x</td>
</tr>
<tr>
<td>6.1.x</td>
<td>6.3.x</td>
<td>use <code>firmwareDownload -sf</code> to upgrade directly to 6.3.x</td>
</tr>
<tr>
<td></td>
<td>6.4.x</td>
<td>use <code>firmwareDownload -sf</code> to upgrade directly to 6.3.x, then use <code>firmwareDownload -s</code> to upgrade to 6.4.x</td>
</tr>
<tr>
<td>6.2.x</td>
<td>6.4.x</td>
<td>use <code>firmwareDownload -sf</code> to upgrade directly to 6.4.x</td>
</tr>
</tbody>
</table>
If you are upgrading through multiple versions of Fabric OS, you may have to run the upgrade procedure more than once. Consult Table 3 above to confirm how many times you have to repeat procedure. With either the -s or -sf options, you must also provide either the name of the FTP server or its IP address.

```
SW1:admin> firmwaredownload -sf FTP_host
Checking system settings for firmwaredownload...
Server IP: 127.1.1.7, Protocol IPv4
System settings check passed.

You are downloading on Standby CP. We cannot perform version compatibility check. Please make sure you are downloading a compatible version.

You are running firmwaredownload with auto-reboot disabled. After firmware is downloaded, please reboot the system to activate the new firmware.
```

Firmware is being downloaded to the switch. This step may take up to 30 minutes.
2010/06/18-14:35:27, [SULB-1001], 901,, WARNING, SilkWorm 48000, Firmwaredownload command has started.
Preparing for firmwaredownload...
2010/06/18-14:35:27, [SULB-1036], 902,, INFO, SilkWorm 48000, The current Version: Fabric OS v6.1.0j

Start to install packages...
```
| dir                         | ################################################## |
| ldconfig                   | ################################################## |
|                           |                                                     |
| fs18548-brcdecc-module     | ################################################## |
| eccrepd                    | ################################################## |

Removing unneeded files, please wait ...
Finished removing unneeded files.

created the tracedump file with size:34821120 bytes
All packages have been downloaded successfully.
Relocating an internal firmware image on the CP blade.
2010/06/18-14:42:06, [SULB-1032], 903,, WARNING, SilkWorm 48000, Relocating an internal firmware image on the CP.
The internal firmware image is relocated successfully.
Firmware has been downloaded to the secondary partition of the switch.
2010/06/18-14:44:04, [SULB-1002], 904,, INFO, SilkWorm 48000, Firmwaredownload command has completed successfully.

3. When the download process finishes, run firmwareDownloadStatus to verify that the firmware has been updated. The command displays a running account of the progress of the firmwaredownload command (if it is still running) until the command has completed. The final message is similar to the following and will appear with a date and time stamp:
```
Slot 6 (CP0, active): Firmwaredownload command has completed successfully. Use firmwareshow to verify the firmware versions.
```

4. On the standby CP blade (the blade for which you just changed the firmware level), run reboot. The reboot of the standby CP will initiate a firmwarecommit to the secondary partition and log you out.
```
SW1:admin> reboot
Broadcast message from root (ttyS0) Fri Jun 18 14:49:45 2010...
The system is going down for reboot NOW !!
INIT: Switching to runlevel: 6
INIT: Sending processes the TERM signal SW1:admin> HAMu Heartbeat down, stop FSS
Unmounting all f##exiting due to signal: 9, pending signals: 0x20000, 0x0
ilesystems.
Please stand by while rebooting the system...
Restarting system.
The system is coming up, please wait...
.
.
Please wait ...
Validating the filesystem ...
Please wait ...

2010/06/18-14:56:50, [SULB-1004], 908, SLOT 7 | CHASSIS, INFO, SilkWorm 48000, Firmwarecommit has completed.
2010/06/18-14:56:50, [SULB-1036], 909, SLOT 7 | CHASSIS, INFO, SilkWorm 48000, The new Version: Fabric OS v6.3.0c
2010/06/18-14:56:50, [SULB-1002], 910, SLOT 7 | CHASSIS, INFO, SilkWorm 48000, Firmwaredownload command has completed successfully.

5. Log back in to the standby CP blade and run firmwaredownloadstatus on the standby CP blade to validate a successful commit. This may take 10 minutes.

6. If you are upgrading through several levels of the Fabric OS, repeat step 2 through step 5 as often as necessary based on the path outlined in Table 3. Otherwise, proceed to step 7.

7. Log out of the standby CP blade and log in to the active CP blade.

8. Proceed to “Complete the replacement.”
Complete the replacement

1. Type `haEnable` to re-enable HA on the active CP blade.

   **NOTE**
   Wait until POST completes before moving to the next step. POST is complete when the Status LED on the CP blade returns to a steady green state.

2. Type `haShow` and verify that the command output includes “HA Enabled, Heartbeat Up”. If it is not yet enabled, re-enter the command until you have verified that redundancy is achieved.

   ```
   SW1:admin> hashow
   Local CP (Slot 7, CP1) : Active
   Remote CP (Slot 6, CP0) : Standby, Healthy
   HA Enabled, Heartbeat Up, HA State Synchronized
   ```

3. Type `firmwareShow` to verify that the firmware version has been updated and that the versions are the same on the two CP blades.

   ```
   SW1:admin> firmwareshow
   Slot Name    Appl     Primary/Secondary Versions  Status
   -----------------------------------------------
   4  FR4-18i FOS      v6.4.0                      
      v6.4.0
   6  CP0     FOS      v6.4.0                      STANDBY
      v6.4.0
   7  CP1     FOS      v6.4.0                      ACTIVE *
      v6.4.0
   10 FA4-18  FOS      v6.4.0                      
      v6.4.0
      SAS      v3.4.0                      
      v3.4.0
   ```

4. Pack the faulty CP blade in the packaging provided with the new CP blade, and contact the switch supplier to determine the return procedure.

5. Replace the chassis door.

   If you have one or more application blades in the chassis, the Fabric OS automatically detects mismatches between the active CP firmware and the application blade's firmware and triggers the auto-leveling process. This auto-leveling process automatically updates the application blade firmware to match the active CP. At the end of the auto-leveling process, the active CP and the application blades will run the same version of the firmware.