Compaq StorageWorks™

INSTALLING A GLM IN AN HSG80 FIBRE CHANNEL CONTROLLER

Open Card Completely Before Beginning Installation Procedures

European Union Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23 EEC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards):

- EN 55022 (CISPR 22) *Electromagnetic Interference*
- EN 50082-1 (IEC 801-2, IEC 801-3, IEC 801-4) *Electromagnetic Immunity*
- EN 60950 (IEC 950) *Product Safety*

NOTICE

INSTALLING A GLM IN AN HSG80 FIBRE CHANNEL CONTROLLER

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Compaq Computer Corporation

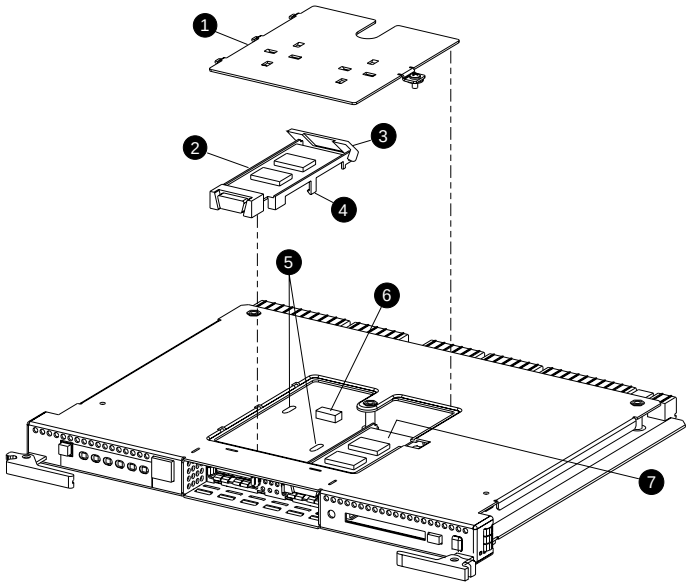
About This Card

This document contains instructions to install a gigabit link module (GLM) in an HSG80 ACS Version 8.*x* Array Controller.

> **NOTE:** For instructions on upgrading a single controller configuration to a dual-redundant controller configuration, see the appropriate *DIGITAL StorageWorks™ HSG80 Array Controller ACS Version 8.2 User Guide* or *Compaq™ StorageWorks HSG80 Array Controller ACS Version 8.x Maintenance and Service Guide.*

General Information

Figure 1 provides general information about the HSG80 controller and the GLM.



❶ Access door
❷ Port 1 GLM
❸ Release lever
❹ Locking tab
❺ Guide holes
❻ GLM connector
❼ Port 2 GLM

Figure 1. Location of GLMs in an HSG80 controller

Single Controller Configurations

Use this procedure for the following configurations:

- **HSG80 ACS Version 8.2 Single Controller**
- **HSG80 ACS Version 8.3 Single Controller**
- **HSG80 ACS Version 8.4 Single Controller**
- **HSG80 ACS Version 8.5 Single Controller**

Use the steps in "Removing a GLM" and "Installing a GLM" to replace a GLM.

CAUTION: Electrostatic discharge (ESD) can easily damage a controller or GLM. Wear a snug-fitting, grounded ESD wrist strap.

Removing a GLM

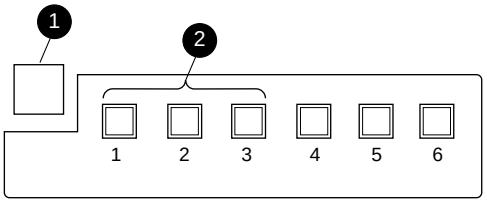
Use the following steps to remove a GLM:

1. From the host console, dismount the logical units in the subsystem. If using a Microsoft Windows NT platform, shut down the server.
2. If the controller is operating, connect a PC or terminal to the controller maintenance port for the failed GLM.

   If the controller is not operating, go to step 5.
3. Run the fault management utility (FMU) to obtain the last failure codes, if desired.
4. Shut down "this controller" with the following command:

   SHUTDOWN THIS_CONTROLLER

   When the controller shuts down, the reset button ❶ and the first three light emitting diodes (LEDs) ❷ turn ON (see Figure 2). It might take several minutes for this indication to appear, depending on the amount of data that needs to be flushed from the cache module.

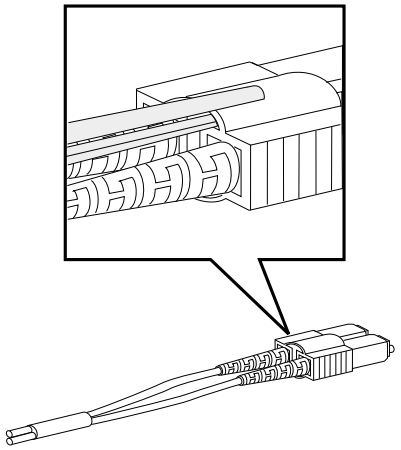


CXO6991A

Figure 2. Controller reset button and first three LEDs

NOTE: One or two host bus cables might be attached, depending on the configuration.

5. Disconnect all host bus cables from the controllers. If extender clips are not installed on the cables, use needle nose pliers to disconnect the cables (see Figure 3).



CXO6613A

Figure 3. Using pliers to disconnect a fibre optic cable

6. If connected, disconnect the PC or terminal from the controller maintenance port containing the failed GLM.
7. Disengage both retaining levers and remove the controller containing the failed GLM.
8. Place the controller on an antistatic bag or a grounded antistatic mat.
9. Remove the screw that secures the access door (see Figure 1, ❶) on the top of the controller.
10. Remove the access door, and set it aside.
11. Disengage the GLM locking tabs ❹ that protrude through the guide holes ❺ on the bottom side of the controller.
12. Use your index finger and thumb to operate the release lever ❸ on the exposed end of the GLM. Press the lower end of the release lever with your index finger while pulling the raised end of the release lever up with your thumb.
13. Remove the GLM.

Installing a GLM

Use the following steps to install a GLM:

NOTE: Before inserting the new GLM, locate the holes on the controller board where the GLM will reside.

1. Insert the new GLM by first placing the cable connection end of the GLM through the opening on the front of the controller.
2. Line up the locking tab ❹ on the bottom of the replacement GLM with the guide holes ❺ in the board, and press firmly to seat the GLM.
3. Press the release lever firmly into place to secure the GLM.
4. Install the access door ❶ on the top of the controller and secure it with the screw.

CAUTION: Make sure to align the controller in the appropriate guide rails. If the controller is not aligned correctly, damage to the backplane can occur.

5. Insert the controller into its bay and engage its retaining levers.
6. Connect all host bus cables to the new controller.
7. Connect a PC or terminal to the maintenance port of the controller just installed.
8. Press and release the reset button on the controller.

9. When the CLI prompt reappears, display details about the configured controller using the following command:

   SHOW THIS_CONTROLLER FULL

10. Mount the logical units on the host. If using a Windows NT platform, restart the server.
11. Set the subsystem date and time using the following command in its entirety:

    SET THIS_CONTROLLER TIME=*dd-mmm-yyyy:hh:mm:ss*

12. Disconnect the PC or terminal from the controller maintenance port.

Dual Controller Configurations

Use this procedure for the following configurations:

- **HSG80 ACS Version 8.2 Dual-Redundant Controller**
- **HSG80 ACS Version 8.3 Dual-Redundant Controller**
- **HSG80 ACS Version 8.4 Dual-Redundant Controller**
- **HSG80 ACS Version 8.5 Dual-Redundant Controller**

Use the steps in "Removing a GLM" and "Installing a GLM" to replace a GLM.

CAUTION: ESD can easily damage a controller or GLM. Wear a snug-fitting, grounded ESD wrist strap.

Removing a GLM

Use the following steps to remove a GLM:

1. Connect a PC or terminal to the maintenance port of the operational controller.

   The controller connected to becomes "this controller" the controller being removed becomes the "other controller."

2. Disable failover and take the controllers out of their dual-redundant configuration with the following command:

   SET NOFAILOVER

3. Start FRUTIL with the following command:

   RUN FRUTIL

4. If a replace the cache battery question appears, enter **N**(o).
5. Enter option **1**, *Replace or remove a controller or cache module*, from the FRUTIL Main menu.
6. Enter option **2**, *Other controller module*, from the Replace or Remove Options menu.
7. Enter **Y**(es) to confirm intent to remove the "other controller" module.

IMPORTANT: Wait for FRUTIL to quiesce the device ports. This might take several minutes.

CAUTION: The device ports must quiesce before removing the controller. Failure to allow the ports to quiesce might result in data loss. Quiescing might take several minutes.

NOTE: A countdown timer allows a total of two minutes to remove the controller. After two minutes, "this controller" will exit FRUTIL and resume operations. If this happens, return to step 3 and proceed.

8. Follow on-screen instructions to remove the "other controller."
9. Remove all host bus cables from the "other controller." If extender clips are not installed on the cables, use needle nose pliers to disconnect the cables (see Figure 3).
10. Place the controller on an antistatic bag or a grounded antistatic mat.
11. Enter **N**(o) to the question for a replacement controller.

    FRUTIL will exit.

12. Remove the screw that secures the access door (see Figure 1, ❶) on the top of the controller.
13. Remove the access door and set it aside.
14. Disengage the GLM locking tabs ❹ that protrude through the guide holes ❺ on the bottom side of the controller.
15. Use your index finger and thumb to operate the release lever ❸ on the exposed end of the GLM. Press the lower end of the release lever with your index finger while pulling the raised end of the release lever up with your thumb.
16. Remove the GLM.

Installing a GLM

Use the following steps to install a GLM:

NOTE: Before inserting the new GLM, locate the holes on the controller board where the GLM will reside.

1. Insert the new GLM by first placing the cable connection end of the GLM through the opening on the front of the controller.
2. Line up the locking tab ❹ on the bottom of the replacement GLM with the guide holes ❺ in the board, and press firmly to seat the GLM.
3. Press the release lever firmly into place to secure the GLM.
4. Install the access door ❶ on the top of the controller and secure it with the screw.
5. Connect a PC or terminal to the operational controller.

   The controller connected to becomes "this controller;" the controller being installed becomes the "other controller."

6. Start FRUTIL with the following command:

   RUN FRUTIL

7. If a replace the cache battery question appears, enter **N**(o).
8. Enter option **2**, *Install a controller or cache module*, from the FRUTIL Main menu.
9. Enter option **2**, *Other controller module*, from the Replace or Remove Options menu.
10. Enter **Y**(es) to confirm intent to install the other controller module.

IMPORTANT: Wait for FRUTIL to quiesce the ports. This might take several minutes.

CAUTION: Carefully align the controller in the appropriate guide rails. Misalignment might damage the backplane.

NOTE: A countdown timer allows a total of two minutes to install the controller. After two minutes, "this controller" will exit FRUTIL and resume operations. If this happens, return to step 6 and proceed.

11. Follow on-screen instructions to install and restart the "other controller."

IMPORTANT: Wait for FRUTIL to terminate and then reconnect the host bus cables to the "other controller."

12. Enable failover, and re-establish the dual-redundant configuration with the following command:

    ```
    SET FAILOVER COPY=THIS_CONTROLLER
    ```

    This command copies the subsystem configuration from “this controller” to the “other controller.”

13. If desired, verify the failover configuration with the following command:

    ```
    SHOW THIS_CONTROLLER FULL
    ```

14. Disconnect the PC or terminal from the controller maintenance port.

This completes the hardware installation.