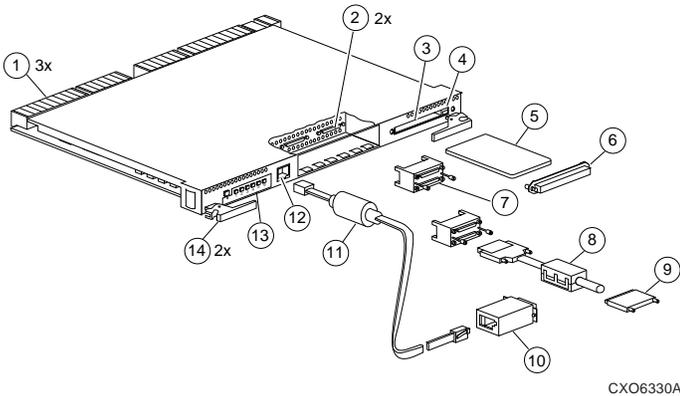


Installing an HSZ80 Array Controller

Follow these instructions to replace a controller in a single or dual-redundant controller configuration. See the *HSZ80 Array Controller ACS Version 8.x User's Guide* for instructions on upgrading a subsystem to a dual-redundant controller configuration.

Figure 1. HSZ80 Array Controller



- 1 Backplane connectors
- 2 Host ports
- 3 Program-card slot
- 4 Program-card ejection button
- 5 Program card
- 6 ESD/PCMCIA card cover
- 7 Trilink connector
- 8 Host bus cable with ferrite bead
- 9 SCSI terminator
- 10 PC serial-port adapter
- 11 Maintenance port cable
- 12 Maintenance port
- 13 Operator control panel (OCP)
- 14 Lever for removing, installing, and retaining controller

Replacing a Controller in a Dual-Redundant Controller Configuration

Follow these steps to replace a controller.

Removing a Controller in a Dual-Redundant Controller Configuration

Follow these steps to remove a controller.

1. Connect a terminal to the operational controller's maintenance port. The controller to which you're connected is "this controller;" the controller that you're removing is the "other controller."

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

SET NOFAILOVER

3. Start FRUTIL with the following command:

RUN FRUTIL

4. Choose option 1, *Replace or remove a controller or cache module*, from the FRUTIL Main Menu:

FRUTIL Main Menu:

1. Replace or remove a controller or cache module
2. Install a controller or cache module
3. Replace other cache module battery
4. Replace a PVA module
5. Replace an I/O module
6. Set battery life to new
7. Exit

Enter choice: 1, 2, 3, 4, 5, 6, or 7 -> 1

5. Choose option 2, *Other controller module*, from the Replace or Remove Options menu to remove the "other controller:"

Replace or remove Options:

1. Other controller and cache module
2. Other controller module
3. Other cache module
4. Exit

Enter choice: 1, 2, 3, or 4 -> 2

6. Confirm that you want to remove the "other controller."

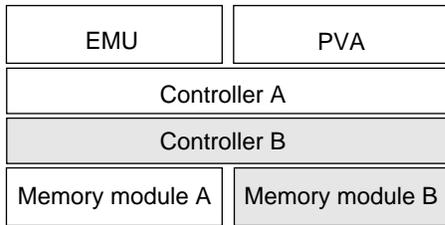
FRUTIL displays the following:

Remove the slot B controller? Y/N

7. Type Y(es) and press return.
8. Wait for FRUTIL to quiesce the device ports. After the ports have been quiesced (this may take several minutes), FRUTIL displays the following:
All device ports quiesced.
Remove the slot B controller (the one without a blinking green LED)

See Figure 2 for location of the controller.

Figure 2. Location of Controllers and Cache Modules



CXO6283A

NOTE: A countdown timer allows a total of two minutes to remove the controller. If you exceed the two minutes, “this controller” will exit FRUTIL and resume operations.

CAUTION: An electrostatic discharge (ESD) can easily damage a controller or cache module. Wear an ESD wrist strap on your wrist, make sure the strap fits snugly, and attach the ESD strap's grounding lead to a verified earth ground.

9. Remove the ESD cover and program card. Save them for the new controller.
10. Remove the tralink connectors from the “other controller” but don’t disconnect the bus cables (or terminators) from the tralink connectors.

NOTE: One or two tralink connectors may be attached, depending on the configuration.

11. Disengage the two retaining levers, and remove the “other controller,” and place the controller into an approved antistatic bag or onto a grounded antistatic mat.
12. Once the controller is removed, FRUTIL displays the following:

```
Restarting all device ports. Please wait...  
.  
.  
.  
Do you have a replacement controller? Y/N
```

Installing a Controller in a Dual-Redundant Controller Configuration

Follow these steps to install a controller.

NOTE: If you selected Y(es) in step 12 in the removal procedure—for a continuous removal and installation—go to step 5.

1. Connect a terminal to the operational controller’s maintenance port. The controller to which you’re connected is “this controller;” the controller that you’re installing is the “other controller.”
2. Start FRUTIL with the following command:
RUN FRUTIL
3. Choose option 2, *Install a controller or cache module*, from the FRUTIL Main Menu:

FRUTIL Main Menu:

1. Replace or remove a controller or cache module
2. Install a controller or cache module
3. Replace other cache module battery
4. Replace a PVA module
5. Replace an I/O module
6. Set battery life to new
7. Exit

Enter choice: 1, 2, 3, 4, 5, 6, or 7 -> 2

4. Choose option 2, *Other controller module*, from the Install Options menu to install the “other controller:”

Install Options:

1. Other controller and cache module
2. Other controller module
3. Other cache module
4. Exit

Enter choice: 1, 2, 3, or 4 -> 2

5. Confirm that you want to install the “other controller.”

FRUTIL displays the following:

Insert the slot B controller? Y/N

6. Type Y(es) and press return.
7. Wait for FRUTIL to quiesce the device ports. After the ports have been quiesced (this may take several minutes), FRUTIL displays the following:

All device ports quiesced.

Insert the controller module, without its program card, in slot B within x minutes, xx seconds.

NOTE: A countdown timer allows a total of two minutes to install the controller. If you exceed the two minutes, “this controller” will exit FRUTIL and resume operations.

CAUTION: An electrostatic discharge (ESD) can easily damage a controller or cache module. Wear an ESD wrist strap on your wrist, make sure the strap fits snugly, and attach the ESD strap's grounding lead to a verified earth ground.

8. Ensure that the program card is NOT in the new controller and insert the new controller into its slot. Engage its retaining levers.
9. Wait for FRUTIL to terminate.
10. Connect the tralink connectors to the new controller.

NOTE: One or two tralink connectors may be attached, depending on the configuration.

11. Hold the reset button while inserting the program card into the new controller. Release the reset button and replace the ESD cover.

NOTE: This procedure assumes that a new controller is being installed. If the controller you’re installing was previously used in another subsystem, it will need to be purged of the controller’s old configuration.

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

SET FAILOVER COPY=THIS_CONTROLLER

This command copies the subsystem's configuration from "this controller" to the new controller.

Replacing the Controller in a Single Controller Configuration

Follow these steps to replace the controller.

Removing the Controller in a Single Controller Configuration

Follow these steps to remove the controller.

1. From the host console, dismount the logical units in the subsystem. If you are using a Windows NT platform, shut down the PC.
2. If the controller is operating, connect a terminal to the controller's maintenance port.
3. Run FMU to obtain the last failure codes, if desired.

If the controller is not operating, go to step 5.

CAUTION: The cache module may contain data if the controller crashed and you weren't able to shut it down with the **SHUTDOWN THIS_CONTROLLER** command.

If you won't be installing a new controller within 24 hours, and if the cache module is still holding data, then restore the power to the subsystem after you've removed the failed controller. The cache module will hold its data as long as it receives power from the ECB. An ECB provides power for 24 hours or more depending on the amount of memory in the cache module.

4. Shut down the controller with the following command:

SHUTDOWN THIS_CONTROLLER

When the controller shuts down, its reset button and the first three LEDs are lit continuously.

5. Turn off the power to the subsystem.

CAUTION: An electrostatic discharge (ESD) can easily damage a controller. Wear an ESD wrist strap on your wrist, make sure the strap fits snugly, and attach the ESD strap's grounding lead to a verified earth ground.

6. Remove the ESD cover and program card. Save them for the new controller.
7. Remove the tralink connectors, but don't disconnect the bus cables (or terminators) from the tralink connectors.

NOTE: One or two tralink connectors may be attached, depending on the configuration.

8. If connected, disconnect the terminal from the controller's maintenance port.

9. Disengage the two retaining levers and remove the controller, then place the controller into an approved antistatic bag or onto a grounded antistatic mat.

Installing the Controller in a Single Controller Configuration

Follow these steps to install the controller.

CAUTION: An electrostatic discharge (ESD) can easily damage a controller. Wear an ESD wrist strap on your wrist, make sure the strap fits snugly, and attach the ESD strap's grounding lead to a verified earth ground.

Make sure you align the controller and cache module in the appropriate card cage guide rails. If you do not align the modules appropriately, damage to the backplane can occur.

1. Insert the new controller into its slot, and engage its retaining levers.
2. Connect the tralink connectors to the new controller.

NOTE: One or two tralink connectors may be attached, depending on the configuration.

3. Connect a terminal to the controller's maintenance port.
4. Restore power to the subsystem.
5. Hold the reset button while inserting the program card into the new controller. Release and replace the ESD cover.

If the controller you're installing was previously used in another subsystem, it will restart with the configuration that resides in its nonvolatile memory. If this differs from the subsystem's current configuration, you can purge the controller's old configuration with the following command:

SET THIS_CONTROLLER INITIAL_CONFIGURATION

The controller shuts down after returning to its initial configuration. Press its reset button to restart the controller after the controller has been configured.

If **INITIALIZE container-name SAVE_CONFIGURATION** was used to save the controller's configuration, you can restore the configuration by using the **CONFIGURATION RESTORE** command.

6. Using CLCP, install any patches that you had installed on the previous controller as described in the *HSZ80 Array Controller ACS Version 8.x User's Guide*.
7. Mount the logical units on the host. (If you are using a Windows NT platform, restart the PC.)
8. Set the subsystem date and time.