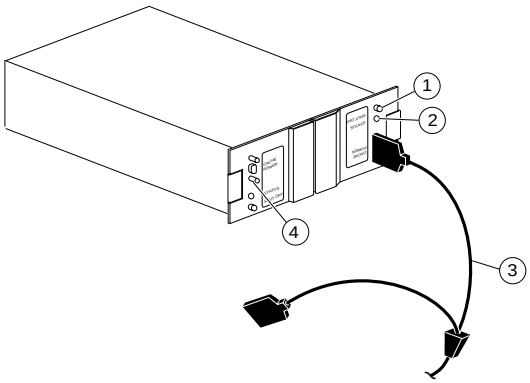
Installing an HSZ80 External Cache Battery (ECB)

Follow these instructions to replace an ECB in a single controller 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.

Replacing an External Cache Battery Storage Building Block in a Dual-Redundant Controller Configuration

Follow these steps to replace an external cache battery (ECB) storage building block (SBB) (see Figure 1):

Figure 1. ECB for Dual-Redundant Configurations



1 Shut off button
2 Status LED
3 ECB "Y" cable
4 Faceplate and controls for second battery

CAUTION: *Do not disconnect the old ECB until the batteries in the new ECB are fully charged.*

NOTE: *This procedure assumes that a single ECB SBB with a dual battery is installed and an empty slot is available for the replacement ECB SBB. If an empty slot is not available, place the new ECB SBB on the top of the cabinet. After the old ECB SBB has been removed, carefully insert the new ECB SBB into the empty slot.*

1. Connect a local terminal to the controller with the operational ECB. The controller to which you're connected is "this controller;" the controller whose ECB you're replacing is 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. Choose option 3, *Replace other cache module battery*, 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 -> 3
```

5. Confirm that you have a new dual-battery replacement ECB SBB. FRUTIL displays the following:

```
Do you have a NEW replacement battery? Y/N
```

6. Type Y(es) and press return.

NOTE: *If an empty slot is not available, place the new ECB SBB on the top of the cabinet.*

7. Confirm that you want to install a replacement ECB SBB. FRUTIL displays the following:

```
Replace the battery for the cache module in slot A
(or B)? Y/N
```

8. Type Y(es) and press return.
9. Insert the new ECB SBB into an empty slot.

CAUTION: *The ECB cable has a 12-V and a 5-V pin. Improper handling when connecting or disconnecting could cause these pins to contact ground, resulting in the cache module being shorted out.*

10. Connect the open end of the ECB "Y" cable to the new ECB.

CAUTION*: Do not disconnect the old ECB until the batteries in the new ECB are fully charged. The new ECB's status light will be lit continuously to indicate that its batteries are fully charged. A blinking status light indicates that its batteries are charging. You may operate the subsystem regardless of the old ECB's status.*

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11. Wait until the new ECB's status light is on continuously, then disconnect the ECB cable from the old ECB.

    FRUTIL displays the following:

    ```
    Setting battery A (or B) state to new.
    Testing battery attached to cache module A (or B).
    Test complete. Battery is good.
    ```

12. Wait for FRUTIL to terminate.

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

    SET FAILOVER COPY=THIS_CONTROLLER

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

14. Disconnect the local terminal from the controller and connect it to the other controller.

15. To connect the other cache module to the new ECB SSB, repeat steps 2 through 8. Since the new ECB SBB is already installed, skip step 9, and then repeat steps 10 through 12. Now both cache modules are connected to the new ECB SSB.

16. Remove the old ECB SBB.

NOTE: *If an empty slot was not available, and the new ECB SBB was placed on the top of the cabinet, carefully insert it now into the empty slot.*

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

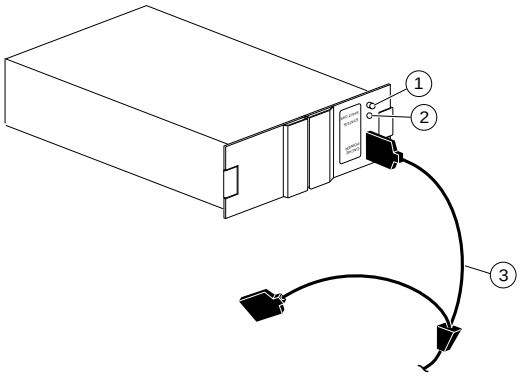
    SET FAILOVER COPY=THIS_CONTROLLER

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

Replacing the External Cache Battery in a Single Controller Configuration

Follow these instructions to remove and replace a single-battery external cache battery (ECB) storage building block (SBB) (see Figure 2):

Figure 2. ECB for Single Configurations



1 Shut off button
2 Status LED
3 ECB "Y" cable

CAUTION: *Do not disconnect the old ECB until the batteries in the new ECB are fully charged.*

1. If the controller and cache module are not operating, go to step 4. Otherwise, go to the next step.

2. Connect a local terminal to the controller's maintenance port.

3. Shut down the controller with the following command:

   SHUTDOWN THIS_CONTROLLER

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

4. Turn off the power to the subsystem.

5. Insert the new ECB SBB into its slot.

CAUTION: *The ECB cable has a 12-V and a 5-V pin. Improper handling when connecting or disconnecting could cause these pins to contact ground, resulting in the cache module being shorted out.*

6. Connect the open end of the ECB "Y" cable to the new ECB.

7. Restore power to the subsystem. The controller automatically restarts.

CAUTION: *Do not disconnect the old ECB until the batteries in the new ECB are fully charged. The new ECB's status light will be lit continuously to indicate that its batteries are fully charged. A blinking status light indicates that its batteries are charging. You may operate the subsystem regardless of the old ECB's battery status, but do not disconnect the old ECB until the batteries in the new ECB are fully charged.*

8. Wait until the new ECB's status light is on continuously, then disconnect the ECB cable from the old ECB.

9. Start FRUTIL with the following command:

   RUN FRUTIL

10. An internal clock monitors the life of the battery. When replacing a battery this clock must be reset. Choose option 6, *Set battery life to new*, from the FRUTIL Main Menu to reset the internal clock.

    ```
    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 -> 6
    ```

11. Choose option 1, *Battery attached to cache module A*, from the Battery Replacement menu:

```
Which battery was replaced while powered off?
 1. Battery attached to cache module A
 2. Battery attached to cache module B
 3. Both batteries
 4. Exit
Enter choice: 1, 2, 3, or 4 -> 1
```

    FRUTIL displays the following:

```
Setting battery A state to new.
Testing battery attached to cache module A.
Test complete. Battery is good.
```

12. Wait for FRUTIL to terminate.
13. Remove the old ECB SBB.