DRAFT 3/29/2016

15   Using Server Management Client, clear the summary alert.

16   Using Server Management Client, close the maintenance window.

17   Using Server Management Client, add a comment to the summary alert.

18   Pack the replaced part according to Teradata Customer Support procedures, then return it to the service parts center or dispose of it locally.

Replacing a Controller Module in an SSD Array

Observe all servicing cautions and warnings.

Replacing a controller module may require a restart of the Teradata Database. Before starting this procedure, the CSR must communicate to the customer that replacing a controller module may require a database restart and, if necessary, coordinate with the customer to find a convenient time for performing the procedure.

Notice: To prevent the storage drives from overheating, replace a failed controller module within three minutes of removal. If replacing the module will take longer than three minutes, the Teradata Database must be stopped and the drive enclosure powered off.

Notice: Data on the Smart Cache circuit card from the controller is unencrypted. If the customer has a data retention policy, remove the Smart Cache circuit card before sending the controller back for failure analysis (FA) or controller replacement.

Related Topics
Servicing Cautions and Warnings, on page 681

Preparing for the Procedure

Notice: Wear an anti-static wrist strap attached to an unpainted metal surface on the rack or chassis when handling parts.

Notice: If replacing the controller module will take longer than three minutes, the CSR must communicate to the customer that the Teradata Database must be stopped to replace the module, and arrange a convenient time to perform this operation.

1   If replacing the controller module will take longer than three minutes, stop the Teradata Database.

2   Remove the new part from its packaging and place it on a static-free surface.

3   Record the serial number and/or part number of the new part in the site equipment log.

4   Access Server Management Client.

5   Using Server Management Client, open a maintenance window for the target component.

6 [Using Server Management Client, initiate a FRU replacement procedure for the component.](#)

Follow the instructions in the FRU Replace Procedure window. The software checks the component status and verifies that all conditions for replacing the component have been met.

If an error message appears, contact Teradata Customer Support.

7 Open the rear door of the cabinet.

8 Verify that the controller module's blue Service Action Allowed LED is on before proceeding with the hardware replacement.

If the replacement procedure has been initiated as a result of a fault condition or the controller being **offline:**	The LED is on. Continue to next step.
If the controller being replaced does not have faults and is online, use SYMplicity to place the controller **offline** before proceeding with the hardware replacement:	a. [From the Service Workstation (SWS), open SYMplicity.](#) b. In the Enterprise Management window, select the Devices tab. c. Double-click the array containing the controller to be placed offline. d. In the Array Management window, select the Hardware tab. e. Click the controller that is to be placed offline. f. Select Hardware > Controller > Advanced > Place > **Offline**. g. When a confirmation dialog box appears, click Yes.

9 Return to Server Management Client and, in the FRU Replace window, click Ok to advance to the replacement step.

Note: If an error message appears, click Cancel. Resolve the issue, then reinitiate the FRU replacement procedure.

Removing a Controller Module

Figure 243: Removing a Controller Module

Latches

Array_0356
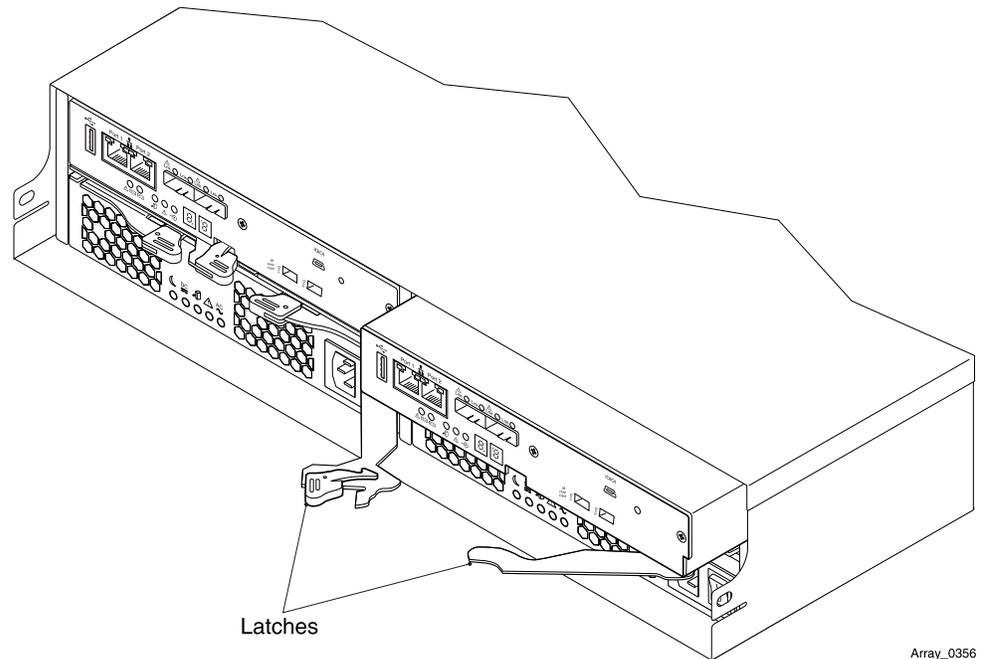
1   At the rear of the cabinet, locate the controller module with amber Service Action Required and blue Service Action Allowed LEDs.

The Service Action Allowed LED indicates that the module can be safely serviced.

2   If replacing the controller module will take longer than three minutes, power off the drive enclosure by powering off both the power supply/cooling modules.

3   Verify that the cables connected to the module are labeled and then disconnect them.

4   Pull the latch out and slide the controller out of the enclosure.

Removing a Smart Cache Circuit Board

If the customer has a data retention policy, remove the Smart Cache device.

Notice: Data on the Smart Cache device from the controller is unencrypted. If the customer has a data retention policy, remove the Smart Cache device before sending the controller back for failure analysis (FA) or controller replacement.

Figure 244: Accessing the Smart Cache
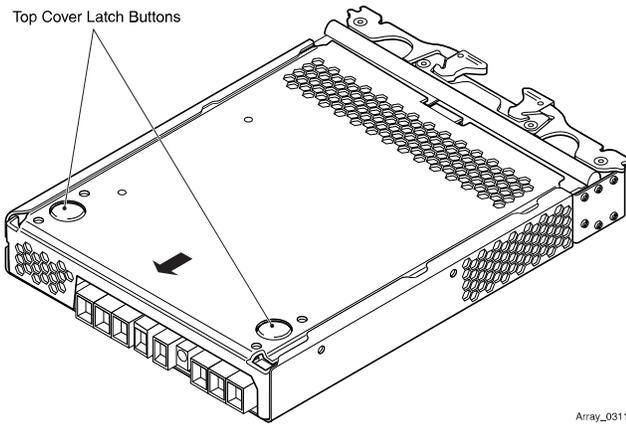
1   From the top of the controller, push the latch buttons and slide the cover off of the
    controller.

2   Locate the Smart Cache circuit card and carefully lift the connector end of the circuit
    card to release it from the connector.
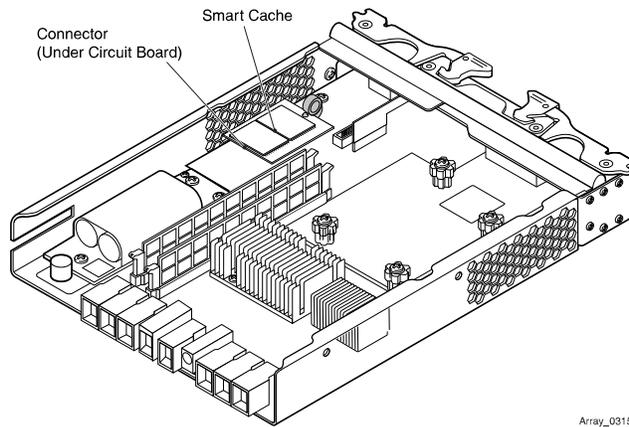
3   Push the blue retainer clip and lift the circuit board from the blue retainer post.

Array_0313
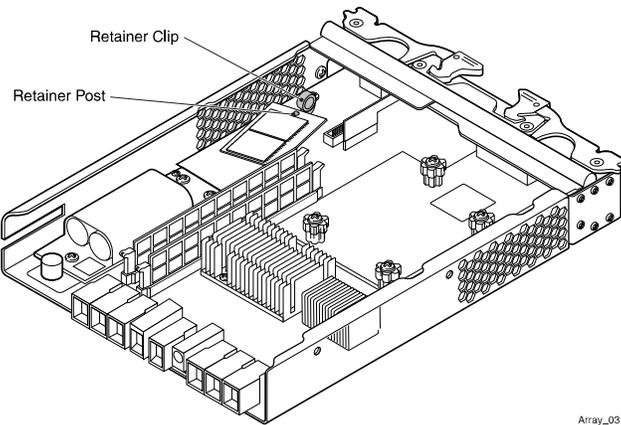
4 Slide the cover on the top of the controller and push it into place until it clicks.

5 Retain the Smart Cache circuit board for the customer, or store it onsite.

Moving the BBU from One Controller Module to Another

Replacement disk array controller modules do *not* come with battery backup units (BBU) installed. When replacing a controller module in a disk array enclosure, you are required to transfer the battery backup unit from the defective controller module to the new controller module.

Removing a Backup Battery Unit

1 With the controller removed from the drive enclosure, set the controller module on a flat, static-free surface, with the release levers up.

2 Press down on both of the top cover latch buttons, and slide the top cover to the rear of the controller module.

Figure 245: Removing the Controller Module Top Cover
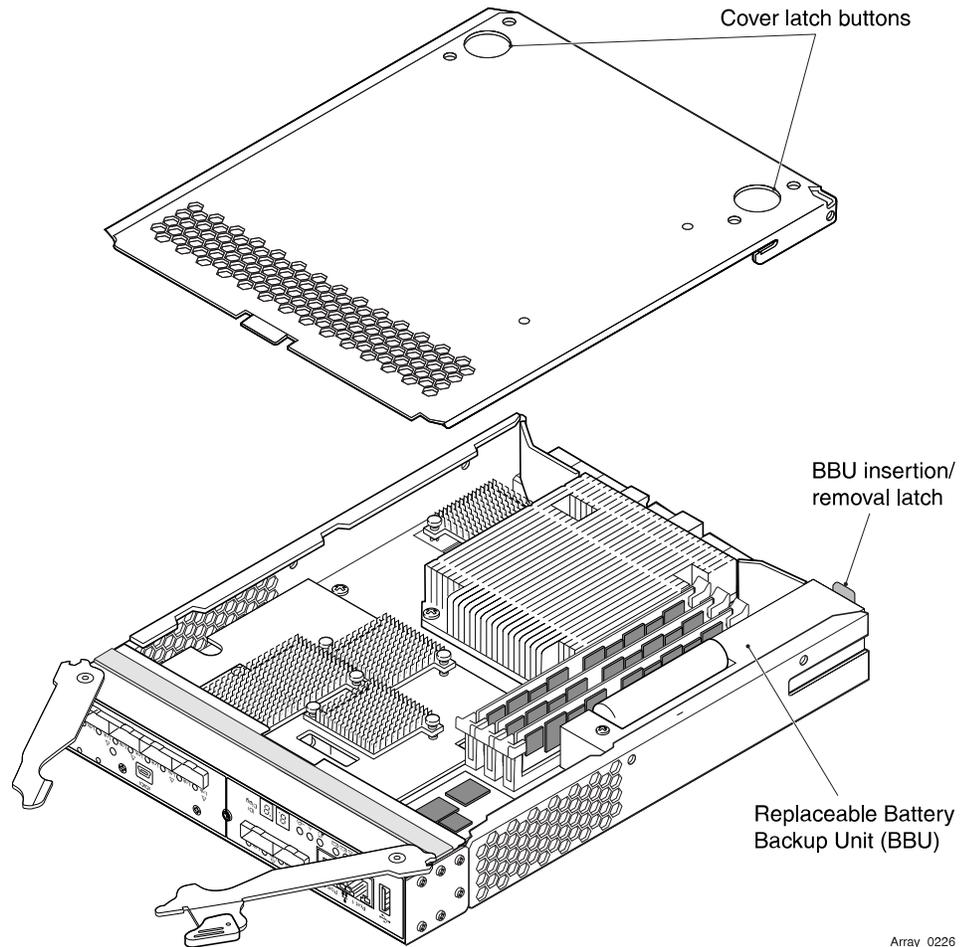
3 Press down on the BBU insertion/removal latch that secures the battery backup unit to
   the controller module.

Figure 246: Removing the Battery Backup Unit
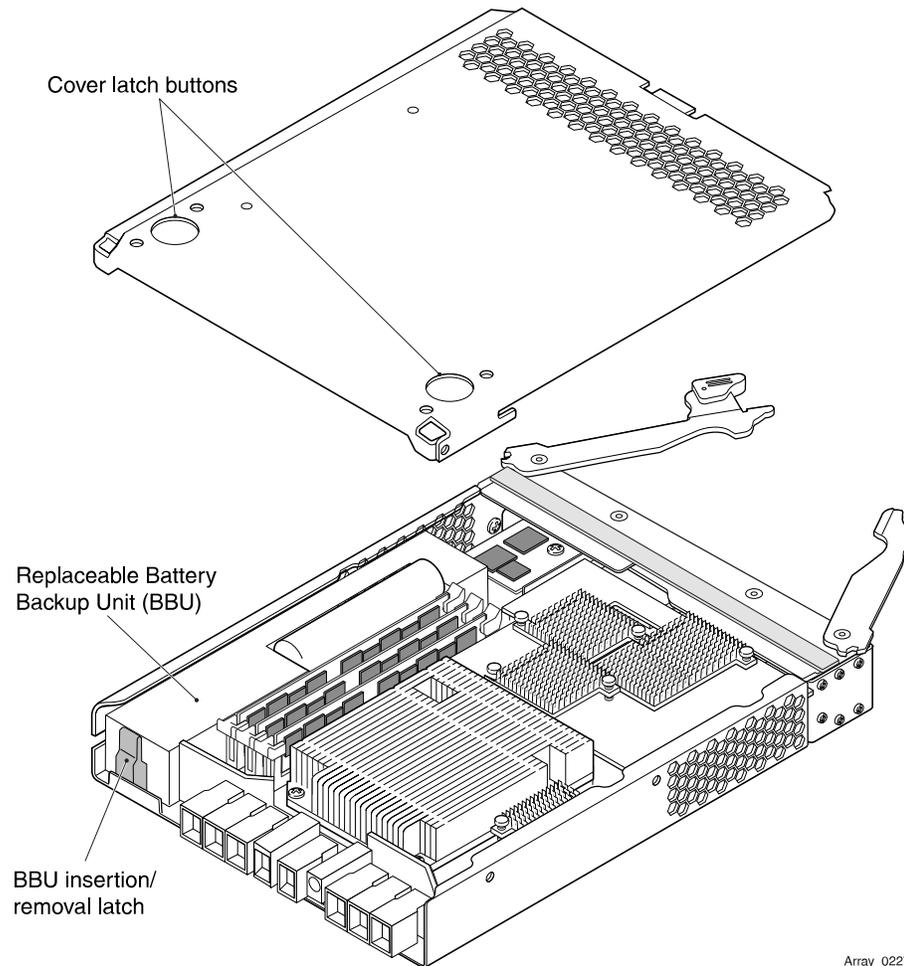
4   Remove the battery backup unit by sliding it towards the rear of the controller module.

Installing a Backup Battery Unit

1   Insert the backup battery unit into the controller module by sliding the backup battery unit towards the front of the controller module.

Notice: To ensure that the backup battery unit is seated correctly, you might need to back it out of the connector to make sure that it is correctly aligned with the thumbscrew.

Figure 247: Replacing the Backup Battery Unit
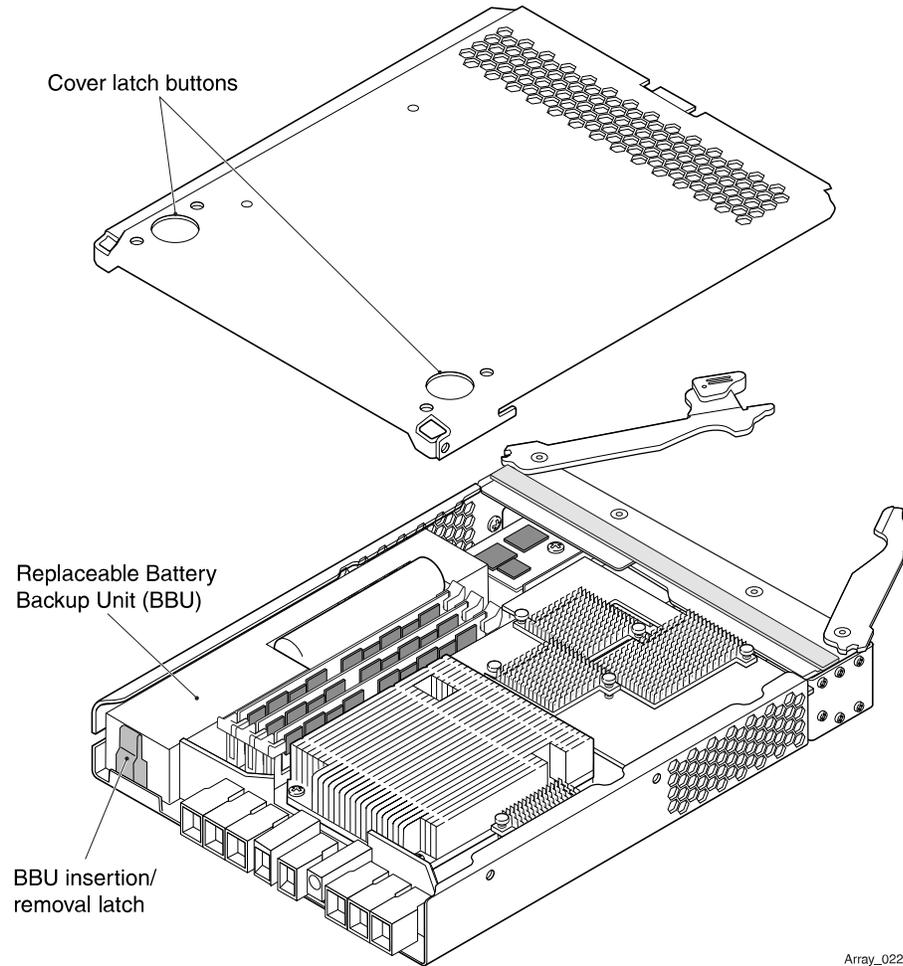
2 Press up on the BBU insertion/removal latch that secures the backup battery unit to the controller module.

3 Reinstall the top cover on the controller module by sliding it forward until the top cover latch buttons click.

Figure 248: Replacing the Controller Module Top Cover
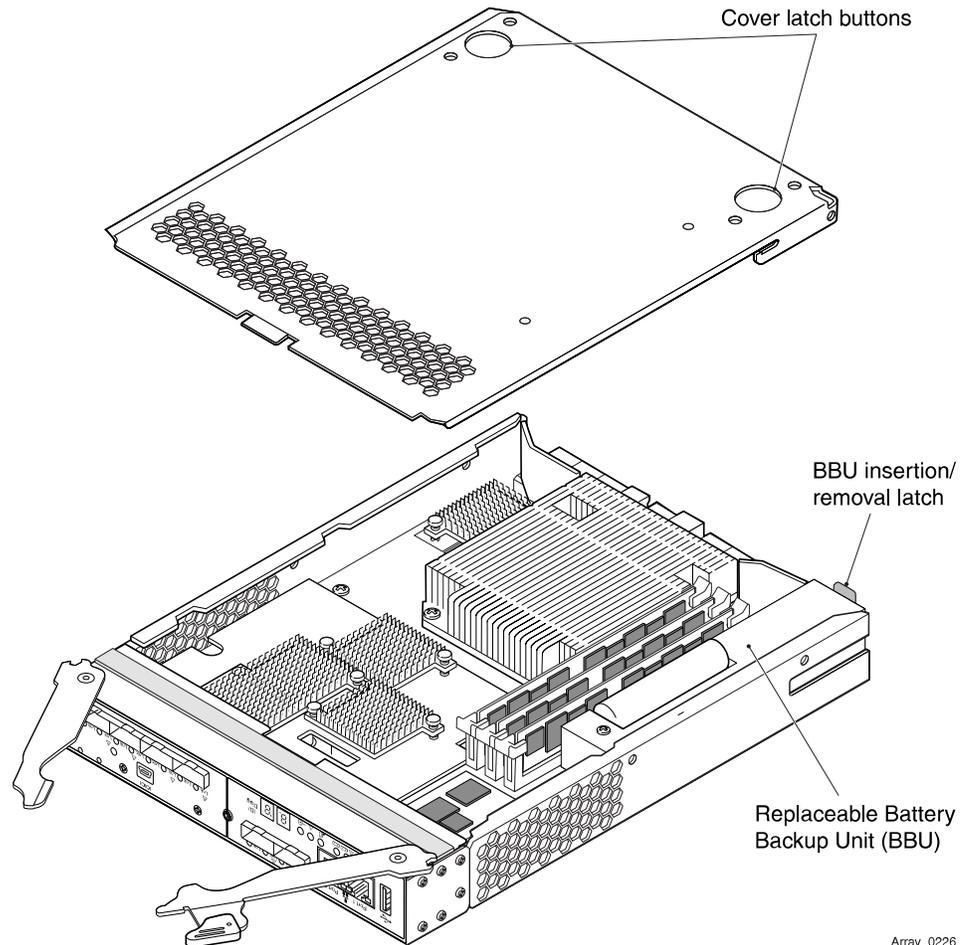
4   Type the following SMcli command to reset the BBU Age displayed in SYMplicity and server management via the SYMbol interface: "reset storageArray batteryInstallDate controller=a|b;"

The BBU Age resets to zero.

5   Type the following SMcli command to initiate a new BBU learn cycle: "set storageArray learnCycleDate daysToNextLearnCycle = 0 time=<hh:mm>;"

Where *hh* and *mm* represent the time of day (hour and minutes) when the next learn cycle is set to begin.

Note: When a new BBU is installed into an array, this command changes an existing 8-week learn cycle to one that starts right away.

The condition of the new BBU is detected and correctly displayed via SYMplicity and the SYMbol interface.

Installing a Controller Module

Figure 249: Installing a Controller Module

Latches

Array_0356
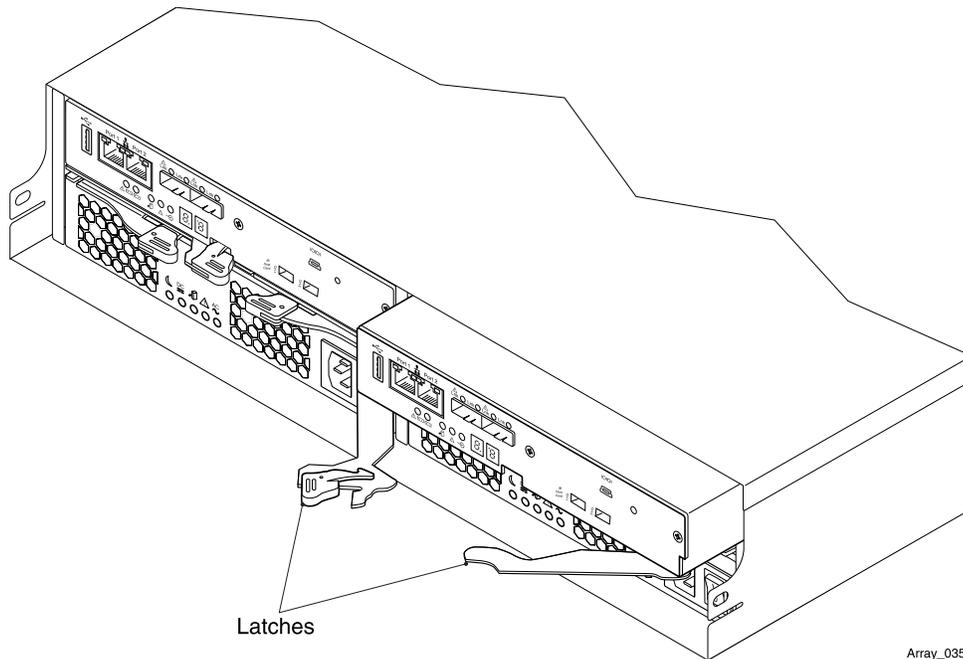
1 Insert the controller into the open bay and push the latch in until both latches snap into place.

2 Connect all cables to the module.

3 If the power supply/cooling modules were powered off, power them on.

4 Wait approximately 60 seconds for the storage management software to recognize the controller module.

Completing the Procedure

1 Return to Server Management Client and, in the FRU Replace window, click Ok.

2 Use SYMplicity to place the new controller online:

 a From the Service Workstation (SWS), open SYMplicity.

 b In the Enterprise Management window, select the Devices tab.

 c Double-click the array containing the offline controller (indicated by a red circle with a down-pointing arrow).

 d In the Array Management window, select the Hardware tab.

 e Click the offline controller.

 f Select Hardware > Controller > Advanced > Place > Online.

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    g When a confirmation dialog box appears, click Yes.

3 Allow approximately three minutes for the controller to come online. When the controller is online, the seven segment display shows the enclosure ID.

Note: If the firmware levels of the new and existing controllers do not match, Auto Code Synchronization (ACS) resolves the firmware mismatch. ACS takes approximately seven minutes to complete.

4 Return to Server Management Client and, in the FRU Replace window, click Ok.

5 Verify that all paths from the nodes to the disk array are online:

    a From Server Management Client, open a console window to a node that is attached to the disk array and then type the following:

```
tdmputil -r
```

    b Verify that all paths display the status Up.

    c Repeat steps a and b for each node that is attached to the disk array.

6 If the Teradata Database was stopped prior to replacing the controller, return to SYMplicity to redistribute the disk array volumes:

    a In the Array Management window, select Storage > Volume > Advanced > Redistribute Volumes

    b When a confirmation dialog box appears, click Yes.

7 When the processing dialog box shows Completed, click OK.

8 Obtain the MAC address for the new controller module:

    a In the Array Management window, select the Hardware tab.

    b In the Array Management window, highlight the new controller module and then click the View Complete Controller Properties link.

    c Click the Network tab.

    d Locate and write down the hardware (MAC) address of the primary server management Ethernet port (port 1).

9 [Using the CMIC Configuration Editor in Server Management Web Services, replace the old MAC addresses with the new one.](#)

10 Return to Server Management Client and, in the FRU Replace window, click Ok.

11 When the Replace FRU confirmation dialog box appears, click Ok to close the FRU replacement session in Server Management Client.

12 If the Teradata Database was stopped, [start the database.](#)

13 [Using the Server Management Client Tree View, check the operational state of the target chassis.](#)

14 [Using Server Management Client, add a comment to the summary alert.](#)

15 [Using Server Management Client, clear the summary alert.](#)

16 [Using Server Management Client, close the maintenance window.](#)

17 [Using Server Management Client, add a comment to the summary alert.](#)

18 Pack the replaced part according to Teradata Customer Support procedures, then return it to the service parts center or dispose of it locally.

Replacing a Backup Battery Unit

Observe all servicing cautions and warnings.

Replacing a controller module may require a restart of the . Before starting this procedure, the CSR must communicate to the customer that replacing a controller module may require a database restart and, if necessary, coordinate with the customer to find a convenient time for performing the procedure.

Notice: To prevent the storage drives from overheating, replace a failed controller module within three minutes of removal. If replacing the module will take longer than three minutes, the must be stopped and the drive enclosure powered off.

> ### Related Topics
> [Servicing Cautions and Warnings, on page 681](#)

Preparing for the Procedure

Notice: Wear an anti-static wrist strap attached to an unpainted metal surface on the rack or chassis when handling parts.

Notice: If replacing the controller battery backup unit will take longer than three minutes, the CSR must communicate to the customer that the must be stopped to replace the module, and arrange a convenient time to perform this operation.

1 Remove the new part from its packaging and place it on a static-free surface.

2 Record the serial number and/or part number of the new part in the site equipment log.

3 Open the rear door of the cabinet.

4 Verify that the controller module's blue Service Action Allowed LED and the amber Battery Service Action Required LED are on before proceeding with the hardware replacement.

   Note: Controller modules are located in the bottom enclosure (T0) of each array. ESMs are located in the top enclosure (T1) of each array.

5 Return to Server Management Client and, in the FRU Replace window, click Ok to advance to the replacement step.

Teradata IntelliFlex™ Hardware Service Guide