



Replace the real-time clock battery

ONTAP Systems

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Replace the real-time clock battery

You replace the real-time clock (RTC) battery in the controller module so that your system's services and applications that depend on accurate time synchronization continue to function.

- You can use this procedure with all versions of ONTAP supported by your system
- All other components in the system must be functioning properly; if not, you must contact technical support.

Step 1: Shut down the impaired controller

You can shut down or take over the impaired controller using different procedures, depending on the storage system hardware configuration.

Option 1: Most configurations

To shut down the impaired node, you must determine the status of the node and, if necessary, take over the node so that the healthy node continues to serve data from the impaired node storage.

About this task

If you have a cluster with more than two nodes, it must be in quorum. If the cluster is not in quorum or a healthy node shows false for eligibility and health, you must correct the issue before shutting down the impaired node.

[ONTAP 9 System Administration Reference](#)

Steps

1. If AutoSupport is enabled, suppress automatic case creation by invoking an AutoSupport message:

```
system node autosupport invoke -node * -type all -message  
MAINT=number_of_hours_downh
```

The following AutoSupport message suppresses automatic case creation for two hours: `cluster1:*>`

```
system node autosupport invoke -node * -type all -message MAINT=2h
```

2. Disable automatic giveback from the console of the healthy node: `storage failover modify -node local -auto-giveback false`
3. Take the impaired node to the LOADER prompt:

If the impaired node is displaying...	Then...
The LOADER prompt	Go to the next step.
Waiting for giveback...	Press Ctrl-C, and then respond <code>y</code> when prompted.

If the impaired node is displaying...	Then...
System prompt or password prompt (enter system password)	<p>Take over or halt the impaired node:</p> <ul style="list-style-type: none"> For an HA pair, take over the impaired node from the healthy node: <code>storage failover takeover -ofnode <i>impaired_node_name</i></code> <p>When the impaired node shows Waiting for giveback..., press Ctrl-C, and then respond <code>y</code>.</p>

Option 2: Controller is in a two-node MetroCluster

To shut down the impaired node, you must determine the status of the node and, if necessary, switch over the node so that the healthy node continues to serve data from the impaired node storage.

About this task

- If you are using NetApp Storage Encryption, you must have reset the MSID using the instructions in the "Returning SEDs to unprotected mode" section of the *ONTAP 9 NetApp Encryption Power Guide*.

[ONTAP 9 NetApp Encryption Power Guide](#)

- You must leave the power supplies turned on at the end of this procedure to provide power to the healthy node.

Steps

- Check the MetroCluster status to determine whether the impaired node has automatically switched over to the healthy node: `metrocluster show`
- Depending on whether an automatic switchover has occurred, proceed according to the following table:

If the impaired node...	Then...
Has automatically switched over	Proceed to the next step.
Has not automatically switched over	Perform a planned switchover operation from the healthy node: <code>metrocluster switchover</code>
Has not automatically switched over, you attempted switchover with the <code>metrocluster switchover</code> command, and the switchover was vetoed	Review the veto messages and, if possible, resolve the issue and try again. If you are unable to resolve the issue, contact technical support.

- Resynchronize the data aggregates by running the `metrocluster heal -phase aggregates` command from the surviving cluster.

```
controller_A_1::> metrocluster heal -phase aggregates
[Job 130] Job succeeded: Heal Aggregates is successful.
```

If the healing is vetoed, you have the option of reissuing the `metrocluster heal` command with the `-override-vetoes` parameter. If you use this optional parameter, the system overrides any soft vetoes that prevent the healing operation.

4. Verify that the operation has been completed by using the `metrocluster operation show` command.

```
controller_A_1::> metrocluster operation show
Operation: heal-aggregates
State: successful
Start Time: 7/25/2016 18:45:55
End Time: 7/25/2016 18:45:56
Errors: -
```

5. Check the state of the aggregates by using the `storage aggregate show` command.

```
controller_A_1::> storage aggregate show
Aggregate      Size Available Used% State   #Vols  Nodes      RAID
Status
-----
...
aggr_b2        227.1GB   227.1GB   0% online      0 mcc1-a2
raid_dp, mirrored, normal...
```

6. Heal the root aggregates by using the `metrocluster heal -phase root-aggregates` command.

```
mcc1A::> metrocluster heal -phase root-aggregates
[Job 137] Job succeeded: Heal Root Aggregates is successful
```

If the healing is vetoed, you have the option of reissuing the `metrocluster heal` command with the `-override-vetoes` parameter. If you use this optional parameter, the system overrides any soft vetoes that prevent the healing operation.

7. Verify that the heal operation is complete by using the `metrocluster operation show` command on the destination cluster:

```
mccl1A::> metrocluster operation show
Operation: heal-root-aggregates
State: successful
Start Time: 7/29/2016 20:54:41
End Time: 7/29/2016 20:54:42
Errors: -
```

8. On the impaired controller module, disconnect the power supplies.

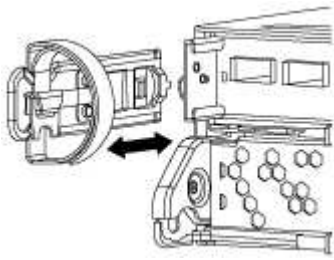
Step 2: Open the system

To access components inside the controller, you must first remove the controller module from the system and then remove the cover on the controller module.

1. If you are not already grounded, properly ground yourself.
2. Loosen the hook and loop strap binding the cables to the cable management device, and then unplug the system cables and SFPs (if needed) from the controller module, keeping track of where the cables were connected.

Leave the cables in the cable management device so that when you reinstall the cable management device, the cables are organized.

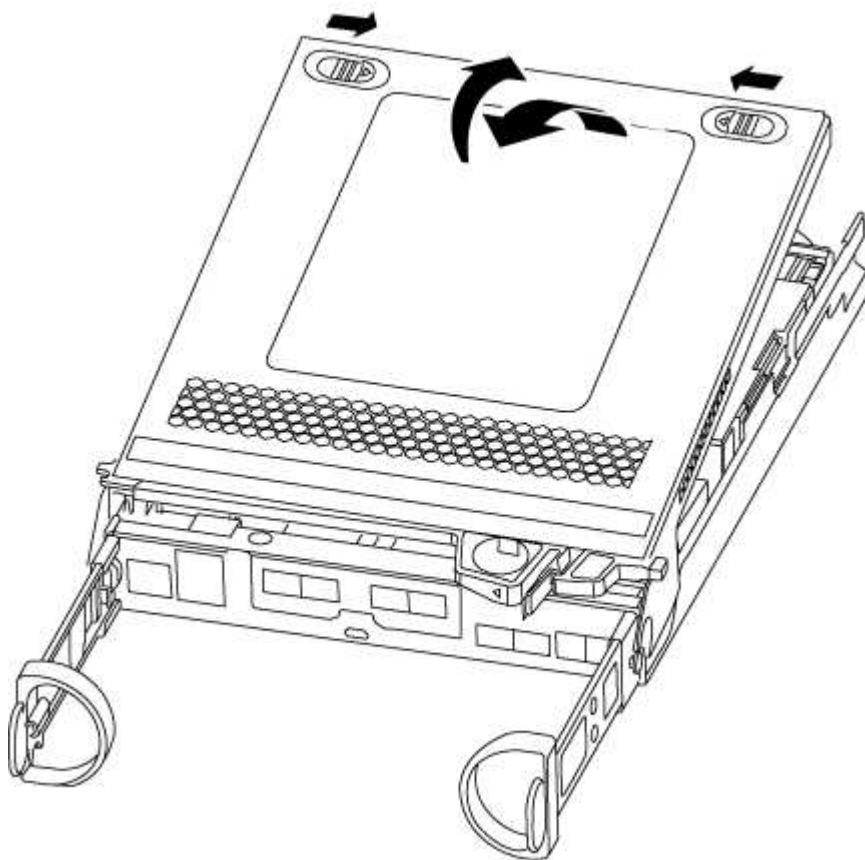
3. Remove and set aside the cable management devices from the left and right sides of the controller module.



4. Squeeze the latch on the cam handle until it releases, open the cam handle fully to release the controller module from the midplane, and then, using two hands, pull the controller module out of the chassis.



5. Turn the controller module over and place it on a flat, stable surface.
6. Open the cover by sliding in the blue tabs to release the cover, and then swing the cover up and open.

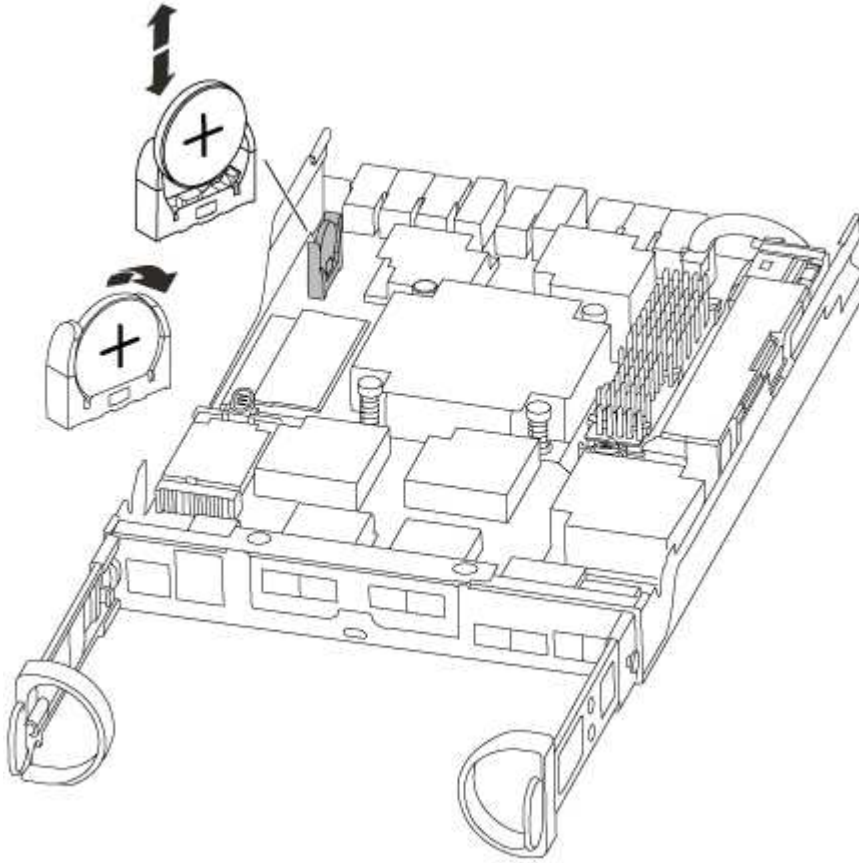


Step 3: Replace the RTC battery

To replace the RTC battery, locate it inside the controller and follow the specific sequence

of steps.

1. If you are not already grounded, properly ground yourself.
2. Locate the RTC battery.



3. Gently push the battery away from the holder, rotate it away from the holder, and then lift it out of the holder.



Note the polarity of the battery as you remove it from the holder. The battery is marked with a plus sign and must be positioned in the holder correctly. A plus sign near the holder tells you how the battery should be positioned.

4. Remove the replacement battery from the antistatic shipping bag.
5. Locate the empty battery holder in the controller module.
6. Note the polarity of the RTC battery, and then insert it into the holder by tilting the battery at an angle and pushing down.
7. Visually inspect the battery to make sure that it is completely installed into the holder and that the polarity is correct.

Step 4: Reinstall the controller module and set time/date after RTC battery replacement

After you replace a component within the controller module, you must reinstall the controller module in the system chassis, reset the time and date on the controller, and

then boot it.

1. If you have not already done so, close the air duct or controller module cover.
2. Align the end of the controller module with the opening in the chassis, and then gently push the controller module halfway into the system.

Do not completely insert the controller module in the chassis until instructed to do so.

3. Recable the system, as needed.

If you removed the media converters (QSFPs or SFPs), remember to reinstall them if you are using fiber optic cables.

4. If the power supplies were unplugged, plug them back in and reinstall the power cable retainers.

5. Complete the reinstallation of the controller module:

- a. With the cam handle in the open position, firmly push the controller module in until it meets the midplane and is fully seated, and then close the cam handle to the locked position.



Do not use excessive force when sliding the controller module into the chassis to avoid damaging the connectors.

- b. If you have not already done so, reinstall the cable management device.
 - c. Bind the cables to the cable management device with the hook and loop strap.
 - d. Reconnect the power cables to the power supplies and to the power sources, and then turn on the power to start the boot process.
 - e. Halt the controller at the LOADER prompt.
6. Reset the time and date on the controller:
 - a. Check the date and time on the healthy node with the `show date` command.
 - b. At the LOADER prompt on the target node, check the time and date.
 - c. If necessary, modify the date with the `set date mm/dd/yyyy` command.
 - d. If necessary, set the time, in GMT, using the `set time hh:mm:ss` command.
 - e. Confirm the date and time on the target node.
 7. At the LOADER prompt, enter `bye` to reinitialize the PCIe cards and other components and let the node reboot.
 8. Return the node to normal operation by giving back its storage: `storage failover giveback -ofnode impaired_node_name`
 9. If automatic giveback was disabled, reenable it: `storage failover modify -node local -auto-giveback true`

Step 5: Switch back aggregates in a two-node MetroCluster configuration

After you have completed the FRU replacement in a two-node MetroCluster configuration, you can perform the MetroCluster switchback operation. This returns the

configuration to its normal operating state, with the sync-source storage virtual machines (SVMs) on the formerly impaired site now active and serving data from the local disk pools.

This task only applies to two-node MetroCluster configurations.

Steps

1. Verify that all nodes are in the enabled state: `metrocluster node show`

```
cluster_B::> metrocluster node show

DR                               Configuration  DR
Group Cluster Node              State          Mirroring Mode
-----
1      cluster_A
      controller_A_1 configured      enabled    heal roots
completed
      cluster_B
      controller_B_1 configured      enabled    waiting for
switchback recovery
2 entries were displayed.
```

2. Verify that resynchronization is complete on all SVMs: `metrocluster vserver show`
3. Verify that any automatic LIF migrations being performed by the healing operations were completed successfully: `metrocluster check lif show`
4. Perform the switchback by using the `metrocluster switchback` command from any node in the surviving cluster.
5. Verify that the switchback operation has completed: `metrocluster show`

The switchback operation is still running when a cluster is in the `waiting-for-switchback` state:

```
cluster_B::> metrocluster show

Cluster              Configuration State      Mode
-----
Local: cluster_B configured      switchover
Remote: cluster_A configured      waiting-for-switchback
```

The switchback operation is complete when the clusters are in the `normal` state.:

```
cluster_B::> metrocluster show
Cluster              Configuration State      Mode
-----
Local: cluster_B configured          normal
Remote: cluster_A configured          normal
```

If a switchback is taking a long time to finish, you can check on the status of in-progress baselines by using the `metrocluster config-replication resync-status show` command.

6. Reestablish any SnapMirror or SnapVault configurations.

Step 6: Return the failed part to NetApp

After you replace the part, you can return the failed part to NetApp, as described in the RMA instructions shipped with the kit. Contact technical support at [NetApp Support](#), 888-463-8277 (North America), 00-800-44-638277 (Europe), or +800-800-80-800 (Asia/Pacific) if you need the RMA number or additional help with the replacement procedure.

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