



Removing the MetroCluster FC controllers

ONTAP MetroCluster

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You must perform clean-up tasks and remove the old controller modules from the MetroCluster configuration.

1. To prevent automatic support case generation, send an Autosupport message to indicate maintenance is underway.
 - a. Issue the following command: `system node autosupport invoke -node * -type all -message MAINT=maintenance-window-in-hours`

maintenance-window-in-hours specifies the length of the maintenance window, with a maximum of 72 hours. If the maintenance is completed before the time has elapsed, you can invoke an AutoSupport message indicating the end of the maintenance period: `system node autosupport invoke -node * -type all -message MAINT=end`
 - b. Repeat the command on the partner cluster.
2. Identify the aggregates hosted on the MetroCluster FC configuration that need to be deleted.

In this example the following data aggregates are hosted by the MetroCluster FC cluster_B and need to be deleted: aggr_data_a1 and aggr_data_a2.



You need to perform the steps to identify, offline and delete the data aggregates on both the clusters. The example is for one cluster only.

```
cluster_B::> aggr show
```

Aggregate Status	Size	Available	Used%	State	#Vols	Nodes	RAID

aggr0_node_A_1-FC	349.0GB	16.83GB	95%	online	1	node_A_1-FC	
raid_dp,							
mirrored,							
normal							
aggr0_node_A_2-FC	349.0GB	16.83GB	95%	online	1	node_A_2-FC	
raid_dp,							
mirrored,							
normal							
aggr0_node_A_3-IP	467.6GB	22.63GB	95%	online	1	node_A_3-IP	
raid_dp,							

```

mirrored,

normal
aggr0_node_A_3-IP
      467.6GB    22.62GB    95% online      1 node_A_4-IP
raid_dp,

mirrored,

normal
aggr_data_a1
      1.02TB     1.02TB     0% online      0 node_A_1-FC
raid_dp,

mirrored,

normal
aggr_data_a2
      1.02TB     1.02TB     0% online      0 node_A_2-FC
raid_dp,

mirrored,

normal
aggr_data_a3
      1.37TB     1.35TB     1% online      3 node_A_3-IP
raid_dp,

mirrored,

normal
aggr_data_a4
      1.25TB     1.24TB     1% online      2 node_A_4-IP
raid_dp,

mirrored,

normal
8 entries were displayed.

```

```
cluster_B::>
```

3. Check if the data aggregates on the FC nodes have any MDV_aud volumes, and delete them prior to deleting the aggregates.

You must delete the MDV_aud volumes as they cannot be moved.

4. Take each of the aggregates offline, and then delete them:

- a. Take the aggregate offline: `storage aggregate offline -aggregate aggregate-name`

The following example shows the aggregate `node_B_1_aggr0` being taken offline:

```
cluster_B::> storage aggregate offline -aggregate node_B_1_aggr0  
  
Aggregate offline successful on aggregate: node_B_1_aggr0
```

- b. Delete the aggregate: `storage aggregate delete -aggregate aggregate-name`

You can destroy the plex when prompted.

The following example shows the aggregate `node_B_1_aggr0` being deleted.

```
cluster_B::> storage aggregate delete -aggregate node_B_1_aggr0  
Warning: Are you sure you want to destroy aggregate "node_B_1_aggr0"?  
{y|n}: y  
[Job 123] Job succeeded: DONE  
  
cluster_B::>
```

5. Identify the MetroCluster FC DR group that need to be removed.

In the following example the MetroCluster FC nodes are in DR Group '1', and this is the DR group that need to be removed.

```
cluster_B::> metrocluster node show
```

DR	Configuration	DR
Group	Cluster	Node
State	Mirroring	Mode
1	cluster_A	
	node_A_1-FC	configured
	node_A_2-FC	configured
	cluster_B	
	node_B_1-FC	configured
	node_B_2-FC	configured
2	cluster_A	
	node_A_3-IP	configured
	node_A_4-IP	configured
	cluster_B	
	node_B_3-IP	configured
	node_B_3-IP	configured

8 entries were displayed.

```
cluster_B::>
```

6. Move the cluster management LIF from a MetroCluster FC node to a MetroCluster IP node:

```
cluster_B::> network interface migrate -vserver svm-name -lif cluster_mgmt  
-destination-node node-in-metrocluster-ip-dr-group -destination-port  
available-port
```

7. Change the home node and home port of the cluster management LIF: `cluster_B::> network interface modify -vserver svm-name -lif cluster_mgmt -service-policy default-management -home-node node-in-metrocluster-ip-dr-group -home-port lif-port`

8. Move epsilon from a MetroCluster FC node to a MetroCluster IP node:

- a. Identify which node currently has epsilon: `cluster show -fields epsilon`

```
cluster_B::> cluster show -fields epsilon
```

node	epsilon
node_A_1-FC	true
node_A_2-FC	false
node_A_1-IP	false
node_A_2-IP	false

4 entries were displayed.

- b. Set epsilon to false on the MetroCluster FC node (node_A_1-FC): `cluster modify -node fc-node -epsilon false`

- c. Set epsilon to true on the MetroCluster IP node (node_A_1-IP): `cluster modify -node ip-node -epsilon true`
- d. Verify that epsilon has moved to the correct node: `cluster show -fields epsilon`

```
cluster_B::> cluster show -fields epsilon
node          epsilon
-----
node_A_1-FC    false
node_A_2-FC    false
node_A_1-IP    true
node_A_2-IP    false
4 entries were displayed.
```

9. On each cluster, remove the DR group containing the old nodes from the MetroCluster FC configuration.

You must perform this step on both clusters, one at a time.

```
cluster_B::> metrocluster remove-dr-group -dr-group-id 1
```

Warning: Nodes in the DR group that are removed from the MetroCluster configuration will lose their disaster recovery protection.

Local nodes "node_A_1-FC, node_A_2-FC" will be removed from the MetroCluster configuration. You must repeat the operation on the partner cluster "cluster_B" to remove the remote nodes in the DR group.

Do you want to continue? {y|n}: y

Info: The following preparation steps must be completed on the local and partner clusters before removing a DR group.

1. Move all data volumes to another DR group.
2. Move all MDV_CRS metadata volumes to another DR group.
3. Delete all MDV_aud metadata volumes that may exist in the DR group to be removed.
4. Delete all data aggregates in the DR group to be removed. Root aggregates are not deleted.
5. Migrate all data LIFs to home nodes in another DR group.
6. Migrate the cluster management LIF to a home node in another DR group. Node management and inter-cluster LIFs are not migrated.
7. Transfer epsilon to a node in another DR group.

The command is vetoed if the preparation steps are not completed on the local and partner clusters.

Do you want to continue? {y|n}: y

[Job 513] Job succeeded: Remove DR Group is successful.

```
cluster_B::>
```

10. Verify that the nodes are ready to be removed from the clusters.

You must perform this step on both clusters.



At this point, the `metrocluster node show` command only shows the local MetroCluster FC nodes and no longer shows the nodes that are part of the partner cluster.


```
cluster_B::> metrocluster node show
```

DR	Configuration	DR
Group Cluster Node	State	Mirroring Mode
-----	-----	-----
1	cluster_A	
	node_A_1-FC	ready to configure
		-
	node_A_2-FC	ready to configure
		-
2	cluster_A	
	node_A_3-IP	configured
	node_A_4-IP	configured
	cluster_B	
	node_B_3-IP	configured
	node_B_4-IP	configured

6 entries were displayed.

```
cluster_B::>
```

11. Disable storage failover for the MetroCluster FC nodes.

You must perform this step on each node.

```
cluster_A::> storage failover modify -node node_A_1-FC -enabled false
cluster_A::> storage failover modify -node node_A_2-FC -enabled false
cluster_A::>
```

12. Unjoin the MetroCluster FC nodes from the clusters: `cluster unjoin -node node-name`

You must perform this step on each node.

```
cluster_A::> cluster unjoin -node node_A_1-FC
```

Warning: This command will remove node "node_A_1-FC" from the cluster.
You must

remove the failover partner as well. After the node is removed,
erase

its configuration and initialize all disks by using the "Clean
configuration and initialize all disks (4)" option from the
boot menu.

Do you want to continue? {y|n}: y

[Job 553] Job is queued: Cluster remove-node of Node:node_A_1-FC with
UUID:6c87de7e-ff54-11e9-8371

[Job 553] Checking prerequisites

[Job 553] Cleaning cluster database

[Job 553] Job succeeded: Node remove succeeded

If applicable, also remove the node's HA partner, and then clean its
configuration and initialize all disks with the boot menu.

Run "debug vreport show" to address remaining aggregate or volume
issues.

```
cluster_B::>
```

13. Power down the MetroCluster FC controller modules and storage shelves.
14. Disconnect and remove the MetroCluster FC controller modules and storage shelves.

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