



# Healing the configuration

## ONTAP MetroCluster

NetApp

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# Table of Contents

- Healing the configuration ..... 1
  - Healing the configuration in a MetroCluster FC configuration ..... 1
  - Healing the configuration in a MetroCluster IP configuration (ONTAP 9.4 and earlier) ..... 3

# Healing the configuration

After a negotiated switchover operation, you must perform the healing operations in specific order to restore MetroCluster functionality. The procedure you use depends on the type of MetroCluster configuration you have.

On MetroCluster IP systems running ONTAP 9.5, healing is performed automatically, and you can skip these tasks.

## Healing the configuration in a MetroCluster FC configuration

Following a switchover, you must perform the healing operations in specific order to restore MetroCluster functionality.

- Switchover must have been performed and the surviving site must be serving data.
- Nodes on the disaster site must be halted or remain powered off.

They must not be fully booted during the healing process.

- Storage at the disaster site must be accessible (shelves are powered up, functional, and accessible).
- In fabric-attached MetroCluster configurations, inter-switch links (ISLs) must be up and operating.
- In four-node MetroCluster configurations, nodes in the surviving site must not be in HA failover state (all nodes must be up and running for each HA pair).

The healing operation must first be performed on the data aggregates, and then on the root aggregates.

### Healing the data aggregates after negotiated switchover

You must heal the data aggregates after completing any maintenance or testing. This process resynchronizes the data aggregates and prepares the disaster site for normal operation. You must heal the data aggregates prior to healing the root aggregates.

All configuration updates in the remote cluster successfully replicate to the local cluster. You power up the storage on the disaster site as part of this procedure, but you do not and must not power up the controller modules on the disaster site.

#### Steps

1. Ensure that switchover has been completed by running the metrocluster operation show command.

```
controller_A_1::> metrocluster operation show
  Operation: switchover
    State: successful
  Start Time: 7/25/2014 20:01:48
  End Time: 7/25/2014 20:02:14
  Errors: -
```

2. 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.

3. Verify that the operation has been completed by running the metrocluster operation show command.

```
controller_A_1::> metrocluster operation show
  Operation: heal-aggregates
  State: successful
Start Time: 7/25/2014 18:45:55
End Time: 7/25/2014 18:45:56
Errors: -
```

4. Check the state of the aggregates by running 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...
```

5. If storage has been replaced at the disaster site, you might need to remirror the aggregates.

## Healing the root aggregates after negotiated switchover

After the data aggregates have been healed, you must heal the root aggregates in preparation for the switchback operation.

The data aggregates phase of the MetroCluster healing process must have been completed successfully.

### Steps

1. Switch back the mirrored aggregates by running the metrocluster heal -phase root-aggregates command.

```
cluster_A::> 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.

2. Confirm the heal operation is complete by running the metrocluster operation show command on the healthy cluster:

```
cluster_A::> metrocluster operation show
  Operation: heal-root-aggregates
    State: successful
  Start Time: 7/29/2014 20:54:41
    End Time: 7/29/2014 20:54:42
    Errors: -
```

3. Check for and remove any failed disks belonging to the disaster site by issuing the following command on the healthy site: `disk show -broken`
4. Power up or boot each controller module on the disaster site.

If the system displays the LOADER prompt, run the `boot_ontap` command.

5. After nodes are booted, verify that the root aggregates are mirrored.

If both plexes are present, resynchronization will occur automatically if the plexes are not synchronized. If one plex has failed, that plex must be destroyed and the mirror must be recreated using the `storage aggregate mirror -aggregateaggregate-name` command to reestablish the mirror relationship.

## Healing the configuration in a MetroCluster IP configuration (ONTAP 9.4 and earlier)

You must heal the aggregates in preparation for the switchback operation.

The following conditions must exist before performing the healing procedure:

- Switchover must have been performed and the surviving site must be serving data.
- Storage shelves at the disaster site must be powered up, functional, and accessible.
- ISLs must be up and operating.
- Nodes in the surviving site must not be in HA failover state (both nodes must be up and running).

This task applies to MetroCluster IP configurations running ONTAP versions prior to 9.5 only.

This procedure differs from the healing procedure for MetroCluster FC configurations.

### Steps

1. Power up each controller module on the site that was switched over and let them fully boot.

If the system displays the LOADER prompt, run the `boot_ontap` command.

2. Perform the root aggregate healing phase: `metrocluster heal root-aggregates`

```
cluster_A:> metrocluster heal 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 root-aggregates` command with the `--override-vetoes` parameter. If you use this optional parameter, the system overrides any soft vetoes that prevent the healing operation.

3. Resynchronize the aggregates: `metrocluster heal aggregates`

```
cluster_A:> metrocluster heal aggregates
[Job 137] 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. Confirm the heal operation is complete by running the `metrocluster operation show` command on the healthy cluster:

```
cluster_A:> metrocluster operation show
Operation: heal-aggregates
State: successful
Start Time: 7/29/2017 20:54:41
End Time: 7/29/2017 20:54:42
Errors: -
```

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