



Replacing a shelf nondisruptively in a stretch MetroCluster configuration

ONTAP MetroCluster

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April 21, 2021

This PDF was generated from https://docs.netapp.com/us-en/ontap-metrocluster/maintain/task_replace_a_shelf_nondisruptively_in_a_stretch_mcc_configuration.html on September 24, 2021. Always check docs.netapp.com for the latest.

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Replacing a shelf nondisruptively in a stretch MetroCluster configuration

You can replace disk shelves without disruption in a stretch MetroCluster configuration with a fully populated disk shelf or a disk shelf chassis and transfer components from the shelf you are removing.


The disk shelf model you are installing must meet the storage system requirements specified in the [Hardware Universe](#), which includes supported shelf models, supported disk drive types, the maximum number of disk shelves in a stack, and supported ONTAP versions.

Steps

1. Properly ground yourself.
2. Identify all aggregates and volumes that have disks from the loop that contains the shelf you are replacing and make note of the affected plex name.

Either node might contain disks from the loop of the affected shelf and host aggregates or host volumes.

3. Choose one of the following two options based on the replacement scenario you are planning.
 - If you are replacing a complete disk shelf, including the shelf chassis, disks, and I/O modules (IOM), take the corresponding action as described in the table below:

Scenario	Action
The affected plex contains fewer disks from the affected shelf.	Replace the disks one-by-one on the affected shelf with spares from another shelf.  You can take the plex offline after completing the disk replacement.
The affected plex contains more disks than are in the affected shelf.	Move the plex offline and then delete the plex.
The affected plex has any disk from the affected shelf.	Move the plex offline but do not delete it.

- If you are replacing only the disk shelf chassis and no other components, perform the following steps:
 - a. Offline the affected plexes from the controller where they are hosted:
aggregate offline
 - b. Verify that the plexes are offline:

```
aggregate status -r
```

4. Identify the controller SAS ports to which the affected shelf loop is connected and disable the SAS ports on both site controllers:

```
storage port disable -node node_name -port SAS_port
```

The affected shelf loop is connected to both sites.

5. Wait for ONTAP to recognize that the disk is missing. You can use the following commands to verify that the disk is missing: **sysconfig -a** or **sysconfig -r**.
6. Turn off the power switch on the disk shelf.
7. Unplug all power cords from the disk shelf.
8. Make a record of the ports from which you unplug the cables so that you can cable the new disk shelf in the same way.
9. Unplug and remove the cables connecting the disk shelf to the other disk shelves or the storage system.
10. Remove the disk shelf from the rack.

To make the disk shelf lighter and easier to maneuver, remove the power supplies and IOM. If you will be installing a disk shelf chassis, also remove the disk drives or carriers. Otherwise, avoid removing disk drives or carriers if possible because excessive handling can cause internal drive damage.

11. Install and secure the replacement disk shelf onto the support brackets and rack.
12. If you installed a disk shelf chassis, reinstall power supplies and IOM.
13. Reconfigure the stack of disk shelves by connecting all cables to the replacement disk shelf ports exactly as they were configured on the disk shelf that you removed.
14. Turn on the power to the replacement disk shelf and wait for the disk drives to spin up.
15. Change the disk shelf ID to a unique ID from 0 through 98.
16. Enable any SAS ports that you previously disabled and then wait for ONTAP to recognize that the disks are inserted.

You can use the following commands to verify that the disks are inserted: **sysconfig -a** or **sysconfig -r**.

17. If you are replacing the complete disk shelf (disk shelf chassis, disks, IOM), perform the following steps:



If you are replacing only the disk shelf chassis and no other components, go to Step 19.

- a. Use the **storage disk option modify -autoassign** command to determine whether disk auto assignment is enabled (on).

Disk assignment will occur automatically.

- b. If disk auto assignment is not enabled, assign disk ownership manually.

18. Move the plexes back online: **aggregate online plex name**
19. Recreate any plexes that were deleted by mirroring the aggregate.
20. Monitor the plexes as they begin resynchronizing:

aggregate status -r <aggregate name>

21. Verify that the storage system is functioning as expected:

system health alert show

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