MetroCluster configurations

ONTAP 9

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MetroCluster configurations

Upgrade requirements for MetroCluster configurations

If you have to upgrade a MetroCluster configuration, you should be aware of some important requirements.

Required methods for performing major and minor upgrades of MetroCluster configurations

Patch upgrades to MetroCluster configurations can be performed with automatic non-disruptive upgrade (NDU) procedure.

Starting with ONTAP 9.3, major upgrades to MetroCluster configurations can be performed with automatic non-disruptive upgrade (NDU) procedure. On systems running ONTAP 9.2 or earlier, major upgrades to MetroCluster configurations must be performed with the NDU procedure that is specific to MetroCluster configurations.

General requirements

- Both clusters must be running the same version of ONTAP.

  You can verify the ONTAP version by using the version command.

- The MetroCluster configuration must be in either normal or switchover mode.

  Upgrade in switchover mode is only supported in minor patch upgrades.

- For all configurations except two-node clusters, you can nondisruptively upgrade both clusters at the same time.

  For nondisruptive upgrade in two-node clusters, the clusters must be upgraded one node at a time.

- The aggregates in both clusters must not be in resyncing RAID status.

  During MetroCluster healing, the mirrored aggregates are resynchronized. You can verify if the MetroCluster configuration is in this state by using the `storage aggregate plex show -in -progress true` command. If any aggregates are being synchronized, you should not perform an upgrade until the resynchronization is complete.

- Negotiated switchover operations will fail while the upgrade is in progress.

  To avoid issues with upgrade or revert operations, do not attempt an unplanned switchover during an upgrade or revert operation unless all nodes on both clusters are running the same version of ONTAP.

Configuration requirements for normal operation

- The source SVM LIFs must be up and located on their home nodes.

  Data LIFs for the destination SVMs are not required to be up or to be on their home nodes.

- All aggregates at the local site must be online.
- All root and data volumes owned by the local cluster's SVMs must be online.

Configuration requirements for switchover

- All LIFs must be up and located on their home nodes.
- All aggregates must be online, except for the root aggregates at the DR site.

  Root aggregates at the DR site are offline during certain phases of switchover.

- All volumes must be online.

Related information

Verifying networking and storage status for MetroCluster configurations

Verify networking and storage status for MetroCluster configurations

Before performing an upgrade in a MetroCluster configuration, you should verify the status of the LIFs, aggregates, and volumes for each cluster.

1. Verify the LIF status: `network interface show`

   In normal operation, LIFs for source SVMs must have an admin status of up and be located on their home nodes. LIFs for destination SVMs are not required to be up or located on their home nodes. In switchover, all LIFs have an admin status of up, but they do not need to be located on their home nodes.

```
cluster1::> network interface show
            Logical    Status     Network            Current
Current Is
Vserver     Interface  Admin/Oper Address/Mask       Node          Port
Home
----------- ---------- ---------- ------------------ -------------
------- ----
Cluster
            cluster1-a1_clus1
                         up/up    192.0.2.1/24       cluster1-01
                                                                  e2a
true
            cluster1-a1_clus2
                         up/up    192.0.2.2/24       cluster1-01
                                                                  e2b
true


cluster1-01
            clus_mgmt    up/up    198.51.100.1/24    cluster1-01
                                                                  e3a
true
            cluster1-a1_inet4_intercluster1
                         up/up    198.51.100.2/24    cluster1-01
                                                                  e3c
true
            ...

27 entries were displayed.
```

2. Verify the state of the aggregates: `storage aggregate show -state !online`

   This command displays any aggregates that are *not* online. In normal operation, all aggregates located at the local site must be online. However, if the MetroCluster configuration is in switchover, root aggregates at the disaster recovery site are permitted to be offline.

   This example shows a cluster in normal operation:

```
cluster1::> storage aggregate show -state !online
There are no entries matching your query.
```

   This example shows a cluster in switchover, in which the root aggregates at the disaster recovery site are offline:

```
cluster1::> storage aggregate show -state !online
Aggregate     Size Available Used% State   #Vols  Nodes            RAID
Status
--------- -------- --------- ----- ------- ------ ----------------
------------
aggr0_b1
                0B        0B    0% offline      0 cluster2-01
raid_dp,

mirror

degraded
aggr0_b2
                0B        0B    0% offline      0 cluster2-02
raid_dp,

mirror

degraded
2 entries were displayed.
```

3. Verify the state of the volumes: `volume show -state !online`

   This command displays any volumes that are *not* online.

   If the MetroCluster configuration is in normal operation (it is not in switchover state), the output should show all volumes owned by the cluster's secondary SVMs (those with the SVM name appended with "-mc").

   Those volumes come online only in the event of a switchover.

   This example shows a cluster in normal operation, in which the volumes at the disaster recovery site are not online.

```
cluster1::> volume show -state !online
  (volume show)
Vserver   Volume       Aggregate    State      Type       Size
Available Used%
--------- ------------ ------------ ---------- ---- ----------
---------- -----
vs2-mc    vol1         aggr1_b1     -          RW            -
-     -
vs2-mc    root_vs2     aggr0_b1     -          RW            -
-     -
vs2-mc    vol2         aggr1_b1     -          RW            -
-     -
vs2-mc    vol3         aggr1_b1     -          RW            -
-     -
vs2-mc    vol4         aggr1_b1     -          RW            -
-     -
5 entries were displayed.
```

4. Verify that there are no inconsistent volumes: `volume show -is-inconsistent true`

   If any inconsistent volumes are returned, you must contact NetApp Support before you precede with the upgrade.

Related information

Upgrade requirements for MetroCluster configurations

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