Troubleshoot nodes

Element Software

NetApp
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Troubleshoot nodes

You can remove nodes from a cluster for maintenance or replacement. You should use the NetApp Element UI or API to remove nodes before taking them offline.

An overview of the procedure to remove storage nodes is as follows:

- Ensure that there is sufficient capacity in the cluster to create a copy of the data on the node.
- Remove drives from the cluster by using the UI or the RemoveDrives API method.

  This results in the system migrating data from the node's drives to other drives in the cluster. The time this process takes is dependent on how much data must be migrated.

- Remove the node from the cluster.

Keep the following considerations in mind before you power down or power up a node:

- Powering down nodes and clusters involves risks if not performed properly.

  Powering down a node should be done under the direction of NetApp Support.

- If a node has been down longer than 5.5 minutes under any type of shutdown condition, Double Helix data protection begins the task of writing single replicated blocks to another node to replicate the data. In this case, contact NetApp Support for help with analyzing the failed node.
- To safely reboot or power down a node, you can use the Shutdown API command.
- If a node is in a down, or in an off state, you must contact NetApp Support before bringing it back online.
- After a node is brought back online, you must add the drives back to the cluster, depending on how long it has been out of service.

For more information

Replacing a failed SolidFire chassis

Replacing a failed H600S series node

Power down a cluster

Perform the following procedure to power down an entire cluster.

Steps

1. (Optional) Contact NetApp Support for assistance with completing the preliminary steps.
2. Verify that all I/O has stopped.
3. Disconnect all iSCSI sessions:
   a. Navigate to the management virtual IP (MVIP) address on the cluster to open the Element UI.
   b. Note the nodes listed in the Nodes list.
   c. Run the Shutdown API method with the halt option specified on each Node ID in the cluster.

When you restart the cluster, you must follow certain steps to verify that all nodes come online:

1. Verify that all Critical severity and `volumesOffline` cluster faults have been resolved.
2. Wait for 10 to 15 minutes for the cluster to settle.
3. Start bringing up the hosts to access the data.

If you want to allow more time when powering on nodes and verifying that they are healthy after maintenance, contact technical support for assistance with delaying data synchronization to prevent unnecessary bin syncing.

Find more information

How to gracefully shut down and power on a NetApp Solidfire/HCI storage cluster

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