Complete in ONTAP 9.7 or earlier

Upgrade controllers

NetApp
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Overview

Use these steps to complete the upgrade in ONTAP 9.7 or earlier:

- Map network ports using ONTAP 9.7 or earlier
- Perform final upgrade steps in ONTAP 9.7 or earlier

Map network ports using ONTAP 9.7 or earlier

To enable node3 and node4 to communicate with each other in the cluster and with the network after the upgrade, you must confirm that the physical ports are correctly configured with the settings for the intended use, such as cluster, data, and so on.

Before you begin

These steps apply to systems running ONTAP 9.7 or earlier. If you are running ONTAP 9.8 or later, you must use the procedure in Map network ports using ONTAP 9.8 or later.

About this task

You must perform these steps on node3 and node4.

> The following command examples refer to "node1" because at this stage in the procedure the replacement nodes "node3" and "node4" are actually named "node1" and "node2".

Steps

1. If your system is running ONTAP 9.8 or later, **STOP**. You must use the procedure in Map network ports using ONTAP 9.8 or later.
2. Locate the port and LIF configuration information for node1 and node2 that you recorded in *Prepare for upgrade when moving storage*, Step 3.
3. Locate the information for ports, broadcast domains, and IPspaces that you recorded in *Prepare for upgrade when moving storage*, Step 3.

   NetApp Hardware Universe

4. Make the following changes:
   a. Boot node3 and node4 to the cluster prompt if you have not already done so.
   b. Add the correct ports to the `Cluster` broadcast domain:

      ```
      network port modify -node node_name -port port_name -mtu 9000 -ipspace
      Cluster
      ```

      This example adds `Cluster` port e1b on “node1”:

      ```
      network port modify -node node1 -port e1b -ipspace Cluster -mtu 9000
      ```

   c. Migrate the LIFs to the new ports, once for each LIF:

```
network interface migrate -vserver vserver_name -lif lif_name -source-node
node1 -destination-node node1 -destination-port port_name
```

SAN data LIFs can be migrated only when they are offline.

d. Modify the home port of the Cluster LIFs:

```
network interface modify -vserver Cluster -lif lif_name –home-port port_name
```

e. Remove the old ports from the Cluster broadcast domain:

```
network port broadcast-domain remove-ports -ipspace Cluster -broadcast
-domain Cluster -ports node1:port
```

f. Display the health state of node3 and node4:

```
cluster show -node node1 -fields health
```

g. Each cluster LIF must be listening on port 7700. Verify that the cluster LIFs are listening on port 7700:

```
::> network connections listening show -vserver Cluster
```

Port 7700 listening on cluster ports is the expected outcome as shown in the following example for a two-node cluster:

```
Cluster::> network connections listening show -vserver Cluster
Vserver Name     Interface Name:Local Port     Protocol/Service
---------------- ----------------------------  -------------------
Node: NodeA
Cluster          NodeA_clus1:7700               TCP/ctlopcp
Cluster          NodeA_clus2:7700               TCP/ctlopcp
Node: NodeB
Cluster          NodeB_clus1:7700               TCP/ctlopcp
Cluster          NodeB_clus2:7700               TCP/ctlopcp
4 entries were displayed.
```

h. For each cluster LIF that is not listening on port 7700, set the administrative status of the LIF to `down` and then `up`:

```
::> net int modify -vserver Cluster -lif cluster-lif -status-admin down; net
int modify -vserver Cluster -lif cluster-lif -status-admin up
```

Repeat substep (g) to verify that the cluster LIF is now listening on port 7700.

5. Modify the VLAN and `ifgrp config` to match the new controller physical port layout.
6. Delete the node1 and node2 ports that no longer exist on node3 and node4 (advanced privilege level):

```
network port delete -node node1 -port port_name
```

7. Adjust the node-management broadcast domain and migrate the node-management and cluster-

management LIFs if necessary:

a. Display the home port of a LIF:

```
network interface show -fields home-node,home-port
```

b. Display the broadcast domain containing the port:

```
network port broadcast-domain show -ports node_name:port_name
```

c. Add or remove ports from broadcast domains as necessary:

```
network port broadcast-domain add-ports
```

```
network port broadcast-domain remove-ports
```

d. Modify a LIF's home port if necessary:

```
network interface modify -vserver vserver_name -lif lif_name –home-port
port_name
```

8. Adjust the intercluster broadcast domains and migrate the intercluster LIFs, if necessary, using the commands in Step 7.
9. Adjust any other broadcast domains and migrate the data LIFs, if necessary, using the commands in Step 7.
10. Adjust all the LIF failover groups:

```
network interface modify -failover-group failover_group -failover-policy
failover_policy
```

The following command sets the failover policy to broadcast-domain-wide and uses the ports in failover group "fg1" as failover targets for LIF "data1" on "node1":

```
network interface modify -vserver node1 -lif data1 -failover-policy broadcast-
domain-wide -failover-group fg1
```

11. Display node3 and node4 's network port attributes:

```
network port show -node node1
```

After you finish

You have completed mapping the physical ports. To complete the upgrade, go to Perform final upgrade steps in ONTAP 9.7 or earlier.

Perform the final upgrade steps in ONTAP 9.7 or earlier

To complete the procedure of upgrading by moving storage, you must delete any unused ports and LIFs from the new nodes, re-enable storage failover or high availability, configure the Service Processor (SP), install new licenses, and set up AutoSupport. You might also need to set up Storage or Volume Encryption and configure the FC or CNA ports.

Before you begin

These steps apply to systems running ONTAP 9.7 or earlier. If you are running ONTAP 9.8 or later, you must use the procedure in Perform the final upgrade steps in ONTAP 9.8 or later.

Steps

1. If your system is running ONTAP 9.8 or later, **STOP**. You must use the procedure in Perform final upgrade steps in ONTAP 9.8 or later.
2. From the storage system prompt, display information about LIFs:

   ```
   network interface show
   ```

3. Delete any unused ports from the new nodes (advanced privilege level):

   ```
   network port delete
   ```

4. If you are in a SAN environment, delete unused LIFs from the port set so that you can remove them:
   a. Display the port set list:

      ```
      lun portset show
      ```

   b. Remove any unused LIFs from the port set:

      ```
      lun portset remove
      ```

5. Remove each unused LIF from the new nodes:

   ```
   network interface delete
   ```

6. Re-enable storage failover or high availability on the new node pair as needed:

If you have a…	Then…
Two-node cluster	Re-enable high availability: `cluster ha modify -configured true`
A cluster with more than two nodes	Re-enable storage failover: `storage failover modify -node node_name -enabled true`

7. Configure the SP on the new nodes as needed:

   ```
   system service-processor network modify
   ```

8. Install new licenses on the new nodes as needed:

   ```
   system license add
   ```

9. Set up AutoSupport on the new nodes:

   ```
   system node autosupport modify
   ```

10. From each new node, send a post-upgrade AutoSupport message to technical support:

    ```
    system node autosupport invoke -node node_name -type all -message "MAINT=END
    ```

```
node_name successfully upgraded from platform_old to platform_new"
```

11. Restore Storage or Volume Encryption functionality by using the appropriate procedure in the Manage encryption with the CLI content.

    Use one of the following procedures, depending on whether you are using onboard or external key management:

    - “Restoring onboard key management encryption keys”
    - “Restoring external key management encryption keys”

12. If the new nodes have FC ports (onboard or on FC adapters), onboard CNA ports, or a CNA card, configure the FC or CNA ports by entering the following command at the storage system prompt:

    ```
    system node hardware unified-connect modify -node node-name -adapter adapter-name -mode {fc|cna} -type {target|initiator}
    ```

    SAN management with the CLI

    You can modify the CNA configuration only when the CNA adapters are offline.

13. Set up a switchless cluster on the new nodes if necessary.

    Migrating to a two-node switched cluster with Cisco cluster switches

    Migrating to a two-node switched cluster with NetApp CN1610 cluster switches

14. As needed, decommission the original systems through the NetApp Support Site to inform NetApp that the systems are no longer in operation and can be removed from support databases:
    a. Log in to the NetApp Support site.
    b. Click the link **My Installed Systems**.
    c. On the Installed Systems page, enter the serial number of the old system in the form and then click **Go!**
    d. On the Decommission Form page, fill out the form and click **Submit**.

After you finish

You have completed the upgrade procedure.

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