

Migrate switches

Cluster and storage switches

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Migrate switches

Migrate CN1610 cluster switches to NVIDIA SN2100 cluster switches

You can migrate NetApp CN1610 cluster switches for an ONTAP cluster to NVIDIA SN2100 cluster switches. This is a nondisruptive procedure.

Review requirements

You must be aware of certain configuration information, port connections and cabling requirements when you are replacing NetApp CN1610 cluster switches with NVIDIA SN2100 cluster switches. See Overview of installation and configuration for NVIDIA SN2100 switches.

Supported switches

The following cluster switches are supported:

- NetApp CN1610
- NVIDIA SN2100

For details of supported ports and their configurations, see the Hardware Universe.

What you'll need

Verify that you meet the following requirements for you configuration:

- The existing cluster is correctly set up and functioning.
- All cluster ports are in the **up** state to ensure nondisruptive operations.
- The NVIDIA SN2100 cluster switches are configured and operating under the correct version of Cumulus Linux installed with the reference configuration file (RCF) applied.
- The existing cluster network configuration has the following:
 - A redundant and fully functional NetApp cluster using CN1610 switches.
 - Management connectivity and console access to both the CN1610 switches and the new switches.
 - All cluster LIFs in the up state with the cluster LIfs on their home ports.
 - ISL ports enabled and cabled between the CN1610 switches and between the new switches.
- Some of the ports are configured on NVIDIA SN2100 switches to run at 40GbE or 100GbE.
- You have planned, migrated, and documented 40GbE and 100GbE connectivity from nodes to NVIDIA SN2100 cluster switches.

Migrate the switches

About the examples

The examples in this procedure use the following switch and node nomenclature:

- The existing CN1610 cluster switches are c1 and c2.
- The new NVIDIA SN2100 cluster switches are *sw1* and *sw2*.

- The nodes are *node1* and *node2*.
- The cluster LIFs are *node1_clus1* and *node1_clus2* on node 1, and *node2_clus1* and *node2_clus2* on node 2 respectively.
- The cluster1::*> prompt indicates the name of the cluster.
- The cluster ports used in this procedure are *e3a* and *e3b*.
- Breakout ports take the format: swp[port]s[breakout port 0-3]. For example, four breakout ports on swp1 are *swp1s0*, *swp1s1*, *swp1s2*, and *swp1s3*.

About this task

This procedure covers the following scenario:

- Switch c2 is replaced by switch sw2 first.
 - Shut down the ports to the cluster nodes. All ports must be shut down simultaneously to avoid cluster instability.
 - The cabling between the nodes and c2 is then disconnected from c2 and reconnected to sw2.
- Switch c1 is replaced by switch sw1.
 - Shut down the ports to the cluster nodes. All ports must be shut down simultaneously to avoid cluster instability.
 - The cabling between the nodes and c1 is then disconnected from c1 and reconnected to sw1.



No operational inter-switch link (ISL) is needed during this procedure. This is by design because RCF version changes can affect ISL connectivity temporarily. To ensure non-disruptive cluster operations, the following procedure migrates all of the cluster LIFs to the operational partner switch while performing the steps on the target switch.

Step 1: Prepare for migration

1. If AutoSupport is enabled on this cluster, suppress automatic case creation by invoking an AutoSupport message:

system node autosupport invoke -node * -type all -message MAINT=xh

where *x* is the duration of the maintenance window in hours.

2. Change the privilege level to advanced, entering y when prompted to continue:

set -privilege advanced

The advanced prompt (*>) appears.

3. Disable auto-revert on the cluster LIFs:

network interface modify -vserver Cluster -lif * -auto-revert false

Step 2: Configure ports and cabling

1. Determine the administrative or operational status for each cluster interface.

Each port should display up for Link and healthy for Health Status.

a. Display the network port attributes:

```
network port show -ipspace Cluster
```

```
Show example
```

```
cluster1::*> network port show -ipspace Cluster
Node: node1
Ignore
                                  Speed(Mbps)
Health Health
Port IPspace Broadcast Domain Link MTU Admin/Oper
Status Status
----- ---- ----- ----- ---- -----
_____ ____
e3a Cluster Cluster up 9000 auto/100000
healthy false
     Cluster Cluster up 9000 auto/100000
e3b
healthy false
Node: node2
Ignore
                                  Speed(Mbps)
Health Health
Port IPspace Broadcast Domain Link MTU Admin/Oper
Status Status
_____ _
e3a Cluster Cluster up 9000 auto/100000
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
```

b. Display information about the LIFs and their designated home nodes:

network interface show -vserver Cluster

Each LIF should display up/up for Status Admin/Oper and true for Is Home.

```
cluster1::*> network interface show -vserver Cluster
         Logical Status
                          Network
                                         Current
Current Is
Vserver Interface Admin/Oper Address/Mask Node
Port Home
_____ ____
_____ _
Cluster
        nodel clus1 up/up 169.254.209.69/16 node1
e3a
     true
                           169.254.49.125/16 node1
         nodel clus2 up/up
e3b
      true
         node2 clus1 up/up
                           169.254.47.194/16 node2
e3a
      true
         node2 clus2 up/up
                           169.254.19.183/16 node2
e3b
      true
```

The cluster ports on each node are connected to existing cluster switches in the following way (from the nodes' perspective) using the command:

network device-discovery show -protocol

Show example

```
cluster1::*> network device-discovery show -protocol cdp
Node/ Local Discovered
Protocol Port Device (LLDP: ChassisID) Interface
Platform
______ ____
_____
node1
       /cdp
         e3a c1 (6a:ad:4f:98:3b:3f) 0/1
              c2 (6a:ad:4f:98:4c:a4)
                                  0/1
         e3b
node2
        /cdp
             c1 (6a:ad:4f:98:3b:3f)
                                  0/2
         e3a
         e3b c2 (6a:ad:4f:98:4c:a4)
                                  0/2
```

3. The cluster ports and switches are connected in the following way (from the switches' perspective) using the command:

show cdp neighbors

cl# show cdp neighbors Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge S - Switch, H - Host, I - IGMP, r - Repeater, V - VoIP-Phone, D - Remotely-Managed-Device, s - Supports-STP-Dispute Device-ID Local Intrfce Hldtme Capability Platform Port ID 0/1 124 node1 Η AFF-A400 e3a node2 0/2 124 Н AFF-A400 e3a c2 0/13 179 SIS CN1610 0/13 c2 0/14 175 SIS CN1610 0/14 0/15 c2 179 SIS CN1610 0/15 c2 0/16 175 SIS CN1610 0/16 c2# show cdp neighbors Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge S - Switch, H - Host, I - IGMP, r - Repeater, V - VoIP-Phone, D - Remotely-Managed-Device, s - Supports-STP-Dispute Device-ID Local Intrfce Hldtme Capability Platform Port ID 0/1 124 node1 Η AFF-A400 e3b node2 0/2 124 AFF-A400 Η e3b c1 0/13 175 SIS CN1610 0/13 с1 0/14 175 SIS CN1610 0/14 с1 0/15 175 SIS CN1610 0/150/16 с1 175 SIS CN1610 0/16

4. Verify that the cluster network has full connectivity:

cluster ping-cluster -node node-name

```
Show example
```

```
cluster1::*> cluster ping-cluster -node node2
Host is node2
Getting addresses from network interface table...
Cluster nodel clus1 169.254.209.69 nodel
                                              e3a
Cluster node1 clus2 169.254.49.125 node1
                                              e3b
Cluster node2 clus1 169.254.47.194 node2
                                              e3a
Cluster node2 clus2 169.254.19.183 node2
                                              e3b
Local = 169.254.47.194 \ 169.254.19.183
Remote = 169.254.209.69 169.254.49.125
Cluster Vserver Id = 4294967293
Ping status:
. . . .
Basic connectivity succeeds on 4 path(s)
Basic connectivity fails on 0 path(s)
. . . . . . . . . . . . . . . .
Detected 9000 byte MTU on 4 path(s):
    Local 169.254.19.183 to Remote 169.254.209.69
    Local 169.254.19.183 to Remote 169.254.49.125
    Local 169.254.47.194 to Remote 169.254.209.69
    Local 169.254.47.194 to Remote 169.254.49.125
Larger than PMTU communication succeeds on 4 path(s)
RPC status:
2 paths up, 0 paths down (tcp check)
2 paths up, 0 paths down (udp check)
```

5. On switch c2, shut down the ports connected to the cluster ports of the nodes in order to fail over the cluster LIFs.

```
(c2) # configure
(c2) (Config) # interface 0/1-0/12
(c2) (Interface 0/1-0/12) # shutdown
(c2) (Interface 0/1-0/12) # exit
(c2) (Config) # exit
(c2) #
```

Move the node cluster ports from the old switch c2 to the new switch sw2, using appropriate cabling supported by NVIDIA SN2100. 7. Display the network port attributes:

```
network port show -ipspace Cluster
```

```
Show example
```

```
cluster1::*> network port show -ipspace Cluster
Node: node1
Ignore
                                  Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
----- ---- ------
_____ ____
e3a Cluster Cluster up
                             9000 auto/100000
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
Node: node2
Ignore
                                  Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
----- ----
e3a Cluster Cluster up 9000 auto/100000
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
```

8. The cluster ports on each node are now connected to cluster switches in the following way, from the nodes' perspective:

network device-discovery show -protocol

```
cluster1::*> network device-discovery show -protocol lldp
Node/
        Local Discovered
Protocol
        Port Device (LLDP: ChassisID) Interface
Platform
_____ ____
_____
       /lldp
node1
        e3a c1 (6a:ad:4f:98:3b:3f) 0/1
              sw2 (b8:ce:f6:19:1a:7e) swp3
        e3b
                                                _
node2
       /lldp
         e3a c1 (6a:ad:4f:98:3b:3f) 0/2
         e3b
             sw2 (b8:ce:f6:19:1b:96) swp4
```

9. On switch sw2, verify that all node cluster ports are up:

```
net show interface
```

```
Show example
```

```
cumulus@sw2:~$ net show interface
                  MTU Mode LLDP
State Name
          Spd
Summary
_____ _____
_____
. . .
. . .
UP swp3 100G 9216
                       Trunk/L2 e3b
Master: bridge(UP)
            100G 9216 Trunk/L2 e3b
UP swp4
Master: bridge(UP)
            100G 9216 BondMember sw1 (swp15)
UP swp15
Master: cluster isl(UP)
  swp16
              100G 9216 BondMember sw1 (swp16)
UP
Master: cluster isl(UP)
```

10. On switch c1, shut down the ports connected to the cluster ports of the nodes in order to fail over the cluster LIFs.

```
(c1) # configure
(c1) (Config) # interface 0/1-0/12
(c1) (Interface 0/1-0/12) # shutdown
(c1) (Interface 0/1-0/12) # exit
(c1) (Config) # exit
(c1) #
```

- 11. Move the node cluster ports from the old switch c1 to the new switch sw1, using appropriate cabling supported by NVIDIA SN2100.
- 12. Verify the final configuration of the cluster:

network port show -ipspace Cluster

Each port should display up for Link and healthy for Health Status.

```
cluster1::*> network port show -ipspace Cluster
Node: node1
Ignore
                                Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
_____
     Cluster Cluster up 9000 auto/100000
e3a
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
Node: node2
Ignore
                                Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
_____ _
     Cluster Cluster up 9000 auto/100000
e3a
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
```

13. The cluster ports on each node are now connected to cluster switches in the following way, from the nodes' perspective:

network device-discovery show -protocol

```
cluster1::*> network device-discovery show -protocol lldp
Node/ Local Discovered
Protocol Port Device (LLDP: ChassisID) Interface
Platform
_____ ____
_____
node1
       /lldp
        e3a sw1 (b8:ce:f6:19:1a:7e) swp3
                                              _
             sw2 (b8:ce:f6:19:1b:96) swp3
        e3b
                                              _
       /lldp
node2
        e3a sw1 (b8:ce:f6:19:1a:7e) swp4
         e3b sw2 (b8:ce:f6:19:1b:96) swp4
```

14. On switches sw1 and sw2, verify that all node cluster ports are up:

net show interface

cumulus@sw1:~\$ net show interface State Name Spd MTU Mode LLDP Summary _____ ____ _____ ____ _____ _____ UP swp3 100G 9216 Trunk/L2 e3a Master: bridge(UP) 100G 9216 Trunk/L2 e3a UP swp4 Master: bridge(UP) UP swp15 100G 9216 BondMember sw2 (swp15) Master: cluster isl(UP) UP swp16 100G 9216 BondMember sw2 (swp16) Master: cluster isl(UP) cumulus@sw2:~\$ net show interface State Name Spd MTU Mode LLDP Summary _____ _____ _____ UP swp3 100G 9216 Trunk/L2 e3b Master: bridge(UP) 100G 9216 Trunk/L2 e3b UP swp4 Master: bridge(UP) UP swp15 100G 9216 BondMember sw1 (swp15) Master: cluster isl(UP) UP swp16 100G 9216 BondMember sw1 (swp16) Master: cluster isl(UP)

15. Verify that both nodes each have one connection to each switch:

net show lldp

Show example

The following example shows the appropriate results for both switches:

```
cumulus@sw1:~$ net show lldp
LocalPort Speed Mode RemoteHost
                                   RemotePort
_____ ____ _____
swp3
       100G Trunk/L2 node1
                                    e3a
swp4
       100G Trunk/L2 node2
                                    e3a
swp15
      100G BondMember sw2
                                    swp15
swp16 100G BondMember sw2
                                    swp16
cumulus@sw2:~$ net show lldp
LocalPort Speed Mode
                     RemoteHost
                                    RemotePort
_____ ____ _____ ______ ______
      100G Trunk/L2 node1
swp3
                                    e3b
swp4
       100G Trunk/L2 node2
                                    e3b
swp15
       100G BondMember sw1
                                    swp15
      100G BondMember sw1
swp16
                                    swp16
```

Step 3: Complete the procedure

1. Enable auto-revert on the cluster LIFs:

```
cluster1::*> network interface modify -vserver Cluster -lif * -auto-revert
true
```

2. Verify that all cluster network LIFs are back on their home ports:

network interface show

```
Show example
```

```
cluster1::*> network interface show -vserver Cluster
         Logical Status Network
                                          Current
Current Is
Vserver Interface Admin/Oper Address/Mask
                                          Node
Port
     Home
_____ ____
_____ ____
Cluster
        node1_clus1 up/up 169.254.209.69/16 node1
e3a
      true
         nodel clus2 up/up
                          169.254.49.125/16 node1
e3b
      true
         node2_clus1 up/up 169.254.47.194/16 node2
e3a
      true
         node2 clus2 up/up 169.254.19.183/16 node2
e3b
      true
```

3. To set up log collection, run the following command for each switch. You are prompted to enter the switch name, username, and password for log collection.

system switch ethernet log setup-password

```
cluster1::*> system switch ethernet log setup-password
Enter the switch name: <return>
The switch name entered is not recognized.
Choose from the following list:
sw1
sw2
cluster1::*> system switch ethernet log setup-password
Enter the switch name: sw1
Would you like to specify a user other than admin for log
collection? {y|n}: n
Enter the password: <enter switch password>
Enter the password again: <enter switch password>
cluster1::*> system switch ethernet log setup-password
Enter the switch name: sw2
Would you like to specify a user other than admin for log
collection? {y|n}: n
Enter the password: <enter switch password>
Enter the password again: <enter switch password>
```

4. To start log collection, run the following command, replacing DEVICE with the switch used in the previous command. This starts both types of log collection: the detailed **Support** logs and an hourly collection of **Periodic** data.

system switch ethernet log modify -device <switch-name> -log-request true

```
cluster1::*> system switch ethernet log modify -device cs1 -log
-request true
Do you want to modify the cluster switch log collection
configuration? {y|n}: [n] y
Enabling cluster switch log collection.
cluster1::*> system switch ethernet log modify -device cs2 -log
-request true
Do you want to modify the cluster switch log collection
configuration? {y|n}: [n] y
Enabling cluster switch log collection.
```

Wait for 10 minutes and then check that the log collection completes:

system switch ethernet log show

Show example

```
cluster1::*> system switch ethernet log showLog Collection Enabled: trueIndex SwitchLog Timestamp------Status1cs1 (b8:ce:f6:19:1b:42)2cs2 (b8:ce:f6:19:1b:96)4/29/2022 03:07:42complete
```



If any of these commands return an error or if the log collection does not complete, contact NetApp support.

5. Change the privilege level back to admin:

```
set -privilege admin
```

6. If you suppressed automatic case creation, re-enable it by invoking an AutoSupport message:

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

Migrate from a Cisco cluster switch to a NVIDIA SN2100 cluster switch

You can migrate Cisco cluster switches for an ONTAP cluster to NVIDIA SN2100 cluster switches. This is a nondisruptive procedure.

Review requirements

You must be aware of certain configuration information, port connections and cabling requirements when you are replacing some older Cisco cluster switches with NVIDIA SN2100 cluster switches. See Overview of installation and configuration for NVIDIA SN2100 switches.

Supported switches

The following Cisco cluster switches are supported:

- Nexus 9336C-FX2
- Nexus 92300YC
- Nexus 5596UP
- Nexus 3232C
- Nexus 3132Q-V

For details of supported ports and their configurations, see the Hardware Universe .

What you'll need

Ensure that:

- The existing cluster is properly set up and functioning.
- All cluster ports are in the **up** state to ensure nondisruptive operations.
- The NVIDIA SN2100 cluster switches are configured and operating under the proper version of Cumulus Linux installed with the reference configuration file (RCF) applied.
- The existing cluster network configuration have the following:
 - A redundant and fully functional NetApp cluster using both older Cisco switches.
 - Management connectivity and console access to both the older Cisco switches and the new switches.
 - $\,\circ\,$ All cluster LIFs in the up state with the cluster LIfs are on their home ports.
 - $\circ\,$ ISL ports enabled and cabled between the older Cisco switches and between the new switches.
- Some of the ports are configured on NVIDIA SN2100 switches to run at 40 GbE or 100 GbE.
- You have planned, migrated, and documented 40 GbE and 100 GbE connectivity from nodes to NVIDIA SN2100 cluster switches.



If you are changing the port speed of the e0a and e1a cluster ports on AFF A800 or AFF C800 systems, you might observe malformed packets being received after the speed conversion. See Bug 1570339 and the Knowledge Base article CRC errors on T6 ports after converting from 40GbE to 100GbE for guidance.

Migrate the switches

About the examples

In this procedure, Cisco Nexus 3232C cluster switches are used for example commands and outputs.

The examples in this procedure use the following switch and node nomenclature:

- The existing Cisco Nexus 3232C cluster switches are c1 and c2.
- The new NVIDIA SN2100 cluster switches are sw1 and sw2.
- The nodes are *node1* and *node2*.
- The cluster LIFs are *node1_clus1* and *node1_clus2* on node 1, and *node2_clus1* and *node2_clus2* on node 2 respectively.
- The cluster1::*> prompt indicates the name of the cluster.
- The cluster ports used in this procedure are e3a and e3b.
- Breakout ports take the format: swp[port]s[breakout port 0-3]. For example, four breakout ports on swp1 are *swp1s0*, *swp1s1*, *swp1s2*, and *swp1s3*.

About this task

This procedure covers the following scenario:

- Switch c2 is replaced by switch sw2 first.
 - Shut down the ports to the cluster nodes. All ports must be shut down simultaneously to avoid cluster instability.
 - Cabling between the nodes and c2 are then disconnected from c2 and reconnected to sw2.
- Switch c1 is replaced by switch sw1.
 - Shut down the ports to the cluster nodes. All ports must be shut down simultaneously to avoid cluster instability.
 - Cabling between the nodes and c1 are then disconnected from c1 and reconnected to sw1.

Step 1: Prepare for migration

1. If AutoSupport is enabled on this cluster, suppress automatic case creation by invoking an AutoSupport message:

system node autosupport invoke -node * -type all -message MAINT=xh

where *x* is the duration of the maintenance window in hours.

2. Change the privilege level to advanced, entering y when prompted to continue:

set -privilege advanced

The advanced prompt (*>) appears.

3. Disable auto-revert on the cluster LIFs:

```
network interface modify -vserver Cluster -lif * -auto-revert false
```

Step 2: Configure ports and cabling

1. Determine the administrative or operational status for each cluster interface.

Each port should display up for Link and healthy for Health Status.

a. Display the network port attributes:

network port show -ipspace Cluster

Show example

```
cluster1::*> network port show -ipspace Cluster
Node: node1
Ignore
                                  Speed (Mbps)
Health Health
Port IPspace Broadcast Domain Link MTU Admin/Oper
Status Status
_____ ___ ____
_____ ____
e3a Cluster Cluster up 9000 auto/100000
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
Node: node2
Ignore
                                  Speed(Mbps)
Health Health
Port IPspace Broadcast Domain Link MTU Admin/Oper
Status Status
_____ _
e3a Cluster Cluster up 9000 auto/100000
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
```

b. Display information about the logical interfaces and their designated home nodes:

network interface show -vserver Cluster

Each LIF should display up/up for Status Admin/Oper and true for Is Home.

```
cluster1::*> network interface show -vserver Cluster
         Logical Status
                            Network
                                           Current
Current Is
Vserver Interface Admin/Oper Address/Mask Node
Port Home
_____ ____
_____ ____
Cluster
         nodel clus1 up/up
                           169.254.209.69/16 node1
e3a
      true
                            169.254.49.125/16 node1
         nodel clus2 up/up
e3b
      true
         node2 clus1 up/up
                            169.254.47.194/16 node2
e3a
      true
         node2 clus2 up/up
                            169.254.19.183/16 node2
e3b
      true
```

The cluster ports on each node are connected to existing cluster switches in the following way (from the nodes' perspective):

network device-discovery show -protocol lldp

Show example

```
cluster1::*> network device-discovery show -protocol lldp
Node/
        Local Discovered
Protocol Port Device (LLDP: ChassisID) Interface
Platform
_____ _ ____
_____
node1
        /lldp
         e3a
              c1 (6a:ad:4f:98:3b:3f) Eth1/1
              c2 (6a:ad:4f:98:4c:a4)
         e3b
                                  Eth1/1
node2
        /lldp
              c1 (6a:ad:4f:98:3b:3f)
                                  Eth1/2
         e3a
         e3b
              c2 (6a:ad:4f:98:4c:a4) Eth1/2
```

3. The cluster ports and switches are connected in the following way (from the switches' perspective):

show cdp neighbors

```
cl# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-
Bridge
                 S - Switch, H - Host, I - IGMP, r - Repeater,
                 V - VoIP-Phone, D - Remotely-Managed-Device,
                 s - Supports-STP-Dispute
Device-ID
                    Local Intrfce Hldtme Capability Platform
Port ID
node1
                    Eth1/1
                                  124 н
                                                   AFF-A400
e3a
node2
                    Eth1/2
                                  124 н
                                                   AFF-A400
e3a
                                                   N3K-C3232C
c2
                    Eth1/31
                                  179 SIS
Eth1/31
c2
                    Eth1/32
                                  175 SIS
                                                  N3K-C3232C
Eth1/32
c2# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-
Bridge
                 S - Switch, H - Host, I - IGMP, r - Repeater,
                 V - VoIP-Phone, D - Remotely-Managed-Device,
                 s - Supports-STP-Dispute
Device-ID
                    Local Intrfce Hldtme Capability Platform
Port ID
node1
                    Eth1/1
                                 124
                                       Н
                                                   AFF-A400
e3b
node2
                    Eth1/2
                                  124 Н
                                                   AFF-A400
e3b
c1
                    Eth1/31
                                  175 SIS
                                                   N3K-C3232C
Eth1/31
                    Eth1/32
с1
                                  175 SIS
                                                   N3K-C3232C
Eth1/32
```

4. Ensure that the cluster network has full connectivity:

cluster ping-cluster -node node-name

```
cluster1::*> cluster ping-cluster -node node2
Host is node2
Getting addresses from network interface table...
Cluster nodel clus1 169.254.209.69 node1
                                              e3a
Cluster nodel clus2 169.254.49.125 nodel
                                              e3b
Cluster node2 clus1 169.254.47.194 node2
                                              e3a
Cluster node2 clus2 169.254.19.183 node2
                                              e3b
Local = 169.254.47.194 169.254.19.183
Remote = 169.254.209.69 169.254.49.125
Cluster Vserver Id = 4294967293
Ping status:
. . . .
Basic connectivity succeeds on 4 path(s)
Basic connectivity fails on 0 path(s)
. . . . . . . . . . . . . . . .
Detected 9000 byte MTU on 4 path(s):
    Local 169.254.19.183 to Remote 169.254.209.69
   Local 169.254.19.183 to Remote 169.254.49.125
    Local 169.254.47.194 to Remote 169.254.209.69
    Local 169.254.47.194 to Remote 169.254.49.125
Larger than PMTU communication succeeds on 4 path(s)
RPC status:
2 paths up, 0 paths down (tcp check)
2 paths up, 0 paths down (udp check)
```

On switch c2, shut down the ports connected to the cluster ports of the nodes in order to fail over the cluster LIFs.

```
(c2)# configure
Enter configuration commands, one per line. End with CNTL/Z.
(c2) (Config)# interface
(c2) (config-if-range)# shutdown <interface_list>
(c2) (config-if-range)# exit
(c2) (Config)# exit
(c2) (Config)# exit
(c2)#
```

- 6. Move the node cluster ports from the old switch c2 to the new switch sw2, using appropriate cabling supported by NVIDIA SN2100.
- 7. Display the network port attributes:

Show example

```
cluster1::*> network port show -ipspace Cluster
Node: node1
Ignore
                                  Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
_____ ____
e3a Cluster Cluster up 9000 auto/100000
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
Node: node2
Ignore
                                  Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
_____ ____ _____
_____ ____
e3a Cluster Cluster up 9000 auto/100000
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
```

8. The cluster ports on each node are now connected to cluster switches in the following way, from the nodes' perspective:

```
cluster1::*> network device-discovery show -protocol lldp
Node/
        Local Discovered
Protocol
        Port Device (LLDP: ChassisID) Interface
Platform
_____ ____
_____
       /lldp
node1
        e3a c1 (6a:ad:4f:98:3b:3f) Eth1/1
              sw2 (b8:ce:f6:19:1a:7e) swp3
        e3b
                                                _
       /lldp
node2
         e3a c1 (6a:ad:4f:98:3b:3f) Eth1/2
         e3b
             sw2 (b8:ce:f6:19:1b:96) swp4
```

9. On switch sw2, verify that all node cluster ports are up:

```
net show interface
```

```
Show example
```

```
cumulus@sw2:~$ net show interface
State Name Spd MTU Mode LLDP
Summary
_____ _____
_____
. . .
. . .
UP swp3 100G 9216
                       Trunk/L2 e3b
Master: bridge(UP)
            100G 9216 Trunk/L2 e3b
UP swp4
Master: bridge(UP)
            100G 9216 BondMember sw1 (swp15)
UP swp15
Master: cluster isl(UP)
UP
  swp16
              100G 9216 BondMember sw1 (swp16)
Master: cluster isl(UP)
```

10. On switch c1, shut down the ports connected to the cluster ports of the nodes in order to fail over the cluster LIFs.

```
(c1)# configure
Enter configuration commands, one per line. End with CNTL/Z.
(c1) (Config)# interface
(c1) (config-if-range)# shutdown <interface_list>
(c1) (config-if-range)# exit
(c1) (Config)# exit
(c1) (Config)# exit
(c1)#
```

- 11. Move the node cluster ports from the old switch c1 to the new switch sw1, using appropriate cabling supported by NVIDIA SN2100.
- 12. Verify the final configuration of the cluster:

network port show -ipspace Cluster

Each port should display up for Link and healthy for Health Status.

```
cluster1::*> network port show -ipspace Cluster
Node: node1
Ignore
                                Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
_____
     Cluster Cluster up 9000 auto/100000
e3a
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
Node: node2
Ignore
                                Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
_____ _
     Cluster Cluster up 9000 auto/100000
e3a
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
```

13. The cluster ports on each node are now connected to cluster switches in the following way, from the nodes' perspective:

```
cluster1::*> network device-discovery show -protocol lldp
Node/ Local Discovered
Protocol Port Device (LLDP: ChassisID) Interface
Platform
_____ ____
_____
node1
       /lldp
        e3a sw1 (b8:ce:f6:19:1a:7e) swp3
                                              _
             sw2 (b8:ce:f6:19:1b:96) swp3
        e3b
                                              _
       /lldp
node2
        e3a sw1 (b8:ce:f6:19:1a:7e) swp4
         e3b sw2 (b8:ce:f6:19:1b:96) swp4
```

14. On switches sw1 and sw2, verify that all node cluster ports are up:

net show interface

cumulus@sw1:~\$ net show interface State Name Spd MTU Mode LLDP Summary _____ ____ _____ _____ _____ UP swp3 100G 9216 Trunk/L2 e3a Master: bridge(UP) 100G 9216 Trunk/L2 e3a UP swp4 Master: bridge(UP) UP swp15 100G 9216 BondMember sw2 (swp15) Master: cluster isl(UP) UP swp16 100G 9216 BondMember sw2 (swp16) Master: cluster isl(UP) cumulus@sw2:~\$ net show interface State Name Spd MTU Mode LLDP Summary _____ _____ _____ UP swp3 100G 9216 Trunk/L2 e3b Master: bridge(UP) 100G 9216 Trunk/L2 e3b UP swp4 Master: bridge(UP) UP swp15 100G 9216 BondMember sw1 (swp15) Master: cluster isl(UP) UP swp16 100G 9216 BondMember sw1 (swp16) Master: cluster isl(UP)

15. Verify that both nodes each have one connection to each switch:

net show lldp

Show example

The following example shows the appropriate results for both switches:

```
cumulus@sw1:~$ net show lldp
LocalPort Speed Mode RemoteHost
                                 RemotePort
_____ ____ _____
swp3
      100G Trunk/L2 node1
                                   e3a
swp4
      100G Trunk/L2 node2
                                  e3a
      100G BondMember sw2
swp15
                                  swp15
swp16 100G BondMember sw2
                                   swp16
cumulus@sw2:~$ net show lldp
LocalPort Speed Mode
                    RemoteHost
                                   RemotePort
_____ ___ ____
      100G Trunk/L2 node1
swp3
                                   e3b
swp4
      100G Trunk/L2 node2
                                   e3b
      100G BondMember sw1
swp15
                                   swp15
     100G BondMember sw1
swp16
                                   swp16
```

Step 3: Complete the procedure

1. Enable auto-revert on the cluster LIFs:

```
cluster1::*> network interface modify -vserver Cluster -lif * -auto-revert
true
```

2. Verify that all cluster network LIFs are back on their home ports:

network interface show

```
Show example
```

```
cluster1::*> network interface show -vserver Cluster
         Logical Status Network
                                          Current
Current Is
Vserver Interface Admin/Oper Address/Mask
                                          Node
Port
     Home
_____ ____
_____ ____
Cluster
        node1_clus1 up/up 169.254.209.69/16 node1
e3a
      true
         nodel clus2 up/up
                          169.254.49.125/16 node1
e3b
      true
         node2_clus1 up/up 169.254.47.194/16 node2
e3a
      true
         node2 clus2 up/up 169.254.19.183/16 node2
e3b
      true
```

3. To set up log collection, run the following command for each switch. You are prompted to enter the switch name, username, and password for log collection.

system switch ethernet log setup-password

```
cluster1::*> system switch ethernet log setup-password
Enter the switch name: <return>
The switch name entered is not recognized.
Choose from the following list:
sw1
sw2
cluster1::*> system switch ethernet log setup-password
Enter the switch name: sw1
Would you like to specify a user other than admin for log
collection? {y|n}: n
Enter the password: <enter switch password>
Enter the password again: <enter switch password>
cluster1::*> system switch ethernet log setup-password
Enter the switch name: sw2
Would you like to specify a user other than admin for log
collection? {y|n}: n
Enter the password: <enter switch password>
Enter the password again: <enter switch password>
```

4. To start log collection, run the following command, replacing DEVICE with the switch used in the previous command. This starts both types of log collection: the detailed **Support** logs and an hourly collection of **Periodic** data.

system switch ethernet log modify -device <switch-name> -log-request true

```
cluster1::*> system switch ethernet log modify -device swl -log
-request true
Do you want to modify the cluster switch log collection
configuration? {y|n}: [n] y
Enabling cluster switch log collection.
cluster1::*> system switch ethernet log modify -device sw2 -log
-request true
Do you want to modify the cluster switch log collection
configuration? {y|n}: [n] y
Enabling cluster switch log collection.
```

Wait for 10 minutes and then check that the log collection completes:

system switch ethernet log show

Show example

```
cluster1::*> system switch ethernet log show
Log Collection Enabled: true
Index Switch Log Timestamp Status
----- Status
1 swl (b8:ce:f6:19:1b:42) 4/29/2022 03:05:25 complete
2 sw2 (b8:ce:f6:19:1b:96) 4/29/2022 03:07:42 complete
```



If any of these commands return an error or if the log collection does not complete, contact NetApp support.

5. Change the privilege level back to admin:

```
set -privilege admin
```

6. If you suppressed automatic case creation, re-enable it by invoking an AutoSupport message:

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

Migrate to a two-node switched cluster with NVIDIA SN2100 cluster switches

If you have an existing two-node switchless cluster environment, you can migrate to a two-node switched cluster environment using NVIDIA SN2100 switches to enable you to scale beyond two nodes in the cluster.

The procedure you use depends on whether you have two dedicated cluster-network ports on each controller or a single cluster port on each controller. The process documented works for all nodes using optical or Twinax ports but is not supported on this switch if nodes are using onboard 10GBASE-T RJ45 ports for the cluster-network ports.

Review requirements

Two-node switchless configuration

Ensure that:

- The two-node switchless configuration are properly set up and functioning.
- The nodes are running ONTAP 9.10.1P3 and later.
- All cluster ports are in the **up** state.
- All cluster logical interfaces (LIFs) are in the up state and on their home ports.

NVIDIA SN2100 cluster switch configuration

Ensure that:

- · Both switches have management network connectivity.
- There is console access to the cluster switches.
- NVIDIA SN2100 node-to-node switch and switch-to-switch connections use Twinax or fiber cables.



See Review cabling and configuration considerations for caveats and further details. The Hardware Universe - Switches also contains more information about cabling.

- Inter-Switch Link (ISL) cables are connected to ports swp15 and swp16 on both NVIDIA SN2100 switches.
- Initial customization of both the SN2100 switches are completed, so that:
 - $\circ\,$ SN2100 switches are running the latest version of Cumulus Linux
 - Reference Configuration Files (RCFs) are applied to the switches
 - Any site customization, such as SMTP, SNMP, and SSH are configured on the new switches.

The Hardware Universe contains the latest information about the actual cluster ports for your platforms.

Migrate the switches

About the examples

The examples in this procedure use the following cluster switch and node nomenclature:

• The names of the SN2100 switches are *sw1* and *sw2*.

- The names of the cluster SVMs are *node1* and *node2*.
- The names of the LIFs are *node1_clus1* and *node1_clus2* on node 1, and *node2_clus1* and *node2_clus2* on node 2 respectively.
- The cluster1::*> prompt indicates the name of the cluster.
- The cluster ports used in this procedure are *e3a* and *e3b*.
- Breakout ports take the format: swp[port]s[breakout port 0-3]. For example, four breakout ports on swp1 are *swp1s0*, *swp1s1*, *swp1s2*, and *swp1s3*.

Step 1: Prepare for migration

1. If AutoSupport is enabled on this cluster, suppress automatic case creation by invoking an AutoSupport message: system node autosupport invoke -node * -type all -message MAINT=xh

where *x* is the duration of the maintenance window in hours.

2. Change the privilege level to advanced, entering y when prompted to continue: set -privilege advanced

The advanced prompt (*>) appears.

Step 2: Configure ports and cabling

Cumulus Linux 4.4.x

1. Disable all node-facing ports (not ISL ports) on both the new cluster switches sw1 and sw2.

You must not disable the ISL ports.

The following commands disable the node-facing ports on switches sw1 and sw2:

```
cumulus@sw1:~$ net add interface swp1s0-3, swp2s0-3, swp3-14 link
down
cumulus@sw1:~$ net pending
cumulus@sw1:~$ net commit
cumulus@sw2:~$ net add interface swp1s0-3, swp2s0-3, swp3-14 link
down
cumulus@sw2:~$ net pending
cumulus@sw2:~$ net commit
```

2. Verify that the ISL and the physical ports on the ISL between the two SN2100 switches sw1 and sw2 are up on ports swp15 and swp16:

net show interface

The following commands show that the ISL ports are up on switches sw1 and sw2:

```
cumulus@sw1:~$ net show interface
State Name
            Spd MTU Mode LLDP
                                          Summary
_____ ____
                      _____ ____
                  ____
  _____
. . .
. . .
UP swp15 100G 9216 BondMember sw2 (swp15) Master:
cluster isl(UP)
UP swp16 100G 9216 BondMember sw2 (swp16) Master:
cluster isl(UP)
cumulus@sw2:~$ net show interface
State Name Spd MTU Mode LLDP
                                          Summary
_____ ____
                 ____
                       _____
                                _____
_____
. . .
. . .
UP swp15 100G 9216 BondMember sw1 (swp15) Master:
cluster_isl(UP)
UP swp16 100G 9216 BondMember sw1 (swp16) Master:
cluster isl(UP)
```

Cumulus Linux 5.x

1. Disable all node-facing ports (not ISL ports) on both new cluster switches sw1 and sw2.

You must not disable the ISL ports.

The following commands disable the node-facing ports on switches sw1 and sw2:

```
cumulus@sw1:~$ nv set interface swp1s0-3,swp2s0-3,swp3-14 link state
down
cumulus@sw1:~$ nv config apply
cumulus@sw2:~$ nv save
cumulus@sw2:~$ nv config apply
cumulus@sw2:~$ nv config apply
cumulus@sw2:~$ nv save
```

2. Verify that the ISL and the physical ports on the ISL between the two SN2100 switches sw1 and sw2 are up on ports swp15 and swp16:

```
nv show interface
```

cumulus@sw1:~\$ nv show interface Speed State Remote Host Remote Port Interface MTU Type Summary ----- ----- ----- -----_____ + swp14 9216 down swp + swp15 9216 100G up ossg-rcf1 Intra-Cluster Switch ISL Port swp15 swp + swp16 9216 100G up ossg-rcf2 Intra-Cluster Switch ISL Port swp16 swp cumulus@sw2:~\$ nv show interface Interface MTU Speed State Remote Host Remote Port Type Summary ----- ----- ----- -----_____ ____ + swp14 9216 down swp + swp15 9216 100G up ossg-rcf1 Intra-Cluster Switch ISL Port swp15 swp + swp16 9216 100G up ossq-rcf2 Intra-Cluster Switch ISL Port swp16 swp

The following examples show that the ISL ports are up on switches sw1 and sw2:

3. Verify that all cluster ports are up:

network port show

Each port should display up for Link and healthy for Health Status.

```
cluster1::*> network port show
Node: node1
Ignore
                                Speed(Mbps)
Health Health
Port IPspace Broadcast Domain Link MTU Admin/Oper
Status Status
_____ ___
e3a Cluster Cluster up 9000 auto/100000
healthy false
     Cluster Cluster up 9000 auto/100000
e3b
healthy false
Node: node2
Ignore
                                Speed(Mbps)
Health Health
Port IPspace Broadcast Domain Link MTU Admin/Oper
Status Status
_____ ____
e3a Cluster Cluster up 9000 auto/100000
healthy false
e3b
     Cluster Cluster up 9000 auto/100000
healthy false
```

4. Verify that all cluster LIFs are up and operational:

network interface show

Each cluster LIF should display true for Is Home and have a Status Admin/Oper of up/up.

```
Show example
```

```
cluster1::*> network interface show -vserver Cluster
        Logical Status Network
                                Current
Current Is
Vserver Interface Admin/Oper Address/Mask Node
Port
     Home
_____
_____ ___
Cluster
        nodel clus1 up/up 169.254.209.69/16 node1
e3a
     true
        nodel clus2 up/up 169.254.49.125/16 nodel
e3b
     true
        node2_clus1_up/up 169.254.47.194/16_node2
e3a
     true
         node2 clus2 up/up 169.254.19.183/16 node2
e3b
     true
```

5. Disable auto-revert on the cluster LIFs:

network interface modify -vserver Cluster -lif * -auto-revert false

Show example

```
cluster1::*> network interface modify -vserver Cluster -lif * -auto
-revert false
Logical
Vserver Interface Auto-revert
------
Cluster
node1_clus1 false
node1_clus2 false
node2_clus1 false
node2_clus2 false
```

6. Disconnect the cable from cluster port e3a on node1, and then connect e3a to port 3 on cluster switch sw1, using the appropriate cabling supported by the SN2100 switches.

The Hardware Universe - Switches contains more information about cabling.

7. Disconnect the cable from cluster port e3a on node2, and then connect e3a to port 4 on cluster switch sw1,

using the appropriate cabling supported by the SN2100 switches.

Cumulus Linux 4.4.x

8. On switch sw1, enable all node-facing ports.

The following commands enable all node-facing ports on switch sw1.

```
cumulus@sw1:~$ net del interface swp1s0-3, swp2s0-3, swp3-14 link
down
cumulus@sw1:~$ net pending
cumulus@sw1:~$ net commit
```

9. On switch sw1, verify that all ports are up:

net show interface all

cumulus@sw1:~\$ net show interface all

State	Name	Spd	MTU	Mode	LLDP		Summary
DN	swp1s0	10G	9216	Trunk/L2			Master:
br_defa	ault(UP)						
DN	swplsl	10G	9216	Trunk/L2			Master:
br_defa	ault(UP)						
DN	swp1s2	10G	9216	Trunk/L2			Master:
br_defa	ault(UP)						
DN	swp1s3	10G	9216	Trunk/L2			Master:
br_defa	ault(UP)						
DN	swp2s0	25G	9216	Trunk/L2			Master:
br_defa	ault(UP)						
DN	swp2s1	25G	9216	Trunk/L2			Master:
br_defa	ault(UP)						
DN	swp2s2	25G	9216	Trunk/L2			Master:
br_defa	ault(UP)						
DN	swp2s3	25G	9216	Trunk/L2			Master:
br_defa	ault(UP)						
UP	swp3	100G	9216	Trunk/L2	node1	(e3a)	Master:
br_defa	ault(UP)						
UP	swp4	100G	9216	Trunk/L2	node2	(e3a)	Master:
br_defa	ault(UP)						
•••							
•••							
UP	swp15	100G	9216	BondMember	swp15		Master:
cluster	_isl(UP)						
UP	swp16	100G	9216	BondMember	swp16		Master:
cluster	_isl(UP)						
•••							

Cumulus Linux 5.x

8. On switch sw1, enable all node-facing ports.

The following commands enable all node-facing ports on switch sw1.

```
cumulus@sw1:~$ nv unset interface swp1s0-3,swp2s0-3,swp3-14 link
state down
cumulus@sw1:~$ nv config apply
cumulus@sw1:~$ nv config save
```

9. On switch sw1, verify that all ports are up:

nv show interface

Interface	State	Speed	MTU	Туре	Remote Host
Remote Port	Summar	У			
•••					
•••					
swp1s0	up	10G	9216	swp	odq-a300-1a
e0a					
swpls1	up	10G	9216	swp	odq-a300-1b
e0a					
swp1s2	down	10G	9216	swp	
swp1s3	down	10G	9216	swp	
swp2s0	down	25G	9216	swp	
swp2s1	down	25G	9216	swp	
swp2s2	down	25G	9216	swp	
swp2s3	down	25G	9216	swp	
swp3	down		9216	swp	
swp4	down		9216	swp	
				_	
swp14	down		9216	swp	
swp15	up	100G	9216	swp	ossg-int-rcf10
swp15	Ŧ			Ŧ	
swp16	up	100G	9216	SWD	ossg-int-rcf10
swp16	-15	2000	2220	P	

10. Verify that all cluster ports are up:

network port show -ipspace Cluster

The following example shows that all of the cluster ports are up on node1 and node2:

```
cluster1::*> network port show -ipspace Cluster
Node: node1
Ignore
                                   Speed(Mbps)
Health Health
Port IPspace Broadcast Domain Link MTU Admin/Oper
Status Status
_____ ____
    Cluster Cluster up 9000 auto/100000
e3a
healthy false
e3b Cluster Cluster up 9000 auto/100000
healthy false
Node: node2
Ignore
                                   Speed(Mbps)
Health Health
Port IPspace Broadcast Domain Link MTU Admin/Oper
Status Status
----- ---- ----- ---- ---- ----
_____ _
e3a Cluster Cluster up 9000 auto/100000
healthy false
   Cluster Cluster up 9000 auto/100000
e3b
healthy false
```

11. Display information about the status of the nodes in the cluster:

cluster show

The following example displays information about the health and eligibility of the nodes in the cluster:

cluster1::*> cluster	show		
Node	Health	Eligibility	Epsilon
nodel node2	true true	true true	false false

- 12. Disconnect the cable from cluster port e3b on node1, and then connect e3b to port 3 on cluster switch sw2, using the appropriate cabling supported by the SN2100 switches.
- 13. Disconnect the cable from cluster port e3b on node2, and then connect e3b to port 4 on cluster switch sw2, using the appropriate cabling supported by the SN2100 switches.

Cumulus Linux 4.4.x

14. On switch sw2, enable all node-facing ports.

The following commands enable the node-facing ports on switch sw2:

```
cumulus@sw2:~$ net del interface swp1s0-3, swp2s0-3, swp3-14 link
down
cumulus@sw2:~$ net pending
cumulus@sw2:~$ net commit
```

15. On switch sw2, verify that all ports are up:

```
net show interface all
```

cumulus@sw2:~\$ net show interface all

State	Name	Spd	MTU	Mode	LLDP	Summary
DN br defa	swp1s0 ault(UP)	10G	9216	Trunk/L2		Master:
DN br.defa	swp1s1	10G	9216	Trunk/L2		Master:
DN br. defa	swp1s2	10G	9216	Trunk/L2		Master:
DN	swp1s3	10G	9216	Trunk/L2		Master:
DN	swp2s0	25G	9216	Trunk/L2		Master:
br_defa DN	ault(UP) swp2s1	25G	9216	Trunk/L2		Master:
br_defa DN	ault(UP) swp2s2	25G	9216	Trunk/L2		Master:
br_defa	ault(UP)	0.5.0	0016	m 1 (T O		
br_defa	swp2s3 ault(UP)	25G	9216	Trunk/L2		Master:
UP br defa	swp3 ault(UP)	100G	9216	Trunk/L2	nodel (e3b)	Master:
UP br.dof	swp4	100G	9216	Trunk/L2	node2 (e3b)	Master:
···	aurc (Or)					
UP	swp15	100G	9216	BondMember	swp15	Master:
cluster	r_isl(UP)					
UP cluster	swp16 r_isl(UP)	100G	9216	BondMember	swp16	Master:

16. On both switches sw1 and sw2, verify that both nodes each have one connection to each switch:

net show lldp

The following example shows the appropriate results for both switches sw1 and sw2:

cumulus@sw1:~\$ net show lldp

LocalPort	Speed	Mode	RemoteHost	RemotePort
swp3	100G	Trunk/L2	node1	e3a
swp4	100G	Trunk/L2	node2	e3a
swp15	100G	BondMember	sw2	swp15
swp16	100G	BondMember	sw2	swp16

```
cumulus@sw2:~$ net show lldp
```

UIL

Cumulus Linux 5.x

14. On switch sw2, enable all node-facing ports.

The following commands enable the node-facing ports on switch sw2:

```
cumulus@sw2:~$ nv unset interface swp1s0-3,swp2s0-3,swp3-14 link
state down
cumulus@sw2:~$ nv config apply
cumulus@sw2:~$ nv config save
```

15. On switch sw2, verify that all ports are up:

nv show interface

cumulus@sw2:~\$ nv show interface							
Interface Remote Port	State Summar	Speed Y	MTU	Туре	Remote Host		
•••							
••• swp1s0	au	100	9216	SIND	ada = 300 = 1a		
202	up	TOG	5210	змЪ	oug abou la		
swp1s1	นต	10G	9216	SWD	odg-a300-1b		
e0a	- <u>F</u>			2.15			
swp1s2	down	10G	9216	swp			
swp1s3	down	10G	9216	swp			
swp2s0	down	25G	9216	swp			
swp2s1	down	25G	9216	swp			
swp2s2	down	25G	9216	swp			
swp2s3	down	25G	9216	swp			
swp3	down		9216	swp			
swp4	down		9216	swp			
•••	_						
swp14	down		9216	swp			
swp15	up	100G	9216	swp	ossg-int-rcf10		
swp15		1.0.0	0.0.7.7				
swp16	up	100G	9216	swp	ossg-int-rcf10		
swp16							

16. On both switches sw1 and sw2, verify that both nodes each have one connection to each switch:

```
nv show interface --view=lldp
```

The following examples show the appropriate results for both switches sw1 and sw2:

eUa			
swp1s2	10G	swp	
swp1s3	10G	swp	
swp2s0	25G	swp	
swp2s1	25G	swp	
swp2s2	25G	swp	
swp2s3	25G	swp	
swp3		swp	
swp4		swp	
• • •			
•••			
swp14		swp	
swp15	100G	swp	ossg-int-rcf10
swp15			
swp16	100G	swp	ossg-int-rcf10
swp16			
cumulus@sw2:	~\$ nv s	how interf	faceview=lldp
	a 1	_	
Interrace	Speed	Туре	Remote Host
Remote Port	 10G	swp	 odq-a300-1a
Remote Port	 10G	swp	 odq-a300-1a
Remote Port	 10G 10G	swp	 odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a	 10G 10G	swp swp	odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2	 10G 10G	swp swp swp	 odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3	 10G 10G 10G	swp swp swp swp	odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3 swp2s0	10G 10G 10G 10G 25G	swp swp swp swp swp	 odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3 swp2s0 swp2s1	10G 10G 10G 10G 25G 25G	swp swp swp swp swp swp	odq-a300-1a odq-a300-1b
Remote Port Remote Port Remote Port Remote Port Remote Port Remote Port Remote Port Remote Port Remote Port Swp1s0 e0a Swp1s0 e0a Swp1s1 e0a Swp1s2 Swp1s3 Swp2s0 Swp2s1 Swp2s2	10G 10G 10G 10G 25G 25G 25G	swp swp swp swp swp swp swp	 odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3 swp2s0 swp2s1 swp2s2 swp2s3	10G 10G 10G 10G 25G 25G 25G 25G	swp swp swp swp swp swp swp swp	odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3 swp2s0 swp2s1 swp2s2 swp2s3 swp2s3 swp3	10G 10G 10G 25G 25G 25G 25G	swp swp swp swp swp swp swp swp swp swp	odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3 swp2s0 swp2s1 swp2s2 swp2s3 swp3 swp4	10G 10G 10G 10G 25G 25G 25G 25G	swp swp swp swp swp swp swp swp swp swp	odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3 swp2s0 swp2s1 swp2s2 swp2s3 swp2s3 swp4 	10G 10G 10G 25G 25G 25G 25G	swp swp swp swp swp swp swp swp swp swp	 odq-a300-1a odq-a300-1b
Remote Port Remote Port Remote Port Remote Port Remote Port Remote Port Remote Port Remote Port Remote Port Swp1s0 e0a Swp1s0 e0a Swp1s1 e0a Swp1s2 Swp1s3 Swp2s0 Swp2s1 Swp2s2 Swp2s3 Swp3 Swp4 	10G 10G 10G 25G 25G 25G 25G	swp swp swp swp swp swp swp swp swp swp	 odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3 swp2s0 swp2s1 swp2s2 swp2s3 swp3 swp4 swp14	10G 10G 10G 25G 25G 25G 25G	swp swp swp swp swp swp swp swp swp swp	 odq-a300-1a odq-a300-1b
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3 swp2s0 swp2s1 swp2s2 swp2s3 swp2 swp4 swp14 swp15	10G 10G 10G 25G 25G 25G 25G	swp swp swp swp swp swp swp swp swp swp	odq-a300-1a odq-a300-1b ossg-int-rcf10
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp2s0 swp2s1 swp2s2 swp2s3 swp4 swp14 swp15 swp15	10G 10G 10G 25G 25G 25G 25G	swp swp swp swp swp swp swp swp swp swp	odq-a300-1a odq-a300-1b ossg-int-rcf10
Remote Port swp1s0 e0a swp1s1 e0a swp1s2 swp1s3 swp2s0 swp2s1 swp2s2 swp2s3 swp2s3 swp4 swp14 swp15 swp15 swp16	10G 10G 10G 25G 25G 25G 25G 25G	swp swp swp swp swp swp swp swp swp swp	odq-a300-1a odq-a300-1b ossg-int-rcf10 ossg-int-rcf10

17. Display information about the discovered network devices in your cluster:

network device-discovery show -protocol lldp

Show example

```
cluster1::*> network device-discovery show -protocol lldp
Node/
        Local Discovered
Protocol
        Port Device (LLDP: ChassisID) Interface Platform
_____
_____
node1
      /lldp
        e3a sw1 (b8:ce:f6:19:1a:7e) swp3
        e3b
             sw2 (b8:ce:f6:19:1b:96) swp3
                                            _
       /lldp
node2
         e3a sw1 (b8:ce:f6:19:1a:7e) swp4
         e3b sw2 (b8:ce:f6:19:1b:96) swp4
```

18. Verify that all cluster ports are up:

network port show -ipspace Cluster

The following example shows that all of the cluster ports are up on node1 and node2:

```
cluster1::*> network port show -ipspace Cluster
Node: node1
Ignore
                                   Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
_____ ____
     Cluster Cluster up 9000 auto/10000
e3a
healthy false
    Cluster Cluster up 9000 auto/10000
e3b
healthy false
Node: node2
Ignore
                                   Speed(Mbps) Health
Health
Port IPspace Broadcast Domain Link MTU Admin/Oper Status
Status
----- ---- ----- ----- ---- ---- ----
_____ _
e3a Cluster Cluster up 9000 auto/10000
healthy false
    Cluster Cluster up 9000 auto/10000
e3b
healthy false
```

Step 3: Complete the procedure

1. Enable auto-revert on all cluster LIFs:

net interface modify -vserver Cluster -lif * -auto-revert true

```
cluster1::*> net interface modify -vserver Cluster -lif * -auto
-revert true
Logical
Vserver Interface Auto-revert
------ -----------
Cluster
node1_clus1 true
node1_clus2 true
node2_clus1 true
node2_clus2 true
```

2. Verify that all interfaces display true for Is Home:

net interface show -vserver Cluster



This might take a minute to complete.

Show example

The following example shows that all LIFs are up on node1 and node2 and that Is Home results are true:

```
cluster1::*> net interface show -vserver Cluster
       Logical Status Network Current
Current Is
Vserver Interface Admin/Oper Address/Mask Node
                                              Port
Home
_____ ____
_____ ___
Cluster
       node1_clus1_up/up
                        169.254.209.69/16 node1
                                                e3a
true
       nodel clus2 up/up
                         169.254.49.125/16 node1
                                                e3b
true
       node2 clus1 up/up
                         169.254.47.194/16 node2
                                                e3a
true
       node2 clus2 up/up 169.254.19.183/16 node2
                                                e3b
true
```

3. Verify that the settings are disabled:

network options switchless-cluster show

Show example

The false output in the following example shows that the configuration settings are disabled:

cluster1::*> network options switchless-cluster show
Enable Switchless Cluster: false

4. Verify the status of the node members in the cluster:

```
cluster show
```

Show example

The following example shows information about the health and eligibility of the nodes in the cluster:

cluster1::*> cluster	show		
Node	Health	Eligibility	Epsilon
nodel node2	true true	true true	false false

5. Verify that the cluster network has full connectivity:

cluster ping-cluster -node node-name

```
cluster1::*> cluster ping-cluster -node node1
Host is nodel
Getting addresses from network interface table...
Cluster nodel clus1 169.254.209.69 nodel e3a
Cluster nodel clus2 169.254.49.125 nodel e3b
Cluster node2 clus1 169.254.47.194 node2 e3a
Cluster node2 clus2 169.254.19.183 node2 e3b
Local = 169.254.47.194 \ 169.254.19.183
Remote = 169.254.209.69 169.254.49.125
Cluster Vserver Id = 4294967293
Ping status:
Basic connectivity succeeds on 4 path(s)
Basic connectivity fails on 0 path(s)
Detected 9000 byte MTU on 4 path(s):
Local 169.254.47.194 to Remote 169.254.209.69
Local 169.254.47.194 to Remote 169.254.49.125
Local 169.254.19.183 to Remote 169.254.209.69
Local 169.254.19.183 to Remote 169.254.49.125
Larger than PMTU communication succeeds on 4 path(s)
RPC status:
2 paths up, 0 paths down (tcp check)
2 paths up, 0 paths down (udp check)
```

6. To set up log collection, run the following command for each switch. You are prompted to enter the switch name, username, and password for log collection.

system switch ethernet log setup-password

Show example

```
cluster1::*> system switch ethernet log setup-password
Enter the switch name: <return>
The switch name entered is not recognized.
Choose from the following list:
cs1
cs2
cluster1::*> system switch ethernet log setup-password
Enter the switch name: cs1
Would you like to specify a user other than admin for log
collection? {y|n}: n
Enter the password: <enter switch password>
Enter the password again: <enter switch password>
cluster1::*> system switch ethernet log setup-password
Enter the switch name: cs2
Would you like to specify a user other than admin for log
collection? {y|n}: n
Enter the password: <enter switch password>
Enter the password again: <enter switch password>
```

7. To start log collection, run the following command, replacing DEVICE with the switch used in the previous command. This starts both types of log collection: the detailed **Support** logs and an hourly collection of **Periodic** data.

system switch ethernet log modify -device <switch-name> -log-request true

```
cluster1::*> system switch ethernet log modify -device sw1 -log
-request true
Do you want to modify the cluster switch log collection
configuration? {y|n}: [n] y
Enabling cluster switch log collection.
cluster1::*> system switch ethernet log modify -device sw2 -log
-request true
Do you want to modify the cluster switch log collection
configuration? {y|n}: [n] y
Enabling cluster switch log collection.
```

Wait for 10 minutes and then check that the log collection completes:

system switch ethernet log show

Show example

```
cluster1::*> system switch ethernet log show<br/>Log Collection Enabled: trueLog TimestampStatusIndex SwitchLog TimestampStatus1sw1 (b8:ce:f6:19:1b:42)4/29/2022 03:05:25complete2sw2 (b8:ce:f6:19:1b:96)4/29/2022 03:07:42complete
```



If any of these commands return an error, contact NetApp support.

8. Change the privilege level back to admin:

```
set -privilege admin
```

9. If you suppressed automatic case creation, reenable it by invoking an AutoSupport message:

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

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