



Migrate from a Cisco switch to a Cisco Nexus 92300YC switch

Cluster and storage switches

NetApp
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Migrate from a Cisco switch to a Cisco Nexus 92300YC switch

Migrate from a Cisco switch to a Cisco Nexus 92300YC switch

You must be aware of certain configuration information, port connections and cabling requirements when you are replacing some older Cisco Nexus cluster switches with Cisco Nexus 92300YC cluster switches.

- The following cluster switches are supported:
 - Nexus 92300YC
 - Nexus 5596UP
 - Nexus 5020
 - Nexus 5010
- The cluster switches use the following ports for connections to nodes:
 - Ports e1/1-48 (10/25 GbE), e1/49-64 (40/100 GbE): Nexus 92300YC
 - Ports e1/1-40 (10 GbE): Nexus 5596UP
 - Ports e1/1-32 (10 GbE): Nexus 5020
 - Ports e1/1-12, e2/1-6 (10 GbE): Nexus 5010 with expansion module
- The cluster switches use the following Inter-Switch Link (ISL) ports:
 - Ports e1/65-66 (100 GbE): Nexus 92300YC
 - Ports e1/41-48 (10 GbE): Nexus 5596UP
 - Ports e1/33-40 (10 GbE): Nexus 5020
 - Ports e1/13-20 (10 GbE): Nexus 5010
- The [Hardware Universe - Switches](#) contains information about supported cabling for all cluster switches.
- You have configured some of the ports on Nexus 92300YC switches to run at 10 GbE or 40 GbE.
- You have planned, migrated, and documented 10 GbE and 40 GbE connectivity from nodes to Nexus 92300YC cluster switches.
- The ONTAP and NX-OS versions supported in this procedure are on the [Cisco Ethernet Switches](#) page.



After your migration completes, you might need to install the required configuration file to support the Cluster Switch Health Monitor (CSHM) for 92300YC cluster switches. See *Installing the Cluster Switch Health Monitor (CSHM) configuration file for 92300YC switches* in the [Setting up](#) guide.

How to migrate from a Cisco switch to a Cisco Nexus 92300YC switch

You can migrate nondisruptively older Cisco cluster switches for an ONTAP cluster to

Cisco Nexus 92300YC cluster network switches.

About this task

- The existing cluster must be properly set up and functioning.
- All cluster ports must be in the up state to ensure nondisruptive operations.
- The Nexus 92300YC cluster switches must be configured and operating under the proper version of NX-OS installed and reference configuration file (RCF) applied.
- The existing cluster network configuration must 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.
 - All cluster LIFs in the up state with the cluster LIFs are on their home ports.
 - ISL ports enabled and cabled between the older Cisco switches and between the new switches.

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

- The existing Cisco Nexus 5596UP cluster switches are c1 and c2.
- The new Nexus 92300YC cluster switches are cs1 and cs2.
- 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.
- Switch c2 is replaced by switch cs2 first and then switch c1 is replaced by switch cs1.
 - A temporary ISL is built on cs1 connecting c1 to cs1.
 - Cabling between the nodes and c2 are then disconnected from c2 and reconnected to cs2.
 - Cabling between the nodes and c1 are then disconnected from c1 and reconnected to cs1.
 - The temporary ISL between c1 and cs1 is then removed.

Steps

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

```
set -privilege advanced
```

The advanced prompt (*>) appears.

2. 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.



The AutoSupport message notifies technical support of this maintenance task so that automatic case creation is suppressed during the maintenance window.

The following command suppresses automatic case creation for two hours:

```
cluster1::*> system node autosupport invoke -node * -type all -message  
MAINT=2h
```

3. Verify that auto-revert is enabled on all cluster LIFs:

```
network interface show -vserver Cluster -fields auto-revert
```

```
cluster1::*> network interface show -vserver Cluster -fields auto-revert
```

Vserver	Logical Interface	Auto-revert
-----	-----	-----
Cluster		
	node1_clus1	true
	node1_clus2	true
	node2_clus1	true
	node2_clus2	true

4 entries were displayed.

4. 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
```

```
cluster1::*> network port show -ipspace Cluster
```

```
Node: node1
```

```
Ignore
```

						Speed(Mbps)	Health
Health							
Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
Status							
-----	-----	-----	-----	----	----	-----	
-----	-----						
e0a	Cluster	Cluster		up	9000	auto/10000	healthy
false							
e0b	Cluster	Cluster		up	9000	auto/10000	healthy
false							

```
Node: node2
```

```
Ignore
```

						Speed(Mbps)	Health
Health							
Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
Status							
-----	-----	-----	-----	----	----	-----	
-----	-----						
e0a	Cluster	Cluster		up	9000	auto/10000	healthy
false							
e0b	Cluster	Cluster		up	9000	auto/10000	healthy
false							

```
4 entries were displayed.
```

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
```

Current Is	Logical	Status	Network	Current
Vserver	Interface	Admin/Oper	Address/Mask	Node
Port	Home			
Cluster				
e0a	node1_clus1	up/up	169.254.209.69/16	node1
e0b	node1_clus2	up/up	169.254.49.125/16	node1
e0a	node2_clus1	up/up	169.254.47.194/16	node2
e0b	node2_clus2	up/up	169.254.19.183/16	node2

4 entries were displayed.

5. 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 cdp
```

```
cluster1::*> network device-discovery show -protocol cdp
```

Node/	Local	Discovered		
Protocol	Port	Device (LLDP: ChassisID)	Interface	Platform
node2	/cdp			
	e0a	c1	0/2	N5K-
C5596UP				
	e0b	c2	0/2	N5K-
C5596UP				
node1	/cdp			
	e0a	c1	0/1	N5K-
C5596UP				
	e0b	c2	0/1	N5K-
C5596UP				

4 entries were displayed.

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

show cdp neighbors

c1# **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 Port ID	Local Intrfce	Hldtme	Capability	Platform
node1 e0a	Eth1/1	124	H	FAS2750
node2 e0a	Eth1/2	124	H	FAS2750
c2 (FOX2025GEFC) Eth1/41	Eth1/41	179	S I s	N5K-C5596UP
c2 (FOX2025GEFC) Eth1/42	Eth1/42	175	S I s	N5K-C5596UP
c2 (FOX2025GEFC) Eth1/43	Eth1/43	179	S I s	N5K-C5596UP
c2 (FOX2025GEFC) Eth1/44	Eth1/44	175	S I s	N5K-C5596UP
c2 (FOX2025GEFC) Eth1/45	Eth1/45	179	S I s	N5K-C5596UP
c2 (FOX2025GEFC) Eth1/46	Eth1/46	179	S I s	N5K-C5596UP
c2 (FOX2025GEFC) Eth1/47	Eth1/47	175	S I s	N5K-C5596UP
c2 (FOX2025GEFC) Eth1/48	Eth1/48	179	S I s	N5K-C5596UP

Total entries displayed: 10

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 Port ID	Local Intrfce	Hldtme	Capability	Platform
node1 e0b	Eth1/1	124	H	FAS2750
node2 e0b	Eth1/2	124	H	FAS2750
c1 (FOX2025GEEX) Eth1/41	Eth1/41	175	S I s	N5K-C5596UP
c1 (FOX2025GEEX) Eth1/42	Eth1/42	175	S I s	N5K-C5596UP
c1 (FOX2025GEEX) Eth1/43	Eth1/43	175	S I s	N5K-C5596UP
c1 (FOX2025GEEX) Eth1/44	Eth1/44	175	S I s	N5K-C5596UP
c1 (FOX2025GEEX) Eth1/45	Eth1/45	175	S I s	N5K-C5596UP
c1 (FOX2025GEEX) Eth1/46	Eth1/46	175	S I s	N5K-C5596UP
c1 (FOX2025GEEX) Eth1/47	Eth1/47	176	S I s	N5K-C5596UP
c1 (FOX2025GEEX) Eth1/48	Eth1/48	176	S I s	N5K-C5596UP

7. Ensure that the cluster network has full connectivity using the command:

```
cluster ping-cluster -node node-name
```

```

cluster1::*> cluster ping-cluster -node node2
Host is node2
Getting addresses from network interface table...
Cluster node1_clus1 169.254.209.69 node1      e0a
Cluster node1_clus2 169.254.49.125 node1      e0b
Cluster node2_clus1 169.254.47.194 node2      e0a
Cluster node2_clus2 169.254.19.183 node2      e0b
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)

```

8. Configure a temporary ISL on cs1 on ports e1/41-48, between c1 and cs1.

The following example shows how the new ISL is configured on c1 and cs1:

```
cs1# configure
Enter configuration commands, one per line. End with CNTL/Z.
cs1(config)# interface e1/41-48
cs1(config-if-range)# description temporary ISL between Nexus 5596UP and
Nexus 92300YC
cs1(config-if-range)# no lldp transmit
cs1(config-if-range)# no lldp receive
cs1(config-if-range)# switchport mode trunk
cs1(config-if-range)# no spanning-tree bpduguard enable
cs1(config-if-range)# channel-group 101 mode active
cs1(config-if-range)# exit
cs1(config)# interface port-channel 101
cs1(config-if)# switchport mode trunk
cs1(config-if)# spanning-tree port type network
cs1(config-if)# exit
cs1(config)# exit
```

9. Remove ISL cables from ports e1/41-48 from c2 and connect the cables to ports e1/41-48 on cs1.
10. Verify that the ISL ports and port-channel are operational connecting c1 and cs1:

```
show port-channel summary
```

The following example shows the Cisco show port-channel summary command being used to verify the ISL ports are operational on c1 and cs1:

```
c1# show port-channel summary
```

```
Flags:  D - Down          P - Up in port-channel (members)
        I - Individual    H - Hot-standby (LACP only)
        s - Suspended     r - Module-removed
        b - BFD Session Wait
        S - Switched      R - Routed
        U - Up (port-channel)
        p - Up in delay-lACP mode (member)
        M - Not in use. Min-links not met
```

```
-----
-----
Group Port-      Type      Protocol  Member Ports
Channel
```

```
-----
1      Po1(SU)    Eth       LACP      Eth1/41(P)  Eth1/42(P)
Eth1/43(P)
                        Eth1/44(P)  Eth1/45(P)
Eth1/46(P)
                        Eth1/47(P)  Eth1/48(P)
```

```
cs1# show port-channel summary
```

```
Flags:  D - Down          P - Up in port-channel (members)
        I - Individual    H - Hot-standby (LACP only)
        s - Suspended     r - Module-removed
        b - BFD Session Wait
        S - Switched      R - Routed
        U - Up (port-channel)
        p - Up in delay-lACP mode (member)
        M - Not in use. Min-links not met
```

```
-----
-----
Group Port-      Type      Protocol  Member Ports
Channel
```

```
-----
1      Po1(SU)    Eth       LACP      Eth1/65(P)  Eth1/66(P)
101    Po101(SU)  Eth       LACP      Eth1/41(P)  Eth1/42(P)
Eth1/43(P)
                        Eth1/44(P)  Eth1/45(P)
Eth1/46(P)
                        Eth1/47(P)  Eth1/48(P)
```

11. For node1, disconnect the cable from e1/1 on c2, and then connect the cable to e1/1 on cs2, using

appropriate cabling supported by Nexus 92300YC.

12. For node2, disconnect the cable from e1/2 on c2, and then connect the cable to e1/2 on cs2, using appropriate cabling supported by Nexus 92300YC.
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 cdp
```

```
cluster1::*> network device-discovery show -protocol cdp
```

Node/ Protocol	Local Port	Discovered Device (LLDP: ChassisID)	Interface	Platform
node2	/cdp			
	e0a	c1	0/2	N5K-
C5596UP				
	e0b	cs2	0/2	N9K-
C92300YC				
node1	/cdp			
	e0a	c1	0/1	N5K-
C5596UP				
	e0b	cs2	0/1	N9K-
C92300YC				

```
4 entries were displayed.
```

14. For node1, disconnect the cable from e1/1 on c1, and then connect the cable to e1/1 on cs1, using appropriate cabling supported by Nexus 92300YC.
15. For node2, disconnect the cable from e1/2 on c1, and then connect the cable to e1/2 on cs1, using appropriate cabling supported by Nexus 92300YC.
16. 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 cdp
```

```
cluster1::*> network device-discovery show -protocol cdp
```

Node/ Protocol	Local Port	Discovered Device (LLDP: ChassisID)	Interface	Platform
node2	/cdp			
	e0a	cs1	0/2	N9K-
C92300YC				
	e0b	cs2	0/2	N9K-
C92300YC				
node1	/cdp			
	e0a	cs1	0/1	N9K-
C92300YC				
	e0b	cs2	0/1	N9K-
C92300YC				

4 entries were displayed.

17. Delete the temporary ISL between cs1 and c1.

```
cs1(config)# no interface port-channel 10
cs1(config)# interface e1/41-48
cs1(config-if-range)# lldp transmit
cs1(config-if-range)# lldp receive
cs1(config-if-range)# no switchport mode trunk
cs1(config-if-range)# no channel-group
cs1(config-if-range)# description 10GbE Node Port
cs1(config-if-range)# spanning-tree bpduguard enable
cs1(config-if-range)# exit
cs1(config)# exit
```

18. 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	
Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status			

```

Status
-----
-----
e0a      Cluster      Cluster      up    9000    auto/10000 healthy
false
e0b      Cluster      Cluster      up    9000    auto/10000 healthy
false

```

Node: node2

```

Ignore
                                           Speed(Mbps) Health
Health
Port      IPspace      Broadcast Domain Link MTU   Admin/Oper  Status
Status
-----
-----
e0a      Cluster      Cluster      up    9000    auto/10000 healthy
false
e0b      Cluster      Cluster      up    9000    auto/10000 healthy
false

```

4 entries were displayed.

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     e0a
true
          node1_clus2  up/up      169.254.49.125/16  node1     e0b
true
          node2_clus1  up/up      169.254.47.194/16  node2     e0a
true
          node2_clus2  up/up      169.254.19.183/16  node2     e0b
true

```

4 entries were displayed.

```
cluster1::*> network device-discovery show -protocol cdp
```

Node/ Protocol	Local Port	Discovered Device (LLDP: ChassisID)	Interface	Platform
node2	/cdp			
	e0a	cs1	0/2	N9K-
C92300YC				
	e0b	cs2	0/2	N9K-
C92300YC				
node1	/cdp			
	e0a	cs1	0/1	N9K-
C92300YC				
	e0b	cs2	0/1	N9K-
C92300YC				

4 entries were displayed.

```
cs1# 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	H	FAS2750	
e0a					
node2	Eth1/2	124	H	FAS2750	
e0a					
cs2 (FDO220329V5)	Eth1/65	179	R S I s	N9K-C92300YC	
Eth1/65					
cs2 (FDO220329V5)	Eth1/66	179	R S I s	N9K-C92300YC	
Eth1/66					

```
cs2# 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	H	FAS2750
e0b				
node2	Eth1/2	124	H	FAS2750
e0b				
cs1 (FDO220329KU)	Eth1/65	179	R S I S	N9K-C92300YC
Eth1/65				
cs1 (FDO220329KU)	Eth1/66	179	R S I S	N9K-C92300YC
Eth1/66				
Total entries displayed: 4				

19. Ensure that the cluster network has full connectivity:

```
cluster ping-cluster -node node-name
```

```
cluster1::*> set -priv advanced
```

Warning: These advanced commands are potentially dangerous; use them only when

directed to do so by NetApp personnel.

Do you want to continue? {y|n}: **y**

```
cluster1::*> cluster ping-cluster -node node2
```

Host is node2

Getting addresses from network interface table...

Cluster node1_clus1 169.254.209.69 node1 e0a

Cluster node1_clus2 169.254.49.125 node1 e0b

Cluster node2_clus1 169.254.47.194 node2 e0a

Cluster node2_clus2 169.254.19.183 node2 e0b

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)

```
cluster1::*> set -privilege admin
```

```
cluster1::*>
```

20. For ONTAP 9.4 and later, enable the cluster switch health monitor log collection feature for collecting switch-related log files, using the commands:

```
system cluster-switch log setup-password and system cluster-switch log enable-  
collection
```

```

cluster1::*> system cluster-switch log setup-password
Enter the switch name: <return>
The switch name entered is not recognized.
Choose from the following list:
cs1
cs2

cluster1::*> system cluster-switch log setup-password

Enter the switch name: cs1
RSA key fingerprint is e5:8b:c6:dc:e2:18:18:09:36:63:d9:63:dd:03:d9:cc
Do you want to continue? {y|n}::[n] y

Enter the password: <enter switch password>
Enter the password again: <enter switch password>

cluster1::*> system cluster-switch log setup-password

Enter the switch name: cs2
RSA key fingerprint is 57:49:86:a1:b9:80:6a:61:9a:86:8e:3c:e3:b7:1f:b1
Do you want to continue? {y|n}:: [n] y

Enter the password: <enter switch password>
Enter the password again: <enter switch password>

cluster1::*> system cluster-switch log enable-collection

Do you want to enable cluster log collection for all nodes in the
cluster?
{y|n}: [n] y

Enabling cluster switch log collection.

cluster1::*>

```



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

Replace a Cisco Nexus 92300YC switch

Replacing a defective Nexus 92300YC switch in a cluster network is a nondisruptive procedure (NDU).

Before you begin

The following conditions must exist before performing the switch replacement in the current environment and on the replacement switch.

- Existing cluster and network infrastructure:
 - The existing cluster must be verified as completely functional, with at least one fully connected cluster switch.
 - All cluster ports must be up.
 - All cluster logical interfaces (LIFs) must be up and on their home ports.
 - The ONTAP cluster ping-cluster -node node1 command must indicate that basic connectivity and larger than PMTU communication are successful on all paths.
- Nexus 92300YC replacement switch:
 - Management network connectivity on the replacement switch must be functional.
 - Console access to the replacement switch must be in place.
 - The node connections are ports 1/1 through 1/64.
 - All Inter-Switch Link (ISL) ports must be disabled on ports 1/65 and 1/66.
 - The desired reference configuration file (RCF) and NX-OS operating system image switch must be loaded onto the switch.
 - Initial customization of the switch must be complete, as detailed in:

[Configuring a new Cisco Nexus 92300YC switch](#)

Any previous site customizations, such as STP, SNMP, and SSH, should be copied to the new switch.

About this task

You must execute the command for migrating a cluster LIF from the node where the cluster LIF is hosted.

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

- The names of the existing Nexus 92300YC switches are cs1 and cs2.
- The name of the new Nexus 92300YC switch is newcs2.
- The node names are node1 and node2.
- The cluster ports on each node are named e0a and e0b.
- The cluster LIF names are node1_clus1 and node1_clus2 for node1, and node2_clus1 and node2_clus2 for node2.
- The prompt for changes to all cluster nodes is cluster1::*>



The following procedure is based on the following cluster network topology:

```
cluster1::*> network port show -ipspace Cluster
```

```
Node: node1
```

```
Ignore
```

```
Speed (Mbps) Health
```

```
Health
```

```
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper  Status
Status
```

```

-----
e0a      Cluster      Cluster      up    9000  auto/10000 healthy
false
e0b      Cluster      Cluster      up    9000  auto/10000 healthy
false

Node: node2

Ignore

Speed(Mbps) Health
Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper  Status
Status
-----
e0a      Cluster      Cluster      up    9000  auto/10000 healthy
false
e0b      Cluster      Cluster      up    9000  auto/10000 healthy
false
4 entries were displayed.

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      e0a
true
node1_clus2  up/up      169.254.49.125/16  node1      e0b
true
node2_clus1  up/up      169.254.47.194/16  node2      e0a
true
node2_clus2  up/up      169.254.19.183/16  node2      e0b
true
4 entries were displayed.

cluster1::*> network device-discovery show -protocol cdp
Node/      Local  Discovered

```

Protocol	Port	Device (LLDP: ChassisID)	Interface	Platform
node2	/cdp			
	e0a	cs1	Eth1/2	N9K-
C92300YC				
	e0b	cs2	Eth1/2	N9K-
C92300YC				
node1	/cdp			
	e0a	cs1	Eth1/1	N9K-
C92300YC				
	e0b	cs2	Eth1/1	N9K-
C92300YC				

4 entries were displayed.

cs1# **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	144	H	FAS2980	e0a
node2	Eth1/2	145	H	FAS2980	e0a
cs2 (FDO220329V5)	Eth1/65	176	R S I s	N9K-C92300YC	Eth1/65
cs2 (FDO220329V5)	Eth1/66	176	R S I s	N9K-C92300YC	Eth1/66

Total entries displayed: 4

cs2# **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	139	H	FAS2980	e0b
node2	Eth1/2	124	H	FAS2980	e0b
cs1 (FDO220329KU)	Eth1/65	178	R S I s	N9K-C92300YC	Eth1/65
cs1 (FDO220329KU)	Eth1/66	178	R S I s	N9K-C92300YC	Eth1/66

Steps

1. Install the appropriate RCF and image on the switch, newcs2, and make any necessary site preparations.

If necessary, verify, download, and install the appropriate versions of the RCF and NX-OS software for the new switch. If you have verified that the new switch is correctly set up and does not need updates to the RCF and NX-OS software, continue to step 2.

- a. Go to the *NetApp Cluster and Management Network Switches Reference Configuration File Description Page* on the NetApp Support Site.
 - b. Click the link for the *Cluster Network and Management Network Compatibility Matrix*, and then note the required switch software version.
 - c. Click your browser's back arrow to return to the **Description** page, click **CONTINUE**, accept the license agreement, and then go to the **Download** page.
 - d. Follow the steps on the Download page to download the correct RCF and NX-OS files for the version of ONTAP software you are installing.
2. On the new switch, log in as admin and shut down all of the ports that will be connected to the node cluster interfaces (ports 1/1 to 1/64).

If the switch that you are replacing is not functional and is powered down, go to Step 4. The LIFs on the cluster nodes should have already failed over to the other cluster port for each node.

```
newcs2# config
Enter configuration commands, one per line. End with CNTL/Z.
newcs2(config)# interface e1/1-64
newcs2(config-if-range)# shutdown
```

3. Verify that all cluster LIFs have auto-revert enabled:

```
network interface show -vserver Cluster -fields auto-revert
```

```
cluster1::> network interface show -vserver Cluster -fields auto-revert
```

Vserver	Logical Interface	Auto-revert
Cluster	node1_clus1	true
Cluster	node1_clus2	true
Cluster	node2_clus1	true
Cluster	node2_clus2	true

4 entries were displayed.

4. Verify that all the cluster LIFs can communicate:

```
cluster ping-cluster
```

```
cluster1::*> cluster ping-cluster node1

Host is node2
Getting addresses from network interface table...
Cluster node1_clus1 169.254.209.69 node1 e0a
Cluster node1_clus2 169.254.49.125 node1 e0b
Cluster node2_clus1 169.254.47.194 node2 e0a
Cluster node2_clus2 169.254.19.183 node2 e0b
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)
```

5. Shut down the ISL ports 1/65 and 1/66 on the Nexus 92300YC switch cs1:

```
cs1# configure
Enter configuration commands, one per line. End with CNTL/Z.
cs1(config)# interface e1/65-66
cs1(config-if-range)# shutdown
cs1(config-if-range)#
```

6. Remove all of the cables from the Nexus 92300YC cs2 switch, and then connect them to the same ports on the Nexus 92300YC newcs2 switch.
7. Bring up the ISLs ports 1/65 and 1/66 between the cs1 and newcs2 switches, and then verify the port channel operation status.

Port-Channel should indicate Po1(SU) and Member Ports should indicate Eth1/65(P) and Eth1/66(P).

This example enables ISL ports 1/65 and 1/66 and displays the port channel summary on switch cs1:


```

cs1# configure
Enter configuration commands, one per line. End with CNTL/Z.
cs1(config)# int e1/65-66
cs1(config-if-range)# no shutdown

cs1(config-if-range)# show port-channel summary
Flags:  D - Down          P - Up in port-channel (members)
        I - Individual    H - Hot-standby (LACP only)
        s - Suspended     r - Module-removed
        b - BFD Session Wait
        S - Switched      R - Routed
        U - Up (port-channel)
        p - Up in delay-lacp mode (member)
        M - Not in use. Min-links not met
-----
-----
Group Port-          Type      Protocol  Member Ports
      Channel
-----
-----
1      Po1 (SU)      Eth      LACP      Eth1/65 (P)  Eth1/66 (P)

cs1(config-if-range)#

```

8. Verify that port e0b is up on all nodes:

```
network port show ipspace Cluster
```

The output should be similar to the following:

```
cluster1::*> network port show -ipspace Cluster
```

```
Node: node1
```

```
Ignore
```

						Speed(Mbps)	Health
Health							
Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
Status							
-----	-----	-----	-----	-----	-----	-----	-----
e0a	Cluster	Cluster		up	9000	auto/10000	healthy
false							
e0b	Cluster	Cluster		up	9000	auto/10000	healthy
false							

```
Node: node2
```

```
Ignore
```

						Speed(Mbps)	Health
Health							
Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
Status							
-----	-----	-----	-----	-----	-----	-----	-----
e0a	Cluster	Cluster		up	9000	auto/10000	healthy
false							
e0b	Cluster	Cluster		up	9000	auto/auto	-
false							

```
4 entries were displayed.
```

9. On the same node you used in the previous step, revert the cluster LIF associated with the port in the previous step by using the network interface revert command.

In this example, LIF node1_clus2 on node1 is successfully reverted if the Home value is true and the port is e0b.

The following commands return LIF node1_clus2 on node1 to home port e0a and displays information about the LIFs on both nodes. Bringing up the first node is successful if the Is Home column is true for both cluster interfaces and they show the correct port assignments, in this example e0a and e0b on node1.

```
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	e0a	
node1_clus2	up/up	169.254.49.125/16	node1	e0b	
node2_clus1	up/up	169.254.47.194/16	node2	e0a	
node2_clus2	up/up	169.254.19.183/16	node2	e0a	

4 entries were displayed.

10. Display information about the nodes in a cluster:

```
cluster show
```

This example shows that the node health for node1 and node2 in this cluster is true:

```
cluster1::*> cluster show
```

Node	Health	Eligibility
-----	-----	-----
node1	false	true
node2	true	true

11. Verify that all physical cluster ports are up:

```
network port show ipspace Cluster
```

```
cluster1::*> network port show -ipspace Cluster
```

```
Node: node1
```

```
Ignore
```

						Speed(Mbps)	Health
Health							
Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
Status							
-----	-----	-----	-----	-----	-----	-----	-----
e0a	Cluster	Cluster		up	9000	auto/10000	healthy
false							
e0b	Cluster	Cluster		up	9000	auto/10000	healthy
false							

```
Node: node2
```

```
Ignore
```

						Speed(Mbps)	Health
Health							
Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
Status							
-----	-----	-----	-----	-----	-----	-----	-----
e0a	Cluster	Cluster		up	9000	auto/10000	healthy
false							
e0b	Cluster	Cluster		up	9000	auto/10000	healthy
false							

```
4 entries were displayed.
```

12. Verify that all the cluster LIFs can communicate:

```
cluster ping-cluster
```

```

cluster1::*> cluster ping-cluster -node node2
Host is node2
Getting addresses from network interface table...
Cluster node1_clus1 169.254.209.69 node1 e0a
Cluster node1_clus2 169.254.49.125 node1 e0b
Cluster node2_clus1 169.254.47.194 node2 e0a
Cluster node2_clus2 169.254.19.183 node2 e0b
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)

```

13. Confirm the following cluster network configuration:

network port show

```

cluster1::*> network port show -ipspace Cluster
Node: node1

Ignore
Speed (Mbps)
Health
Port      IPspace      Broadcast Domain Link MTU   Admin/Oper Status
Status
-----
e0a       Cluster      Cluster      up    9000    auto/10000 healthy
false
e0b       Cluster      Cluster      up    9000    auto/10000 healthy
false

Node: node2

```

Ignore

		Speed (Mbps)			Health	
Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper
Status						Status

e0a	Cluster	Cluster		up	9000	auto/10000
false						healthy
e0b	Cluster	Cluster		up	9000	auto/10000
false						healthy

4 entries were displayed.

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	e0a
true					
	node1_clus2	up/up	169.254.49.125/16	node1	e0b
true					
	node2_clus1	up/up	169.254.47.194/16	node2	e0a
true					
	node2_clus2	up/up	169.254.19.183/16	node2	e0b
true					

4 entries were displayed.

cluster1::> **network device-discovery show -protocol cdp**

Node/ Protocol	Local Port	Discovered Device (LLDP: ChassisID)	Interface	Platform

node2	/cdp			
	e0a	cs1	0/2	N9K-
C92300YC				
	e0b	newcs2	0/2	N9K-

```

C92300YC
node1      /cdp
           e0a      cs1                        0/1                        N9K-
C92300YC
           e0b      newcs2                    0/1                        N9K-
C92300YC

```

4 entries were displayed.

cs1# **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 Port ID	Local Intrfce	Hldtme	Capability	Platform	
node1	Eth1/1	144	H	FAS2980	e0a
node2	Eth1/2	145	H	FAS2980	e0a
newcs2 (FDO296348FU) Eth1/65	Eth1/65	176	R S I s	N9K-C92300YC	
newcs2 (FDO296348FU) Eth1/66	Eth1/66	176	R S I s	N9K-C92300YC	

Total entries displayed: 4

cs2# **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 ID	Local Intrfce	Hldtme	Capability	Platform	Port
node1	Eth1/1	139	H	FAS2980	e0b
node2	Eth1/2	124	H	FAS2980	e0b
cs1 (FDO220329KU) Eth1/65	Eth1/65	178	R S I s	N9K-C92300YC	
cs1 (FDO220329KU) Eth1/66	Eth1/66	178	R S I s	N9K-C92300YC	

Total entries displayed: 4

14. For ONTAP 9.4 and later, enable the cluster switch health monitor log collection feature for collecting switch-related log files, using the commands:

```
system cluster-switch log setup-password and system cluster-switch log enable-collection
```

```
cluster1::*> system cluster-switch log setup-password
Enter the switch name: <return>
The switch name entered is not recognized.
Choose from the following list:
cs1
cs2

cluster1::*> system cluster-switch log setup-password

Enter the switch name: cs1
RSA key fingerprint is e5:8b:c6:dc:e2:18:18:09:36:63:d9:63:dd:03:d9:cc
Do you want to continue? {y|n}::[n] y

Enter the password: <enter switch password>
Enter the password again: <enter switch password>

cluster1::*> system cluster-switch log setup-password

Enter the switch name: cs2
RSA key fingerprint is 57:49:86:a1:b9:80:6a:61:9a:86:8e:3c:e3:b7:1f:b1
Do you want to continue? {y|n}:: [n] y

Enter the password: <enter switch password>
Enter the password again: <enter switch password>

cluster1::*> system cluster-switch log enable-collection

Do you want to enable cluster log collection for all nodes in the
cluster?
{y|n}: [n] y

Enabling cluster switch log collection.

cluster1::*>
```



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

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