

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

ONTAP Systems Switches

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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.

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:

 $\verb|cluster1::*> \verb|system| | node | autosupport | invoke -node | * -type | all -message | MAINT=2h|$

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

network interface show -vserver Cluster -fields auto-revert

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 p	ort show -:	ipspace	Clus	ter		
Node: nod	le1						
Ignore						Speed(Mbps)	Health
Health						speed (Mpps)	nearth
Port Status	IPspace					Admin/Oper	Status
e0a false	Cluster	Cluster		up	9000	auto/10000	healthy
e0b	Cluster	Cluster		up	9000	auto/10000	healthy
false							
Node: nod	le2						
Ignore						Speed(Mbps)	Health
Status	IPspace						Status
e0a false	Cluster	Cluster		up	9000	auto/10000	healthy
	Cluster	Cluster		up	9000	auto/10000	healthy
4 entries	were display	red.					

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	1::*>	> network inte	erface show	-vserver Cluster	
		Logical	Status	Network	Current
Current	Is				
Vserver		Interface	Admin/Oper	Address/Mask	Node
Port	Home	Э			
		-			
Cluster					
		node1_clus1	up/up	169.254.209.69/16	node1
e0a	true	Э			
		node1_clus2	up/up	169.254.49.125/16	node1
e0b	true	Э			
		node2_clus1	up/up	169.254.47.194/16	node2
e0a	true	Э			
		node2_clus2	up/up	169.254.19.183/16	node2
e0b	true	Э			
4 entrie	es we	ere 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

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				

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

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 Intrf	ce Hldtn	ne Capabil:	ity Platform
node1	Eth1/1	124	Н	FAS2750
node2 e0a	Eth1/2	124	Н	FAS2750
c2(FOX2025GEFC) Eth1/41	Eth1/41	179	SIS	N5K-C5596UP
c2(FOX2025GEFC) Eth1/42	Eth1/42	175	SIS	N5K-C5596UP
c2(FOX2025GEFC) Eth1/43	Eth1/43	179	SIS	N5K-C5596UP
c2(FOX2025GEFC) Eth1/44	Eth1/44	175	SIS	N5K-C5596UP
c2(FOX2025GEFC) Eth1/45	Eth1/45	179	SIS	N5K-C5596UP
c2(FOX2025GEFC) Eth1/46	Eth1/46	179	SIS	N5K-C5596UP
c2(FOX2025GEFC) Eth1/47	Eth1/47	175	SIs	N5K-C5596UP
c2(FOX2025GEFC) Eth1/48	Eth1/48	179	SIs	N5K-C5596UP

Total entries displayed: 10

c2# show cdp neighbors

Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge

			GMP, r - Repeater,	
			y-Managed-Device,	
	s - Supports-S	STP-Dispute		
Device-ID	Iogal Int	rfac Hld+ma Car	oability Platform	
Port ID	LOCAL IIIC.	rice midulle cap	pability Flation	
node1	Eth1/1	124 н	FAS2750	
e0b	ECHI, I	124 11	1 ADZ 1 3 0	
node2	Eth1/2	124 н	FAS2750	
e0b	_ 5111 / _		11102700	
c1(FOX2025GEEX)	Eth1/41	175 S I	s N5K-C5596UP	
Eth1/41				
c1(FOX2025GEEX)	Eth1/42	175 S I	s N5K-C5596UP	
Eth1/42				
	Eth1/43	175 S I	s N5K-C5596UP	
Eth1/43				
1 (5000005050000	T. 1. 1. / 4.4	155 0 5	NEW 05506	
c1(FOX2025GEEX) Eth1/44	Ethi/44	175 S I	s N5K-C5596UP	
EUII1/44				
c1(FOX2025GEEX)	Eth1/45	175 S I	s N5K-C5596UP	
Eth1/45	20111/ 10	170 01	z won occurren	
c1 (FOX2025GEEX)	Eth1/46	175 S I	s N5K-C5596UP	
Eth1/46				
c1(FOX2025GEEX)	Eth1/47	176 S I	s N5K-C5596UP	
Eth1/47				
1 / 50270 0 0 5 0 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	7.11/40	100	NEW 05500	
c1 (FOX2025GEEX)	Ethl/48	1/6 S I	s N5K-C5596UP	

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

cluster ping-cluster -node node-name

Eth1/48

```
cluster1::*> cluster ping-cluster -node node2
Host is node2
Getting addresses from network interface table...
Cluster nodel clus1 169.254.209.69 node1
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 cs1on 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::	*> netwo	rk device-discovery show -	protocol cdp	
Node/	Local	Discovered		
Protocol	Port	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 dis	played.		

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

C+ - +							
Status							
	luster	Cluster		1170	0000	211+2/10000	h 1 + h
e0a C false	luster	Cluster		up	9000	auto/10000	neartny
	luster	Cluston		1170	0000	211+2/10000	h 1 + h
false	ruster	Clustel		uр	9000	auto/10000	пеатспу
Laise							
Node: node2							
Ignore							
J						Speed (Mbps)	Health
Health							
Port I	Pspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
Status							
e0a C	luster	Cluster		up	9000	auto/10000	healthy
false							
e0b C	luster	Cluster		up	9000	auto/10000	healthy
false							
f enciles w	ere displaye	ed.					
	ere displaye > network ir		ow -vs	erver	Clust	cer	
		nterface sh			Clust	cer Current	
cluster1::*	> network in	nterface sh			Clust		
cluster1::* Current Is	> network in	nterface sh Status	Netwo:	rk			Port
cluster1::* Current Is Vserver	> network ir Logical	nterface sh Status	Netwo:	rk		Current	Port
cluster1::* Current Is Vserver Home	> network in Logical Interface	nterface sh Status	Netwo:	rk		Current	Port
cluster1::* Current Is Vserver Home	> network in Logical Interface	nterface sh Status	Netwo:	rk		Current	Por†
Cluster1::* Current Is Vserver Home	> network in Logical Interface	Status Admin/Oper	Netwo: Addres	rk ss/Mas	sk 	Current Node	
Cluster1::* Current Is Vserver Home Cluster	> network in Logical Interface	Status Admin/Oper	Netwo: Addres	rk ss/Mas	sk 	Current Node	Port e0a
Cluster1::* Current Is Vserver Home Cluster	> network in Logical Interface node1_clus1	Status Admin/Oper	Netwo: Addres	rk ss/Mas	sk 9.69/1	Current Node	 e0a
Cluster1::* Current Is Vserver Home Cluster true	> network in Logical Interface	Status Admin/Oper	Netwo: Addres	rk ss/Mas	sk 9.69/1	Current Node	
Cluster1::* Current Is Vserver Home Cluster true	> network in Logical Interface node1_clus1	Status Admin/Oper up/up up/up	Netwo: Addres: 169.25	rk ss/Mas 54.209	sk 9.69/1	Current Node node node1 node1	e0a e0b
Cluster1::* Current Is Vserver Home Cluster true true	> network in Logical Interface node1_clus1	Status Admin/Oper up/up up/up	Netwo: Addres: 169.25	rk ss/Mas 54.209	sk 9.69/1	Current Node node node1 node1	 e0a
cluster1::* Current Is Vserver Home	> network in Logical Interface node1_clus1 node1_clus2 node2_clus1	Status Admin/Oper up/up up/up up/up up/up	Netwo: Addres: 169.23 169.23	rk ss/Mas 54.209	sk 9.69/1 .125/1	Current Node node1 node1 node2	e0a e0b e0a
Cluster1::* Current Is Vserver Home Cluster true true	> network in Logical Interface node1_clus1	Status Admin/Oper up/up up/up up/up up/up	Netwo: Addres: 169.23 169.23	rk ss/Mas 54.209	sk 9.69/1 .125/1	Current Node node1 node1 node2	e0a e0b
Cluster1::* Current Is Vserver Home Cluster true true	> network in Logical Interface node1_clus1 node1_clus2 node2_clus1	Status Admin/Oper up/up up/up up/up up/up	Netwo: Addres: 169.23 169.23	rk ss/Mas 54.209	sk 9.69/1 .125/1	Current Node node1 node1 node2	e0a e0b e0a
Cluster1::* Current Is Vserver Home Cluster true true true	> network in Logical Interface node1_clus1 node1_clus2 node2_clus1 node2_clus2	Status Admin/Oper up/up up/up up/up up/up up/up	Netwo: Addres: 169.23 169.23	rk ss/Mas 54.209	sk 9.69/1 .125/1	Current Node node1 node1 node2	e0a e0b e0a
Current Is Vserver Home Cluster true true true	> network in Logical Interface node1_clus1 node1_clus2 node2_clus1	Status Admin/Oper up/up up/up up/up up/up up/up	Netwo: Addres: 169.23 169.23	rk ss/Mas 54.209	sk 9.69/1 .125/1	Current Node node1 node1 node2	e0a e0b e0a

Noae/	Local	Discovered				
Protocol	Port	Device (LLDP:	ChassisID) Interf	ace	Platform
node2	/cdp					
	e0a	cs1		0/2		N9K-
C92300YC						
	e0b	cs2		0/2		N9K-
C92300YC	, .					
node1	_	1		0 /1		
G0020077G	e0a	CSI		0/1		N9K-
C92300YC	o O b	222		0 /1		NOV
C92300YC	e0b	CSZ		0/1		N9K-
C723001C						
4 entries	were dis	splayed.				
cs1# show	cdp neid	hbors				
capability		R - ROHTER - 'I' -	- Trans-Br	ridae. B -	Source-Rour	te-Bridge
		S - Switch, H - V - VoIP-Phone,	- Host, I D - Remo	- IGMP, r tely-Mana	_	_
		S - Switch, H -	- Host, I D - Remo	- IGMP, r tely-Mana	- Repeater	_
Device-ID		S - Switch, H - V - VoIP-Phone,	- Host, I D - Remo	- IGMP, r etely-Mana	- Repeater ged-Device,	,
ID		S - Switch, H - V - VoIP-Phone, s - Supports-ST	- Host, I D - Remo P-Dispute Hldtme C	- IGMP, rotely-Mana	- Repeater ged-Device, Platform	,
ID node1		S - Switch, H - V - VoIP-Phone, s - Supports-SI	- Host, I D - Remo P-Dispute Hldtme C	- IGMP, r etely-Mana	- Repeater ged-Device,	,
ID node1 e0a		S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1	- Host, I D - Remo P-Dispute Hldtme C	- IGMP, rotely-Mana	- Repeater ged-Device, Platform FAS2750	,
ID node1 e0a node2		S - Switch, H - V - VoIP-Phone, s - Supports-ST	- Host, I D - Remo P-Dispute Hldtme C	- IGMP, retely-Mana	- Repeater ged-Device, Platform	,
ID node1 e0a node2 e0a cs2 (FDO220		S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1	- Host, I D - Remo TP-Dispute Hldtme C 124	- IGMP, rotely-Mana capability H	- Repeater ged-Device, Platform FAS2750	Port
ID node1 e0a node2 e0a cs2(FDO220 Eth1/65	329V5)	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65	Host, I D - Remo P-Dispute Hldtme C 124 124 179	- IGMP, rotely-Mana capability H R S I s	- Repeater ged-Device, Platform FAS2750 FAS2750	, Port YC
ID node1 e0a node2 e0a cs2 (FDO220 Eth1/65 cs2 (FDO220	329V5)	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2	Host, I D - Remo P-Dispute Hldtme C 124 124 179	- IGMP, rotely-Mana capability H R S I s	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300	, Port YC
ID node1 e0a node2 e0a cs2(FD0220 Eth1/65 cs2(FD0220	329V5)	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65	Host, I D - Remo P-Dispute Hldtme C 124 124 179	- IGMP, rotely-Mana capability H R S I s	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300	, Port YC
ID node1 e0a node2 e0a cs2(FD0220 Eth1/65 cs2(FD0220	329V5)	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65	Host, I D - Remo P-Dispute Hldtme C 124 124 179	- IGMP, rotely-Mana capability H R S I s	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300	, Port YC
ID node1 e0a node2 e0a cs2(FDO220 Eth1/65 cs2(FDO220 Eth1/66	329V5) 329V5)	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65 Eth1/66	Host, I D - Remo P-Dispute Hldtme C 124 124 179	- IGMP, rotely-Mana capability H R S I s	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300	, Port YC
ID node1 e0a node2 e0a cs2(FDO220 Eth1/65 cs2(FDO220	329V5) 329V5)	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65 Eth1/66	Host, I D - Remo P-Dispute Hldtme C 124 124 179	- IGMP, rotely-Mana capability H R S I s	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300	, Port YC
ID node1 e0a node2 e0a cs2(FDO220 Eth1/65 cs2(FDO220 Eth1/66	329V5) 329V5) cdp neig	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65 Eth1/66	Host, I D - Remo P-Dispute Hldtme C 124 124 179 179	- IGMP, rotely-Mana Capability H RSIS	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300	, Port
ID node1 e0a node2 e0a cs2(FDO220 Eth1/65 cs2(FDO220 Eth1/66	329V5) 329V5) cdp neig	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65 Eth1/66	- Host, I D - Remo TP-Dispute Hldtme C 124 124 179 179	- IGMP, rotely-Mana capability H R S I s R S I s	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300 N9K-C92300	, Port YC YC
ID node1 e0a node2 e0a cs2(FD0220 Eth1/65 cs2(FD0220 Eth1/66	329V5) 329V5) cdp neig	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65 Eth1/66 Thbors R - Router, T -	Host, I D - Remo P-Dispute Hldtme C 124 124 179 179 179	- IGMP, retely-Mana Capability H RSIS RSIS RSIS	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300 N9K-C92300	, Port YC YC
ID node1 e0a node2 e0a cs2(FDO220 Eth1/65 cs2(FDO220 Eth1/66 cs2# show	329V5) 329V5) cdp neig	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65 Eth1/66 Phbors R - Router, T - S - Switch, H -	Host, I D - Remo P-Dispute Hidtme C 124 124 179 179 179 Trans-Br Host, I D - Remo	- IGMP, rotely-Mana capability H R S I s R S I s ridge, B - - IGMP, rotely-Mana	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300 N9K-C92300	, Port YC YC
ID node1 e0a node2 e0a cs2(FDO220 Eth1/65 cs2(FDO220 Eth1/66	329V5) 329V5) cdp neig	S - Switch, H - V - VoIP-Phone, s - Supports-ST Local Intrfce Eth1/1 Eth1/2 Eth1/65 Eth1/66 Thbors R - Router, T - S - Switch, H - V - VoIP-Phone,	Host, I D - Remo P-Dispute Hidtme C 124 124 179 179 179 Trans-Br Host, I D - Remo	- IGMP, rotely-Mana capability H R S I s R S I s ridge, B - - IGMP, rotely-Mana	- Repeater ged-Device, Platform FAS2750 FAS2750 N9K-C92300 N9K-C92300	, Port YC YC

ID				
node1	Eth1/1	124	Н	FAS2750
e0b	<u>.</u>			
node2	Eth1/2	124	Н	FAS2750
e0b				
cs1(FD0220329KU)				
	Eth1/65	179	RSIs	N9K-C92300YC
Eth1/65				
cs1(FD0220329KU)				
	Eth1/66	179	RSIs	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
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:

e0a	Cluster	Cluster	1110	9000	211+0/10000	h o o 1 + h · ·
	Cluster	Clustel	up	9000	auto/10000	Hearthy
false						
e0b	Cluster	Cluster	up	9000	auto/10000	healthy
false			-			-
14150						
Node: node	e2					
Ignore						
Ignore						
					Speed (Mbps)	Health
Health						
Port	IPspace	Broadcast Domain	Link	MTU	Admin/Oper	Status
Status						
Status						
e0a	Cluster	Cluster	up	9000	auto/10000	healthy
	0140001	0148601	αp	3000	44007 10000	near only
false						
e0b	Cluster	Cluster	up	9000	auto/10000	healthy
false						
	were displaye	2d				
4 CHCTIES	Mere arshrale	Ju.				

cluster1::	<pre>*> network in</pre>	terface sh	ow -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 v	were displaye	d.			

cluster1::*	> netwo	rk 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 dis	splayed.		

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	Н	FAS2980	e0a
node2	Eth1/2	145	Н	FAS2980	e0a
cs2(FD0220329V5)	Eth1/65	176	R S I s	N9K-C92300YC	Eth1/65
cs2(FD0220329V5)	Eth1/66	176	RSIs	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	Н	FAS2980	e0b
node2	Eth1/2	124	Н	FAS2980	e0b
cs1(FD0220329KU)	Eth1/65	178	RSIS	N9K-C92300YC	Eth1/65
cs1(FDO220329KU)	Eth1/66	178	RSIs	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
            Logical
            Interface
Vserver
                         Auto-revert
Cluster
            nodel clus1
                         true
            node1 clus2 true
Cluster
            node2 clus1
Cluster
                          true
            node2 clus2
Cluster
                          true
4 entries were displayed.
```

4. Verify that all the cluster LIFs can communicate:

```
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:

```
csl# configure
Enter configuration commands, one per line. End with CNTL/Z.
csl(config)# interface e1/65-66
csl(config-if-range)# shutdown
csl(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 p	ort show -:	ipspace	Clus	ter		
Node: node	e1						
Ignore						Control (Miles a)	TT 1 + h
Health						Speed (Mbps)	пеатсп
	IPspace					_	
e0a false	Cluster	Cluster		up	9000	auto/10000	healthy
e0b false	Cluster	Cluster		up	9000	auto/10000	healthy
Node: node	e2						
Ignore						Speed(Mbps)	Health
Health							
Port Status	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
	Cluster	Cluster		up	9000	auto/10000	healthy
	Cluster	Cluster		up	9000	auto/auto	-
4 entries	were display	ed.					

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 int	erface show	-vserver Cluster		
	Logical	Status	Network	Current	
Current Is					
Vserver Home	Interface	Admin/Oper	Address/Mask	Node	Port
Cluster					
	node1_clus1	up/up	169.254.209.69/16	node1	e0a
true	1 1 1 0	/	160 054 40 105/16	1 1	01
true	nodel_clus2	up/up	169.254.49.125/16	nodel	e0b
	node2_clus1	up/up	169.254.47.194/16	node2	e0a
true	node2_clus2	up/up	169.254.19.183/16	node2	e0a
false					
4 entries w	ere 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	Clust	er		
Node: node	e1					
Ignore						
Health					Speed (Mbps)	Health
	IPspace	Broadcast Domain	Link	MTU	Admin/Oper	Status
e0a false	Cluster	Cluster	up	9000	auto/10000	healthy
e0b false	Cluster	Cluster	up	9000	auto/10000	healthy
Node: node	e2					
Ignore						
					Speed(Mbps)	Health
Health Port Status	IPspace	Broadcast Domain	Link	MTU	Admin/Oper	Status
e0a false	Cluster	Cluster	up	9000	auto/10000	healthy
	Cluster	Cluster	up	9000	auto/10000	healthy
4 entries	were displa	yed.				

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

Ignore				Speed	d (Mbps	3)	Health
Health Port Status	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
e0a false	Cluster	Cluster		up	9000	auto/10000	healthy
	Cluster	Cluster		up	9000	auto/10000	healthy
4 entries	were display	ed.					
cluster1::	*> network i	nterface sh	ow -vse	erver	Clust	ter	
Current To	-	Status	Netwo	rk		Current	
Current Is Vserver Home		Admin/Oper	Addres	ss/Mas	sk	Node	Port
Cluster	node1_clus	1 up/up	169.2	54.209	9.69/1	16 node1	e0a
true	node1_clus	2 up/up	169.2	54.49	.125/1	16 node1	e0b
true	node2 clus	1 up/up	169.2	54.47	.194/1	16 node2	e0a
true	node2 clus	2 up/up	169.2	54.19	.183/1	16 node2	e0b
true	_						
4 entries	were display	ed.					
<pre>cluster1::</pre>	> network de	vice-discov	ery sh	cq-wc	rotoco	ol cdp	
	Local Dis Port Dev		Chassis	sID) 	Inte	rface	Platform
node2					0/2		N9K-
C92300YC	e0a CSI				0/2		
	eub new	USZ			0/2		N9K-

C92300YC						
node1	/cdp					
	e0a	cs1		0/1	N9K	<u> </u>
C92300YC				- ,		
	e0b	newcs2		0/1	N9K	<u> </u>
C92300YC				·		
4 entries w	ere dis	splayed.				
cs1# show c	dp neig	ghbors				
Capability	Codes:	R - Router, T -		3 .		ridge
		S - Switch, H -			-	
		V - VoIP-Phone,			ed-Device,	
		s - Supports-ST	r-Disput	e		
Device-ID		Local Intrfc	e Hldtm	e Capabilit	y Platform	
Port ID					_	
node1		Eth1/1	144	Н	FAS2980	e0a
node2		Eth1/2	145	Н	FAS2980	e0a
newcs2 (FDO2	96348FU	J) Eth1/65	176	RSIs	N9K-C92300Y	·C
Eth1/65						
newcs2 (FDO2	96348FU	J) Eth1/66	176	RSIs	N9K-C92300Y	·C
Eth1/66						
Total entri	es disp	olayed: 4				
cs2# show c	dp neic	nhbors				
		•				
Capability	Codes:	R - Router, T -	Trans-E	ridge, B -	Source-Route-B	ridge
		S - Switch, H -	Host, I	- IGMP, r	- Repeater,	
		V - VoIP-Phone,	D - Rem	otely-Manag	ed-Device,	
		s - Supports-ST	P-Disput	е		
Device-ID		Local Intrfce	Hldtme	Capability	Platform	Port
ID				_		
node1		Eth1/1	139	Н	FAS2980	e0b
node2		Eth1/2	124	Н	FAS2980	e0b
cs1(FD02203	29KU)	Eth1/65	178	RSIs	N9K-C92300YC	
Eth1/65						
cs1(FD02203	29KU)	Eth1/66	178	RSIs	N9K-C92300YC	

Eth1/66

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 gthe commands:

 $\verb|system| cluster-switch| log| setup-password| \verb|and| system| cluster-switch| log| enable-collection|$

```
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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