

**cDOT Cluster Switch Upgrade Process**

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Contents

[1 Introduction 4](#_Toc505605597)

[1.1 Management Summary 4](#_Toc505605598)

[1.2 Change History 4](#_Toc505605599)

[1.3 Distribution List 5](#_Toc505605600)

[1.4 Glossary 5](#_Toc505605601)

[2 Switch Upgrade Pre-Work 6](#_Toc505605602)

[2.1 Description 6](#_Toc505605603)

[2.2 Tasks 6](#_Toc505605604)

[2.2.1 Check For Low Memory Condition 6](#_Toc505605605)

[2.2.2 Gather required Data 6](#_Toc505605606)

[2.2.3 Perform Cluster Ping Test 8](#_Toc505605607)

[2.2.4 Check All Cluster LIFs Are Functional 8](#_Toc505605608)

[2.2.5 Ensure Switches Have SSH Enabled 9](#_Toc505605609)

[2.2.6 Ensure There Is a Server Available With Files Ready 9](#_Toc505605610)

[3 Switch2 Upgrade 9](#_Toc505605611)

[3.1.1 Send Autosupport 9](#_Toc505605612)

[3.1.2 Migrate Switch2 Cluster LIFs (All Nodes) 9](#_Toc505605613)

[3.1.3 Check Assigned Ports 9](#_Toc505605614)

[3.1.4 Shutdown Cluster Ports No Longer In Use (All Nodes) 10](#_Toc505605615)

[3.1.5 Check Ports 10](#_Toc505605616)

[3.1.6 Check Ports Are Down On Switch 2 (If they aren’t something is wrong, STOP) 10](#_Toc505605617)

[3.1.7 Check Ports Are UP On Switch 1 (If they aren’t something is wrong, STOP) 11](#_Toc505605618)

[3.1.8 Shut Down the ISL On the ACTIVE Switch (Switch 1) 11](#_Toc505605619)

[3.1.9 Check Ports Are Down on Switch2 (If they aren’t something is wrong, STOP) 11](#_Toc505605620)

[3.1.10 Backup Image On Switch2 12](#_Toc505605621)

[3.1.11 Save Current Config 12](#_Toc505605622)

[3.1.12 Copy RCF To Switch 12](#_Toc505605623)

[3.1.13 Check The Script Is Copied 15](#_Toc505605624)

[3.1.14 Apply The Script 15](#_Toc505605625)

[3.1.15 Check Config Is Applied 18](#_Toc505605626)

[3.1.16 Copy Firmware To Switch 20](#_Toc505605627)

[3.1.17 Check New firmware Is Available on Next Boot 21](#_Toc505605628)

[3.1.18 Write Running Switch Config To Storage 21](#_Toc505605629)

[3.1.19 Reboot The Switch 21](#_Toc505605630)

[3.1.20 Check Version Post Reboot 21](#_Toc505605631)

[3.1.21 Bring Up ISL on Active Switch (Switch1) After Version Check 21](#_Toc505605632)

[3.1.22 Check ISL on Active Switch (Switch1) 22](#_Toc505605633)

[3.1.23 Bring Up Cluster Ports 22](#_Toc505605634)

[3.1.24 Check Ports On Switch2 22](#_Toc505605635)

[3.1.25 Check Cluster LIF ports are Correct 23](#_Toc505605636)

[3.1.26 Check Cluster Health 23](#_Toc505605637)

[4 Switch1 Upgrade 24](#_Toc505605638)

[4.1.1 Check Cluster LIFS Are All Functional 24](#_Toc505605639)

[4.1.2 Migrate Switch1 Cluster LIFS (All Nodes) 24](#_Toc505605640)

[4.1.3 Check Interfaces 24](#_Toc505605641)

[4.1.4 Shut Down Cluster Ports That are No Longer In Use (All Nodes) 25](#_Toc505605642)

[4.1.5 Check Ports 25](#_Toc505605643)

[4.1.6 Check Ports Are Down On Switch 1 (If they aren’t something is wrong, STOP) 25](#_Toc505605644)

[4.1.7 Check Ports Are UP On Switch 2 (If they aren’t something is wrong, STOP) 26](#_Toc505605645)

[4.1.8 Shut Down the ISL On the ACTIVE Switch (Switch 2) 26](#_Toc505605646)

[4.1.9 Check Ports Are Down on Switch1 (If they aren’t something is wrong, STOP) 26](#_Toc505605647)

[4.1.10 Backup Image On Switch1 27](#_Toc505605648)

[4.1.11 Save Current Config 27](#_Toc505605649)

[4.1.12 Copy RCF To Switch1 27](#_Toc505605650)

[4.1.13 Check The Script Is Copied 30](#_Toc505605651)

[4.1.14 Apply The Script 30](#_Toc505605652)

[4.1.15 Check Config Applied 33](#_Toc505605653)

[4.1.16 Copy Code 35](#_Toc505605654)

[4.1.17 Write Config 36](#_Toc505605655)

[4.1.18 Reboot The Switch 36](#_Toc505605656)

[4.1.19 Check Version Post Upgrade 36](#_Toc505605657)

[4.1.20 Bring Up ISL on Active Switch (Switch2) 37](#_Toc505605658)

[4.1.21 Check ISL on Active Switch (Switch2) 37](#_Toc505605659)

[4.1.22 Bring Up Cluster Ports 37](#_Toc505605660)

[4.1.23 Check Ports On Switch1 37](#_Toc505605661)

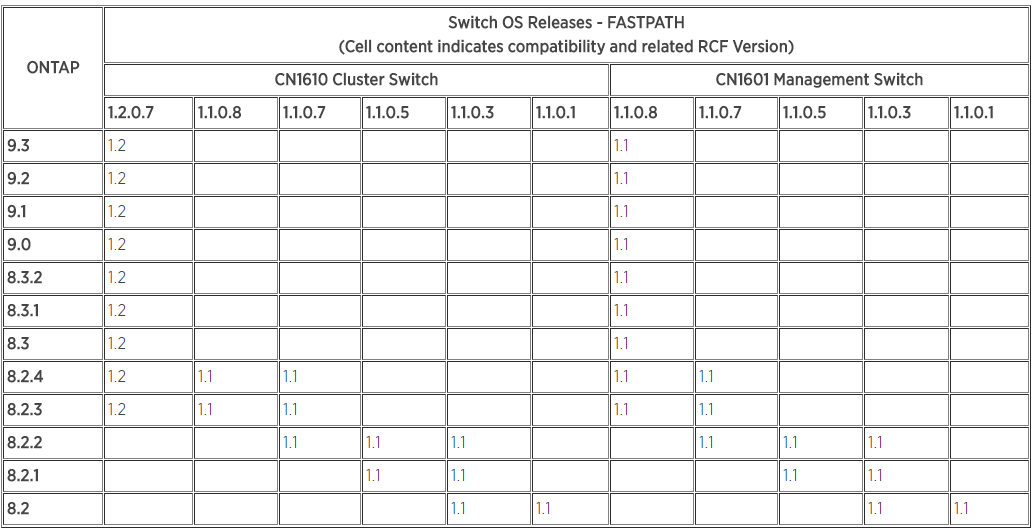
[4.1.24 Check Cluster LIF ports are Correct 38](#_Toc505605662)

[4.1.25 Check Cluster Health 38](#_Toc505605663)

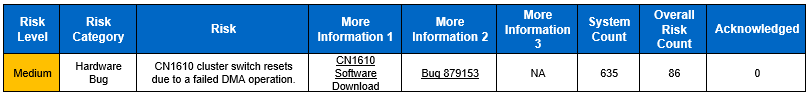
# Introduction

## Management Summary

This document details the process used to upgrade switches to the required release of code to support ONTAP 8.3.2P7 and 9.1P7. As per the table below:



This upgrade also addresses BURT 879153:



## Change History

|  |  |  |  |
| --- | --- | --- | --- |
| **Ver** | **Date** | **Author** | **Key Changes** |
| 0.1 | November 2017 | Ian Daniel | Initial Version |
| 0.2 | November 2017 | Ian Daniel | Added supported versions table and BURT to summary. |
| 0.3 | November 2017 | Ian Daniel | Added Autosupport generation step on first upgrade to prevent false case creation. |
| 0.4 | November 2017 | Ian Daniel | Updated following review. |
| 0.5 | November 2017 | Ian Daniel | Added additional checks. |
| 0.6 | January 2018 | Ian Daniel | Modified to use SCP instead of TFTP |
| 0.7 | February 2018 | Ian Daniel | Added check for low memory condition |
| 0.8 | February 2018 | Ian Daniel | Modified cdp checks |
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|  |  |  |  |

## Distribution List

|  |  |
| --- | --- |
| **Name** | **Role** |
| Storage Engineering | Reviewer |
| Storage Delivery | Reviewer |
| Storage Architecture | Reviewer |

## Glossary

|  |  |
| --- | --- |
| **Term** | **Definition** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

# Switch Upgrade Pre-Work

## Description

In order to be compatible with both ONTAP 8.3.2P7 and ONTAP 9.1P7 we need to be running a 1.2x version of switch firmware and configuration.

## Tasks

The following tasks need to be carried out.

### ****Check For Low Memory Condition****

Check to ensure the cluster is not experiencing memory issues. If you see messages like the ones below **stop**. The affected node(s) will probably need a takeover/giveback to clear the condition.

eg-cis-clsn-e01::> event log show -event \*wafl.memory\*

Time Node Severity Event

------------------- ---------------- ------------- ---------------------------

2/5/2018 02:51:10 eg-cis-clsn-e01-h01

WARNING wafl.memory.statusLowMemory: WAFL is running low on memory, with 1607MB remaining.

2/5/2018 01:58:29 eg-cis-clsn-e01-h01

WARNING wafl.memory.statusLowMemory: WAFL is running low on memory, with 1571MB remaining.

2/5/2018 01:53:27 eg-cis-clsn-e01-h01

WARNING wafl.memory.statusLowMemory: WAFL is running low on memory, with 1609MB remaining.

### ****Gather required Data****

**Get Cluster Interconnect LIF Names and Ports**

eg-si-clsn-e01::> net int show -role cluster

(network interface show)

Logical Status Network Current Current Is

Vserver Interface Admin/Oper Address/Mask Node Port Home

----------- ---------- ---------- ------------------ ------------- ------- ----

eg-si-clsn-e01-h01

clus1 up/up 169.254.136.69/16 eg-si-clsn-e01-h01

e0a true

clus2 up/up 169.254.254.37/16 eg-si-clsn-e01-h01

e0c true

eg-si-clsn-e01-h02

clus1 up/up 169.254.144.203/16 eg-si-clsn-e01-h02

e0a true

clus2 up/up 169.254.23.213/16 eg-si-clsn-e01-h02

e0c true

eg-si-clsn-e01-l03

clus1 up/up 169.254.56.100/16 eg-si-clsn-e01-l03

e0a true

clus2 up/up 169.254.150.213/16 eg-si-clsn-e01-l03

e0c true

eg-si-clsn-e01-l04

clus1 up/up 169.254.240.154/16 eg-si-clsn-e01-l04

e0a true

clus2 up/up 169.254.98.147/16 eg-si-clsn-e01-l04

e0c true

8 entries were displayed.

**Check Cluster Interconnect Ports Are Assigned As Expected (If they aren’t Fix Before Continuing)**

eg-si-clsn-e01::> network device-discovery show -node \* -port e0c

Node/ Local Discovered

Protocol Port Device Interface Platform

----------- ------ ------------------------- ---------------- ----------------

eg-si-clsn-e01-h02/cdp

e0c eag-nasor-clus1-switch-02 0/2 CN1610

eg-si-clsn-e01-l04/cdp

e0c eag-nasor-clus1-switch-02 0/4 CN1610

eg-si-clsn-e01-l03/cdp

e0c eag-nasor-clus1-switch-02 0/3 CN1610

eg-si-clsn-e01-h01/cdp

e0c eag-nasor-clus1-switch-02 0/1 CN1610

4 entries were displayed.

eg-si-clsn-e01::> network device-discovery show -node \* -port e0a

Node/ Local Discovered

Protocol Port Device Interface Platform

----------- ------ ------------------------- ---------------- ----------------

eg-si-clsn-e01-h02/cdp

e0a eag-nasor-clus1-switch-01 0/2 CN1610

eg-si-clsn-e01-l04/cdp

e0a eag-nasor-clus1-switch-01 0/4 CN1610

eg-si-clsn-e01-l03/cdp

e0a eag-nasor-clus1-switch-01 0/3 CN1610

eg-si-clsn-e01-h01/cdp

e0a eag-nasor-clus1-switch-01 0/1 CN1610

4 entries were displayed.

**Get Node Mgmt IP Addresses**

eg-si-clsn-e01::> net int show -role node-mgmt

(network interface show)

Logical Status Network Current Current Is

Vserver Interface Admin/Oper Address/Mask Node Port Home

----------- ---------- ---------- ------------------ ------------- ------- ----

eg-si-clsn-e01-h01

mgmt1 up/up 10.220.194.43/24 eg-si-clsn-e01-h01

e0i true

eg-si-clsn-e01-h02

mgmt1 up/up 10.220.194.63/24 eg-si-clsn-e01-h02

e0i true

eg-si-clsn-e01-l03

mgmt1 up/up 10.220.194.65/24 eg-si-clsn-e01-l03

e0i true

eg-si-clsn-e01-l04

mgmt1 up/up 10.220.194.67/24 eg-si-clsn-e01-l04

e0i true

4 entries were displayed.

**Get Node SP IP Addresses**

eg-si-clsn-e01::> service-processor show

(system node service-processor show)

IP Firmware

Node Type Status Configured Version IP Address

------------- ---- ----------- ------------ --------- -------------------------

eg-si-clsn-e01-h01

SP online true 3.0.2 10.220.194.62

eg-si-clsn-e01-h02

SP online true 3.0.2 10.220.194.64

eg-si-clsn-e01-l03

SP online true 3.0.2 10.220.194.66

eg-si-clsn-e01-l04

SP online true 3.0.2 10.220.194.68

4 entries were displayed.

**Get Switch IP Addresses**

eg-si-clsn-e01::> system health cluster-switch show

Switch Type Address Model

--------------------------- ------------------ ---------------- ---------------

eag-nasor-clus1-switch-01 cluster-network 10.220.194.69 CN1610

Is Monitored: yes

Reason:

Software Version: 1.1.0.5

Version Source: ISDP

eag-nasor-clus1-switch-02 cluster-network 10.220.194.80 CN1610

Is Monitored: yes

Reason:

Software Version: 1.1.0.5

Version Source: ISDP

### ****Perform Cluster Ping Test****

You need to ensure larger than PMTU communication succeeds (highlighted) so perform the following test.

eg-si-clsn-e01::> set advanced -confirmations off

eg-si-clsn-e01::\*> cluster ping-cluster -node eg-si-clsn-e01-h01

Host is eg-si-clsn-e01-h01

Getting addresses from network interface table...

Local = 169.254.136.69 169.254.254.37

Remote = 169.254.144.203 169.254.23.213 169.254.56.100 169.254.150.213 169.254.240.154 169.254.98.147

Ping status:

............

Basic connectivity succeeds on 12 path(s)

Basic connectivity fails on 0 path(s)

................................................

Detected 9000 byte MTU on 12 path(s):

Local 169.254.136.69 to Remote 169.254.144.203

Local 169.254.136.69 to Remote 169.254.150.213

Local 169.254.136.69 to Remote 169.254.23.213

Local 169.254.136.69 to Remote 169.254.240.154

Local 169.254.136.69 to Remote 169.254.56.100

Local 169.254.136.69 to Remote 169.254.98.147

Local 169.254.254.37 to Remote 169.254.144.203

Local 169.254.254.37 to Remote 169.254.150.213

Local 169.254.254.37 to Remote 169.254.23.213

Local 169.254.254.37 to Remote 169.254.240.154

Local 169.254.254.37 to Remote 169.254.56.100

Local 169.254.254.37 to Remote 169.254.98.147

Larger than PMTU communication succeeds on 12 path(s)

RPC status:

6 paths up, 0 paths down (tcp check)

6 paths up, 0 paths down (udp check)

### ****Check All Cluster LIFs Are Functional****

Check cluster lifs are all up and functional plus on their home ports. Make a note of the ports as you need these for future steps.

eg-si-clsn-e01::\*> net int show -role cluster

(network interface show)

Logical Status Network Current Current Is

Vserver Interface Admin/Oper Address/Mask Node Port Home

----------- ---------- ---------- ------------------ ------------- ------- ----

eg-si-clsn-e01-h01

clus1 up/up 169.254.136.69/16 eg-si-clsn-e01-h01

e0a true

clus2 up/up 169.254.254.37/16 eg-si-clsn-e01-h01

e0c true

eg-si-clsn-e01-h02

clus1 up/up 169.254.144.203/16 eg-si-clsn-e01-h02

e0a true

clus2 up/up 169.254.23.213/16 eg-si-clsn-e01-h02

e0c true

eg-si-clsn-e01-l03

clus1 up/up 169.254.56.100/16 eg-si-clsn-e01-l03

e0a true

clus2 up/up 169.254.150.213/16 eg-si-clsn-e01-l03

e0c true

eg-si-clsn-e01-l04

clus1 up/up 169.254.240.154/16 eg-si-clsn-e01-l04

e0a true

clus2 up/up 169.254.98.147/16 eg-si-clsn-e01-l04

e0c true

8 entries were displayed.

### ****Ensure Switches Have SSH Enabled****

(CN1610) #ip ssh protocol 2

(CN1610) #configure

(CN1610) (Config)#crypto key generate dsa

(CN1610) (Config)#crypto key generate rsa

(CN1610) (Config)#exit

(CN1610) #ip ssh server enable

### ****Ensure There Is a Server Available With Files Ready****

You will need a server that the switch can use to upload files.

# Switch2 Upgrade

We start with Switch2.

### ****Send Autosupport****

As this is the first switch to be upgraded, trigger an AutoSupport notification:

autosupport invoke -node \* -type all -message "MAINT=<time>h Starting\_NDU"

where <time> is the maintenance window duration for the upgrade.

**NOTE:** During this time, automatic case creation will suppressed at NetApp.

You can resume case creation at any time by executing the following command:

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

### ****Migrate Switch2 Cluster LIFs (All Nodes)****

These LIFs must be migrated prior to performing the upgrade on switch2. You need to do this by connecting to each individual node, it will not work from the cluster management lif.

**Node Shell on eg-si-clsn-e01-h01**

net int migrate -vserver eg-si-clsn-e01-h01 -lif clus2 -destination-node eg-si-clsn-e01-h01 -destination-port e0a

**Node Shell on eg-si-clsn-e01-h02**

net int migrate -vserver eg-si-clsn-e01-h02 -lif clus2 -destination-node eg-si-clsn-e01-h02 -destination-port e0a

**Node Shell on eg-si-clsn-e01-l03**

net int migrate -vserver eg-si-clsn-e01-l03 -lif clus2 -destination-node eg-si-clsn-e01-l03 -destination-port e0a

**Node Shell on eg-si-clsn-e01-l04**

net int migrate -vserver eg-si-clsn-e01-l04 -lif clus2 -destination-node eg-si-clsn-e01-l04 -destination-port e0a

### ****Check Assigned Ports****

eg-si-clsn-e01::> net int show -role cluster

(network interface show)

Logical Status Network Current Current Is

Vserver Interface Admin/Oper Address/Mask Node Port Home

----------- ---------- ---------- ------------------ ------------- ------- ----

eg-si-clsn-e01-h01

clus1 up/up 169.254.136.69/16 eg-si-clsn-e01-h01

e0a true

clus2 up/up 169.254.254.37/16 eg-si-clsn-e01-h01

e0a false

eg-si-clsn-e01-h02

clus1 up/up 169.254.144.203/16 eg-si-clsn-e01-h02

e0a true

clus2 up/up 169.254.23.213/16 eg-si-clsn-e01-h02

e0a false

eg-si-clsn-e01-l03

clus1 up/up 169.254.56.100/16 eg-si-clsn-e01-l03

e0a true

clus2 up/up 169.254.150.213/16 eg-si-clsn-e01-l03

e0a false

eg-si-clsn-e01-l04

clus1 up/up 169.254.240.154/16 eg-si-clsn-e01-l04

e0a true

clus2 up/up 169.254.98.147/16 eg-si-clsn-e01-l04

e0a false

8 entries were displayed.

### ****Shutdown Cluster Ports No Longer In Use (All Nodes)****

**Node Shell on eg-si-clsn-e01-h01**

network port modify -node eg-si-clsn-e01-h01 -port e0c -up-admin false

**Node Shell on eg-si-clsn-e01-h02**

network port modify -node eg-si-clsn-e01-h02 -port e0c -up-admin false

**Node Shell on eg-si-clsn-e01-l03**

network port modify -node eg-si-clsn-e01-l03 -port e0c -up-admin false

**Node Shell on eg-si-clsn-e01-l04**

network port modify -node eg-si-clsn-e01-l04 -port e0c -up-admin false

### ****Check Ports****

eg-si-clsn-e01::\*> net port show -role cluster

(network port show)

Auto-Negot Duplex Speed (Mbps)

Node Port Role Link MTU Admin/Oper Admin/Oper Admin/Oper

------ ------ ------------ ---- ----- ----------- ---------- ------------

eg-si-clsn-e01-h01

e0a cluster up 9000 true/true full/full auto/10000

e0c cluster down 9000 true/true full/full auto/10000

eg-si-clsn-e01-h02

e0a cluster up 9000 true/true full/full auto/10000

e0c cluster down 9000 true/true full/full auto/10000

eg-si-clsn-e01-l03

e0a cluster up 9000 true/true full/full auto/10000

e0c cluster down 9000 true/true full/full auto/10000

eg-si-clsn-e01-l04

e0a cluster up 9000 true/true full/full auto/10000

e0c cluster down 9000 true/true full/full auto/10000

8 entries were displayed.

### ****Check Ports Are Down On Switch 2 (If they aren’t something is wrong, STOP)****

(eag-nasor-clus1-switch-02) #show port all

Admin Physical Physical Link Link LACP Flow

Intf Type Mode Mode Status Status Trap Mode Mode

--------- ------ --------- ---------- ---------- ------ ------- ------ -------

0/1 Enable 10G Full Down Enable Enable Disable

0/2 Enable 10G Full Down Enable Enable Disable

0/3 Enable 10G Full Down Enable Enable Disable

0/4 Enable 10G Full Down Enable Enable Disable

0/5 Enable Auto Down Enable Enable Disable

0/6 Enable Auto Down Enable Enable Disable

0/7 Enable Auto Down Enable Enable Disable

0/8 Enable Auto Down Enable Enable Disable

0/9 Enable Auto Down Enable Enable Disable

0/10 Enable Auto Down Enable Enable Disable

0/11 Enable Auto Down Enable Enable Disable

0/12 Enable Auto Down Enable Enable Disable

0/13 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

0/14 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

0/15 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

0/16 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

3/1 Enable Up Disable N/A Disable

3/2 Enable Down Disable N/A Disable

### Check Ports Are UP On Switch 1 (If they aren’t something is wrong, STOP)

(eag-nasor-clus1-switch-01) #show port all

Admin Physical Physical Link Link LACP Flow

Intf Type Mode Mode Status Status Trap Mode Mode

--------- ------ --------- ---------- ---------- ------ ------- ------ -------

0/1 Enable 10G Full 10G Full Up Enable Enable Disable

0/2 Enable 10G Full 10G Full Up Enable Enable Disable

0/3 Enable 10G Full 10G Full Up Enable Enable Disable

0/4 Enable 10G Full 10G Full Up Enable Enable Disable

0/5 Enable Auto Down Enable Enable Disable

0/6 Enable Auto Down Enable Enable Disable

0/7 Enable Auto Down Enable Enable Disable

0/8 Enable Auto Down Enable Enable Disable

0/9 Enable Auto Down Enable Enable Disable

0/10 Enable Auto Down Enable Enable Disable

0/11 Enable Auto Down Enable Enable Disable

0/12 Enable Auto Down Enable Enable Disable

0/13 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

0/14 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

0/15 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

0/16 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

3/1 Enable Up Disable N/A Disable

3/2 Enable Down Disable N/A Disable

### Shut Down the ISL On the ACTIVE Switch (Switch 1)

(eag-nasor-clus1-switch-01) #config

(eag-nasor-clus1-switch-01) (Config)#interface 0/13-0/16

(eag-nasor-clus1-switch-01) (Interface 0/13-0/16)#shutdown

(eag-nasor-clus1-switch-01) (Interface 0/13-0/16)#exit

(eag-nasor-clus1-switch-01) (Config)#exit

### Check Ports Are Down on Switch2 (If they aren’t something is wrong, STOP)

(eag-nasor-clus1-switch-02) #show port all

Admin Physical Physical Link Link LACP Flow

Intf Type Mode Mode Status Status Trap Mode Mode

--------- ------ --------- ---------- ---------- ------ ------- ------ -------

0/1 Enable 10G Full Down Enable Enable Disable

0/2 Enable 10G Full Down Enable Enable Disable

0/3 Enable 10G Full Down Enable Enable Disable

0/4 Enable 10G Full Down Enable Enable Disable

0/5 Enable Auto Down Enable Enable Disable

0/6 Enable Auto Down Enable Enable Disable

0/7 Enable Auto Down Enable Enable Disable

0/8 Enable Auto Down Enable Enable Disable

0/9 Enable Auto Down Enable Enable Disable

0/10 Enable Auto Down Enable Enable Disable

0/11 Enable Auto Down Enable Enable Disable

0/12 Enable Auto Down Enable Enable Disable

0/13 PC Mbr Enable 10G Full Down Enable Enable Disable

0/14 PC Mbr Enable 10G Full Down Enable Enable Disable

0/15 PC Mbr Enable 10G Full Down Enable Enable Disable

0/16 PC Mbr Enable 10G Full Down Enable Enable Disable

### Backup Image On Switch2

(eag-nasor-clus1-switch-02) #copy active backup

Copying active to backup

Copy operation successful

(eag-nasor-clus1-switch-02) #

(eag-nasor-clus1-switch-02) #show bootvar

Image Descriptions

active :

backup :

Images currently available on Flash

--------------------------------------------------------------------

unit active backup current-active next-active

--------------------------------------------------------------------

1 1.1.0.5 1.1.0.5 1.1.0.5 1.1.0.5

### Save Current Config

(eag-nasor-clus1-switch-02) #write memory

This operation may take a few minutes.

Management interfaces will not be available during this time.

Are you sure you want to save? (y/n) y

Config file 'startup-config' created successfully .

Configuration Saved!

### Copy RCF To Switch

Copy the RCF from the server to the switch.

(eag-nasor-clus1-switch-02) # #copy scp://root@10.220.179.83/var/lib/tftpboot/CN1610\_CS\_RCF\_v1.2.txt nvram:script CN1610\_CS\_RCF\_v1.2.scr

Remote Password:\*\*\*\*\*\*\*

Mode........................................... SCP

Set Server IP.................................. 10.220.179.83

Path........................................... ./

Filename....................................... CN1610\_CS\_RCF\_v1.2.txt

Data Type...................................... Config Script

Destination Filename........................... CN1610\_CS\_RCF\_v1.2.scr

Management access will be blocked for the duration of the transfer

Are you sure you want to start? (y/n) y

Validating configuration script...

no ip telnet server enable

config

logging persistent 4

isdp run

isdp timer 5

no isdp advertise-v2

spanning-tree bpduguard

snmp-server community "cshm1!"

port-channel name 3/1 ISL-LAG

interface 0/13

addport 3/1

exit

interface 0/14

addport 3/1

exit

interface 0/15

addport 3/1

exit

interface 0/16

addport 3/1

exit

interface 0/1

description "Cluster Port 1"

spanning-tree edgeport

mtu 9216

exit

interface 0/2

description "Cluster Port 2"

spanning-tree edgeport

mtu 9216

exit

interface 0/3

description "Cluster Port 3"

spanning-tree edgeport

mtu 9216

exit

interface 0/4

description "Cluster Port 4"

spanning-tree edgeport

mtu 9216

exit

interface 0/5

description "Cluster Port 5"

spanning-tree edgeport

mtu 9216

exit

interface 0/6

description "Cluster Port 6"

spanning-tree edgeport

mtu 9216

exit

interface 0/7

description "Cluster Port 7"

spanning-tree edgeport

mtu 9216

exit

interface 0/8

description "Cluster Port 8"

spanning-tree edgeport

mtu 9216

exit

interface 0/9

description "Cluster Port 9"

spanning-tree edgeport

mtu 9216

exit

interface 0/10

description "Cluster Port 10"

spanning-tree edgeport

mtu 9216

exit

interface 0/11

description "Cluster Port 11"

spanning-tree edgeport

mtu 9216

exit

interface 0/12

description "Cluster Port 12"

spanning-tree edgeport

mtu 9216

exit

interface 0/13

description "ISL member port 13"

mtu 9216

exit

interface 0/14

description "ISL member port 14"

mtu 9216

exit

interface 0/15

description "ISL member port 15"

mtu 9216

exit

interface 0/16

description "ISL member port 16"

mtu 9216

exit

interface 3/1

description "ISL LAG - ports 13-16"

port-channel load-balance 7

mtu 9216

exit

interface 3/64

description "NetApp CN1610 Cluster Switch RCF v1.2 - 2015-01-13"

exit

### Check The Script Is Copied

Configuration script validated.

File transfer operation completed successfully.

(eag-nasor-clus1-switch-02) #script list

Configuration Script Name Size(Bytes)

-------------------------------- -----------

CN1610\_CS\_RCF\_v1.0.scr 2149

CN1610\_CS\_RCF\_v1.1.scr 2191

CN1610\_CS\_RCF\_v1.2.scr 2225

config\_8\_15\_2014.scr 2749

4 configuration script(s) found.

2038 Kbytes free.

### Apply The Script

(eag-nasor-clus1-switch-02) #script apply CN1610\_CS\_RCF\_v1.2.scr

Are you sure you want to apply the configuration script? (y/n)y

no ip telnet server enable

config

logging persistent 4

isdp run

isdp timer 5

no isdp advertise-v2

spanning-tree bpduguard

snmp-server community "cshm1!"

Community already exists!

port-channel name 3/1 ISL-LAG

interface 0/13

addport 3/1

0/13 interface is part of a port-channel.

exit

interface 0/14

addport 3/1

0/14 interface is part of a port-channel.

exit

interface 0/15

addport 3/1

0/15 interface is part of a port-channel.

exit

interface 0/16

addport 3/1

0/16 interface is part of a port-channel.

exit

interface 0/1

description "Cluster Port 1"

spanning-tree edgeport

mtu 9216

exit

interface 0/2

description "Cluster Port 2"

spanning-tree edgeport

mtu 9216

exit

interface 0/3

description "Cluster Port 3"

spanning-tree edgeport

mtu 9216

exit

interface 0/4

description "Cluster Port 4"

spanning-tree edgeport

mtu 9216

exit

interface 0/5

description "Cluster Port 5"

spanning-tree edgeport

mtu 9216

exit

interface 0/6

description "Cluster Port 6"

spanning-tree edgeport

mtu 9216

exit

interface 0/7

description "Cluster Port 7"

spanning-tree edgeport

mtu 9216

exit

interface 0/8

description "Cluster Port 8"

spanning-tree edgeport

mtu 9216

exit

interface 0/9

description "Cluster Port 9"

spanning-tree edgeport

mtu 9216

exit

interface 0/10

description "Cluster Port 10"

spanning-tree edgeport

mtu 9216

exit

interface 0/11

description "Cluster Port 11"

spanning-tree edgeport

mtu 9216

exit

interface 0/12

description "Cluster Port 12"

spanning-tree edgeport

mtu 9216

exit

interface 0/13

description "ISL member port 13"

mtu 9216

exit

interface 0/14

description "ISL member port 14"

mtu 9216

exit

interface 0/15

description "ISL member port 15"

mtu 9216

exit

interface 0/16

description "ISL member port 16"

mtu 9216

exit

interface 3/1

description "ISL LAG - ports 13-16"

port-channel load-balance 7

mtu 9216

exit

interface 3/64

description "NetApp CN1610 Cluster Switch RCF v1.2 - 2015-01-13"

exit

Configuration script 'CN1610\_CS\_RCF\_v1.2.scr' applied.

### Check Config Is Applied

(eag-nasor-clus1-switch-02) #show run

!Current Configuration:

!

!System Description "NetApp CN1610, 1.1.0.5, Linux 2.6.21.7"

!System Software Version "1.1.0.5"

!System Up Time "1088 days 2 hrs 24 mins 37 secs"

!Additional Packages FASTPATH QOS

!Current SNTP Synchronized Time: Not Synchronized

!

set prompt "eag-nasor-clus1-switch-02"

serviceport protocol none

serviceport ip 10.220.194.80 255.255.255.0 10.220.194.254

vlan database

exit

ip ssh server enable

ip ssh protocol 2

no ip telnet server enable

configure

logging persistent 4

username "admin" password e656b86727db9284861b57a00dc1b4c60ec6ddd405a497246fe27f28688acc396e59d86101d010b0232888f754b78d03e93503850b582eefb8cfabd5200c403e level 15 encrypted

line console

exit

line telnet

exit

line ssh

exit

spanning-tree configuration name "00-A0-98-E9-36-76"

spanning-tree bpduguard

port-channel name 3/1 ISL-LAG

interface 0/13

no auto-negotiate

addport 3/1

exit

interface 0/14

no auto-negotiate

addport 3/1

exit

interface 0/15

no auto-negotiate

addport 3/1

exit

interface 0/16

no auto-negotiate

addport 3/1

exit

snmp-server sysname "eag-nasor-clus1-switch-02"

!

snmp-server community "netapp"

snmp-server community "cshm1!"

interface 0/1

no auto-negotiate

description 'Cluster Port 1'

spanning-tree edgeport

mtu 9216

exit

interface 0/2

no auto-negotiate

description 'Cluster Port 2'

spanning-tree edgeport

mtu 9216

exit

interface 0/3

no auto-negotiate

description 'Cluster Port 3'

spanning-tree edgeport

mtu 9216

exit

interface 0/4

no auto-negotiate

description 'Cluster Port 4'

spanning-tree edgeport

mtu 9216

exit

interface 0/5

description 'Cluster Port 5'

spanning-tree edgeport

mtu 9216

exit

interface 0/6

description 'Cluster Port 6'

spanning-tree edgeport

mtu 9216

exit

interface 0/7

description 'Cluster Port 7'

spanning-tree edgeport

mtu 9216

exit

interface 0/8

description 'Cluster Port 8'

spanning-tree edgeport

mtu 9216

exit

interface 0/9

description 'Cluster Port 9'

spanning-tree edgeport

mtu 9216

exit

interface 0/10

description 'Cluster Port 10'

spanning-tree edgeport

mtu 9216

exit

interface 0/11

description 'Cluster Port 11'

spanning-tree edgeport

mtu 9216

exit

interface 0/12

description 'Cluster Port 12'

spanning-tree edgeport

mtu 9216

exit

interface 0/13

description 'ISL member port 13'

mtu 9216

exit

interface 0/14

description 'ISL member port 14'

mtu 9216

exit

interface 0/15

description 'ISL member port 15'

mtu 9216

exit

interface 0/16

description 'ISL member port 16'

mtu 9216

exit

interface 3/1

description 'ISL LAG - ports 13-16'

port-channel load-balance 7

mtu 9216

exit

interface 3/64

description 'NetApp CN1610 Cluster Switch RCF v1.2 - 2015-01-13'

exit

no isdp advertise-v2

isdp timer 5

exit

terminal length 0

### Copy Firmware To Switch

Copy the new firmware to the switch from the server.

(eag-nasor-clus1-switch-02) #copy scp://root@10.220.179.83/var/lib/tftpboot /NetApp\_CN1610\_1.2.0.7.stk active

Remote Password:\*\*\*\*\*\*\*

Mode........................................... SCP

Set Server IP.................................. 10.220.179.83

Path........................................... ./

Filename....................................... NetApp\_CN1610\_1.2.0.7.stk

Data Type...................................... Code

Destination Filename........................... active

Management access will be blocked for the duration of the transfer

Are you sure you want to start? (y/n) y

SCP Code transfer starting...

File transfer operation completed successfully.

### Check New firmware Is Available on Next Boot

(eag-nasor-clus1-switch-02) #show bootvar

Image Descriptions

active :

backup :

Images currently available on Flash

--------------------------------------------------------------------

unit active backup current-active next-active

--------------------------------------------------------------------

1 1.2.0.7 1.1.0.5 1.1.0.5 1.2.0.7

(eag-nasor-clus1-switch-02) #

### Write Running Switch Config To Storage

(eag-nasor-clus1-switch-02) #write memory

This operation may take a few minutes.

Management interfaces will not be available during this time.

Are you sure you want to save? (y/n) y

Config file 'startup-config' created successfully .

Configuration Saved!

### Reboot The Switch

(eag-nasor-clus1-switch-02) #reload

Are you sure you would like to reset the system? (y/n) y

System will now restart!

### Check Version Post Reboot

(eag-nasor-clus1-switch-02) #show version

Switch: 1

System Description............................. NetApp CN1610, 1.2.0.7, Linux 3.8.13-4ce360e8

Machine Type................................... NetApp CN1610

Machine Model.................................. CN1610

Serial Number.................................. 40111200510

Part Number.................................... 111-00982

Burned In MAC Address.......................... 00:A0:98:E9:36:76

Software Version............................... 1.2.0.7

Operating System............................... Linux 3.8.13-4ce360e8

Network Processing Device...................... BCM56820\_B0

CPLD version................................... 0x5

Additional Packages............................ FASTPATH QOS

FASTPATH IPv6 Management

### Bring Up ISL on Active Switch (Switch1) After Version Check

(eag-nasor-clus1-switch-01) #configure

(eag-nasor-clus1-switch-01) (Config)#interface 0/13-0/16

(eag-nasor-clus1-switch-01) (Interface 0/13-0/16)#no shutdown

(eag-nasor-clus1-switch-01) (Interface 0/13-0/16)#exit

(eag-nasor-clus1-switch-01) (Config)#exit

### Check ISL on Active Switch (Switch1)

(eag-nasor-clus1-switch-01) #show port-channel 3/1

Local Interface................................ 3/1

Channel Name................................... ISL-LAG

Link State..................................... Up

Admin Mode..................................... Enabled

Type........................................... Static

Load Balance Option............................ 7

(Enhanced hashing mode)

Mbr Device/ Port Port

Ports Timeout Speed Active

------ ------------- --------- -------

0/13 actor/long 10G Full True

partner/long

0/14 actor/long 10G Full True

partner/long

0/15 actor/long 10G Full True

partner/long

0/16 actor/long 10G Full True

partner/long

### Bring Up Cluster Ports

If All the above checks are ok then re-enable the cluster ports.

eg-si-clsn-e01::> set 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

eg-si-clsn-e01::\*> network port modify -node eg-si-clsn-e01-h01 -port e0c -up-admin true

eg-si-clsn-e01::\*> network port modify -node eg-si-clsn-e01-h02 -port e0c -up-admin true

eg-si-clsn-e01::\*> network port modify -node eg-si-clsn-e01-l03 -port e0c -up-admin true

eg-si-clsn-e01::\*> network port modify -node eg-si-clsn-e01-l04 -port e0c -up-admin true

### Check Ports On Switch2

Check all ports are now enabled post upgrade and after ISL enabled.

(eag-nasor-clus1-switch-02) #show port all

Admin Physical Physical Link Link LACP Actor

Intf Type Mode Mode Status Status Trap Mode Timeout

--------- ------ --------- ---------- ---------- ------ ------- ------ --------

0/1 Enable 10G Full 10G Full Up Enable Enable long

0/2 Enable 10G Full 10G Full Up Enable Enable long

0/3 Enable 10G Full 10G Full Up Enable Enable long

0/4 Enable 10G Full 10G Full Up Enable Enable long

0/5 Enable 10G Full Down Enable Enable long

0/6 Enable 10G Full Down Enable Enable long

0/7 Enable 10G Full Down Enable Enable long

0/8 Enable 10G Full Down Enable Enable long

0/9 Enable 10G Full Down Enable Enable long

0/10 Enable 10G Full Down Enable Enable long

0/11 Enable 10G Full Down Enable Enable long

0/12 Enable 10G Full Down Enable Enable long

0/13 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

0/14 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

0/15 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

0/16 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

### Check Cluster LIF ports are Correct

Now ports are back online check LIFs are using them again.

eg-si-clsn-e01::\*> net int show -role cluster

(network interface show)

Logical Status Network Current Current Is

Vserver Interface Admin/Oper Address/Mask Node Port Home

----------- ---------- ---------- ------------------ ------------- ------- ----

eg-si-clsn-e01-h01

clus1 up/up 169.254.136.69/16 eg-si-clsn-e01-h01

e0a true

clus2 up/up 169.254.254.37/16 eg-si-clsn-e01-h01

e0c true

eg-si-clsn-e01-h02

clus1 up/up 169.254.144.203/16 eg-si-clsn-e01-h02

e0a true

clus2 up/up 169.254.23.213/16 eg-si-clsn-e01-h02

e0c true

eg-si-clsn-e01-l03

clus1 up/up 169.254.56.100/16 eg-si-clsn-e01-l03

e0a true

clus2 up/up 169.254.150.213/16 eg-si-clsn-e01-l03

e0c true

eg-si-clsn-e01-l04

clus1 up/up 169.254.240.154/16 eg-si-clsn-e01-l04

e0a true

clus2 up/up 169.254.98.147/16 eg-si-clsn-e01-l04

e0c true

8 entries were displayed.

### Check Cluster Health

eg-si-clsn-e01::\*> cluster show

Node Health Eligibility Epsilon

-------------------- ------- ------------ ------------

eg-si-clsn-e01-h01 true true false

eg-si-clsn-e01-h02 true true true

eg-si-clsn-e01-l03 true true false

eg-si-clsn-e01-l04 true true false

4 entries were displayed.

# Switch1 Upgrade

Now we upgrade Switch1 to the new version of code and config. This requires us to again modify the cluster configuration.

### Check Cluster LIFS Are All Functional

Check cluster lifs are all up and functional plus on their home ports. Make a note of the ports as you need these for future steps.

eg-si-clsn-e01::\*> net int show -role cluster

(network interface show)

Logical Status Network Current Current Is

Vserver Interface Admin/Oper Address/Mask Node Port Home

----------- ---------- ---------- ------------------ ------------- ------- ----

eg-si-clsn-e01-h01

clus1 up/up 169.254.136.69/16 eg-si-clsn-e01-h01

e0a true

clus2 up/up 169.254.254.37/16 eg-si-clsn-e01-h01

e0c true

eg-si-clsn-e01-h02

clus1 up/up 169.254.144.203/16 eg-si-clsn-e01-h02

e0a true

clus2 up/up 169.254.23.213/16 eg-si-clsn-e01-h02

e0c true

eg-si-clsn-e01-l03

clus1 up/up 169.254.56.100/16 eg-si-clsn-e01-l03

e0a true

clus2 up/up 169.254.150.213/16 eg-si-clsn-e01-l03

e0c true

eg-si-clsn-e01-l04

clus1 up/up 169.254.240.154/16 eg-si-clsn-e01-l04

e0a true

clus2 up/up 169.254.98.147/16 eg-si-clsn-e01-l04

e0c true

8 entries were displayed.

### Migrate Switch1 Cluster LIFS (All Nodes)

These LIFs must be migrated prior to performing the upgrade on switch1. You need to do this by connecting to each individual node, it will not work from the cluster management LIF.

**Node Shell on eg-si-clsn-e01-h01**

net int migrate -vserver eg-si-clsn-e01-h01 -lif clus1 -destination-node eg-si-clsn-e01-h01 -destination-port e0c

**Node Shell on eg-si-clsn-e01-h02**

net int migrate -vserver eg-si-clsn-e01-h02 -lif clus1 -destination-node eg-si-clsn-e01-h02 -destination-port e0c

**Node Shell on eg-si-clsn-e01-l03**

net int migrate -vserver eg-si-clsn-e01-l03 -lif clus1 -destination-node eg-si-clsn-e01-l03 -destination-port e0c

**Node Shell on eg-si-clsn-e01-l04**

net int migrate -vserver eg-si-clsn-e01-l04 -lif clus1 -destination-node eg-si-clsn-e01-l04 -destination-port e0c

### Check Interfaces

eg-si-clsn-e01::> net int show -role cluster

(network interface show)

Logical Status Network Current Current Is

Vserver Interface Admin/Oper Address/Mask Node Port Home

----------- ---------- ---------- ------------------ ------------- ------- ----

eg-si-clsn-e01-h01

clus1 up/up 169.254.136.69/16 eg-si-clsn-e01-h01

e0c false

clus2 up/up 169.254.254.37/16 eg-si-clsn-e01-h01

e0c true

eg-si-clsn-e01-h02

clus1 up/up 169.254.144.203/16 eg-si-clsn-e01-h02

e0c false

clus2 up/up 169.254.23.213/16 eg-si-clsn-e01-h02

e0c true

eg-si-clsn-e01-l03

clus1 up/up 169.254.56.100/16 eg-si-clsn-e01-l03

e0c false

clus2 up/up 169.254.150.213/16 eg-si-clsn-e01-l03

e0c true

eg-si-clsn-e01-l04

clus1 up/up 169.254.240.154/16 eg-si-clsn-e01-l04

e0c false

clus2 up/up 169.254.98.147/16 eg-si-clsn-e01-l04

e0c true

8 entries were displayed.

### Shut Down Cluster Ports That are No Longer In Use (All Nodes)

**Node Shell on eg-si-clsn-e01-h01**

network port modify -node eg-si-clsn-e01-h01 -port e0a -up-admin false

**Node Shell on eg-si-clsn-e01-h02**

network port modify -node eg-si-clsn-e01-h02 -port e0a -up-admin false

**Node Shell on eg-si-clsn-e01-l03**

network port modify -node eg-si-clsn-e01-l03 -port e0a -up-admin false

**Node Shell on eg-si-clsn-e01-l04**

network port modify -node eg-si-clsn-e01-l04 -port e0a -up-admin false

### Check Ports

eg-si-clsn-e01::\*> net port show -role cluster

(network port show)

Auto-Negot Duplex Speed (Mbps)

Node Port Role Link MTU Admin/Oper Admin/Oper Admin/Oper

------ ------ ------------ ---- ----- ----------- ---------- ------------

eg-si-clsn-e01-h01

e0a cluster down 9000 true/true full/full auto/10000

e0c cluster up 9000 true/true full/full auto/10000

eg-si-clsn-e01-h02

e0a cluster down 9000 true/true full/full auto/10000

e0c cluster up 9000 true/true full/full auto/10000

eg-si-clsn-e01-l03

e0a cluster down 9000 true/true full/full auto/10000

e0c cluster up 9000 true/true full/full auto/10000

eg-si-clsn-e01-l04

e0a cluster down 9000 true/true full/full auto/10000

e0c cluster up 9000 true/true full/full auto/10000

8 entries were displayed.

### Check Ports Are Down On Switch 1 (If they aren’t something is wrong, STOP)

(eag-nasor-clus1-switch-01) #show port all

Admin Physical Physical Link Link LACP Flow

Intf Type Mode Mode Status Status Trap Mode Mode

--------- ------ --------- ---------- ---------- ------ ------- ------ -------

0/1 Enable 10G Full Down Enable Enable Disable

0/2 Enable 10G Full Down Enable Enable Disable

0/3 Enable 10G Full Down Enable Enable Disable

0/4 Enable 10G Full Down Enable Enable Disable

0/5 Enable Auto Down Enable Enable Disable

0/6 Enable Auto Down Enable Enable Disable

0/7 Enable Auto Down Enable Enable Disable

0/8 Enable Auto Down Enable Enable Disable

0/9 Enable Auto Down Enable Enable Disable

0/10 Enable Auto Down Enable Enable Disable

0/11 Enable Auto Down Enable Enable Disable

0/12 Enable Auto Down Enable Enable Disable

0/13 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

0/14 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

0/15 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

0/16 PC Mbr Enable 10G Full 10G Full Up Enable Enable Disable

3/1 Enable Up Disable N/A Disable

3/2 Enable Down Disable N/A Disable

### Check Ports Are UP On Switch 2 (If they aren’t something is wrong, STOP)

(eag-nasor-clus1-switch-02) #show port all

Admin Physical Physical Link Link LACP Actor

Intf Type Mode Mode Status Status Trap Mode Timeout

--------- ------ --------- ---------- ---------- ------ ------- ------ --------

0/1 Enable 10G Full 10G Full Up Enable Enable long

0/2 Enable 10G Full 10G Full Up Enable Enable long

0/3 Enable 10G Full 10G Full Up Enable Enable long

0/4 Enable 10G Full 10G Full Up Enable Enable long

0/5 Enable 10G Full Down Enable Enable long

0/6 Enable 10G Full Down Enable Enable long

0/7 Enable 10G Full Down Enable Enable long

0/8 Enable 10G Full Down Enable Enable long

0/9 Enable 10G Full Down Enable Enable long

0/10 Enable 10G Full Down Enable Enable long

0/11 Enable 10G Full Down Enable Enable long

0/12 Enable 10G Full Down Enable Enable long

0/13 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

0/14 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

0/15 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

0/16 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

### Shut Down the ISL On the ACTIVE Switch (Switch 2)

(eag-nasor-clus1-switch-02) #configure

(eag-nasor-clus1-switch-02) (Config)#interface 0/13-0/16

(eag-nasor-clus1-switch-02) (Interface 0/13-0/16)#shutdown

(eag-nasor-clus1-switch-02) (Interface 0/13-0/16)#exit

(eag-nasor-clus1-switch-02) (Config)#exit

(eag-nasor-clus1-switch-02) #

### Check Ports Are Down on Switch1 (If they aren’t something is wrong, STOP)

(eag-nasor-clus1-switch-01) #show port all

Admin Physical Physical Link Link LACP Flow

Intf Type Mode Mode Status Status Trap Mode Mode

--------- ------ --------- ---------- ---------- ------ ------- ------ -------

0/1 Enable 10G Full Down Enable Enable Disable

0/2 Enable 10G Full Down Enable Enable Disable

0/3 Enable 10G Full Down Enable Enable Disable

0/4 Enable 10G Full Down Enable Enable Disable

0/5 Enable Auto Down Enable Enable Disable

0/6 Enable Auto Down Enable Enable Disable

0/7 Enable Auto Down Enable Enable Disable

0/8 Enable Auto Down Enable Enable Disable

0/9 Enable Auto Down Enable Enable Disable

0/10 Enable Auto Down Enable Enable Disable

0/11 Enable Auto Down Enable Enable Disable

0/12 Enable Auto Down Enable Enable Disable

0/13 PC Mbr Enable 10G Full Down Enable Enable Disable

0/14 PC Mbr Enable 10G Full Down Enable Enable Disable

0/15 PC Mbr Enable 10G Full Down Enable Enable Disable

0/16 PC Mbr Enable 10G Full Down Enable Enable Disable

3/1 Enable Down Disable N/A Disable

### Backup Image On Switch1

(eag-nasor-clus1-switch-01) #copy active backup

Copying active to backup

Copy operation successful

(eag-nasor-clus1-switch-01) #show bootvar

Image Descriptions

active :

backup :

Images currently available on Flash

--------------------------------------------------------------------

unit active backup current-active next-active

--------------------------------------------------------------------

1 1.1.0.5 1.1.0.5 1.1.0.5 1.1.0.5

### Save Current Config

(eag-nasor-clus1-switch-01) #write memory

This operation may take a few minutes.

Management interfaces will not be available during this time.

Are you sure you want to save? (y/n) y

Config file 'startup-config' created successfully .

Configuration Saved!

### Copy RCF To Switch1

(eag-nasor-clus1-switch-01) # copy scp://root@10.220.179.83/var/lib/tftpboot/CN1610\_CS\_RCF\_v1.2.txt nvram:script CN1610\_CS\_RCF\_v1.2.scr

Remote Password:\*\*\*\*\*\*\*

Mode........................................... SCP

Set Server IP.................................. 10.220.179.83

Path........................................... ./

Filename....................................... CN1610\_CS\_RCF\_v1.2.txt

Data Type...................................... Config Script

Destination Filename........................... CN1610\_CS\_RCF\_v1.2.scr

Management access will be blocked for the duration of the transfer

Are you sure you want to start? (y/n) y

Validating configuration script...

no ip telnet server enable

config

logging persistent 4

isdp run

isdp timer 5

no isdp advertise-v2

spanning-tree bpduguard

snmp-server community "cshm1!"

port-channel name 3/1 ISL-LAG

interface 0/13

addport 3/1

exit

interface 0/14

addport 3/1

exit

interface 0/15

addport 3/1

exit

interface 0/16

addport 3/1

exit

interface 0/1

description "Cluster Port 1"

spanning-tree edgeport

mtu 9216

exit

interface 0/2

description "Cluster Port 2"

spanning-tree edgeport

mtu 9216

exit

interface 0/3

description "Cluster Port 3"

spanning-tree edgeport

mtu 9216

exit

interface 0/4

description "Cluster Port 4"

spanning-tree edgeport

mtu 9216

exit

interface 0/5

description "Cluster Port 5"

spanning-tree edgeport

mtu 9216

exit

interface 0/6

description "Cluster Port 6"

spanning-tree edgeport

mtu 9216

exit

interface 0/7

description "Cluster Port 7"

spanning-tree edgeport

mtu 9216

exit

interface 0/8

description "Cluster Port 8"

spanning-tree edgeport

mtu 9216

exit

interface 0/9

description "Cluster Port 9"

spanning-tree edgeport

mtu 9216

exit

interface 0/10

description "Cluster Port 10"

spanning-tree edgeport

mtu 9216

exit

interface 0/11

description "Cluster Port 11"

spanning-tree edgeport

mtu 9216

exit

interface 0/12

description "Cluster Port 12"

spanning-tree edgeport

mtu 9216

exit

interface 0/13

description "ISL member port 13"

mtu 9216

exit

interface 0/14

description "ISL member port 14"

mtu 9216

exit

interface 0/15

description "ISL member port 15"

mtu 9216

exit

interface 0/16

description "ISL member port 16"

mtu 9216

exit

interface 3/1

description "ISL LAG - ports 13-16"

port-channel load-balance 7

mtu 9216

exit

interface 3/64

description "NetApp CN1610 Cluster Switch RCF v1.2 - 2015-01-13"

exit

Configuration script validated.

File transfer operation completed successfully.

### Check The Script Is Copied

(eag-nasor-clus1-switch-01) #script list

Configuration Script Name Size(Bytes)

-------------------------------- -----------

CN1610\_CS\_RCF\_v1.0.scr 2149

CN1610\_CS\_RCF\_v1.1.scr 2191

CN1610\_CS\_RCF\_v1.2.scr 2225

config8\_15\_14.scr 2658

4 configuration script(s) found.

2038 Kbytes free.

### Apply The Script

(eag-nasor-clus1-switch-01) #script list

Configuration Script Name Size(Bytes)

-------------------------------- -----------

CN1610\_CS\_RCF\_v1.0.scr 2149

CN1610\_CS\_RCF\_v1.1.scr 2191

CN1610\_CS\_RCF\_v1.2.scr 2225

config8\_15\_14.scr 2658

4 configuration script(s) found.

2038 Kbytes free.

(eag-nasor-clus1-switch-01) #script apply CN1610\_CS\_RCF\_v1.2.scr

Are you sure you want to apply the configuration script? (y/n)y

no ip telnet server enable

config

logging persistent 4

isdp run

isdp timer 5

no isdp advertise-v2

spanning-tree bpduguard

snmp-server community "cshm1!"

Community already exists!

port-channel name 3/1 ISL-LAG

interface 0/13

addport 3/1

0/13 interface is part of a port-channel.

exit

interface 0/14

addport 3/1

0/14 interface is part of a port-channel.

exit

interface 0/15

addport 3/1

0/15 interface is part of a port-channel.

exit

interface 0/16

addport 3/1

0/16 interface is part of a port-channel.

exit

interface 0/1

description "Cluster Port 1"

spanning-tree edgeport

mtu 9216

exit

interface 0/2

description "Cluster Port 2"

spanning-tree edgeport

mtu 9216

exit

interface 0/3

description "Cluster Port 3"

spanning-tree edgeport

mtu 9216

exit

interface 0/4

description "Cluster Port 4"

spanning-tree edgeport

mtu 9216

exit

interface 0/5

description "Cluster Port 5"

spanning-tree edgeport

mtu 9216

exit

interface 0/6

description "Cluster Port 6"

spanning-tree edgeport

mtu 9216

exit

interface 0/7

description "Cluster Port 7"

spanning-tree edgeport

mtu 9216

exit

interface 0/8

description "Cluster Port 8"

spanning-tree edgeport

mtu 9216

exit

interface 0/9

description "Cluster Port 9"

spanning-tree edgeport

mtu 9216

exit

interface 0/10

description "Cluster Port 10"

spanning-tree edgeport

mtu 9216

exit

interface 0/11

description "Cluster Port 11"

spanning-tree edgeport

mtu 9216

exit

interface 0/12

description "Cluster Port 12"

spanning-tree edgeport

mtu 9216

exit

interface 0/13

description "ISL member port 13"

mtu 9216

exit

interface 0/14

description "ISL member port 14"

mtu 9216

exit

interface 0/15

description "ISL member port 15"

mtu 9216

exit

interface 0/16

description "ISL member port 16"

mtu 9216

exit

interface 3/1

description "ISL LAG - ports 13-16"

port-channel load-balance 7

mtu 9216

exit

interface 3/64

description "NetApp CN1610 Cluster Switch RCF v1.2 - 2015-01-13"

exit

Configuration script 'CN1610\_CS\_RCF\_v1.2.scr' applied.

### Check Config Applied

(eag-nasor-clus1-switch-01) #show run

!Current Configuration:

!

!System Description "NetApp CN1610, 1.1.0.5, Linux 2.6.21.7"

!System Software Version "1.1.0.5"

!System Up Time "1088 days 3 hrs 10 mins 55 secs"

!Additional Packages FASTPATH QOS

!Current SNTP Synchronized Time: Not Synchronized

!

set prompt "eag-nasor-clus1-switch-01"

serviceport protocol none

serviceport ip 10.220.194.69 255.255.255.0 10.220.194.254

vlan database

exit

ip ssh server enable

ip ssh protocol 2

no ip telnet server enable

configure

logging persistent 4

username "admin" password e656b86727db9284861b57a00dc1b4c60ec6ddd405a497246fe27f28688acc396e59d86101d010b0232888f754b78d03e93503850b582eefb8cfabd5200c403e level 15 encrypted

line console

exit

line telnet

exit

line ssh

exit

spanning-tree configuration name "00-A0-98-E9-2C-D5"

spanning-tree bpduguard

port-channel name 3/1 ISL-LAG

interface 0/13

no auto-negotiate

addport 3/1

exit

interface 0/14

no auto-negotiate

addport 3/1

exit

interface 0/15

no auto-negotiate

addport 3/1

exit

interface 0/16

no auto-negotiate

addport 3/1

exit

snmp-server sysname "eag-nasor-clus1-switch-01"

!

snmp-server community "netapp"

snmp-server community "cshm1!"

interface 0/1

no auto-negotiate

description 'Cluster Port 1'

spanning-tree edgeport

mtu 9216

exit

interface 0/2

no auto-negotiate

description 'Cluster Port 2'

spanning-tree edgeport

mtu 9216

exit

interface 0/3

no auto-negotiate

description 'Cluster Port 3'

spanning-tree edgeport

mtu 9216

exit

interface 0/4

no auto-negotiate

description 'Cluster Port 4'

spanning-tree edgeport

mtu 9216

exit

interface 0/5

description 'Cluster Port 5'

spanning-tree edgeport

mtu 9216

exit

interface 0/6

description 'Cluster Port 6'

spanning-tree edgeport

mtu 9216

exit

interface 0/7

description 'Cluster Port 7'

spanning-tree edgeport

mtu 9216

exit

interface 0/8

description 'Cluster Port 8'

spanning-tree edgeport

mtu 9216

exit

interface 0/9

description 'Cluster Port 9'

spanning-tree edgeport

mtu 9216

exit

interface 0/10

description 'Cluster Port 10'

spanning-tree edgeport

mtu 9216

exit

interface 0/11

description 'Cluster Port 11'

spanning-tree edgeport

mtu 9216

exit

interface 0/12

description 'Cluster Port 12'

spanning-tree edgeport

mtu 9216

exit

interface 0/13

description 'ISL member port 13'

mtu 9216

exit

interface 0/14

description 'ISL member port 14'

mtu 9216

exit

interface 0/15

description 'ISL member port 15'

mtu 9216

exit

interface 0/16

description 'ISL member port 16'

mtu 9216

exit

interface 3/1

description 'ISL LAG - ports 13-16'

port-channel load-balance 7

mtu 9216

exit

interface 3/64

description 'NetApp CN1610 Cluster Switch RCF v1.2 - 2015-01-13'

exit

no isdp advertise-v2

isdp timer 5

exit

terminal length 0

### Copy Code

(eag-nasor-clus1-switch-01) #copy scp://10.220.179.83/var/lib/tftpboot/NetApp\_CN1610\_1.2.0.7.stk active

Remote Password:\*\*\*\*\*\*\*

Mode........................................... SCP

Set Server IP.................................. 10.220.179.83

Path........................................... ./

Filename....................................... NetApp\_CN1610\_1.2.0.7.stk

Data Type...................................... Code

Destination Filename........................... active

Management access will be blocked for the duration of the transfer

Are you sure you want to start? (y/n) y

SCP Code transfer starting...

File transfer operation completed successfully.

(eag-nasor-clus1-switch-01) #show bootvar

Image Descriptions

active :

backup :

Images currently available on Flash

--------------------------------------------------------------------

unit active backup current-active next-active

--------------------------------------------------------------------

1 1.2.0.7 1.1.0.5 1.1.0.5 1.2.0.7

### Write Config

(eag-nasor-clus1-switch-01) #write memory

This operation may take a few minutes.

Management interfaces will not be available during this time.

Are you sure you want to save? (y/n) y

Config file 'startup-config' created successfully .

Configuration Saved!

### Reboot The Switch

(eag-nasor-clus1-switch-01) #reload

Are you sure you would like to reset the system? (y/n) y

System will now restart!

### Check Version Post Upgrade

(eag-nasor-clus1-switch-01) #show version

Switch: 1

System Description............................. NetApp CN1610, 1.2.0.7, Linux 3.8.13-4ce360e8

Machine Type................................... NetApp CN1610

Machine Model.................................. CN1610

Serial Number.................................. 40111200365

Part Number.................................... 111-00982

Burned In MAC Address.......................... 00:A0:98:E9:2C:D5

Software Version............................... 1.2.0.7

Operating System............................... Linux 3.8.13-4ce360e8

Network Processing Device...................... BCM56820\_B0

CPLD version................................... 0x5

Additional Packages............................ FASTPATH QOS

FASTPATH IPv6 Management

### Bring Up ISL on Active Switch (Switch2)

(eag-nasor-clus1-switch-02) >en

(eag-nasor-clus1-switch-02) #config

(eag-nasor-clus1-switch-02) (Config)#interface 0/13-0/16

(eag-nasor-clus1-switch-02) (Interface 0/13-0/16)#no shut

(eag-nasor-clus1-switch-02) (Interface 0/13-0/16)#exit

(eag-nasor-clus1-switch-02) (Config)#exit

(eag-nasor-clus1-switch-02) #

### Check ISL on Active Switch (Switch2)

(eag-nasor-clus1-switch-02) #show port-channel 3/1

Local Interface................................ 3/1

Channel Name................................... ISL-LAG

Link State..................................... Up

Admin Mode..................................... Enabled

Type........................................... Static

Port-channel Min-links......................... 1

Load Balance Option............................ 7

(Enhanced hashing mode)

Mbr Device/ Port Port

Ports Timeout Speed Active

------ ------------- --------- -------

0/13 actor/long 10G Full True

partner/long

0/14 actor/long 10G Full True

partner/long

0/15 actor/long 10G Full True

partner/long

0/16 actor/long 10G Full True

partner/long

### Bring Up Cluster Ports

eg-si-clsn-e01::> set 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

eg-si-clsn-e01::\*> network port modify -node eg-si-clsn-e01-h01 -port e0a -up-admin true

eg-si-clsn-e01::\*> network port modify -node eg-si-clsn-e01-h02 -port e0a -up-admin true

eg-si-clsn-e01::\*> network port modify -node eg-si-clsn-e01-l03 -port e0a -up-admin true

eg-si-clsn-e01::\*> network port modify -node eg-si-clsn-e01-l04 -port e0a -up-admin true

eg-si-clsn-e01::\*>

### Check Ports On Switch1

(eag-nasor-clus1-switch-01) #show port all

Admin Physical Physical Link Link LACP Actor

Intf Type Mode Mode Status Status Trap Mode Timeout

--------- ------ --------- ---------- ---------- ------ ------- ------ --------

0/1 Enable 10G Full 10G Full Up Enable Enable long

0/2 Enable 10G Full 10G Full Up Enable Enable long

0/3 Enable 10G Full 10G Full Up Enable Enable long

0/4 Enable 10G Full 10G Full Up Enable Enable long

0/5 Enable 10G Full Down Enable Enable long

0/6 Enable 10G Full Down Enable Enable long

0/7 Enable 10G Full Down Enable Enable long

0/8 Enable 10G Full Down Enable Enable long

0/9 Enable 10G Full Down Enable Enable long

0/10 Enable 10G Full Down Enable Enable long

0/11 Enable 10G Full Down Enable Enable long

0/12 Enable 10G Full Down Enable Enable long

0/13 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

0/14 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

0/15 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

0/16 PC Mbr Enable 10G Full 10G Full Up Enable Enable long

### Check Cluster LIF ports are Correct

eg-si-clsn-e01::\*> net int show -role cluster

(network interface show)

Logical Status Network Current Current Is

Vserver Interface Admin/Oper Address/Mask Node Port Home

----------- ---------- ---------- ------------------ ------------- ------- ----

eg-si-clsn-e01-h01

clus1 up/up 169.254.136.69/16 eg-si-clsn-e01-h01

e0a true

clus2 up/up 169.254.254.37/16 eg-si-clsn-e01-h01

e0c true

eg-si-clsn-e01-h02

clus1 up/up 169.254.144.203/16 eg-si-clsn-e01-h02

e0a true

clus2 up/up 169.254.23.213/16 eg-si-clsn-e01-h02

e0c true

eg-si-clsn-e01-l03

clus1 up/up 169.254.56.100/16 eg-si-clsn-e01-l03

e0a true

clus2 up/up 169.254.150.213/16 eg-si-clsn-e01-l03

e0c true

eg-si-clsn-e01-l04

clus1 up/up 169.254.240.154/16 eg-si-clsn-e01-l04

e0a true

clus2 up/up 169.254.98.147/16 eg-si-clsn-e01-l04

e0c true

8 entries were displayed.

### Check Cluster Health

eg-si-clsn-e01::\*> cluster show

Node Health Eligibility Epsilon

-------------------- ------- ------------ ------------

eg-si-clsn-e01-h01 true true false

eg-si-clsn-e01-h02 true true true

eg-si-clsn-e01-l03 true true false

eg-si-clsn-e01-l04 true true false

4 entries were displayed.

eg-si-clsn-e01::\*> system health cluster-switch show

Switch Type Address Model

--------------------------- ------------------ ---------------- ---------------

eag-nasor-clus1-switch-01 cluster-network 10.220.194.69 CN1610

Is Monitored: yes

Reason:

Software Version: 1.2.0.7

Version Source: ISDP

eag-nasor-clus1-switch-02 cluster-network 10.220.194.80 CN1610

Is Monitored: yes

Reason:

Software Version: 1.2.0.7

Version Source: ISDP

2 entries were displayed.