

**cDOT 8.3.x Upgrade from 8.2.3P5**

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# Introduction

## Management Summary

This document details the process used to upgrade cDOT from 8.2.3P5 to 8.3.2P7.

## Change History

|  |  |  |  |
| --- | --- | --- | --- |
| **Ver** | **Date** | **Author** | **Key Changes** |
| 0.1 | March 2017 | Ian Daniel | Initial Version |
| 0.2 | March 2017 | Ian Daniel | Added interface rehoming following feedback. |
| 0.3 | April 2017 | Ian Daniel | Updated following feedback. |
| 0.4 | April 2017 | Ian Daniel | Updated following feedback. |
| 0.5 | April 2017 | Ian Daniel | Added additional BD processing |
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## Distribution List

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

## Glossary

|  |  |
| --- | --- |
| **Term** | **Definition** |
| cDOT | clustered Data ONTAP |
| Vserver | A logical storage virtual server, also known as a Storage Virtual Machine (SVM), which contains LIFs, Volumes, and configuration information such as access control details. |
| LIF | Logical Interface – a cDOT logical network interface with an IP address, assigned to a single Vserver. |
| CIFS | Short for Common Internet File System, a protocol that defines a standard for remote file access using millions of computers at a time. With CIFS, users with different platforms and computers can share files without having to install new software. |
| SMB | Short for Server Message Block, a message format used by DOS and Windows to share files, directories and devices. |
| NFS | A distributed file system protocol originally developed by Sun Microsystems in 1984, allowing a user on a client computer to access files over a computer network much like local storage is accessed. |

# Pre-Upgrade Process

## Description

Prior to upgrading a cluster to 8.3.2P7 you first need to perform a number of tasks in order to ensure the upgrade goes smoothly.

## Tasks

The following tasks are carried out pre-upgrade.

### ****Obtain The Correct ONTAP Version And Make It Available Via HTTP****

The version of ONTAP being used for upgrades is 8.3.2P7 and is available here:

<http://mysupport.netapp.com/NOW/download/software/ontap/8.3.2P7/>

### ****Check For ISCSI****

At this time ISCSI is not released for cDOT 8.3.x and so if the cluster has ISCSI on it you **MUST NOT** under any circumstances upgrade it. To check for ISCSI on a cluster do the following.

eg-cps-clsp-e01::> lun show -vserver \*

There are no entries matching your query.

If there are LUNs present you will see output like this.

eg-si-clsn-e01::> lun show -vserver \*

Vserver Path State Mapped Type Size

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

ciststjms-e0001

/vol/iscsitest01/lun/testlun01 online unmapped windows 20.00GB

orprod-iscsi-01

/vol/cb0000\_wi\_15142\_05\_info\_snap/luns/snapinfo

online mapped windows 10.00GB

orprod-iscsi-01

/vol/cb0000\_wi\_15142\_05\_tsys\_nosnap/luns/sysdb

online mapped windows 20.00GB

### ****Check For Any Failover Group Issues****

To successfully upgrade a cDOT cluster to 8.3.2P7 we need to ensure that all failover groups and interface configurations are correct. **This MUST be done ahead of the upgrade**, if not then you will have issues with the upgrade process or end up with a configuration that is not as expected. **This could cause an outage in terms of data access.**

To assist with this, there is a script that will output a list of issues with network configuration. This can be run prior to upgrade and the issues can be addressed. The script takes a single argument which is the cluster management IP address or Hostname.

**Example Output**

# ./net-chk 10.220.194.42

THIS SCRIPT ONLY IDENTIFIES FG-RELATED ISSUES CURRENTLY, DOES NOT HAVE SUGGESTED COMMAND LINE FIXES YET.

This script checks for various cDOT 8.2 networking concepts.

As such, this script was only coded for 8.2 and will fail on newer ONTAP 8.3+ releases.

Received target of : 10.220.194.42

Please enter the API username: admin

Please enter the API user password:

This script checks for the following items:

\* Missing failover groups

\* Missing failover group port membership

\* Misconfigured failover group port MTU settings

\* Ports that are a member of more than one failover group

\* LIFs missing a failover group assignment

Gathering cluster information from target '10.220.194.42'...

...finished.

Retrieving port information and building dictionary...

...finished.

Retrieving failover group information and building dictionary...

...finished.

Retrieving logical interface information(LIF) and building dictionary...

...finished.

Checking existing failover group configuration...

...finished.

Checking possible missing failover groups...

...finished.

Checking for any LIFs without a specified failover group...

...finished.

The following configuration issues were identified:

===================================================

MISSING FAILOVER GROUPS:

MISSING FAILOVER GROUP PORT MEMBERS:

FAILOVER\_GROUP NODE PORT

delete-me eg-si-clsn-e01-h02 a0a-2003

FAILOVER GROUPS MISSING MEMBERSHIP FROM ALL NODES:

FAILOVER\_GROUP MISSING\_NODE

delete-me eg-si-clsn-e01-h02

delete-me eg-si-clsn-e01-l03

delete-me eg-si-clsn-e01-l04

data-2001 eg-si-clsn-e01-l03

data-2001 eg-si-clsn-e01-l04

FAILOVER GROUP PORT MTU MISMATCH:

FAILOVER\_GROUP NODE PORT MTU

PORTS THAT ARE PART OF MORE THAN ONE FAILOVER GROUP:

NODE PORT

eg-si-clsn-e01-h01 a0a-2003

LIFS MISSING FAILOVER GROUP ASSIGNMENT:

VSERVER LIF

svm237csb svm237csb\_lif

orprod-iscsi-02 orprod-iscsi-02-mgmt-lif01

svm123def svm123def\_lif

svm789xyz svm789xyz\_lif

svm129cug svm129cug\_lif

svm317drc svm317drc\_lif

svm012abc svm012abc\_lif

test-ico-vfiler-cdot-001 test\_ico\_vfiler\_cdot\_001\_lif

svm070njz svm070njz\_lif

si-globalscape-test02 si-globalscape-test02-lif01

si-winautomation-test01 si-winautomation-test01-mgmt-lif01

ciststjms-e0001 ciststjms-e0001-mgmt-lif01

si-8040-test-01 si-8040-test-01-lif

svm237xyz svm237xyz\_lif

si-globalscape-test01 si-globalscape-test01-mgmt-lif01

svm594nxp svm594nxp\_lif

orprod-iscsi-04 orprod-iscsi-04-mgmt-lif01

siesx-e0001 siesx-e0001-lif01

svm338zvz svm338zvz\_lif

orprod-iscsi-03 orprod-iscsi-03-mgmt-lif01

svm598bdv svm598bdv\_lif

orprod-iscsi-01 orprod-iscsi-01-mgmt-lif01

### ****How To Fix Failover Group Issues Flagged By Script****

The following are examples of script output and how to fix the issue.

#### Missing Port Members

MISSING FAILOVER GROUP PORT MEMBERS:

FAILOVER\_GROUP NODE PORT

delete-me eg-si-clsn-e01-h02 a0a-2003

**Show the ports configured**

eg-si-clsn-e01::> failover-groups show -failover-group

clusterwide data-2001 data-2003 delete-me mgmt

eg-si-clsn-e01::> failover-groups show -failover-group delete-me

(network interface failover-groups show)

Failover

Group Node Port

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

delete-me

eg-si-clsn-e01-h01

a0a-2003

**Show ports**

eg-si-clsn-e01::> net port show -node eg-si-clsn-e01-\* -port a0a-2003

(network port show)

Auto-Negot Duplex Speed (Mbps)

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

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

eg-si-clsn-e01-h01

a0a-2003

data up 1500 true/- auto/full auto/10000

eg-si-clsn-e01-h02

a0a-2003

data up 1500 true/- auto/full auto/10000

eg-si-clsn-e01-l03

a0a-2003

data up 1500 true/- auto/full auto/10000

eg-si-clsn-e01-l04

a0a-2003

data up 1500 true/- auto/full auto/10000

4 entries were displayed.

**Modify Failover Group**

eg-si-clsn-e01::> failover-groups create -failover-group delete-me -node eg-si-clsn-e01-h02 -port a0a-2003

(network interface failover-groups create)

**Re-Run Script and Error is Cleared**

FAILOVER GROUP PORT MTU MISMATCH:

FAILOVER\_GROUP NODE PORT MTU

PORTS THAT ARE PART OF MORE THAN ONE FAILOVER GROUP:

#### FAILOVER GROUPS MISSING MEMBERSHIP FROM ALL NODES

FAILOVER GROUPS MISSING MEMBERSHIP FROM ALL NODES:

FAILOVER\_GROUP MISSING\_NODE

delete-me eg-si-clsn-e01-l03

delete-me eg-si-clsn-e01-l04

**Check Failover Groups**

eg-si-clsn-e01::> failover-groups show -failover-group delete-me (network interface failover-groups show) Failover

Group Node Port

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

delete-me

eg-si-clsn-e01-h02

a0a-2003

eg-si-clsn-e01-h01

a0a-2003

2 entries were displayed.

**Create Failover Groups**

eg-si-clsn-e01::> failover-groups create -failover-group delete-me -node eg-si-clsn-e01-l03 -port a0a-2003

(network interface failover-groups create)

eg-si-clsn-e01::> failover-groups create -failover-group delete-me -node eg-si-clsn-e01-l04 -port a0a-2003

(network interface failover-groups create)

**Re-Run Script and Error is Cleared**

FAILOVER GROUPS MISSING MEMBERSHIP FROM ALL NODES:

FAILOVER\_GROUP MISSING\_NODE

FAILOVER GROUP PORT MTU MISMATCH:

#### PORTS THAT ARE PART OF MORE THAN ONE FAILOVER GROUP

PORTS THAT ARE PART OF MORE THAN ONE FAILOVER GROUP:

NODE PORT

eg-si-clsn-e01-l03 a0a-2003

eg-si-clsn-e01-h01 a0a-2003

eg-si-clsn-e01-l04 a0a-2003

eg-si-clsn-e01-h02 a0a-2003

**Find Failover Groups**

eg-si-clsn-e01::> failover-groups show -port a0a-2003

(network interface failover-groups show)

Failover

Group Node Port

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

data-2003

eg-si-clsn-e01-h02

a0a-2003

eg-si-clsn-e01-l04

a0a-2003

eg-si-clsn-e01-l03

a0a-2003

eg-si-clsn-e01-h01

a0a-2003

delete-me

eg-si-clsn-e01-h02

a0a-2003

eg-si-clsn-e01-l04

a0a-2003

eg-si-clsn-e01-l03

a0a-2003

eg-si-clsn-e01-h01

a0a-2003

8 entries were displayed.

**Check Failover Group Membership**

eg-si-clsn-e01::> net int show -failover-group delete-me

(network interface show)

There are no entries matching your query.

eg-si-clsn-e01::> net int show -failover-group data-2003

(network interface show)

Logical Status Network Current Current Is

Vserver Interface Admin/Oper Address/Mask Node Port Home

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

cisesx-e0001

cisesx\_e0001\_lif-01

up/up 10.220.181.80/25 eg-si-clsn-e01-h02

a0a-2003

true

eg-si-oracle-e01

eg-si-oracle-e01-lif-01

up/up 10.220.181.65/25 eg-si-clsn-e01-h01

a0a-2003

true

si-davng-e0001

si-davng-e0001-lif-01

up/up 10.220.181.68/25 eg-si-clsn-e01-l03

a0a-2003

true

si-esxmig-01

si-esxmig-01-lif01

up/up 10.220.181.64/25 eg-si-clsn-e01-h01

a0a-2003

Press <space> to page down, <return> for next line, or 'q' to quit...

If one failover group is not in use delete it

eg-si-clsn-e01::> failover-groups delete -failover-group delete-me -node eg-si-clsn-e01-h01 -port a0a-2003

(network interface failover-groups delete)

eg-si-clsn-e01::> failover-groups delete -failover-group delete-me -node eg-si-clsn-e01-h02 -port a0a-2003

(network interface failover-groups delete)

eg-si-clsn-e01::> failover-groups delete -failover-group delete-me -node eg-si-clsn-e01-l03 -port a0a-2003

(network interface failover-groups delete)

eg-si-clsn-e01::> failover-groups delete -failover-group delete-me -node eg-si-clsn-e01-l04 -port a0a-2003

(network interface failover-groups delete)

If both are in use assign all interfaces to the one failover group and then delete the other one.

Re-Run the Script and Errors are Cleared

PORTS THAT ARE PART OF MORE THAN ONE FAILOVER GROUP:

NODE PORT

LIFS MISSING FAILOVER GROUP ASSIGNMENT:

#### LIFS MISSING FAILOVER GROUP ASSIGNMENT

LIFS MISSING FAILOVER GROUP ASSIGNMENT:

VSERVER LIF

svm237csb svm237csb\_lif

orprod-iscsi-02 orprod-iscsi-02-mgmt-lif01

svm123def svm123def\_lif

svm789xyz svm789xyz\_lif

svm129cug svm129cug\_lif

svm317drc svm317drc\_lif

svm012abc svm012abc\_lif

test-ico-vfiler-cdot-001 test\_ico\_vfiler\_cdot\_001\_lif

svm070njz svm070njz\_lif

si-globalscape-test02 si-globalscape-test02-lif01

si-winautomation-test01 si-winautomation-test01-mgmt-lif01

ciststjms-e0001 ciststjms-e0001-mgmt-lif01

si-8040-test-01 si-8040-test-01-lif

svm237xyz svm237xyz\_lif

si-globalscape-test01 si-globalscape-test01-mgmt-lif01

svm594nxp svm594nxp\_lif

orprod-iscsi-04 orprod-iscsi-04-mgmt-lif01

siesx-e0001 siesx-e0001-lif01

svm338zvz svm338zvz\_lif

orprod-iscsi-03 orprod-iscsi-03-mgmt-lif01

svm598bdv svm598bdv\_lif

orprod-iscsi-01 orprod-iscsi-01-mgmt-lif01

**Check Failover Group Membership and Port**

eg-si-clsn-e01::> net int show -vserver svm237csb -lif svm237csb\_lif -fields failover-group,home-port

(network interface show)

vserver lif home-port failover-group

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

svm237csb svm237csb\_lif a0a-2003 system-defined

**Find Correct Failover Group**

eg-si-clsn-e01::> failover-groups show -port a0a-2003

(network interface failover-groups show)

Failover

Group Node Port

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

data-2003

eg-si-clsn-e01-h02

a0a-2003

eg-si-clsn-e01-l04

a0a-2003

eg-si-clsn-e01-l03

a0a-2003

eg-si-clsn-e01-h01

a0a-2003

4 entries were displayed.

**Set Correct Failover Group**

eg-si-clsn-e01::> net int modify -vserver svm237csb -lif svm237csb\_lif -failover-group data-2003

(network interface modify)

**Re-Run Script and SVM is No Longer Listed**

LIFS MISSING FAILOVER GROUP ASSIGNMENT:

VSERVER LIF

orprod-iscsi-02 orprod-iscsi-02-mgmt-lif01

svm123def svm123def\_lif

**Repeat These Steps For All SVMs Listed Then Re-Run Script**

The following configuration issues were identified:

===================================================

MISSING FAILOVER GROUPS:

Create failover group 'data-2001'.

MISSING FAILOVER GROUP PORT MEMBERS:

FAILOVER\_GROUP NODE PORT

FAILOVER GROUPS MISSING MEMBERSHIP FROM ALL NODES:

FAILOVER\_GROUP MISSING\_NODE

FAILOVER GROUP PORT MTU MISMATCH:

FAILOVER\_GROUP NODE PORT MTU

PORTS THAT ARE PART OF MORE THAN ONE FAILOVER GROUP:

NODE PORT

LIFS MISSING FAILOVER GROUP ASSIGNMENT:

VSERVER LIF

### ****Check For Hardware Issues****

Check for disk failures, shelf issues etc.

::\*> env sensors show

(system node environment sensors show)

Node Sensor State Value/Units Crit-Low Warn-Low Warn-Hi Crit-Hi

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

eg-si-clsn-e01-h01

Fan1 normal

GOOD

Fan2 normal

GOOD

Fan3 normal

GOOD

PSU1 normal

GOOD

PSU2 normal

GOOD

CPU0 Temp Margin normal

-63 C - - -5 0

In Flow Temp normal

28 C 0 10 50 56

Out Flow Temp normal

42 C 0 10 64 71

PCI Riser\_R Temp normal

31 C 0 10 49 57

Smart Bat Temp normal

36 C 0 10 58 65

CPU0 Error normal

NORMAL

CPU0 Therm Trip normal

NORMAL

CPU0 Hot normal

NORMAL

Memory0 Hot normal

NORMAL

PCH Hot normal

NORMAL

P5V STBY normal

5002 mV 4245 4343 5660 5807

P3.3V STBY normal

3312 mV 2960 3040 3568 3664

P1.8V STBY normal

1794 mV 1629 1658 1949 1969

P1.2V STBY normal

1193 mV 1086 1105 1299 1319

P0.9V STBY normal

882 mV 805 853 950 999

P5V normal

5026 mV 4245 4343 5660 5807

P3.3V normal

3280 mV 2960 3040 3568 3664

Press <space> to page down, <return> for next line, or 'q' to quit...

::\*> environment show

(system health controller environment show)

Node FRU Name State

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

eg-si-clsn-e01-h01 Fan1 GOOD

eg-si-clsn-e01-h01 Fan2 GOOD

eg-si-clsn-e01-h01 Fan3 GOOD

eg-si-clsn-e01-h01 PSU1 GOOD

eg-si-clsn-e01-h01 PSU2 GOOD

eg-si-clsn-e01-h02 Fan1 GOOD

eg-si-clsn-e01-h02 Fan3 GOOD

eg-si-clsn-e01-h02 Fan2 GOOD

eg-si-clsn-e01-h02 PSU1 GOOD

eg-si-clsn-e01-h02 PSU2 GOOD

eg-si-clsn-e01-l03 PSU1 GOOD

eg-si-clsn-e01-l03 PSU2 GOOD

eg-si-clsn-e01-l03 Fan1 GOOD

eg-si-clsn-e01-l03 Fan3 GOOD

eg-si-clsn-e01-l03 Fan2 GOOD

eg-si-clsn-e01-l04 PSU1 GOOD

eg-si-clsn-e01-l04 PSU2 GOOD

eg-si-clsn-e01-l04 Fan3 GOOD

eg-si-clsn-e01-l04 Fan2 GOOD

eg-si-clsn-e01-l04 Fan1 GOOD

20 entries were displayed.

::\*> disk show -broken

Original Owner: eg-si-clsn-e01-h02

Checksum Compatibility: block

Usable Physical

Disk Outage Reason HA Shelf Bay Chan Pool Type RPM Size Size

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

eg-si-clsn-e01-h02:0c.20.4

not responding

0c 20 4 B FAILED SAS 10000 546.9GB 558.9GB

### ****Check DNS Servers****

All vservers must have DNS configured and be able to contact those DNS servers prior to upgrade.

### ****Reboot Service Processors****

There is a bug that causes the SP to reboot the node if a certain number of days’ uptime is reached. Prior to upgrade reboot both SPs as a precautionary measure. **Once rebooted check both are accessible**.

::> system node service-processor reboot-sp -node \*

Note: If your console connection is through the SP, it will be disconnected.

Do you want to reboot the SP ? {y|n}: y

4 entries were acted on.

### ****Generate An Upgrade Advisor****

Upgrade advisors are based off ASUP data so once all issues are resolved with failover groups and interfaces please generate a new ASUP.

**Example**

::> autosupport invoke -node \* -type all -message "UA SnapShot"

After an hour connect to the NetApp Support website and create an upgrade advisor. Download the resulting documents and keep in a safe place.

### ****Check Upgrade Advisor****

Read through Upgrade Advisor and check/remediate any issues that are flagged.

# Upgrade Process

## ****Description****

The upgrade process is a rolling upgrade. As part of the process the network configuration is changed to support to IP Spaces and Broadcast domains. This is the reason for having to check and fix ALL network interface issues prior to upgrade.

## ****Tasks****

### Download Code Onto All Nodes

system node image get -node \* -package <http://storagecentral-amers.int.thomsonreuters.com/netapp/firmware/dot_cdot/832P7_q_image.tgz> -replace-package true -background true

system node image package show

### Check Interface Locations Prior To Upgrade

Check the configuration prior to upgrade and make a note of interface locations and failover-groups

::> net int show -role data|cluster\_mgmt -fields home-port,home-node,failover-group

### Move All Interfaces To The First Node That You Will Be Upgrading

This is required in order to ensure that all interfaces are correctly configured post upgrade.

::> net int modify -vserver \* -lif \* -home-node *FIRST\_NODE*

::> net int revert -vserver \* -lif \*

::> net int show -role data|cluster\_mgmt -fields home-port,home-node ,is-home

**Note:** Upgrades are performed during off-peak hours and so traffic on interfaces should be low. If in doubt check the load on the interfaces prior to upgrade and before migrating them.

### Check Auto Revert Settings

This command check the auto-revert setting and can be performed at any time. The setting is not altered if the lif is migrated. Make a note of the auto-revert settings prior to upgrade.

::> net int show -vserver \* -lif \* -fields auto-revert

### Enable Auto Revert

::> net int modify -vserver \* -lif \* -auto-revert true

### Check All Aggregates Are Online

The following shows how to check for aggregates that are not online. Any aggregates returned **MUST** be dealt with before an upgrade is attempted.

::\*> agg show -state !online

(aggr)

There are no entries matching your query.

### Check All Volumes Are Online

The following shows how to check for volumes that are not online. Any volumes returned will have a status of offline or restricted and must be dealt with before an upgrade is attempted.

::\*> vol show -state !online

(volume show)

Vserver Volume Aggregate State Type Size Available Used%

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

cisesx-e0001

volume\_post\_test1

aggr1\_data\_h02

offline RW 1GB - -

ciststjms-e0001

test01 aggr1\_data\_h01

offline RW 100GB - -

mtt\_test\_vserver

InfDev00113 aggr1\_data\_h01

offline RW 200.5GB - -

orprod-iscsi-01

cb0000\_wi\_15142\_07\_info\_snap\_old

aggr1\_data\_h01

offline RW 25GB - -

si-8040-test-01

Image1 aggr1\_data\_l03

offline RW 10GB - -

si-8040-test-01

si\_tst\_nfs01\_snap

aggr1\_data\_l04

offline RW 250GB - -

svm012abc cb0000\_dme\_msil\_rename

aggr1\_data\_h01

offline RW 1GB - -

svm012abc jon\_test\_renamesuccess

aggr1\_data\_h01

restricted RW 25GB - -

svm789xyz dme\_cDOT\_mig\_tstd2

aggr1\_data\_h02

restricted DP 1GB - -

svm789xyz dme\_mig\_cDOT\_dst

aggr1\_data\_h02

restricted DP 1GB - -

svm789xyz ico\_cdot\_allocation\_test\_vol001

aggr1\_data\_h02

offline RW 1GB - -

svm789xyz ico\_cdot\_allocation\_test\_vol501

aggr1\_data\_h02

offline RW 18.75GB - -

12 entries were displayed.

### Check All Volumes Have Enough Space

Any volumes using more than 95% space should be adjusted to be below that threshold prior to upgrade.

::\*> vol show -percent-used > 95

(volume show)

Vserver Volume Aggregate State Type Size Available Used%

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

orprod-iscsi-01

cb0000\_wi\_15142\_05\_usr\_snap

aggr1\_data\_h01

online RW 160GB 4.68GB 97%

orprod-iscsi-02

cb0000\_wi\_or\_tsys\_nosnap

aggr1\_data\_h01

online RW 68.26GB 1.99GB 97%

orprod-iscsi-02

cb0000\_wi\_or\_usr\_snap

aggr1\_data\_h01

online RW 634.5GB 993.2MB 99%

orprod-iscsi-03

cb0001\_wi\_winapp\_usr\_snap

aggr1\_data\_h01

online RW 152.6GB 1009MB 99%

orprod-iscsi-04

cb0000\_wi\_prj11504\_usr\_snap

aggr1\_data\_h02

online RW 152.6GB 1009MB 99%

si-8040-test-01

dng\_test2 aggr1\_data\_l03

online RW 1GB 760KB 99%

6 entries were displayed.

### Check For Running Jobs

Check for running volume, aggregate or snapshot jobs.

::\*> job show -state running\|queued -name !efficiency-DeDupe

Delete any jobs

::\*> job delete -id *JOB\_ID*

### Check All Volumes are 64Bit

::\*> set advanced

::\*> storage aggregate 64bit-upgrade status -include-all-volumes -aggregate a\*

**Note:** Do NOT use just a \* for aggregate name this does not work. Use either aggregate names or at least one character and a \* as above.

### Check for 32Bit SnapShots (Delete any found)

::\*> volume snapshot show -fs-block-format !64-bit -fields fs-block-format

There are no entries matching your query.

### Turn OFF 32bit capability

storage aggregate 64bit-upgrade 32bit-disable -check

storage aggregate 64bit-upgrade 32bit-disable

### Quiesce SnapMirrors

::\*> snapmirror quiesce -destination-path \*

Operation succeeded: snapmirror quiesce for destination "sicifs-e0001:test\_bip".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:c\_mode\_dest".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:test\_bip".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_07\_cb0000\_infra\_virtual\_saesxi\_snap07".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_14\_cb0000\_infra\_virtual\_saesxi\_snap14".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_si\_wi\_fas2552\_c\_info\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_si\_wi\_fas2552\_c\_usr\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_wi\_si\_fas2552\_a\_info\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_wi\_si\_fas2552\_a\_usr\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_si\_wi\_fas2552\_d\_info\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_si\_wi\_fas2552\_d\_usr\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_wi\_si\_fas2552\_b\_info\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_wi\_si\_fas2552\_b\_usr\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-mysql-01:sv\_14\_cb0000\_si\_mysqllab12d\_s01mysql1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-mysql-01:sv\_14\_cb0000\_si\_mysqllab13d\_s01mysql1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-mysql-01:sv\_7\_cb0000\_si\_mysqllab1d\_s01mysql1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-mysql-01:sv\_7\_cb0000\_si\_mysqllab2d\_s01mysql1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_14\_cb0000\_si\_oralab14d\_s01ora1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_14\_cb0000\_si\_oralab14d\_s01oraadm1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_14\_cb0000\_si\_oralab15d\_s01ora1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_14\_cb0000\_si\_oralab15d\_s01oraadm1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_14\_cb0000\_orf\_2552\_test\_s01ora1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_14\_cb0000\_orf\_2552\_test\_s01oraadm1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_14\_cb0000\_orf\_2552\_test2\_s01ora1\_snap".

Operation succeeded: snapmirror quiesce for destination "silab-clbk-e01:sv\_14\_cb0000\_orf\_2552\_test2\_s01oraadm1\_snap".

25 entries were acted on.

::\*> snapmirror show -status !Quiesced

There are no entries matching your query.

### Send ASUPs Prior To Upgrade

::> autosupport invoke -node \* -type all -message "pre-upgrade to 8.3.2P7"

### Check auto-giveback is disabled

::\*> storage failover show -node \* -fields auto-giveback

node auto-giveback

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node-01 false

node-02 false

2 entries were displayed.

### Upgrade

system node image update -node node-01 -package 832P7\_q\_image.tgz -setdefault true

system node image update -node node-02 -package 832P7\_q\_image.tgz -setdefault true

### Make Sure All LIFs are on First Node

This **MUST** be done prior to any TO/GB steps. That way we ensure all interfaces are correctly assigned to broadcast domains.

network interface migrate-all -node *FIRST\_NODE*

### TAKEOVER FIRST Node (Use an SP Console)

storage failover takeover -ofnode node-01

storage failover show

### GIVEBACK FIRST Node (Use an SP Console)

storage failover giveback -ofnode node-01

### Check Status (once Giveback completed)

The following command will show you the status of the upgrade process.

::\*> system node upgrade-revert show -node node-01

Node: node-01 Status: complete

Status Message: The upgrade is complete.

Vers Phase Status Upgrade Phase Status Message

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330 pre-root applied No upgrade is required for this phase.

330 pre-apps applied No upgrade is required for this phase.

330 post-apps applied Upgrade successful.

420 pre-root applied No upgrade is required for this phase.

420 pre-apps applied Upgrade successful.

420 post-apps applied Upgrade successful.

6 entries were displayed.

### TAKEOVER NEXT Node (Use an SP Console)

::\*> set advanced

::\*> network interface migrate-all -node orf-lab2554-02 -option allow-version-mismatch

::\*> storage failover show

### GIVEBACK of NEXT Node (Use an SP Console)

::\*> storage failover giveback -ofnode orf-lab2554-02

::\*> storage failover show

### Check Status (once Giveback completed)

::\*> system node upgrade-revert show -node orf-lab2554-02

# Post-Upgrade Process

## Description

After the upgrades are completed and all nodes are on OCUM 8.3.2P7 we need to modify some of the configuration created by the upgrade process.

### Resume SnapMirror

::> snapmirror resume -destination-path \*

Operation succeeded: snapmirror resume for destination "sicifs-e0001:test\_bip".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:c\_mode\_dest".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:test\_bip".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_07\_cb0000\_infra\_virtual\_saesxi\_snap07".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_14\_cb0000\_infra\_virtual\_saesxi\_snap14".

Operation succeeded: snapmirror resume for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_si\_wi\_fas2552\_c\_info\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_si\_wi\_fas2552\_c\_usr\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_wi\_si\_fas2552\_a\_info\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_wi\_si\_fas2552\_a\_usr\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_si\_wi\_fas2552\_d\_info\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_si\_wi\_fas2552\_d\_usr\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_wi\_si\_fas2552\_b\_info\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-iscsi-01:sv\_14\_cb0000\_wi\_si\_fas2552\_b\_usr\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-mysql-01:sv\_14\_cb0000\_si\_mysqllab12d\_s01mysql1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-mysql-01:sv\_14\_cb0000\_si\_mysqllab13d\_s01mysql1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-mysql-01:sv\_7\_cb0000\_si\_mysqllab1d\_s01mysql1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-mysql-01:sv\_7\_cb0000\_si\_mysqllab2d\_s01mysql1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_14\_cb0000\_si\_oralab14d\_s01ora1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_14\_cb0000\_si\_oralab14d\_s01oraadm1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_14\_cb0000\_si\_oralab15d\_s01ora1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_14\_cb0000\_si\_oralab15d\_s01oraadm1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_14\_cb0000\_orf\_2552\_test\_s01ora1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_14\_cb0000\_orf\_2552\_test\_s01oraadm1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_14\_cb0000\_orf\_2552\_test2\_s01ora1\_snap".

Operation succeeded: snapmirror resume for destination "silab-clbk-e01:sv\_14\_cb0000\_orf\_2552\_test2\_s01oraadm1\_snap".

25 entries were acted on.

### Split the Default Broadcast Domain To Provide Separate MGMT BD

If required, split the Default broadcast domain to isolate the mgmt. ports so they can have 1500MTU and data ports in the default BD can have 9000MTU

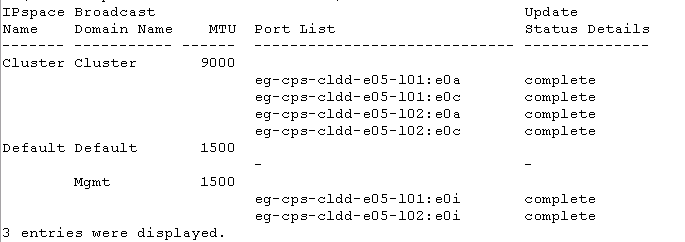
broadcast-domain split -broadcast-domain Default -new-broadcast-domain Mgmt -ports <NODE>:<PORT>,<NODE>:<PORT> -ipspace Default

### Remove Unwanted Ports From Default Broadcast Domain

If required remove any unwanted ports from the BD.

broadcast-domain remove-ports -broadcast-domain Default -ports eg-cps-cldd-e05-l01:e0b,eg-cps-cldd-e05-l02:e0b,eg-cps-cldd-e05-l01:e0d,eg-cps-cldd-e05-l02:e0d,eg-cps-cldd-e05-l01:e0e,eg-cps-cldd-e05-l02:e0e,eg-cps-cldd-e05-l01:e0f,eg-cps-cldd-e05-l02:e0f, eg-cps-cldd-e05-l01:e0g,eg-cps-cldd-e05-l02:e0g, eg-cps-cldd-e05-l01:e0h,eg-cps-cldd-e05-l02:e0h, eg-cps-cldd-e05-l01:e0j,eg-cps-cldd-e05-l02:e0j, eg-cps-cldd-e05-l01:e0k,eg-cps-cldd-e05-l02:e0k, eg-cps-cldd-e05-l01:e0l,eg-cps-cldd-e05-l02:e0l, eg-cps-cldd-e05-l01:e0M,eg-cps-cldd-e05-l02:e0M

**Example:**



### Rename Broadcast Domains

After upgrading you will see broadcast domains named like the following example.

::> broad show

(network port broadcast-domain show)

IPspace Broadcast Update

Name Domain Name MTU Port List Status Details

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Cluster Cluster 9000

node-01:e0c complete

node-01:e0e complete

node-02:e0c complete

node-02:e0e complete

Default 10.220.171.64/27\_10.220.181.0/25

9000

node-01:a0a-2003 complete

node-02:a0a-2003 complete

10.220.180.64/26

1500

node-01:a0b-2001 complete

node-02:a0b-2001 complete

10.220.192.0/23

1500

node-01:e0M complete

node-02:e0M complete

4 entries were displayed.

This is non-disruptive, you will see the original failover groups are still present and the interfaces belong to those failover groups. The following command will show you failover groups for a data or mgmt interface:

net int show -role cluster\_mgmt|data -fields failover-group,home-port

We need to modify the interfaces to use the broadcast domain which has a corresponding failover group and then delete the OLD failover group.

For broadcast domain renaming you will need to do the following:

Rename the BD to a temp name

This makes it easier than using 10.220.180.64/26 in commands

broadcast-domain rename -broadcast-domain *CURRENT\_NAME* -new-name *TEMP\_NAME* -ipspace Default

#### List Interfaces Using the old failover group

net int show -failover-group *OLD\_GROUP*

#### Modify interfaces to use TEMP\_NAME of the BD as their failover group

net int modify -vserver *VSERVER* -lif *LIF* -failover-group *TEMP\_NAME*

#### Remove the old failover-group

failover-groups delete -vserver \* -failover-group mgmt

#### Rename the BD to a suitable name i.e. colo-2003

broadcast-domain rename -broadcast-domain *TEMP\_NAME* -new-name *FINAL\_NAME* -ipspace Default

**Note:** Broadcast domains need to be named following the network they are on i.e. If they are in a Corp IP Space the broadcast domains start with corp. If the default IP Space is in ECOM then any broadcast domain in the Default IP Space is named starting with ecom.

### Rehome Interfaces

The interfaces at this point are all still set with their home port on the first node that was upgraded. We need to re-assign the port and migrate the interfaces back to their original node.

**Determine Home Node**

The easiest way to do this is using the aggregate the vserver data volumes are on. We use direct networking so the port will be on the node hosting that aggregate. We do this as follows.

#### Check Aggregate for Home Node

::> vserver show -fields aggregate

vserver aggregate

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

SVM1Test -

av-sisn01-lab01

aggr1\_LowTier\_orf\_lab2554\_02

ocum-opm-test

aggr1\_BKP\_orf\_lab2554\_01

orf-lab2554

-

orf-lab2554-01

-

orf-lab2554-02

-

orf-tsm aggr1\_LowTier\_orf\_lab2554\_02

orf-tsm01

aggr1\_LowTier\_orf\_lab2554\_01

orftsm-lab.int.thomsonreuters.com

aggr1\_BKP\_orf\_lab2554\_01

si-2554-cifs-01

aggr1\_LowTier\_orf\_lab2554\_01

sicifs-e0001

aggr1\_LowTier\_orf\_lab2554\_01

silab-clbk-e01

aggr1\_BKP\_orf\_lab2554\_01

silab-clbk-iscsi-01

aggr1\_BKP\_orf\_lab2554\_01

silab-clbk-mysql-01

aggr1\_BKP\_orf\_lab2554\_01

test\_SVM\_1G

aggr1\_BKP\_orf\_lab2554\_01

15 entries were displayed.

From the above we can see that there are 2 vservers that need their home node set to node-02 which is done using the following commands.

#### Modify Interface Home Node Where Needed

net int modify -vserver av-sisn01-lab01 -home-node orf-lab2554-02 -lif av-cissn01-lab01-lif-01

net int modify -vserver orf-tsm -lif ocum\_opm-test1\_nfs\_lif1 -home-node orf-lab2554-02

net int show

net int revert \*

At this point the interfaces should show as home on the correct node which can be checked as follows.

orf-lab2554::> net int show -role data -fields is-home,vserver,home-port

(network interface show)

vserver lif home-port is-home

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

av-sisn01-lab01 av-cissn01-lab01-lif-01 a0a-2003 true

labsvm-e0001 labsvm-e0001-lif01 a0a-2003 true

ocum-opm-test ocum-opm-test\_nfs\_lif1 a0a-2003 true

orf-tsm ocum\_opm-test1\_nfs\_lif1 a0a-2003 true

orf-tsm01 orf-tsm01-lif01 a0a-2003 true

orftsm-lab.int.thomsonreuters.com

orf-lab2554-01:a0a-2003 a0a-2003 true

si-2554-cifs-01 si-2554-cifs-01-lif-01 a0a-2003 true

sicifs-e0001 sicifs-e0001-lif-01 a0a-2003 true

silab-clbk-e01 silab-clbk-e01-lif-01 a0a-2003 true

silab-clbk-iscsi-01

silab-clbk-iscsi-01-lif-01

a0a-2003 true

silab-clbk-iscsi-01

silab-clbk-iscsi-01-lif-02

a0a-2003 true

silab-clbk-iscsi-01

silab-clbk-iscsi-01-mgmt-lif-01

a0a-2003 true

silab-clbk-mysql-01

silab-clbk-mysql-01-lif-01

a0a-2003 true

13 entries were displayed.

#### Re-Instate auto-revert settings

We need to now put the auto-revert settings back to how they were pre-upgrade (this is why you made a note of them). The command to do this is:

net int modify -vserver *VSERVER* -lif *LIF\_NAME* -auto-revert *true/false*

net int show -fields auto-revert