ORACLE EXADATA DATABASE MACHINE

INSTALLATION SUMMARY

Prepared for Customer
--
AOK Nordost
Exadata X10M
2 database servers, 4 storage servers (HC 22TB)
exa4
2445XV8080
CSI# 93482496

Deployed By: Peter Asboeck
2025-04-22

Table of Contents

Oracle Exadata Database Machine Installation Detail

Contact Information

Customer Contacts		
Name	Horst Pfitzner	
Role	Business Intelligence	
Phone	0800 2 65080-22022	
Email Address	Horst.Pfitzner@NORDOST.AOK.DE	
Physical Address	AOK Nordost - Die Gesundheitskasse	

NTP Servers

NTP Server address	10.2.128.20
NTP Server address	10.2.128.21
NTP Server address	10.25.99.79
NTP Server address	10.25.99.80

Name Servers

NameServer address	10.25.64.48
NameServer address	10.5.5.5
NameServer address	10.5.15.5

Domain and Default Gateway

Domain Name	prod.d002.loc
Default Gateway	10.2.160.1
Management Gateway	10.25.96.1
Backup Gateway	10.21.96.1

SUN QDR Infiniband Switches

Leaf Switch address (U22)	10.25.99.75
Leaf Switch address (U20)	10.25.99.74

Ethernet Switch & KVM

Ethernet switch address (U21)	10.25.99.78

Database Server Information

X10M-2 Elastic Rack HC 22TB (2445XV8080)

Server Rack position	Mgt Name IP Netmask Bonded	Public Hostname IP Netmask Bonded	Private Name IP Netmask Bonded
exa4dbadm01 14	exa4dbadm01 10.25.99.79 255.255.248.0 No	exa4db01 10.2.163.176 255.255.248.0 Yes	exa4db01-priv1 192.168.10.1 exa4db01-priv2 192.168.10.2 255.255.252.0 Active-Active
exa4dbadm02 16	exa4dbadm02 10.25.99.80 255.255.248.0 No	exa4db02 10.2.163.177 255.255.248.0 Yes	exa4db02-priv1 192.168.10.3 exa4db02-priv2 192.168.10.4 255.255.252.0 Active-Active

Server	Virtual Name IP Netmask	ILOM Hostname IP Netmask
exa4dbadm01	exa4db01-vip 10.2.163.178 255.255.248.0	exa4dbadm01-ilom 10.25.99.69 255.255.248.0
exa4dbadm02	exa4db02-vip 10.2.163.179 255.255.248.0	exa4dbadm02-ilom 10.25.99.68 255.255.248.0

Default Passwords (Please change them as soon as possible)
Note: The last step of OneCommand is to secure the machine, if this step is completed, it will force the change of passwords from the defaults noted below.

Upon installation completion the root password for all database servers is welcome1
The oracle/grid password has been set to We1come$
All oracle database passwords are We1come$
The ASMSNMP password is We1come$
The PDUs username/password of admin/admin
Upon installation completion the root password for all storage servers is welcome1
The celladmin password for all storage servers is welcome(apply to Exadata imaging version 19.3.2 and older, check Doc 2663439.1)
The cellmonitor password for all storage servers is welcome(apply to Exadata imaging version 19.3.2 and older, check Doc 2663439.1)
The ILOM username and password is root/welcome1
For the CISCO switch, the password is welcome1 for the account admin

For the CISCO RoCE switches, the password is welcome1 for the account admin

CELLDIAG user has been created on cell servers. Please ask your ACS representative/Cloud provisionier for the password. Please login to each of the cells as "celladmin" and change the password using the following command:
cellcli -e ALTER USER CELLDIAG password="<newPassword>"
Please note that CELLDIAG user's password would be reset to a random password during "Resecure Machine" step.

Database Server Chassis Serial Numbers

Database Server Hostname	Serial Number
X10M-2 Elastic Rack HC 22TB:	2445XV8080
exa4dbadm01 (U14)	2445XVJ07G
exa4dbadm02 (U16)	2445XVJ5VN

Storage Server Information

X10M-2 Elastic Rack HC 22TB (2445XV8080)

Server Rack position	Mgt Name IP Netmask Bonded	Private Name IP Netmask Bonded	ILOM Hostname IP Netmask
exa4celadm01 2	exa4celadm01 10.25.99.81 255.255.248.0 No	exa4cel01-priv1 192.168.10.5 exa4cel01-priv2 192.168.10.6 255.255.252.0 Active-Active	exa4celadm01-ilom 10.25.99.70 255.255.248.0
exa4celadm02 4	exa4celadm02 10.25.99.82 255.255.248.0 No	exa4cel02-priv1 192.168.10.7 exa4cel02-priv2 192.168.10.8 255.255.252.0 Active-Active	exa4celadm02-ilom 10.25.99.71 255.255.248.0
exa4celadm03 6	exa4celadm03 10.25.99.83 255.255.248.0 No	exa4cel03-priv1 192.168.10.9 exa4cel03-priv2 192.168.10.10 255.255.252.0 Active-Active	exa4celadm03-ilom 10.25.99.72 255.255.248.0
exa4celadm04 8	exa4celadm04 10.25.99.84 255.255.248.0 No	exa4cel04-priv1 192.168.10.11 exa4cel04-priv2 192.168.10.12 255.255.252.0 Active-Active	exa4celadm04-ilom 10.25.99.73 255.255.248.0

Storage Server Chassis Serial Numbers

Storage Server Hostname	Serial Number
exa4celadm01 (U2)	2445XVJ0L3
exa4celadm02 (U4)	2445XVJ0DW
exa4celadm03 (U6)	2445XVJ0L6
exa4celadm04 (U8)	2445XVJ0LC

Database Installation Summary

Database Name	cdb1 (23ai) cdb2 (19c)
PDB Name	pdb1 @ cdb1 pdb1 @ cdb2
Database SID	cdb11@exa4dbadm01 cdb12@exa4dbadm02 cdb21@exa4dbadm01 cdb22@exa4dbadm02
Disk Groups	DATAC1,RECOC1
Tablespace Names	SYSTEM, SYSAUX, TEMP, UNDOTBS1, UNDOTBS2,UNDOTBS3, UNDOTBS4, USERS
Database Options Installed	Enterprise Edition
Oracle Infrastructure Home Location	/u01/app/23.0.0.0/grid
Oracle RDBMS Home Location	/u01/app/oracle/product/23.0.0.0/dbhome_1, /u01/app/oracle/product/19.0.0.0/dbhome_1
Location for diag	/u01/app/oracle/diag
Listener Name and Port	LISTENER,1521
SCAN Name and IPs	exa4-scan1 10.2.163.180 10.2.163.181 10.2.163.182
Database Machines	exa4dbadm01 exa4dbadm02
Storage Machines	exa4celadm01 (264000G) exa4celadm02 (264000G) exa4celadm03 (264000G) exa4celadm04 (264000G)

Software Installation Summary for cluster: Cluster-exa4

Database Servers: Grid Infrastructure Version & Patches	Oracle Grid Infrastructure 23.7.0.25.01 Bundle Patch 01
Database Servers: Oracle RDBMS Version & Patches	Oracle Database - Enterprise Server Edition 23.7.0.25.01,19.26.0.0.250121 Bundle Patch 01,250121
Storage Servers Exadata Software & Patches	Active Image Version 25.1.3.0.0.250313
Operating System Deployed	Linux 5.15.0-300.163.18.7.el8uek.x86_64
OVM Deployment	N/A

Note: The Linux operating system has been configured with Hugepages. If you modify the size of SGA used by the database (sum of all SGAs if multiple databases), please check your huge pages configuration. See MOS Note 361323.1 and MOS Note 401749.1 for more information on huge pages.

Monitoring Installation Summary

Automatic Service Request	ASR Manager Server: anopfli27044523.prod.d002.loc Technical Contact User: Horst Pfitzner MOS Contact Email: horst.pfitzner@NORDOST.AOK.DE MOS Account: horst.pfitzner@NORDOST.AOK.DE
Oracle Configuration Management	N/A
Oracle Enterprise Management Grid Control Agents	SMTP Server: smtplb.prod.d002.loc SMTP Port: 25 Send Email to: fp_bi-betrieb@nordost.aok.de#horst.pfitzner@nordost.aok.de Email From: fp_bi-betrieb@nordost.aok.de Email From who: Exadata EXA4
Oracle Enterprise Manager Grid Control Management Server	N/A

Customer Exadata CSI

Your CSI number is 93482496

Use this CSI number whenever you log new Service Requests for the Database Machine with Oracle Support. This CSI will identify the issue as involving a Database Machine and will help route it to the proper analysts in Oracle Support. Support will involve the appropriate subject matter experts (both Hardware and Software) when needed.

Service Requests opened during the deployment

SR#	Data Opened	Description	Status
None			

Final Comments

Getting Started

The Oracle Exadata Storage Server and Oracle Exadata Database Machine **Documentation** can be found on the Exadata Storage cell in **/opt/oracle/cell/doc** This will be updated with the latest version with each Oracle Exadata Storage Server version. It is also available at http://docs.oracle.com/cd/E50790_01/welcome.html

Here are some commands to help you get started with the environment.
(all can be run as the oracle user on the first DB node):

```
/u01/app/<version>/grid/bin/crsctl stat res –t
/u01/app/<version>/grid/bin/srvctl status database –d dbm

For dcli commands below, cd to
/opt/oracle.SupportTools/onecommand which contains the
cell_group file

dcli -g cell_group cellcli -e list cell
dcli -g cell_group cellcli -e list griddisk \
  attributes name,size,offset,status
dcli -g cell_group cellcli -e list flashcache detail
```

For details on how to use dcli see Chapter 9 of the Oracle Exadata Storage Server Users Guide

To Obtain hardware information
The *dmidecode* command, available from the linux prompt, provides useful hardware information such as the manufacturer, serial number, bios versions, etc.
Check the System Event Log for problems
Oracle Sun ILOM can manage an Exadata cell remotely through an IE browser. Common functions include remotely rebooting the cell or checking the system console for messages. It is important to also check the System Event Log for any hardware issues such as power supply failures or memory (ECC) errors. Issues such as these should be investigated and corrected.
Integrated Lights Out Manager (ILOM) CLI Quick Reference (Doc ID 1009715.1)
Note: ipmitool can also be used on the cells to investigate the system event log.

Useful My Oracle Support Notes

Note Number	Title
888828.1	Database Machine and Exadata Storage Server Supported Versions
1270094.1	Exadata Critical Issues **** Read this regularly!
1353073.1	Exadata Diagnostics Collection Guide
1187674.1	Master Note for Oracle Exadata Database Machine and Oracle Exadata Storage Server
1483344.1	Exadata Platinum Customer Outage Classifications and Restoration Action Plans
757552.1	Oracle Exadata Best Practices
1274318.1	Oracle Sun Database Machine Setup/Configuration Best Practices
1571965.1l	Maximizing Availability with Engineered Systems - Exadata
1262380.1	Exadata Testing Practices and Patching Explained
1306814.1	Oracle Software Patching with OPLAN
1110675.1	Oracle Exadata Database Machine Monitoring
1070954.1	Database Machine Healthcheck (Exachk) *** Run this regularly
1071221.1	Oracle Sun Database Machine Backup and Recovery Best Practices
1054431.1	Configuring DBFS on Oracle Exadata Database Machine
1084360.1	Bare Metal Restore Procedure for Compute Nodes on an Exadata Environment (Linux)
1339769.1	Master Note for Oracle Database Resource Manager
960510.1	Data Guard Transport Considerations on Oracle Database Machine

For more information on Oracle Exadata Maximum Availability Architecture Best Practices, see the recorded webcasts on the website
http://www.oracle.com/technetwork/database/exadata/index.html

Click on Oracle Exadata Database Machine Best Practice Series.

Oracle Exadata Database Machine White Papers

Paper Name	URL to Paper
Oracle Exadata Technical Overview: Oracle Exadata (PDF)	http://www.oracle.com/technetwork/server-storage/engineered-systems/exadata/exadata-storage-technical-overview-128045.pdf
Oracle Exadata and OVM - Best Practice Overview	http://www.oracle.com/technetwork/database/availability/exadata-ovm-2795225.pdf
Oracle Exadata Database Machine Technical Whitepaper (PDF)	http://www.oracle.com/technetwork/database/exadata/exadata-dbmachine-x4-twp-2076451.pdf
Exadata Hybrid Columnar Compression Technical White Paper (PDF)	http://www.oracle.com/technetwork/database/exadata/ehcc-twp-131254.pdf
Exadata Smart Flash Cache and the Oracle Exadata Database Machine Technical White Paper (PDF)	http://www.oracle.com/technetwork/database/exadata/exadata-smart-flash-cache-366203.pdf
MAA Best Practices for Oracle Exadata Database Machine	http://www.oracle.com/technetwork/database/features/availability/exadata-maa-131903.pdf
Backup and Recovery Performance and Best Practices for Oracle Exadata Database Machine (PDF)	http://www.oracle.com/technetwork/database/features/availability/maa-tech-wp-sundbm-backup-11202-183503.pdf
Backup and Recovery Performance and Best Practices using Sun ZFS Storage Appliance with Oracle Exadata Database Machine	http://www.oracle.com/technetwork/database/features/availability/maa-wp-dbm-zfs-backup-1593252.pdf
Oracle Exadata Database Machine Backup and Recovery Sizing: Tape Backups (PDF)	http://www.oracle.com/technetwork/database/exadata/maa-exadata-backup-methodology-495297.pdf
Oracle Data Guard: Disaster Recovery Best Practices for Oracle Exadata Database Machine	http://www.oracle.com/technetwork/database/features/availability/maa-wp-dr-dbm-130065.pdf
Oracle Exadata Database Machine - Extreme Performance for the Data Warehouse (PDF)	http://www.oracle.com/technetwork/database/exadata/wp-db-machine-1-134479.pdf
Best Practices for Consolidation on Oracle Exadata Database Machine	http://www.oracle.com/technetwork/database/features/availability/exadata-consolidation-522500.pdf
MAA Best Practices for Database Consolidation and Oracle Multitenant with Oracle	http://www.oracle.com/technetwork/database/availability/maa-consolidation-2186395.pdf

12c	
Migrating to Oracle Exadata Storage Server Paper (PDF)	http://www.oracle.com/technetwork/database/features/availability/xmigration-11-133466.pdf
Oracle Solaris on Oracle Exadata Database Machine	http://www.oracle.com/technetwork/server-storage/solaris11/documentation/exadatawp-394593.pdf

Appendix A

Storage Summary
Please also read MOS Note 1551288.1 Understanding ASM Capacity and Reserving Free Space in Exadata.

The Golden Rule for adding disks in a disk group are:
1. All grid disks must be the same type of disk (all HP or all HC) (Note they can be different sized disks IE for HP we have 600G/1.2T, for HC we have 2T,3T,4T)
2. All grid disks must be the same size and offset
3. An Exadata Storage Server must have the same number of active disks (IE you cannot put the cells from a 1/8th rack in the same diskgroup as ¼ rack (or ½, or full).

The usable storage for Exadata is calculated after factoring in ASM redundancy and after reserving some free space to tolerate disk failures. For ASM normal redundancy, we reserve 1 disk worth of free space for a Half and Quarter Rack and 2 disks worth of space for a Full Rack to automatically re-mirror the data after a disk failure. For ASM high redundancy, we don't reserve any free space as even in the event of a disk failure, we still have 2 copies of the data on other disks.

A few points to note:
1) The raw disk size is quoted using decimal math i.e 1TB = 1000 x 1000 x 1000 x 1000 bytes. This is the convention used by the disk drive vendors. However the usable storage and all the database views use binary math to calculate space. I.E. 1TB = 1024 x 1024 x 1024 x 1024 bytes. In effect, a 600GB disk is really 559GB when using binary math and a similarly a 3TB disk is really 2.73TB when using binary math. E.G. a Quarter Rack with High Performance disks has 36 x 558GB = 19.65TB. Factoring in ASM normal redundancy (data mirrored twice) and leaving 1 disk worth of free space gives you ~9.5TB of usable storage

2) When you look at ASM's Useable_file_MB metric, it calculates the amount of space available differently as this metric assumes that you will leave enough free space to re-mirror data when an entire Exadata storage server fails (I.E. 12 disks are unavailable). This amount of free space is not required in practice as a storage server can be bought online a lot quicker than the time it takes to re-mirror the data, during which window the system is still vulnerable to a failure in the another cell . If you want to protect against such a failure, it is recommended that you use high redundancy in which case, there is no need to reserve free space as you will have at least 2 copies of the data in event of a failure. "Usable_file_MB" is the amount of free space that you can allocate without running out of space for rebalance after an entire failure group is lost. When this is negative it means that dropping your largest failure group will result in running out of space, and rebalance will not be able to restore redundancy.
NOTE: For customers installing Oracle Database 12c, the REQUIRED_MIRROR_FREE_MB is reported as the size of the largest disk in the disk group.

3) The usable storage is the space available for the DBFS, DATA, and RECO disk groups and is not necessarily a reflection of how much user data can be stored in the database. The actual amount of user data that can stored in a rack will vary based on whether compression is used, the amount of indexes created, the size of temp and undo tablespaces, the amount of space reserved for archive logs, the space reserved for on-disk backups, etc. Typical deployments divide up the usable space by dedicating a fixed portion to the DBFS disk group while dividing the remaining space between the DATA and RECO disk groups in a 60/40 (backups internal to the database machine) or 80/20 ratio (backups external to the database machine).

Appendix B

Cores Enabled Result and Total Physical Memory for Database Nodes

```
From node: exa4dbadm01.prod.d002.loc
Command: /usr/sbin/dbmcli -e list dbserver attributes
name,corecount,cpuCount,makeModel,kernelVersion,releaseVersion detail
        name:                   exa4dbadm01
        coreCount:              192/192
        cpuCount:               384/384
        makeModel:              Oracle Corporation ORACLE SERVER E5-2L
        kernelVersion:          5.15.0-300.163.18.7.el8uek.x86_64
        releaseVersion:         25.1.3.0.0.250313
Total Physical Memory: 2270GB
*****************************************
From node: exa4dbadm02.prod.d002.loc
Command: /usr/sbin/dbmcli -e list dbserver attributes
name,corecount,cpuCount,makeModel,kernelVersion,releaseVersion detail
        name:                   exa4dbadm02
        coreCount:              192/192
        cpuCount:               384/384
        makeModel:              Oracle Corporation ORACLE SERVER E5-2L
        kernelVersion:          5.15.0-300.163.18.7.el8uek.x86_64
        releaseVersion:         25.1.3.0.0.250313
Total Physical Memory: 2270GB
*****************************************
```

Calibrate Results

```
****************exa4celadm01*****************
Command: cellcli -e calibrate force
Calibration will take a few minutes...
Aggregate random read throughput across all hard disk LUNs: 2591 MBPS
Aggregate random read throughput across all flash disk LUNs: 45800 MBPS
Aggregate random read IOs per second (IOPS) across all hard disk LUNs: 5283
Calibrating hard disks (read only) ...
LUN 0_0  on drive [0:0                ] random read throughput: 226.00 MBPS, and 427
IOPS
LUN 0_1  on drive [0:1                ] random read throughput: 227.00 MBPS, and 439
IOPS
LUN 0_10 on drive [0:10               ] random read throughput: 234.00 MBPS, and 424
IOPS
LUN 0_11 on drive [0:11               ] random read throughput: 231.00 MBPS, and 432
IOPS
LUN 0_2  on drive [0:2                ] random read throughput: 226.00 MBPS, and 426
IOPS
LUN 0_3  on drive [0:3                ] random read throughput: 226.00 MBPS, and 420
IOPS
LUN 0_4  on drive [0:4                ] random read throughput: 223.00 MBPS, and 433
IOPS
LUN 0_5  on drive [0:5                ] random read throughput: 231.00 MBPS, and 427
IOPS
LUN 0_6  on drive [0:6                ] random read throughput: 227.00 MBPS, and 433
IOPS
LUN 0_7  on drive [0:7                ] random read throughput: 230.00 MBPS, and 429
IOPS
LUN 0_8  on drive [0:8                ] random read throughput: 228.00 MBPS, and 423
IOPS
LUN 0_9  on drive [0:9                ] random read throughput: 225.00 MBPS, and 427
IOPS
Calibrating flash disks (read only, note that writes will be significantly slower) ...
```

```
LUN 1_0  on drive [FLASH_1_2,FLASH_1_1] random read throughput: 13,955.00 MBPS, and
362396 IOPS
LUN 3_0  on drive [FLASH_3_2,FLASH_3_1] random read throughput: 13,960.00 MBPS, and
355540 IOPS
LUN 6_0  on drive [FLASH_6_2,FLASH_6_1] random read throughput: 13,957.00 MBPS, and
362476 IOPS
LUN 8_0  on drive [FLASH_8_2,FLASH_8_1] random read throughput: 13,959.00 MBPS, and
367137 IOPS
CALIBRATE results are within an acceptable range.
Calibration has finished.
******************************************

***************exa4celadm02*****************
Command: cellcli -e calibrate force
Calibration will take a few minutes...
Aggregate random read throughput across all hard disk LUNs: 2402 MBPS
Aggregate random read throughput across all flash disk LUNs: 45897 MBPS
Aggregate random read IOs per second (IOPS) across all hard disk LUNs: 5284
Calibrating hard disks (read only) ...
LUN 0_0  on drive [0:0                ] random read throughput: 227.00 MBPS, and 436
IOPS
LUN 0_1  on drive [0:1                ] random read throughput: 227.00 MBPS, and 427
IOPS
LUN 0_10 on drive [0:10               ] random read throughput: 229.00 MBPS, and 435
IOPS
LUN 0_11 on drive [0:11               ] random read throughput: 227.00 MBPS, and 429
IOPS
LUN 0_2  on drive [0:2                ] random read throughput: 230.00 MBPS, and 436
IOPS
LUN 0_3  on drive [0:3                ] random read throughput: 228.00 MBPS, and 436
IOPS
LUN 0_4  on drive [0:4                ] random read throughput: 226.00 MBPS, and 433
IOPS
LUN 0_5  on drive [0:5                ] random read throughput: 224.00 MBPS, and 427
IOPS
LUN 0_6  on drive [0:6                ] random read throughput: 227.00 MBPS, and 435
IOPS
LUN 0_7  on drive [0:7                ] random read throughput: 227.00 MBPS, and 426
IOPS
LUN 0_8  on drive [0:8                ] random read throughput: 227.00 MBPS, and 431
IOPS
LUN 0_9  on drive [0:9                ] random read throughput: 227.00 MBPS, and 425
IOPS
Calibrating flash disks (read only, note that writes will be significantly slower) ...
LUN 1_0  on drive [FLASH_1_2,FLASH_1_1] random read throughput: 13,958.00 MBPS, and
375631 IOPS
LUN 3_0  on drive [FLASH_3_2,FLASH_3_1] random read throughput: 13,953.00 MBPS, and
354167 IOPS
LUN 6_0  on drive [FLASH_6_2,FLASH_6_1] random read throughput: 13,955.00 MBPS, and
357400 IOPS
LUN 8_0  on drive [FLASH_8_2,FLASH_8_1] random read throughput: 13,956.00 MBPS, and
373082 IOPS
CALIBRATE results are within an acceptable range.
Calibration has finished.
******************************************

***************exa4celadm03*****************
Command: cellcli -e calibrate force
Calibration will take a few minutes...
Aggregate random read throughput across all hard disk LUNs: 2669 MBPS
Aggregate random read throughput across all flash disk LUNs: 45840 MBPS
Aggregate random read IOs per second (IOPS) across all hard disk LUNs: 5292
Calibrating hard disks (read only) ...
```

```
LUN 0_0  on drive [0:0                ] random read throughput: 228.00 MBPS, and 432
IOPS
LUN 0_1  on drive [0:1                ] random read throughput: 229.00 MBPS, and 429
IOPS
LUN 0_10 on drive [0:10               ] random read throughput: 226.00 MBPS, and 426
IOPS
LUN 0_11 on drive [0:11               ] random read throughput: 230.00 MBPS, and 434
IOPS
LUN 0_2  on drive [0:2                ] random read throughput: 228.00 MBPS, and 422
IOPS
LUN 0_3  on drive [0:3                ] random read throughput: 226.00 MBPS, and 422
IOPS
LUN 0_4  on drive [0:4                ] random read throughput: 224.00 MBPS, and 434
IOPS
LUN 0_5  on drive [0:5                ] random read throughput: 230.00 MBPS, and 429
IOPS
LUN 0_6  on drive [0:6                ] random read throughput: 229.00 MBPS, and 433
IOPS
LUN 0_7  on drive [0:7                ] random read throughput: 228.00 MBPS, and 433
IOPS
LUN 0_8  on drive [0:8                ] random read throughput: 230.00 MBPS, and 435
IOPS
LUN 0_9  on drive [0:9                ] random read throughput: 227.00 MBPS, and 428
IOPS
Calibrating flash disks (read only, note that writes will be significantly slower) ...
LUN 1_0  on drive [FLASH_1_2,FLASH_1_1] random read throughput: 13,956.00 MBPS, and
362802 IOPS
LUN 3_0  on drive [FLASH_3_2,FLASH_3_1] random read throughput: 13,955.00 MBPS, and
358168 IOPS
LUN 6_0  on drive [FLASH_6_2,FLASH_6_1] random read throughput: 13,958.00 MBPS, and
355135 IOPS
LUN 8_0  on drive [FLASH_8_2,FLASH_8_1] random read throughput: 13,954.00 MBPS, and
365335 IOPS
CALIBRATE results are within an acceptable range.
Calibration has finished.
******************************************

****************exa4celadm04*****************
Command: cellcli -e calibrate force
Calibration will take a few minutes...
Aggregate random read throughput across all hard disk LUNs: 2674 MBPS
Aggregate random read throughput across all flash disk LUNs: 45846 MBPS
Aggregate random read IOs per second (IOPS) across all hard disk LUNs: 5003
Calibrating hard disks (read only) ...
LUN 0_0  on drive [0:0                ] random read throughput: 231.00 MBPS, and 433
IOPS
LUN 0_1  on drive [0:1                ] random read throughput: 231.00 MBPS, and 443
IOPS
LUN 0_10 on drive [0:10               ] random read throughput: 226.00 MBPS, and 425
IOPS
LUN 0_11 on drive [0:11               ] random read throughput: 228.00 MBPS, and 429
IOPS
LUN 0_2  on drive [0:2                ] random read throughput: 233.00 MBPS, and 424
IOPS
LUN 0_3  on drive [0:3                ] random read throughput: 229.00 MBPS, and 442
IOPS
LUN 0_4  on drive [0:4                ] random read throughput: 229.00 MBPS, and 423
IOPS
LUN 0_5  on drive [0:5                ] random read throughput: 225.00 MBPS, and 437
IOPS
LUN 0_6  on drive [0:6                ] random read throughput: 227.00 MBPS, and 430
IOPS
```

```
LUN 0_7  on drive [0:7                ] random read throughput: 228.00 MBPS, and 430
IOPS
LUN 0_8  on drive [0:8                ] random read throughput: 229.00 MBPS, and 423
IOPS
LUN 0_9  on drive [0:9                ] random read throughput: 230.00 MBPS, and 431
IOPS
Calibrating flash disks (read only, note that writes will be significantly slower) ...
LUN 1_0  on drive [FLASH_1_2,FLASH_1_1] random read throughput: 13,959.00 MBPS, and
366143 IOPS
LUN 3_0  on drive [FLASH_3_2,FLASH_3_1] random read throughput: 13,957.00 MBPS, and
370387 IOPS
LUN 6_0  on drive [FLASH_6_2,FLASH_6_1] random read throughput: 13,957.00 MBPS, and
362010 IOPS
LUN 8_0  on drive [FLASH_8_2,FLASH_8_1] random read throughput: 13,959.00 MBPS, and
361673 IOPS
CALIBRATE results are within an acceptable range.
Calibration has finished.
******************************************
```

Network Topology Results

```
 No IB information in RoCE system
```

Hardware Check Results

```
****************exa4celadm01*****************
Command: /opt/oracle.cellos/CheckHWnFWProfile
[40;1;32m[SUCCESS][0m The hardware and firmware matches supported profile for
server=ORACLE_SERVER_X10-2L
******************************************

****************exa4celadm02*****************
Command: /opt/oracle.cellos/CheckHWnFWProfile
[40;1;32m[SUCCESS][0m The hardware and firmware matches supported profile for
server=ORACLE_SERVER_X10-2L
******************************************

****************exa4celadm03*****************
Command: /opt/oracle.cellos/CheckHWnFWProfile
[40;1;32m[SUCCESS][0m The hardware and firmware matches supported profile for
server=ORACLE_SERVER_X10-2L
******************************************

****************exa4celadm04*****************
Command: /opt/oracle.cellos/CheckHWnFWProfile
[40;1;32m[SUCCESS][0m The hardware and firmware matches supported profile for
server=ORACLE_SERVER_X10-2L
******************************************

****************exa4dbadm01*****************
Command: /opt/oracle.cellos/CheckHWnFWProfile
[40;1;32m[SUCCESS][0m The hardware and firmware matches supported profile for
server=ORACLE_SERVER_E5-2L
******************************************

****************exa4dbadm02*****************
Command: /opt/oracle.cellos/CheckHWnFWProfile
[40;1;32m[SUCCESS][0m The hardware and firmware matches supported profile for
server=ORACLE_SERVER_E5-2L
******************************************
```

Validate IB Results

```
 No IB information in RoCE system
```

Validate Flash Cache Results

```
****************exa4celadm01*****************
Command: cellcli -e list flashcache detail
         name:                   exa4celadm01_FLASHCACHE
         cellDisk:
FD_00_exa4celadm01,FD_01_exa4celadm01,FD_02_exa4celadm01,FD_03_exa4celadm01
         creationTime:           2025-04-22T10:10:44+02:00
         degradedCelldisks:
         effectiveCacheSize:     24.742431640625T
         id:                     eeedaa45-7b5a-47a0-91f5-3c443e86d542
         size:                   24.742431640625T
         status:                 normal
Command: cellcli -e list flashlog detail
         name:                   exa4celadm01_FLASHLOG
         cellDisk:
FD_00_exa4celadm01,FD_01_exa4celadm01,FD_02_exa4celadm01,FD_03_exa4celadm01
         creationTime:           2025-04-22T10:10:43+02:00
         degradedCelldisks:
         effectiveSize:          512M
         efficiency:             100.0
         id:                     333668f6-ca9e-42da-9caf-7cf7c716337f
         size:                   512M
         status:                 normal
*****************************************

****************exa4celadm02*****************
Command: cellcli -e list flashcache detail
         name:                   exa4celadm02_FLASHCACHE
         cellDisk:
FD_00_exa4celadm02,FD_01_exa4celadm02,FD_02_exa4celadm02,FD_03_exa4celadm02
         creationTime:           2025-04-22T10:11:06+02:00
         degradedCelldisks:
         effectiveCacheSize:     24.742431640625T
         id:                     a58e1923-1748-4289-97bf-8868d7e40880
         size:                   24.742431640625T
         status:                 normal
Command: cellcli -e list flashlog detail
         name:                   exa4celadm02_FLASHLOG
         cellDisk:
FD_00_exa4celadm02,FD_01_exa4celadm02,FD_02_exa4celadm02,FD_03_exa4celadm02
         creationTime:           2025-04-22T10:11:05+02:00
         degradedCelldisks:
         effectiveSize:          512M
         efficiency:             100.0
         id:                     bdc1a317-aa01-4a03-acf6-773322acbe11
         size:                   512M
         status:                 normal
*****************************************

****************exa4celadm03*****************
Command: cellcli -e list flashcache detail
         name:                   exa4celadm03_FLASHCACHE
         cellDisk:
FD_00_exa4celadm03,FD_01_exa4celadm03,FD_02_exa4celadm03,FD_03_exa4celadm03
         creationTime:           2025-04-22T10:12:25+02:00
         degradedCelldisks:
         effectiveCacheSize:     24.742431640625T
         id:                     4988ef00-f47b-4e89-a914-0ba2ccbb22bc
         size:                   24.742431640625T
```

```
         status:                 normal
Command: cellcli -e list flashlog detail
         name:                   exa4celadm03_FLASHLOG
         cellDisk:
FD_00_exa4celadm03,FD_01_exa4celadm03,FD_02_exa4celadm03,FD_03_exa4celadm03
         creationTime:           2025-04-22T10:12:25+02:00
         degradedCelldisks:
         effectiveSize:          512M
         efficiency:             100.0
         id:                     580a4a7a-3352-4696-bbe2-ed2a84555ba1
         size:                   512M
         status:                 normal
*****************************************

***************exa4celadm04****************
Command: cellcli -e list flashcache detail
         name:                   exa4celadm04_FLASHCACHE
         cellDisk:
FD_00_exa4celadm04,FD_01_exa4celadm04,FD_02_exa4celadm04,FD_03_exa4celadm04
         creationTime:           2025-04-22T10:11:06+02:00
         degradedCelldisks:
         effectiveCacheSize:     24.742431640625T
         id:                     0a613d8e-40f6-4adb-aef9-95b6a463aead
         size:                   24.742431640625T
         status:                 normal
Command: cellcli -e list flashlog detail
         name:                   exa4celadm04_FLASHLOG
         cellDisk:
FD_00_exa4celadm04,FD_01_exa4celadm04,FD_02_exa4celadm04,FD_03_exa4celadm04
         creationTime:           2025-04-22T10:11:06+02:00
         degradedCelldisks:
         effectiveSize:          512M
         efficiency:             100.0
         id:                     d0834dad-898f-4da6-87ed-f1ec01a2dda4
         size:                   512M
         status:                 normal
*****************************************
```

Exachk Summary Report

Oracle Exadata Assessment Report

System Health Score is 97 out of 100 (detail)

Cluster Summary

Heading	Description
System Type	Exadata
Cluster Name	Cluster-exa4
OS/Kernel Version	LINUX X86-64 OELRHEL 8 5.15.0-300.163.18.7.el8uek.x86_64
CRS Home - Version	/u01/app/23.0.0.0/grid - 23.7.0.25.01
DB Home - Version - Names	/u01/app/oracle/product/23.0.0.0/dbhome_1 - 23.7.0.25.01 - cdb1 database /u01/app/oracle/product/19.0.0.0/dbhome_1 - 19.26.0.0.250121 - cdb2 database
Exadata Version	25.1.3.0.0.250313
Number of nodes	8
Database Servers	2
Storage Servers	4
RDMA Network Fabric Switches	2
Exachk Version	25.3.0_20250327
Collection	exachk_exa4dbadm01_cdb2_042325_113318
Duration	11 mins, 7 seconds
Executed by	root
Arguments	-dball -switches exa4sw-rocea0,exa4sw-roceb0
Collection Date	23-Apr-2025 11:35:34

Component		Host/Location	Found version	Recommended versions	Status
DATABASE SERVER	Database Home	exa4dbadm01,exa4dbadm02: /u01/app/oracle/product/19.0.0.0/dbhome_1	19.26.0.0.250121	19.26.0.0.250121	Version within recommended range (minimum version is 19.23.0.0.240416).
		exa4dbadm01,exa4dbadm02: /u01/app/oracle/product/23.0.0.0/dbhome_1	23.7.0.25.01	23.7.0.25.01	Version within recommended range (minimum version is 23.6.0.0.0).
	Grid Infrastructure	exa4dbadm01,exa4dbadm02: /u01/app/23.0.0.0/grid	23.7.0.25.01	23.7.0.25.01	Version within recommended range (minimum version is 23.6.0.0.0).
	Exadata	exa4dbadm01,exa4dbadm02	25.1.3.0.0	25.1.2.0.0	Version within recommended range (minimum version is 25.1.1.0.0).
STORAGE SERVER	Exadata	exa4celadm01,exa4celadm02,exa4celadm03	25.1.3.0.0	25.1.2.0.0	Version within recommended range (minimum version is 25.1.1.0.0).

Exadata Critical Issues

The following Exadata Critical Issues (MOS Note 1270094.1) have been checked in this report:

- This environment has been checked for exposure to the following Exadata Critical Issues from MOS Note 1270094.1
-
- Exadata Database Server and Storage Server : EX1-EX65,EX67,EX69-EX78,EX80-EX85,EX87-EX92
- Oracle Database and Crid Infrastructure : DB1-DB4, DB6, DB9-DB50,DB52-DB54
- Exadata Fabric Switch : IB1-IB3,IB5-IB9

Note: Exadata Critical issues which are not shown in the following table are not applicable to the system configuration.

Exadata Critical Issues on Database Server

Status	Previous Status	Type	Description	Status On	Details
CRITICAL	NA	OS Check	Exadata Critical Issue DB50	All Database Servers	View

Exadata Critical Issues on Storage Server

Status	Previous Status	Type	Description	Status On	Details

Exadata Critical Issues on Cluster Wide

Status	Previous Status	Type	Description	Status On	Details

Database Server

Status	Previous Status	Type	Description	Status On	Details
FAIL	NA	ORACLE_HOME Check	Verify important bug fixes on long term recent releases (using MOS 555.1 metadata from 2025-03-26)	All ORACLE_HOME's	View
FAIL	NA	Database Check	High Redundancy Controlfile	All Databases	View
FAIL	NA	Database Check	Verify that critical database files reside on high redundancy diskgroups	All Databases	View
FAIL	NA	Database Check	Verify Hidden Database Initialization Parameter Usage	exa4dbadm01:cdb1, exa4dbadm02:cdb1	View

Storage Server

Status	Previous Status	Type	Description	Status On	Details

Cluster Wide

Status	Previous Status	Type	Description	Status On	Details

Cluster Verification Utility (CVU 23.7.0.25.1) result

Status	Previous Status	Type	Description	Status On	Details

Top

Findings needing further review

NOTE: This section contains best practices that Exachk can only do a partial check for because a complete check requires information it cannot gather (ex: data outside of Exachk run scope, requires customer knowledge, etc). Please investigate the partial finding that Exachk reports in this section, paying particular attention to the details, to determine if any action is required.

Status	Previous Status	Type	Description	Status On	Details

Top

Platinum Certification

Status	Previous Status	Type	Description	Status On	Details

Top

Component Elapsed Times

Component Name	Component Type	Elapsed Time

Handover Status

```
[root@exa4dbadm01 tmp]# GROUP_FILE=/root/all_group
[root@exa4dbadm01 tmp]# date '+%Y-%m-%d %H:%M:%S' ; dcli -g ${GROUP_FILE} -l root imagehistory
2025-04-23 13:05:11
exa4dbadm01: Version                             : 25.1.3.0.0.250313
exa4dbadm01: Exadata Live Update Version         : n/a
exa4dbadm01: Image activation date               : 2025-04-22 10:19:24 +0200
exa4dbadm01: Imaging mode                        : fresh
exa4dbadm01: Imaging status                      : success
exa4dbadm01:
exa4dbadm02: Version                             : 25.1.3.0.0.250313
exa4dbadm02: Exadata Live Update Version         : n/a
exa4dbadm02: Image activation date               : 2025-04-22 10:20:18 +0200
exa4dbadm02: Imaging mode                        : fresh
exa4dbadm02: Imaging status                      : success
exa4dbadm02:
exa4celadm01: Version                             : 25.1.3.0.0.250313
exa4celadm01: Image activation date               : 2025-04-22 10:11:33 +0200
exa4celadm01: Imaging mode                        : fresh
exa4celadm01: Imaging status                      : success
exa4celadm01:
exa4celadm02: Version                             : 25.1.3.0.0.250313
exa4celadm02: Image activation date               : 2025-04-22 10:11:55 +0200
exa4celadm02: Imaging mode                        : fresh
exa4celadm02: Imaging status                      : success
exa4celadm02:
exa4celadm03: Version                             : 25.1.3.0.0.250313
exa4celadm03: Image activation date               : 2025-04-22 10:13:14 +0200
exa4celadm03: Imaging mode                        : fresh
exa4celadm03: Imaging status                      : success
exa4celadm03:
exa4celadm04: Version                             : 25.1.3.0.0.250313
exa4celadm04: Image activation date               : 2025-04-22 10:11:55 +0200
exa4celadm04: Imaging mode                        : fresh
exa4celadm04: Imaging status                      : success
exa4celadm04:
[root@exa4dbadm01 tmp]# date '+%Y-%m-%d %H:%M:%S' ; dcli -g ${GROUP_FILE} -l root imageinfo
2025-04-23 13:05:23
exa4dbadm01:
exa4dbadm01: Kernel version: 5.15.0-300.163.18.7.el8uek.x86_64 #2 SMP Fri Nov 15 03:14:11 PST 2024 x86_64
exa4dbadm01: Uptrack kernel version: 5.15.0-305.176.4.el8uek.x86_64 #2 SMP Tue Jan 28 20:08:29 PST 2025 x86_64
exa4dbadm01: Image kernel version: 5.15.0-300.163.18.7.el8uek
exa4dbadm01: Image version: 25.1.3.0.0.250313
exa4dbadm01: Image activated: 2025-04-22 10:19:24 +0200
exa4dbadm01: Image status: success
exa4dbadm01: Exadata software version: 25.1.3.0.0.250313
exa4dbadm01: Node type: COMPUTE
exa4dbadm01: System partition on device: /dev/mapper/VGExaDb-LVDbSys1
exa4dbadm01:
exa4dbadm02:
exa4dbadm02: Kernel version: 5.15.0-300.163.18.7.el8uek.x86_64 #2 SMP Fri Nov 15 03:14:11 PST 2024 x86_64
exa4dbadm02: Uptrack kernel version: 5.15.0-305.176.4.el8uek.x86_64 #2 SMP Tue Jan 28 20:08:29 PST 2025 x86_64
exa4dbadm02: Image kernel version: 5.15.0-300.163.18.7.el8uek
exa4dbadm02: Image version: 25.1.3.0.0.250313
exa4dbadm02: Image activated: 2025-04-22 10:20:18 +0200
exa4dbadm02: Image status: success
exa4dbadm02: Exadata software version: 25.1.3.0.0.250313
exa4dbadm02: Node type: COMPUTE
exa4dbadm02: System partition on device: /dev/mapper/VGExaDb-LVDbSys1
exa4dbadm02:
exa4celadm01:
exa4celadm01: Kernel version: 5.15.0-300.163.18.7.el8uek.x86_64 #2 SMP Fri Nov 15 03:14:11 PST 2024 x86_64
exa4celadm01: Uptrack kernel version: 5.15.0-305.176.4.el8uek.x86_64 #2 SMP Tue Jan 28 20:08:29 PST 2025 x86_64
exa4celadm01: Cell version: OSS_25.1.3.0.0_LINUX.X64_250313
exa4celadm01: Cell rpm version: cell-25.1.3.0.0_LINUX.X64_250313-1.x86_64
exa4celadm01:
```

```
exa4celadm01: Active image version: 25.1.3.0.0.250313
exa4celadm01: Active image kernel version: 5.15.0-300.163.18.7.el8uek
exa4celadm01: Active image activated: 2025-04-22 10:11:33 +0200
exa4celadm01: Active image status: success
exa4celadm01: Active node type: STORAGE
exa4celadm01: Active system partition on device: /dev/md24p5
exa4celadm01: Active software partition on device: /dev/md24p7
exa4celadm01:
exa4celadm01: Cell boot device partition: /dev/md25p1
exa4celadm01: Cell boot device version: 25.1.3.0.0.250313
exa4celadm01:
exa4celadm01: Inactive image version: undefined
exa4celadm01: Rollback to the inactive partitions: Impossible
exa4celadm02:
exa4celadm02: Kernel version: 5.15.0-300.163.18.7.el8uek.x86_64 #2 SMP Fri Nov 15 03:14:11 PST 2024 x86_64
exa4celadm02: Uptrack kernel version: 5.15.0-305.176.4.el8uek.x86_64 #2 SMP Tue Jan 28 20:08:29 PST 2025 x86_64
exa4celadm02: Cell version: OSS_25.1.3.0.0_LINUX.X64_250313
exa4celadm02: Cell rpm version: cell-25.1.3.0.0_LINUX.X64_250313-1.x86_64
exa4celadm02:
exa4celadm02: Active image version: 25.1.3.0.0.250313
exa4celadm02: Active image kernel version: 5.15.0-300.163.18.7.el8uek
exa4celadm02: Active image activated: 2025-04-22 10:11:55 +0200
exa4celadm02: Active image status: success
exa4celadm02: Active node type: STORAGE
exa4celadm02: Active system partition on device: /dev/md24p5
exa4celadm02: Active software partition on device: /dev/md24p7
exa4celadm02:
exa4celadm02: Cell boot device partition: /dev/md25p1
exa4celadm02: Cell boot device version: 25.1.3.0.0.250313
exa4celadm02:
exa4celadm02: Inactive image version: undefined
exa4celadm02: Rollback to the inactive partitions: Impossible
exa4celadm03:
exa4celadm03: Kernel version: 5.15.0-300.163.18.7.el8uek.x86_64 #2 SMP Fri Nov 15 03:14:11 PST 2024 x86_64
exa4celadm03: Uptrack kernel version: 5.15.0-305.176.4.el8uek.x86_64 #2 SMP Tue Jan 28 20:08:29 PST 2025 x86_64
exa4celadm03: Cell version: OSS_25.1.3.0.0_LINUX.X64_250313
exa4celadm03: Cell rpm version: cell-25.1.3.0.0_LINUX.X64_250313-1.x86_64
exa4celadm03:
exa4celadm03: Active image version: 25.1.3.0.0.250313
exa4celadm03: Active image kernel version: 5.15.0-300.163.18.7.el8uek
exa4celadm03: Active image activated: 2025-04-22 10:13:14 +0200
exa4celadm03: Active image status: success
exa4celadm03: Active node type: STORAGE
exa4celadm03: Active system partition on device: /dev/md24p5
exa4celadm03: Active software partition on device: /dev/md24p7
exa4celadm03:
exa4celadm03: Cell boot device partition: /dev/md25p1
exa4celadm03: Cell boot device version: 25.1.3.0.0.250313
exa4celadm03:
exa4celadm03: Inactive image version: undefined
exa4celadm03: Rollback to the inactive partitions: Impossible
exa4celadm04:
exa4celadm04: Kernel version: 5.15.0-300.163.18.7.el8uek.x86_64 #2 SMP Fri Nov 15 03:14:11 PST 2024 x86_64
exa4celadm04: Uptrack kernel version: 5.15.0-305.176.4.el8uek.x86_64 #2 SMP Tue Jan 28 20:08:29 PST 2025 x86_64
exa4celadm04: Cell version: OSS_25.1.3.0.0_LINUX.X64_250313
exa4celadm04: Cell rpm version: cell-25.1.3.0.0_LINUX.X64_250313-1.x86_64
exa4celadm04:
exa4celadm04: Active image version: 25.1.3.0.0.250313
exa4celadm04: Active image kernel version: 5.15.0-300.163.18.7.el8uek
exa4celadm04: Active image activated: 2025-04-22 10:11:55 +0200
exa4celadm04: Active image status: success
exa4celadm04: Active node type: STORAGE
exa4celadm04: Active system partition on device: /dev/md24p5
exa4celadm04: Active software partition on device: /dev/md24p7
exa4celadm04:
exa4celadm04: Cell boot device partition: /dev/md25p1
exa4celadm04: Cell boot device version: 25.1.3.0.0.250313
exa4celadm04:
exa4celadm04: Inactive image version: undefined
```

```
exa4celadm04: Rollback to the inactive partitions: Impossible
[root@exa4dbadm01 tmp]#
[root@exa4dbadm01 tmp]# date '+%Y-%m-%d %H:%M:%S' ; dcli -g ${GROUP_FILE} -l root
'/opt/oracle.SupportTools/CheckHWnFWProfile -c strict'
2025-04-23 13:05:40
exa4dbadm01: [SUCCESS] The hardware and firmware matches supported profile for server=ORACLE_SERVER_E5-2L
exa4dbadm02: [SUCCESS] The hardware and firmware matches supported profile for server=ORACLE_SERVER_E5-2L
exa4celadm01: [SUCCESS] The hardware and firmware matches supported profile for server=ORACLE_SERVER_X10-2L
exa4celadm02: [SUCCESS] The hardware and firmware matches supported profile for server=ORACLE_SERVER_X10-2L
exa4celadm03: [SUCCESS] The hardware and firmware matches supported profile for server=ORACLE_SERVER_X10-2L
exa4celadm04: [SUCCESS] The hardware and firmware matches supported profile for server=ORACLE_SERVER_X10-2L
[root@exa4dbadm01 tmp]#
[root@exa4dbadm01 tmp]# date '+%Y-%m-%d %H:%M:%S' ; for H in $(cat ${GROUP_FILE}); do ssh -q root@$H "bash -s" --
< ./show-node-info.sh --short --csv; done | column -s'|' -t
2025-04-23 13:06:29
exa4dbadm01   RU14  2445XVJ07G  25.1.3.0.0.250313  E5-2L          AMD EPYC 9J14 96-Core Processor  2/192/192
2304GB
exa4dbadm02   RU16  2445XVJ5VN  25.1.3.0.0.250313  E5-2L          AMD EPYC 9J14 96-Core Processor  2/192/192
2304GB
exa4celadm01  RU02  2445XVJ0L3  25.1.3.0.0.250313  X10-2L HC      AMD EPYC 9334 32-Core Processor  2/64/64
1536GB  22T  12/12
exa4celadm02  RU04  2445XVJ0DW  25.1.3.0.0.250313  X10-2L HC      AMD EPYC 9334 32-Core Processor  2/64/64
1536GB  22T  12/12
exa4celadm03  RU06  2445XVJ0L6  25.1.3.0.0.250313  X10-2L HC      AMD EPYC 9334 32-Core Processor  2/64/64
1536GB  22T  12/12
exa4celadm04  RU08  2445XVJ0LC  25.1.3.0.0.250313  X10-2L HC      AMD EPYC 9334 32-Core Processor  2/64/64
1536GB  22T  12/12
[root@exa4dbadm01 tmp]#
[root@exa4dbadm01 tmp]# date '+%Y-%m-%d %H:%M:%S' ; dcli -g ${GROUP_FILE} -l root '/opt/oracle.cellos/ipconf.pl
-verify -semantic -at-runtime -check-consistency -verbose -nocodes | tail -1'
2025-04-23 13:08:43
exa4dbadm01: [Info]: Consistency check PASSED
exa4dbadm02: [Info]: Consistency check PASSED
exa4celadm01: [Info]: Consistency check PASSED
exa4celadm02: [Info]: Consistency check PASSED
exa4celadm03: [Info]: Consistency check PASSED
exa4celadm04: [Info]: Consistency check PASSED
[root@exa4dbadm01 tmp]# date '+%Y-%m-%d %H:%M:%S' ; dcli -g ${GROUP_FILE} -l root '/opt/oracle.cellos/ipconf.pl
-verify -semantic -at-runtime -check-consistency -verbose -nocodes | grep -i fail'
2025-04-23 13:09:10
[root@exa4dbadm01 tmp]#
[root@exa4dbadm01 tmp]# date '+%Y-%m-%d %H:%M:%S' ; for H in $(cat ${GROUP_FILE}); do ssh -q root@$H "bash -s" --
< ./show-node-netinfo.sh; done | column -s'|' -t
2025-04-23 13:09:33
ILOM                          :  10.25.99.69    /21  255.255.248.0  10.25.96.1  exa4dbadm01-ilom.prod.d002.loc
eth0                          :  10.25.99.79    /21  255.255.248.0  n/a         exa4dbadm01.prod.d002.loc
re0                           :  192.168.10.1   /22  255.255.252.0  n/a         exa4db01-priv1.prod.d002.loc
re1                           :  192.168.10.2   /22  255.255.252.0  n/a         exa4db01-priv2.prod.d002.loc
bondeth0.2191  [eth9,eth10]   :  10.2.163.176   /21  255.255.248.0  10.2.160.1  exa4db01.prod.d002.loc
bondeth0.2191  [eth9,eth10]   :  10.2.163.178   /21  255.255.248.0  10.2.160.1  exa4db01-vip.prod.d002.loc
bondeth0.2191  [eth9,eth10]   :  10.2.163.181   /21  255.255.248.0  10.2.160.1  exa4-scan1.prod.d002.loc
bondeth1.2193  [eth29,eth30]  :  10.21.97.120   /21  255.255.248.0  n/a         exa4db01s.prod.d002.loc
ILOM                          :  10.25.99.68    /21  255.255.248.0  10.25.96.1  exa4dbadm02-ilom.prod.d002.loc
eth0                          :  10.25.99.80    /21  255.255.248.0  n/a         exa4dbadm02.prod.d002.loc
re0                           :  192.168.10.3   /22  255.255.252.0  n/a         exa4db02-priv1.prod.d002.loc
re1                           :  192.168.10.4   /22  255.255.252.0  n/a         exa4db02-priv2.prod.d002.loc
bondeth0.2191  [eth9,eth10]   :  10.2.163.177   /21  255.255.248.0  10.2.160.1  exa4db02.prod.d002.loc
bondeth0.2191  [eth9,eth10]   :  10.2.163.179   /21  255.255.248.0  10.2.160.1  exa4db02-vip.prod.d002.loc
bondeth0.2191  [eth9,eth10]   :  10.2.163.182   /21  255.255.248.0  10.2.160.1  exa4-scan1.prod.d002.loc
bondeth0.2191  [eth9,eth10]   :  10.2.163.180   /21  255.255.248.0  10.2.160.1  exa4-scan1.prod.d002.loc
bondeth1.2193  [eth29,eth30]  :  10.21.97.121   /21  255.255.248.0  n/a         exa4db02s.prod.d002.loc
ILOM                          :  10.25.99.70    /21  255.255.248.0  10.25.96.1  exa4celadm01-ilom.prod.d002.loc
eth0                          :  10.25.99.81    /21  255.255.248.0  10.25.96.1  exa4celadm01.prod.d002.loc
re0                           :  192.168.10.5   /22  255.255.252.0  n/a         exa4cel01-priv1.prod.d002.loc
re1                           :  192.168.10.6   /22  255.255.252.0  n/a         exa4cel01-priv2.prod.d002.loc
ILOM                          :  10.25.99.71    /21  255.255.248.0  10.25.96.1  exa4celadm02-ilom.prod.d002.loc
eth0                          :  10.25.99.82    /21  255.255.248.0  10.25.96.1  exa4celadm02.prod.d002.loc
re0                           :  192.168.10.7   /22  255.255.252.0  n/a         exa4cel02-priv1.prod.d002.loc
re1                           :  192.168.10.8   /22  255.255.252.0  n/a         exa4cel02-priv2.prod.d002.loc
```

```
ILOM                          :  10.25.99.72    /21  255.255.248.0  10.25.96.1  exa4celadm03-ilom.prod.d002.loc
eth0                          :  10.25.99.83    /21  255.255.248.0  10.25.96.1  exa4celadm03.prod.d002.loc
re0                           :  192.168.10.9   /22  255.255.252.0  n/a         exa4cel03-priv1.prod.d002.loc
re1                           :  192.168.10.10  /22  255.255.252.0  n/a         exa4cel03-priv2.prod.d002.loc
ILOM                          :  10.25.99.73    /21  255.255.248.0  10.25.96.1  exa4celadm04-ilom.prod.d002.loc
eth0                          :  10.25.99.84    /21  255.255.248.0  10.25.96.1  exa4celadm04.prod.d002.loc
re0                           :  192.168.10.11  /22  255.255.252.0  n/a         exa4cel04-priv1.prod.d002.loc
re1                           :  192.168.10.12  /22  255.255.252.0  n/a         exa4cel04-priv2.prod.d002.loc
[root@exa4dbadm01 tmp]#
[root@exa4dbadm01 tmp]# date '+%Y-%m-%d %H:%M:%S' ; dcli -g ${GROUP_FILE} -l root 'df -hT'
2025-04-23 13:10:14
exa4dbadm01: Filesystem                          Type      Size  Used Avail Use% Mounted on
exa4dbadm01: devtmpfs                            devtmpfs  1.2T     0  1.2T   0% /dev
exa4dbadm01: tmpfs                               tmpfs     2.3T   11G  2.3T   1% /dev/shm
exa4dbadm01: tmpfs                               tmpfs     1.2T   26M  1.2T   1% /run
exa4dbadm01: tmpfs                               tmpfs     1.2T     0  1.2T   0% /sys/fs/cgroup
exa4dbadm01: /dev/mapper/VGExaDb-LVDbSys1        xfs        15G  8.1G  6.9G  54% /
exa4dbadm01: /dev/mapper/VGExaDb-LVDbTmp         xfs       3.0G   82M  2.9G   3% /tmp
exa4dbadm01: /dev/mapper/VGExaDb-LVDbVar1        xfs       2.0G  847M  1.1G  44% /var
exa4dbadm01: /dev/mapper/VGExaDb-LVDbOra1        xfs       200G   79G  122G  40% /u01
exa4dbadm01: /dev/md24p1                         xfs       7.2G  174M  7.0G   3% /boot
exa4dbadm01: /dev/mapper/VGExaDb-LVDbHome        xfs       4.0G   64M  3.9G   2% /home
exa4dbadm01: /dev/mapper/VGExaDb-LVDbVarLog      xfs        18G  815M   18G   5% /var/log
exa4dbadm01: /dev/md24p2                         vfat      254M  6.0M  249M   3% /boot/efi
exa4dbadm01: /dev/mapper/VGExaDb-LVDbVarLogAudit xfs       924M  155M  770M  17% /var/log/audit
exa4dbadm01: oracle_clusterware                  tmpfs     128M  4.9M  124M   4%
/u01/app/oracle/crsdata/exa4dbadm01/shm
exa4dbadm01: tmpfs                               tmpfs     228G     0  228G   0% /run/user/1001
exa4dbadm01: tmpfs                               tmpfs     228G     0  228G   0% /run/user/0
exa4dbadm02: Filesystem                          Type      Size  Used Avail Use% Mounted on
exa4dbadm02: devtmpfs                            devtmpfs  1.2T     0  1.2T   0% /dev
exa4dbadm02: tmpfs                               tmpfs     2.3T   11G  2.3T   1% /dev/shm
exa4dbadm02: tmpfs                               tmpfs     1.2T   26M  1.2T   1% /run
exa4dbadm02: tmpfs                               tmpfs     1.2T     0  1.2T   0% /sys/fs/cgroup
exa4dbadm02: /dev/mapper/VGExaDb-LVDbSys1        xfs        15G  8.1G  6.9G  54% /
exa4dbadm02: /dev/mapper/VGExaDb-LVDbOra1        xfs       200G   27G  174G  14% /u01
exa4dbadm02: /dev/md24p1                         xfs       7.2G  174M  7.0G   3% /boot
exa4dbadm02: /dev/mapper/VGExaDb-LVDbVar1        xfs       2.0G  846M  1.1G  44% /var
exa4dbadm02: /dev/mapper/VGExaDb-LVDbTmp         xfs       3.0G  234M  2.7G   8% /tmp
exa4dbadm02: /dev/mapper/VGExaDb-LVDbHome        xfs       4.0G   61M  3.9G   2% /home
exa4dbadm02: /dev/mapper/VGExaDb-LVDbVarLog      xfs        18G  830M   18G   5% /var/log
exa4dbadm02: /dev/md24p2                         vfat      254M  6.0M  249M   3% /boot/efi
exa4dbadm02: /dev/mapper/VGExaDb-LVDbVarLogAudit xfs       924M  161M  764M  18% /var/log/audit
exa4dbadm02: oracle_clusterware                  tmpfs     128M  5.1M  123M   4%
/u01/app/oracle/crsdata/exa4dbadm02/shm
exa4dbadm02: tmpfs                               tmpfs     228G     0  228G   0% /run/user/1001
exa4dbadm02: tmpfs                               tmpfs     228G     0  228G   0% /run/user/0
exa4celadm01: Filesystem     Type      Size  Used Avail Use% Mounted on
exa4celadm01: devtmpfs       devtmpfs  756G     0  756G   0% /dev
exa4celadm01: tmpfs          tmpfs     756G  4.0K  756G   1% /dev/shm
exa4celadm01: tmpfs          tmpfs     756G   18M  756G   1% /run
exa4celadm01: tmpfs          tmpfs     756G     0  756G   0% /sys/fs/cgroup
exa4celadm01: /dev/md24p5    xfs        10G  4.9G  5.1G  49% /
exa4celadm01: /dev/md24p1    xfs       412M  116M  297M  29% /boot
exa4celadm01: /dev/md24p15   xfs        96M  6.2M   90M   7% /home
exa4celadm01: /dev/md24p12   xfs       2.0G  829M  1.1G  43% /var
exa4celadm01: /dev/md24p16   xfs       924M   41M  884M   5% /tmp
exa4celadm01: /dev/md24p7    xfs       5.0G  1.4G  3.6G  27% /opt/oracle
exa4celadm01: /dev/md24p17   xfs        70G  533M   70G   1% /datastore
exa4celadm01: /dev/md24p3    xfs       924M   40M  885M   5% /opt/cellconf
exa4celadm01: /dev/md24p2    vfat      254M  6.0M  249M   3% /boot/efi
exa4celadm01: /dev/md24p11   xfs        18G  437M   18G   3% /var/log
exa4celadm01: /dev/md24p14   xfs       924M   96M  829M  11% /var/log/audit
exa4celadm01: tmpfs          tmpfs     2.0G   16K  2.0G   1% /dev/xrmem
exa4celadm01: tmpfs          tmpfs     628G  628G     0 100% /dev/xrmem/node0
exa4celadm01: tmpfs          tmpfs     628G  628G     0 100% /dev/xrmem/node1
exa4celadm01: tmpfs          tmpfs     152G     0  152G   0% /run/user/0
exa4celadm02: Filesystem     Type      Size  Used Avail Use% Mounted on
exa4celadm02: devtmpfs       devtmpfs  756G     0  756G   0% /dev
```

```
exa4celadm02: tmpfs          tmpfs     756G  4.0K  756G   1% /dev/shm
exa4celadm02: tmpfs          tmpfs     756G   18M  756G   1% /run
exa4celadm02: tmpfs          tmpfs     756G     0  756G   0% /sys/fs/cgroup
exa4celadm02: /dev/md24p5    xfs        10G  4.9G  5.1G  49% /
exa4celadm02: /dev/md24p1    xfs       412M  116M  297M  29% /boot
exa4celadm02: /dev/md24p15   xfs        96M  6.2M   90M   7% /home
exa4celadm02: /dev/md24p7    xfs       5.0G  1.4G  3.6G  27% /opt/oracle
exa4celadm02: /dev/md24p16   xfs       924M   41M  884M   5% /tmp
exa4celadm02: /dev/md24p2    vfat      254M  6.0M  249M   3% /boot/efi
exa4celadm02: /dev/md24p12   xfs       2.0G  829M  1.1G  43% /var
exa4celadm02: /dev/md24p3    xfs       924M   40M  885M   5% /opt/cellconf
exa4celadm02: /dev/md24p17   xfs        70G  533M   70G   1% /datastore
exa4celadm02: /dev/md24p11   xfs        18G  437M   18G   3% /var/log
exa4celadm02: /dev/md24p14   xfs       924M   97M  828M  11% /var/log/audit
exa4celadm02: tmpfs          tmpfs     2.0G   16K  2.0G   1% /dev/xrmem
exa4celadm02: tmpfs          tmpfs     628G  628G     0 100% /dev/xrmem/node0
exa4celadm02: tmpfs          tmpfs     628G  628G     0 100% /dev/xrmem/node1
exa4celadm02: tmpfs          tmpfs     152G     0  152G   0% /run/user/0
exa4celadm03: Filesystem     Type       Size  Used Avail Use% Mounted on
exa4celadm03: devtmpfs       devtmpfs  756G     0  756G   0% /dev
exa4celadm03: tmpfs          tmpfs     756G  4.0K  756G   1% /dev/shm
exa4celadm03: tmpfs          tmpfs     756G   18M  756G   1% /run
exa4celadm03: tmpfs          tmpfs     756G     0  756G   0% /sys/fs/cgroup
exa4celadm03: /dev/md24p5    xfs        10G  4.9G  5.1G  49% /
exa4celadm03: /dev/md24p15   xfs        96M  6.2M   90M   7% /home
exa4celadm03: /dev/md24p1    xfs       412M  116M  297M  29% /boot
exa4celadm03: /dev/md24p7    xfs       5.0G  1.4G  3.6G  27% /opt/oracle
exa4celadm03: /dev/md24p12   xfs       2.0G  829M  1.1G  43% /var
exa4celadm03: /dev/md24p16   xfs       924M   41M  884M   5% /tmp
exa4celadm03: /dev/md24p3    xfs       924M   40M  885M   5% /opt/cellconf
exa4celadm03: /dev/md24p17   xfs        70G  533M   70G   1% /datastore
exa4celadm03: /dev/md24p2    vfat      254M  6.0M  249M   3% /boot/efi
exa4celadm03: /dev/md24p11   xfs        18G  443M   18G   3% /var/log
exa4celadm03: /dev/md24p14   xfs       924M   96M  829M  11% /var/log/audit
exa4celadm03: tmpfs          tmpfs     2.0G   16K  2.0G   1% /dev/xrmem
exa4celadm03: tmpfs          tmpfs     628G  628G     0 100% /dev/xrmem/node0
exa4celadm03: tmpfs          tmpfs     628G  628G     0 100% /dev/xrmem/node1
exa4celadm03: tmpfs          tmpfs     152G     0  152G   0% /run/user/0
exa4celadm04: Filesystem     Type       Size  Used Avail Use% Mounted on
exa4celadm04: devtmpfs       devtmpfs  756G     0  756G   0% /dev
exa4celadm04: tmpfs          tmpfs     756G  4.0K  756G   1% /dev/shm
exa4celadm04: tmpfs          tmpfs     756G   18M  756G   1% /run
exa4celadm04: tmpfs          tmpfs     756G     0  756G   0% /sys/fs/cgroup
exa4celadm04: /dev/md24p5    xfs        10G  4.9G  5.1G  49% /
exa4celadm04: /dev/md24p12   xfs       2.0G  829M  1.1G  43% /var
exa4celadm04: /dev/md24p3    xfs       924M   40M  885M   5% /opt/cellconf
exa4celadm04: /dev/md24p15   xfs        96M  6.2M   90M   7% /home
exa4celadm04: /dev/md24p1    xfs       412M  116M  297M  29% /boot
exa4celadm04: /dev/md24p7    xfs       5.0G  1.4G  3.6G  27% /opt/oracle
exa4celadm04: /dev/md24p16   xfs       924M   41M  884M   5% /tmp
exa4celadm04: /dev/md24p11   xfs        18G  439M   18G   3% /var/log
exa4celadm04: /dev/md24p17   xfs        70G  533M   70G   1% /datastore
exa4celadm04: /dev/md24p2    vfat      254M  6.0M  249M   3% /boot/efi
exa4celadm04: /dev/md24p14   xfs       924M   96M  829M  11% /var/log/audit
exa4celadm04: tmpfs          tmpfs     2.0G   16K  2.0G   1% /dev/xrmem
exa4celadm04: tmpfs          tmpfs     628G  628G     0 100% /dev/xrmem/node0
exa4celadm04: tmpfs          tmpfs     628G  628G     0 100% /dev/xrmem/node1
exa4celadm04: tmpfs          tmpfs     152G     0  152G   0% /run/user/0
[root@exa4dbadm01 tmp]#
[root@exa4dbadm01 tmp]# date '+%Y-%m-%d %H:%M:%S' ; /opt/oracle.SupportTools/ibdiagtools/verify_roce_cables.py
-n /root/all_group -s /root/roce_group
2025-04-23 13:10:29
SWITCH PORT (EXPECTED PEER)                             LOWER LEAF (exa4sw-rocea0)   CABLE OK?
UPPER LEAF (exa4sw-roceb0)   CABLE OK?
---------- ---------------              ----------------------------------------   --------
----------------------------------------   ---------
    Eth1/4 (ISL peer switch)   :                         exa4sw-roceb0 Ethernet1/4 : OK
exa4sw-rocea0 Ethernet1/4 : OK
    Eth1/5 (ISL peer switch)   :                         exa4sw-roceb0 Ethernet1/5 : OK
```

```
exa4sw-rocea0 Ethernet1/5 : OK
    Eth1/6 (ISL peer switch)   :                          exa4sw-roceb0 Ethernet1/6 : OK
exa4sw-rocea0 Ethernet1/6 : OK
    Eth1/7 (ISL peer switch)   :                          exa4sw-roceb0 Ethernet1/7 : OK
exa4sw-rocea0 Ethernet1/7 : OK
   Eth1/22 (RU16)              :                         exa4dbadm02 port-1 3888(re) : OK
exa4dbadm02 port-2 3888(re) : OK
   Eth1/23 (RU14)              :                         exa4dbadm01 port-1 3888(re) : OK
exa4dbadm01 port-2 3888(re) : OK
   Eth1/26 (RU08)              :                        exa4celadm04 port-1 3888(re) : OK
exa4celadm04 port-2 3888(re) : OK
   Eth1/27 (RU06)              :                        exa4celadm03 port-1 3888(re) : OK
exa4celadm03 port-2 3888(re) : OK
   Eth1/28 (RU04)              :                        exa4celadm02 port-1 3888(re) : OK
exa4celadm02 port-2 3888(re) : OK
   Eth1/29 (RU02)              :                        exa4celadm01 port-1 3888(re) : OK
exa4celadm01 port-2 3888(re) : OK
   Eth1/30 (ISL peer switch)   :                          exa4sw-roceb0 Ethernet1/30 : OK
exa4sw-rocea0 Ethernet1/30 : OK
   Eth1/31 (ISL peer switch)   :                          exa4sw-roceb0 Ethernet1/31 : OK
exa4sw-rocea0 Ethernet1/31 : OK
   Eth1/32 (ISL peer switch)   :                          exa4sw-roceb0 Ethernet1/32 : OK
exa4sw-rocea0 Ethernet1/32 : OK
   Eth1/33 (ISL peer switch)   :                          exa4sw-roceb0 Ethernet1/33 : OK
exa4sw-rocea0 Ethernet1/33 : OK
[root@exa4dbadm01 tmp]#

[root@exa4dbadm01 tmp]# export GROUP_FILE=/root/dbs_group
[root@exa4dbadm01 tmp]# for H in $(cat ${GROUP_FILE}); do date '+%Y-%m-%d %H:%M:%S'; ssh -q $H 'export GI_HOME=$
(grep -e "^crs_home" /etc/oracle/olr.loc | cut -d= -f2); $GI_HOME/bin/olsnodes -c; $GI_HOME/bin/olsnodes | paste
-sd","; dcli -c $($GI_HOME/bin/olsnodes | paste -sd",") -l root uptime; $GI_HOME/bin/crsctl status res -t'; echo
""; done
2025-04-23 13:12:16
Cluster-exa4
exa4dbadm01,exa4dbadm02
exa4dbadm01: 13:12:17 up 21:16,  2 users,  load average: 0.83, 1.11, 1.13
exa4dbadm02: 13:12:17 up 21:16,  0 users,  load average: 1.80, 1.46, 1.30
--------------------------------------------------------------------------------
Name           Target  State        Server                   State details
--------------------------------------------------------------------------------
Local Resources
--------------------------------------------------------------------------------
ora.LISTENER.lsnr
               ONLINE  ONLINE       exa4dbadm01              STABLE
               ONLINE  ONLINE       exa4dbadm02              STABLE
ora.chad
               ONLINE  ONLINE       exa4dbadm01              STABLE
               ONLINE  ONLINE       exa4dbadm02              STABLE
ora.helper
               OFFLINE OFFLINE      exa4dbadm01              IDLE,STABLE
               OFFLINE OFFLINE      exa4dbadm02              IDLE,STABLE
ora.net1.network
               ONLINE  ONLINE       exa4dbadm01              STABLE
               ONLINE  ONLINE       exa4dbadm02              STABLE
ora.ons
               ONLINE  ONLINE       exa4dbadm01              STABLE
               ONLINE  ONLINE       exa4dbadm02              STABLE
--------------------------------------------------------------------------------
Cluster Resources
--------------------------------------------------------------------------------
ora.ASMNET1LSNR_ASM.lsnr(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.DATAC1.dg(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.LISTENER_SCAN1.lsnr
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.LISTENER_SCAN2.lsnr
```

```
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
ora.LISTENER_SCAN3.lsnr
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.RECOC1.dg(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.asm(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              Started,STABLE
      2        ONLINE  ONLINE       exa4dbadm02              Started,STABLE
ora.asmnet1.asmnetwork(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdb1.cdb1_pdb1.svc
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdb1.cdb1_pdb1_svc.svc
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdb1.db
      1        ONLINE  ONLINE       exa4dbadm01              Open,HOME=/u01/app/o
                                                             racle/product/23.0.0
                                                             .0/dbhome_1,STABLE
      2        ONLINE  ONLINE       exa4dbadm02              Open,HOME=/u01/app/o
                                                             racle/product/23.0.0
                                                             .0/dbhome_1,STABLE
ora.cdb1.pdb1.pdb
      1        ONLINE  ONLINE       exa4dbadm01              READ WRITE,STABLE
      2        ONLINE  ONLINE       exa4dbadm02              READ WRITE,STABLE
ora.cdb2.cdb2_pdb1_svc.svc
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdb2.db
      1        ONLINE  ONLINE       exa4dbadm01              Open,HOME=/u01/app/o
                                                             racle/product/19.0.0
                                                             .0/dbhome_1,STABLE
      2        ONLINE  ONLINE       exa4dbadm02              Open,HOME=/u01/app/o
                                                             racle/product/19.0.0
                                                             .0/dbhome_1,STABLE
ora.cdp1.cdp
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdp2.cdp
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
ora.cdp3.cdp
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cvu
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.exa4dbadm01.vip
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
ora.exa4dbadm02.vip
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.rhpserver
      1        OFFLINE OFFLINE                               STABLE
ora.scan1.vip
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.scan2.vip
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
ora.scan3.vip
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
--------------------------------------------------------------------------------

2025-04-23 13:12:17
Cluster-exa4
exa4dbadm01,exa4dbadm02
exa4dbadm01: 13:12:17 up 21:16,  2 users,  load average: 0.83, 1.11, 1.13
exa4dbadm02: 13:12:17 up 21:16,  0 users,  load average: 1.80, 1.46, 1.30
--------------------------------------------------------------------------------
Name           Target  State        Server                   State details
--------------------------------------------------------------------------------
Local Resources
```

```
--------------------------------------------------------------------------------
ora.LISTENER.lsnr
               ONLINE  ONLINE       exa4dbadm01              STABLE
               ONLINE  ONLINE       exa4dbadm02              STABLE
ora.chad
               ONLINE  ONLINE       exa4dbadm01              STABLE
               ONLINE  ONLINE       exa4dbadm02              STABLE
ora.helper
               OFFLINE OFFLINE      exa4dbadm01              IDLE,STABLE
               OFFLINE OFFLINE      exa4dbadm02              IDLE,STABLE
ora.net1.network
               ONLINE  ONLINE       exa4dbadm01              STABLE
               ONLINE  ONLINE       exa4dbadm02              STABLE
ora.ons
               ONLINE  ONLINE       exa4dbadm01              STABLE
               ONLINE  ONLINE       exa4dbadm02              STABLE
--------------------------------------------------------------------------------
Cluster Resources
--------------------------------------------------------------------------------
ora.ASMNET1LSNR_ASM.lsnr(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.DATAC1.dg(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.LISTENER_SCAN1.lsnr
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.LISTENER_SCAN2.lsnr
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
ora.LISTENER_SCAN3.lsnr
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.RECOC1.dg(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.asm(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              Started,STABLE
      2        ONLINE  ONLINE       exa4dbadm02              Started,STABLE
ora.asmnet1.asmnetwork(ora.asmgroup)
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdb1.cdb1_pdb1.svc
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdb1.cdb1_pdb1_svc.svc
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdb1.db
      1        ONLINE  ONLINE       exa4dbadm01              Open,HOME=/u01/app/o
                                                             racle/product/23.0.0
                                                             .0/dbhome_1,STABLE
      2        ONLINE  ONLINE       exa4dbadm02              Open,HOME=/u01/app/o
                                                             racle/product/23.0.0
                                                             .0/dbhome_1,STABLE
ora.cdb1.pdb1.pdb
      1        ONLINE  ONLINE       exa4dbadm01              READ WRITE,STABLE
      2        ONLINE  ONLINE       exa4dbadm02              READ WRITE,STABLE
ora.cdb2.cdb2_pdb1_svc.svc
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
      2        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdb2.db
      1        ONLINE  ONLINE       exa4dbadm01              Open,HOME=/u01/app/o
                                                             racle/product/19.0.0
                                                             .0/dbhome_1,STABLE
      2        ONLINE  ONLINE       exa4dbadm02              Open,HOME=/u01/app/o
                                                             racle/product/19.0.0
                                                             .0/dbhome_1,STABLE
ora.cdp1.cdp
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cdp2.cdp
```

```
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
ora.cdp3.cdp
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.cvu
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.exa4dbadm01.vip
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
ora.exa4dbadm02.vip
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.rhpserver
      1        OFFLINE OFFLINE                               STABLE
ora.scan1.vip
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
ora.scan2.vip
      1        ONLINE  ONLINE       exa4dbadm01              STABLE
ora.scan3.vip
      1        ONLINE  ONLINE       exa4dbadm02              STABLE
--------------------------------------------------------------------------------

[root@exa4dbadm01 tmp]# for H in $(cat ${GROUP_FILE}); do date '+%Y-%m-%d %H:%M:%S'; ssh -q $H 'export GI_HOME=$
(grep -e "^crs_home" /etc/oracle/olr.loc | cut -d= -f2); echo "cluster $($GI_HOME/bin/olsnodes -c) - node $
(hostname -s)"'; export GI_OWNER=$(ssh -q $H "stat -c %U \$(grep -e "^crs_home" /etc/oracle/olr.loc | cut -d=
-f2)/bin/oracle"); ssh -q $H "su ${GI_OWNER} -c 'export GI_HOME=\$(grep -e "^crs_home" /etc/oracle/olr.loc | cut
-d= -f2) ; echo "installed patches GI_HOME \$GI_HOME"; \$GI_HOME/OPatch/opatch lspatches'"; echo ""; done
2025-04-23 13:12:41
cluster Cluster-exa4 - node exa4dbadm01
installed patches GI_HOME /u01/app/23.0.0.0/grid
37369904;RHP RELEASE UPDATE 23.7.0.25.01 (37369904)
37369900;OCW RELEASE UPDATE 23.7.0.25.01 (37369900)
37369896;ACFS RELEASE UPDATE 23.7.0.25.01 (37369896)
37369888;MICRONAUT RELEASE UPDATE 23.7.0.25.01 (37369888)
37366180;Database Release Update : 23.7.0.25.01 (37366180)

OPatch succeeded.

2025-04-23 13:12:43
cluster Cluster-exa4 - node exa4dbadm02
installed patches GI_HOME /u01/app/23.0.0.0/grid
37369904;RHP RELEASE UPDATE 23.7.0.25.01 (37369904)
37369900;OCW RELEASE UPDATE 23.7.0.25.01 (37369900)
37369896;ACFS RELEASE UPDATE 23.7.0.25.01 (37369896)
37369888;MICRONAUT RELEASE UPDATE 23.7.0.25.01 (37369888)
37366180;Database Release Update : 23.7.0.25.01 (37366180)

OPatch succeeded.

[root@exa4dbadm01 tmp]# export ORACLE_OWNER=oracle ; export ORACLE_HOME=/u01/app/oracle/product/23.0.0.0/dbhome_1;
for H in $(cat ${GROUP_FILE}); do date '+%Y-%m-%d %H:%M:%S'; ssh -q $H 'export GI_HOME=$(grep -e "^crs_home"
/etc/oracle/olr.loc | cut -d= -f2); echo "cluster $($GI_HOME/bin/olsnodes -c) - node $(hostname -s)"'; ssh -q $H
"su ${ORACLE_OWNER} -c 'export ORACLE_HOME=${ORACLE_HOME}; echo "installed patches \$ORACLE_HOME"; \$
{ORACLE_HOME}/OPatch/opatch lspatches'"; echo ""; done
2025-04-23 13:13:18
cluster Cluster-exa4 - node exa4dbadm01
installed patches /u01/app/oracle/product/23.0.0.0/dbhome_1
37369900;OCW RELEASE UPDATE 23.7.0.25.01 (37369900)
37366180;Database Release Update : 23.7.0.25.01 (37366180)

OPatch succeeded.

2025-04-23 13:13:20
cluster Cluster-exa4 - node exa4dbadm02
installed patches /u01/app/oracle/product/23.0.0.0/dbhome_1
37369900;OCW RELEASE UPDATE 23.7.0.25.01 (37369900)
37366180;Database Release Update : 23.7.0.25.01 (37366180)

OPatch succeeded.

[root@exa4dbadm01 tmp]# export ORACLE_OWNER=oracle ; export ORACLE_HOME=/u01/app/oracle/product/19.0.0.0/dbhome_1;
for H in $(cat ${GROUP_FILE}); do date '+%Y-%m-%d %H:%M:%S'; ssh -q $H 'export GI_HOME=$(grep -e "^crs_home"
```

```
/etc/oracle/olr.loc | cut -d= -f2); echo "cluster $($GI_HOME/bin/olsnodes -c) - node $(hostname -s)"'; ssh -q $H
"su ${ORACLE_OWNER} -c 'export ORACLE_HOME=${ORACLE_HOME}; echo "installed patches \$ORACLE_HOME"; \$
{ORACLE_HOME}/OPatch/opatch lspatches'"; echo ""; done
2025-04-23 13:13:35
cluster Cluster-exa4 - node exa4dbadm01
installed patches /u01/app/oracle/product/19.0.0.0/dbhome_1
37102264;OJVM RELEASE UPDATE: 19.26.0.0.250121 (37102264)
37268031;OCW RELEASE UPDATE 19.26.0.0.0 (37268031)
37260974;Database Release Update : 19.26.0.0.250121 (37260974)

OPatch succeeded.

2025-04-23 13:13:38
cluster Cluster-exa4 - node exa4dbadm02
installed patches /u01/app/oracle/product/19.0.0.0/dbhome_1
37102264;OJVM RELEASE UPDATE: 19.26.0.0.250121 (37102264)
37268031;OCW RELEASE UPDATE 19.26.0.0.0 (37268031)
37260974;Database Release Update : 19.26.0.0.250121 (37260974)

OPatch succeeded.

[root@exa4dbadm01 tmp]# for H in $(cat ${GROUP_FILE}); do date '+%Y-%m-%d %H:%M:%S'; ssh -q $H 'export GI_HOME=$
(grep -e "^crs_home" /etc/oracle/olr.loc | cut -d= -f2); $GI_HOME/bin/olsnodes -c; $GI_HOME/bin/olsnodes | paste
-sd","; dcli -c $($GI_HOME/bin/olsnodes | paste -sd",") -l root uptime; $GI_HOME/bin/crsctl query css votedisk;
echo ""; $GI_HOME/bin/ocrcheck | tr -s "\n" ; $GI_HOME/bin/ocrconfig -showbackup | tr -s "\n"' ; echo ""; done
2025-04-23 13:13:51
Cluster-exa4
exa4dbadm01,exa4dbadm02
exa4dbadm01: 13:13:51 up 21:18,  2 users,  load average: 0.94, 1.06, 1.11
exa4dbadm02: 13:13:51 up 21:18,  0 users,  load average: 1.65, 1.53, 1.34
##  STATE    File Universal Id                File Name Disk group
--  -----    -----------------                --------- ---------
 1. ONLINE   e384cb2eddd74f9fbf3090918c750901 (o/192.168.10.11;192.168.10.12/DATAC1_CD_06_exa4celadm04) [DATAC1]
 2. ONLINE   0b8bfd014a6e4fe1bf50730e5c11357d (o/192.168.10.5;192.168.10.6/DATAC1_CD_02_exa4celadm01) [DATAC1]
 3. ONLINE   9f3487de4d004f28bf4316d27a8a1df7 (o/192.168.10.9;192.168.10.10/DATAC1_CD_03_exa4celadm03) [DATAC1]
Located 3 voting disk(s).

Status of Oracle Cluster Registry is as follows :
         Version                  :          4
         Total space (kbytes)     :     901284
         Used space (kbytes)      :      85344
         Available space (kbytes) :     815940
         ID                       :  503713553
         Device/File Name         :    +DATAC1
                                    Device/File integrity check succeeded
                                    Device/File not configured
                                    Device/File not configured
                                    Device/File not configured
                                    Device/File not configured
         Cluster registry integrity check succeeded
         Logical corruption check succeeded

exa4dbadm02     2025/04/23 11:58:32     +RECOC1:/Cluster-exa4/OCRBACKUP/backup00.ocr.317.1199188711     2303155306
exa4dbadm02     2025/04/23 07:58:30     +RECOC1:/Cluster-exa4/OCRBACKUP/backup01.ocr.316.1199174309     2303155306
exa4dbadm02     2025/04/23 03:58:28     +RECOC1:/Cluster-exa4/OCRBACKUP/backup02.ocr.314.1199159907     2303155306
exa4dbadm01     2025/04/22 13:26:03     +DATAC1:/Cluster-exa4/OCRBACKUP/day.ocr.259.1199107563     2303155306
exa4dbadm01     2025/04/22 13:26:03     +DATAC1:/Cluster-exa4/OCRBACKUP/week.ocr.260.1199107563     2303155306
exa4dbadm02     2025/04/23 09:25:26     +RECOC1:/Cluster-exa4/OCRBACKUP/backup_20250423_092526.ocr.312.1199179527
2303155306
exa4dbadm01     2025/04/22 14:37:33     +RECOC1:/Cluster-exa4/OCRBACKUP/backup_20250422_143733.ocr.284.1199111853
2303155306

2025-04-23 13:13:52
Cluster-exa4
exa4dbadm01,exa4dbadm02
exa4dbadm01: 13:13:52 up 21:18,  2 users,  load average: 0.94, 1.06, 1.11
exa4dbadm02: 13:13:52 up 21:18,  0 users,  load average: 1.65, 1.53, 1.34
##  STATE    File Universal Id                File Name Disk group
--  -----    -----------------                --------- ---------
```

```
 1. ONLINE   e384cb2eddd74f9fbf3090918c750901 (o/192.168.10.11;192.168.10.12/DATAC1_CD_06_exa4celadm04) [DATAC1]
 2. ONLINE   0b8bfd014a6e4fe1bf50730e5c11357d (o/192.168.10.5;192.168.10.6/DATAC1_CD_02_exa4celadm01) [DATAC1]
 3. ONLINE   9f3487de4d004f28bf4316d27a8a1df7 (o/192.168.10.9;192.168.10.10/DATAC1_CD_03_exa4celadm03) [DATAC1]
Located 3 voting disk(s).

Status of Oracle Cluster Registry is as follows :
         Version                  :          4
         Total space (kbytes)     :     901284
         Used space (kbytes)      :      85344
         Available space (kbytes) :     815940
         ID                       :  503713553
         Device/File Name         :    +DATAC1
                                    Device/File integrity check succeeded
                                    Device/File not configured
                                    Device/File not configured
                                    Device/File not configured
                                    Device/File not configured
         Cluster registry integrity check succeeded
         Logical corruption check succeeded

exa4dbadm02     2025/04/23 11:58:32     +RECOC1:/Cluster-exa4/OCRBACKUP/backup00.ocr.317.1199188711     2303155306
exa4dbadm02     2025/04/23 07:58:30     +RECOC1:/Cluster-exa4/OCRBACKUP/backup01.ocr.316.1199174309     2303155306
exa4dbadm02     2025/04/23 03:58:28     +RECOC1:/Cluster-exa4/OCRBACKUP/backup02.ocr.314.1199159907     2303155306
exa4dbadm01     2025/04/22 13:26:03     +DATAC1:/Cluster-exa4/OCRBACKUP/day.ocr.259.1199107563     2303155306
exa4dbadm01     2025/04/22 13:26:03     +DATAC1:/Cluster-exa4/OCRBACKUP/week.ocr.260.1199107563     2303155306
exa4dbadm02     2025/04/23 09:25:26     +RECOC1:/Cluster-exa4/OCRBACKUP/backup_20250423_092526.ocr.312.1199179527
2303155306
exa4dbadm01     2025/04/22 14:37:33     +RECOC1:/Cluster-exa4/OCRBACKUP/backup_20250422_143733.ocr.284.1199111853
2303155306

[root@exa4dbadm01 tmp]# for H in $(cat ${GROUP_FILE}); do date '+%Y-%m-%d %H:%M:%S'; ssh -q $H 'export GI_HOME=$
(grep -e "^crs_home" /etc/oracle/olr.loc | cut -d= -f2); echo "cluster $($GI_HOME/bin/olsnodes -c) (nodes $
($GI_HOME/bin/olsnodes | paste -sd,))"'; export GI_HOME=$(ssh -q $H 'grep -e "^crs_home" /etc/oracle/olr.loc | cut
-d= -f2') ; export GI_OWNER=$(ssh $H "stat -c %U ${GI_HOME}/bin/oracle") ; ssh -q $H "su ${GI_OWNER} -c 'export
ORACLE_HOME=\$(grep -e \"^crs_home\" /etc/oracle/olr.loc | cut -d= -f2); \$ORACLE_HOME/bin/asmcmd lsdg'"; echo "";
done
2025-04-23 13:14:24
cluster Cluster-exa4 (nodes exa4dbadm01,exa4dbadm02)
State    Type    Rebal  Sector  Logical_Sector  Block       AU   Total_MB    Free_MB  Req_mir_free_MB
Usable_file_MB  Offline_disks  Voting_files  Name
MOUNTED  NORMAL  N         512             512   4096  4194304  805650432  804716232        120847564
341934334              0             Y  DATAC1/
MOUNTED  NORMAL  N         512             512   4096  4194304  201471744  201255736         30220761
85517487             0             N  RECOC1/

2025-04-23 13:14:26
cluster Cluster-exa4 (nodes exa4dbadm01,exa4dbadm02)
State    Type    Rebal  Sector  Logical_Sector  Block       AU   Total_MB    Free_MB  Req_mir_free_MB
Usable_file_MB  Offline_disks  Voting_files  Name
MOUNTED  NORMAL  N         512             512   4096  4194304  805650432  804716232        120847564
341934334              0             Y  DATAC1/
MOUNTED  NORMAL  N         512             512   4096  4194304  201471744  201255736         30220761
85517487             0             N  RECOC1/

[root@exa4dbadm01 tmp]#
```