

Oracle® Database Appliance

Release Notes

Release 12.1.2.6.0 for Linux x86-64

E69449-01

February 2016

This document may be updated after the most recent version of the product is released. To check for updates to this document and to view other Oracle documentation, check the online Oracle Database Appliance documentation library:

<http://www.oracle.com/goto/oda/docs>

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- Documentation Accessibility

Documentation Corrections and Additions

The following topics are updates to the documentation set contents:

Changing the Sysman Password After Installation

The SYSMAN account is the default super user account used to set up and administer Enterprise Manager. It is also the database account that owns the objects stored in the Oracle Management Repository. From this account, you can set up additional administrator accounts and set up Enterprise Manager for use in your organization.

The SYSMAN account is created automatically in the Management Repository database during the Enterprise Manager installation. You also provide a password for the SYSMAN account during the installation.

Oracle Database Appliance Information Center

For the latest software, announcements, alerts, knowledge documents, and problem-solution and troubleshooting documents, visit My Oracle Support Information Center: Oracle Database Appliance [ID 1417713.2]:

<https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=1417713.2>

Current Support Note and Known Issues

My Oracle Support note 888888.1 is a dynamically updated document that contains patch downloads and the most current information about patches and known deployment issues. Access the note using the following URL:

<https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=888888.1>

Oracle Database Appliance Release 12.1.2.5.0

Due to file size limitations, the patch set zip file is split into two parts for this release: Oracle Database Appliance 12.1.2.5.0 Patch 21645601 (p21645601_121250_Linux-x86-64_1of2.zip and p21645601_121250_Linux-x86-64_2of2.zip)

Changes in Release 12.1.2.5.0

- Support for Oracle Grid Infrastructure release 12.1.0.2.5 including Oracle Database 12.1.0.2.5, with patch upgrades from releases 11.2.0.4.x to releases 11.2.0.4.8.
- Enhanced output for `oakcli show dbstorage` command.

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 12.1.2.5.0 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 12.1.2.5.0 End User Bundle (GI+RDBMS) RDBMS Clone Patches

RDBMS Clone Patches

- End User 12.1.0.2.5 RDBMS Clone Patch 19520042
File Name: p19520042_121250_Linux-x86-64.zip
- End User 11.2.0.4.8 RDBMS Clone Patch 17770873
File Name: p17770873_121250_Linux-x86-64.zip
- End User 11.2.0.3.15 RDBMS Clone Patch 14777276
File Name: p14777276_121250_Linux-x86-64.zip

Oracle Database Appliance Release 12.1.2.4.0

Due to file size limitations, the patch set zip file is split into two parts for this release: Oracle Database Appliance 12.1.2.4.0 Patch 21204676 (p21204676_121240_Linux-x86-64_1of2.zip and p21204676_121240_Linux-x86-64_2of2.zip)

Changes in Release 12.1.2.4.0

- Support for Oracle Grid Infrastructure release 12.1.0.2.4 including Oracle Database 12.1.0.2.4, with patch upgrades from releases 11.2.0.4.x and 11.2.0.3.x, to releases 11.2.0.4.7, and 11.2.0.3.15, respectively.
- New and modified Oracle Appliance Manager commands including:
 - Addition of the oakcli configure ib2fiber, oakcli migrate vm
 - Addition of -sparse option for oakcli create vdisk command, allowing you to create of a sparse virtual disk.
- Support for sudo which allows administrators to give certain users (or groups of users) the ability to run commands as root while logging all commands and arguments.
- Support for passwordless root access for sudo users.
- Support for performing a live migration of an Oracle Database Appliance virtual machine. This allows you to move a virtual machine or application between physical machines without disconnecting the client or application.

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 12.1.2.4.0 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 12.1.2.4.0 End User Bundle (GI+RDBMS) RDBMS Clone Patches

RDBMS Clone Patches

- End User 12.1.0.2.4 RDBMS Clone Patch 19520042
File Name: p19520042_121240_Linux-x86-64.zip
- End User 11.2.0.4.7 RDBMS Clone Patch 17770873
File Name: p17770873_121240_Linux-x86-64.zip
- End User 11.2.0.3.15 RDBMS Clone Patch 14777276
File Name: p14777276_121240_Linux-x86-64.zip

Oracle Database Appliance Release 12.1.2.3.0

Due to file size limitations, the patch set zip file is split into two parts for this release: Oracle Database Appliance 12.1.2.3.0 Patch 20690087 (p20690087_121230_Linux-x86-64_1of2.zip and p20690087_121230_Linux-x86-64_2of2.zip)

Changes in Release 12.1.2.3.0

- Support for Oracle Grid Infrastructure release 12.1.0.2.3 including Oracle Database 12.1.0.2.3, with patch upgrades from releases 11.2.0.4.x and 11.2.0.3.x, to releases 11.2.0.4.6, and 11.2.0.3.14 respectively.
- New and modified Oracle Appliance Manager commands, including
 - Addition of the `oakcli show dbstorage`, `oakcli show fs`, `oakcli show ib`, `oakcli show iraid`, and `oakcli show raidsyncstatus` commands

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 12.1.2.3.0 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 12.1.2.3.0 End User Bundle (GI+RDBMS) RDBMS Clone Patches

RDBMS Clone Patches

- End User 12.1.0.2.3 RDBMS Clone Patch 19520042
File Name: p19520042_121230_Linux-x86-64.zip
- End User 11.2.0.4.6 RDBMS Clone Patch 17770873
File Name: p17770873_121230_Linux-x86-64.zip
- End User 11.2.0.3.14 RDBMS Clone Patch 14777276
File Name: p14777276_121230_Linux-x86-64.zip

Oracle Database Appliance Release 12.1.2.2.0

Due to file size limitations, the patch set zip file is split into two parts for this release: Oracle Database Appliance 12.1.2.2.0 Patch 20340774 (p20340774_121220_Linux-x86-64_1of2.zip and p20340774_121220_Linux-x86-64_2of2.zip)

Changes in Release 12.1.2.2.0

- Support for Oracle Grid Infrastructure release 12.1.0.2.2, including Oracle Database 12.1.0.2.2, with patch upgrades from releases 11.2.0.4.x and 11.2.0.3.x, to releases 11.2.0.4.5, and 11.2.0.3.13 respectively
- Support for Oracle Database Appliance X5-2
- Enhancements to database sizing templates
- New and modified Oracle Appliance Manager commands, including
 - Addition of the `oakcli create dbstorage`, `delete dbstorage`, and `resize dbstorage` commands
 - Enhancements to the `oakcli create database` command
 - Addition of `--storage` parameter to the `oakcli manage diagcollect` command

- Addition of `-node` and `-d` parameters to the `oakcli start vm` command

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 12.1.2.2.0 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 12.1.2.2.0 End User Bundle (GI+RDBMS) RDBMS Clone Patches

RDBMS Clone Patches

- End User 12.1.0.2.2 RDBMS Clone Patch 19520042
File Name: p19520042_121220_Linux-x86-64.zip
- End User 11.2.0.4.5 RDBMS Clone Patch 17770873
File Name: p17770873_121220_Linux-x86-64.zip
- End User 11.2.0.3.13 RDBMS Clone Patch 14777276
File Name: p14777276_121220_Linux-x86-64.zip

Oracle Database Appliance Release 12.1.2.1.0

Due to file size limitations, the patch set zip file is split into two parts for this release: Oracle Database Appliance 12.1.2.1.0 Patch 19690105 (p19690105_121210_Linux-x86-64_1of2.zip and p19690105_121210_Linux-x86-64_2of2.zip)

Changes in Release 12.1.2.1.0

- Support for Oracle Grid Infrastructure release 12.1.0.2.1.

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 12.1.2.1.0 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 12.1.2.1.0 End User Bundle (GI+RDBMS) RDBMS Clone Patches

RDBMS Clone Patches

- End User 12.1.0.2.1 RDBMS Clone Patch 19520042
File Name: p19520042_121210_Linux-x86-64.zip
- End User 11.2.0.4.4 RDBMS Clone Patch 17770873
File Name: p17770873_121210_Linux-x86-64.zip
- End User 11.2.0.3.12 RDBMS Clone Patch 14777276

File Name: p14777276_121210_Linux-x86-64.zip

Oracle Database Appliance Release 12.1.2.0.0

Due to file size limitations, the patch set zip file is split into two parts for this release: Oracle Database Appliance 12.1.2.0.0 Patch 18680198 (p18680198_121200_Linux-x86-64_1of2.zip and p18680198_121200_Linux-x86-64_2of2.zip)

Changes in Release 12.1.2.0.0

- Support for Oracle Grid Infrastructure Release 12.1.0.2.0, including Oracle Database 12.1.0.2.0, with patch upgrades from releases 11.2.0.4.x, 11.2.0.3.x, and 11.2.0.2.x to releases 11.2.0.4.3, 11.2.0.3.11, and 11.2.0.2.12 respectively.
- Support for container databases in Oracle Database 12c, 12.1.0.2.0, homes.
- Support for virtual disks.
- Support for database snapshots.
- Support for virtual machine snapshots taken from templates and other virtual machines.
- Support for resizing shared repositories.
- The Security Technical Implementation Guide (STIG) is enhanced and converted to Python for this release. The shell script version of the STIG is deprecated and does not contain the latest updates.
- New and modified Oracle Appliance Manager commands, including
 - Addition of the `-snap` parameter to the `oakcli clone` command.
 - Addition of the `repo` option to the `oakcli configure` command.
 - Addition of the `vdisk` option to the `oakcli create`, `oakcli delete`, `oakcli modify`, and `oakcli show` commands.
 - Addition of the `-errors` parameter to the `oakcli show storage` command.

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 12.1.2 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 12.1.2 End User Bundle (GI+RDBMS) RDBMS Clone Patches

RDBMS Clone Patches

- End User 11.2.0.4.3 RDBMS Clone Patch 17770873
File Name: p17770873_121200_Linux-x86-64.zip
- End User 11.2.0.3.11 RDBMS Clone Patch 14777276
File Name: p14777276_121200_Linux-x86-64.zip

Oracle Database Appliance Release 2.10.0.0.0

Due to file size limitations, the patch set zip file is split into two parts for this release: Oracle Database Appliance Patch 2.10.0.0.0 Patch 18284007 (p18284007_210000_Linux-x86-64_1of2.zip and p18284007_210000_Linux-x86-64_2of2.zip)

Changes in Release 2.10.0.0.0

- The product ODAchk has been replaced by ORAchk. To support this change, the oakcli odachk command is replaced with oakcli orachk and the documentation has been appropriately updated.
- All other changes are internal and not visible to Oracle Database Appliance users.

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 2.10 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 2.10 End User Bundle (GI+RDBMS) RDBMS Clone Patches

RDBMS Clone Patches

- End User 11.2.0.4.2 RDBMS Clone Patch 17770873
File Name: p17770873_210000_Linux-x86-64.zip
- End User 11.2.0.3.10 RDBMS Clone Patch 14777276
File Name: p14777276_210000_Linux-x86-64.zip

Oracle Database Appliance Release 2.9.0.0.0

Patch 2.9.0.0.0 Patch 17630388 (p17630388_29000_Linux-x86-64.zip)

Changes in Release 2.9.0.0.0

- Improved VM stack - better logging (TINT ID), better exception handling in oakd, multithreading of XML rpc agent, multithreading OAKD adapter, to allow parallel VM commands.
- Import of http based templates on ODA_BASE.
- Send Key support to the VM via xenstore.
- Oracle Database Patch Set Update (PSU) 11.2.0.4.1 and 11.2.0.3.9.
- Software enhancements:
 - New template available for Very Very Small databases

- Support for SNMP Version 3 which can be used, optionally, instead of SNMP Version 2
- Hardware Monitoring Tool enhanced to collect information about storage enclosures
- Revised prompts and tools for managing the selection of Fiber or Copper public network
- New Oracle Appliance Manager option to update the first-boot installation configuration of a virtual machine
- Oracle Appliance Manager updates include
 - The `oakcli show` command has a new option, `enclosure`, to monitor storage enclosures
 - The `oakcli modify vm` command has a new parameter, `-s`, to define and send a message to a virtual machine
 - Commands related to managing databases, Oracle Auto Service Request, Virtual Machines, and the Hardware Monitoring Tool have modified input and output where required by the new features supported in this release

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 2.9 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 2.9 End User Bundle (GI+RDBMS) RDBMS Clone Patches

RDBMS Clone Patches

- End User 11.2.0.4.1 RDBMS Clone Patch 17770873
File Name: p17770873_298000_Linux-x86-64.zip
- End User 11.2.0.3.9 RDBMS Clone Patch 14777276
File Name: p14777276_29000_Linux-x86-64.zip

Oracle Database Appliance Release 2.8.0.0.0

Patch 2.8.0.0.0 Patch 17630367 (p17630367_28000_Linux-x86-64.zip)

Changes in Release 2.8.0.0.0

- For Bare Metal and Virtualized Platform ODA_BASE, Oracle Grid Infrastructure upgrade to 11.2.0.4.0
- Oracle Database Patch Set Update (PSU) 11.2.0.3.8 and 11.2.0.2.12
- Support for Oracle Database Appliance X4-2
- ILOM / BIOS updated to 3.0.16.22.d r83408/12010311 for V1 and 3.1.2.10.d r83372/17050100 for X3-2

- Software enhancements:
 - Shared Repository support for Oracle Database Appliance Virtualized Platform
 - Virtual Local Area Network support for Oracle Database Appliance Virtualized Platform
 - Hardware Monitoring Tool reports data from sensors in subsystems for Oracle Database Appliance X3-2 only
 - Initial deployment does not require configuration of initial Oracle Database or Oracle Enterprise Database Control
- Oracle Appliance Manager has many option and parameter additions to existing commands, such as `oakcli configure`, `oakcli show`, and so on, to support new features such as shared repositories

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 2.8 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 2.8 End User Bundle (GI+RDBMS)

RDBMS Clone Patches

- End User 11.2.0.2.12 RDBMS Clone Patch 14349293
File Name: p14349293_28000_Linux-x86-64.zip
- End User 11.2.0.3.8 RDBMS Clone Patch 14777276
File Name: p14777276_28000_Linux-x86-64.zip

Note: When downloading patches for Oracle Database Appliance Release 2.8, ensure that you select **Oracle Appliance Kit 2.8.0.0.0** in the **Select a Release** drop down list.

Oracle Database Appliance Release 2.7.0.0.0

ODA Patch 2.7.0.0.0 Patch 16760967 (p16760967_27000_Linux-x86-64.zip)

Changes in Release 2.7.0.0.0

- For Bare Metal and Virtualized Platform ODA_BASE, Unbreakable Enterprise Kernel upgraded from UEK1 to UEK2 OEL 5.9 (2.7.39-400.111.1.el5uek)
- For OVM, upgraded from 3.1.1 to 3.2.3 (2.7.39-300.32.1.el5uek)
- Oracle Database Patch Set Update (PSU) 11.2.0.3.7 and 11.2.0.2.11
- For hardware (other than X3-2), ILOM / BIOS updated to 3.0.16.22c r80379 / 12010311
- The `oakcli show` command has new option to show the hardware version and environment type information:

```
oakcli show env_hw
```

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)
 - Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 2.7 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 2.7 End User Bundle (GI+RDBMS)

RDBMS Clone Patches

- End User 11.2.0.2.11 RDBMS Clone Patch 14349293
File Name: p14349293_27000_Linux-x86-64.zip
- End User 11.2.0.3.7 RDBMS Clone Patch 14777276
File Name: p14777276_27000_Linux-x86-64.zip

Note: When downloading patches for Oracle Database Appliance Release 2.7, ensure that you select **Oracle Appliance Kit 2.7.0.0.0** in the **Select a Release** drop down list.

Oracle Database Appliance Release 2.6.0.0.0

ODA Patch 2.6.0.0.0 Patch 16744915 (p16744915_26000_Linux-x86-64.zip)

Changes in Release 2.6.0.0.0

- Offers similar deployment and user experience for both Bare Metal and Virtualized platform on X3-2 and all earlier hardware
- Support of OVM assemblies (*.ova files)
- Support for http option for template import
- SAP supported on Oracle Database Appliance and on Oracle Database Appliance X3-2 Bare Metal
- ILOM version updated to 3.0.16.22.b r78329
- Oracle Database Patch Set Update (PSU) 11.2.0.3.6 and 11.2.0.2.10
- New offline Oracle Appliance Manager Configurator
- New Oracle Appliance Manager commands and options:
 - oakcli restart oda_base: stop and restart ODA_BASE on the local node
 - oakcli start oda_base: start ODA_BASE on the local node
 - oakcli stop oda_base: stop ODA_BASE on the local node

Virtualized or Non-virtualized (Bare Metal) Deployment

- For Virtualized Configuration:
 - Patch 16186163: Oracle Database Appliance VM ISO Image (Dom0)

- Patch 16186172: Oracle Database Appliance VM Template (ODA_BASE)
- For Bare Metal (non-virtualized) configuration:
 - Patch 12999313: Oracle Database Appliance 2.6 Bare Metal ISO Image
 - Patch 12978712: Oracle Database Appliance 2.6 End User Bundle (GI+RDBMS)

RDBMS Clone Patches

- End User 11.2.0.2.10 RDBMS Clone Patch 14349293
File Name: p14349293_26000_Linux-x86-64.zip
- End User 11.2.0.3.6 RDBMS Clone Patch 14777276
File Name: p14777276_26000_Linux-x86-64.zip

Note: When downloading patches for Oracle Database Appliance Release 2.6, ensure that you select **Oracle Appliance Kit 2.6.0.0.0** in the **Select a Release** drop down list.

Changes in Release 2.5.5.0.0

- Support for new Oracle Database Appliance X3-2 (hardware only).
- Support for one additional storage expansion shelf (for a total of two storage shelves).
- Provides choice of either a Bare Metal (BM) or a Virtualization Platform option for ODA X3-2 hardware.
- This is the First version for ODA X3-2, therefore patching is not available.
- For Bare Metal installation only, the following EndUserBundle clone file can be applied on ODA X3-2 nodes running versions 2.5.5.0.0:
 - p12978712_25500_Linux-x86-64.zip
- For Virtualized Platform installation, apply the following files
 - p16186163_25500_Linux-x86-64.zip
 - p16186172_25500_Linux-x86-64.zip
 using the step by step instructions documented in My Oracle Support Note <https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&doctype=REFERENCE&id=1520579.1>.

Changes in Release 2.5.0.0.0

Starting with release 2.5, you can deploy Oracle Database Appliance in a Virtualized or Non-virtualized (Bare Metal) configuration.

- Support for Oracle VM, Version 3.1.1
 - Efficient use of resources:
 - * Few cores can be licensed for database
 - * Remaining cores can support virtual domains for a variety of uses

- Similar deployment and usage experience for both bare metal and virtual platforms
- Based on Oracle VM 3.1.1 and supports all OS and templates support by Oracle VM
- New Oracle VM oakcli commands
- External Auto Service Request server support

Changes in Release 2.4.0.0.0

- Oracle Automatic Storage Management (Oracle ASM) Normal Redundancy Support for DATA and RECO disk groups: This feature is only available for new deployments. In the Oracle Database Appliance Manager GUI, you can select normal redundancy for your DATA and RECO disk groups when you select the Custom configuration option. Oracle continues to use HIGH redundancy for the REDO disk group.
- Trace File Analyzer: This version adds a deployment step to install the new Trace File Analyzer feature.
- The oakcli create command is enhanced as follows:
 - Currently, the supported versions for oakcli create dbhome -version version_number are 11.2.0.2.8 and 11.2.0.3.4.
- All documentation in the Oracle Database Appliance library is current for Oracle Database Appliance 2.4.0.0.0. Some of the documents may refer to previous Oracle Database Appliance releases, but these documents are applicable to this most recent release.

Known Issues for Release 2.4.0.0.0

For additional information about known issues for this patch, refer to My Oracle Support Note 888888.1. The following summarizes the known issues for release 2.4.0.0.0:

- By default, Oracle installs Enterprise Manager DB Console for the database. For Grid Infrastructure patching, Oracle stops all DB Consoles. However, if you installed the Oracle Database Cloud Control 12c agent, then it remains operational. If you have installed Oracle Database Cloud Control 12c, then run the command `emctl stop agent` to stop the Oracle Database Enterprise Manager Agent before applying Grid Infrastructure patching. This avoids running into the issue – copy failed for crsctl.bin.
- It is not necessary to run `emctl stop dbconsole`, because the patching process stops the console. Intermittently, some DB Console processes continue running, and Grid Infrastructure patching fails because a copy operation for crsctl.bin failed. If this happens, then ensure that the DB Console process is stopped before performing Grid Infrastructure patching.
- After the infrastructure is updated, run `dmidecode -t 1 | egrep Serial Number / Version / Product Name / SKU Number` on both nodes. If either node responds with a Not Available message, then reboot the node. This issue should be resolved in this release.
- After the infrastructure updates, run `fwupdate list controller | grep -v Intel` on both nodes. If no information appears under FW Version for SAS LSI Logic

0x0072 Type Manufacturer Model controllers, then reboot the node. The firmware version should be 11.05.02.00. This issue should be resolved in this release.

- In deployments for the version prior to Oracle Database Appliance 2.3, the parameter `use_large_pages` is set to `TRUE`. For new deployments, Oracle adopts the best practice of setting `use_large_pages` to `ONLY`. If you did not properly size your environment based on Appendix C of the *Oracle Database Appliance Getting Started Guide* and your database has a larger SGA, then you might see related messages in your alert log file. Oracle does not recommend that you revert the setting of `use_large_pages` to `TRUE`. Instead, Oracle recommends that you let the system notify you with the early warning that your database might run into memory issues; eventually this limitation will affect your system's performance. In this case, Oracle recommends that you avoid creating and starting additional databases.

```
***** Huge Pages Information *****
Huge Pages memory pool detected (total: 26000 free: 3729)
Huge Pages allocation failed (free: 23694 required: 2049)
Startup will fail as use_large_pages is set to "ONLY"
*****
```

Or:

```
***** Large Pages Information *****
Parameter use_large_pages = ONLY
Large Pages unused system wide = 23951 (47 GB) (alloc incr 128 MB)
Large Pages configured system wide = 26000 (51 GB)
Large Page size = 2048 KB
ERROR:
  Failed to allocate shared global region with large pages, unix errno = 12.
  Aborting Instance startup.
  ORA-27137: unable to allocate Large Pages to create a shared memory segment
ACTION:
  Total Shared Global Region size is 48 GB. Increase the number of
  unused large pages to at least 24580 (48 GB) to allocate 100% Shared Global
  Region with Large Pages.
*****
```

Changes in Release 2.3.0.0.0

- Support for multiple Oracle homes for Oracle Database 11g Release 2 versions 11.2.0.2.5 and 11.2.0.3.3 as follows:
 - Ability to create multiple Oracle homes of the same database version or a different version.
 - For new database homes, Oracle supports 11.2.0.2.8 and 11.2.0.3.4.
 - You can create a database from an existing home. By default, when you create a database without providing the home information, Oracle creates a separate home for that database.
 - If you provide version information while creating the database, then Oracle creates a new database home with that particular version, and then creates the database in that home.

- Please refer to Appendix C of the *Oracle Database Appliance Getting Started Guide* for information about Oracle Database Appliance sizing to determine how many Oracle RAC databases your environment can support.
- The `oakcli create` command is enhanced as follows:
 - In addition to the `oakcli upgrade` command, there are some new `oakcli` commands included in this patch to support multiple databases and multiple database homes.
 - The minimum version to run `oakcli create` or `oakcli delete` is Oracle Database Appliance 2.3.0.0.0.
 - Run `oakcli create` commands to create new databases, or new database homes or new database configuration parameter files.
 - Oracle Database Appliance 2.3: currently the supported versions for `oakcli create dbhome -version version_number` are 11.2.0.2.7 and 11.2.0.3.3.
 - To create 11.2.0.2.8 homes, download the 11.2.0.2.8 database clone file from My Oracle Support, patch number 14349293 - p14349293_24000_Linux-x86-64.zip. To create 11.2.0.3.4 homes, download the 11.2.0.3.4 database clone file from My Oracle Support, patch # 14777276 - p14777276_24000_Linux-x86-64.zip. The command should be run on node 1.

See Also: Enter the `oakcli create -h` command to see more details, or refer to Appendix D in the *Oracle Database Appliance Getting Started Guide*
- The `oakcli delete` command is enhanced as follows:
 - You can use `oakcli delete` commands on node 1 to delete old unused databases and old, unused database homes.

See Also: Enter the `oakcli delete -h` command to see more details, or refer to Appendix D in the *Oracle Database Appliance Getting Started Guide*
- The Oracle Appliance Database configuration parameters are enhanced as follows:
 - Oracle uses a set of default parameters to create a database. You can use `oakcli show db_config_parms -detail` to display the database configuration parameter settings. To change these configuration parameter settings, create a configuration file using `oakcli create db_config_parms -conf conf_file_name` on node 1, where `conf_file_name` is the name of the configuration file.

See Also: Enter the `oakcli show dbconfig_parms -h` command to see more details, or refer to Appendix D in the *Oracle Database Appliance Getting Started Guide*
- You can now run the `oakcli update -patch 2.4.0.0.0 --verify` command as follows:
 - Before you run `oakcli update -patch`, you can verify the proposed patch version by running the `oakcli update -patch 2.4.0.0.0 --verify` command.

- You can now run the `oakcli update -patch 2.4.0.0.0 -clean` command as follows:
 - Run the `oakcli update -patch 2.4.0.0.0 -clean` command to delete all temporary files on the local node.
- See Also:** Enter the `oakcli update -patch 2.4.0.0.0 -clean` command to see more details, or refer to Appendix D in the *Oracle Database Appliance Getting Started Guide*

Changes in Release 2.2.0.0

- Support for Oracle Database 11g Release 2 (11.2.0.3.2)
- Support for Oracle Linux 5.8, including the Unbreakable Enterprise Kernel
- Patching new features, including the following:
 - Support to patch Oracle Grid Infrastructure and Oracle Database homes separately
 - New `oakcli` command options (`-infra`, `-verify`)
- Improved system diagnostics, including improved logging and patching information
- Support for local applications running Oracle Database Appliance

Changes in Release 2.1.0.2.0

- You can deploy Oracle Database Appliance without using a DNS.

Oracle recommends that you use a DNS so that you can use the Single Client Access Name (SCAN) for client requests. If you deploy the appliance without a DNS, but later set up a DNS and configure the SCAN name and addresses on the DNS, then you must configure the SCAN listeners manually after installation.
- See Also:** *Oracle Clusterware Administration and Deployment Guide* for information about configuring SCANs

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