Oracle® Database Appliance X8-2 Deployment and User's Guide





Oracle Database Appliance X8-2 Deployment and User's Guide, Release 19.4 for Linux x86-64

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Preface

Oracle Database Appliance is an optimized, prebuilt database system that is easy to deploy, operate, and manage. By integrating hardware and software, Oracle Database Appliance eliminates the complexities of nonintegrated, manually assembled solutions. Oracle Database Appliance reduces the installation and software deployment times from weeks or months to just a few hours while preventing configuration and setup errors that often result in suboptimal, hard-to-manage database environments.

- Audience
- Documentation Accessibility
- Related Documents
- Conventions

Audience

This guide is intended for anyone who configures, maintains, or uses Oracle Database Appliance:

- System administrators
- Network administrators
- Database administrators
- Application administrators and users

This book does not include information about Oracle Database architecture, tools, management, or application development that is covered in the main body of Oracle Documentation, unless the information provided is specific to Oracle Database Appliance. Users of Oracle Database Appliance software are expected to have the same skills as users of any other Linux-based Oracle Database installations.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

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Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.



Related Documents

For more information about Oracle Database Appliance, go to http://www.oracle.com/goto/oda/docs and click the appropriate release. The following documents are published in the Oracle Database Appliance online documentation library:

- Oracle Database Appliance Release Notes
- Oracle Database Appliance Licensing Information User Manual
- Oracle Database Appliance Security Guide
- Oracle Database Appliance Accessibility Guide
- Oracle Database Appliance X8-2 Deployment and User's Guide
- Oracle Database Appliance X7-2 Deployment and User's Guide
- Oracle Database Appliance X6-2-HA Deployment and User's Guide
- Oracle Database Appliance X6-2S/M/L Deployment and User's Guide
- Oracle Database Appliance X5-2/X4-2 Deployment and User's Guide
- Oracle Database Appliance Setup Posters and Booklets (a full-size printed copy ships with Oracle Database Appliance)
- Oracle Database Appliance Owner's Guide
- Oracle Database Appliance Service Manual
- Oracle Database Appliance Series Safety and Compliance Guide

For more information about using Oracle Database, go to http://docs.oracle.com/en/database/ and select the database release from the menu. See the following documents in the Oracle Database online documentation library:

- Oracle Database Security Guide
- Oracle Database Administrator's Guide
- Oracle Database SQL Language Quick Reference
- Oracle Database Backup and Recovery User's Guide
- Oracle Database Backup and Recovery Reference
- Oracle Database Utilities
- Oracle Automatic Storage Management Administrator's Guide

For more information about Oracle Integrated Lights Out Manager 3.2, see https://docs.oracle.com/cd/E37444_01/.

For more details about other Oracle products that are mentioned in Oracle Database Appliance documentation, see the Oracle Documentation home page at http://docs.oracle.com.

Conventions

The following text conventions are used in this document:



Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action or terms defined in the text.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.
# prompt	The pound (#) prompt indicates a command that is run as the root user.



1

Oracle Database Appliance Checklists

Use these checklists to ensure you have completed the tasks required for setting up, deploying, and patching Oracle Database Appliance.

Checklist for System Requirements

Before you begin the deployment, ensure that you have the system information described in this checklist ready. This checklist applies to baremetal and virtualized platform deployments.

- Deployment Checklist for Oracle Database Appliance Bare Metal Installations
 This checklist provides an overview of the tasks to setup and deploy Oracle
 Database Appliance for the first time.
- Checklist for Custom Network Address Configuration
 Use the checklist to identify the IP addresses required for Oracle Database
 Appliance.

Checklist for System Requirements

Before you begin the deployment, ensure that you have the system information described in this checklist ready. This checklist applies to baremetal and virtualized platform deployments.

Table 1-1 Checklist for System Configuration Information for Oracle Database Appliance

Component	Information Required	Comments
Host Name	The name for the Oracle Database Appliance System. The name must conform with the RFC 952 standard, which allows alphanumeric characters and hyphens (-), but does not allow underscores (_). The name should not begin with a numeral or hyphen and should not end in a hyphen. Oracle recommends that you use all lowercase characters for the host name.	Use this space to note the values for your appliance. Host Name:
Domain Name	Your domain name.	Domain Name:
	For example: example.com	
Region	The region where you plan to operate the Oracle Database Appliance system.	Region:



Table 1-1 (Cont.) Checklist for System Configuration Information for Oracle Database Appliance

Component	Information Required	Comments
Timezone	The time zone where you plan to operate the Oracle Database Appliance system.	Timezone:
Diskgroup Redundancy	Determine the redundancy level for DATA, RECO, and FLASH:	Use this space to note the values for your appliance.
	If there are up to two disks, then you can select the disk group redundancy as Normal or Flex. If there are more than two disk drives, then you can select the redundancy as Normal (two way mirror), High (three way mirror), or Flex. If you select High redundancy, then DATA, RECO, and FLASH are all High Redundancy.	
Number of Enabled CPU Cores	Based on your capacity-on- demand (CoD) license, this value specifies the number of enabled CPU cores	Use this space to note the values for your appliance.
Backup	Determine the backup location. For external backup, you need an NFS device.	Backup location:
Percentage of Storage Reserved for Data	Determine the amount of reserves for DATA storage. The percentage must be a whole number between 10 and 90, and determines how the disks are partitioned between DATA and RECO. For example, if you specify 80, then 80% of storage is reserved for DATA and the remaining 20% is for RECO.	Use this space to note the values for your appliance.
System Password	The password set for the root user of the system, operating system users, database users, and pdbadmin. The password is also used to set the database SYS and SYSTEM passwords. Ensure that the password you provide is in compliance with common security practices.	Use this space to note the values for your appliance.
DNS Server	(Optional) DNS server details. If configuring DNS, a minimum of one DNS Server IP is required.	DNS Server details:



Table 1-1 (Cont.) Checklist for System Configuration Information for Oracle Database Appliance

Component	Information Required	Comments
NTP Server	(Optional) Network Time Protocol (NTP) server details.	NTP Server details:
Network Information for the client access network	Obtain the following network information:	Use this space to note the values for your appliance.
	 Node 0 Name: such as example0 Node 1 Name (For HA Models): such as example1 Node 1 Public IP Address (For HA Models): hode 1 Public IP Address (For HA Models) Node 0 Virtual IP Name (For HA Models): for example, example0-vip Node 0 Public Virtual IP Address (For HA Models): hode 1 Virtual IP Name (For HA Models): for example, example1-vip Node 1 Public Virtual IP Name (For HA Models): for example, example1-vip Node 1 Public Virtual IP Address (For HA Models) SCAN Name (For HA Models) SCAN IP Addresses: Two SCAN IP addresses are required Netmask Gateway IP Obtain the following additional network information for virtualized platforms: OVM Node0 Dom0 Host Name OVM Node1 Dom0 Host Name OVM Node1 Dom0 Host Name OVM Node1 Dom0 IP Address OVM Node1 Dom0 IP Address 	



Table 1-1 (Cont.) Checklist for System Configuration Information for Oracle Database Appliance

Component	Information Required	Comments
Network Information for the Oracle Integrated Lights Out Manager (ILOM) network	Obtain the following ILOM network information: ILOM host name ILOM IP address Subnet mask Gateway IP ILOM Password: default is changeme. For HA systems, ensure that you have the information to configure two ILOM networks.	Use this space to note the values for your appliance.
User and group information	Determine how you want to configure your users and groups and whether or not you want to allow operating system role separation. The default is two users with six groups. Operating System Role Separation: Yes/No Customization of Users and Groups: Yes/No Groups and IDs: Grid Infrastructure User Grid Infrastructure User ID Database User Database User Install Group Install Group Install Group ID ABA Operating System Group ASM Admin Group ASM Admin Group ASM Operating System Group ID	Use this space to note the values for your appliance.



Table 1-1 (Cont.) Checklist for System Configuration Information for Oracle Database Appliance

Component	Information Required	Comments
Initial Database Details (if you want to create one during deployment)	(Optional) If you choose to create an initial database during deployment, determine the following configuration details:	Use this space to note the values for your appliance.
	 Database name Database unique name 	
	Database unique nameDatabase version (based	
	on the database clones that are registered with the Oracle Database Appliance)	
	 Determine the Oracle 	
	Database edition licensing that you have, either Enterprise Edition	
	or Standard Edition. You cannot mix editions.	
	 Database deployment, whether Oracle RAC or 	
	single-instance database	
	 CDB (Container Database): Yes or No 	
	PDB name	
	 Shape (for example, 	
	odb1, odb2, and so on)	
	 Database Class: 	
	Enterprise Edition, OLTP,	
	DSS, or IMDB. Standard	
	Edition OLTP only.	
	Data files on Flash	
	storage: Yes/No • Database file size	
	Database file sizeDatabase characterset	
	National characterset	
	 Database language 	
	Storage (Oracle ASM or	
	Oracle ACFS). 11.2.0.4	
	databases are supported	
	only on Oracle ACFS	
	storage.	
	Database redundancy	
	Configure Oracle Enterprise Manager	
	console. If you are using Enterprise Manager Cloud Control with this	
	appliance, do not choose	
	this option.	
	 Password for the database 	
	The DB Name and DB Unique	



Table 1-1 (Cont.) Checklist for System Configuration Information for Oracle Database Appliance

Component	Information Required	Comments
	alphanumeric characters and must start with an alphabet. It can contain underscores (_), but cannot contain characters such as "!@%^&*()+=\\ `~[{]};:'\",<>/?".	
Oracle Auto Service Request (Oracle ASR) information	(Optional) Do you want to configure and enable Oracle ASR at deployment or later? If required, then ensure that you have the following information. ASR Type ASR User Name ASR Password SNMP Version Proxy Server Name Proxy Port Proxy User Name Proxy Password	Use this space to note the values for your appliance.
Information for Virtualized Platform Deployments Only	Base Memory: Memory allocated to the ODA_BASE domain.	Use this space to note your values.

Deployment Checklist for Oracle Database Appliance Bare Metal Installations

This checklist provides an overview of the tasks to setup and deploy Oracle Database Appliance for the first time.

Table 1-2 Deployment Checklist for Baremetal Installations

Component	Tasks
Register your hardware Support Identifier (SI)	Add your hardware Support Identifier (SI) to your My Oracle Support account profile. Your hardware SI is supplied when you purchase Oracle Database Appliance. If you acquire new software licenses, then you must also register your new software SIs. The SI registration process can take up to 24 hours to complete.
Connect to Oracle Database Appliance	 Plug in the hardware, and then wait for the SP light to become solid green. Do not power up yet. If there is no video port available on your Oracle Database Appliance hardware model, then use the Server Management Serial Port to connect to a laptop, or determine the DHCP address assigned to it. Note: Serial port must be set to 115200, so make sure the baud rate speed matches.



Table 1-2 (Cont.) Deployment Checklist for Baremetal Installations

Component	Tasks
Configure Oracle Integrated Lights Out Manager (Oracle ILOM) on Node0 and Node1	Before you configure Oracle ILOM, ensure that you have following information available: A name and IP address A password to replace the default Oracle ILOM password Access to a management network, using an assigned netmask An Ethernet cable connected from the NET MGT port to the management network Log into the Oracle ILOM console and follow the procedure in the topic Configuring Oracle Integrated Lights Out Manager.
Power ON	 Power on each node and log in as root user with welcomel password. Verify cabling: # /opt/oracle/dcs/bin/odacli validate-storagetopology Verify interconnect networking. Run the commands # ethtool plpl and # ethtool plp2. Follow the steps described in the topic Verifying Cabling and Network Connections.
Plumb the network	Ensure that you have recorded the IP address and netmask address. Set up a temporary network connection to Oracle Database Appliance. Use the command odacli configure-firstnet on NodeO, for both single- and multi-node systems. Log into the Oracle ILOM console and follow the procedure in the topic <i>Plumbing the Network</i> .
Download Oracle Database Appliance Software	Log into My Oracle Support and download the software files for deployment. Refer to the <i>Oracle Database Appliance Release Notes</i> for the latest software.
Install Oracle Database Appliance	Upload the zip files to a temporary location on Oracle Database Appliance and then update the repository and install the software. Follow the steps and run the commands described in the topic Installing Oracle Database Appliance Software.
Create Appliance	 Set the Web Console password for the oda-admin user. Log into the Web Console and configure system, network, and users and groups. Ensure that you have the information mentioned in <i>Checklist for System Requirements</i> available to you. Follow the steps described in the topic <i>Creating an Appliance</i>.
Perform postinstallation tasks	Configure CPU core count. Change the passwords for Web Console, Oracle users and groups, and Oracle ILOM. Follow the steps described in the chapter Oracle Database Appliance Postinstallation Tasks.
Cleanup Deployments	If your deployment failed for some reason, then run the cleanup script and redeploy the appliance. For steps to run the cleanup script, see the topic Running the Cleanup Script for Incomplete or Failed Installations.



Related Topics

Verifying Cabling and Network Connections

After powering on Oracle Database Appliance, verify that the network connections are set up correctly.

Configuring Oracle Integrated Lights Out Manager

Configure Oracle Integrated Lights Out Manager (Oracle ILOM) to manage Oracle Database Appliance independent of the operating system.

Plumbing the Network

Plumb the Oracle Database Appliance network with the public internet protocol (IP) information assigned to a node, to enable provisioning of the Oracle Database Appliance software.

Installing Oracle Database Appliance Software

Install Oracle Database Appliance software, before creating the appliance.

Creating the Appliance

Create the appliance using the Web Console.

Oracle Database Appliance Postinstallation Tasks

Complete these administrative tasks after you have deployed software, but before the system is operational.

Cleaning Up Incomplete or Failed Installations

Use the Oracle Database Appliance cleanup deploy utility, /opt/oracle/oak/onecmd/cleanup.pl to uninstall Oracle Database Appliance components.

Checklist for Custom Network Address Configuration

Use the checklist to identify the IP addresses required for Oracle Database Appliance.



Oracle does not recommend changing the default Host Private Address. You cannot change the private network after deploying the appliance.

Table 1-3 Default IP Address Requirements for Oracle Database Appliance

Type of IP	IP Address Default Values	Your Values As Applicable
Client Access Network	No default	No default
Additional Network	No default	No default
Oracle Integrated Lights Out Manager (ILOM)	No default	No default
Host Private Addresses	InfiniBand has bonded interface ibbond0 . The system configures icbond0 on non-InfiniBand High-Availability systems. The subnet 192.168.16.0/24 is configured.	Not applicable: the private addresses are defined before deployment and should not be changed



Introduction to Oracle Database Appliance

Oracle Database Appliance saves time and money by simplifying deployment, maintenance, and support of database solutions for organizations of every size. Oracle Database Appliance hardware models are optimized to run Oracle Database Standard Edition and Enterprise Edition.

- About Oracle Database Appliance
 Understand Oracle Database Appliance hardware models, deployment plans, and database options.
- Oracle Database Appliance Software Terminology
 Understand the software patches available for Oracle Database Appliance.
- About the Web Console
 Use the Oracle Appliance Manager Web Console to deploy and manage the appliance, databases, networks, and jobs.

About Oracle Database Appliance

Understand Oracle Database Appliance hardware models, deployment plans, and database options.

About Oracle Database Appliance Hardware Models

Choose the Oracle Database Appliance hardware model that suits your business needs.

Oracle Database Appliance Hardware Model	Deployment Use Case
Oracle Database Appliance X8-2S, X8-2M, X8-2-HA	 Oracle Database Appliance X8-2S is a small configuration designed for smaller or entry-level deployments. Oracle Database Appliance X8-2M is a medium-sized configuration designed for performance. Oracle Database Appliance X8-2-HA is a large configuration designed for larger databases and high-availability.
Oracle Database Appliance X7-2S, X7-2M, X7-2-HA	 Oracle Database Appliance X7-2S is a small configuration designed for smaller or entry-level deployments. Oracle Database Appliance X7-2M is a medium-sized configuration designed for performance. Oracle Database Appliance X7-2-HA is a large configuration designed for larger databases and high-availability.



Oracle Database Appliance Hardware Model	Deployment Use Case
Oracle Database Appliance X6-2S, X6-2M, X6-2L	 Oracle Database Appliance X6-2S is a small configuration designed for smaller or entry-level deployments.
	 Oracle Database Appliance X6-2M is a medium-sized configuration designed for performance.
	 Oracle Database Appliance X6-2L is a large configuration designed for larger databases.
Oracle Database Appliance X6-2-HA	Highly-available two-node Oracle RAC clusters that can support both Oracle RAC and single-instance databases.
Oracle Database Appliance X5-2 and X4-2	Highly-available two-node Oracle RAC clusters that can support both Oracle RAC and single-instance databases.

You cannot expand or reconfigure Oracle Database Appliance to a different configuration. For example, you cannot expand Oracle Database Appliance X7-S to Oracle Database Appliance X7-2M. For Oracle Database Appliance hardware configuration details, see the *Oracle Database Appliance Owner's Guide*.

About Oracle Database Appliance Deployment Plans

Oracle Database Appliance X8-2S and X8-2M are single node systems that you deploy as a bare metal platform.

Oracle Database Appliance X8-2-HA is a two-node system with the option to deploy as a bare metal platform or a virtualized platform.

Oracle Database Appliance X7-2S and X7-2M are single node systems that you deploy as a bare metal platform.

Oracle Database Appliance X7-2-HA is a two-node system with the option to deploy as a bare metal platform or a virtualized platform.

Oracle Database Appliance X6-2S, X6-2M, X6-2L are single node systems that you deploy as a bare metal platform.

Oracle Database Appliance X6-2-HA is a two-node system with the option to deploy as a bare metal platform or a virtualized platform. Starting with with Oracle Database Appliance release 19.4, systems deployed as bare metal are migrated from oakcli to odacli (the DCS software stack). Virtualized systems continue to use the oakcli software stack.

Oracle Database Appliance X5-2 and X4-2 are two-node systems with the option to deploy as a bare metal platform or a virtualized platform. Starting with with Oracle Database Appliance release 19.4, systems deployed as bare metal are migrated from oakcli to odacli (the DCS software stack). Virtualized systems continue to use the oakcli software stack.

About Database Deployment Options for Oracle Database Appliance

The following Oracle Database editions are available:



Database Edition	Supported Releases	Description
Oracle Database Enterprise Edition	Oracle Database Release 18 <i>c</i> , 12.2.0.1, 12.1.0.2, and 11.2.0.4	Supports Oracle Real Application Clusters (Oracle RAC) and single-instance Oracle Databases.
Oracle Database Standard Edition Two	Oracle Database Release 18c, 12.2.0.1, 12.1.0.2, and 11.2.0.4	Supports Oracle Real Application Clusters (Oracle RAC), Oracle RAC One, and single-instance Oracle Databases.
Oracle Database Standard Edition One	Oracle Database Release 11.2.0.4	Supports Oracle Real Application Clusters (Oracle RAC), Oracle RAC One, and single-instance Oracle Databases.
Oracle Database Standard Edition	Oracle Database Release 11.2.0.4	Supports Oracle Real Application Clusters (Oracle RAC), Oracle RAC One, and single-instance Oracle Databases.



It is important to understand your Oracle Database licensing before you create databases. You cannot provision Oracle Database Enterprise Edition and Standard Edition databases in the same bare metal platform, or the same ODA_BASE virtualized deployment, subject to Oracle Database licensing requirements. Review the Database Licensing Information User Manual for the Oracle Database release to review supported options and products.

Oracle Database Appliance Software Terminology

Understand the software patches available for Oracle Database Appliance.

The table describes the Oracle Database Appliance patches that are available for download and the purpose of the patch.



Some hardware models may not use the patches listed in the table.

Table 2-1 Software for Oracle Database Appliance

Patch	Description
Oracle Database Appliance patch bundle (quarterly patch release)	Use the patch bundle to update to the latest release after Oracle Database Appliance is deployed. The patch updates the Oracle Database Appliance server, storage, and database components.



Table 2-1 (Cont.) Software for Oracle Database Appliance

Patch	Description	
Oracle Database Appliance GI/ RDBMS Clone	Use to perform an initial deployment of Oracle Database Appliance. The bundle contains the latest Grid Infrastructure and RDBMS components, Oracle Database Appliance Manager software, Oracle Linux and hardware drivers for deployment on an Oracle Database Appliance that is shipped from factory state.	
	If you reimage Oracle Database Appliance with the Bare Metal ISO Image, download the GI/RDBMS Clone patch to deploy Oracle Database Appliance.	
RDBMS Clone	Use the RDBMS Software Clone files to get the latest RDBMS clone binaries for Oracle Database releases 18c, 12.2.0.1, 12.1.0.2, and 11.2.0.4. The RDBMS clone files are needed to create Oracle databases and database homes.	
Bare Metal ISO Image	Use to reimage the appliance and reset the system back to the factory configuration.	
VM ISO Image (DOM0) (Virtualized Platform ISO Image)	Use to re-image Oracle Database Appliance before deploying the ODA_Base Template and virtualized platform. The Oracle Database Appliance virtualized operating system image contains the following:	
	 Oracle Database Appliance Manager oakcli command-line interface Oracle Database Appliance Manager Configurator Oracle Linux Hardware drivers Required for Virtualized Platform deployments on multi-node high availability (HA) systems. 	
ODA_BASE Template (Virtualization Template)	Use to create the ODA_Base virtual machine for a virtualized database appliance. The template contains the following: Oracle Virtual Machine template Oracle Database clone binaries Oracle Database templates, customized for Oracle Database Appliance deployments Oracle Grid Infrastructure clone binaries Required for Virtualized Platform deployments on multi-node HA systems.	



See the *Oracle Database Appliance Release Notes* for the patch numbers and download locations and the component versions available in the patch bundle.



Note:

Starting with Oracle Database 18c, Oracle provides quarterly updates in the form of Release Updates (Updates) and Release Update Revisions (Revisions). Oracle no longer releases patch sets. For more information, see My Oracle Support Note 2285040.1.

Oracle Database releases are of type version and version_full releases. The version release is designated in the form major release version.0.0.0.0. The major release version is based on the last two digits of the year in which an Oracle Database version is released for the first time. The version_full release is an update of a version release and is designated based on the major release version, the quarterly release update version (Update), and the quarterly release update revision version (Revision).

Prior to Oracle Database release 18c, changing the first or second digit in the release number was an upgrade, and changing the fourth digit indicated an update. With 18c and later releases, changing the first digit is an upgrade, and changing the second indicates an update.

About the Web Console

Use the Oracle Appliance Manager Web Console to deploy and manage the appliance, databases, networks, and jobs.

The Web Console provides a user-friendly interface to quickly view and perform many of the tasks needed to deploy, patch, and manage your bare metal system. The *Oracle Database Appliance Deployment and User's Guide* for your hardware model describes how to use the Web Console to perform many of the tasks related to deployment, patching, and management of your appliance.

Use the links in the side navigation to view and manage the following:

Appliance

- Appliance information
- System information
- Disk group information including storage utilization such as free and used space
- Information about all databases that use a storage disk group
- All the patches and hardware and software components installed on the appliance
- List of RPMs and RPM Drift information

Network

- View network details
- Create, update, and delete networks
- View interface details

Oracle ASR



- View Oracle Auto Service Request (Oracle ASR) configuration details
- Configure, update, test, and delete Oracle ASR

Patch Manager

- Update the patch repository with Oracle Database Appliance patches
- View component details of the patch and versions that are installed on the appliance
- View component details of the patch and versions that are available, but not yet installed, on the appliance
- Run patch prechecks before applying the patch
- Update the server and storage components

Use the links in the top navigation to view and manage the following:

Database

- Create a database
- View database details
- Apply a backup policy for the database
- Create a manual backup
- Recover a database from a backup
- View and update the database backup schedule and update the archive log backup schedule for the database
- Create, update, and delete backup policies
- Create, update, and delete database homes
- Create and delete database backup
- Clone a database from a database backup or an Oracle ACFS database snapshot
- Patch database homes

Object Store

- Create Object Store Credentials for backup and recovery
- View the details for Object Store Credentials, including the endpoint URL, user name, and tenant
- Update and delete Object Store Credentials

Monitoring

- View the status of hardware, storage, memory, cooling, networking, and power
- View monitoring information for each node, in the case of High-Availability deployments
- View system health status and drilldown to details of incidents
- Click the hardware image to view details

Activity

- View a list of jobs, details, and status
- Click a job description to view job details



Update ILOM and User Settings

Expand **About** in the upper right corner of the Web Console to perform the following tasks:

- Click About to view the Oracle Database Appliance release that is installed on the appliance.
- Click Update ILOM Setting to change the root password. To enable first-time login and access to Oracle ILOM, a default Administrator (root) account and its password are provided with the system.
- Click Update User Settings to change the oda-admin password.
- Click **Sign Out** to sign out of the Web Console. If you do not sign out, the system automatically signs you out after a period of inactivity. A warning will appear 2 minutes before the session expires.



3

Readying Oracle Database Appliance for Deployment

Before deploying Oracle Database Appliance, perform these setup tasks.

- Attaching Storage Cables to Oracle Database Appliance X8-2-HA
 Connect the storage cables for Oracle Database Appliance X8-2-HA.
- Attaching Network Cables to Oracle Database Appliance X8-2-HA
 Connect Oracle Database Appliance X8-2-HA to either a 10GBase-T (copper) or 25GbE SFP28 (fiber) network.
- Attaching Network Cables to Oracle Database Appliance X8-2S or X8-2M
 Connect Oracle Database Appliance X8-2S or X8-2M to either a 10GBase-T
 (copper) or 25GbE SFP28 (fiber) network.
- Attaching Power Cords and Initializing Components
 Attach power cords for Oracle Database Appliance.
- Configuring Oracle Integrated Lights Out Manager
 Configure Oracle Integrated Lights Out Manager (Oracle ILOM) to manage Oracle
 Database Appliance independent of the operating system.
- Powering On Oracle Database Appliance the First Time
 Use this procedure the first time you power on Oracle Database Appliance.

Attaching Storage Cables to Oracle Database Appliance X8-2-HA

Connect the storage cables for Oracle Database Appliance X8-2-HA.

Cabling the Storage for Oracle Database Appliance X8-2-HA

Connect the storage cables for Oracle Database Appliance X8-2-HA.



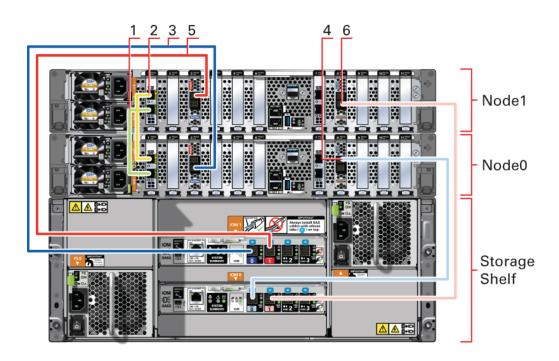
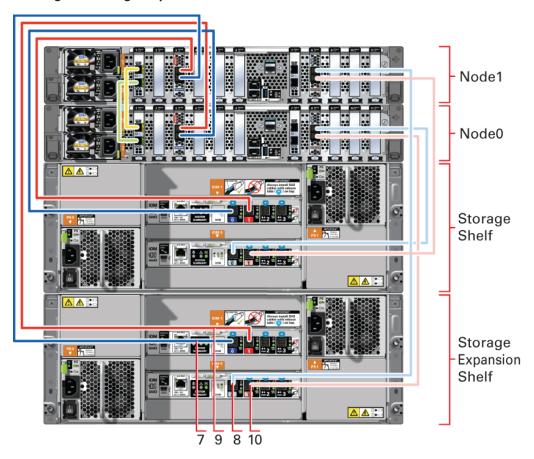


Table 3-1 Storage Cabling for Oracle Database Appliance X8-2-HA

Callout Number	Description
1	Interconnect Port 25GbE p1p1
2	Interconnect Port 25GbE p1p2
3	Dark blue SAS cable between PCle slot 3 in Node0 (SAS0) and the dark blue port in the top IO module in the storage shelf (PORT 0)
4	Light blue SAS cable between PCIe slot 8 in Node0 (SAS1) and the light blue port in the bottom IO module in the storage shelf (PORT 0)
5	Dark red SAS cable between PCIe slot 3 in Node1 (SAS1) and the dark red port in the top IO module in the storage shelf (PORT 1)
6	Light red SAS cable between PCIe slot 8 in Node1 (SAS0) and the light red port in the bottom IO module in the storage shelf (PORT 1)





Cabling the Storage Expansion Shelf

Table 3-2 Cabling the Storage Expansion Shelf for Oracle Database Appliance X8-2-HA

Callout Number	Description
7	Dark blue SAS cable between PCIe slot 3 in Node0 (SAS0) and the dark blue port in the top IO module in the storage shelf (PORT 0)
8	Light blue SAS cable between PCIe slot 8 in Node0 (SAS1) and the light blue port in the bottom IO module in the storage shelf (PORT 0)
9	Dark red SAS cable between PCIe slot 3 in Node1 (SAS1) and the dark red port in the top IO module in the storage shelf (PORT 1)
10	Light red SAS cable between PCIe slot 8 in Node1 (SAS0) and the light red port in the bottom IO module in the storage shelf (PORT 1)



Attaching Network Cables to Oracle Database Appliance X8-2-HA

Connect Oracle Database Appliance X8-2-HA to either a 10GBase-T (copper) or 25GbE SFP28 (fiber) network.

The SFP28 ports support 10Gb and 25Gb fibre and twinaxial cable (twinax), depending on the SFP modules used in these ports. For 10GBase-T public networking, use the Cat-6 network cables. To use the SFP28 ports, use the correct transceivers and cables to meet your switch bandwidth. The following sections show the cabling options for 10GBase and 25GbE SFP28 (fiber) network ports.

Connecting the Fiber and Copper Network Cables for Oracle Database Appliance X8-2-HA

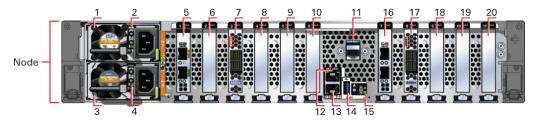


Table 3-3 Network Ports and Cabling

Callout	Description
1	Power Supply (PS) 1 with fan module
2	Power Supply (PS) 1 status indicators: Service Required LED: amber, AC OK LED: green
3	Power Supply (PS) 0 with fan module
4	Power Supply (PS) 0 status indicators: Service Required LED: amber, AC OK LED: green
5	PCIe card slot 1: Oracle Dual Port 25Gb Ethernet Adapter provides two ports with SFP28 connections for a private cluster interconnect between server nodes
6	PCIe card slot 2: filler panel, or optional Oracle Dual Port 25Gb Ethernet Adapter, or optional Oracle Quad Port 10GBase-T Adapter
7	PCIe card slot 3: provides two SAS3 connectors used to connect the servers to the storage shelf and the storage expansion shelf
8-10	PCI card slots 4-6: filler panels
11	SER MGT port: RJ-45 serial port used to connect to the Oracle ILOM service processor.
12	NET MGT port: 10/100/1000Base-T network interface port with RJ-45 connector used to connect to the Oracle ILOM service processor.



Table 3-3 (Cont.) Network Ports and Cabling

Callout	Description	
13	100/1000Base-T network interface port with RJ-45 connector: NET 0	
14	USB 3.0 connector	
15	System status indicators: Locate LED: white, Service Required LED: amber, Power/OK LED: green	
16	PCIe card slot 7: Oracle Dual Port 25Gb Ethernet Adapter or Oracle Quad Port 10GBase-T Adapter	
17	PCIe card slot 8: provides two SAS3 connectors used to connect the servers to the storage shelf and the storage expansion shelf	
18	PCIe card slot 9: filler panel	
19	PCIe card slot 10: filler panel, or optional Oracle Dual Port 25Gb Ethernet Adapter, or optional Oracle Quad Port 10GBase-T Adapter	
20	PCIe card slot 11: filler panel	

Fiber Cables

For optical cables, you must purchase either Short Range (SR) or Long Range (LR) SFP transceivers for each of the network ports, and then plug in the appropriate optical cable. Currently, Oracle sells both the SR and LR SFP transceivers. In addition to these transceivers, you must purchase the appropriate LC-LC terminated fiber optic cables from a third-party vendor.

Table 3-4 Transceivers for the SFP Ports - 10GB/1GB

Name	ATO Part Number	x-option Part Number
SFP+ 10GBase-SR (Short Range Transceiver)	2129a	X2129A-N
SFP+ 10GBase-LR (Long Range Transceiver)	5562a-z	X5562A-Z

Table 3-5 Transceivers for the SFP Ports - 25GB

Name	ATO Part Number	x-option Part Number
SFP28 25GBase-SR (Short Range Transceiver)	7118017	7118019
SFP28 25GBase-LR (Long Range Transceiver)	7118020	7118021

Copper Cables

You can purchase the following copper cables from Oracle. These cables have built-in SFP connectors.



Table 3-6 Networking Cables for the SFP Ports - 10GB/1GB

Name	Length	ATO Part Number	x-option Part Number
TwinAx passive copper cable: 1 meter	1m	7105137	X2130A-1M-N
TwinAx passive copper cable: 2 meter	2m	7105139	7105148
TwinAx passive copper cable: 3 meter	3m	7105140	X2130A-3M-N
TwinAx passive copper cable: 5 meter	5m	7105141	X2130A-5M-N

Table 3-7 Networking Cables for the SFP Ports - 25GB

Name	Length	ATO Part Number	x-option Part Number
TwinAx passive copper cable: 1 meter	1m	7118359	7118367
TwinAx passive copper cable: 2 meter	2m	7118360	7118368
TwinAx passive copper cable: 3 meter	3m	7118361	7118369
TwinAx passive copper cable: 5 meter	5m	7118362	7118370

Attaching Network Cables to Oracle Database Appliance X8-2S or X8-2M

Connect Oracle Database Appliance X8-2S or X8-2M to either a 10GBase-T (copper) or 25GbE SFP28 (fiber) network.

The SFP28 ports support 10Gb and 25Gb fibre and twinaxial cable (twinax), depending on the SFP modules used in these ports. Use standard Cat-6 network cables to connect to the on-board 10GBase-T (copper) network ports.

The following sections show the cabling options for 25GbE SFP28 (fiber) network ports. In the figures, callout 4 identifies the ports for the 10GBase-T (copper) network and callout 5 identifies the ports for the 25GbE SFP28 (fiber) network.

Connecting Network Cables for Oracle Database Appliance X8-2S or X8-2M

Connect the Fiber and Copper Network Cables for Oracle Database Appliance X8-2S or X8-2M



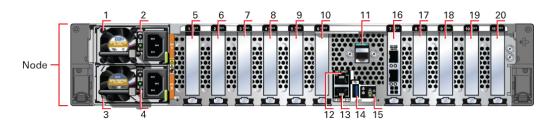


Table 3-8 Network Ports and Power Cabling

Callout	Description
1	Power Supply (PS) 1 with fan module
2	Power Supply (PS) 1 status indicators: Service Required LED: amber, AC OK LED: green
3	Power Supply (PS) 0 with fan module
4	Power Supply (PS) 0 status indicators: Service Required LED: amber, AC OK LED: green
5	PCIe card slot 1: filler panel
6	PCIe card slot 2:
	Oracle Database Appliance X8-2S: filler panel
	Oracle Database Appliance X8-2M: filler panel, or optional Oracle Dual Port 25Gb Ethernet Adapter, or optional Oracle Quad Port 10GBase-T Adapter
7-8	PCIe card slot 3 and PCI card slot 4: Oracle Database Appliance X8-2S: filler panel
	Oracle Database Appliance X8-2M: Oracle NVMe Switch PCIe card
9-10	PCI card slots 5-6: filler panels
11	SER MGT port: RJ-45 serial port used to connect to the Oracle ILOM service processor.
12	NET MGT port: 10/100/1000Base-T network interface port with RJ-45 connector used to connect to the Oracle ILOM service processor.
13	100/1000Base-T network interface port with RJ-45 connector: NET 0
14	USB 3.0 connector
15	System status indicators: Locate LED: white, Service Required LED: amber, Power/OK LED: green
16	PCIe card slot 7: Oracle Dual Port 25Gb Ethernet Adapter or Oracle Quad Port 10GBase-T Adapter
17	PCIe card slot 8: Oracle Database Appliance X8-2S: filler panel, or optional Oracle Dual Port 25Gb Ethernet Adapter, or optional Oracle Quad Port 10GBase-T Adapter Oracle Database Appliance X8-2M: Oracle
	NVMe Switch PCIe card



Table 3-8 (Cont.) Network Ports and Power Cabling

Callout	Description
18	PCIe card slot 9: Oracle NVMe Switch PCIe card
19	PCIe card slot 10: filler panel, or optional Oracle Dual Port 25Gb Ethernet Adapter, or optional Oracle Quad Port 10GBase-T Adapter
20	PCIe card slot 11: filler panel

Fiber Cables

For optical cables, you must purchase either Short Range (SR) or Long Range (LR) SFP transceivers for each of the network ports, and then plug in the appropriate optical cable. Currently, Oracle sells both the SR and LR SFP transceivers. In addition to these transceivers, you must purchase the appropriate LC-LC terminated fiber optic cables from a third-party vendor.

Table 3-9 Transceivers for the SFP Ports - 10GB/1GB

Name	ATO Part Number	x-option Part Number
SFP+ 10GBase-SR (Short Range Transceiver)	2129a	X2129A-N
SFP+ 10GBase-LR (Long Range Transceiver)	5562a-z	X5562A-Z

Table 3-10 Transceivers for the SFP Ports - 25GB

Name	ATO Part Number	x-option Part Number
SFP28 25GBase-SR (Short Range Transceiver)	7118017	7118019
SFP28 25GBase-LR (Long Range Transceiver)	7118020	7118021

Copper Cables

You can purchase the following copper cables from Oracle. These cables have built-in SFP connectors:

Table 3-11 Networking Cables for the SFP Ports - 10GB/1GB

Name	Length	ATO Part Number	x-option Part Number
TwinAx passive copper cable: 1 meter	1m	7105137	X2130A-1M-N
TwinAx passive copper cable: 2 meter	2m	7105139	7105148



Table 3-11 (Cont.) Networking Cables for the SFP Ports - 10GB/1GB

Name	Length	ATO Part Number	x-option Part Number
TwinAx passive copper cable: 3 meter	3m	7105140	X2130A-3M-N
TwinAx passive copper cable: 5 meter	5m	7105141	X2130A-5M-N

Table 3-12 Networking Cables for the SFP Ports - 25GB

Name	Length	ATO Part Number	x-option Part Number
TwinAx passive copper cable: 1 meter	1m	7118359	7118367
TwinAx passive copper cable: 2 meter	2m	7118360	7118368
TwinAx passive copper cable: 3 meter	3m	7118361	7118369
TwinAx passive copper cable: 5 meter	5m	7118362	7118370

Attaching Power Cords and Initializing Components

Attach power cords for Oracle Database Appliance.



Caution:

Before plugging in the power cords, ensure that the electrical outlets providing the power are grounded.

If you use only a single AC circuit, then connect both power cords for each component to that circuit. If you want to maintain N+1 power supply redundancy, then use two separate AC circuits. Connect one power cord from each AC circuit into each component.

For more information about cabling with the supplied Cable Management Arm, refer to *Oracle Database Appliance Owner's Guide*.

Configuring Oracle Integrated Lights Out Manager

Configure Oracle Integrated Lights Out Manager (Oracle ILOM) to manage Oracle Database Appliance independent of the operating system.

Deploying a new Oracle Database Appliance requires a direct connection to the system to configure the Oracle Integrated Lights Out Manager (ILOM) and the first network. If you use the serial port, ensure that the baud rate speeds match. After the



first public network interface is configured, you can perform the remaining deployment steps on the Oracle Database Appliance system or from a remote system.

Configuring Oracle ILOM Using IP Address Assigned by DHCP

Ensure that the ILOM NIC is enabled and that ipv4 is enabled.

- Using a client system's browser, enter the IP address or host name assigned by DHCP into the browser address field and press Enter. For example, https:// 129.xxx.xx.xx.
- 2. At the login page, enter the default user name, root and the default password, changeme.

The Oracle ILOM web interface is displayed.

Configuring Oracle ILOM Using Static IP Address

1. Using a client system, establish a secure shell (SSH) connection by entering the following on the command line:

```
ssh - l root sp\_ip\_address
```

where $sp_ip_address$ is the IP address assigned by DHCP.

2. Enter the default user name, root, and the default password, changeme.

The Oracle ILOM CLI prompt appears. Change the default password to a secure password of your choice.

3. Set the working directory.

```
cd /SP/network
```

4. Specify a static Ethernet configuration as follows:

```
set pendingipaddress=xxx.xxx.xx
set pendingipnetmask=yyy.yyy.yy
set pendingipgateway=zzz.zzz.zzz
set commitpending=true
set state=enabled
```

xxx.xxx.xx, yyy.yyy.y and zzz.zzz.zzz are the IP address, netmask, and gateway (respectively) for your ILOM and network configuration.

5. Verify changes and then exit:

```
show /SP/network
exit
```

Configuring Oracle ILOM Using the IPMI tool

To assign IP addresses to Oracle ILOM manually, follow these steps:

1. Open the IPMI tool.

```
# ipmitool -I open sunoem cli
```



2. Go to SP/network and verify that the port is enabled:

```
show /SP/network
```

3. If the port is not enabled, then enable the port.

```
ipmitool -I open sunoem cli "set /SP/network state=enabled"
```

- 4. In SP/network, verify that ipv4 is enabled.
- 5. If ipv6 is enabled, then disable ipv6 and enable ipv4.

```
# ipmitool -I open sunoem cli "set /SP/network/ipv6 state=disabled"
# ipmitool -I open sunoem cli "set /SP/network/ipv4 state=enabled"
```

Related Topics

Deployment Checklist for Oracle Database Appliance Bare Metal Installations
 This checklist provides an overview of the tasks to setup and deploy Oracle
 Database Appliance for the first time.

Powering On Oracle Database Appliance the First Time

Use this procedure the first time you power on Oracle Database Appliance.

When you power on Oracle Database Appliance for the first time, the system automatically defines your public network interface based on which of the public interface ports are connected. For Oracle Database Appliance X8-2-HA, the dual-port 10/25 GbE SFP28 PCIe adapter is used for the cluster interconnect.



After you connect power cords, the green SP OK light-emitting diode (LED) lights blink for a few minutes, and then turn to steady ON. The cooling fans also may turn on. However, these events do not indicate that the system is started. You must complete all of the steps in this section to turn on the appliance properly. Read through the entire section to understand the sequence required for initial system startup.

- 1. (For Oracle Database Appliance X8-2-HA) Turn on the attached storage shelf, or shelves, before powering on the server nodes.
- **2.** Push the recessed power button to turn on the appliance.



The fully-initialized state is indicated by the green SP OK LEDs staying steadily lit. If any of the green LED lights on the server are still blinking, then wait for them to complete their initialization steps.



Refer to the figures and to the following callout table to identify the power button and the system initialization status indicator lights.



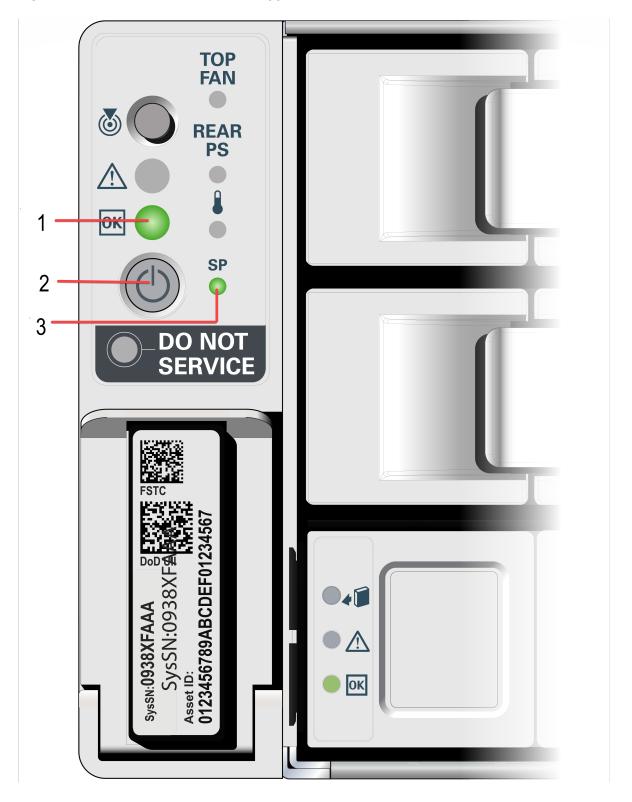




Table 3-13 Description of Callouts for Powering On Oracle Database Appliance

Callout	Function
1	Green Power/OK LED, located on the front panel. The light must be in the steady ON position (Green light does not blink) before you log on to the system.
2	Recessed ON/OFF power button, which is located on the front panel of the appliance. Push this button only once. Do not repeatedly push the power button.
3	SP OK LED light, located on the front panel of the appliance.

Oracle Database Appliance does not use the DO NOT SERVICE indicator.

3. Wait for Oracle Database Appliance to complete startup.



Do not repeatedly push the power buttons. Startup can take several minutes to complete.

Oracle Database Appliance is ready for use when the green Power/OK LED (callout 1) on the front of the system remains steadily on.



4

Provisioning Oracle Database Appliance Baremetal System

Understand the process to configure Oracle Database Appliance baremetal system.

The Web Console is the preferred method of deploying your bare metal platform configuration. The Web Console provides all of the fields necessary to provision Oracle Database Appliance, including configuring the system, network, database, and Oracle Auto Service Request (Oracle ASR). If you prefer to use the command-line interface, you must create a JSON file to configure the deployment options.

Plumbing the Network

Plumb the Oracle Database Appliance network with the public internet protocol (IP) information assigned to a node, to enable provisioning of the Oracle Database Appliance software.

- Verifying Cabling and Network Connections
 After powering on Oracle Database Appliance, verify that the network connections are set up correctly.
- Downloading Oracle Database Appliance Software
 Download Oracle Database Appliance software and copy to a temporary location
 before applying updates to your appliance.
- Installing Oracle Database Appliance Software
 Install Oracle Database Appliance software, before creating the appliance.
- Creating the Appliance
 Create the appliance using the Web Console.
- Updating Oracle Database Appliance Repository with Database Clone Files Using the CLI

Follow these steps to update the Oracle Database Appliance repository with Oracle Database clone files for the latest release using CLI commands.

Plumbing the Network

Plumb the Oracle Database Appliance network with the public internet protocol (IP) information assigned to a node, to enable provisioning of the Oracle Database Appliance software.

- Connect to Oracle ILOM remote console, then log into Oracle Database Appliance as root.
- 2. Run the command configure-firstnet on both nodes.

```
# /opt/oracle/dcs/bin/odacli configure-firstnet
Using bonding public interface (yes/no) [yes]:
Select the Interface to configure the network on (btbond1) [btbond1]:
Configure DHCP on btbond1 (yes/no) [no]:
```



```
INFO: You have chosen Static configuration
Use VLAN on btbond1 (yes/no) [no]:
```

3. Complete the network configuration as prompted and configure the public network interface. Also provide the netmask and gateway IP address.

You use this network connection to transfer the software to the server node.

Example 4-1 Example of a Bonded Configuration

For a bonded configuration, answer yes to using a bonding public interface and configure the first network to use a btbond1 interface without configuring DHCP.

```
# /opt/oracle/dcs/bin/odacli configure-firstnet
Select the Interface to configure the network on (btbond1 btbond2
sfpbond1) [btbond1]:
Configure DHCP on btbond1 (yes/no) [no]:
INFO: You have chosen Static configuration
Use VLAN on btbond1 (yes/no) [no]:
Enter the IP address to configure : 10.209.13.109
Enter the Netmask address to configure : 255.255.252.0
Enter the Gateway address to configure[10.209.12.1] :
INFO: Plumbing the IPs now
INFO: Restarting the network
Shutting down interface btbond1: [ OK ]
Shutting down interface btbond2: [ OK ]
Shutting down interface p3p1: [ OK ]
Shutting down interface p3p2: [ OK ]
Shutting down interface sfpbond1: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface btbond1: Determining if ip address 10.209.13.109 is
already in use for device btbond1...
[ OK ]
Bringing up interface btbond2: [ OK ]
Bringing up interface sfpbond1: [ OK ]
```

Example 4-2 Example of a Non-Bonded Configuration

To create a non-bonded configuration and disable VLAN capabilities, answer ${\tt no}$ to using a bonding public interface.

```
# /opt/oracle/dcs/bin/odacli configure-firstnet
Using bonding public interface (yes/no) [yes]: no
INFO: Breaking the bonding on btbond1
INFO: remove bonding module: rmmod bonding
INFO: remove slave setup in /etc/sysconfig/network-scripts/ifcfg-em2
INFO: remove slave setup in /etc/sysconfig/network-scripts/ifcfg-em3
INFO: Restarting the network
Shutting down interface em1: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface em2: [ OK ]
Bringing up interface em3: [ OK ]
INFO: Restarting the DCS agent
```



```
initdcsagent stop/waiting
initdcsagent start/running, process 57629
Select the Interface to configure the network on (em2 em3) [em2]:
Configure DHCP on em2 (yes/no) [no]:
INFO: You have chosen Static configuration
Enter the IP address to configure : 10.31.102.101
Enter the Netmask address to configure : 255.255.240.0
Enter the Gateway address to configure[10.31.96.1] :
INFO: Plumbing the IPs now
INFO: Restarting the network
Shutting down interface em1: [ OK ]
Shutting down interface em2: [ OK ]
Shutting down interface em3: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface eml: [ OK ]
Bringing up interface em2: Determining if ip address 10.31.102.101 is
already in use for device em2...
Bringing up interface em3: [ OK ]
```

Example 4-3 Example of Configuring VLAN

```
# /opt/oracle/dcs/bin/odacli configure-firstnet
Using bonding public interface (yes/no) [yes]:
Select the Interface to configure the network on (btbond1) [btbond1]:
Configure DHCP on btbond1 (yes/no) [no]:
INFO: You have chosen Static configuration
Use VLAN on btbond1 (yes/no) [no]:yes
Configure VLAN on btbond1, input VLAN ID [2 - 4094] 122
INFO: using network interface btbond1.122
Enter the IP address to configure : 192.0.2.24
Enter the Netmask address to configure : 192.0.2.24
Enter the Gateway address to configure[192.0.2.24] :
INFO: Restarting the network
Shutting down interface btbond1:
                                                           [ OK ]
Shutting down interface eml:
                                                           [ OK ]
Shutting down interface plp1:
                                                           [ OK ]
Shutting down interface p1p2:
                                                           [ OK ]
Shutting down loopback interface:
                                                           [ OK ]
Bringing up loopback interface:
                                                             OK 1
Bringing up interface btbond1:
Determining if ip address 192.0.2.24 is already in use for device
btbond1...
                                                           [ OK ]
Bringing up interface eml:
                                                           [ OK ]
Bringing up interface plp1:
Determining if ip address 192.0.2.24 is already in use for device
p1p1...
                                                                  [ OK ]
Bringing up interface p1p2:
Determining if ip address 192.0.2.24 is already in use for device plp2...
Bringing up interface btbond1.122:
Determining if ip address 192.0.2.24 is already in use for device
```



```
btbond1.122... [ OK INFO: Restarting the DCS agent initdcsagent stop/waiting initdcsagent start/running, process 32104
```

Related Topics

Deployment Checklist for Oracle Database Appliance Bare Metal Installations
 This checklist provides an overview of the tasks to setup and deploy Oracle
 Database Appliance for the first time.

Verifying Cabling and Network Connections

After powering on Oracle Database Appliance, verify that the network connections are set up correctly.

Run the validation scripts only on Oracle Database Appliance HA models.

- Log into the Oracle Database Appliance console and access the server node with user name as root and password welcome1.
- 2. Run validation scripts on both nodes, to verify cabling. For example:

/opt/oracle/dcs/bin/odacli validate-storagetopology

```
INFO: ODA Topology Verification
INFO: Running on Node0
INFO: Check hardware type
SUCCESS: Type of hardware found: X7-2
INFO : Check for Environment(Bare Metal or Virtual Machine)
SUCCESS: Type of environment found: Bare Metal
INFO: Check number of Controllers
SUCCESS: Number of ahci controller found: 1
SUCCESS: Number of External SCSI controllers found: 2
INFO: Check for Controllers correct PCIe slot address
SUCCESS: Internal RAID controller:
SUCCESS: External LSI SAS controller 0: 3b:00.0
SUCCESS: External LSI SAS controller 1: 5e:00.0
INFO: Check if JBOD powered on
SUCCESS: 2JBOD: Powered-on
INFO : Check for correct number of EBODS(2 or 4)
SUCCESS: EBOD found: 4
INFO: Check for External Controller 0
SUCCESS: Cable check for port 0 on controller 0
SUCCESS: Cable check for port 1 on controller 0
SUCCESS: Overall Cable check for controller 0
INFO: Check for External Controller 1
SUCCESS: Cable check for port 0 on controller 1
SUCCESS: Cable check for port 1 on controller 1
SUCCESS: Overall Cable check for controller 1
INFO: Check for overall status of cable validation on NodeO
SUCCESS: Overall Cable Validation on NodeO
SUCCESS: JBODO Nickname set correctly
SUCCESS: JBOD1 Nickname set correctly
```



3. If there is a storage expansion shelf connected to the appliance, then power it on. Run the storagetopology command on both nodes to make sure the cabling is correct. For example:

/opt/oracle/dcs/bin/odacli validate-storagetopology

```
INFO: ODA Topology Verification
INFO: Running on Node0
INFO: Check hardware type
SUCCESS: Type of hardware found: X7-2
INFO : Check for Environment(Bare Metal or Virtual Machine)
SUCCESS: Type of environment found: Bare Metal
INFO: Check number of Controllers
SUCCESS: Number of ahci controller found: 1
SUCCESS: Number of External SCSI controllers found: 2
INFO : Check for Controllers correct PCIe slot address
SUCCESS: Internal RAID controller:
SUCCESS: External LSI SAS controller 0: 3b:00.0
SUCCESS: External LSI SAS controller 1: 5e:00.0
INFO: Check if JBOD powered on
SUCCESS : 2JBOD : Powered-on
INFO : Check for correct number of EBODS(2 or 4)
SUCCESS: EBOD found: 4
INFO: Check for External Controller 0
SUCCESS: Cable check for port 0 on controller 0
SUCCESS: Cable check for port 1 on controller 0
SUCCESS: Overall Cable check for controller 0
INFO: Check for External Controller 1
SUCCESS: Cable check for port 0 on controller 1
SUCCESS: Cable check for port 1 on controller 1
SUCCESS: Overall Cable check for controller 1
INFO: Check for overall status of cable validation on NodeO
SUCCESS: Overall Cable Validation on NodeO
SUCCESS: JBODO Nickname set correctly
SUCCESS: JBOD1 Nickname set correctly
```

4. Verify the interconnect network:

ethtool plp1

```
Settings for plp1:
Supported ports: [ FIBRE ]
Supported link modes: 1000baseT/Full
Supported pause frame use: Symmetric Receive-only
Supports auto-negotiation: Yes
Advertised link modes: 1000baseT/Full
10000baseT/Full
Advertised pause frame use: No
Advertised auto-negotiation: Yes
Speed: 25000Mb/s <<<<<< check speed
Duplex: Full
Port: Direct Attach Copper
PHYAD: 1
Transceiver: internal
Auto-negotiation: on
Current message level: 0x00000000 (0)
Link detected: yes
```



ethtool p1p2

```
Settings for plp2:
Supported ports: [ FIBRE ]
Supported link modes: 1000baseT/Full
Supported pause frame use: Symmetric Receive-only
Supports auto-negotiation: Yes
Advertised link modes: 1000baseT/Full
10000baseT/Full
Advertised pause frame use: No
Advertised auto-negotiation: Yes
Speed: 25000Mb/s <<<<<< check speed
Duplex: Full
Port: Direct Attach Copper
PHYAD: 1
Transceiver: internal
Auto-negotiation: on
Current message level: 0x00000000 (0)
Link detected: yes
```

Related Topics

Deployment Checklist for Oracle Database Appliance Bare Metal Installations
 This checklist provides an overview of the tasks to setup and deploy Oracle
 Database Appliance for the first time.

Downloading Oracle Database Appliance Software

Download Oracle Database Appliance software and copy to a temporary location before applying updates to your appliance.

 Download the software files from My Oracle Support to a temporary location on an external client. Refer to the release notes for details about the software for the latest release.

For example, download the Oracle Database Appliance GI Clone for ODACLI/DCS stack (patch 30403673) and Oracle Database Appliance RDBMS Clone for ODACLI/DCS stack (patch 30403662) for 19.4:

```
p30403673_194000_Linux-x86-64.zip
p30403662_194000_Linux-x86-64.zip
```

2. Unzip the software — it contains README.html and one or more zip files for the patch.

```
unzip p30403673_194000_Linux-x86-64.zip unzip p30403662_194000_Linux-x86-64.zip
```

The GI and RDBMS Clone files for release 19.4 are extracted.

```
odacli-dcs-19.4.0.0.0-191007-GI-19.4.0.0.zip
odacli-dcs-19.4.0.0.0-191007-DB-19.4.0.0.zip
```

Copy the software files from the external client to Oracle Database Appliance. Use the scp or sftp protocol to copy the bundle.

Example using scp command:

```
scp software_file root@oda_host:/tmp
```

Example using sftp command:

```
sftp root@oda_host
```

Enter the root password, and then copy the file.

```
put software file
```

For example, for release 19.4:

```
put odacli-dcs-19.4.0.0.0-191007-GI-19.4.0.0.zip
put odacli-dcs-19.4.0.0.0-191007-DB-19.4.0.0.zip
```

The GI and RDBMS Clone files are copied to the temporary location on the appliance. You can update the repository, and create the appliance, as explained in the next topic.

Related Topics

•

Installing Oracle Database Appliance Software

Install Oracle Database Appliance software, before creating the appliance.

Ensure that the Oracle Database Appliance patches are downloaded and available for updating the repository, as described in the topic *Downloading Oracle Database Appliance Software*.

 Verify the current system version by running the following command on **both** nodes:

```
# /opt/oracle/dcs/bin/odacli describe-component -v
```

2. Update the repository with Oracle Grid Infrastructure and Database software.

```
[root@odal opt]# /opt/oracle/dcs/bin/odacli update-repository -f /tmp/
GI_clone_file,/tmp/DB_clone_file
```

For example, for release 19.4:

```
# /opt/oracle/dcs/bin/odacli update-repository -f /tmp/odacli-
dcs-19.4.0.0.0-191007-DB-19.4.0.0.zip,/tmp/odacli-dcs-19.4.0.0.0-191007-
GI-19.4.0.0.zip
```

3. Confirm that the repository update is successful:

```
[root@oda1 opt]# /opt/oracle/dcs/bin/odacli describe-job -i job_ID
```



4. Delete the software zip files from the temporary location on the appliance to save space:

```
[root@odal opt]# rm software_file
rm: remove regular file software_file? y
```

You have now updated the repository with the Oracle Database Appliance software, and can create your appliance, as described in the next topic.

Related Topics

Deployment Checklist for Oracle Database Appliance Bare Metal Installations
 This checklist provides an overview of the tasks to setup and deploy Oracle
 Database Appliance for the first time.

Creating the Appliance

Create the appliance using the Web Console.

Ensure that ports 7070 and 7093 on the network between Oracle Database Appliance and the client machine, are open.

 Navigate to the Web Console. You are prompted to set the password for the odaadmin user.

```
https://ODA-host-ip-address:7093/mgmt/index.html
```

Log into the Web Console with the new password.

When you launch the Web Console on an unconfigured appliance, the Appliance page notifies you that the appliance is not configured and provides a link to the pages needed to configure and create the appliance.

- 3. Click Create Appliance.
- 4. In the Create Appliance page, if you want to create the appliance from a saved configuration, click **Browse**, and select the JSON file. The information from the saved configuration file is loaded. You can retain or edit the fields. Otherwise, manually, provide the values to create the appliance.
- 5. In the System Information section, specify the values as follows.
 - a. Host Name: Enter the host name.

The host name can contain alphanumeric characters and dashes (-), but cannot start with a number or dash (-) or end with dash (-). Do not exceed 30 characters.

- **b. Domain Name**: Enter the domain name.
- Region: Select the region of the world where the Oracle Database Appliance is located.
- Time Zone: Select the time zone where the Oracle Database Appliance is located.
- e. (Optional) **DNS Servers**: Enter addresses for one or more DNS servers.
- f. (Optional) **NTP Servers**: Enter addresses for one or more NTP servers.
- g. **Diskgroup Redundancy**: If there are up to two disk groups, then you can select the disk group redundancy as Normal or Flex. A quorum disk must



exist, if you want to select Flex redundancy. If there are more than two disk groups, then you can select the redundancy as Normal, High, or Flex. Select **Normal**, **High**, or **Flex**, as per your deployment requirement.

The Flex parameter defines the disk group redundancy. For Oracle ASM storage, when you select Flex as the disk group redundancy, you can set the database redundancy to either Mirror or High. You can set the disk group redundancy only during appliance creation. The database redundancy can be set anytime you create the database.

The redundancy level is for DATA, RECO, and FLASH. If you select High redundancy, then DATA, RECO, and FLASH are all High redundancy. If the system has less than five (5) NVMe storage devices, then redundancy is automatically set to Normal.

If the system has more than three (3) NVMe storage devices, then you can choose the Flex redundancy option.

Note: For Oracle Database Appliance hardware models other than X8-2, the redundancy level for REDO can be set to Flex, but the file groups created in REDO are all High redundancy.

- h. Data Storage Percentage: Enter a whole number between 10 and 90 to define the percentage of storage reserved for DATA, the remainder is reserved for RECO. For example, if you enter 80, then 80% of the storage for DATA and 20% for RECO.
- System Password and Confirm Password: Enter the system password in both fields.

The system password is the password set for UNIX and root users. The password must begin with an alpha character and cannot contain quotation marks. Do not exceed 30 characters.

6. In the Network Information section, configure the primary client access network, virtual networks, and an Oracle Integrated Lights Out Manager (ILOM) network. You are only required to configure the client access network. The ILOM configuration is optional if you already configured the ILOM for the appliance and you do not need to make changes.

Specify the following, depending on whether it is a single-node or multi-node Oracle Database Appliance deployment:

- a. Client Access Network Host Name: For Node0, enter the host name for the primary client access network.
- **b.** Client Access Network IP Address: For Node0, enter the IP address for the primary client access network.
- c. VIP Name for Node0: Enter the name of the virtual IP network for Node0.
- d. VIP IP Address for Node0: Enter the virtual IP address that resides on Node0 and is shared between the nodes.
- e. VIP Name for Node1: Enter the name of the virtual IP network for Node0.
- f. VIP IP Address for Node1: Enter the virtual IP address that resides on Node1 and is shared between the nodes.
- (Optional) ILOM Host Name: Enter the name of the Oracle ILOM host for Node0 and Node1.



- h. (Optional) ILOM Network IP Address: Enter the IP address for the ILOM for Node0 and Node1.
- i. (Optional) ILOM Network Subnet Mask: Enter the subnet mask address for the ILOM.
- j. (Optional) **ILOM Network Gateway**: Enter the gateway address for the ILOM.
- **k.** Client Access Network Subnet Mask: Enter the subnet mask address for the primary client access network.
- Client Access Network Gateway: Enter the gateway address for the primary client access network.
- m. Client Access Network Interface: Enter the interface for the primary client access network.
- 7. Determine how you want to configure your users and groups and whether or not you want to allow operating system role separation:
 - Two users with six groups: Customize Users and Groups, select No. Allow OS Role Separation, select Yes. This is the default configuration.
 - Two customized users with six customized groups: Customize Users and Groups, select Yes. Allow OS Role Separation, select Yes.
 - Single user with two groups: Customize Users and Groups, select No. Allow OS Role Separation, select No
 - Single user with six groups: Customize Users and Groups, select **Yes**. Allow OS Role Separation, select **No**. SAP deployments use this configuration.
- 8. Do you want to create an initial database? Select **Yes** and go to Step 9 or select **No** and go to Step 10.
- **9.** Enter the following information to configure an initial database:
 - a. **DB Name**: Enter a name for the database.
 - The name must contain alphanumeric characters and cannot exceed 8 characters.
 - b. (Optional) **DB Unique Name**: Enter a globally unique name for the database.
 - Databases with the same DB Name within the same domain (for example, copies of a database created for reporting or a physical standby) must have a different DB Unique Name that is unique within the enterprise. The name must contain alphanumeric, underscore (_), dollar (\$), and pound (#) characters, but must begin with an alphabetic character. No other special characters are permitted in a database name. The unique name cannot exceed 30 characters.
 - c. **DB Version**: Select a database bundle patch number.
 - d. **CDB**: Select **Yes** or **No** to specify whether or not you want a Container Database (CDB).
 - e. PDB Name: Enter a name for the pluggable database (PDB).
 - The name must begin with an alphanumeric character. The following characters are valid: alphanumeric characters, and underscore (_).
 - f. PDB Admin User: Enter an Admin user name for the pluggable database (PDB).



- g. **Database Edition**: Select the Oracle Database edition, either Standard Edition and Enterprise Edition. Your license determines which database edition you are eligible to create in the appliance.
- **h. Password**: Provide a password for the database.
- Deployment: Select a deployment type from the list. The options are RAC, RAC-One, or SI (single instance database). If you select a single instance database, then select the node for the SI database deployment.
 - If you select a single instance database, then you have the option to create the database on either Node0 or Node1. The default is Node0.
- i. **Shape**: Select a database shape from the list.
- k. In the **Database Class** field, select a database class from the drop-down list. If an option is not available in the list, it is not supported for the database edition on the Oracle Database Appliance or the version that you selected. The default is OLTP.
- I. In the **Storage** field, select **ACFS** or **ASM** from the drop-down list. The default is Oracle ASM.
 - Only Oracle 18c, 12.2, and 12.1 databases can use Oracle ASM storage. Oracle Database 11.2 is only supported on Oracle ACFS.
- m. If you select the storage as ASM, and the Database Version is 12.2 or later, and you specified the disk group redundancy as Flex, then you can select the Database Redundancy value as Mirror or High.

You can choose Oracle ACFS storage for all database versions, but if you select Oracle ACFS storage, then you cannot specify the database redundancy. If your disk group redundancy is Flex, and you choose Oracle ACFS storage for the database, then the database redundancy is set to Mirror.

n. Data Files on Flash Storage: Select Yes or No.

This option is only available if the HA system has HDD storage drives.

o. Configure EM Express: Select Yes or No.

Select **Yes** to configure the Oracle Enterprise Manager Database Express (EM Express) console for Oracle Database 12.2.1.0 or 12.1.0.2 or the Database Control Console for Oracle Database 11.2.0.4. Selecting Yes enables you to use the console to manage the database.

- p. Character set: Select a character set.
- **u.** National Characterset: Select a national characterset.
- Language: Select the database language.
- s. **Territory**: Select a territory or location from the list.
- 10. (Optional) Configure and enable Oracle ASR on the ASR page.

You can configure and enable Oracle Auto Service Request (Oracle ASR) now or later:

To not enable Oracle ASR during deployment, select No and click Submit.
 After deployment, you can configure an internal Oracle ASR or register with an external Oracle ASR Manager from either the Web Console or command-line interface.



- Internal Oracle ASR: choose to configure Oracle ASR Manager on Oracle Database Appliance or use Oracle ASR Manager configured on another server in the same network as your appliance.
- External Oracle ASR: If you already have Oracle ASR Manager configured elsewhere, you can register Oracle Database Appliance with your existing Oracle ASR Manager.
- To enable Oracle ASR, select Yes and complete the fields:
- **a. ASR User Name**: Enter the e-mail address associated with the My Oracle Support account under which the server is registered.
- **b. Password**: Enter the password associated with the My Oracle Support account under which the server is registered.
- c. SNMP Version: Select V2 or V3. V3 is the default and recommended version.
- d. HTTP Proxy used for Upload to ASR: Select Yes or No.
- **e. Proxy Server Name**: If you are using a proxy for upload, enter the proxy server name.
- **f. Proxy Port**: If you are using a proxy for upload, enter the proxy port.
- g. (Optional) HTTP Proxy Requires Authentication: If you are using a proxy for upload, select Yes if you require authentication. If you do not require authentication, select No.
- Proxy User Name: If you are using a proxy for upload, enter the proxy user name.
- i. **(Optional) Proxy Password**: If you are using a proxy for upload and require authentication, enter the proxy password.
- **11.** Click **Submit**. When prompted, click **Yes** to confirm that you want to start the job to deploy the appliance.
- **12.** Verify that the appliance is deployed. Run the odacli describe-appliance command. For multi-node deployments, run the command on both nodes. For example:

[root@oda1 opt]# /opt/oracle/dcs/bin/odacli describe-appliance Appliance Information

```
Appliance information

ID: 618dfa94-35ff-4f81-8aab-e93810bc2c45

Platform: Odav6

Data Disk Count: 48

CPU Core Count: 36

Created: July 24, 2018 1:55:57 PM MDT

System Information

Name: odax7-2ha

Domain Name: example.com

Time Zone: America/Denver

DB Edition: EE

DNS Servers: 192.1.1.1 192.1.1.2

NTP Servers: 192.1.1.3 192.1.1.4

Disk Group Information
```

DG Name Redundancy Percentage



Data High 80
Reco High 20
Redo High 100

Flash High 100

The job to create the appliance takes time to complete. To monitor the job progress, click the **Activity** tab. Click the job number to view the tasks.

After deployment, the root and database users SYS, SYSTEM, and PDBADMIN are set to the system password. The oracle and grid passwords are set to the default password. Change these passwords to comply with your user security protocols.

Related Topics

Errors When Logging into the Web Console
 If you have problems logging into the Web Console, then it may be due to your browser or credentials.

Related Topics

Deployment Checklist for Oracle Database Appliance Bare Metal Installations
 This checklist provides an overview of the tasks to setup and deploy Oracle
 Database Appliance for the first time.

Related Topics

 Restoring an Oracle Database Appliance Baremetal System
 Re-image Oracle Database Appliance to perform a bare metal restore of Oracle
 Database Appliance.

Updating Oracle Database Appliance Repository with Database Clone Files Using the CLI

Follow these steps to update the Oracle Database Appliance repository with Oracle Database clone files for the latest release using CLI commands.

To create new databases of a specific release version, you must update the Oracle Database Appliance repository with the RDBMS Clone files for a release. Follow these steps to update the repository with Oracle Database clone files for the latest release.

1. Download the RDBMS Clone software file for a release, for example, p30403662_194000_Linux-x86-64.zip, and extract the RDBMS Clone software:

For example, download the server patch for 19.4:

```
unzip /tmp/p30403662_194000_Linux-x86-64.zip odacli-dcs-19.4.0.0.0-191007-DB-19.4.0.0.zip
```

2. Copy all the software files from the external client to Oracle Database Appliance. For High-Availability deployments, copy the software files to only one node. The software files are copied to the other node during the patching process. Use the scp or sftp protocol to copy the bundle.

Example using scp command:

```
# scp software_file root@oda_host:/tmp
```



Example using sftp command:

```
# sftp root@oda_host
```

Enter the root password, and copy the files.

```
put software_file
```

3. Update the repository with latest release database software:

```
[root@odal opt]# /opt/oracle/dcs/bin/odacli update-repository -f /tmp/
odacli-dcs-db-clone-file.zip/
```

For example, for 19.4:

```
[root@odal opt]# /opt/oracle/dcs/bin/odacli update-repository -f /tmp/
odacli-dcs-19.4.0.0.0-191007-DB-19.4.0.0.zip
```

Follow the same steps to update the repository with the RDBMS Clone software for other supported database versions such as 12.2, 12.1, and so on.

4. Confirm that the repository update is successful:

```
[root@odal opt]# /opt/oracle/dcs/bin/odacli list-jobs
[root@odal opt]# /opt/oracle/dcs/bin/odacli describe-job -i job_ID
```

5. Delete the software zip files from the temporary location on the appliance to save space:

```
[root@odal opt]# rm software_file
rm: remove regular file software_file? y
```



5

Oracle Database Appliance Postinstallation Tasks

Complete these administrative tasks after you have deployed software, but before the system is operational.

- Configuring CPU Core Count
 - Oracle Database Appliance is delivered with all cores on each server enabled. Follow this procedure to reduce the number of cores, if required.
- Securing Oracle ILOM Service Processors
 Change the Oracle ILOM default password after completing Oracle Database Appliance deployment.
- Changing Oracle Database Appliance Passwords
 After deploying your appliance, ensure that you change the following passwords for securing your system.

Related Topics

Deployment Checklist for Oracle Database Appliance Bare Metal Installations
 This checklist provides an overview of the tasks to setup and deploy Oracle
 Database Appliance for the first time.

Configuring CPU Core Count

Oracle Database Appliance is delivered with all cores on each server enabled. Follow this procedure to reduce the number of cores, if required.

1. To reduce the number of cores, run the following command on Node 0 only: Set the cores in multiples of 2, for example, 12:

[root@oak1 opt]# /opt/oracle/dcs/bin/odacli update-cpucore --cores 12

2. Check if the job completed successfully:

[root@oak1 opt]# /opt/oracle/dcs/bin/odacli describe-job -i job_ID

3. Verify that the core count is updated on both nodes:

[root@oak1 opt]# /opt/oracle/dcs/bin/odacli describe-cpucore

Securing Oracle ILOM Service Processors

Change the Oracle ILOM default password after completing Oracle Database Appliance deployment.

Do not change the default password until after you have completed software deployment on the Oracle Database Appliance.

Changing Oracle ILOM Password from the Console

- 1. In the Oracle ILOM console, from the **Administration** menu, select **User Management**, and then navigate to the **User Accounts** subtab.
- 2. Select **root** user and click **Edit**.
- 3. Change the root user password.

Changing Oracle ILOM Password Using CLI Commands

1. Connect to the Oracle ILOM console through SSH:

```
# ssh -l root SP-ipaddr
```

2. Set the new password:

```
# set /SP/users/root password=new_password
Changing password for user /SP/users/root/password...
Enter new password again: ********
New password was successfully set for user /SP/users/root
```

Changing Oracle Database Appliance Passwords

After deploying your appliance, ensure that you change the following passwords for securing your system.

Changing the Oracle Installation Owner Passwords

During deployment, the root and database users SYS, SYSTEM and PDBADMIN are set to the system password. After deployment, the oracle and grid passwords are also set to the system password. Change the passwords to comply with your enterprise user security protocols. Refer to the *Oracle Database Appliance Security Guide* and *Oracle Database Security Guide* for information about the required configuration and best practices to secure database systems.

Changing the oda-admin User Password through the Command-Line

- Log in to the appliance as root.
- Run the odacli-adm set-credential command to reset the password. Enter the new password when prompted.

```
# odacli-adm set-credential --password --username oda-admin
Agent password: new password
```



Changing the the oda-admin User Password through the Web Console

- 1. Log into the Web Console using the user name oda-admin.
- 2. Click **About**, then **User Settings** in the upper right corner of the Web Console.
- **3.** Enter the password in the Password field and the Password Confirmation field, then click **Submit**.

A confirmation message is displayed.

- 4. Click About, then click Sign Out.
- 5. Log back into the Web Console with the new password.



The oda-admin password expiration period is 90 days.



6

Re-imaging Oracle Database Appliance

Bare metal operating system re-imaging installs Oracle Database Appliance operating system software on the local (boot) drive.

Bare Metal is a non-virtualized Oracle Database Appliance configuration. Oracle Database Appliance ships from the factory with a bare metal configuration, default ISO image and Appliance Manager installed. Use the OS ISO Image to restore the OS to the "shipped from factory" state. Use only when necessary. Reimaging does not patch the firmware or update the component versions; it only re-images the local system disk from an operating system perspective. After imaging is completed, redeploy the End User image, then restore from backup, as needed.

- Cleaning Up Incomplete or Failed Installations
 Use the Oracle Database Appliance cleanup deploy utility, /opt/oracle/oak/
 onecmd/cleanup.pl to uninstall Oracle Database Appliance components.
- Restoring an Oracle Database Appliance Baremetal System
 Re-image Oracle Database Appliance to perform a bare metal restore of Oracle Database Appliance.
- Performing Secure Erase of Data on Storage Disks
 With this release, you can securely erase data from storage devices. Running the secure erase tool deletes the data on the storage disk permanently.

Related Topics

Errors when re-imaging Oracle Database Appliance
 Understand how to troubleshoot errors that occur when re-imaging Oracle
 Database Appliance.

Cleaning Up Incomplete or Failed Installations

Use the Oracle Database Appliance cleanup deploy utility, /opt/oracle/oak/onecmd/cleanup.pl to uninstall Oracle Database Appliance components.

About the Cleanup Utility

Use the cleanup deploy utility to do the following:

- Uninstall Oracle Auto Service Request (Oracle ASR)
- Uninstall Oracle Trace File Analyzer (TFA)
- Uninstall Oracle ORAchk Health Check Tool
- Uninstall Oracle Grid Infrastructure and the Oracle stack
- Reset or delete the Oracle Linux udev rules
- Delete users and groups that were created when the appliance was created.

The script removes the firstnet config and the client access VLAN UNIX_DB, but does not delete any other VLANs. The script also resets any disabled CPU cores and enables all of the cores.

The cleanup utility runs in two modes: default and force mode. In the default mode, the commands used as part of cleanup do not use the force option. The ASM disk status is changed from MEMBER to FORMER, but ASM header on the disk is not erased. The default mode can be used only for cleaning up or re-provisioning of the same system.



For High-Availability systems, run the cleanup utility on both nodes sequentially. Ensure that the cleanup utility has completed on the first node, and then start the process on the second node.

Running the Cleanup Utility for a Baremetal Deployment

```
# perl cleanup.pl [-griduser grid_user]
[-dbuser db_user] [-groups comma separated list of groups]
[-erasedata] [f]
```

When the *grid_user* and *db_user* are the same (roleSeparation=false), you must run the script for each user (-gridUser and -dbUser).

Table 6-1 Command Options for Cleanup Utility

Option	Description
grid_user	Describes the Oracle Grid Infrastructure user name. The default user is grid.
db_user	Describes the database user name. The default user is oracle
	Example with grid and oracle users:
	cleanup.pl -griduser oracle -dbuser oracle
groups	Describes the comma-separated list of groups. The default groups are oinstall, dba, asmadmin, asmoper, asmdba
	·
erasedata	Completely erases all disks on system. It is mandatory to run this option if intention of cleanup is to reuse or move these disks on other systems.
	Example of secure erase:
	cleanup.pl -erasedata
cleanDefNet	Cleans up the default public network.



Table 6-1 (Cont.) Command Options for Cleanup Utility

Option	Description
checkHeader	Checks for OAK/ASM header on disks after successfully running the cleanup script. Use this to validate if the OAK/ASM header was erased by the cleanup script or not. Example of checking disk header:
	cleanup.pl -checkHeader
f	In the force mode, all commands use the force option. The ASM disk header is erased. The oakd header on the disk is erased in both default and force modes. Example of default mode:
	cleanup.pl
	Example of force mode:
	cleanup.pl -f

Running the Cleanup Script for a Virtualized Platform Deployment

Use this cleanup deploy script tool to clean up a Virtualized Platform deployment on Oracle Database Appliance.

Run the following command from dom0 on Node 0 to remove ODA_BASE and the initial network configuration.

/opt/oracle/oak/tools/cleanOdabase.py

Related Topics

Deployment Checklist for Oracle Database Appliance Bare Metal Installations
 This checklist provides an overview of the tasks to setup and deploy Oracle
 Database Appliance for the first time.

Restoring an Oracle Database Appliance Baremetal System

Re-image Oracle Database Appliance to perform a bare metal restore of Oracle Database Appliance.

Bare metal restore uses Oracle Integrated Lights Out Manager (ILOM) to re-image the Oracle Database Appliance node. The ILOM must be configured before performing a bare metal restore or re-image. Generally, the ILOM is configured as part of readying for deploying Oracle Database Appliance.

Download the Oracle Database Appliance Bare Metal ISO image to your local machine before you launch the ILOM console.



Follow these steps to re-image your appliance. For Oracle Database Appliance High-Availability deployment, follow these steps on **both** nodes.

 Open a browser and connect to Oracle Integrated Lights Out Manager (ILOM) on Node 0 as root.

https://ilom-ip-address

- Launch the Remote Console.
 - a. Expand Remote Control in the left navigation.
 - b. Click the **Redirection** tab.
 - c. Click Launch for the Remote Console in the Actions menu.

The state of the system determines what appears on the Console page.

- **3.** Add the image.
 - a. Click the KVMS tab, then select Storage.
 - b. Click Add.
 - **c.** Browse to the Oracle Database Appliance Bare Metal ISO Image, highlight the image, then click **Select**.
 - d. Click Connect.

The mounting of the ISO image is successful when the **Connect** button changes to a **Disconnect** button.

e. Click OK

The CD-ROM icon in the top right corner is highlighted.

- 4. Configure the CD-ROM as the next boot device.
 - **a.** Expand **Host Management** in the left menu of the ILOM Remote Console tab.
 - b. Click Host Control.
 - c. Select CDROM from the Next Boot Device menu, then click Save.
- **5.** Power cycle the node.
 - a. Click Power Control in the Host Management menu.
 - **b.** Select **Power Cycle**, then click **Save**.

When the node comes back after the power cycle, re-imaging starts automatically. The Oracle Linux page appears, followed by the Running Post-Install scripts page.

The Running Post-Install scripts page is a static page and might give the impression that the re-imaging process is not progressing. The post-install process during re-imaging will wait until the synchronization between the partitions of the two mirrored local hard disks is complete, which can take 15 to 20 minutes to complete.

To check the progress of re-synchronization, press the ALT-F2 key combination to open a second console and enter the following command:

cat /proc/mdstat

When the re-synchronization is complete, re-imaging is completed and the machine restarts.



After the machine restarts, the system is ready for you to deploy the Oracle software on the appliance to create an Oracle Database Appliance bare metal platform.

Related Topics

Creating the Appliance
 Create the appliance using the Web Console.

Performing Secure Erase of Data on Storage Disks

With this release, you can securely erase data from storage devices. Running the secure erase tool deletes the data on the storage disk permanently.

You may want to consolidate storage disks between appliances. For example, you can use X7-2 disks on X6-2 models, and may want to consolidate all X6-2 disks on one system, and use all new X7-2 storage disks on another system. In such cases, use secure erase to erase headers from disks before re-imaging the disks, since the storage disks across the appliances may have different partition ratios.



Running the secure erase tool removes data from storage disks permanently. If you have any data on the disk, then take a backup of your storage disk before running the secure erase tool.

Follow the steps to run the secure erase tool:

1. Stop oakd and the database and Oracle Grid Infrastructure before running the secure erase tool.

On bare metal systems, run the command:

```
# odaadmcli stop oak
```

On Virtualized Platforms:

```
# oakcli stop oak
```

To stop Oracle Clusterware resources:

```
# crsctl stop crs -f
```

2. Run the secure erase tool:

```
# /opt/oracle/oak/bin/odaeraser.py
```

3. You can also run the secure erase tool when running the cleanup tool:

```
# cleanup.pl -erasedata
```



Example 6-1 Options for the Secure Erase Tool

Option	Description
-a,all	Erases all disks. For example:
	# /opt/oracle/oak/bin/odaeraser.pyall
disk disk1,disk2	Erases specified disks. For example:
	<pre># /opt/oracle/oak/bin/odaeraser.pydisk e0_pd_00,e0_pd_01</pre>
dryrun	Runs the tool in the test mode
type HDD SSD NVMe	Erases the type of disk specified
-v,verbose	Displays verbose output
-h,help	Displays all CLI options for the tool



7

Managing Oracle Databases

Manage the Oracle Databases on your Oracle Database Appliance. For an Oracle Database Appliance Virtualized Platform, see the <code>oakcli</code> commands for managing the databases.

- About Administrative Groups and Users on Oracle Database Appliance
 Oracle Database Appliance Web Console deployment creates operating system
 groups and users whose members are granted system administration privileges on
 the appliance.
- About Data Migration Options for Oracle Database Appliance
 Oracle Database Appliance supports the use of standard Oracle Database loading
 and migration tools.
- Working with Databases
 Use the Web Console to display a list of databases, database details, and create and delete databases. You can use CLI commands to manage your databases.
- Working with Database Homes
 Use the Web Console to display a list of database homes, details, and create and delete database homes.
- Migrating Databases
 Review these topics to learn how to prepare for and migrate an entire database to your Oracle Database Appliance.
- About Managing Multiple Database Instances Using Instance Caging
 Use instance caging to manage your system resources on Oracle Database
 Appliance.
- Oracle EM Express and DB Console
 You can use Oracle Enterprise Manager Database Express (EM Express), or the
 Database Control Console (DB Console) to manage your database.

About Administrative Groups and Users on Oracle Database Appliance

Oracle Database Appliance Web Console deployment creates operating system groups and users whose members are granted system administration privileges on the appliance.

During configuration, two administrative accounts are created for Oracle Database Appliance: the user <code>grid</code>, with a user ID (UID) of 1001, and the user <code>oracle</code>, with a UID of 1000. The user <code>grid</code> is the Oracle Grid Infrastructure installation owner. The user <code>oracle</code> is the Oracle Database installation owner, and the owner of all Oracle Database homes (Oracle homes). By default, these users are members of operating system groups whose members are granted privileges to start up and administer Oracle Database and Oracle Automatic Storage Management.

The following table describes the Oracle system privileges groups, and information about the operating system authentication groups:

Table 7-1 Operating System Groups and Users on Oracle Database Appliance

Oracle System Privileges	Group Name	Group ID (GID)	<i>grid</i> is a member	<i>oracle</i> is a member
Oracle Inventory group (OINSTALL)	oinstall	1001	yes (primary group)	yes (primary group
OSOPER for dbaoper group	dbaoper	1002	yes	yes
OSDBA group	dba	1003	no	yes
OSASM Group for Oracle ASM	asmadmin	1004	yes	no
OSOPER for ASM group	asmoper	1005	yes	no
OSDBA for ASM group	asmdba	1006	yes	yes

To change the Group Name and GID from the default values on Oracle Database Appliance bare metal platforms, change the default values from the Web Console during the deployment. If you create an initial database during deployment, then the password for the SYS and SYSTEM users is the Master Password that you set in the Web Console.

To change the Group Name and GID from the default values on the Oracle Database Appliance Virtualized Platform, use the -advance parameter with the command oakcli deploy. If you create an initial database during deployment, then the password for the SYS and SYSTEM users is the ROOT password from the Configurator.



Change the password for both users as soon as possible after configuration to prevent unauthorized access to your database using these privileged accounts.

About Data Migration Options for Oracle Database Appliance

Oracle Database Appliance supports the use of standard Oracle Database loading and migration tools.

If you are loading data or migrating data from an existing database to Oracle Database Appliance, then you can use the standard Oracle Database loading and migration tools. These tools include the following:

- Oracle GoldenGate
- SQL*Loader
- Oracle Data Pump



- transportable tablespaces
- RMAN

You can also use the RMAN utility to back up and recover databases on Oracle Database Appliance.

Working with Databases

Use the Web Console to display a list of databases, database details, and create and delete databases. You can use CLI commands to manage your databases.

Note:

Oracle Database Appliance release 18.7 enables unified auditing for databases created in new database homes. Unified audit trail captures audit information and places them in one location and in one format. This consolidated view enables auditors to co-relate audit information from different components. Having a single audit trail also improves management and security of the audit trail. For more information about unified audit trail for Oracle Database, see *Oracle Database Security Guide*.

Viewing Databases

Use the Oracle Appliance Manager Web Console to display a list of Oracle databases and database details, create, upgrade, and delete a database in Oracle Database Appliance.

Creating a Database

Use the Oracle Appliance Manager Web Console to create a database in Oracle Database Appliance.

Creating a Database Instance

Create an instance only database from the command-line interface.

- Cloning a Database from Backup
 - Use the Web Console to clone a database from a backup.
- Cloning an Oracle ACFS Database Using the Web Console
 Create a database from an existing Oracle ACFS database using the Web Console.
- Cloning an Oracle ACFS Database Using Command Line Interface
 Create a database from an existing Oracle ACFS database using CLI commands.
- Upgrading a Database

Use the Oracle Appliance Manager Web Console to upgrade an Oracle database to a different database home version.

Deleting a Database

Use the Oracle Appliance Manager Web Console to delete an Oracle database.



Viewing Databases

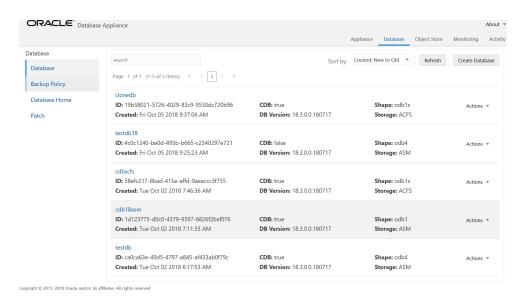
Use the Oracle Appliance Manager Web Console to display a list of Oracle databases and database details, create, upgrade, and delete a database in Oracle Database Appliance.

On the Oracle Database Appliance Virtualized Platform, see the command oakcli list databases.

1. Log into the Web Console:

https://host name or ip-address:7093/mgmt/index.html

Click the Database tab.



- (Optional) Click the database name, in blue font, to display more details about the database.
- 4. (Optional) Click **Actions** next to a database entry to view more details, upgrade or delete the database.

Creating a Database

Use the Oracle Appliance Manager Web Console to create a database in Oracle Database Appliance.

Ensure that the repository is updated with the RDBMS Clone files for a database version, before creating the database as described in *Updating Oracle Database Appliance Repository with Database Clone Files Using the CLI*.

The Web Console provides a quick and easy method of creating new databases. The Create New Database page in the Web Console is populated with default options for most of the configuration options. Drop-down lists enable you to quickly view and select from a list of available options. You can use the drop-down list to create a new database Oracle Database Home (ORACLE_HOME) for the database or select an existing ORACLE_HOME that you created earlier.

Oracle Database 19.4 is supported on both Oracle Automatic Storage Management (Oracle ASM) and Oracle ASM Cluster file system (ACFS). When databases are

created in Oracle ACFS, each database is configured with its own Oracle ACFS file system for the datafiles and uses the following naming convention: /u02/app/db user/oradata/db unique name. The default size of this mount point is 100 GB.

The fields in the Web Console adjust, depending on the database version you select. Follow these steps to create a database:

1. Log into the Web Console:

```
https://host-ip-address:7093/mgmt/index.html
```

- Click the Database tab.
- 3. Click **Create Database** to display the Create Database page.
- 4. Select **Create Database** on the Create Database page.
- 5. Enter the following information on the Create Database page to configure the database:
 - a. In the **DB Name** field, enter a name for the database. The name *db1* appears in the field as an example of a database name, but the field is not populated. You must enter a name.

The name must contain lowercase alphanumeric characters and cannot exceed 8 characters. The Oracle system identifier (SID) is always set to the database name.

- b. (Optional) In the **DB Unique Name** field, enter a name to define a unique name for the database.
- c. In the Use Existing DB Home field, select Yes or No.
- **d.** In the **DB Version** field, select a database bundle patch number from the drop-down list.

Available database versions with available clones appear in the list in descending order. Supported versions that are not available in the repository appear in light gray font at the bottom of the list. Search is available for the list. To add a supported version to the repository, download the RDBMS clone file and update the repository.

- e. For the CDB option on Oracle Database version 19.4, select Yes or No, depending on whether or not you want the database to be a container database (CDB). The default is Yes.
- f. In the **PDB Name** field, enter a name for the pluggable database (PDB).

Alphanumeric characters and underscore (_) are valid. The name must begin with an alphanumeric character and cannot exceed 30 characters. The name pdb1 appears in the field in italic text as an example, but it is not populated. You must enter a name.

g. In the PDB Admin User field, enter a name.

The field shows *pdbadmin* as an example, you must enter a name. Alphanumeric characters and underscore () are valid.

- h. In the Database Edition field, enter the edition for which you have a license, either **Enterprise Edition** or **Standard Edition**.
- i. In the Shape field, select a database shape from the drop-down list. The shape determines the number of cores and total memory allocated to the database. The default is odb1 (1 Core, 8 GB Memory).



- j. In the **Database Class** field, select a database class from the drop-down list. If an option is not available in the list, it is not supported for the database edition on the Oracle Database Appliance or the version that you selected. The default is OLTP.
- k. In the Storage field, select ACFS or ASM from the drop-down list. The default is Oracle ASM.
- I. If you select the storage as ASM, and the Database Version is 12.2 or later, and the disk group redundancy was set to Flex during the appliance creation, then you can select the Database Redundancy value as Mirror or High.
 - You can choose Oracle ACFS storage for all database versions, but if you select Oracle ACFS storage, then you cannot specify the database redundancy. If your disk group redundancy is Flex, and you choose Oracle ACFS storage for the database, then the database redundancy is set to Mirror.
- m. For the Configure EM Express or Configure EM Console option, select Yes or No. The default is No.
 - Select **Yes** to configure the Oracle Enterprise Manager Database Express (EM Express) console for Oracle Database 19.4. Selecting **Yes** enables you to use the console to manage the database.
- n. In the **Password** field, enter the password for the SYS, SYSTEM, and PDB Admin.
 - The password must begin with an alpha character and cannot exceed 30 characters. Quotation marks are not allowed.
- o. In the Confirm Password field, enter the password again to confirm.
- **p.** In the **Characterset** field, select an option from the drop-down list. The default is AL32UTF8.
- q. In the National Characterset field, select an option from the drop-down list. The default is AL16UTF16.
- r. In the **Language** field, select a database language from the drop-down list. The default is American.
- s. In the **Territory** field, select a territory or location for the database from the drop-down list. The default is America.
- **6.** Click **Create**. When prompted, click **Yes** to confirm that you want to start the job to create the database.

The job is submitted and a confirmation page appears with a link to the job. Click the link to view the job progress, tasks, and status.

After you close the Job confirmation page, you can click the **Activity** tab to monitor the job progress. Click the job number to view the tasks and status details. Click **Refresh** to refresh the page.



Creating a Database Instance

Create an instance only database from the command-line interface.



If you provisioned the appliance without creating an initial database, then you must create a Oracle home. If the version of the database home is different from the migrated database, create a database home for the migrated database. You might want to create a database home specifically for the migrated database.

This example creates an instance only database named PRODDB with database version 19.4 and a new database home.

1. Use the odacli list-dbhomes command to display a list of database homes and verify that a database home exists for the database version.

Note the ID if you want to use an existing database home or if you want to get more details. Use the odacli describe-dbhomes command to get greater details about a specific database home.

Create a database home if a database home does not exist for the database version.

If you want to create a database home for specifically for the migrated database, you can use the odacli create-dbhome command, or you can create the database home when you create the database. The example creates a database home for database version 19.4.0.0.0.

```
# odacli create-dbhome -v 19.4.0.0.0
```

3. Create an instance only database. You can use an existing database home ID or you can create a database home when creating the database.

To create an instance only database named PRODDB with database version 19.4.0.0.0 that uses an existing database home with ID b727bf80-c99e-4846-ac1f-28a81a725df6:

```
\# odacli create-database -n PRODDB -v 19.4.0.0.0 -io -m -dh b727bf80-c99e-4846-ac1f-28a81a725df6
```



To create an instance only database named PRODDB with database version 19.4.0.0.0 and a database home:

odacli create-database -n PRODDB -v 19.4.0.0.0 -io -m

Cloning a Database from Backup

Use the Web Console to clone a database from a backup.

When you backup a database in Oracle Database Appliance, a backup report is created. Save the backup report as a JSON file and you can use the file to create a database on the same appliance, or a different appliance.

The following are the prerequisites to cloning a database from a backup:

- The source database backup location must be Object Store or External FRA (Network File System).
- If you use Object Store backup location, then obtain Object Store Credentials for the host.
- 3. If you use an External FRA (Network File System) backup location, then obtain the Network File System (NFS) mount point location.
- Create a backup policy using the object store credentials or NFS mount point as the backup destination.
- **5.** Attach the backup policy to the database that you want to backup.
- 6. Create a manual backup of the database and save the backup report generated when the backup completes.

Follow these steps to create a database from backup:

1. Log into the Web Console:

```
https://host-ip-address:7093/mgmt/index.html
```

- 2. Click the Database tab.
- 3. Click **Create Database** to display the Create Database page.
- Click Clone Database from Backup, then click Next to display the Clone Database from Backup page.
- 5. Select the Backup Destination from which you want to create the database. If your backup destination is ObjectStore:
 - a. Select Backup Destination as **ObjectStore**.
 - b. Select your Object Store Credential Name.
 - c. Enter the password in the Backup Encryption Passwords field and the Confirm Backup Encryption Passwords field.

If your backup destination is Network File System (NFS):

- Select Backup Destination as External FRA.
- b. Specify the External FRA Mount Point.
- c. Enter the password in the Backup Encryption Passwords field and the Confirm Backup Encryption Passwords field.



Click Browse and select the backup report from which you want to create the database.

When the backup report is loaded, additional fields appear on the page and are populated based on the backup report. You can edit some of the fields.

7. In the **DB Name** field, enter a name for the database.

The name must contain lowercase alphanumeric characters and cannot exceed 8 characters. The Oracle system identifier (SID) is always set to the database name.

- Enter the password in the SYS User Password field and the Confirm SYS User Password field.
- 9. Click Create.
- Click Yes to confirm that you want to clone a database from the selected Object Store or External FRA.

When you submit the job, the job ID and a link to the job appears. Click the link to display the job status and details.

11. Validate that the job completed. You can track the job in the Activity tab in the Web Console, or run the command odacli describe-job with the job ID.

```
# odacli describe-job -ijobId
```

Cloning an Oracle ACFS Database Using the Web Console

Create a database from an existing Oracle ACFS database using the Web Console.

Cloning enables to:

- Create a database from another database without bringing down the source database
- Create multiple databases from a gold image, thus ensuring standardized mass deployments
- Optimize space utilization, by use of Oracle ACFS snapshots in cloning
- Create different types of databases, from a single source database type. For
 example, you can create single-instance databases, Oracle RAC databases, or
 Oracle RAC One Node databases from any type of source database
- Depending on the available memory and CPU cores, specify a supported database shape such as odb1s, odb2, and so on, to create any class of database from any source database.

Follow these steps to create a database from an existing Oracle ACFS database:

1. Log into the Web Console:

```
https://host-ip-address:7093/mgmt/index.html
```

- 2. Click the **Database** tab.
- 3. Click **Create Database** to display the Create Database page.
- 4. Click **Clone a Database**, then click **Next** to display the Clone Database page.
- 5. Select the **Source Database** from which you want to create the database.
- 6. Select the **Database Shape** (template) for your new database. The database shape you select determines the total memory allocated to the database.



7. In the **DB Name** field, enter a name for the database.

The name must contain lowercase alphanumeric characters and cannot exceed 8 characters. The Oracle system identifier (SID) is always set to the database name.

- **8.** Specify the **DB Unique Name** for the database. If the database unique name is not provided, then the name of the database is set to the database name.
- Enter the password in the SYS User Password field and the Confirm SYS User Password field.
- **10.** Optionally, specify the **TDE Wallet Password**.
- 11. Click Create.
- Click Yes to confirm that you want to clone a database from the selected source database.

When you submit the job, the job ID and a link to the job appears. Click the link to display the job status and details.

13. Validate that the job completed. You can track the job in the Activity tab in the Web Console, or run the command odacli describe-job with the job ID.

odacli describe-job -ijobId

Cloning an Oracle ACFS Database Using Command Line Interface

Create a database from an existing Oracle ACFS database using CLI commands.

Cloning enables to:

- Create a database from another database without bringing down the source database
- Create multiple databases from a gold image, thus ensuring standardized mass deployments
- Optimize space utilization, by use of Oracle ACFS snapshots in cloning
- Create different types of databases, from a single source database type. For example, you can create single-instance databases, Oracle RAC databases, or Oracle RAC One Node databases from any type of source database
- Depending on the available memory and CPU cores, specify a supported database shape such as odb1s, odb2, and so on, to create any class of database from any source database.

Following are the prerequisites to clone a database:

- Ensure that Oracle Clusterware is running on all nodes, and the source database is up and running.
- The source database must use Oracle ACFS storage.
- The source database must not be a multitenant container databases (CDBs)
- The source database must be the primary database.
- The source database must be in the OPEN state.
- The source database must not be in backup mode.
- The source database must be in archive mode.



Follow this procedure to clone a database:

Run the odacli clone-database command.

```
odacli clone-database --databaseUniqueName --dbname --dbshape --dbtype | SI --json --sourcedbname --syspassword --tdepassword
```

Specify the unique name of the database, the name for the new database, the database shape, the type of database, the source database name, password for SYS user, and the TDE Wallet password. For information about all the command options, see the *ODACLI Command Reference* chapter.

Related Topics

odacli clone-database

Use the odacli clone-database command to clone a new database from a source database.

Upgrading a Database

Use the Oracle Appliance Manager Web Console to upgrade an Oracle database to a different database home version.

Before upgrading to a different database home, you must upload the RDBMS database version to the repository and create the database home.

1. Log into the Web Console:

```
https://host name or ip-address:7093/mgmt/index.html
```

- 2. Click the **Database** tab.
- 3. Click **Actions** next to the database that you want, then select **Upgrade**.
- 4. Select the destination database home version from the list of available versions, then click **Upgrade**.

Deleting a Database

Use the Oracle Appliance Manager Web Console to delete an Oracle database.

Log into the Web Console:

```
https://host name or ip-address:7093/mgmt/index.html
```

- 2. Click the **Database** tab.
- 3. Click **Actions** next to the database that you want, then select **Delete**.
- 4. Confirm the action.

Working with Database Homes

Use the Web Console to display a list of database homes, details, and create and delete database homes.



- About Managing Multiple Oracle Homes on Oracle Database Appliance
 Create and manage one or more Oracle home directories and Oracle databases
 on Oracle Database Appliance.
- Viewing Database Homes
 Use the Web Console to display a list of database homes and database home details, including databases associated with a DB home.
- Creating a Database Home
 Use the Web Console to create database homes in Oracle Database Appliance.
- Deleting a Database Home
 Use the Web Console to delete an Oracle database home.

About Managing Multiple Oracle Homes on Oracle Database Appliance

Create and manage one or more Oracle home directories and Oracle databases on Oracle Database Appliance.

Oracle home is the directory in which you install Oracle Database binaries, and from which Oracle Database runs. Oracle Database Appliance supports multiple Oracle homes, including support of different release Oracle Database homes. You can create multiple Oracle databases on a given Oracle home. Use Oracle Appliance Manager Web Console to create and manage multiple Oracle homes and databases on Oracle Database Appliance. Oracle Database Appliance Manager automatically creates an Oracle Database Oracle home that is compliant with Oracle's Optimal Flexible Architecture (OFA) standards.

Check the *Oracle Database Appliance Release Notes* to obtain information about the specific Oracle software releases supported for your Oracle Database Appliance platform.

When you use ODACLI commands to create multiple homes on Oracle Database Appliance, the commands start the Oracle Home cloning process. In Oracle Database Appliance deployments, the user oracle is the default software installation owner.

You can use the Web Console or the command-line interface to create and manage databases.

Use ODACLI commands to create, list, describe, and delete databases on Oracle Database Appliance. The odacli create-database command enables you to create a database with minimal user input. When you run this command without any additional options, the command creates a new database home (ORACLE_HOME). You can create a database in an existing home by using the --dbhomeid option. To find the dbhomeid, use the odacli list-dbhomes command.

Alternatively, you can use the Web Console to create list, describe and delete databases and database homes. You can display a list of all Database Homes that includes the database home name, ID, version, the date and time that the database home was created and the location on the same page. You can also create and delete database homes on the Web Console.



A

Caution:

Do not apply Oracle Database patches directly to Oracle Databases on Oracle Database Appliance. Only use Oracle Database Appliance patch bundles, which are tested to work across the whole software stack. If a one-off database patch is required, it may be applied to the Oracle Home. When you apply the Oracle Database Appliance patch bundle, it may cause a conflict during future patching events and you might need to roll back and then re-apply the patch.

Viewing Database Homes

Use the Web Console to display a list of database homes and database home details, including databases associated with a DB home.

1. Log in to the Web Console:

https://ip-address:7093/mgmt/index.html

- Click the Database tab.
- Click Database Home on the left menu to view all database homes. The name, ID, version, location and date and time stamp of when the database home was created appears on the page.
- (Optional) Click Actions next to a database home entry, then View Databases to see the databases that are associated with the database home.

Creating a Database Home

Use the Web Console to create database homes in Oracle Database Appliance.

Before you can create a database home, the Oracle Database Appliance RDBMS Clone file image must be in the repository. Follow these steps to create a database home:

Log in to the Web Console:

https://ip-address:7093/mgmt/index.html

- Click the Database tab, then click Database Home.
- 3. Click Create Database Home.
- Select a database version from the list of available versions, then select the database edition, either Enterprise Edition or Standard Edition, per your licensing agreement.
- 5. Click Create. When prompted, click Yes to confirm that you want to start the job.

Deleting a Database Home

Use the Web Console to delete an Oracle database home.

You can delete a database home (DB Home) if it is not associated with any databases.

Log into the Web Console:

https://host name or ip-address:7093/mgmt/index.html

- 2. Click the **Database** tab.
- 3. Click **Database Home** on the left menu to view all database homes. The name, ID, version, location and date and time stamp of when the database home was created appears on the page.
- 4. Click **Actions** next to a database home entry, then **Delete**, and then confirm the action to delete a database home.

Migrating Databases

Review these topics to learn how to prepare for and migrate an entire database to your Oracle Database Appliance.

About Migrating Databases

You can migrate an entire active container database (CDB) or non-CDB database to an Oracle Database Appliance machine by using the RMAN duplicate command.

- Configuring a Static Listener
 Configure a static listener before you duplicate a database.
- Migrating a Database
 Use the RMAN Duplicate command to migrate the entire database to the appliance.
- Registering a Database
 Use the odacli register-database command to register the migrated database with the appliance.

About Migrating Databases

You can migrate an entire active container database (CDB) or non-CDB database to an Oracle Database Appliance machine by using the RMAN duplicate command.

When using RMAN Duplicate, ensure to have network connectivity from source and target databases:

- Source database: The existing database to be migrated.
- Target database: The new database created on an Oracle Database Appliance environment.

If you do not have network connectivity between the source and the target environments, you can use the offline migration method. Offline migration uses RMAN backup sets for duplication, which does not require connectivity to the primary database.

At a high level, the procedure involves the following steps:

1. Deploy or update Oracle Database Appliance to the latest version.

Confirm that the provisioning completed successfully. On bare metal systems, use the command odacli list-jobs and the command odacli describe-job to verify the status.

2. Create an instance only database from the command-line interface.



• On bare metal systems, use the command odacli create-database with the instanceonly flag on an Oracle Database Appliance machine. The new database is the target database.

Creating an instance only database also creates the following:

- ACFS Filesystem used to store the database files
- Directory structures that are required by the database instance/rman duplicate command
- Password file for the SYS user
- 3. Configure a static listener.
- 4. Migrate the existing database to the target database using the backup and restore operations.
- 5. Register the migrated database with the appliance.



You can only migrate and register a database of the same storage type. For example, to migrate and register an Oracle ACFS database, you must create an Oracle ACFS database and then migrate and register it. Similarly, to to migrate an Oracle ASM database, you must create an Oracle ASM database and then migrate it.

Configuring a Static Listener

Configure a static listener before you duplicate a database.

The static listener is only required when using RMAN Duplicate command.

Perform the following steps to manually configure the listener.ora file:

- 1. Log in as a grid user.
- 2. Navigate to /u01/app/18.0.0.0/grid/network/admin/directory.
- 3. Edit the default listener.ora file and append the static database entry.

```
SID_LIST_LISTENER=
  (SID_LIST=
      (SID_DESC=
            (GLOBAL_DBNAME=db_unique_name with domain)
            (ORACLE_HOME=db home)
            (SID_NAME=db unique name)
            (ENVS="TNS_ADMIN=database home/network/admin"))
)
```

For example, the following file is edited for an 19.4.0.0.0 database named PRODDB in the example.com domain:

```
SID_LIST_LISTENER=
(SID_LIST=
(SID_DESC=
```



- Save the file.
- 5. Restart the listener.

```
srvctl stop listener -l listener
srvctl start listener -l listener
```

Migrating a Database

Use the RMAN Duplicate command to migrate the entire database to the appliance.

Before migrating the database, verify that a network connection exists between the source and destination databases.

 Verify that the sysdba connection to the auxiliary database is working. Use the password that you defined when you created the database with the -instanceonly flag.

```
sqlplus sys/password@hostname:PORT/GLOBAL_DBNAME as sysdba << EOF
select 1 from dual;
exit;
EOF</pre>
```

The following example uses the Welcome_12 password for myhost on port 1521 for PRODDB.example.com.

```
sqlplus sys/Welcome_12@myhost:1521/PRODDB.example.com as sysdba << EOF
select 1 from dual;
exit;
EOF</pre>
```

2. As oracle user, set the ORACLE_HOME and ORACLE_SID environment variables.

```
ORACLE_HOME=path of Oracle Home against which the AUX DB is created ORACLE_SID=database unique name
```

3. Display a list of all database storage configured on the appliance and database storage identifiers (ID).

Use the odacli list-dbstorages to display the storage IDs for all configured filesystems.



```
68d13446-f26c-49ee-ab75-a393732aa88a Asm rdb1 Configured ff2023d9-338d-4cff-8bb4-e73a89e32ce4 Acfs PRODDB Configured
```

Display the database storage details, including the DATA, RECO and REDO locations, for each database storage ID.

For example, use the odacli describe-dbstorage command to display information about the ACFS storage for ID 9fe39332-cc1a-4b4b-8393-165524a6ef6b.

5. Duplicate the database.

Use the RMAN duplicate database command to duplicate the database.

```
rman target sys/Welcome__12@source database hostname:PORT
(Continued)
/Service Name auxiliary sys/Welcome_12@Hostname of the target database:
1521/service name
RUN {
SET NEWNAME FOR DATABASE TO NEW;
duplicate target database to PRODDB from active database
SPFILE
SET cluster_database 'false'
SET audit_file_dest '/u01/app/oracle/admin/PRODDB/adump'
SET db_create_file_dest '/u02/app/oracle/oradata/PRODDB'
SET db_create_online_log_dest_1 '/u03/app/oracle/redo'
SET db_recovery_file_dest '/u03/app/oracle/fast_recovery_area'
SET control_files '/tmp/control_PRODDB.ctl' nofilenamecheck;
}
```

Registering a Database

Use the odacli register-database command to register the migrated database with the appliance.

The dbclass, dbshape, servicename and password are mandatory for registering the database. The dbclass and dbshape determine the sga_target and pga_target settings. The database init.ora parameters are reset as part of the odacli register-database command. Review the init.ora parameters after registration and ensure that the parameters set correctly.





The odacli register-database command is supported only for primary database of type single-instance.

Follow these steps to register a database:

1. If you have Oracle Database version 12.1 with SQL patches, ensure that the sqlpatches are in the Oracle Database Appliance environment. If the patches are not in the environment, copy the \$OH/sqlpatch directories from the source database home to the \$OH in Oracle Database Appliance before executing the odacli register-database command

The odacli register-database command invokes the datapatch utility for applying the post patch SQLs. If the source database has any sqlpatches applied that are not present in the Oracle Database Appliance environment, then the datapatch will fail.

- 2. If you have Oracle Database version 11.2 with SQL patches, you must roll back any patches applied to the source database that are not part of the installed Oracle Database Bundle patch (BP).
- 3. Register the database with Oracle Database Appliance.

```
odacli reqister-database -c OLTP -s odb1 -sn proddb.example.com -p
Password for SYS:
  "jobId" : "317b430f-ad5f-42ae-bb07-13f053d266e2",
 "status" : "Created",
 "message" : null,
  "reports" : [ ],
  "createTimestamp": "August 08, 2018 05:55:49 AM EDT",
  "description" : "Database service registration with
                  db service name: proddb.example.com",
  "updatedTime" : "August 08, 2018 05:55:49 AM EDT"
rpandrap: ]# odacli describe-job -i "317b430f-ad5f-42ae-
bb07-13f053d266e2"
Job details
           ID: 317b430f-ad5f-42ae-bb07-13f053d266e2
  Description: Database service registration with
            db service name: proddb.example.com
       Status: Success
      Created: November 23, 2018 5:55:49 AM EDT
      Message:
Task Name
                               Start Time
restore control file
                              November 23, 2018 5:55:49 AM EDT
move spfile to right location November 23, 2018 5:56:08 AM EDT
register DB with clusterware November 23, 2018 5:56:13 AM EDT
reset db parameters
                              November 23, 2018 5:57:05 AM EDT
Running DataPatch
                              November 23, 2018 5:57:36 AM EDT
```



(Continue End Tim				Stat	tus	
November	23,	2018	5:56:08	AM	EDT	Success
November	23,	2018	5:56:13	AM	EDT	Success
November	23,	2018	5:57:05	AM	EDT	Success
November	23,	2018	5:57:36	AM	EDT	Success
November	23,	2018	5:57:49	AM	EDT	Success

4. Use the odacli list-databases command to view the registered database.

About Managing Multiple Database Instances Using Instance Caging

Use instance caging to manage your system resources on Oracle Database Appliance.

Oracle Database provides a method for managing CPU allocations on a multi-CPU server that runs multiple database instances. This method is called instance caging. Instance caging uses an initialization parameter to limit the number of CPUs that an instance can use simultaneously.

Instance caging and Oracle Database Resource Manager (the Resource Manager) work together to support your desired service levels across multiple instances. Consolidation can minimize idle resources, maximize efficiency, and lower costs.

Oracle Database Appliance templates are already tuned for the size of each database instance workload. They are designed to run on a specific number of cores. Instance caging ensures that each database workload is restricted to the set of cores allocated by the template, enabling multiple databases to run concurrently with no performance degradation, up to the capacity of Oracle Database Appliance. You can select database template sizes larger than your current needs to provide for planned growth.

Note:

Oracle strongly recommends that you use the Oracle Database Appliance templates, because they implement best practices and are configured specifically for Oracle Database Appliance.

The Oracle Database Appliance Manager interface refers to the database sizing templates as database classes.

By default, instance caging is not enabled on Oracle Database Appliance. To enable instance caging, set the initialization parameter, RESOURCE_MANAGER_PLAN, for each database on Oracle Database Appliance. The parameter specifies the plan to be used by the Resource Manager for the current instance. Setting this parameter directs the Resource Manager to allocate core resources among databases. If a plan is not specified with this parameter, then the Resource Manager and instance caging are not enabled.



Instance caging allocation of core resources is enabled in accordance with the Oracle Database Appliance database template size that you select for each database. The CPU_COUNT initialization parameter is set in the template. Use the CPU_COUNT setting that matches the size of each database to consolidate, and follow the standard instructions for configuring instance caging.

Oracle EM Express and DB Console

You can use Oracle Enterprise Manager Database Express (EM Express), or the Database Control Console (DB Console) to manage your database.

The EM Express console is available for Oracle Database 18c, 12.2.0.1, and 12.1.0.2. The DB Console is available for Oracle Database 11.2.0.4. Both consoles are webbased tools for managing Oracle Databases.

The EM Express console provides the following features:

- Support for basic administrative tasks, such as storage and user management
- Comprehensive solutions for performance diagnostics and tuning
- Performance advisors in a graphic user interface
- Oracle Database utilities in a graphic user interface, such as SQL*Loader and Oracle Recovery Manager (RMAN)

EM Express is built inside the database server and cannot perform actions outside the database.



8

Managing Storage

Understand the storage options and how to manage storage for your Oracle Database Appliance deployment.

- About Managing Storage
 Understand Oracle Database Appliance storage options.
- Managing Storage on Single-Node Systems
 Understand the storage options for your Oracle Database Appliance X8-2S and X8-2M systems.
- Managing Storage on High-Availability Systems
 Understand the storage for your Oracle Database Appliance X8-2-HA system.

About Managing Storage

Understand Oracle Database Appliance storage options.

Oracle Database Appliance uses raw storage to protect data in the following ways:

- Fast Recovery Area (FRA) backup. FRA is a storage area (directory on disk or Oracle ASM diskgroup) that contains redo logs, control file, archived logs, backup pieces and copies, and flashback logs.
- Mirroring. Double or triple mirroring provides protection against mechanical issues.

The amount of available storage is determined by the location of the FRA backup (external or internal) and if double or triple mirroring is used. External NFS storage is supported for online backups, data staging, or additional database files.

Oracle Database Appliance X8-2M and X8-2-HA models provide storage expansion options from the base configuration. In addition, Oracle Database Appliance X8-2-HA multi-node platforms have an optional storage expansion shelf.

Note:

In this release, you can add storage as per your requirement, or deploy the full storage capacity for Oracle Database Appliance X8-2HA and X8-2M hardware models at the time of initial deployment of the appliance. You can only utilize whatever storage you configured during the initial deployment of the appliance (before the initial system power ON and software provisioning and configuration). You cannot add additional storage after the initial deployment of the X8-2HA and X8-2M hardware models, in this release of Oracle Database Appliance, even if the expandable storage slots are present as empty.

The redundancy level for FLASH is based on the DATA and RECO selection. If you choose High redundancy (triple mirroring), then FLASH is also High redundancy.

Managing Storage on Single-Node Systems

Understand the storage options for your Oracle Database Appliance X8-2S and X8-2M systems.

About Storage on Oracle Database Appliance X8-2S and X8-2M
 Understand the storage for your Oracle Database Appliance single-node system.

About Storage on Oracle Database Appliance X8-2S and X8-2M

Understand the storage for your Oracle Database Appliance single-node system.

Oracle Database Appliance X8-2S has two 6.4TB NVMe disks that host DATA and RECO disk groups. There are two partitions, one each for DATA and RECO for Oracle ASM storage information. The storage capacity is fixed and cannot be expanded.

Oracle Database Appliance X8-2M has two 6.4TB NVMe disks that host DATA and RECO disk groups. There are two partitions, one each for DATA and RECO for Oracle ASM storage information. When you first deploy and configure X8-2M in this release, you can set the storage on X8-2M in multiple of 2 packs of NVMe drives, such as 2,4,6, 8, and 10 disks, up to a maximum of 12 disks.

Note:

In this release, you can add storage as per your requirement, or deploy the full storage capacity for Oracle Database Appliance X8-2HA and X8-2M hardware models at the time of initial deployment of the appliance. You can only utilize whatever storage you configured during the initial deployment of the appliance (before the initial system power ON and software provisioning and configuration). You cannot add additional storage after the initial deployment of the X8-2HA and X8-2M hardware models, in this release of Oracle Database Appliance, even if the expandable storage slots are present as empty.

The table describes the NVMe storage configurations with expansion memory and storage options for single-node systems.

Table 8-1 Storage Options for Oracle Database Appliance X8-2S and X8-2M

Configuration	Oracle Database Appliance X8-2S	Oracle Database Appliance X8-2M
Base Configuration	2 x 6.4 TB NVMe = 12.8 TB NVMe	2 x 6.4 TB NVMe = 12.8 TB NVMe
Storage addition options	None	10 x 6.4 TB NVMe storage drives added at the time of initial deployment, for a total storage of 76.8 TB NVMe



Managing Storage on High-Availability Systems

Understand the storage for your Oracle Database Appliance X8-2-HA system.

About Storage Options for Oracle Database Appliance X8-2-HA
 Oracle Database Appliance High-Availability systems have options for high performance and high capacity storage configurations.

About Storage Options for Oracle Database Appliance X8-2-HA

Oracle Database Appliance High-Availability systems have options for high performance and high capacity storage configurations.

The base configuration of Oracle Database Appliance X8-2HA hardware model has six slots (slots 0-5) with 7.68 TB drives of SSD raw storage. If you choose to order and deploy the full storage capacity, then you can fill the remaining 18 slots (slots 6-23) with either SSD or HDD drives. For even more storage, you can add a storage expansion shelf to double the storage capacity of your appliance.

In all configurations, the base storage and the storage expansion shelf each have six SSDs for DATA/RECO in the SSD option or FLASH in the HDD option.

Oracle Database Appliance X8-2-HA does not allocate dedicated SSD drives for REDO disk groups. Instead, the space for REDO logs is allocated on SSD drives as required.

For Oracle ASM storage, the REDO logs are stored in the available disk group space during database creation, based on the database shape selected. For Oracle ACFS storage, the space for REDO logs is allocated during the database storage creation assuming the minimum db shape (odb1s). If you create the database storage without database, then the space allocated for REDO logs is 4 GB, assuming the minimum db shape (odb1s). Subsequently, when you create a database with your required database shape on the existing database storage, the REDO logs space is extended based on shape of the database.

On Oracle Database Appliance X8-2-HA High Performance configurations, with only SSD drives, the DATA and RECO disk groups use all the SSD drives whether 6, 12, 18, 24, or 48 with storage expansion shelf. REDO logs are stored in the RECO disk group.

On Oracle Database Appliance X8-2-HA High Capacity configurations, with both HDD and SSD drives, the DATA and RECO disk groups use the HDD drives, and the SSD drives store the FLASH disk group. REDO logs are stored in the FLASH disk group.

On both High Performance and High Capacity configurations, REDO logs are always created on SSD drives, similar to earlier Oracle Database Appliance hardware models. REDO logs are always created with high redundancy irrespective of the redundancy level of the disk group, whether RECO or FLASH.



Note:

In this release, you can add storage as per your requirement, or deploy the full storage capacity for Oracle Database Appliance X8-2HA and X8-2M hardware models at the time of initial deployment of the appliance. You can only utilize whatever storage you configured during the initial deployment of the appliance (before the initial system power ON and software provisioning and configuration). You cannot add additional storage after the initial deployment of the X8-2HA and X8-2M hardware models, in this release of Oracle Database Appliance, even if the expandable storage slots are present as empty.

High Performance

A high performance configuration uses solid state drives (SSDs) for DATA and RECO storage. The base configuration has six disks, each with 7.68 TB SSD raw storage for DATA and RECO.

You can add up to three (3) 6-Pack SSDs on the base configuration, for a total of 184.32 TB SSD raw storage. If you need more storage, you can double the capacity by adding an expansion shelf of SSD drives. The expansion shelf provides an additional 24 SSDs, each with 7.68TB raw storage for DATA and RECO, for a total of another 184.32 TB SSD raw storage.

Adding an expansion shelf requires that the base storage shelf and expansion shelf are fully populated with SSD drives. When you expand the storage using only SSD, there is no downtime.

A system fully configured for high performance has 368.64 TB SSD raw storage for DATA and RECO.

High Capacity

A high capacity configuration uses a combination of SSD and HDD drives.

The base configuration has six disks, each with 7.68 TB SSD raw storage for FLASH.

The following expansion options are available:

- Base shelf: additional 252 TB HDD raw storage for DATA and RECO (18 HDDs, each with 14 TB storage)
- Expansion Storage shelf: additional shelf storage configuration must be identical to the storage configuration of the base shelf.

A system fully configured for high capacity has a total of 596.16 TB raw storage for DATA, RECO, and FLASH, with with 92.16 TB SSD and 504 TB HDD.



Table 8-2 Storage Options for Oracle Database Appliance X8-2-HA

Configura tion	Oracle Database Appliance X8-2-HA Base Configuration	Oracle Database Appliance X8-2-HA SSD- Only Configuration for High Performance	Oracle Database Appliance X8-2-HA SSD and HDD Configuration for High Capacity	
Base Configurati on and storage addition options at the time of initial deploymen t	JBOD: • 6 x 7.68 TB SSD	JBOD: • 6 x 7.68 TB SSD = 46.08 TB SSD • 18 x 7.68 TB SSD = 138.24 TB SSD • Total storage on the first JBOD = 184.32 TB SSD • Additional JBOD with the same configuration as the base shelf, added during initial deployment • Total storage including both JBODs configured during initial deployment = 368.64 TB SSD	JBOD: • 6 x 7.68 TB SSD = 46.08 TB SSD • 18 x 14TB HDD = 252 TB HDD • Total storage on the first JBOD = 298.08 TB, with 46.08 TB SSD and 252 TB HDD • Additional JBOD with the same configuration as the base shelf, added during initial deployment • Total storage including both JBODs configured during initial deployment = 596.16 TB, with 92.16 TB SSD and 504 TB HDD	



9

Managing Networks

View the public and private networks that are configured on your Oracle Database Appliance.

- About Network Infrastructure and VLANs on Oracle Database Appliance
 Learn about networks and virtual local area networks (VLANs) on the appliance.
- About Oracle Database Appliance X8-2 Network Interfaces
 Learn about onboard network interfaces for Oracle Database Appliance.
- Viewing Configured Networks and Network Interfaces
 Use the Web Console to display a list of configured networks, network details, and interfaces.
- Creating a Network
 Understand how you can use the Web Console to create a network for the appliance.
- Creating a Physical Network
 Understand how you can use the Web Console to create a physical network on the unused network interface.
- Updating a Network
 Understand how you can use the Web Console to update a network and revise the IP address, subnet mask, gateway, or type of network.
- Deleting a Network
 Understand how you can delete a configured network using the Web Console.

About Network Infrastructure and VLANs on Oracle Database Appliance

Learn about networks and virtual local area networks (VLANs) on the appliance.

Oracle Database Appliance has two dual-port public network interfaces (either copper or fiber), which are bonded. For dual-port networks cards, the bonded network interface used for primary public network is always btbond1. You can, optionally, configure upto six bonded interfaces, btbond1 to btbond6. If you use network cards with four ports, then you can select either btbond1 or btbond2 as the public network interface.

You can use the Web Console to display all physical and virtual networks. You can use ODACLI commands or the Web Console to create, update, and deleted networks.

Virtual Local Area Networks (VLANs)

Oracle Database Appliance supports multiple virtual local area networks (VLANs) on the same network port or bond. VLANs are multiple logical networks that are created from a single physical network switch port, providing network security isolation for multiple workloads that share a common network. For example, application, backup, and management networks. Each VLAN acts as an independent logical network

operating with other VLANs over the same physical connection. The VLAN tag associated with the data packet and network define the network. You can create a collection of isolated networks to enhance network security and bandwidth and keep data packets separated.

The network interfaces differ, depending on your Oracle Database Appliance hardware. The VLAN is created on btbond0 in single- and multi-node platforms. In all cases, connections to user domains are through the selected interfaces. A switch that supports tagged VLANs uses VLAN IDs to identify the packet, including to which network the packet belongs.

Note:

To use VLANs with Oracle Database Appliance, you must configure the VLANs before you deploy the appliance.

The Web Console enables you to create, list, and delete VLANs on the appliance. For high-availability systems, you can use the Web Console to create a VLAN on both nodes of the appliance. To create a VLAN on a specific node, use the command-line interface.

For a bare metal deployment, use the Web Console or odacli commands to manage the following types of VLANs:

- Data Guard: For Oracle Data Guard.
- Database: For Oracle Database.
- Backup: For backup operations.
- Management: For management traffic.
- Other: For usage defined by the customer. For example, for applications.

The public VLAN is setup when you configure the first network using the command odacli configure-firstnet. You can set up only one public VLAN. Use the command-line interface to create other VLANs. For high-availability systems, the IP addresses for Node 0 and Node 1 cannot be the same. Oracle Database Appliance does not support Dynamic Host Configuration Protocol (DHCP) to provide IP addresses, subnet mask and default gateway.

About Oracle Database Appliance X8-2 Network Interfaces

Learn about onboard network interfaces for Oracle Database Appliance.

The network interfaces differ, depending on your Oracle Database Appliance hardware. In all cases, connections to user domains are through the selected interfaces.

The following table lists the default network interfaces for Oracle Database Appliance bare metal systems on Oracle Database Appliance X8-2-HA.



Table 9-1 Network Interfaces for Oracle Database Appliance X8-2-HA Bare Metal Deployment

PCIe Network Card Slot	PCIe Network Port	Network Interfaces	Network Bonds	IP Addresses
PCIe Slot 1 (Interconnect)	2 x 10/25GbE SFP28 ports	p1p1, p1p2	icbond0	Node 0: 192.168.16.24
				Node 1: 192.168.16.25
PCIe Slot 7 (required)	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	p7p1, p7p2 (p7p3, p7p4)	btbond1 (btbond2)	Either one of the IP addresses: btbond1 or btbond2, can be assigned during deployment. The remaining IP address can be assigned post deployment.
PCIe Slot 2 (optional)	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	p2p1, p2p2 (p2p3, p2p4)	btbond3 (btbond4)	Assigned post deployment
PCIe Slot 10 (optional)	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	p10p1, p10p2 (p10p3, p10p4)	btbond5 (btbond6)	Assigned post deployment
On-board	1GBase-T	em1	Not applicable	Assigned post deployment

The following table lists the default network interfaces for Oracle Database Appliance X8-2-HA Virtualized Platform.

Table 9-2 Network Interfaces for Oracle Database Appliance X8-2-HA Virtualized Platform

PCIe Network Card Slot	PCIe Network Port	Network Interfaces	Network Bonds	IP Addresses
PCIe Slot 1 (Interconnect)	2 x 10/25GbE SFP28 ports	eth0, eth1	icbond0/priv1	Node 0: 192.168.16.24 Node 1: 192.168.16.25
PCIe Slot 7 (required)	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	eth3, eth4 (eth5, eth6)	bond0/net1 (bond1/net2)	Assigned post deployment
PCIe Slot 8 (optional)	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	eth7, eth8 (eth9, eth10)	bond2/net3 (bond3/net4)	Assigned post deployment
PCIe Slot 10 (optional)	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	eth11, eth12 (eth13, eth14)	bond4/net5 (bond5/net6)	Assigned post deployment



Table 9-2 (Cont.) Network Interfaces for Oracle Database Appliance X8-2-HA Virtualized Platform

PCIe Network Card Slot	PCIe Network Port	Network Interfaces	Network Bonds	IP Addresses
On-board	1GBase-T	eth2	Not applicable	Assigned post deployment

The following table lists the default network interfaces for Oracle Database Appliance bare metal systems on Oracle Database Appliance X8-2S and X8-2M.

Table 9-3 Network Interfaces for Oracle Database Appliance X8-2S and X8-2M Bare Metal Deployment

PCIe Network Card Slot	PCIe Network Port	Network Interfaces	Network Bonds	IP Addresses
PCIe Slot 1	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	p7p1, p7p2 (p7p3, p7p4)	btbond1 (btbond2)	btbond1 is assigned during deployment. btbond2 can be assigned post deployment.
PCIe Slot 2 (optional for Oracle Database Appliance X8-2M)	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	p2p1, p2p2 (p2p3, p2p4)	btbond3 (btbond4)	Assigned post deployment
PCIe Slot 8 (optional for Oracle Database Appliance X8-2S)	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	p8p1, p8p2 (p8p3, p8p4)	btbond3 (btbond4)	Assigned post deployment
PCIe Slot 10 (optional)	4 x 10GBase-T ports or 2 x 10/25GbE SFP28 ports	p10p1, p10p2 (p10p3, p10p4)	btbond5 (btbond6)	Assigned post deployment
On-board	1GBase-T	em1	Not applicable	Assigned post deployment

Viewing Configured Networks and Network Interfaces

Use the Web Console to display a list of configured networks, network details, and interfaces.

- 1. Click the **Appliance** tab in the Web Console.
- Click the Network tab in the left navigation to display a list of configured networks.When the appliance is a high-availability system, tabs named Node0 and Node1

When the appliance is a high-availability system, tabs named **Node0** and **Node1** display in the right corner, below the **Refresh** button. Click a tab to display network details for each node.

Click Show Interfaces in the upper left corner of the Network page to display a list of network interfaces.



If the appliance is a high-availability system, then tabs named **Node0** and **Node1** display in the right corner, below the **Refresh** button. Click a tab to display the interfaces for each node.

Click Show Networks to go back to the network view.

Creating a Network

Understand how you can use the Web Console to create a network for the appliance.

When naming a network, you can use alphanumeric characters, dashes (-) and underscores (_). The network name cannot exceed 40 characters and must begin with an alpha character.

- 1. Click the **Appliance** tab in the Web Console.
- 2. Click the **Network** tab in the left navigation to display a list of configured networks.
- 3. If the appliance is a high-availability system, then the Web Console helps you create the network for both nodes at the same time.
- 4. Click Create Network in the upper right corner.
- 5. Enter the network information in the required fields. The Interface field has a drop-down menu with available choices. The Subnet Mask field has a drop-down menu with available choices and a search box. Optionally, enter a Gateway IP address and select an option from the Network Type list. The network type helps to identify if the network is for backup, database, dataguard, management, private, or other. Click Create.

Creating a Physical Network

Understand how you can use the Web Console to create a physical network on the unused network interface.

- 1. Click the **Appliance** tab in the Web Console.
- 2. Click the **Network** tab in the left navigation to display a list of configured networks.
- If the appliance is a single-node system, then click Create Network in the upper right corner. If the appliance is a high-availability system, then go to Step 4.
 - a. Enter the network information in the required fields. The Interface field has a drop-down menu with available choices. The Subnet Mask field has a dropdown menu with available choices and a search box. Optionally, enter a Gateway IP address and select an option from the Network Type list. The network type helps to identify if the network is for backup, database, dataguard, management, private, or other.
 - b. Click Create.
- 4. If the appliance is a high-availability system, then the Web Console helps you create the network for both nodes at the same time. Click Create Network in the upper right corner.
 - a. Enter the network information in the required fields. The Interface field has a drop-down menu with available choices. The Subnet Mask field has a dropdown menu with available choices and a search box. Optionally, enter a Gateway IP address and select an option from the Network Type list. The network type helps to identify if the network is for backup, database, dataguard, management, private, or other.



b. Click Create.

Updating a Network

Understand how you can use the Web Console to update a network and revise the IP address, subnet mask, gateway, or type of network.

- 1. Click the **Appliance** tab in the Web Console.
- 2. Click the **Network** tab in the left navigation to display a list of configured networks.
 - When the appliance is a high-availability system, tabs named **Node0** and **Node1** display in the right corner, below the **Refresh** button. Click a tab to display network details for each node.
- 3. If the appliance is a high-availability system, click **Node0** or **Node1** to display the node where the network that you want to edit resides.
- 4. Expand the **Actions** menu, then click **Update** for the network that you want to edit.
- 5. Update the information in the IP Address, Subnet Mask, and Gateway fields and select a network type from the list, as needed, then click **Update**.

Deleting a Network

Understand how you can delete a configured network using the Web Console.

- 1. Click the **Appliance** tab in the Web Console.
- 2. Click the **Network** tab in the left navigation to display a list of configured networks.
 - When the appliance is a high-availability system, tabs named **Node0** and **Node1** display in the right corner, below the **Refresh** button. Click a tab to display network details for each node.
- 3. If the appliance is a high-availability system, then click **Node0** or **Node1** to display the node where the network that you want to delete resides.
- Expand the Actions menu, then click Delete for the network that you want to delete.
- 5. Confirm the action when prompted.



10

Backup, Restore and Recover Databases

Review backup, restore, and recovery operations for your databases.

About Database Backup and Recovery Options

Backup your databases in Oracle Database Appliance and use the restore and recover features to restore a database to the same or another system or to recover database files.

Creating a Mount Point for NFS Backup Location

Create a mount point for the Network File System (NFS) location, to set up the NFS backup and recovery option.

Configuring Agent Proxy Settings for Object Store Access

If the Object Store IP address is accessible only through proxy setup by the Oracle Database Appliance server, then define the proxy setting for the agent, so that the agent can access the Object Store.

Creating a Database Backup Policy

Understand how to create a policy to backup a database to an internal or external Oracle Fast Recovery Area (FRA) location or to the Object Store using the Web Console.

Updating a Database with a Backup Policy

Attach a backup policy to a database to define the database backup attributes and destination.

Updating a Database Backup Policy

Use the Web Console to update the recovery window, change the ObjectStore Credential, or change the crosscheck option for a database backup policy.

Backing Up a Database Using the Web Console

Apply a backup policy to a database, create a manual backup, update a database backup schedule, or update an archive log backup.

Viewing Backup Reports

Understand how you can use the Web Console to view backup reports.

Recovering a Database Using the Web Console

Understand the recovery options available for recovering a database.

Deleting a Backup Using the Web Console

Use the Web Console to delete database backups.

Deleting a Backup Policy

Use the Web Console to delete a database backup policy.

Using the CLI to Backup, Restore, and Recover

Use the command-line interface to backup, restore, and recover databases.

About Database Backup and Recovery Options

Backup your databases in Oracle Database Appliance and use the restore and recover features to restore a database to the same or another system or to recover database files.

It is important to create a backup recovery strategy to protect the databases in Oracle Database Appliance from data loss due to a physical problem with a disk that causes a failure of a read from or write to a disk file that is required to run the database, or due to user error. The backup feature provides the ability to PITR restore the database. You can create a backup policy in the Web Console or from the command-line interface.

The following backup options are available:

- Backup to an Oracle Fast Recovery Area (FRA) disk (Internal FRA)
- Backup to Oracle Cloud Infrastructure Object Storage (Oracle Object Storage)
- Backup to a Network File System (NFS) location (External FRA)

You can use the backup, restore, and recovery features with databases that have backup policy attached to them in the system. You can choose to manage your backups, and set up your backup, restore, and recovery option.

The backup feature enables you to create a backup policy with your backup parameters, including backup level and location. For new and existing databases, you can create and attach a backup policy to a database to perform a daily backup. Once a backup policy is attached to a database, the dcs-agent schedules daily automatic backups for the database. It also schedules archivelog backups for the database. By default, the frequency of the archivelog backup is 30 minutes. The default schedule is a level 0 backup every Sunday and a level 1 backup Monday through Saturday. You can edit or disable the schedule.

The dcs-agent generates and saves a backup report for each backup. The backup report contains the metadata required to recover or restore a database.



You cannot backup databases that use Transparent Data Encryption (TDE).

Recovering a database in Oracle Database Appliance is a full or whole database recovery using RMAN. You can recover from a Backup Report, a point-in-time (PITR), a System Change Number (SCN), or from the latest backup. For recovery of data block, tablespaces, data files, PDBs, see the *Oracle Database Backup and Recovery Reference Guide*.

Backup Policy

The backup policy defines the backup details. When you create a backup policy, you define the destination for the database backups, either Internal FRA (Disk) or External FRA (NFS location), or Cloud Object Storage, and you define the recovery window.

If you use the Oracle Object Storage for backup and recovery, you must have an ObjectStore Resource ID or Name.

You can assign the backup policy to the database when you create the database. You can attach a backup policy to an existing database or update a backup policy.

Backup Levels

The backup policy that you create defines the backup level:



- Level 0: The backup captures all blocks in the datafile. By default, level 0 backups
 occur every Sunday. You can customize your backup settings through the Web
 Console or the command-line. A level 0 backup is a full backup and is used as the
 parent for a level 1 backup.
- Level 1: The backup is an incremental backup that captures only those blocks that change between backups in each datafile. By default, a level 1 backup occurs daily, Monday through Saturday, and captures images of each block in a datafile that changed. Level 1 backups are differential backups. The backup includes blocks from the most recent previous level 1 or level 0 backup.
- LongTerm: The backup is a long-term, or archival backup. Use LongTerm to
 create a backup that is all-inclusive and exempt from the backup retention policy.
 The backup is all-inclusive because every file needed to restore and recover the
 database is backed up to a single location. The backup is exempt from the
 retention policy that is defined in the recovery window. For long term backups, you
 must use non-FRA locations for backup destinations using the backup policy
 options.
- **Archivelog**: This is a backup of all archivelogs not yet backed up to the backup destination, such as Internal FRA, External FRA (NFS location), or Object Store.

The AutoScheduler creates a level 0 backup on Level 0 Backup Day, by default, on Sunday, and level 1 on the remaining days of the week. You can display a list of scheduled backups, edit your backup schedule, or disable a scheduled backup. It also creates archivelogs backup for the database with a default frequency of 30 minutes.

Backup to Disk

When you backup to disk, you are using the Oracle Fast Recovery Area (FRA) of the disk. FRA is a storage directory that allows backup and recovery operations on Oracle databases. The directory contains archived redo logs, backup pieces and copies, and the control file.

Advantages to backing up to disk are as follows:

- Quick recovery from backups stored on disk
- Automate management of recovery related files (like archived logs)

Note:

When you backup to disk, data is not encrypted and passwords are not allowed. In addition, backup to disk requires a lot of disk space (up to two to three times the size of the database).

The following is a high-level overview of the workflow for backup and recovery when using a disk:

- 1. Create a backup policy to define the backup location (disk) and recovery window for the disk destination.
- 2. Create a database and attach the backup policy to the database. When the backup policy is associated with a database, archivelog backups and database backups are automatically created.
- 3. Manage obsolete backups.



4. Recover the database from a backup on the disk.

Backup to External FRA (Network File System)

Specifying a Network File System (NFS) location for backups, enables you to safely and securely store or retrieve a database backup at any time.

The advantages of using NFS backup location are:

- With NFS, you can access remote files, locally, by mounting local file systems on a network.
- Provides a centralized backup location, without requiring manual refresh.
- Supports enhanced security options using firewalls and Kerberos.
- Support for encrypted backups using passwords. You optionally, set the backup password, and provide the same during restore operation.

The following is a high-level overview of the workflow for backup and recovery when using an NFS location:

- 1. Create a mount point for the NFS location.
 - The mount point must be accessible from both nodes. The oracle user must have read/write permissions to the NFS location. If the request is being made to a remote server, ensure that it is running. See *Creating a Mount Point for NFS Backup Location* for the procedure to create a mount point.
- Create a backup policy specifying the NFS location, and the recovery window for NFS destination.
- **3.** Associate the database with this backup policy, either during database creation, or by updating the backup policy for the database.
- Backups are automatically scheduled, and you can also run manual backups. You
 can specify manual backup options in the Web Console or using ODACLI
 commands.
- Manage obsolete backups.
- **6.** Restore from backup. When you save your backups to NFS, you can restore the database to the same system or to a different system.
- 7. Recover the database from a backup on NFS.

Backup to Oracle Object Storage

Oracle Object Storage is a highly secure, scalable storage platform that enables you to safely and securely store or retrieve a database backup at any time. Data and the associated metadata are stored as an object in a logical container (bucket). Oracle Database Appliance creates a Backup Report and a unique ID to identify each backup.

Oracle Object Storage is tightly integrated with Oracle Cloud Infrastructure Identity and Access Management. The data, user-defined metadata associated with the data, and encryption keys are automatically encrypted using 256-bit Advanced Encryption Standard (AES- 256). The encryption keys are rotated frequently and cannot be disabled. By default, only authenticated users that have explicitly been granted access to specific resources can access data stored in Oracle Object Storage. Data is uploaded and downloaded over SSL endpoints using the HTTPS protocol.



When you backup to Oracle Object Storage, you are using your backup policy and your Oracle ObjectStoreSwift credentials. The credentials are stored in an encrypted Oracle wallet. You can attach the credentials to one or more backup policies.



Credentials are validated when you create the backup policy that uses Oracle Object Storage. The credentials are not validated against the URL and tenancy.

Advantages to using Oracle Object Storage are as follows:

Backups are encrypted using the password for non-TDE databases.



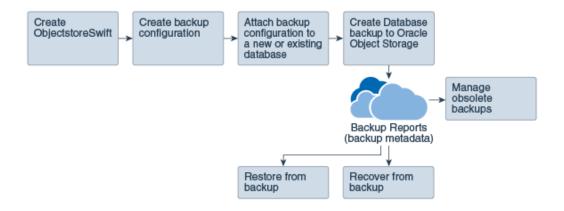
Save the password that you use during backups in a safe location, you must provide the password during recovery operations.

- Quick recovery from backups. With the Oracle Object Storage, you can safely and securely use the Web Console to store or retrieve data directly from within the cloud platform, at any time.
- Automate management of recovery related files (like archived logs)
- Oracle Object Storage is not directly accessed by the operating system, instead it
 uses APIs to access the storage at the application level.

The following is a high-level overview of the workflow for backup and recovery when using Oracle Object Storage:

- 1. Create an Object Store object with your credentials.
- 2. Create a backup policy to define the backup location (Object Store), Object Store Credentials Name, the container (bucket) name where you want to store backups, and the recovery window.
- Create a database and attach the backup policy either as a part of creating the database, or update the database with backup policy after creating the database. When the backup policy is associated with a database, backups are automatically created.
- 4. Manage obsolete backups.
- 5. Restore from backup. When you save your backups to Oracle Object Storage, you can restore the database to the same system or to a different system.
- Recover the database from a backup on Oracle Object Storage.





Note:

Before you can use this backup option, you must create an Oracle Cloud Infrastructure Object Storage account. When you create the account, you define the account credentials, end point URL, and bucket. Go to the Oracle Store and sign up for Oracle Cloud Infrastructure Object Storage.

Backup Reports

A backup report is generated for each backup and is similar to, but does not replace, a recovery catalog. The report contains the Oracle Database Appliance information and metadata needed to restore or recover a database. The Backup Report is designed to keep track of all of the information required to restore or recover a database.

The following is an example of a level 1 backup report:

```
"id": "2d82460c-d648-4e75-8c7d-72cc90bc442a"
  "dbResId" : "b5fc646e-01a6-4c8b-8286-7633346c4329",
   "tag" : null,
  "dbId": "2717054291",
"dbName": "HRDbO",
"dbUniqueName": "HRDbOu"
  "backupType" : "REGULAR-L1",
  "keepDays" : null,
  "backupLocation": "https://swiftobjectstorage.us-phoenix-1.oraclecloud.com/v1/dbaasimage/backupbucket", "cfBackupHandle": "c-2717054291-20171108-04",
   "spfBackupHandle" : "c-2717054291-20171108-04"
  "pitrTimeStamp" : "November 08, 2017 12:43:14 PM UTC",
  "pitrsCM": "1175058",
"resetLogsTimeStamp": "November 08, 2017 10:43:14 FM 010",
"resetLogsTimeStamp": "November 08, 2017 09:55:34 AM UTC",
  "resetLogsSCN": "1112268",
"oraHomeVersion": "12.2.0.1.170814 (26723265, 26609817)",
  "sqlPatches" : "25811364,26609817",
   "backupLogLoc": "https://swiftobjectstorage.us-phoenix-1.oraclecloud.com/v1/dbaasimage/backupbucket/scaoda702c1n1/rmanlog/
HRDbOu/2717054291/2017-11-08/rman_backup_2017-11-08_12-42-41.0545.log",
  "tdeWalletLoc": null,
"dbConfigLoc": "https://swiftobjectstorage.us-phoenix-1.oraclecloud.com/v1/dbaasimage/backupbucket/scaoda702cln1/dbconfig/
HRDbOu/2717054291/2017-11-08/DBCONFIG_TAG20171108T124407_2017-11-08_12-44-07.0533.tar.gz*,
  "name" : "Backup_Report_HRDb0",
"createTime" : "November 08, 2017 12:42:08 PM UTC",
     "status" : "CONFIGURED"
   .
"updatedTime" : "November 08, 2017 12:44:12 PM UTC",
  "backupReportLogDetail": "https://swiftobjectstorage.us-phoenix-1.oraclecloud.com/v1/dbaasimage/backupbucket/scaoda702cln1/
. "mandetaillogreport/HRDb0u/2717054291/2017-11-08/rman_list_backup_detail_2017-11-08_12-44-04.0362.log"
  "dbInfo" : {
  "dbClass" : "OLTP",
    "dbType" : "RAC",
"dbShape" : "odb1",
     "dbEdition" : "EE"
     "dbStorage" : "ASM'
   "dbDataSize" : "1542M",
```



```
"dbRedoSize" : "16403M"
```

About Recovery Options

The recovery in Oracle Database Appliance always performs a full database restore or recover. The recovery options are LATEST, PITR, SCN, and BackupReport.

The following types of recovery are available:

- LATEST: Performs a complete recovery (valid backups and all required archived logs and online redo logs must be available)
- PITR: Point-in-Time Recovery that performs a recovery to a specified timestamp within the current incarnation of database
- SCN: SCN-based recovery that performs a recovery is an incomplete recovery to a specified SCN within the current incarnation of database.
- BackupReport: Performs a recovery based on the Backup Report SCN. The BackupReport option is similar to SCN, except that the recovery uses the Backup Report SCN instead of a specified SCN.

Point-in-Time Database Recovery

Point-in-Time Recovery (PITR) recovers the database to a specific point-in-time. You must use specify the timestamp for this type of recovery.

A point-in-time recovery is often used for the following situations:

- You want to recover the database to an SCN before a user or administrative error.
- Complete database recovery failed because all necessary archived redo logs were not available.
- A database upgrade fails.
- You are creating a test database or a reporting database from production database backups.

System Change Number Recovery

A system change number (SCN) is a stamp that defines a committed version of a database at a point in time. Oracle assigns every committed transaction a unique SCN. You can recover a database to the latest time or to an SCN.

The database is restored from backups created before the target time, and then applies incremental backups and logs to re-create all changes between the time of the data file backups and the end point of recovery. When the end point is specified as an SCN, the database applies the redo logs and stops after each redo thread or the specified SCN, whichever occurs first. When the end point is specified as a time, the database internally determines a suitable SCN for the specified time and then recovers to this SCN.

SCN is a primary mechanism to maintain data consistency in Oracle database. With each execution, there is an increase in the count of the SCN. The following are some examples of areas that use SCN:

 Redo records. Every redo record has an SCN version of the redo record in the redo header (redo records can have non-unique SCN). Given redo records from two threads (as in the case of RAC), recovery will order them in SCN order, essentially maintaining a strict sequential order.



- 2. Data block. Every data block has block SCN (block version). In addition to that, a change vector in a redo record also has expected block SCN. This means that a change vector can be applied to one and only version of the block. Code checks if the target SCN in a change vector is matching with the block SCN before applying the redo record. If there is a mismatch, corruption errors are thrown.
- 3. Read consistency. Every query has query environment which includes an SCN at the start of the query. A session can see the transactional changes only if that transaction commit SCN is lower then the query environment SCN.
- 4. Commit. Every commit generates an SCN (commit SCN) that marks a transaction boundary. Group commits are possible too.

Obsolete Database Backups

It is important to remove older backups once they become obsolete. The type of backup and the recovery window that you define in the database backup policy determines when database backups become obsolete.

For level 0 and level 1 backups, run the command odacli delete-backup for a given Database Resource Identifier to delete obsolete backups based on the defined recovery window.

For Longterm backups, provide the corresponding backup report as an input and use the command odacli delete-backup to delete the backups from Oracle Object Storage.

Typically, older level 0 and level 1 database backups are considered obsolete and deleted based on the defined recovery window, as follows:

Disk: 1-14 days

Object Storage: 1-31 days

Related Topics

Creating a Mount Point for NFS Backup Location
 Create a mount point for the Network File System (NFS) location, to set up the NFS backup and recovery option.

Creating a Mount Point for NFS Backup Location

Create a mount point for the Network File System (NFS) location, to set up the NFS backup and recovery option.

Follow these steps to create a mount point for the NFS location:

- **1.** Follow these steps on the source machine:
 - a. Create a sharable location on the source machine and give full permissions to this directory.

```
# mkdir /tmp/nfs_test
chmod 777 /tmp/nfs_test
```

b. Add entries in the /etc/exports file in the format shared_location destination_IPs (permissions).



For example:

```
# cat /etc/exports
/tmp/nfs_test 192.0.2.1(rw,sync)
/tmp/nfs_test 192.0.2.2(rw,sync)
```

c. Restart the NFS server on the host.

```
service nfs restart
```

d. Check the export list for the entries.

```
# showmount -e
Export list for odal:
/tmp/nfs_test 192.0.2.1,192.0.2.2
```

- 2. Follow these steps on the client machine:
 - a. Create a client location on the client machine as the oracle user.

```
# sudo -E -u oracle mkdir /tmp/client_location
```

b. Mount this location with the source location in the format

```
mount_server:source_folder client_location.
```

```
# mount 192.0.2.3:/tmp/nfs_test /tmp/client_location
```

c. Check if the mount details are correct:

```
# mount
192.0.2.3:/tmp/nfs_test on /tmp/client_location type nfs
(rw,vers=4,addr=192.0.2.3,clientaddr=192.0.2.2)
```

Specify this NFS location in the backup configuration, either through the Web Console or CLI commands.

Related Topics

About Database Backup and Recovery Options

Backup your databases in Oracle Database Appliance and use the restore and recover features to restore a database to the same or another system or to recover database files.

Related Topics

Preparing for Database Backup to NFS Location

Use the command-line interface to create a policy to backup a database to an External FRA (NFS Location).



Configuring Agent Proxy Settings for Object Store Access

If the Object Store IP address is accessible only through proxy setup by the Oracle Database Appliance server, then define the proxy setting for the agent, so that the agent can access the Object Store.

To create a backup policy that uses Object Store location, the agent must be able to access the Object Store URL.

 Define the HttpProxyHost and HttpProxyPort settings in the updateagentconfigParameters command.

For more information about the agentconfigParameters command usage, see the Oracle Database Appliance Command-Line Interface.

2. Verify that the update succeeded:

3. Run the list-agentconfigParameters command to view the changes in the proxy settings:



```
HttpProxyPort 80 October 23, 2018 4:56:53 PM IST
HttpsProxyHost Https proxy server host October 23, 2018 12:23:21 AM IST
HttpsProxyPort Https proxy server port October 23, 2018 12:23:21 AM IST
OSPatchRepos Repo list for OS patching October 23, 2018 12:23:21 AM IST
```

You can now use the Web Console or the command-line interface to create a backup policy to use the ObjectStore location for backup.

Related Topics

- odacli update-agentconfig-parameters
 Use the odacli update-agentconfig-parameters command to modify configuration variables used by the appliance.
- odacli list-agentconfig-parameters
 Use the odacli list-agentconfig-parameters command to list configuration variables used by the appliance.

Creating a Database Backup Policy

Understand how to create a policy to backup a database to an internal or external Oracle Fast Recovery Area (FRA) location or to the Object Store using the Web Console.

The backup policy defines the backup, including the location where you want to store the backups and the recovery window. Backup to disk requires a lot of disk space (up to two to three times the size of the database).

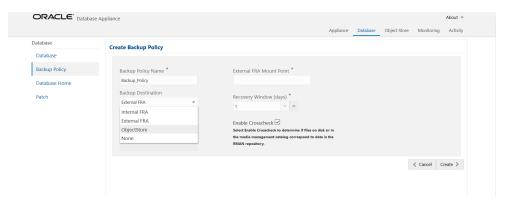
Follow these steps to create a backup policy from the Web Console:

- 1. Click the **Database** tab in the Web Console.
- 2. Click Backup Policy in the left navigation to display a list of backup policies.
- 3. Click Create Backup Policy.
- 4. Enter a name for the backup policy and select the number of days for the recovery window. Select Enable Crosscheck to determine if the files on the disk on in the media management catalog correspond to data in the RMAN repository. Select one of the following as the backup destination:
 - To backup to disk, select Internal FRA as the backup destination.
 - To backup to the cloud, select **ObjectStore** as the backup destination. If you have more than one Object Store, then select the Object Store Credential Name from the list. Enter a name in the Container Name field.
 - To backup to an NFS location, select External FRA as the backup destination, and specify the NFS mount point location.
 - To not define a destination, select None.

The Backup Policy name must begin with an alpha character and contain only alphanumeric characters.

The following figure shows the Create Backup Policy page.





5. Click **Create**. Click **Yes** to confirm that you want to create the backup policy.

A link to the job appears. When the job completes successfully, the backup configuration is ready.

Update an existing database to attach the backup configuration to the database using the ID or Name. When you attach the backup configuration to a database, the dcs-agent schedules daily automatic backups for the database.

Updating a Database with a Backup Policy

Attach a backup policy to a database to define the database backup attributes and destination.

- 1. In the Web Console, click the **Database** tab, then select a database from the list.
- In the Database Information page, click Apply Backup Policy.If the action is disabled, then you must create a backup policy.
- 3. Select a backup policy from the list of available backup policies, and provide the **Backup Encryption Password**. Click **Apply**.
- Expand the Actions menu, then click View to display the Database Information page.
 - The details include whether or not Auto Backup is enabled, the Backup Destination, and options to create a backup, enable or disable automatic backups, update the database, and archive log backup schedule.
- (Optional) Click Manual Backup to create a single backup. Click Update
 Database Backup Schedule to schedule automatic backups. Click Update
 Archive Log Backup Schedule to schedule archive log backups.
- 6. Click the **Activity** tab to check the job status.

When the job completes successfully, the backup policy is associated with the database.

Updating a Database Backup Policy

Use the Web Console to update the recovery window, change the ObjectStore Credential, or change the crosscheck option for a database backup policy.

Crosscheck determines if the files on the disk on in the media management catalog correspond to data in the RMAN repository.

- Click the **Database** tab in the Web Console.
- 2. Click **Backup Policy** in the left navigation to display a list of backup policies.
- 3. Expand the **Actions** menu for a backup policy, then click **Update**.
- To change the recovery window, use the up or down arrow to change the number of days.
- 5. To enable or disable the crosscheck, select or deselect **Enable Crosscheck**.
- 6. Click Update. Click Yes to confirm that you want to update the backup policy. A link to the job appears. When the job completes successfully, the backup configuration is ready.

Backing Up a Database Using the Web Console

Apply a backup policy to a database, create a manual backup, update a database backup schedule, or update an archive log backup.

You can use the Web Console or the command-line interface to create a database backup. In the command-line interface, use the command odacli create-backup for a specified Database.

Before creating a database backup, you must have a backup policy. The backup policy defines the recovery window and the backup destination. You must associate a backup policy with the database, otherwise you cannot create backups. Follow these steps to backup a database from the Web Console:

- In the Web Console, click the Database tab.
- Click a database name to select a database from the list.
- Review the database information, including the backup policy name and destination details. To select a backup policy for the database, click Apply Backup Policy. Select a policy and specify the Backup Encryption Password.
- Click Manual Backup, Update Database Backup Schedule or Update Archive Log Backup Schedule.

If the action is disabled, then apply a backup policy.

Click Yes to confirm the job.

A link to the job appears. When the job completes successfully, the backup is ready. A list of backups appears at the bottom of the page.

Viewing Backup Reports

Understand how you can use the Web Console to view backup reports.

A report is generated when a database backup is performed. The backup report lists the type, location, and date and timestamp of the backup.

- In the Web Console, click the **Database** tab, then click the database name in the list of databases.
 - Information about the database appears on the Database Information page.
- 2. Scroll to the bottom of the page to view a list of Backups.



3. Click the Job ID for a backup to view the Backup Report and more details about the backup.

Recovering a Database Using the Web Console

Understand the recovery options available for recovering a database.

- 1. In the Web Console, click the **Database** tab, then select a database from the list.
- 2. On the Database Information page, click Recover.
- 3. On the Recover Database page, select any of the following recovery options:

Recover Full Database to the specified Backup: Select the existing backup from which you want to recover the database

Recover Full Database to the Latest: Select this option to recover the database from the last known good state, with the least possible data loss.

Recover Full Database to the specified Timestamp: Specify the timestamp to recover the database.

Recover Full Database to the System Change Number (SCN): Specify the SCN of the backup from which you want to recover the database.

- 4. Specify and confirm the **Backup Encryption Password**.
- 5. Click the **Activity** tab to check the job status.

When the job completes successfully, the database is recovered as per the specified recovery options.

Deleting a Backup Using the Web Console

Use the Web Console to delete database backups.

You can delete Level-0, Level-1, and Archive Log backups anytime. To delete long term backups, you must check the Backup Report for the database to determine when the backup is obsolete.

- 1. Click the **Database** tab in the Web Console.
- 2. Click the database name, in blue font, to display more details about the database for which you want to delete the backup.
- 3. Click Delete Backups .
- 4. Select the Backup type you want to delete, whether Level-0, Level-1, and Archive Log backup or long Term backup, then click Start. Click Yes to confirm that you want to delete the backup.

A link to the job appears. When the job completes successfully, the backup is deleted.

Deleting a Backup Policy

Use the Web Console to delete a database backup policy.

- 1. Click the **Database** tab in the Web Console.
- Click Backup Policy in the left navigation to display a list of backup policies.



3. Expand the **Actions** menu for a backup policy, then click **Delete**. Click **Yes** to confirm that you want to delete the backup policy.

A link to the job appears. When the job completes successfully, the backup policy is deleted.

Using the CLI to Backup, Restore, and Recover

Use the command-line interface to backup, restore, and recover databases.

- Preparing for Database Backup to Disk
 - Use the command-line interface to create a policy to backup a database to the Oracle Fast Recovery Area (FRA) of a disk.
- Preparing for Database Backup to NFS Location
 Use the command-line interface to create a policy to backup a database to an External FRA (NFS Location).
- Preparing for Database Backup to Oracle Cloud
 Create a backup configuration to backup a database to Oracle Cloud Infrastructure
 Object Storage.
- Backing Up a Database with the CLI
 Create a level 0, level 1, LongTerm database backup, or archivelog backup with
 the command-line interface.
- Recovering a Database with the CLI
 Recover the database to the system using a Backup Report, point-in-time recovery
 (PITR), a system change number (SCN), or from the latest backup time.
- Restoring a Database with the CLI
 Restore a database to a system from Oracle Object Storage using a Backup
 Report and the command-line interface.
- Deleting Backups with the CLI
 Delete older, obsolete level 0, level 1 and long term backups.

Preparing for Database Backup to Disk

Use the command-line interface to create a policy to backup a database to the Oracle Fast Recovery Area (FRA) of a disk.

You can create a backup policy using the Web Console or the command-line interface. Most of the backup and recovery commands enable you to provide either a resource name or resource ID to identify the database.

Backup to disk or the **Backup to Internal FRA** option in the Web Console, requires a lot of disk space (up to two to three times the size of the database).

Follow these steps to create a backup policy through the command-line interface:

1. Create a BackupConfig object (backup configuration) using the command odacli create-backupconfig.

The backup configuration defines the backup, including the location where you want to store the backups and the recovery window.



The following example creates a backup configuration named mkgldailydiskwith a backup to disk and a 1 day recovery window.

```
# odacli create-backupconfig -d Disk -n mkgldailydisk -w 1
```

Check the job status.

```
# odacli list-jobs
```

When the job completes successfully, the backup configuration is ready.

3. Update an existing database to attach the backup configuration to the database using the ID or Name.

When you attach the backup configuration to a database, the dcs-agent schedules daily automatic backups for the database.

The following example uses the Database Resource ID and Backup Configuration ID:

```
# odacli update-database -i d3c4d8f6-5eb7-4f9e-ab27-7bdd5013ac90 -bi 9d942e0a-ba00-4cbc-9bfb-0de83ed279e5 -bp
```

The following example uses the Database Resource Name, mydb and the Backup Configuration Name, mydb:

```
# odacli update-database -in mydb -bin mybcfg -bp
```

You can create manual backups or scheduled backups to disk.

Preparing for Database Backup to NFS Location

Use the command-line interface to create a policy to backup a database to an External FRA (NFS Location).

You can create a backup policy using the Web Console or the command-line interface. Most of the backup and recovery commands enable you to provide either a resource name or resource ID to identify the database.

Backup to NFS location or the **Backup to External FRA** option in the Web Console, requires creation of an NFS mount point.

Follow these steps to create a backup policy through the command-line interface:

1. Create a BackupConfig object (backup configuration) using the command odacli create-backupconfig.

The backup configuration defines the backup, including the location where you want to store the backups and the recovery window.

The following example creates a backup configuration named mkgldailydiskwith a backup to disk and a 1 day recovery window.

```
\sharp odacli create-backup<br/>config -d NFS -n mkgldailynfs -c absolute-path-to-parent-directory-for-NFS-destination -w<br/> 1
```



2. Check the job status.

```
# odacli list-jobs
```

When the job completes successfully, the backup configuration is ready.

(Optional) Update an existing database to attach the backup configuration to the database using the ID or Name.

When you attach the backup configuration to a database, the dcs-agent schedules daily automatic backups for the database.

The following example uses the Database Resource ID and Backup Configuration ID:

```
# odacli update-database -i d3c4d8f6-5eb7-4f9e-ab27-7bdd5013ac90 -bi
9d942e0a-ba00-4cbc-9bfb-0de83ed279e5 -bp
```

The following example uses the Database Resource Name, mydb and the Backup Configuration Name, mydb:

```
# odacli update-database -in mydb -bin mybcfg -bp
```

You can create manual backups or scheduled backups to NFS location.

Related Topics

Creating a Mount Point for NFS Backup Location
 Create a mount point for the Network File System (NFS) location, to set up the NFS backup and recovery option.

Preparing for Database Backup to Oracle Cloud

Create a backup configuration to backup a database to Oracle Cloud Infrastructure Object Storage.

Before you can backup to Oracle Object Storage, you must sign up for an Oracle Cloud Infrastructure Object Storage account and know your Oracle Object Storage credentials. When you create an Oracle ObjectStoreSwift object, the command creates and stores the credential details in the system and stores the password in an encrypted Oracle wallet. The Oracle wallet contains your tenant name, user name, and defines the end point URL.

Go to the Oracle Store to sign up for Oracle Cloud Infrastructure Object Storage.

 Create an Oracle ObjectStoreSwift object using the command createobjectstoreswift. If you already have an Oracle wallet for Oracle Database Appliance, skip to Step 2.

```
# odacli create-objectstoreswift -e swift end point URL -n Object
Store Swift name [-p] swiftpassword -t Object Store tenant name -u
Object Store user name
```



For example:

```
# odacli create-objectstoreswift -e https://
swiftobjectstorage.rl.oracleiaas.com/vl -n ossnl -t mytenant -u
user.name@example.com -p
```

The output includes an objectstoreswift Resource ID to identify an ObjectStoreSwift credential.

2. Create a BackupConfig object (backup configuration) using the command odacli create-backupconfig.

The backup configuration defines the backup, including the location (container) where you want to store the backups, the recovery window, and the credentials that are defined in your encrypted Oracle wallet.

The following example creates a backup configuration named hr_7d_cloud with a backup to the <code>ObjectStore</code>. The following backup parameters are defined: the container is hr_bucket , crosscheck is not enabled, the recovery window is 7 days, and the <code>ObjectStoreSwift</code> Resource ID is provided, which attaches the Oracle Wallet and credentials to the backup configuration.

```
# odacli create-backupconfig -n hr_7d_cloud -d ObjectStore -w 7 -o
b974f006-5503-4949-ab6c-6f1a56e4ac37 -c hr_bucket -no-cr
```

Note:

If the ObjectstoreSwift Object was not created with valid credentials, then creating the backup configuration will fail.

3. Check the job status.

```
# odacli list-jobs
```

When the job completes successfully, the backup configuration is ready. When you create a new database, you have the option to associate the database with a backup configuration.

(Optional) Update an existing database to attach the backup configuration to the database.

When you attach the backup configuration to a database, the dcs-agent schedules daily automatic backups for the database.

```
# odacli update-database -i e3c4d8f6-5eb7-4f9e-ab27-7bdd5013ac10 -bi 7d942e0a-ba00-4cbc-9bfb-0de83ed279e5 -bp
```

You can create manual backups outside of scheduled backups, view backup reports, or disable automatic backups.



Backing Up a Database with the CLI

Create a level 0, level 1, LongTerm database backup, or archivelog backup with the command-line interface.

You can create a database backup in the Web Console or with the command-line interface. When you attach a backup configuration object to a database, the dcs-agent automatically schedules daily backups for the database. The day and time are based on the Oracle Database Appliance time zone. The AutoSchedule triggers a level 0 Backup every Sunday, a level 1 the other 6 days of the week, and an archivelog backup every 30 minutes. Use the command odacli update-schedule to disable or change the scheduled backup time.

To create a Long Term database backup, or a level 0 or level 1 backup outside of the automatic backups, use the command odacli create-backup.



To recover a database, there must be a level 0 backup taken, so that the backup report contains information about the base backup. Restoring a database to the same system with a different DB Name and DB Unique Name or to another system does not always require a long term database backup report. You can use archivelog, or level 0, or level 1 backup reports as well. If you use the archivelog backup report , a prior database backup must exist. To restore a database to another system, you must have a long term database backup in Oracle Object Storage.

- 1. Verify that a backup configuration object is associated with the database.
- 2. Create a single backup, outside of the automatic backups, by using the command odacli create-backup.

Use the Database Resource ID to identify the database to backup, specify the type of backup, and use a tag to create a name for the backup. You can use up to 30 alphanumeric characters for the backup name tag. If you do not select a backup type (level 0, level 1, LongTerm, or archivelog backup), a level 1 backup is performed. For example, create a level 0 backup named 2018Jan02_HRLevel0 for resource ID 20576eb1-bc32-4e34-bf97-fda0b60ca15b

```
# odacli create-backup -i 20576eb1-bc32-4e34-bf97-fda0b60ca15b -bt
Regular-L0 -t 2018Jan02_HRLevel0
```

When the job finishes, a backup report is generated for the backup. The report contains all of the metadata required to recover a database.

- 3. (Optional) Display a list of backup reports.
 - # odacli list-backupreports
- 4. (Optional) Display a list of all scheduled backups.
 - # odacli list-schedules



Recovering a Database with the CLI

Recover the database to the system using a Backup Report, point-in-time recovery (PITR), a system change number (SCN), or from the latest backup time.

Recovering a database in Oracle Database Appliance is a full RMAN database recovery.

Recovering from a backup report requires JSON input for the backup report.

1. Display a list of backup reports and locate the latest Backup Report for the database and save the Backup Report ID.

```
# odacli list-backupreports
```

Use the Backup Report ID to display the details of the Backup Report. Determine how you want to recover the database: PITR, SCN, or Latest and locate the needed information in the Backup Report.

```
# odacli describe-backupreport -i 2d82460c-d648-4e75-8c7d-72cc90bc442a
  "id" : "2d82460c-d648-4e75-8c7d-72cc90bc442a",
 "dbResId" : "b5fc646e-01a6-4c8b-8286-7633346c4329",
  "tag" : null,
  "dbId" : "2717054291",
  "dbName" : "ExampleDB",
  "dbUniqueName" : "ExampleDBu",
  "backupType" : "REGULAR-L1",
  "keepDays" : null,
  "backupLocation" : "https://swiftobjectstorage.example.com/v1/
dbaasimage/backupbucket",
  "cfBackupHandle" : "c-2717054291-20180108-04",
  "spfBackupHandle" : "c-2717054291-20180108-04",
  "pitrTimeStamp" : "January 08, 2018 12:43:14 PM UTC",
  "pitrSCN" : "1175058",
  "resetLogsTimeStamp" : "January 08, 2018 09:55:34 AM UTC",
  "resetLogsSCN" : "1112268",
  "oraHomeVersion": "12.2.0.1.170814 (26723265, 26609817)",
  "sqlPatches" : "25811364,26609817",
  "backupLogLoc" : "https://swiftobjectstorage.example.com/v1/
dbaasimage/backupbucket/system_namec1n1/
rmanlog/ExampleDBu/2717054291/2018-01-08/
rman backup 2018-01-08 12-42-41.0545.log",
  "tdeWalletLoc" : null,
  "dbConfigLoc" : "https://swiftobjectstorage.example.com/v1/dbaasimage/
backupbucket/system_namec1n1/
dbconfig/ExampleDBu/2717054291/2018-01-08/
DBCONFIG TAG20180108T124407 2018-01-08 12-44-07.0533.tar.qz",
  "name" : "Backup Report ExampleDB",
  "createTime" : "January 08, 2018 12:42:08 PM UTC",
  "state" : {
    "status" : "CONFIGURED"
  },
  "updatedTime" : "January 08, 2018 12:44:12 PM UTC",
```



```
"backupReportLogDetail" : "https://swiftobjectstorage.example.com/v1/
dbaasimage/backupbucket/system_namec1n1/
rmandetaillogreport/ExampleDBu/2717054291/2018-01-08/
rman_list_backup_detail_2018-01-08_12-44-04.0362.log",
   "dbInfo" : {
      "dbClass" : "OLTP",
      "dbType" : "RAC",
      "dbShape" : "odb1",
      "dbEdition" : "EE",
      "dbStorage" : "ASM"
   },
   "dbDataSize" : "1542M",
   "dbRedoSize" : "16403M"
}
```

3. To recover from a backup report, based on PITR, identify the database ID and the backup report for recovery.

In the following example, the JSON input file for the backup report is backupreport.json.

```
# odacli recover-database -i b5fc646e-01a6-4c8b-8286-7633346c4 -br
backupreport.json -p
```

4. To recover based on PITR, identify the database ID and the date and time stamp for recovery.

```
# odacli recover-database -i b5fc646e-01a6-4c8b-8286-7633346c4 -t PITR -
r 01/08/2018 12:57:33 -p
```

5. To recover based on SCN, identify the database ID and the SCN number.

```
# odacli recover-database -i b5fc646e-01a6-4c8b-8286-7633346c4 -t SCN - s 392375947
```

6. To recover based on the latest backup, identify the database ID and use the Latest option.

```
\# odacli recover-database -i b5fc646e-01a6-4c8b-8286-7633346c4 -t Latest -p
```

7. Validate that the job completed. You can track the job in the Activity tab in the Web Console, or run the command odacli describe-job with the job ID.

```
# odacli describe-job -i jobId
```

When the job completes successfully, the recovery is complete.



Restoring a Database with the CLI

Restore a database to a system from Oracle Object Storage using a Backup Report and the command-line interface.

When you restore a database, environment and validation checks and setup tasks are performed. Restoring a database requires a number of tasks and configuration details, such as creating database storage, Oracle Home, recreating the control file, registering the database, and establishing RMAN restore and recovery. An Oracle Database Appliance backup report is generated for each backup and contains the metadata required to restore a database. The report is designed to help you to quickly and efficiently restore a database.

You can restore a database from one appliance to another appliance, or to the same appliance when the source database is deleted:

- To restore to a different system, copy the backup report generated by the command odacli create-backup to the other machine's \bin folder and use the command odacli irestore-database with the backup report.
- To restore to the same system, delete the source database and use the backup report generated by the command odacli create-backup.

To restore a database to another system, you must have a database backup report in Oracle Object Storage, valid credentials in an Oracle wallet (ObjectStoreSwift), the Swift Object Store credential ID, and the SYS user password. Follow these steps to restore a database using the command-line (CLI):

 Display a list of backup reports and locate the latest Backup Report in Oracle Object Storage for the database and save the Backup Report ID.

```
# odacli list-backupreports
```

2. Use the Backup Report ID to display the details of the Backup Report.

```
# odacli describe-backupreport -i 2d82460c-d648-4e75-8c7d-72cc90bc442a
  "id" : "2d82460c-d648-4e75-8c7d-72cc90bc442a",
  "dbResId" : "b5fc646e-01a6-4c8b-8286-7633346c4329",
  "tag" : null.
  "dbId" : "2717054291",
  "dbName" : "ExampleDB"
  "dbUniqueName" : "ExampleDBu",
  "backupType" : "REGULAR-L1",
  "keepDays" : null,
  "backupLocation": "https://swiftobjectstorage.example.com/v1/dbaasimage/backupbucket", "cfBackupHandle": "c-2717054291-20180108-04",
  "spfBackupHandle" : "c-2717054291-20180108-04"
  "pitrTimeStamp" : "January 08, 2018 12:43:14 PM UTC",
  "pitrSCN" : "1175058",
  "resetLogsTimeStamp" : "January 08, 2018 09:55:34 AM UTC",
  "resetLogsSCN" : "1112268",
  "oraHomeVersion" : "12.2.0.1.170814 (26723265, 26609817)",
  "sqlPatches": "25811364,26609817",
  "backupLogLoc": "https://swiftobjectstorage.example.com/v1/dbaasimage/backupbucket/system_namec1n1/
rmanlog/ExampleDBu/2717054291/2018-01-08/rman_backup_2018-01-08_12-42-41.0545.log",
  "tdeWalletLoc" : null.
  "dbConfigLoc": "https://swiftobjectstorage.example.com/v1/dbaasimage/backupbucket/system_namec1n1/
dbconfig/ExampleDBu/2717054291/2018-01-08/
DBCONFIG_TAG20180108T124407_2018-01-08_12-44-07.0533.tar.gz",
  "name" : "Backup_Report_ExampleDB"
  "createTime" : "January 08, 2018 12:42:08 PM UTC",
  "state" : {
    "status" : "CONFIGURED"
```



```
"updatedTime" : "January 08, 2018 12:44:12 PM UTC",
  "backupReportLogDetail" : "https://swiftobjectstorage.example.com/v1/dbaasimage/backupbucket/
system_namecln1/
rmandetaillogreport/ExampleDBu/2717054291/2018-01-08/
rman_list_backup_detail_2018-01-08_12-44-04.0362.log",
  "dbInfo" : {
    "dbClass" : "OLTP",
    "dbClass" : "OLTP",
    "dbShape" : "odb1",
    "dbStorage" : "ASM"
},
    "dbDataSize" : "1542M",
    "dbRedoSize" : "16403M"
}
```

3. (Optional) If you need to generate a new backup report, use the command odacli create-backup.

```
# odacli create-backup
```

4. Locate the Swift Object Store credential ID for the database backup.

```
# odacli list-objectstoreswifts
```

- 5. Save the backup report as a JSON file in a folder in the \bin directory on the appliance. For example, backupreport.json.
- 6. Restore the database to the system using the JSON file in the command odacli irestore-database.

Run the command, then enter the SYS user password when prompted.

```
# odacli irestore-database -r backupreport.json -oid Object Store ID -m
```

7. Validate that the job completed. You can track the job in the Activity tab in the Web Console, or run the command odacli describe-job with the job ID.

```
# odacli describe-job -ijobId
```

Deleting Backups with the CLI

Delete older, obsolete level 0, level 1 and long term backups.

For level 0 and level 1 backups, the recovery window defined in the Backup Configuration determines when the backup is obsolete. The ranges are as follows:

- Backup to disk: between 1 and 14 days
- Backup to the Oracle Object Storage: between 1 and 31 days

For Long Term backups to the Oracle Object Storage, view the Backup Report for a database to determine when the backup is obsolete. To delete Long Term Backup, the Database Resource ID or Database name and the Backup Report are required.

Follow these steps to delete database backups using odacli commands:

Display a list of all backup reports.

```
# odacli list-backupreports
```



2. Obtain the Database ID and type of backup.

```
# odacli describe-backupreport -i Backup Report ID
```

3. To delete obsolete level 0 and level 1 backups, use the Database ID or Database Name to delete the backup.

```
# odacli delete-backup -i 20576eb1-bc32-4e34-bf97-fda0b60ca15b
```

4. To delete Long Term backups, use the Backup Report and a JSON file to delete the backup.

In the following example, the JSON input file for the backup report is backupreport.json.

```
# odacli delete-backup -i 20576eb1-bc32-4e34-bf97-fda0b60ca15b -br
backupreport.json
```



11

Oracle Database Appliance Command-Line Interface

The command-line interface has different classes of tools to manage Oracle Database Appliance.

About Oracle Database Appliance Command-Line Interface

Three classes of tools are available to perform deployment, lifecycle management, and system administration on Oracle Database Appliance.

Managing ODACLI Privileges and Security with SUDO

Oracle Appliance Manager command-line utility requires root system privileges for most administration actions. You may want to use SUDO as part of your system auditing and security policy.

odacli Network Commands

Use the odacli network commands to list and describe network interfaces.

odacli Apply Patch and Update Commands

Use the commands <code>odacli</code> update and <code>apply</code> patch to apply patches and update the appliance.

odacli Appliance Commands

Use the odacli appliance commands to perform lifecycle activities for the appliance.

odacli Backup and Recovery Commands

Use the odacli backup and recover commands to backup to and restore from Oracle Cloud Infrastructure Object Storage or disk.

odacli CPU Core Commands

Use the CPU Core commands to enable CPU cores and display current and historical CPU core configurations.

odacli Database Commands

Use the odacli database commands to perform database lifecycle operations.

odacli DBHome Commands

Use the odacli DBHome commands to manage database Home operations.

odacli Database Storage Commands

Use the Database Storage commands to list, describe, create, and delete Oracle database storage.

odacli Job Commands

Use the odacli list-jobs and odacli describe-job commands to display job details.

Log Commands

Use the odacli log commands to specify the options to collect and delete logs.

odacli Oracle Auto Service Request Commands

Use the Oracle Auto Service Request (Oracle ASR) commands to configure, update, test, and delete Oracle ASR on the system.

odacli OS Commands

Use the odacli OS commands to list and update operating system (OS) parameters.

- odaadmcli Hardware Monitoring Commands
 Use the hardware monitoring commands to display hardware configurations.
- Storage Commands
 Understand the commands to perform storage operations and diagnostics.

About Oracle Database Appliance Command-Line Interface

Three classes of tools are available to perform deployment, lifecycle management, and system administration on Oracle Database Appliance.

The command-line interface (CLI) is an alternative to Oracle Database Appliance Web Console for some appliance configuration and patching tasks, database management, and job activity.

Oracle Database Appliance uses a role-based command-line interface. Use the odacli commands to perform lifecycle management tasks and the odaadmcli commands to perform storage and hardware monitoring maintenance. Many tasks related to managing Oracle Databases are also required with databases on Oracle Database Appliance. Tasks common to Oracle Database generally are described in the Oracle Database documentation library. However, to simplify tasks, use the Oracle Database Appliance command-line interface. The odacli and odaadmcliutilities combine the capabilities of the SYS database administrator role and the operating system Superuser (root user). Always perform administrative tasks using the Oracle Database Appliance Web Console or CLI utilities.

The following classes of commands are available:

- Deployment and Configuration: Use the deployment and configuration commands as part of the initial deployment of the appliance and to configure CPU cores.
- Lifecycle management: Use odacli commands to perform database and system administration tasks for the appliance. The odacli commands are the primary interface to perform life cycle activities for the appliance.
- Administration: Use odaadmcli commands to perform hardware administration tasks for the appliance. The odaadmcli commands are the interface for infrequent administration activities needed to manage appliance hardware components, storage, and VLAN.

You can perform the following deployment and configuration tasks:

- Configure the first network in the appliance
- Unzip and copy the Oracle Database Appliance software to the correct locations
- Set the number of CPU Cores for the system

You can perform the following appliance lifecycle tasks with odacli commands:

- · Create and describe the appliance
- Create, list, describe, and delete databases
- Create, list, describe, and delete Oracle Database Homes
- Create, list, and describe the networks



List and describe the jobs

You can perform the following appliance administration tasks with odaadmcli commands:

- Show storage, disks, diskgroups, and controllers
- Display storage diagnostics for disks and NVM Express (NVMes)
- Locate disks
- Show server, memory, processor, power, cooling, and network details

Depending on your version of Oracle Appliance Manager and your hardware, some of the odacli commands may not be available to you. To see which commands are supported on your version of Oracle Appliance Manager and your hardware, run the odacli help command: odacli -h.

Command-Line Interface Syntax

The command-line interface commands and parameters are case-sensitive.

An odacli or odaadmclicommand uses the following command syntax:

```
odacli command [options]
```

- *command* is an action you want to perform on the appliance. For example: odacli list-networks **Or** odacli describe-jobs.
- options are optional parts of the odacli command. Options can consist of one or more options that extend the use of the odacli command carried out on an object. Options include additional information about the action that you want to perform on the object. Option names are preceded with a dash. Some options require the name of an object for the command to perform the action that you want to carry out. If an option is preceded with an * (asterisk), this information is required to submit the command. When appending <code>-j</code> to the odacli command, the output is returned in JSON format. The help option (-h) is an option that is available with almost all commands. When you include the <code>-h</code> option, you can obtain additional information about the command that you want to perform.

Example 11-1 Command-Line Interface Syntax

```
# odacli create-database -h
Usage: create-database [options]
Options:
 * --adminpassword, -m
      Password for SYS, SYSTEM and PDB Admin
  --backupconfigid, -bi
      Backup Config ID
  --cdb, -c
      Create Container Database (Inverse option: --no-cdb/-no-c)
  --characterset, -cs
      Character Set (default:AL32UTF8)
                                              Default: AL32UTF8
  --databaseUniqueName, -u
       database unique name
  --dbclass, -cl
      Database Class EE: OLTP/DSS/IMDB, SE: OLTP
                                                      Default: OLTP
```



```
--dbconsole, -co
      Enable Database Console (Inverse option: --no-dbconsole/-no-co)
 --dbhomeid, -dh
      Database Home ID (Use Existing DB Home)
 --dblanguage, -l
      Datbase Language (default:AMERICAN)
                                          Default: AMERICAN
* --dbname, -n
      Database Name
 --dbshape, -s
      Database Shape{odb1s,odb1,odb2,etc.}
                                                 Default: odb1
 --dbstorage, -r
      Database Storage {ACFS | ASM} Default: ACFS
 --dbterritory, -dt
      Database Territory (default:AMERICA)
                                                  Default: AMERICA
 --dbtype, -y
      Database Type: SI Default: SI
 --help, -h
      get help
 --instanceonly, -io
      Create Instance Only (For Standby)
 --json, -j
      json output
 --nlscharacterset, -ns
      NLS Character Set (default:AL16UTF16)
                                                 Default: AL16UTF16
  --no-cdb, -no-c
   Won't create Container Database (Inverse option: --cdb/-c)
   --no-dbconsole, -no-co
   Disable Database Console (Inverse option: --dbconsole/-co)
 --pdbadmin, -d
      Pluggable Database Admin User
 --pdbname, -p
      Pluggable Database Name
 --version, -v
      Database Version
```

Oracle Database Appliance Manager Command-Line Interface Help

Run the -h command to see the usage information for all commands available for your Oracle Database Appliance. For example:

```
odacli -h
```

Run odacli command -h or odacliadm command -h to see detailed help about a specific command. For example, to see detailed help for the odacli described bhome command, use the following:

```
odacli describe-dbhome -h
```

Managing ODACLI Privileges and Security with SUDO

Oracle Appliance Manager command-line utility requires root system privileges for most administration actions. You may want to use SUDO as part of your system auditing and security policy.

For most tasks, Oracle recommends that you log in as root to use the Oracle Appliance Manager command-line interface on Oracle Database Appliance. If you are not logged in as root, then you cannot carry out most actions on the appliance. For example, if you are not logged in as root, then you can view storage information, but you cannot modify the storage.

Allowing Root User Access Using SUDO

In environments where system administration is handled by a different group than database administration, or where security is a significant concern, you may want to limit access to the root user account and password. SUDO enables system administrators to grant certain users (or groups of users) the ability to run commands as root, while logging all commands and arguments as part of your security and compliance protocol.

A SUDO security policy is configured by using the file /etc/sudoers. Within the sudoers file, you can configure groups of users and sets of commands to simplify and audit server administration with SUDO commands.



Caution:

Configuring SUDO to allow a user to perform any operation is equivalent to giving that user root privileges. Consider carefully if this is appropriate for your security needs.

Example 11-2 SUDO Example 1: Allow a User to Perform Any ODACLI Operation

This example shows how to configure SUDO to enable a user to perform any ODACLI operation. You do this by adding lines to the commands section in the /etc/sudoers file:

```
## The commands section may have other options added to it.
##
Cmnd_Alias ODACLI_CMDS=/opt/oracle/dcs/bin/odacli *
jdoe ALL = ODACLI_CMDS
```

In this example, the user name is jdoe. The file parameter setting ALL= ODACLI_CMDS grants the user jdoe permission to run all odacli commands that are defined by the command alias ODACLI_CMDS. After configuration, you can copy one sudoers file to multiple hosts. You can also create different rules on each host.



Before database creation, you must set up user equivalency with SSH for the root user on each server. If you do not set up user equivalency and configure SSH on each server, then you are prompted to provide the root password for each server during database creation.



After you configure the ${\tt sudoer}$ file with the user, the user ${\tt jdoe}$ can run the set of odacli commands configured with the command alias <code>ODACLI_CMDS</code>. For example:

odacli create-database --dbname newdb -m Password for SYS, SYSTEM and PDB Admin:

Job details

ID: 1bc31577-f910-4d3f-b6ff-8e3fccd30141

Description: Database service creation with db name: newdb

Status: Created

Created: November 30, 2018 9:23:57 AM PST

Message:

Task Name Start Time End Time Status

Example 11-3 SUDO Example 2: Allow a User to Perform Only Selected ODACLI Operations

To configure SUDO to allow a user to perform only selected ODACLI operations, add lines to the commands section in the /etc/sudoers file as follows:

DCS commands for oracle user
Cmnd_Alias DCSCMDS = /opt/oracle/dcs/bin/odacli describe-appliance
oracle ALL= DCSCMDS

\$ sudo /opt/oracle/dcs/bin/odacli describe-appliance

Appliance Information

ID: a977bb04-6cf0-4c07-8e0c-91a8c7e7ebb8

Platform: OdaliteL

Data Disk Count: 6
 CPU Core Count: 20

Created: October 24, 2017 6:51:52 AM HDT

System Information

Name: rwsodal001

Domain Name: example.com

Time Zone: America/Adak

DB Edition: EE

DNS Servers: 10.200.76.198 10.200.76.199 192.0.2.254

NTP Servers: 10.200.0.1 10.200.0.2

Disk Group Information

DG Name Redundancy Percentage
----Data Normal 90
Reco Normal 10



In this example, the user <code>jdoe2</code> tries to run the <code>sudo odacli list-databases</code> command, which is not part of the set of commands that is configured for that user. SUDO prevents <code>jdoe2</code> from running the command.

[jdoe2@servernode1 ~]\$ sudo /opt/oracle/dcs/bin/odacli list-databases

Sorry, user jdoe2 is not allowed to execute '/opt/oracle/dcs/bin/odacli list-databases' as root on servernode1.

odacli Network Commands

Use the odacli network commands to list and describe network interfaces.

odacli configure-firstnet

Use the command configure-firstnet to configure the first network in the appliance after racking and connecting the power and network cables.

odacli list-networks

Use the odacli list-networks command to display networks.

odacli describe-network

Use the odacli describe-network command to display the details of a specific network.

odacli create-network

Use the odacli create-network command to create a network.

odacli configure-network

Use the odacli configure-network command to configure a network.

odacli update-network

Use the odacli update-network command to update an existing network configuration.

odacli delete-network

Use the command odacli delete-network to delete a network.

odacli describe-networkinterface

Use the odacli describe-networkinterface command to display the details of any network interface.

odacli list-networkinterfaces

Use the odacli list-networkinterfaces command to display network interfaces.

odacli configure-firstnet

Use the command configure-firstnet to configure the first network in the appliance after racking and connecting the power and network cables.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

/opt/oracle/dcs/bin/odacli configure-firstnet



Usage Notes

This command ensures that the system is available in the network, enabling you to manage the deployment through the Oracle Appliance Manager Web Console.

- Bonded network configuration: Bonded dual-ported interface. With the bonded configuration, you can only enable one of the interfaces. The bonded configuration supports VLANs. The bonded network configuration uses btbond1. Default setting.
- Non-bonded network configuration: Two separate physical network interfaces, this
 configuration does not support VLANs. The non-bonded network configuration
 uses em2 and em3 as public interfaces.
- To change a non-bonded network configuration to a bonded configuration, run the Oracle Database Appliance Cleanup Script and redeploy the appliance.

Example 11-4 Configuring the First Network as a Bonded Network

Configure the first network to use a btbond1 interface without configuring DHCP. Complete the IP address, netmask address, and gateway address.

Values that you need to provide are shown in *italic font*, with the exception of the net1 gateway address; the program obtains the gateway IP address. The program derives this gateway address using the network information you provided for the other IP addresses. Accept this value, unless your network administrator provides an alternative gateway address that is different from the default that the appliance command-line interface detects.

The following is an example of the command on a single node platform:

```
# /opt/oracle/dcs/bin/odacli configure-firstnet
```

```
Select the Interface to configure the network on (btbond1): btbond1
Configure DHCP on btbond1 (yes/no): no
INFO: You have chosen Static configuration
Enter the IP address to configure: 10.1.10.2
Enter the Netmask address to configure: 255.255.255.0
Enter the Gateway address to configure: 10.1.10.1
INFO: Plumbing the IPs now
INFO: Restarting the network
Shutting down interface btbond1: bonding: btbond1: Removing slave em2.
bonding: btbond1: releasing active interface em2
bonding: btbond1: making interface em3 the new active one.
bonding: btbond1: Removing slave em3.
bonding: btbond1: releasing active interface em3
::::::::::
```

Example 11-5 Configuring the First Network as a Non-Bonded Network

The following is an example of a non-bonded configuration. For a non-bonded configuration, answer no to using a bonding public interface.

```
# /opt/oracle/dcs/bin/odacli configure-firstnet
Using bonding public interface (yes/no) [yes]: no
INFO: Breaking the bonding on btbond1
INFO: remove bonding module: rmmod bonding
INFO: remove slave setup in /etc/sysconfig/network-scripts/ifcfg-em2
```



```
INFO: remove slave setup in /etc/sysconfig/network-scripts/ifcfg-em3
INFO: Restarting the network
Shutting down interface em1: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface eml: [ OK ]
Bringing up interface em2: [ OK ]
Bringing up interface em3: [ OK ]
INFO: Restarting the DCS agent
initdcsagent stop/waiting
initdcsagent start/running, process 57629
Select the Interface to configure the network on (em2 em3) [em2]:
Configure DHCP on em2 (yes/no) [no]:
INFO: You have chosen Static configuration
Enter the IP address to configure : 10.31.102.101
Enter the Netmask address to configure : 255.255.240.0
Enter the Gateway address to configure[10.31.96.1] :
INFO: Plumbing the IPs now
INFO: Restarting the network
Shutting down interface em1: [ OK ]
Shutting down interface em2: [ OK ]
Shutting down interface em3: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface em1: [ OK ]
Bringing up interface em2: Determining if ip address 10.31.102.101 is
already in use for device em2...
Bringing up interface em3: [ OK ]
```

odacli list-networks

Use the odacli list-networks command to display networks.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
odacli list-networks [-j] [-h]
```

Parameters

Parameter	Description
json, -j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.
nodeNumber, -u	(Optional) Displays the network interface information for the specified node. By default, the node number is always the first node (Node0).



Example 11-6 Displaying a List of Networks

Use the odacli list-networks command to display a list of networks:

odacli describe-network

Use the odacli describe-network command to display the details of a specific network.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To display the details of a specific network:

odacli describe-network -i id [-j][-u][-h]

Parameters

Parameter	Description
id, -i	Identifies the network ID. Use the odacli list-networks command to obtain the id.
json, -j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.
nodeNumber, -u	(Optional) Displays the network interface information for the specified node. By default, the node number is always the first node (Node0).

Example 11-7 Displaying Network Details

Enter the following command to display the details of network ID 93c07043-3002-494a-8fa0-f3ae932fb4c5:

odacli describe-network -i 93c07043-3002-494a-8fa0-f3ae932fb4c5 -u 1

Network details

ID: 93c07043-3002-494a-8fa0-f3ae932fb4c5

Name: Private-network

NIC: ibbond0 InterfaceType: BOND



IP Address: 192.168.16.25
Subnet Mask: 255.255.255.0

Gateway:
VlanId:

Type: Private Default: false

Created: November 18, 2018 10:54:16 PM PST

odacli create-network

Use the odacli create-network command to create a network.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
odacli create-network [-d|-no-d] -n interface -p ipaddress -w {Public|Dataguard|Database|Management|Backup|Other} -s subnetmask -g gateway[-h] [-j] VLAN [-p]
```

Parameters

Parameter	Description
defaultnetwork, -d	Identifies the default network.
gateway,-g	Defines the network gateway. The gateway is required for the default network.
help, -h	(Optional) Displays help for using the command.
interface, -n	Defines the name of the network interface.
ipaddress, -p	Defines the network IP address.
json, -j	(Optional) Displays JSON output.
networktype, -w	Defines the type of network. Options are: {Public Dataguard Database Management Backup Other}. The default is Other.
no-defaultnetwork, no-d	Identifies a network as not the default network. Use defaultnetwork -d to identify a default network.
subnetmask, -s	Defines the Network Subnet Mask.
VLAN, -p	Add VLAN as a new network.

Usage Notes

Network of public type can only be defined when deploying the appliance or when running odacli configure-firstnet during initial provisioning.

Use this command to create an additional network not done in create-appliance.

You are only allowed to create a network on the bond interface.



Example 11-8 Creating a Network

The following example creates a new network, sfpbond1, with IP address 192.0.2.15. The network is an additional network that uses subnet mask 255.255.255.0 and is not a default network.

```
\# odacli create-network -n sfpbond1 -p 192.0.2.15 -w Backup -s 255.255.25.0 -no-d
```

Example 11-9 Creating a VLAN Network

```
odacli create-network -u 0 -n btbond1 -t VLAN -p 192.0.2.1 -m vlan123 -w Database -s 255.255.255.0 -g 192.0.2.1 -v 123 odacli create-network -u 1 -n btbond1 -t VLAN -p 192.0.2.1 -m vlan123 -w Database -s 255.255.255.0 -g 192.0.2.1 -v 123
```

odacli configure-network

Use the odacli configure-network command to configure a network.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

To configure a network:

odacli configure-network -publicNet [copper|fiber] -changeNetCard [-j] [h]

Parameters

Parameter	Description
json, -j	(Optional) Displays JSON output.
-publicNet [copper fibre]	Switches the public network interface from copper to fibre or fibre to copper.
-changeNetCard	Configures the network after replacing a network card.
help,-h	(Optional) Displays help for using the command.

Usage Notes

You cannot modify the public and private interfaces after the system is deployed.

The -publicNet and -changeNetCard options cannot be used together. You can specify either one at a time.

Example 11-10 Configuring the network after changing a network card

odacli configure-network -changeNetCard



Example 11-11 Changing a Network Interface

odacli configure-network -publicNet copper/fiber

odacli update-network

Use the odacli update-network command to update an existing network configuration.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To update a network:

```
odacli update-network -i id [-p IP address]
[-w [Public|Dataguard|Backup|Other]] [-s network subnet mask]
[-g network gateway] [-j] [-h]
```

Parameters

Parameter	Description
id, -i	Defines the network identity.
gateway,-g	(Optional) Defines the network gateway.
ipaddress,-p	(Optional) Defines the network IP address.
json, -j	(Optional) Displays JSON output.
networktype, -w [Public Dataguard Backup Other]	(Optional) Defines the type of network.
subnetmask,-s	(Optional) Defines the Network Subnet Mask.
help,-h	(Optional) Displays help for using the command.

Usage Notes

You cannot modify the Public and Private-interfaces after the system is deployed.

The system has both SFP+ and 10GBaseT bonded pairs, which means that one of them is used for the public, and you can configure the other after deployment if you want additional connectivity. For example, if you want a backup network.

Example 11-12 Updating a Network

The following example updates network ID 192.0.0.2 and designates the network as a backup network:

```
# odacli update-network -i 192.0.0.2 -w Backup
```



odacli delete-network

Use the command odacli delete-network to delete a network.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To delete a network:

```
odacli delete-network -i id [-j] [-h]
```

Parameters

Parameter	Description
id, -i	Defines the network identity.
json,-j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.

Usage Notes

You cannot delete the Public-network or Private-network after the system is deployed.

Example 11-13 Deleting a Network

The following example deletes a backup network with a network ID of 55db39db-d95c-42c5-abbd-b88eb99b83ec.

```
# odacli delete-network -i 55db39db-d95c-42c5-abbd-b88eb99b83ec
```

```
"jobId" : "c26d217e-419b-4a91-8680-7b06bcfe9828",
"status" : "Running",
"message" : null,
"reports" : [ {
    "taskId" : "TaskSequential_137",
    "taskName" : "deleting network",
    "taskResult" : "Running",
    "startTime" : "May 18, 2019 23:14:32 PM EDT",
    "endTime" : "May 18, 2019 23:14:32 PM EDT",
    "status" : "Running",
    "taskDescription" : null,
    "parentTaskId" : "TaskSequential_135",
    "jobId" : "c26d217e-419b-4a91-8680-7b06bcfe9828",
    "tags" : [ ],
    "reportLevel" : "Info",
    "updatedTime" : "May 18, 2019 23:14:32 PM EDT"
  },{
   "taskId" : "TaskZJsonRpcExt_142",
```



odacli describe-networkinterface

Use the odacli describe-networkinterface command to display the details of any network interface.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To display the details of a specific network interface:

```
odacli describe-networkinterface -i id [-j][-h][-u]
```

Parameters

Parameter	Description
id, -i	Identifies the network interface ID. Use the odacli list-networks command to obtain the id.
json, -j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.
nodeNumber, -u	(Optional) Displays the network interface information for the specified node. By default, the node number is always the first node (Node0).

Usage Notes

By default, this command always displays the network interface description of the first node (Node0). To display the description of another node, specify the node number option (-u).



Example 11-14 Displaying Network Details

Enter the following command to display the details of network interface with ID fe1bf0a7-f56e-44cd-9a84-f374c0aa4b61:

/opt/oracle/dcs/bin/odacli describe-networkinterface
-i felbf0a7-f56e-44cd-9a84-f374c0aa4b61 -u 1

Network Interface details

ID: fe1bf0a7-f56e-44cd-9a84-f374c0aa4b61

Name: eth2
NIC: eth2
Type: PHYSICAL
Members: eth2

Slave Interface: true

Created: October 16, 2018 1:16:59 PM PDT

odacli list-networkinterfaces

Use the odacli list-networkinterfaces command to display network interfaces.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-networkinterfaces [-j] [-h] [-u]

Parameters

Parameter	Description
json, -j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.
nodeNumber, -u	(Optional) Displays the network interface information for the specified node. By default, the node number is always the first node (Node0).

Example 11-15 Displaying a List of Network Interfaces

Use the odacli list-networkinterfaces command to display a list of network interfaces:

networkinterfaces -u 1	
	Name
Туре	
48c7-8d47-2c188ed43ddd	bond0
BOND	
42a9-8e08-6bfdf3a33229	bond1
	Type



bond1	BOND	
743ced8d-bbe5	-4987-b316-5fdf95d5e60b	eth0
eth0	PHYSICAL	
a4121f9e-e694	-4852-a521-44efc6ef3fde	eth1
eth1	PHYSICAL	
c62c5f04-aa93	-4783-a3a7-275bf9fab2d9	eth2
eth2	PHYSICAL	
bda21dad-5c1c	-4073-89e5-798b8fce8533	eth3
eth3	PHYSICAL	
0141f1ac-5c34	-4393-8b99-76094b6f795c	ib0
ib0	PHYSICAL	
e8cb138a-087f	-4739-bb8d-90b1d903aeb6	ib1
ib1	PHYSICAL	
a31cfd63-fb90	-4cbb-a2fb-382c5e33983b	ibbond0
ibbond0	BOND	

odacli Apply Patch and Update Commands

Use the commands odacli update and apply patch to apply patches and update the appliance.

odacli describe-component

Use the odacli describe-component command to display the installed version and the latest available version for each component.

odacli describe-latestpatch

Use the odacli describe-latestpatch command to display a list of the latest supported patch versions for each component.

odacli create-prepatchreport

Use the odacli create-prepatchreport command to run pre-checks for patching.

odacli describe-prepatchreport

Use the odacli describe-prepatchreport command to display the precheck report, with a list of pre-checks run with status and comments.

odacli list-prepatchreports

Use the odacli list-prepatchreports command to display all pre-check reports, with a list of pre-checks run with status and comments.

odacli cleanup-patchrepo

Use the odacli cleanup-patchrepo command to delete obsolete or old patches from the repository.

odacli list-availablepatches

Use the odacli list-availablepatches command to display all available patches for Oracle Database Appliance.

odacli delete-prepatchreport

Use the odacli delete-prepatchreport command to delete any pre-check report.

odacli list-agentconfig-parameters

Use the odacli list-agentconfig-parameters command to list configuration variables used by the appliance.



odacli update-agentconfig-parameters

Use the odacli update-agentconfig-parameters command to modify configuration variables used by the appliance.

odacli update-dbhome

Use the odacli update-dbhome command to update a specific RDBMS Home to the latest patch bundle version.

odacli update-dcsadmin

Use the odacli update-dcsadmin command to update the DCS admin components for Zookeeper upgrade.

odacli update-dcscomponents

Use the odacli update-dcscomponents command to update the DCS components such as the DCS agent and Zookeeper.

odacli update-dcsagent

Use the odacli update-dcsagent command to update the agent.

odacli update-registry

Use the odacli update-registry command to update the registry of components when you apply patches manually.

odacli update-repository

Use the odacli update-repository command to update the repository with the new Oracle Database Appliance software.

odacli update-server

Use the odacli update-server command to update the operating system, firmware, Oracle Appliance Kit, Oracle Clusterware, and all other infrastructure components.

odaadmcli orachk

Use the odaadmcli orachk command to check configuration settings for Oracle Database Appliance components.

odacli update-storage

Use the odacli update-storage command to update the storage.

odacli describe-component

Use the odacli describe-component command to display the installed version and the latest available version for each component.

If there are multiple DB Homes installed in Oracle Database Appliance, then the output will display the version details for each of the installed homes. You can use this command to check the component version after applying a patch.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

odacli describe-component [-d][-j][-h][-s][-v]



Parameters

Parameter	Description
dbhomes, -d	(Optional) Lists the database home versions and available versions.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
local	(Optional) Describes the components for the local node. Use to display details on the local node of multi-node high availability (HA) systems. This option is not needed to display component details on single node systems.
node, -v	(Optional) Describes the components for a specific node on multi-node high availability (HA) systems. This option is not needed to display component details on single node systems. {0 1}
server, -s	(Optional) Lists the server components and versions and the available versions to which you can patch them.

Usage Notes

Use the odacli describe-component command to get component details. On a multi-node environment, the command provides details across all nodes. Use the --node or --local option to get component details for a specific node.

Example 11-16 Displaying Patch Details for Components for Oracle Database Appliance Release 19.418.5

System Version		
18.7.0.0.0		
System node Name		
node1		
Local System Version		
18.7.0.0.0		
Component Version	Installed Version	Available
	10.5.0.0	
OAK	18.7.0.0.0	up-to-date
GI	18.7.0.0.190716	up-to-date
DB { [OraDB11204_home1,OraDB11204_home2] [OraDB12102_home1,OraDB12102_home2] [OraDB12201_home1,OraDB12201_home2] [OraDB18000_home1,OraDB18000_home2]	11.2.0.4.190716 12.1.0.2.190716 12.2.0.1.190716 18.7.0.0.190716	up-to-date up-to-date up-to-date up-to-date



```
}
DCSAGENT
                                          18.7.0.0.0
                                                                 up-to-date
ILOM
                                           4.0.4.40.r130348
                                                                 up-to-date
                                           41060300
BIOS
                                                                 up-to-date
OS
                                           6.10
                                                                 up-to-date
                                          13.00.00.00
FIRMWARECONTROLLER
                                                                 up-to-date
                                           0306
FIRMWAREEXPANDER
                                                                 up-to-date
FIRMWAREDISK {
[ c0d0,c0d1 ]
                                           0112
                                                                 0121
[ cld0,cld1,cld2,cld3,cld4,cld5,cld6,
                                          A38K
                                                                 up-to-date
c1d7,c1d8,c1d9,c1d10,c1d11,c1d12,c1d13,
c1d14,c2d0,c2d1,c2d2,c2d3,c2d4,c2d5,
c2d6,c2d7,c2d8,c2d9,c2d10,c2d11,c2d12,
c2d13,c2d14 ]
[ cld15,cld16,cld17,cld18,cld19,cld20,
                                          A122
                                                                 up-to-date
c1d21,c1d22,c1d23,c2d15,c2d16,c2d17,
c2d18,c2d19,c2d20,c2d21,c2d22,c2d23 ]
}
ASR
                                          18.3.1
                                                                 up-to-date
System node Name
node2
Local System Version
18.7.0.0.0
Component
                                         Installed Version
                                                               Available
Version
                                          18.7.0.0.0
                                                                 up-to-date
OAK
GΙ
                                          18.7.0.0.190716
                                                                 up-to-date
DB {
[ OraDB11204_home1,OraDB11204_home2 ]
                                          11.2.0.4.190716
                                                                 up-to-date
[ OraDB12102_home1,OraDB12102_home2 ]
                                          12.1.0.2.190716
                                                                 up-to-date
                                                                 up-to-date
[ OraDB12201_home1,OraDB12201_home2 ]
                                          12.2.0.1.190716
[ OraDB18000_home1,OraDB18000_home2 ]
                                          18.7.0.0.190716
                                                                 up-to-date
DCSAGENT
                                          18.7.0.0.0
                                                                 up-to-date
ILOM
                                           4.0.4.40.r130348
                                                                 up-to-date
```



BIOS	41060300	up-to-date
OS	6.10	up-to-date
FIRMWARECONTROLLER	13.00.00.00	up-to-date
FIRMWAREEXPANDER	0306	up-to-date
FIRMWAREDISK { [c0d0,c0d1] [c1d0,c1d1,c1d2,c1d3,c1d4,c1d5,c1d6, c1d7,c1d8,c1d9,c1d10,c1d11,c1d12,c1d13, c1d14,c2d0,c2d1,c2d2,c2d3,c2d4,c2d5, c2d6,c2d7,c2d8,c2d9,c2d10,c2d11,c2d12, c2d13,c2d14]	0112 A38K	0121 up-to-date
[c1d15,c1d16,c1d17,c1d18,c1d19,c1d20, c1d21,c1d22,c1d23,c2d15,c2d16,c2d17, c2d18,c2d19,c2d20,c2d21,c2d22,c2d23] }	A122	up-to-date

Example 11-17 List DB Home Details

```
# odacli describe-component -d
System Version
18.7.0.0.0
System node Name
node1
Local System Version
18.7.0.0.0
                                 Installed Version Available
Component
Version
______
                                 12.2.0.1.190716 up-to-date
System node Name
-----
node2
Local System Version
18.7.0.0.0
Component
                                 Installed Version Available
Version
```



DB 12.2.0.1.190716 up-to-date

Example 11-18 List the Server Components and Versions

odacli describe-component -s
System Version
----18.7.0.0.0

System node Name

node1

Local System Version

18.7.0.0.0

Component Installed Version Available _______ 18.7.0.0.0 up-to-date OAK GI 18.7.0.0.190716 up-to-date 4.0.4.38.r130206 ILOM up-to-date BIOS 52010400 up-to-date OS 6.10 up-to-date System node Name _____ node2 Local System Version 18.7.0.0.0

Installed Version Available ${\tt Component}$ 18.7.0.0.0 up-to-date OAK GI 18.7.0.0.190716 up-to-date 4.0.4.38.r130206 ILOM up-to-date BIOS 52010400 up-to-date OS 6.10 up-to-date



odacli describe-latestpatch

Use the odacli describe-latestpatch command to display a list of the latest supported patch versions for each component.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli describe-latestpatch [-h]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.

Example 11-19 Listing the Latest Supported Versions

odacli describe-latestpatch

omponentType	availableVersion	
qi	18.7.0.0.190716	
db	18.7.0.0.190716	
db	12.2.0.1.190716	
db	12.1.0.2.190716	
db	11.2.0.4.190716	
oak	18.7.0.0.0	
asr	18.3.1	
ilom	3.0.16.22.f.r100119	
ilom	4.0.2.31.r126282	
ilom	4.0.4.41.r130359	
ilom	4.0.4.37.r130617	
ilom	4.0.0.24.r121140	
ilom	4.0.4.40.r130348	
ilom	4.0.4.38.r130206	
OS	6.10	
bios	17140300	
bios	30150300	
bios	25080100	
bios	41060300	
bios	38130200	
bios	39090000	
bios	52010400	
firmwareexpander 0342		
firmwareexpander 001e		
firmwareexpander 0306		
firmwaredisk a901		
firmwaredisk	0r3q	



```
firmwaredisk
              a29a
firmwarecontroller 11.05.03.00
firmwarecontroller qdv1rf30
firmwarecontroller vdv1ry03
firmwarecontroller 20.08.01.14
firmwarecontroller 2.11.1280
firmwarecontroller 13.00.00.00
firmwarecontroller 4.650.00-7176
firmwarecontroller kpyair3q
dcsagent
             18.7.0.0.0
firmwaredisk a7e0
firmwaredisk a4c0
firmwaredisk a72a
firmwaredisk a880
firmwaredisk al22
firmwaredisk a38k
firmwaredisk c122
firmwaredisk 944a
firmwaredisk 9440
firmwaredisk e12b
firmwaredisk
              5q08
firmwaredisk a902
firmwaredisk a140
firmwaredisk
              sa03
firmwaredisk 0b25
firmwaredisk sf04
firmwaredisk c38k
firmwaredisk
              a3a0
firmwaredisk pd51
firmwaredisk m554
firmwaredisk
              0121
firmwaredisk
              xc311102
```

odacli create-prepatchreport

Use the \mbox{odacli} create-prepatchreport command to run pre-checks for patching.

Patching pre-checks help identify and remedy any problems before attempting to patch, and ensure all components are ready for updates.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli create-prepatchreport -v -s



Parameters

Parameter	Description	
dbhome, -d	(Optional) Specifies the database home component for running the pre-checks.	
dbhomeid, -i	(Optional) Specifies the IDs of the database homes for running the pre-checks.	
help, -h	(Optional) Displays help for using the command.	
json, -j	(Optional) Displays JSON output. The default is false.	
local, -l	(Optional) Runs patch pre-checks only on the local node.	
node, -n	(Optional) Runs patch pre-checks on specified nodes.	
server, -s	(Optional) Specify this option to run the patch pre-checks for the server components.	
version, -v	(Optional) Specifies the version for running the pre-checks.	

Usage Notes

Use the odacli create-prepatchreport command to generate a pre-check report. Use the --node or --local option to run the patch pre-checks on specific nodes or the local node.

Example 11-20 Creating Pre-Check Report

odacli describe-prepatchreport

Use the odacli describe-prepatchreport command to display the pre-check report, with a list of pre-checks run with status and comments.

Patching pre-checks help identify and remedy any problems before attempting to patch, and ensure all components are ready for updates.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli describe-prepatchreport -i

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
jobid,-i	Specifies the Job ID for the pre-check report.

Usage Notes

Use the odacli describe-prepatchreport command to display the pre-check report.

Example 11-21 Displaying the Patch Pre-Checks Report

odacli describe-prepatchreport -i 39efleeb-70d3-47ad-b3f5-48960ca0607b Patch pre-check report

Job ID: 39efleeb-70d3-47ad-b3f5-48960ca0607b

Description: Pre-Check report for patching [GI, ILOM, OS]

Status: COMPLETED

Result: One or more pre-checks failed for [GI]

Node Name _____

node n1

Pre-Check Status

Comments

12.2.1.2.0

Validate available space

OS Validate patching tag Success Validated patching tag: 12.2.1.2.0 Patch location is Is patch location available Success available Verify OS patch Success There are no packages available for an update ILOM Validate patching tag Success Validated patching tag: 12.2.1.2.0 Is patch location available Patch location is Success available Checking Ilom patch Version Successfully verified the Success versions Patch location validation Successfully validated Success location __GI__ Is clusterware running Success Clusterware is running Validate patching tag Success Validated patching tag:

Success Validated free space under /



u01

Is system provisioned Success Verified system is

provisioned

Validate minimum agent version Success GI patching enabled in

current

DCSAGENT

version

Validate GI patch metadata Failed Internal error

encountered:

patchmetadata for

12.2.1.2.0

missing target version for

GI.

Is patch location available Success Patch location is

available

Patch location validation Failed Internal error

encountered:

specified

location

Patch verification Failed Internal error encountered:

Unable

to get patch number on

node

n1.

Opatch updation Success Successfully updated the

opatch in

GiHome /u01/app/12.2.0.1/grid

on

node n1

Patch conflict check Failed Internal error

encountered:

internal error

0+242+2

Invalid patch location in

metadata.

Example 11-22 Example of a Successful Patch Pre-Checks Report

odacli describe-prepatchreport -i aec9373c-96aa-43ce-9aae-8091ec9cd4eb
Patch pre-check report

Job ID: aec9373c-96aa-43ce-9aae-8091ec9cd4eb Description: Pre-Check report for patching [DB]

Status: COMPLETED

Result: All pre-checks succeeded

Node Name

node1

Pre-Check Status

Comments

__DB___

Validate patching tag Success Validated patching tag:

12.2.1.2.0

Validate available space Success Validated free space

required		
0.1		under /
u01		161 7
Is system provisioned	Success	Verified system is
provisioned		
Is patch location available available	Success	Patch location is
Validate minimum agent version	Success	Validated minimum agent
version		
Verify DBHome patch tag	Success	Verified DB Home patch
tag		
Is GI upgraded	Success	Validated GI is
upgraded		
Patch location validation	Success	Successfully validated
location		
Patch verification	Success	Patch 26710464 not applied on
DB		
home		
Is patch rollback required	Success	No DB patch is required to
rollback	_	
Opatch updation	Success	Successfully updated the
opatch in		
DbHome		
Patch conflict check	Cuagoaa	No natah ganfligta faund an
100011 001121200 0110011	Success	No patch conflicts found on
DBHome		

odacli list-prepatchreports

Use the $odacli\ list-prepatchreports$ command to display all pre-check reports, with a list of pre-checks run with status and comments.

Patching pre-checks help identify and remedy any problems before attempting to patch, and ensure all components are ready for updates.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

odacli list-prepatchreports [-h] [-j]

Parameter	Description	
help, -h	(Optional) Displays help for using the command.	
json, -j	(Optional) Displays JSON output. The default is false.	



Usage Notes

Use the odacli list-prepatchreports command to display all pre-check reports.

Example 11-23 Displaying All Patch Pre-Checks Reports

```
# odacli list-prepatchreports
    Description Created
                                              Status
8a8a14b5-1b5e-4eeb-8ba9-c8136fb4eeal Patch pre-checks for [DB]: DbHome
is OraDB12102_home1
May 16, 2018 7:00:56 PM PDT Running
2c9a747d-a452-4e48-bcab-9c7cd9f5f35b
                                  Patch pre-checks for
[STORAGE]
May 16, 2018 6:53:23 PM PDT
                              Success
f3b9c7c1-3061-4577-848d-645669d71f72
                                  Patch pre-checks for [OS, ILOM,
May 16, 2018 7:00:56 PM PDT
                              Running
```

odacli cleanup-patchrepo

Use the odacli cleanup-patchrepo command to delete obsolete or old patches from the repository.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli cleanup-patchrepo [-cl clones] | [-v version [-comp component]]| [-l local|-n NodeID]

Parameter	Description
clones, -cl	Specifies the option to clean up clone files (DB and GI) from the repository /opt/oracle/oak/pkgrepos/orapkgs/clones/.
version, -v	Defines the Oracle Database Appliance release you want to delete. For example, 12.2.1.4.0.
component, -comp	A comma-separated list of components as $\{DB,GI\}$ to cleanup for a specific Oracle Database Appliance patch version. The default is both $\{DB,GI\}$.
local, -l	(Optional) Cleans up the repository on the local node.



Parameter	Description
node, -n	(Optional) Cleans up the repository on the specified nodes.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output.

Usage Notes

- Use the command to free up space in the patch repository.
- This command does not delete the current patches or latest installed patch repository.

Example 11-24 Deleting RDBMS and GI components for a specific release

```
# odacli cleanup-patchrepo -cl -comp db,gi -v 12.2.1.4.0
{
"jobId" : "d915ffc0-c7f6-49cf-8ddd-ab5d2ad9072f",
"status" : "Created",
"message" : null,
"reports" : ,
"createTimestamp" : "April 17, 2019 06:44:28 AM UTC",
"resourceList" : ,
"description" : "Cleanup patchrepos",
"updatedTime" : "April 17, 2019 06:44:28 AM UTC"
```

Example 11-25 Deleting Clone Files

```
# odacli cleanup-patchrepo -cl
{
"jobId" : "5d8549a2-1a5e-4b4f-9867-clf671c659c4",
"status" : "Created",
"message" : null,
"reports" : ,
"createTimestamp" : "April 17, 2019 06:43:45 AM UTC",
"resourceList" : ,
"description" : "Cleanup patchrepos",
"updatedTime" : "April 17, 2019 06:43:45 AM UTC"
}
```

odacli list-availablepatches

Use the $odacli\ list-available\ patches\ command\ to\ display\ all\ available\ patches\ for\ Oracle\ Database\ Appliance.$

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli



Syntax

odacli list-availablepatches [-h] [-j]

Parameters

Parameter	Description	
help, -h	(Optional) Displays help for using the command.	
json, -j	(Optional) Displays JSON output. The default is false.	

Usage Notes

Use the odacli list-available patches command to display all available patches for Oracle Database Appliance.

Example 11-26 Displaying All Patch Pre-Checks Reports

odacli delete-prepatchreport

Use the odacli delete-prepatchreport command to delete any pre-check report.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

odacli delete-prepatchreport -i Report ID

Parameters

Parameter	Description
Report ID	Describes the ID of the report to be deleted.
help, -h	(Optional) Displays help for using the command.

Usage Notes

Use the odacli delete-prepatchreport command to delete pre-check reports.



Example 11-27 Deleting A Patch Pre-Checks Report

odacli delete-prepatchreport -i 741f635b-7c75-4832-8813-782367f1e6fd

odacli list-agentconfig-parameters

Use the $odacli\ list-agentconfig-parameters\ command\ to\ list\ configuration$ variables used by the appliance.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-agentconfig-parameters [-h] [-j] [-n]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
name, -n	Specifies the name of the parameter.

Usage Notes

Use the odacli list-agentconfig-parameters command to list configuration variables used by the appliance.

Example 11-28 Example Command

./odacli list-agentconfig-parameters -n HttpProxyPort

Name Va	lue I	Description	Updated		
HttpProxyPor UTC	t Http pı	coxy server port	June 24	4, 2018	4:14:10 AM
./odacli lis	t-agentcor	nfig-parameters			
Name	Value	Description	Updated		
HttpProxyHos	t Http:	proxy server hos	 st June 24	. 2018	4:14:10 AM UTC



HttpProxyPort Http proxy server port June 24, 2018 4:14:10 AM UTC

HttpsProxyHost Https proxy server host June 24, 2018 4:14:10 AM UTC

HttpsProxyPort Https proxy server port June 24, 2018 4:14:10 AM UTC

OSPatchRepos Repo list for OS patching June 24, 2018 4:14:10 AM UTC

Related Topics

Configuring Agent Proxy Settings for Object Store Access
 If the Object Store IP address is accessible only through proxy setup by the Oracle
 Database Appliance server, then define the proxy setting for the agent, so that the
 agent can access the Object Store.

odacli update-agentconfig-parameters

Use the odacli update-agentconfig-parameters command to modify configuration variables used by the appliance.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli update-agentconfig-parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
append, -a	(Optional) Appends the parameter values. For example, -n p1 -v v1 -n p2 -v v2 -a. The default is false.
comment, -c	(Optional) Specifies the comment for the parameter.
description, -d	(Optional) Specifies the description of the parameter.
json, -j	(Optional) Displays JSON output. The default is false.
name, -n	Specifies the name of the parameter. Provide multiple parameter values in the format -n p1 -v v1 -n p2 -v v2.



Parameter	Description
reset, -r	Resets the parameter to the default value. For example: -n p1 -n p2 -r. The default is false.
update, -u	Replaces the parameter with the specified value. For example: -n p1 -v v1 -n p2 -v v2 -u. The default is false.
value, -v	Specifies the value of the parameter. Provide multiple parameter values in the format -n p1 -v v1 -n p2 -v v2.

Usage Notes

Use the odacli update-agentconfig-parameters command to modify configuration variables used by the appliance. The supported configuration parameters are HttpsProxyHost, HttpsProxyPort, and OSPatchRepos.

Multiple values can be specified. For High-Availability models, the command sets the parameter values on both nodes in the cluster.

Example 11-29 Setting Multiple Parameters

```
# odacli update-agentconfig-parameters -n HttpsProxyPort -v 80 -d "Http
proxy port"
-n HttpsProxyPort -v 80 -d "Https proxy port" -u

update-agentconfig-parameters -n HttpsProxyPort -n HttpProxyPort -r

update-agentconfig-parameters -n HttpsProxyHost -v 90 -a

update-agentconfig-parameters -n OSPatchRepos -v
```

Related Topics

Configuring Agent Proxy Settings for Object Store Access
 If the Object Store IP address is accessible only through proxy setup by the Oracle
 Database Appliance server, then define the proxy setting for the agent, so that the
 agent can access the Object Store.

odacli update-dbhome

Use the ${\tt odacli}$ update-dbhome command to update a specific RDBMS Home to the latest patch bundle version.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

odacli update-dbhome -i dbhomeid -v version [-j] [-h] [-v]



Parameters

Parameter	Description
dbhomeid, -i	Defines the Oracle Database Home to update.
help-h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
precheck, -p	Analyzes the patch.
version, -v	Defines the Oracle Database Appliance version to update. For example, 12.2.1.1.

Usage Notes

- The update-dbhome command applies the latest release update (RU) for Oracle Database home.
- To be updated with the latest patches, the database must be running.
- Only databases in the Configured status are updated. Use the odacli list-database command to see a list of configured databases. Databases in any other status are skipped during the update.

Example 11-30 Updating an Oracle Database Home

To apply the latest patch bundle to update an Oracle Database:

```
# odacli update-dbhome -i ad6c7326-e460-411e-94df-230dedbef743 -v 19.4.0.0.0
```

odacli update-dcsadmin

Use the odacli update-dcsadmin command to update the DCS admin components for Zookeeper upgrade.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli update-dcsadmin -v version [-j] [-h]

Parameter	Description
version, -v	Defines the Oracle Database Appliance version after update.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output.



Usage Notes

The update-dcsadmin command sets up the dcsadmin and other components. Run the update-dcsadmin command only after you update the DCS agent.

Example 11-31 Updating DCS Admin

```
# odacli update-dcsadmin -v 18.7.0.0.0
{
   "jobId" : "4c238b93-e641-4f9d-9f86-93d0574dd234",
   "status" : "Created",
   "message" : null,
   "reports" : [],
   "createTimestamp" : "July 12, 2019 03:11:53 AM UTC",
   "resourceList" : [],
   "description" : "DcsAdmin patching",
   "updatedTime" : "July 12, 2019 03:11:53 AM UTC"
}
```

odacli update-dcscomponents

Use the odacli update-dcscomponents command to update the DCS components such as the DCS agent and Zookeeper.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
odacli update-dcscomponents -v version [-j] [-h]
```

Parameters

Parameter	Description
version, -v	Defines the Oracle Database Appliance version after update.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output.

Usage Notes

The ${\tt update-dcscomponents}$ command sets up the ${\tt dcscomponents}$ such as Zookeeper.

Example 11-32 Updating DCS Components

```
# odacli update-dcscomponents -v 18.7.0.0.0
{
   "jobId" : "4c238b93-e641-4f9d-9f86-93d0574dd234",
```



```
"status" : "Created",
"message" : null,
"reports" : [ ],
"createTimestamp" : "July 12, 2019 03:11:53 AM UTC",
"resourceList" : [ ],
"description" : "DcsComponents patching",
"updatedTime" : "July 12, 2019 03:11:53 AM UTC"
}
```

odacli update-dcsagent

Use the odacli update-dcsagent command to update the agent.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
odacli update-dcsagent -v version [-j] [-h]
```

Parameters

Parameter	Description
version, -v	Defines the Oracle Database Appliance version after update.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output.

Usage Notes

The update dcsagent command updates the dcs-agent to the RPM package that is located in the *location* and restarts the dcs-agent. After the update is applied, the agent automatically restarts. It will take a few minutes to reconnect to the dcs-agent. Wait until the agent shuts down and completes restarting before performing any tasks.



Before updating the agent, ensure that you do not have any jobs running or pending during the update window.

Example 11-33 Updating the Agent

To update the dcs-agent to version 19.4:

```
# odacli update-dcsagent -v 19.4
{
   "jobId" : "77e454d3-eb68-4130-a247-7633f8d6192b",
   "status" : "Created",
   "message" : null,
```



```
"reports" : [ ],
"createTimestamp" : "May 18, 2019 14:09:24 PM CST",
"description" : "DcsAgent patching",
"updatedTime" : "May 18, 2019 14:09:24 PM CST"
}
```

odacli update-registry

Use the odacli update-registry command to update the registry of components when you apply patches manually.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
odacli update-registry -n component [-f] [-j] [-h]
```

Parameters

Parameter	Description	
component, -n	Defines the Oracle Database Appliance component for the registry update. The values can be system {gihome, dbnode, sysinstance} or all {dbhome, db, dbstorage, asr}. You can also specify the individual component to be refreshed.	
	Note: Refresh system components before you refresh all components.	
-f	(Optional) Forces the refresh of the specified component even if it already exists in the appliance registry metadata.	
help, -h	(Optional) Displays help for using the command.	
json, -j	(Optional) Displays JSON output.	

Usage Notes

The ${\tt update-registry}$ command updates the registry of components when you apply patches manually.

Example 11-34 Updating the Registry with the -force option



```
Status: Created
               Created: July 31, 2019 1:02:51 PM UTC
               Message:
Task Name Start Time End Time Status
# odacli describe-job -i 752b56d8-2bcd-4a29-ab96-196925fc5c13
Job details
                   ID: 752b56d8-2bcd-4a29-ab96-196925fc5c13
           Description: Discover System Components: system
               Status: Success
               Created: July 31, 2019 1:02:51 PM UTC
               Message:
Task Name Start Time End Time Status
-----
Rediscover SysInstance July 31, 2019 1:02:51 PM UTC July 31, 2019 1:03:24
PM UTC Success
Rediscover DBNode July 31, 2019 1:03:24 PM UTC July 31, 2019 1:03:24 PM
Rediscover GiHome July 31, 2019 1:03:24 PM UTC July 31, 2019 1:03:26 PM
UTC Success
```

odacli update-repository

Use the odacli update-repository command to update the repository with the new Oracle Database Appliance software.

Prerequisites

Before updating the repository, you must upload the Oracle Database Appliance software to the appliance. If the patch contains more than one zip file, then extract and concatenate the zip files before updating the repository.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

To unpack and copy the patch bundle to the correct locations in the file system:

```
odacli update-repository -f filename [-j] [-h]
```



Parameters

Parameter	Description
filename, -f	Defines the zip filename of patch bundle or RDBMS clones downloaded from My Oracle Support. Provide a comma-separated list of absolute file paths of the end user and patch bundles.
json, -j	(Optional) Displays JSON output. The default is false.
help,-h	(Optional) Displays help for using the command.

Usage Notes

- Before updating the repository, ensure that you do not have any jobs running or pending during the update window.
- Upload the patches to dom0 on Node0. On multi-node systems, the DCS-Agent copies the patch to Node1 and updates the patch repository on both nodes.

Example 11-35 Updating the Repository

The server patch zip file is located in the /u01/tmpdir directory. The following example updates the repository with the latest server patch and then lists the job to verify that the update is successful:

```
# /opt/oracle/dcs/bin/odacli update-repository -f /tmp/oda-
sm-18.7.0.0.0-190911-serverlof2.zip,/tmp/oda-sm-18.7.0.0.0-190911-
server2of2.zip
  "jobId" : "d3510276-da05-447b-990e-6d30964f8f79",
  "status" : "Created",
  "message" : "/u01/tmpdir/oda-sm-12.2.1.1.0-171031-server.zip",
  "reports" : [ ],
  "createTimestamp" : "May 18, 2019 14:13:45 AM CST",
  "description" : "Repository Update",
  "updatedTime" : "May 18, 2019 14:13:45 AM CST"
[root@oak1 tmpdir]# ./odacli list-jobs
# odacli list-jobs
ID
                                   Description
Created
                                  Status
_____
6f27a29a-959f-44e1-b984-7473e3c918ad Server Patching May 18, 2019
14:19:05 AM CST Success
```



odacli update-server

Use the odacli update-server command to update the operating system, firmware, Oracle Appliance Kit, Oracle Clusterware, and all other infrastructure components.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

```
odacli update-server -v version [-j] [-h]
```

Parameters

Parameter	Description
precheck, -p	Analyzes the patch.
version, -v	Defines the version to update.
local,-l	Updates the server on the local node of multi-node high availability (HA) systems. This option is not needed for single-node systems.
json, -j	(Optional) Displays JSON output. The default is false.
help, -h	(Optional) Displays help for using the command.

Usage Notes

The update-server command applies the patches to various infrastructure components and Oracle Clusterware.

After the update is applied, the agent automatically restarts. It will take a few minutes to reconnect to the server. Wait until the agent shuts down and completes restarting before performing any tasks. Allow at least two (2) minutes before running the next command.



Before updating the server, ensure that you do not have any jobs running or pending during the update window.

Example 11-36 Updating the Server

Run the odacli update-server command to update the server to 19.4.0.0.0. On a multinode HA system, you must run the command on both nodes to update the server version.

```
# odacli update-server -v 19.4.0.0.0
{
  "jobId" : "6f27a29a-959f-44e1-b984-7473e3c918ad",
  "status" : "Created",
```



```
"message" : "Success of Server Update may trigger reboot of node after
4-5 minutes.
Please wait till node restart",
   "reports" : [ ],
   "createTimestamp" : "May 18, 2019 14:13:45 PM CST",
   "resourceList" : [ ],
   "description" : "Server Patching",
   "updatedTime" : "May 18, 2019 14:13:45 PM CST"
}
```

odaadmcli orachk

Use the odaadmcli orachk command to check configuration settings for Oracle Database Appliance components.

File Path

/opt/oracle/dcs/bin/odaadmcli

Syntax

To perform diagnostic checks of components:

```
odaadmcli orachk [-h]
```

Parameters

Parameter	Description	
help, -h	(Optional) Displays help for using the command.	
Components such as -a, -acchk, - applypatch, -autostop	(Optional) Specifies the comma-separated list of components for which you want to collect data. Specify the component to be checked in the command. For example:	
	# odaadmcli orachk -a	
verbose	Displays detailed message.	

Usage Notes

The odaadmcli orachk command invokes orachk from the directory opt/oracle.SupportTools/orachk.

Example 11-37 Running odaadmcli orachk

```
[root@oak bin] # ./odaadmcli orachk
INFO: 2019-09-04 16:41:26: Running orachk under /opt/oracle.SupportTools/
orachk
```



Example 11-38 Running odaadmcli orachk for a component

[root@oak bin] # ./odaadmcli orachk -a
INFO: 2019-09-19 10:45:16: Running orachk under /usr/bin/orachk
Checking ssh user equivalency settings on all nodes in cluster for root

odacli update-storage

Use the odacli update-storage command to update the storage.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

odacli update-storage -v version [-h] [-j] [-r]

Parameters

Parameter	Description
version, -v	Defines the version to update.
json, -j	(Optional) Displays JSON output. The default is false.
help, -h	(Optional) Displays help for using the command.
rolling, -r	(Optional) Enables to patch shared disks in rolling fashion without stopping Oracle Clusterware. The shared disks must be online.

Usage Notes

Example 11-39 Updating the Storage

odacli update-storage -v 19.4.0.0.0

odacli Appliance Commands

Use the odacli appliance commands to perform lifecycle activities for the appliance.

- odacli create-appliance
 - Use the odacli create-appliance command in a JSON file format to provision Oracle Database Appliance.
- odacli describe-appliance
 - Use the odacli describe-appliance command to display appliance details.
- · odacli describe-system
 - Use the odacli describe-system command to display details about components installed on the system.



odacli list-featuretracking

Use the odacli list-featuretracking command to display the latest feature tracking report.

odacli-adm set-credential

Use the odacli-adm set-credential command to change the oda-admin user credentials.

odacli create-appliance

Use the odacli create-appliance command in a JSON file format to provision Oracle Database Appliance.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To view help for the odacli create-appliance command:

odacli create-appliance -r requestjson [-j] [-h]



The odacli create-appliance command only supports a JavaScript Object Notation (JSON) file format. An example JSON files and a readme are available in an appendix in this document and in the <code>/opt/oracle/dcs/sample</code> directory.

Parameters

Parameter	Description
requestjson, -r	JSON input for appliance creation.
json, -j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.

odacli describe-appliance

Use the odacli describe-appliance command to display appliance details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli describe-appliance [-d|-b][-j][-h]



Parameters

Parameter	Description
details, -d	(Optional) Displays the agent CLI build details.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output.
bom, -b	(Optional) Displays BOM information.

Example 11-40 Displaying Appliance Details

odacli describe-appliance -d

Appliance Information

ID: 78e9a6b8-c4f8-42b2-9e72-7d23c2636544

Platform: OdaliteL Data Disk Count: 6 CPU Core Count: 20

Created: May 18, 2019 5:14:41 AM EST

System Information

Name: rwsoda6f002

Domain Name: example.com
Time Zone: America/New_York

DB Edition: EE

DNS Servers: 10.204.32.1

NTP Servers: 10.68.0.41 10.68.0.42

Disk Group Information

DG Name	Redundancy	Percentage
Data	High	80
Reco	High	20

odacli describe-system

Use the $odacli\ describe-system$ command to display details about components installed on the system.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli



Syntax

To list jobs and view job details and status:

```
odacli describe-system [-h] [-b] [-d] [-j]
```

Parameters

Parameter	Description	
json, -j	(Optional) Displays JSON output.	
help, -h	(Optional) Displays help for using the command.	
bom, -b	(Optional) Displays the bill of materials for the installed components on the appliance.	
details, -d	(Optional) Display on the command-line, the details of all installed components on the appliance.	

Usage Notes

Do not provide both options -b and -d at the same time, in the command.

Example 11-41 Example Command to View the Bill of Materials from the Command Line for Bare Metal Deployments

```
# odacli describe-system -b
ODA Components Information
_____
Component Name
                        Comonent
Details
______
_____
NODE
                         Name : rwsoda6m003
                         Domain Name :
                         Time Stamp : July 29, 2018 7:00:12 PM UTC
RPMS
                         Installed RPMS : acl-2.2.49-7.el6_9.1.x86_64,
                                       aide-0.14-11.el6.x86_64,
                                       alsa-lib-1.1.0-4.el6.x86_64,
                                       at-3.1.10-49.el6.x86_64,
                                       atk-1.30.0-1.el6.x86_64,
                                       attr-2.4.44-7.el6.x86_64,
                                       audit-2.4.5-6.el6.x86_64,
                                       audit-
libs-2.4.5-6.el6.x86_64,
                                       audit-libs-
python-2.4.5-6.el6.x86_64,
                                       augeas-
libs-1.0.0-10.el6.x86_64,
```



authconfig-6.1.12-23.el6.x86_64, avahilibs-0.6.25-17.el6.x86 64, b43openfwwf-5.2-10.el6.noarch, basesystem-10.0-4.0.1.el6.noarch, bash-4.1.2-48.el6.x86 64, bc-1.06.95-1.el6.x86_64, bindlibs-9.8.2-0.62.rc1.el6_9.5.x86_64, bindutils-9.8.2-0.62.rc1.el6_9.5.x86_64, binutils-2.20.51.0.2-5.47.el6_9.1.x86_64, biosdevname-0.7.2-1.el6.x86_64, bridgeutils-1.2-10.el6.x86 64, busybox-1.15.1-21.el6_6.x86_64, bzip2-1.0.5-7.el6_0.x86_64, bzip2libs-1.0.5-7.el6_0.x86_64, cacertificates-2017.2.14-65.0.1.el6_9.noarch, cairo-1.8.8-6.el6_6.x86_64, celt051-0.5.1.3-0.el6.x86_64, checkpolicy-2.0.22-1.el6.x86_64, chkconfig-1.3.49.5-1.el6.x86_64, cloogppl-0.15.7-1.2.el6.x86_64, compatlibcap1-1.10-1.x86_64, compat-libstdc+ +-33-3.2.3-69.el6.x86_64, compatreadline5-5.2-17.1.el6.x86 64, compat-sap-c+ +-4.8.2-16.el6.x86_64, ConsoleKit-0.4.1-6.el6.x86_64, ConsoleKitlibs-0.4.1-6.el6.x86 64, ConsoleKitx11-0.4.1-6.el6.x86_64, coreutils-8.4-46.0.1.el6.x86_64, coreutilslibs-8.4-46.0.1.el6.x86_64, cpio-2.10-13.el6.x86_64, cpp-4.4.7-18.el6.x86_64,

```
cpupowerutils-1.3-2.el6.x86_64,
cpuspeed-1.5-22.0.1.el6.x86_64,
cracklib-2.8.16-4.el6.x86_64,
                                                cracklib-
dicts-2.8.16-4.el6.x86_64,
crash-7.1.4-1.0.1.el6_7.x86_64,
crda-3.13_2015.10.22-3.el6.x86_64,
createrepo-0.9.9-27.el6_9.noarch,
cronie-1.4.4-16.el6_8.2.x86_64,
                                                cronie-
anacron-1.4.4-16.el6_8.2.x86_64,
                                                crontabs-1.10-33.el6.noarch,
                                                cryptsetup-
luks-1.2.0-11.el6.x86_64,
                                                cryptsetup-luks-
libs-1.2.0-11.el6.x86_64,
                                                cups-
libs-1.4.2-78.el6_9.x86_64,
. . . .
```

odacli list-featuretracking

Use the odacli list-featuretracking command to display the latest feature tracking report.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

Use the odacli list-featuretracking command to display the latest feature tracking report.

odacli list-featuretracking [-h] [-j]

Parameter	Description
json, -j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.



Example 11-42 Example Command to View the Features Report from the Command Line

odacli list-featuretracking

DCS Feature Tracking Report

Last collection date: 10/26/18 15:35

Report version: 1.0

DCS Feature Usage Summary

Currently

Detected Total Last Usage

Feature Name Used

Usages Samples Time

Object Store TRUE

12 12 10/26/18 15:35

Automatic Service Request (ASR) FALSE

0 12

Storage Expansion Shelf FALSE

0 12

DCS High Water Mark Statistics

Measured Feature Name High Water

Mark Category

Maximum usage of CPU 8.12

% DCS Agent

Maximum usage of Memory 437.12

MB DCS Agent Maximum number of threads

150 DCS Agent

Maximum number of open file descriptors

257 DCS Agent

Maximum number of Databases

1 Database

Maximum number of EE Databases

1 Database

Maximum number of SE Databases

0 Database

Maximum number of CDBs

1 Database

Maximum number of non-CDBs

O Database
Maximum number of RAC Databases

1 Database

Maximum number of RAC One Databases

0 Database

Maximum number of Single Instance Databases



Database Maximum number of PDBs Database Maximum number of Datafiles Database Maximum number of Database Homes Database Maximum number of Flashback Databases Database Maximum size of a Database 6.40 Database Minimum Database version 18.0.0.0.0 Database Maximum Database version 18.0.0.0.0 Database Maximum number of Backups Database Maximum number of NFS Backups Database Maximum number of Object Store Backups Database Maximum number of Disk Backups Database Maximum number of Regular-LO Backups Database Maximum number of Regular-L1 Backups Database Maximum number of ArchiveLog Backups Database Maximum number of Longterm Backups Database Maximum interval between Database Backups 0 Day(s), 01:01:06 Database Maximum number of Object Store tenants Object Store Maximum number of enabled CPU cores 12 Server Maximum number of disks Storage Maximum number of ASM Disks Groups Storage Maximum size of ASM Disk Groups 11.46 Storage 1.70 Maximum usage of ASM Disk Groups Storage Maximum number of ASM Disks Groups with redundancy 'NORMAL' Storage Maximum number of ASM Disks Groups with redundancy 'HIGH' Storage Maximum number of ASM Disks Groups with redundancy 'EXTERN' Storage Maximum number of ASM Disks Groups with redundancy 'FLEX' Storage Maximum ASM Disk Groups compatibility 18.0.0.0.0 Storage



Minimum ASM Disk Groups compatibi	lity
18.0.0.0.0 Storage	
Maximum number of non-ACFS file s	systems
4 Storage	
Maximum size of non-ACFS file sys	stems 98.31
GB Storage	
Maximum usage of non-ACFS file sy	ystems 82.71
% Storage	
Maximum number of ACFS file syste	ems
1 Storage	
Maximum size of ACFS file systems	5.00
GB Storage	
Maximum usage of ACFS file system	ns 12.19
% Storage	

odacli-adm set-credential

Use the $odacli-adm\ set-credential\ command\ to\ change\ the\ oda-admin\ user\ credentials.$

Syntax

To reset the oda-admin user credentials in interactive mode:

```
odacli-adm set-credential --password --username username [-j] [-h]
```

Parameters

Description
Agent password. The Agent password is needed to access the Oracle Appliance Manager Web Console.
User name required to access the Oracle Appliance Manager Web Console. The default user name is oda-admin.
(Optional) Displays JSON output.
(Optional) Displays help for using the command.

Usage Notes

Only root user can reset the oda-admin user credentials.

Example 11-43 Resetting the oda-admin Password in Interactive Mode

To reset the oda-admin user password to a new password in interactive mode:

```
# odacli-adm set-credential --password --username oda-admin
Agent password: password
```



odacli Backup and Recovery Commands

Use the odacli backup and recover commands to backup to and restore from Oracle Cloud Infrastructure Object Storage or disk.

Topics:

odacli create-backup

Use the command odacli create-backup to create a Level 0, Level 1, archivelog, or Longterm backup.

odacli create-backupconfig

Use the command odacli create-backupconfig to create a backup configuration.

odacli create-objectstoreswift

Use the command odacli create-objectstoreswift to create and store the Oracle credential details required to backup to Oracle Object Store.

odacli delete-backup

Use the command odacli delete-backup to delete backups.

odacli delete-backupconfig

Use the command odacli delete-backupconfig to delete a backup configuration.

odacli delete-objectstoreswift

Use the command odacli delete-objectstoreswift to delete the credentials for the ObjectStore account.

odacli describe-backupreport

Use the command odacli describe-backupreport to display details of a specific backup report.

odacli describe-schedule

Use the command odacli describe-schedule to display details for a specific schedule.

· odacli irestore-database

Use the command odacli irestore-database to restore a database from one system to other system from ObjectStore based on a LongTerm BackupReport.

odacli list-backupreports

Use the command odacli list-backupreports to display a list of all backup reports.

odacli list-backupconfigs

Use the command odacli list-backupconfig to list all backup configurations.

odacli list-objectstoreswifts

Use the command odacli list-objectstoreswifts to display a list of credentials for the ObjectStore account.

· odacli list-schedules

Use the command odacli list-schedules to display a list of the scheduled backups.



odacli recover-database

Use the $odacli\ recover-database\ command\ to\ recover\ or\ restore\ a$ database from backup.

odacli update-backupconfig

Use the command odacli update-backupconfig to update a backup configuration.

odacli update-database

Use the command odacli update-database to associate a backup configuration to a database.

odacli update-objectstoreswift

Use the command ${\tt odacli}$ update-objectstoreswift to change the credentials for the ObjectStore account.

· odacli update-schedule

Use the command odacli update-schedule to update the schedule for a database, or to disable the database backup schedule.

odacli create-backup

Use the command odacli create-backup to create a Level O, Level 1, archivelog, or Longterm backup.

File Path

\$ORACLE HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli create-backup -iDatabase Resource ID [-bt] [-c] [-h] [-j] [-k] [-t]

Parameter	Description
backupType, -bt {Regular-L0 Regular-L1 Longterm archivelog}	Defines the type of backup. The options are not case sensitive.
component, -c {Database}	(Optional) Defines the component. Database is the only supported option.
dbid,-i	Defines the Database Resource ID.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
keepDays, -k	Defines the Keep Days. For Longterm Backup Type only.
tag, -t	Defines the name of the backup. A tag is alphanumeric, up to 30 characters. Required for Longterm Backup Type.



Usage Notes

- Use the command odacli create-backup for a specified Database Resource
 ID and provide a tag for the backup name. Use up to 30 alphanumeric characters
 for the backup name tag. Three types of backups are available:
 - Level 0: An RMAN incremental backup that backs up all data blocks in the data files being backed up. An incremental backup at level 0 is identical in content to a full backup, but unlike a full backup, the level 0 backup is part of an incremental backup strategy.
 - Level 1: An RMAN incremental backup that includes only those blocks that have been changed since the "parent" backup was taken. A parent backup can be either a level 0 or a level 1 backup. If you do not select a backup type (level 0, level 1, or LongTerm), a level 1 backup is performed.
 - Longterm: Longterm backups are only available when backing up to Oracle Cloud Infrastructure Object Storage (Oracle Object Storage).
 - Archivelog: This option is used to perform backup of all archivelogs not yet backed up to the backup destination, such as Internal FRA, External FRA (NFS location), or Object Store.
- This command creates a Backup Report with a Resource ID. To get the ID, use the command odacli describe-job -i job_id-j and look for the resourceId attribute in resourceList.

Example 11-44 Create a Manual Database Backup

Create a long term backup that is kept for 90 days and named q12018HR.

odacli create-backup -i Database Resource ID -bt Longterm -c database -k 90 -t q12018HR

Example 11-45 Create a Level 0 Database Backup

Create a Level 0 backup named 2017Dec22ProductionLevel0 for resource ID 20576eb1-bc32-4e34-bf97-fda0b60ca15b

odacli create-backup -i20576eb1-bc32-4e34-bf97-fda0b60ca15b -bt Regular-L0 -t 2017Dec22ProductionLevel0

odacli create-backupconfig

Use the command odacli create-backupconfig to create a backup configuration.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli create-backup
config -n backup configuration name -d backup destination
{Disk|ObjectStore|NFS|None} [-c] [-cr] [-h] [-j] [-no-cr] [-o][-w]



Parameters

Parameter	Description
backupdestination, -d {Disk ObjectStore NFS None}	Defines the backup destination. The options are not case sensitive.
container,-c	(Optional) Defines the object store container.
crosscheck, -cr	(Optional) Enable crosscheck.
help,-h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
name, -n	Defines the backup configuration name.
no-crosscheck, -no-cr	(Optional) Disable crosscheck.
objectstoreswiftId,-o	(Optional) Defines the swift object store credential ID.
recoverywindow, -wDisk: {1-14} ObjectStore: {1-31}	(Optional) Defines the Recovery Window in days. {1-14} days for Disk and {1-31} days for Object Storage in the cloud.

Usage Notes

- The recovery window that is defined in the backup configuration determines when backups are considered obsolete. The following are guidelines:
 - Disk: 1-14 days
 - Object Storage: 1-31 days

Example 11-46 Create a Backup Configuration for Disk

Create a backup configuration named production that backs up to disk with a 14 day recovery window.

odacli create-backupconfig -d Disk -n production -w 14

Example 11-47 Create a Backup Configuration for NFS Location

Create a backup configuration named production that backs up to NFS with a 2 day recovery window.

odacli create-backupconfig -d NFS -n NfsPolicy1 -c /tmp/Nfsbackps -w 2

odacli create-objectstoreswift

Use the command odacli create-objectstoreswift to create and store the Oracle credential details required to backup to Oracle Object Store.

File Path

/opt/oracle/dcs/bin/odacli



Syntax

odacli create-objectstoreswift -e swift end point URL [-h] [-j] -n
Object Store Swift name [-p] swiftpassword -t Object Store tenant name -u
Object Store user name

Parameters

Parameter	Description
endpointurl, -e	Defines the swift end point URL.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
name, -n	Defines the Object Store Swift name.
swiftpassword, -p	(Optional) Defines the Object Store Swift password.
tenantname, -t	Defines the Object Store Swift tenant name.
username, -u	Defines the Object Store Swift user name.

Usage Notes

The command creates and stores the Oracle Cloud Infrastructure Object Storage credential details in the system and stores the password in an encrypted Oracle wallet. You can attach the credentials to one or more backup configurations.

The credentials are validated during the command odacli create-backupconfig with objectstore as the destination. The credentials are not validated against endpoint URL and tenancy.

odacli delete-backup

Use the command odacli delete-backup to delete backups.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli delete-backup -iDatabase Resource ID [-br] [-h] [-j]

Parameter	Description
backupreport, -br	(Optional) Defines the backup report. To delete a Long Term backup, use a JSON input file for the backupreport.



Parameter	Description
dbid, -i	Defines the Database Resource Identifier (ID). To delete a level 0 or level 1 backup, use the database resource ID.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.

Usage Notes

- Delete older, obsolete level 0 and level 1 backups with the Database Resource ID.
 The recovery window that is defined in the backup configuration determines when backups are considered obsolete.
- Delete long term backups from Oracle Object Storage by using a JSON file with the --backupreport option.
- To locate the database ID, view the databases in the Web Console or use the command odacli list-databases.

Example 11-48 Delete a Level 0 or Level 1 Backup

odacli delete-backup -i20576eb1-bc32-4e34-bf97-fda0b60ca15b

Example 11-49 Delete a Long Term Backup Report

Delete a Long Term backup using a JSON input file for the Backup Report. In this example, backupreport.json is the JSON input for the backupreport.

odacli delete-backup -i 20576eb1-bc32-4e34-bf97-fda0b60ca15b -br backupreport.json

odacli delete-backupconfig

Use the command odacli delete-backupconfig to delete a backup configuration.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli delete-backupconfig -i backup configuration id [-h] [-j]

Parameter	Description
help, -h	(Optional) Displays help for using the command.



Parameter	Description
id,-i	Defines the Backup Config identifier (ID).
json, -j	(Optional) Displays JSON output. The default is false.

Usage Notes

You cannot delete a backup configuration if it is attached to a database.

Example 11-50 Deleting a Backup Configuration

Delete a backup configuration named ${\tt production}$ that backs up to disk with a 14 day recovery window.

odacli delete-backupconfig -d Disk -n production -w 14

odacli delete-objectstoreswift

Use the command ${\tt odacli}$ ${\tt delete-objectstoreswift}$ to delete the credentials for the ObjectStore account.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli delete-objectstoreswift [-h] [-j] -i Object Store Swift id

Parameters

Parameter	Description
help,-h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
objectstoreswiftid, -i	Defines the Object Store Swift identifier (ID).

Usage Notes

You cannot delete the Object Store credentials if they are attached to a backup configuration.

Example 11-51 Deleting the Oracle Object Store Credentials

odacli delete-objectstoreswift -i Object Store Swift id



odacli describe-backupreport

Use the command odacli describe-backupreport to display details of a specific backup report.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
odacli describe-backupreport [-h] [-j] [-i]
```

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
id, -i	Defines the backup report ID.

Example 11-52 Display Details of a Specific Backup Report

```
# odacli describe-backupreport -i 2d82460c-d648-4e75-8c7d-72cc90bc442a
 "id" : "2d82460c-d648-4e75-8c7d-72cc90bc442a".
  "dbResId": "b5fc646e-01a6-4c8b-8286-7633346c4329",
  "tag" : null,
  "dbId" : "2717054291",
  "dbName" : "ExampleDB",
  "dbUniqueName" : "ExampleDBu",
  "backupType" : "REGULAR-L1",
  "keepDays" : null,
  "backupLocation" : "https://swiftobjectstorage.example.com/v1/dbaasimage/
backupbucket",
  "cfBackupHandle" : "c-2717054291-20180108-04",
  "spfBackupHandle" : "c-2717054291-20180108-04",
  "pitrTimeStamp" : "January 08, 2018 12:43:14 PM UTC",
  "pitrSCN" : "1175058",
  "resetLogsTimeStamp" : "January 08, 2018 09:55:34 AM UTC",
  "resetLogsSCN" : "1112268",
  "oraHomeVersion": "12.2.0.1.170814 (26723265, 26609817)",
  "sqlPatches" : "25811364,26609817",
  "backupLoqLoc" : "https://swiftobjectstorage.example.com/v1/dbaasimage/
backupbucket/scaoda702c1n1/rmanlog/ExampleDBu/2717054291/2018-01-08/
rman_backup_2018-01-08_12-42-41.0545.log",
 "tdeWalletLoc" : null,
  "dbConfigLoc" : "https://swiftobjectstorage.example.com/v1/dbaasimage/
backupbucket/scaoda702cln1/dbconfig/ExampleDBu/2717054291/2018-01-08/
DBCONFIG_TAG20180108T124407_2018-01-08_12-44-07.0533.tar.gz",
  "name" : "Backup_Report_ExampleDB",
  "createTime" : "January 08, 2018 12:42:08 PM UTC",
```



```
"state" : {
    "status" : "CONFIGURED"
  },
  "updatedTime" : "January 08, 2018 12:44:12 PM UTC",
  "backupReportLogDetail" : "https://swiftobjectstorage.example.com/v1/
dbaasimage/backupbucket/scaoda702c1n1/rmandetaillogreport/ExampleDBu/
2717054291/2018-01-08/
rman_list_backup_detail_2018-01-08_12-44-04.0362.log",
  "dbInfo" : {
    "dbClass" : "OLTP",
    "dbType" : "RAC",
    "dbShape" : "odb1",
    "dbEdition" : "EE",
    "dbStorage" : "ASM"
  },
  "dbDataSize" : "1542M",
  "dbRedoSize" : "16403M"
```

odacli describe-schedule

Use the command odacli describe-schedule to display details for a specific schedule.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
# odacli describe-schedule [-h] [-j] [-i]
```

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
scheduleid, -id	Defines the schedule with an identifier (ID).

Example 11-53 Display Schedule Details

odacli describe-schedule -i scheduleid



odacli irestore-database

Use the command odacli irestore-database to restore a database from one system to other system from ObjectStore based on a LongTerm BackupReport.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli irestore-database -iDatabase Resource ID [-bp] [-r] [-cl] [-co] [-s] [-dr] [-y] [-h] [-j] [-c] [-oid] [-tp] [-tf] [-bl] [-rDBID]

Parameter	Description
backupPassword(s),-bp	(Optional) Defines the RMAN password for recovery. You can provide more than one password, but the passwords must be separated by a comma(,).
backupReport, -r	JSON input for a backup report.
dbClass,-cl {EE: OLTP/DSS/IMDB, SE: OLTP}	(Optional) Defines the Database class.
dbConsoleEnable, -co	(Optional) Enables the Database Console.
dbShape, -s {odb1,odb2, and so on}	(Optional) Defines the database shape.
dbStorage, -dr {ACFS ASM}	(Optional) Defines the database storage. Database Storage {ACFS ASM} (non case-sensitive). The default is ASM.
dbType, -y	(Optional) Defines the type of database. The default is single instance (SI).
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
noOfRmanChannels,-c	(Optional) Defines the number of RMAN channels (parallelism) Default: SE Edition: 1, Other Enterprise Editions: 5
objectStoreId, -oid	Defines the Swift Object Store credential ID
sysPassword, -m	Defines the password for the SYS user.
tdePassword, -tp	(Optional) Defines the password for the TDE Wallet.
tdefilesLocation, -tf	(Optional) Identifies the TDE Wallet location in Objectstore.
backuplocation, -bl	(Optional) Specifies the NFS or local directory path where backups are available.



Parameter	Description
dbRedundancy, -rd	Specifies the database redundancy value, that is, {HIGH MIRROR}. To specify the dbRedundancy option, at least one disk group of FLEX redundancy must exist, and dbStorage must be ASM, and the dbVersion or dbHomeVersion must later than 12.1.
	If the disk group redundancy is FLEX, then the default dbRedundancy value is MIRROR.
	The precedence logic for setting the dbRedundancy is:
	 dbRedundancy that is specified in the irestore- database command.
	2. dbRedundancy in the backup report
	If the disk group redundancy is FLEX, then the default dbRedundancy value is MIRROR.
-rDBID	Enables target database to run in the same system as source database.

- The command odacli irestore-database restores a database to a system using the Backup Report of a long term backup that is in the Oracle Object Store. You can restore a database from one appliance to another appliance, or to the same appliance after the source database is deleted.
- An Oracle wallet (ObjectStoreSwift credentials) must be created to access the backups in Oracle Object Store. This command performs the environment checks, validation checks, and tasks needed to restore a database to an Oracle Database Appliance system.

Example 11-54 Restoring a Database to the Same System

Run the command odacli irestore-database with the backup report. Enter the SYS user password when prompted.

odacli irestore-database -r backupreport.json -oid Object Store ID -m

Example 11-55 Restoring a Database to a Different System

To restore to a different system, copy the backup report to the other machine's \bin folder (or provide the complete path to the backup report), then run the command odacli irestore-database with the backup report. Enter the SYS user password when prompted.

odacli irestore-database -r backupreport.json -oid Object Store ID -m



odacli list-backupreports

Use the command odacli list-backupreports to display a list of all backup reports.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-backupreports [-h] [-j]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.

Usage Notes

Displays a list of all database backup reports generated from the command odacli create-backup.

Example 11-56 Display a List of all Backup Reports

odacli list-backupreports

odacli list-backupconfigs

Use the command odacli list-backupconfig to list all backup configurations.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-backupconfig [-h] [-j]

Parameter	Description
help,-h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.



Example 11-57 Displaying a List of Backup Configuration

Display a list of backup configurations.

odacli list-backupconfig -d Disk -n production -w 14

odacli list-objectstoreswifts

Use the command odacli list-objectstoreswifts to display a list of credentials for the ObjectStore account.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-objectstoreswifts [-h] [-j]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.

Example 11-58 Displaying a List of ObjectStore Swift Credentials

odacli list-objectstoreswifts

odacli list-schedules

Use the command odacli list-schedules to display a list of the scheduled backups.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-schedules [-h] [-j]

Parameter	Description
help, -h	(Optional) Displays help for using the command.



Parameter	Description
json, -j	(Optional) Displays JSON output. The default is false.

The command lists all of the schedules in the system, including database backup schedules and some internal maintenance schedules.

Example 11-59 Display a List of Scheduled Database Backups

Display a list of all scheduled database backups and details.

odacli list-schedules

odacli recover-database

Use the $odacli\ recover-database\ command\ to\ recover\ or\ restore\ a\ database\ from\ backup.$

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli recover-database -iDatabase Resource ID [-br] [-i] [-h] [-j] [-r] [-t] [-p] [-s] [-in]

Parameter	Description
backupReport, -br{Regular-L0 Regular-L1 Longterm}	(Optional) JSON input for a backup report.
dbName, -in	Defines the Database Name.
dbid, -i	Defines the Database Resource ID.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
recoveryTimeStamp, -r	(Optional) Defines the date and time of the backup. The Recovery Timestamp (in format mm/dd/yyyy hh:mm:ss) is required when the recovery is a point in time recovery (PITR).
recoverytype, -t {Latest PITR SCN}	(Optional) Defines the recovery type. Do not provide the recovery type if you define the Backup Report.
rmanrecoverypassword(s),-p	(Optional) Defines the password for recovery. You can provide more than one password, but the passwords must be within single quote separated by comma(,).
scn, -s	(Optional) Defines the SCN recovery type. Required when the RecoveryType is SCN.



Recovers a database to the latest, a point in time recovery (PITR), or System Change Number (SCN) as input. You can also recover a database from a Backup Report provided as JSON input file.

This command performs various environment and validation checks in order to attempt to ensure that recovery of database is successful. If backups are in ObjectStore, the RMAN recovery passwords are needed to recover the database. This includes RMAN restore and recovery.

This command always performs a full RMAN database restore and recovery. This command is most useful when there is a complete database loss or when the majority of the database files are lost. If you do not require a full RMAN restore, you can perform a manual recovery. For example, a single data file loss or control file loss.

Example 11-60 Recovering a Database to a Point-in-Time

odacli recover-database -i b5fc646e-01a6-4c8b-8286-7633346c4 -t PITR -r 11/08/2017 12:57:33 -p

Example 11-61 Recovering a Database to the Latest

odacli recover-database -i b5fc646e-01a6-4c8b-8286-7633346c4 -t Latest -p

Example 11-62 Recovering a Database to an SCN

odacli recover-database -i b5fc646e-01a6-4c8b-8286-7633346c4 -t SCN -s 392375947

odacli update-backupconfig

Use the command odacli update-backupconfig to update a backup configuration.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli update-backupconfig -n backup configuration name
-d backup destination{Disk|ObjectStore|None} [-c] [-cr] [-h] [-j] [-no-cr]
[-o][-w]

Parameter	Description
backupdestination, -d{Disk ObjectStore None}	Defines the backup destination. The options are not case sensitive
container, -c	(Optional) Defines the object store container.



Parameter	Description
crosscheck, -cr	(Optional) Enable Crosscheck.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
name, -n	Defines the backup configuration name.
no-crosscheck, -no-cr	(Optional) Disable crosscheck.
objectstoreswiftId,-o	(Optional) Defines the swift object store credential ID.
recoverywindow, -w Disk: {1-14} ObjectStore: {1-30}	(Optional) Defines the Recovery Window in days. {1-14} days for Disk and {1-30} days for Object store.

- The recovery window that is defined in the backup configuration determines when backups are considered obsolete. The following are guidelines:
 - Disk: 1-14 days
 - ObjectStore in Casper: 1-30 days

Example 11-63 Revise a Backup Configuration for Disk

Create a backup configuration named production that backs up to disk with a 14 day recovery window.

odacli update-backupconfig -d Disk -n production -w 14

odacli update-database

Use the command odacli update-database to associate a backup configuration to a database.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli update-database [-bi] [-i] [-h] [-j] [-bp] [-in] [-bin] [-id] [-lb] [-no-bkp]

Parameter	Description
backupconfigid, -bi	(Optional) Defines the Backup Config ID.
backupconfigname, -bin	(Optional) Defines the Backup Config Name.



Parameter	Description
dbid,-i	Defines the Database Resource ID.
dbName, -in	Defines the Database Name.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
bkuppassword, -bp	(Optional) Defines the RMAN backup encryption password.
databaseid,-id	(Optional) Defines the database identifier stored in database file headers.
levelzerobackupday, -lb	(Optional) Specifies the Level zero Backup Day. For example, Monday Tuesday Wednesday Sunday
no-backup, -no-bkp	(Optional) Disables database backups. This command also removes the database backup and archivelog backup schedulers.
	To enable database backups again, you must update the database with a backupconfig object.

For backup to the Oracle Object Store, you can set an RMAN backup password. The password is encrypted and stored in an Oracle wallet. The password is used when using the command odacli create-backup to create a database backup.

Example 11-64 Associating a Backup Configuration with a Database

odacli update-database -i database resource ID -bi backup
configuration ID

Example 11-65 Updating an Existing Database Using the Resource ID

Update an existing database to attach the backup configuration to the database using the Database Resource ID.

odacli update-database -i d3c4d8f6-5eb7-4f9e-ab27-7bdd5013ac90 -bi
9d942e0a-ba00-4cbc-9bfb-0de83ed279e5 -bp

Example 11-66 Updating an Existing Database Using the Resource Name

Update an existing database to attach the backup configuration to the database using the Database Resource Name.

In the following example, the Database Resource Name is mydb:

odacli update-database -in mydb -bi 9d942e0a-ba00-4cbc-9bfb-0de83ed279e5
-bp



In the following example, the Database Resource Name is mydb and the backup configuration name is mybcfg:

odacli update-database -in mydb -bin mybcfg -bp

odacli update-objectstoreswift

Use the command odacli update-objectstoreswift to change the credentials for the ObjectStore account.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli update-objectstoreswift [-h] [-j] -i Object Store Swift id [-p] swift password [-u] Object Store user name

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
objectstoreswiftid, -i	Defines the Object Store Swift identifier (ID).
swiftpassword, -p	(Optional) Defines the Object Store Swift password.
username, -u	(Optional) Defines the Object Store Swift user name.

Usage Notes

Use this command to update the password when it is changed for an ObjectStore account. The command updates the Oracle ObjectStore credential details in the system and stores the password in an encrypted Oracle wallet.

The credentials are validated during the command odacli update-backupconfig with objectstore as the destination. The credentials are not validated against endpoint URL and tenancy.

Example 11-67 Changing the Oracle Casper ObjectStore Password

odacli update-objectstoreswift -i Object Store Swift id -p swift password



Example 11-68 Changing the Oracle ObjectStore User Name

odacli update-objectstoreswift -i Object Store Swift id -u Object Store user name

odacli update-schedule

Use the command odacli update-schedule to update the schedule for a database, or to disable the database backup schedule.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli update-schedule [-x] [-t] [-d] [-e] [-h] [-j] [-id]

Parameters

Parameter	Description
cronExpression, -x	(Optional) Defines the date and time for the update.
description, -t	(Optional) Provides a description for the update schedule.
disable,-d	(Optional) Disables the schedule.
enable,-e	(Optional) Enables a disabled schedule.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
scheduleid, -id	Defines the schedule with an identifier (ID).

Usage Notes

Backups incur overhead on the system. When possible, do not schedule backups to run when users are trying to access data.

Use a utility, such as www.croncronmaker.com, to generate a valid cron expression.

Example 11-69 Change What Time the Backup Occurs

Edit the cron expression to change the time of scheduled backups for a given schedule ID.

odacli update-schedule -i scheduleid -x "0 0 13 1/1 * ? *" -e

Example 11-70 Disable Scheduled Database Backups

odacli update-schedule -i scheduleid -d



odacli CPU Core Commands

Use the CPU Core commands to enable CPU cores and display current and historical CPU core configurations.

odacli list-cpucores

Use the odacli list-cpucores command lists the history of core configuration changes in the system.

· odacli describe-cpucore

Use the odacli describe-cpucore command to display the current core configuration and the modification date and time.

update-cpucore

Use the odacli update-cpucore command to enable the number of CPU cores in the system.

odacli list-cpucores

Use the odacli list-cpucores command lists the history of core configuration changes in the system.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-cpucores [-h]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the
	command.

Example 11-71 Displaying a List of Cores

odacli list-cpucores

Node	Cores	Modified	Job Status
0	10	July 22, 2016 12:06:08 PM SGT	Configured
0	8	July 25, 2016 9:39:59 AM SGT	Configured



odacli describe-cpucore

Use the odacli describe-cpucore command to display the current core configuration and the modification date and time.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

odacli describe-cpucore [-h]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Example 11-72 Displaying the Current Core Configuration

odacli describe-cpucore

Node	Cores	Modified					Job Status
0	8	July 25,	2016	9:39:59	AM	SGT	Configured

update-cpucore

Use the ${\tt odacli}$ update-cpucore command to enable the number of CPU cores in the system.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

odacli update-cpucore -c cores [-h]

Parameter	Description
cores, -c	Defines the number of cores to be enabled in the system.
help, -h	(Optional) Displays help for using the command.



- The number of cores you enable must be a multiple of 2.
- After the initial configuration, you cannot reduce the number of cores. You can only increase the number of cores.

Example 11-73 Enabling CPU Cores

The following command enables 8 CPU cores.

```
# odacli update-cpucore -c 8

{
"jobId" : "2807f6ae-3ba5-48a5-8941-b8b365d89d24",
"status" : "Created",
"message" : null,
"reports" : [],
"createTimestamp" : 1469410799194,
"description" : "CPU cores service update",
"updatedTime" : 1469410799194
}
```

odacli Database Commands

Use the odacli database commands to perform database lifecycle operations.

odacli list-databases

Use the odacli list-databases command to list all databases on the appliance.

odacli describe-database

Use the odacli describe-database command to display database details.

odacli create-database

Use the odacli create-database command to create a new database.

odacli clone-database

Use the ${\tt odacli}$ ${\tt clone-database}$ command to clone a new database from a source database.

· odacli modify-database

Use the odacli modify-database command to move a database from one database home to another database home of the same base version, or resize the database, or move and resize databases in the same operation.

odacli register-database

Use the odacli register-database command to register a migrated database with the appliance.

odacli upgrade-database

Use the <code>odacli upgrade-database</code> command to upgrade a database from a supported release.

odacli delete-database

Use the odacli delete-database command to delete a database.



odacli list-databases

Use the odacli list-databases command to list all databases on the appliance.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To display a list of all databases:

odacli list-databases [-h]

Parameters

Parameter	Description
help,-h	(Optional) Displays help for using the command.

Example 11-74 Displaying a List of Databases

Display a list of databases:

```
# odacli list-databases
```

ID			DB Name	DB Version	CDB
ad6c7326-e460	-411e-94df	-230dedbef743	rdb121a	19.4.0.0.0	true
fb4d02f3-2413	-47ca-8584	-a768e23ec2e7	ee12db	19.4.0.0.0	false
(Continued)					
Class Shape Storage Status					
OLTP odb1	ACFS	Configured			
IMDB odb1	ASM	Configured			

odacli describe-database

Use the odacli describe-database command to display database details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To display database details:

odacli describe-database -i dbid [-h] [-j]



Parameters

Parameter	Description
dbid, -i	Identifies the database home identifier (ID) to display.
	Use the odacli list-databases command to obtain the dbid.
json, -j	
	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.

Example 11-75 Displaying Database Details

Display information for database named ac48e0d2-a7b0-4ffd-a27e-f8e42b028c5f:

odacli describe-database -i ac48e0d2-a7b0-4ffd-a27e-f8e42b028c5f

Database details

ID: ac48e0d2-a7b0-4ffd-a27e-f8e42b028c5f

Description: rdb1
DB Name: rdb1

DB Version: 19.4.0.0.0

DBID: 1339792271

CDB: true

PDB Name: r1pdb1

PDB Admin User Name: pdbadmin

Class: OLTP Shape: odb2 Storage: ASM

CharacterSet: DbCharacterSet(characterSet=AL32UTF8,

nlsCharacterset=AL16UTF16, dbTerritory=AMERICA, dbLanguage=AMERICAN)

Home ID: fe87f30c-b810-45d1-8b96-13996ad7a255

Console Enabled: true

Created: May 18, 2019, 2016 6:21:14 PM

odacli create-database

Use the odacli create-database command to create a new database.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
odacli create-database -n database_name -m -cs characterset -cl {OLTP|DSS|IMDB}
-l dblanguage -s dbshape -r {ACFS|ASM} -dt dbterritory
-y dbtype -ns nationalscharacterset -d pdbadmin -p pdbname -v version
[-u databaseUniqueName] [-dh Database Home ID] [-c|-no-c] [-co|-no-co]
[-bi backupconfigid] [-io] [-dn] [-j] [-h] [-rd]
```



Parameter	Description
adminpassword, -m	Defines the password for SYS, SYSTEM, and PDB Admin. Use this option to specify the password interactively. When using this option, do not enter the password in the command-line.
backupconfigid, -bi	(Optional) Defines the backup configuration identifier for future use.
cdb, -c	(Optional) Creates the database as a container database. Use the -c flag to create a container database and use the -no-c flag to create a non-CDB database. The default is -no-c.
characterset, -cs	Defines the character set. The default is AL32UTF8.
databaseUniqueName, -u	(Optional) Defines a unique name for the database.
dbdomainname, -dn	Defines the database domain name.
dbclass, -cl {OLTP DSS	Defines the database class. The default is OLTP. The options are as follows:
,	Enterprise Edition: OLTP, DSS, or IMDB.Standard Edition: OLTP
dbconsole, -co	(Optional) Enables the Database Console. Use the -no-co flag to disable the Database Console. If not selected, the default is no database console.
dbhomeid, -dh	(Optional) Identifies the existing Database Home ID.
dblanguage, -l	Defines the database language. The default language is AMERICAN.
dbname, -n	Defines the name given to the new database (dbname.)
dbshape, -s	Identifies the database shape (template) and determines the total memory allocated to the database. For example, odb1 and odb2. The default is odb1. You cannot specify the database shape when you create a instance-only database.
dbstorage, -r{ACFS ASM}	Defines the Database Storage, either Oracle ACFS or Oracle ASM. The default value is Oracle ASM.
dbterritory, -dt	Defines the database territory. The default territory is AMERICA.
dbtype, -y [SI]	Defines the database type. The default database type is SI.
help, -h	(Optional) Displays help for using the command.
instanceonly, -io	(Optional) Creates a database instance, password file and also the underlying Oracle ACFS mount point. You can use the instance as an auxiliary instance for RMAN duplicate.
json, -j	(Optional) Displays JSON output.
nationalscharacterset, -	Defines the NLS National Character Set. The default is AL16UTF16.



Parameter	Description
no-cdb, -no-c	(Optional) Creates a database that is <i>not</i> a container database. Use this flag when you want to create a non-CDB database. Use the -c flag to create a container database.
no-dbconsole, -no-co	(Optional) Disables Database Console. Use the -co flag to enable Database Console.
pdbadmin, -d	Defines the Pluggable Database (PDB) Admin User.
pdbname, -p	Defines the Pluggable Database (PDB) name. The default value is pdb1.
version, -v	Defines the database bundle patch number. To install the latest bundle patch for a release, specify the release version.
	To specify a specific supported bundle, use the 5 digit format. For example, 12.1.0.2.170814 or 11.2.0.4.170814.
dbRedundancy, -rd	Specifies the database redundancy value, that is, {HIGH MIRROR}. To specify the dbRedundancy option, at least one disk group of FLEX redundancy must exist, and dbStorage must be ASM, and the dbVersion or dbHomeVersion must later than 12.1.

- If the disk group redundancy is FLEX, then the default dbRedundancy value is MIRROR.
- Flash cache is disabled by default.
- You cannot mix Oracle Database Standard Edition and Enterprise Edition databases on the same appliance.
- Use the --cdb or --no-cdb flag to indicate whether or not the database is a container database. When neither flag is specified, the default database created is a non-CDB database.
- When --dbhomeid is not provided, the create-database command creates a new Oracle Database Home.
- When --dbhomeid is provided, the create-database command creates the database using the existing Oracle Home. Use the odacli list-dbhomes command to obtain the dbhomeid.
- When you use the command to create an instance-only database, then you cannot specify the database shape (template).
- When you specify both the --version and the--dbhomeid, the version is ignored and the database is created against the existing database home.
- Oracle Database 12.1 or later is supported on both Oracle Automatic Storage Management (Oracle ASM) and Oracle ASM Cluster file system (ACFS). The default is Oracle ASM.
- Oracle Database 11.2 is only supported on Oracle ACFS.
- When databases are created in Oracle ACFS, each database is configured with its own Oracle ACFS file system for the datafiles and uses the following naming



convention: /u02/app/db user/oradata/db unique name. The default size of this mount point is 100 GB.



Oracle recommends not sharing the mount point across different databases.

- Online logs are stored in the /u03/app/db user/redo/ directory.
- Oracle Fast Recovery Area (FRA) is located in the /u03/app/db user/ fast_recovery_area directory.
- Use the following option to specify the adminpassword:
 - Interactive mode: Use the -m option and enter the password when prompted.
- For the version, you can specify the database version, such as 18.7.0.0, 18.5.0.0, 12.2.0.1, 12.1.0.2 or 11.2.0.4, or you can use a 5 digit format to specify a specific patch bundle version. If you use the database version without specifying the bundle patch number, the latest bundle patch is used.



Oracle Database 11.2.0.4.160419 is not supported. Attempts to create an Oracle Database 11.2 against an 11.2.0.4.160419 database home will fail.

Example 11-76 Creating a Database in Interactive Mode

This example creates a 19.4.0.0.0 OLTP container database named hrdb with shape odb2 and enables you to provide the password interactively.



To provide a password interactively, use the $-\mathfrak{m}$ option, but do not provide the password until prompted.

```
# odacli create-database -n hrdb -c -m -cl OLTP -s odb2 -p pdbl
Password for SYS,SYSTEM and PDB Admin:
{
    "jobId" : "f12485f2-dcbe-4ddf-aeel-de24d37037b6",
    "status" : "Created",
    "message" : null,
    "reports" : [],
    "createTimestamp" : "May 18, 2019 03:54:03 AM EDT",
    "description" : "Database service creation with db name: hrdb",
    "updatedTime" : "May 18, 2019 03:54:03 AM EDT"
}
```



Example 11-77 Creating a Database Against a Different Version

Either of the following statements creates a database against a home with Oracle Database Bundle (170718) applied:

```
# odacli create-database -m -n hrmsdb1 -v 19.4.0.0.0
# odacli create-database -m -n hrmsdb2 -v 19.4.0.0.190716
```

The following statement creates a new database against a home with a specific Oracle Database Bundle:

odacli create-database -m -n hrmsdb3 -v 19.4.0.0.190716

odacli clone-database

Use the odacli clone-database command to clone a new database from a source database.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

odacli clone-database [-u] [-n] [-s] [-y|SI|RAC|RACONE] [-j] [-f] [-m] [-p] [-h]

Parameter	Description
databaseUniqueName, -u	(Optional) Defines a unique name for the database. If thedatabaseUniqueName option is not provided, then the name of the database is set to thedbname value.
dbname, -n	Defines the name given to the new database (dbname.)
dbshape, -s	Identifies the database shape (template) and determines the total memory allocated to the database. For example, odb1 and odb2. The default is odb1.
dbtype, -y [SI]	Defines the database type. The default database type is the source database type, if the option is not specified.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output.
sourcedbname, -f	Specifies the name of the source database
syspassword, -m	Specifies the password for the SYS user.
tdepassword, -p	Specifies the password for the source TDE Wallet.



- The source database must be up and running.
- The source database must use Oracle ACFS storage.
- The source database must not be a multitenant container database (CDB)

Example 11-78 Cloning a Database

The following example creates a clone database snap1 from source database acfsdb1.

/opt/oracle/dcs/bin/odacli clone-database -n snapl -u snaplu -f acfsdbl - hm password

Related Topics

Cloning an Oracle ACFS Database Using Command Line Interface
 Create a database from an existing Oracle ACFS database using CLI commands.

odacli modify-database

Use the odacli modify-database command to move a database from one database home to another database home of the same base version, or resize the database, or move and resize databases in the same operation.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli modify-database [-i] [-dh] [-cl] [-s] [-h] [-j]

Parameter	Description
databaseid, -i	Defines the Database ID.
destdbhomeid, -dh	Defines the destination database home ID.
dbClass, -cl	Defines the database class. The default is OLTP. The options are as follows:
dbShape, -s	Identifies the database shape (template) and determines the total memory allocated to the database. For example, odb1 and odb2. The default is odb1. You cannot specify the database shape for a instance-only database.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output.



Example 11-79 Moving a Database from one Oracle home to another

./odacli modify-database -i database_ID -dh destination_database_home_ID

Example 11-80 Modifying the Database Shape (Template) and Database Class

```
# ./odacli modify-database -s database_shape -cl database_class
odacli modify-database -i 1941d594-c777-4eca-9fce-18b778d5c153 -s odb2 -cl
DSS
{
    "jobId" : "833d43a7-bcc6-48a7-9f98-b42ffdab3fel",
    "status" : "Created",
    "message" : null,
    "reports" : [],
    "createTimestamp" : "August 26, 2019 06:48:58 AM UTC",
    "resourceList" : [],
    "description" : "modify-database service with db ids: 1941d594-
c777-4eca-9fce-18b778d5c153",
    "updatedTime" : "August 26, 2019 06:48:58 AM UTC"
}
```

Example 11-81 Moving and Resizing a Database

```
[root@oak1 ~]# odacli modify-database -i f903c7e2-4376-4160-
b989-9222936f4f58 -dh 6a9d4497-c9dd-43f8-baf4-4e3df1ceb27e -s odb2 -cl DSS
{
    "jobId" : "5eff7912-9ff1-420c-9429-9fb21cab800c",
    "status" : "Created",
    "message" : null,
    "reports" : [ ],
    "createTimestamp" : "September 13, 2019 06:45:10 AM UTC",
    "resourceList" : [ ],
    "description" : "modify-database service with db ids: f903c7e2-4376-4160-b989-9222936f4f58",
    "updatedTime" : "September 13, 2019 06:45:10 AM UTC"
}
```

odacli register-database

Use the odacli register-database command to register a migrated database with the appliance.

File Path

\$ORACLE HOME/opt/oracle/dcs/bin/odacli

Syntax

```
odacli register-database -c {OLTP|DSS|IMDB} -s dbshape -t dbtypeSI -o hostname -sn servicename -p syspassword[-bi backupconfigid] [-co|-no-co] [-h][-j]
```



Parameters

Parameter	Description
backupconfigid, -bi	(Optional) Defines the backup configuration identifier for future use.
dbclass, -c {OLTP DSS IMDB}	Defines the database class. The database class setting determines the database SGA memory and instance PGA memory configuration. The options are as follows: • Enterprise Edition: OLTP, DSS, or IMDB. • Standard Edition: OLTP
dbconsole, -co	(Optional) Enables the Database Console. Use the -no-coflag to disable the Database Console. If not selected, the default is no Database Console.
dbshape, -s	Identifies the database shape (template) and determines the total memory allocated to the database. For example, odb1 and odb2. The default is odb1.
dbtype, -t [SI]	Defines the type of database. Only single-instance databases can be registered.
help, -h	(Optional) Displays help for using the command.
hostname, -o	Defines the host name. Default: local host name
json, -j	(Optional) Displays JSON output.
no-dbconsole, -no-co	(Optional) Disables Database Console. Use the -coflag to enable Database Console.
servicename, -sn	Defines the Database Service Name. Using this service name, the EZCONNECT String is derived for connecting to the database. For example, hostname:port/servicename. The Port number is the port configured for the
	listener, as part of the deployment.
syspassword, -p	Defines the proxy user password for SYS.
tdeWalletPassword, -tp	Defines the password for TDE Wallet.

Usage Notes



It is a good practice to use Easy Connect (EZCONNECT) to test the database connectivity before registering the database. Log in as the ${\tt sys}$ user and enter the following command:

sqlplus sys/password@//hostname:1521/service name



- The odacli register-database command is supported only on the primary database.
- The migrated database is registered with the listener configured during the provisioning of the appliance. The migrated database must be in read-write or read-only mode for the registration to succeed.
- The register-database command validates the datafile and log file locations and moves the controlfile and spfile to the correct locations.
- The following are the minimum compatible parameters set, based on the database version:

Oracle Database 18c : 18.3.0.0Oracle Database 12c : 12.1.0.2

Oracle Database 11 g: 11.2.0.4

• Some init.ora parameters are set, or reset, as part of the registration. Review the parameter changes before and after registration.

The following are examples of changes implemented as part of registration:

- The memory target is reset.
- The sga_target/pga_aggregate_target/log_buffer/inmemory_size is configured based on the database class and database shape settings used during registration.
- The registration process sets, or resets, the recommended appliance-specific parameters.
- The database being registered must use Oracle Managed Files and the file location must match the DATA Location, REDO Location and RECO Location of the odacli describe-dbstorage command.
- As part of the registration process, the database is registered with Oracle Clusterware. Only the primary database is registered with Oracle Clusterware.

Example 11-82 Registering a Migrated Database

The following is the syntax to register a single instance OLTP database that is using shape odb1.

ID: 317b430f-ad5f-42ae-bb07-13f053d266e2

Description: Database service registration with db service

name: crmdb.example.com

Status: Success

Created: May 18, 2019 5:55:49 AM EDT

Message:

Task Name	Start Time
restore control file	May 18, 2019 5:55:49 AM EDT
move spfile to right location	May 18, 2019 5:56:08 AM EDT
register DB with clusterware	May 18, 2019 5:56:13 AM EDT
reset db parameters	May 18, 2019 5:57:05 AM EDT
Running DataPatch	May 18, 2019 5:57:36 AM EDT
(Continued) End Time	Status
May 18, 2019 5:56:08 AM EDT	Success
May 18, 2019 5:56:13 AM EDT	Success
May 18, 2019 5:57:05 AM EDT	Success
May 18, 2019 5:57:36 AM EDT	Success
May 18, 2019 5:57:49 AM EDT	Success

odacli upgrade-database

Use the ${\tt odacli}$ upgrade-database command to upgrade a database from a supported release.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To upgrade an Oracle Database:

odacli upgrade-database -i Comma separated list of database ids -from source dbhome id -to destination dbhome id [-j] [-h]

Parameter	Description
databaseids, -i	(Optional) Defines the Database IDs to upgrade. You can use a comma separated list of database IDs.
destDbHomeId, -to	The DB HOME ID of the destination database home.
sourceDbHomeId, -from	The DB HOME ID of the source database home.
json, -j	(Optional) Displays JSON output. The default is false.
help, -h	(Optional) Displays help for using the command.



You have the following options for defining the databases to upgrade:

- When you define a single database ID, only the database of the source database home is upgraded.
- When you define more than one database ID, only those databases of the source database home are upgraded.
- When you do not define a database ID, all of the databases under the source database home are upgraded.

You can upgrade databases of the following releases:

- Oracle Database 12.2 to 18c
- Oracle Database 12.1 to 18c
- Oracle Database 11c to 18c
- Oracle Database 12.1 to 12.2
- Oracle Database 11c to 12.2
- Oracle Database 11c to 12.1

Example 11-83 Upgrading an Oracle Database

In this example, a single database is upgraded. Use the command odacli list-databases to display the database ID, then use the command odacli upgrade-databases to upgrade the 11.2.0.4 database. After the upgrade is complete, you can run the command odacli list-databases again to verify the upgrade.

```
# odacli list-databases
                                 DB Name DB Version CDB
_____
                                 ______
ad6c7326-e460-411e-94df-230dedbef743 rdb121a 11.2.0.4 true
fb4d02f3-2413-47ca-8584-a768e23ec2e7 ee12db 12.1.0.2 false
(Continued)
Class Shape Storage Status
OLTP odb1 ACFS Configured
IMDB odb1 ASM Configured
# odacli upgrade-database -i ad6c7326-e460-411e-94df-230dedbef743 -from fa4321f5-0543-477d-
bb54-a429dcc8ee8d -to d752df28-ecdd-4af4-9454-38085ea17f8b
  "jobId": "1bbe8boe-acb0-4296--9c8b-473b69da0c18",
  "status" : "Created",
  "message" : null,
  "reports" : [ ],
  "createTimestamp" : "October 24, 2017 03:54:03 AM EDT",
  "description" : "Database service upgrade with db ids: [ad6c7326-
e460-411e-94df-230dedbef743]",
  "updatedTime" : "October 24, 2017 03:54:03 AM EDT"
# odacli list-databases
ID
                                 DB Name DB Version CDB
                                 -----
ad6c7326-e460-411e-94df-230dedbef743 rdb121a 12.1.0.2 true
```



fb4d02f	3-2413-470	ca-8584-a7	68e23ec2e7	ee12db	12.1.0.2	false
(Continu	ued) Shape	Storage	Status			
OLTP IMDB	odb1 odb1	ACFS ASM	Configured			

odacli delete-database

Use the odacli delete-database command to delete a database.

File Path

/opt/oracle/dcs/bin/odacli

Syntax

To delete a database:

odacli delete-database -i dbid [-h] [-j] [-fd]

Parameters

Parameter	Description
dbid, -i	Identifies the database home identifier (ID) to display.
	Use the odacli list-databases command to obtain the dbid.
force, -fd	(Optional) Forces the delete operation.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output.

Usage



The delete-database command deletes the database, the file system, and the underlying advm volumes assigned to the database. For example, deleting a database named hrdb also deletes the file system /u02/app/oracle/oradata/hrdb. Do not keep any other files on this database file location.

Example 11-84 Deleting a Database Named hrmsdb

In this example we want to delete a database named hrmsdb. Before we can delete the database, we need to know the database home identifier (*dbid*). This example shows



how to run the odacli list-databases command to list the databases and their associated *dbid*, then how to delete database hrmsdb.

odacli list-databases

ID			DB Name	DB Version	CDB	
Class						
a3f4a6c0-a	a0c9-4c79	-bad7-898afcf9de46	hrmsdb	12.1.0.2	true	OLTP
7e28bf52-	1a09-49fd	-9391-841838d2c42f	crmdb	12.1.0.2	false	OLTP
(continue	d)					
Shape	Storage	Status				

Shape Storage Status

odbl ACFS Configured
odbl ACFS Configured

odacli delete-database -i a3f4a6c0-a0c9-4c79-bad7-898afcf9de46

odacli DBHome Commands

Use the odacli DBHome commands to manage database Home operations.

odacli list-dbhomes

Use the odacli list-dbhomes command to display a list of Oracle Home directories.

odacli describe-dbhome

Use the odacli describe-dbhome command to display Oracle Database Home details.

odacli create-dbhome

Use the ${\tt odacli}$ create-dbhome command to create an Oracle Database Home.

odacli delete-dbhome

Use the $odacli\ delete-dbhome$ command to delete database home that is not associated with a database.

odacli list-dbhomes

Use the odacli list-dbhomes command to display a list of Oracle Home directories.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To display a list of Oracle Home directories:

```
odacli list-dbhomes [-h] [-j]
```

Parameters

Parameter	Description
help,-h	(Optional) Displays help for using the command.
json,-j	(Optional) Displays JSON output.

Example 11-85 Displaying a List of Oracle Home Directories

Run the following command to display a list of Oracle Home directories:

odacli list-dbhomes

ID	Name	DB Version
b727bf80-c99e-4846-ac1f-28a81a725df6	OraDB12102_home1	12.1.0.2
(continued) Home Location		
/u01/app/orauser/product/12.1.0.2/dbl	nome_1	

odacli describe-dbhome

Use the odacli describe-dbhome command to display Oracle Database Home details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To display details about Oracle Database Home:

odacli describe-dbhome -i dbhomeid [-h] [-j] [-v]

Parameter	Description
-i dbhomeid	Identifies the database home ID. Use the odacli list-dbhomes command to get the dbhomeid.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.
-vdbversion	(Optional) Identifies the Database Home Version. Use the odacli list-dbhomes —v command to get the dbversion.



Example 11-86 Displaying Oracle Database Home Details

The following output is an example of using the display Oracle Database Home details command:

odacli describe-dbhome -i b727bf80-c99e-4846-ac1f-28a81a725df6

DB Home details

ID: b727bf80-c99e-4846-ac1f-28a81a725df6
Name: OraDB12102_home1

Version: 12.1.0.2

Home Location: /u01/app/orauser/product/12.1.0.2/dbhome_1

Created: Jun 2, 2016 10:19:23 AM

odacli create-dbhome

Use the odacli create-dbhome command to create an Oracle Database Home.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To create an Oracle Database Home:

odacli create-dbhome -v version [-j] [-h]

Parameters

Parameter	Description
-v version number	Defines the database bundle patch number.
json, -j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.

Usage Notes

For the version number, you can specify the database version, such as 18.7.0.0, 18.5.0.0, 12.2.0.1, 12.1.0.2 or 11.2.0.4, or you can use a 5 digit format to specify a specific patch bundle version. For example, 19.4.0.0.190716. If you use the database version without specifying the bundle patch number, then the latest bundle patch is used.



Oracle Database 11.2.0.4.160419 is not supported. Attempts to create an Oracle Database 11.2 against an 11.2.0.4.160419 database home will fail.



Example 11-87 Creating an Oracle Database Home

The following example creates an Oracle Database Home version 19.4.0.0.190716.

odacli create-dbhome -v 19.4.0.0.190716

odacli delete-dbhome

Use the odacli delete-dbhome command to delete database home that is not associated with a database.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli delete-dbhome -i [-h]

Parameters

Parameter	Description
id, -i	Identifies the database home using a database identifier (ID).
help, -h	(Optional) Displays help for using the command.

Usage Notes

- Use the odacli list-dbhomes command to locate the identifier.
- To delete, or uninstall, a database home (dbhome), there must not be any associated databases in the dbhome.
- Use the odacli delete-database command to delete an existing database.

Example 11-88 Deleting an Empty Database Home

odacli delete-dbhome -i 0ce547ca-3df2-4178-a7e6-eefa613aeab4

odacli Database Storage Commands

Use the Database Storage commands to list, describe, create, and delete Oracle database storage.

- odacli list-dbstorages
 - Use the odacli list-dbstorages command to display a list of all of the database storage configured in the appliance.
- odacli describe-dbstorage

Use the odacli describe-dbstorage command to display storage configuration details.



odacli create-dbstorage

Use the odacli create-dbstorage command to create the file system for database migrations.

odacli delete-dbstorage

Use the odacli delete-dbstorage command to delete database storage that is not associated with a database.

odacli describe-dgstorage

Use the odacli describe-dgstorages command to display the disk group information.

odacli list-dgstorages

Use the odacli list-dgstorages command to display the disk group information.

odacli list-dbstorages

Use the odacli list-dbstorages command to display a list of all of the database storage configured in the appliance.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-dbstorages [-h]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Usage Notes

This command displays a list of all of the filesystems that are configured with the create-database command and the create-dbstorage command.

Example 11-89 Displaying a List of all Database Storage

odacli list-dbstorages

ID Type	DBUnique	Name	Status
9fe39332-cc1a-4b4b-8393-165524a6ef6b	Acfs	rdb121a	Configured
4f2a1b59-ca66-4d80-951c-425ab7b0acae	Asm	ee12db	Configured
0266edac-c729-4539-861f-3f3d543be9e4	Acfs	db12SE	Configured



odacli describe-dbstorage

Use the odacli describe-dbstorage command to display storage configuration details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli describe-dbstorage -i [-j] [-h]

Parameters

Parameter	Description
id, -i	Identifies the database storage.
json, -j	(Optional) Displays JSON output. The default is false.
help, -h	(Optional) Displays help for using the command.

Usage Notes

- Use the odacli list-dbstorages command to get the database storage identifier (ID).
- The DATA Location corresponds to the init.ora parameter db_create_file_dest.
- RECO Location corresponds to the init.ora parameter db_recovery_file_dest
- REDO Location corresponds to the init.ora parameter db_create_online_log_dest_1

Example 11-90 Displaying Database Oracle ACFS Storage Details

The following example displays Oracle ASM Cluster file system (ACFS) storage details:

odacli describe-dbstorage -i 9fe39332-cc1a-4b4b-8393-165524a6ef6b

DBStorage details

ID: 9fe39332-cc1a-4b4b-8393-165524a6ef6b

DB Name: rdb121a DBUnique Name: rdb121a

DB Resource ID: ad6c7326-e460-411e-94df-230dedbef743

Storage Type: Acfs

DATA Location: /u02/app/oracle/oradata/rdb121a RECO Location: /u03/app/oracle/fast_recovery_area/

REDO Location: /u03/app/oracle/redo/
State: ResourceState(status=Configured)



Created: July 22, 2016 12:07:12 PM SGT UpdatedTime: July 22, 2016 12:26:39 PM SGT

Example 11-91 Displaying Database Oracle ASM Storage Details

The following example displays Oracle Automatic Storage Management (Oracle ASM) storage details:

odacli describe-dbstorage -i 4f2a1b59-ca66-4d80-951c-425ab7b0acae

DBStorage details

ID: 4f2a1b59-ca66-4d80-951c-425ab7b0acae

DB Name: ee12db DBUnique Name: ee12db

DB Resource ID: fb4d02f3-2413-47ca-8584-a768e23ec2e7

Storage Type: Asm
DATA Location: DATA
RECO Location: RECO
REDO Location: RECO

State: ResourceState(status=Configured) Created: July 22, 2016 1:13:51 PM SGT UpdatedTime: July 22, 2016 1:13:52 PM SGT

odacli create-dbstorage

Use the odacli create-dbstorage command to create the file system for database migrations.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli create-dbstorage -n dbname -s dataSize -u databaseUniqueName -r [ASM|ACFS] [-h]

Parameter	Description
dbname, -n	Defines the name of the database.
dataSize,-s	(Optional) Defines the size, in gigabytes (GB), of the filesystem for storing database files and temp files. The default is: 100 GB The minimum size is 10 GB. When entering the size, do not include GB. For example, for 50 GB, use 50.



Parameter	Description
databaseUniqueName, -u	(Optional) Defines a unique name for the database. Specify only if the database unique name is different than the database name. The command creates the following mount point: /u02/app/oracle/oradata/db unique name
dbstorage, -r [ASM ACFS]	(Optional) Defines the type of database storage, either ASM or ACFS. When you select ASM, the command only creates the supporting directory structure for storing nondatabase files. The default is: ASM
help,-h	(Optional) Displays help for using the command.

- The odacli create-dbstorage command registers the storage metadata with the Appliance Manager.
- Oracle Database is supported on both Oracle Automatic Storage Management (Oracle ASM) and Oracle ASM Cluster file system (ACFS). The default is Oracle ASM.
- When you create ACFS database storage, the command creates a separate ACFS file system and creates the directory structure for other database files, such as archives and online logs.
- When you create ASM database storage, the command only creates the corresponding directories for non-database files.

Example 11-92 Creating Database Storage

The following statement creates 50 GB ACFS database storage for the APPSDB database.

```
# odacli create-dbstorage -n APPSDB -s 50 -r ACFS
{
    "jobId" : "fc6bf8fd-60c2-44f3-b8b7-efd0e9a2149f",
    "status" : "Created",
    "message" : null,
    "reports" : [],
    "createTimestamp" : "August 09, 2016 06:19:35 AM WSST",
    "description" : "Database storage service creation with db name:
APPSDB",
    "updatedTime" : "August 09, 2016 06:19:35 AM WSST"
}
```



odacli delete-dbstorage

Use the odacli delete-dbstorage command to delete database storage that is not associated with a database.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli delete-dbstorage -i [-h]

Parameters

Parameter	Description
id, -i	Identifies the database storage using a database identifier (ID).
help, -h	(Optional) Displays help for using the command.

Usage Notes

- You can only use the delete-dbstorage when the storage is not associated with any databases.
- Use the delete-database command to delete an existing database.
- Use the list-dbstorages command to locate the identifier.

Example 11-93 Deleting Empty Database Storage

odacli delete-dbstorage -i 9fe39332-cc1a-4b4b-8393-165524a6ef6b

odacli describe-dgstorage

Use the odacli describe-dgstorages command to display the disk group information.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli describe-dgstorage -d diskgroup -h



Parameters

Parameter	Description
diskgroup, -d	Specifies the disk group for which information is displayed.
help,-h	(Optional) Displays help for using the command.

Usage Notes

This command displays the storage information for all the databases backed by a disk group, for each disk group present in the system.

Example 11-94 Displaying Disk Group Storage

```
# odacli list-dgstorages -r redundancy
Diskgroup storage details
Diskgroup: DATA
                  Redundancy: extern|normal|high|flex
                  Physical Free Space: wGB
                  Physical Total Space: xGB
                  Database Unique Name: rdbx
                                   Location: /u02/app/test/test1/rdbx
                                   Used Space: dGB (acfsutil.total -
acfsutil.freespace)
                                   Free Space: dGB (acfsutil.freespace)
                 Database Unique Name: rdby
                                   Location: +DATA/rdby
                                   Used Space: zGB (v$asm_file.bytes)
                                    Free Space: xGB
                                                      (PhyFree/redundancy)
                                    Physical Space:
vGB(v$asm_diskgroup.total_mb)
                                    Physical Used : wGB (v$asm_file.space)
```

Physical Free :

uGB(v\$asm_diskgroup.free_mb)

Physical Reserved : uGB(Lookup Table)

Diskgroup: RECO

Redundancy: normal|high|flex

Physical Free Space: wGB

Physical Total Space: xGB

Database Unique Name: rdbx

Location: /u02/app/test/

fast_recovery_area

Used Space: dGB (acfsutil.total -

acfsutil.freespace)

Free Space: dGB (acfsutil.freespace)

Database Unique Name: rdby

Location: +DATA/rdby

Used Space: zGB (v\$asm_file.bytes)

Free Space: xGB (PhyFree/redundancy)

Physical Space:

vGB(v\$asm_diskgroup.total_mb)

Physical Used : wGB (v\$asm_file.space)

Physical Free:

 $\verb"uGB"(v\$asm_diskgroup.free_mb")$

Physical Reserved : uGB(Lookup Table)

odacli list-dgstorages

Use the odacli list-dgstorages command to display the disk group information.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-dgstorages -r redundancy -h

Parameters

Parameter	Description
redundancy, -r	Specifies the disk group redundancy.
help, -h	(Optional) Displays help for using the command.

Usage Notes

- The command displays the storage-related information for all the disk groups present in the system.
- The redundancy option is valid only for FLEX disk groups. For all disk groups that
 are not FLEX, logical free space is calculated using the redundancy obtained from
 v\$asm diskgroup rather than the CLI option.
- Redundancy option can take the values EXTERN | NORMAL | HIGH. Use any of these options to specify the redundancy for FLEX disk groups.
- In the example below, Physical Total Space is the total space in the disk group. (V\$ASM_DISKGROUP.total_mb) Physical Reserved Space is the reserved space required to handle disk failures. Physical Free Space is the free space in the disk group. (V\$ASM_DISKGROUP.free_mb) Logical Free Space is the logical free space in the diskgroup. (V\$ASM_DISKGROUP.free_mb / redundancy)

This command displays the storage information for all the databases backed by a disk group, for each disk group present in the system.

Example 11-95 Displaying Disk Group Storage

odacli list-dgstorages -r redundancy Diskgroup Redundancy Physical Total S

Diskgroup Redundancy Physical Total Space Physical Reserved Space Physical Free Space Logical Free Space

DATA FLEX xGB yGB zGB uGB REDO HIGH xGB уGВ zGBuGB RECO NORMAL xGB yGB zGB uGB



odacli Job Commands

Use the odacli list-jobs and odacli describe-job commands to display job details.

odacli list-jobs

Use the odacli list-jobs command to display a list of jobs, including the job IDs, status, and the job created date and time stamp.

odacli describe-job

Use the odacli describe-job command to display details about a specific job, including the job ID, status, tasks, and the job created date and time stamp.

odacli list-scheduled-executions

odacli list-jobs

Use the odacli list-jobs command to display a list of jobs, including the job IDs, status, and the job created date and time stamp.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To list jobs and view job details and status:

Parameter	Description
json, -j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.
for, -o	(Optional) Describes a job created on a specific date. In the format YYYY-MM-DD, such as 2018-01-01.
	Example: # odacli list-jobs -o 2018-08-09



Parameter	Description
from, -f	(Optional) Describes a job created since a specific date. In the format YYYY-MM-DD or YYYY-MM-DD HH:mm:ss, such as 2018-01-01 or 2018-01-01 01:00:00. Examples:
	- P
	<pre># odacli list-jobs -f 2018-08-27 # odacli list-jobs -f "2018-08-27 03:00:00"</pre>
head, -hd	(Optional) Describes the maximum number of older jobs to be displayed, values can be 1 to 200.
	Example:
	odacli list-jobs -hd 10
to, -t	(Optional) Describes a job created ahead of a specific date. In the format YYYY-MM-DD or YYYY-MM-DD HH:mm:ss, such as 2018-01-01 or 2018-01-01 01:00:00.
	Example:
	# odacli list-jobs -t 2018-08-07
tail,-tl	(Optional) Describes the maximum number of latest jobs to be displayed, values can be 1 to 200.
	Example:
	# odacli list-jobs -tl 10
keyword, -k	(Optional) Specifies the keyword that the job description contains.
	Example:
	# odacli list-jobs -k OraDB
status,-s	(Optional) Specifies the status of the job, such as Created, Scheduled, Running, Failure, Success, InternalError.
	Example:
	# odacli list-jobs -s Failure



Example 11-96 Displaying a List of Jobs

To display a list of jobs:

Example 11-97 Displaying Specified Number of Older Jobs

To display a specified number of older jobs:

```
# odacli list-jobs -hd 5
ID Description Created Status
--- ---
643c6186-a667-43d7-847f-d756a96fa072 Create detailed Backup Report
August 5, 2018 12:36:26 AM UTC Success
f29cb82c-6150-487d-aaff-52d65f6ab972 Create recovery-pitr : time
'08/05/2018 07:16:12'
for db : igIyoz August 5, 2018 1:01:39 AM UTC Success
cfe19337-ab2f-4ef3-85b5-24601ba31be2 Create detailed Backup Report
August 5, 2018 1:17:46 AM UTC Success
3749b5e2-240e-4df5-b3c1-32d345243b25 Create detailed Backup Report
August 5, 2018 2:01:07 AM UTC Success
64828852-bb16-4f06-aca9-4bdf9fe7b6f2 Create regular-5 Backup with TAG-iD5UNjBZ8HN2FYL
for Db:igIyoz August 5, 2018 2:14:19 AM UTC Success
```

Example 11-98 Displaying Jobs in a Date Range

To display jobs created within a time frame:

```
# ./odacli list-jobs -f 2018-08-07 -t 2018-08-08
ID Description Created Status
--- ---

1fc5ef97-a9db-49b2-9664-7c551bd005f4 Authentication key update for
test_user August 7, 2018 12:56:58 AM UTC Success
e24f86cf-bb2e-4ebe-84e0-da5cedb27ad4 Provisioning service creation August
7, 2018 1:00:54 AM UTC Success
7f67efd6-cce5-47b4-8dc4-fdb732491f99 CPU cores service update August 7,
2018 1:41:05 AM UTC Success
0ae9a312-bac8-43be-8a64-5a12c24c2a02 SSH keys update August 7, 2018
1:42:59 AM UTC Success
af41fdc1-87ff-46cd-bc41-26615e115ae7 SSH key delete August 7, 2018 1:44:56
AM UTC Success
79e4cbb0-b474-48ab-9e04-d3d602bc0ed2 DcsCli patching August 7, 2018
```



```
1:50:18 AM UTC Success
edd55e7d-f81f-4a10-942d-1121aef0bff3 DcsCli patching August 7, 2018
1:50:32 AM UTC Success
acc22c60-3476-4566-8faa-4d36b116eded create backup
d89efedf-9110-429a-a3b2-ccd6a53f8564 Database Home OraDB12201_home2
creation with version :12.2.0.1 August 7, 2018 2:36:05 AM UTC Success
2a5532ae-41fa-47c2-bc90-010a5f26d6b2 Database service creation with db
name: my122 August 7, 2018 3:52:38 AM UTC Success
c4e533e9-c596-478f-92db-2f11f1384075 Discover Components : all August 7,
2018 4:07:09 AM UTC Success
149e89b5-27d3-4c7c-9c03-f029ca3dd495 Discover Components : all August 7,
2018 4:08:45 AM UTC Success
21d4c37b-49ad-48dd-a1db-1f25d9288312 Database Home OraDB11204_home1
creation with version :11.2.0.4 August 7, 2018 4:19:32 AM UTC Success
b61dbbca-edc1-4a4a-9db2-82b0bdcb64e6 Database service deletion with db
name: myTestDb with id: 6400c81d-5837-480c-b4a1-7c01591ee144 August 7,
2018 4:24:50 AM UTC Success
d4a104df-5796-4e37-9173-82f0e263d642 create backup config:bkfgd August 7,
2018 4:28:54 AM UTC Success
a121d40b-f33b-47a4-8fc6-4e3b84173f44 Database service creation with db
name: my112 August 7, 2018 6:51:13 PM UTC Success
42dd661f-9ba0-4877-ace9-39d3f212c071 Discover Components : all August 7,
2018 7:12:56 PM UTC Success
2f648f5a-c9c5-42ec-adb0-98cf6497c89e Discover System Components : system
August 8, 2018 3:28:12 AM UTC Success
a5755f43-509d-4d4c-b7ef-9f99660c4de7 DB Home Patching: Home Id is
97df26b3-42f2-4189-805b-82d1b38737d0 August 8, 2018 3:52:08 AM UTC Success
79b0e697-065f-4630-a524-8d072a4e139a Database Home OraDB12102_home1
creation with version :12.1.0.2 August 8, 2018 4:34:30 AM UTC Success
112b75bc-3512-4c28-a479-3e0317eb0dc4 Database service creation with db
name: mynew121 August 8, 2018 8:02:51 AM UTC Failure
09f56fb0-le91-4b02-a9b8-5add11a8da32 Database service creation with db
name: my121a August 8, 2018 9:13:01 AM UTC Success
5633ded9-07ea-4bf9-9533-31eb65789fe7 Database service deletion with db
name: mynew121 with id: 24be4362-16c8-476f-903a-f6f2ef59f5e4 August 8,
2018 9:24:31 AM UTC Success
458dlc45-02dc-456c-ae88-5da613faaa66 Database service creation with db
name: mynew121 August 8, 2018 9:27:31 AM UTC Success
f178f378-a9d7-4d5c-b6f5-6f62ea4e05bb Database service deletion with db
name: myTestDb with id : ef50387b-0c62-4446-b210-f8d070e2a043 August 8,
2018 9:40:43 AM UTC Success
7fab740f-a711-466a-ba6d-dd5643374c28 Database service deletion with db
name: myTestDb with id : 6632a083-558a-4eb4-8c2b-af0710179980 August 8,
2018 9:41:04 AM UTC Success
3121529d-2b9d-4bbe-bf58-996c2cf46996 Database service creation with db
name: mydss August 8, 2018 9:42:06 AM UTC Success
3d0a9261-19d7-42bb-8b92-00fcc4f8c4le Discover Components : db August 8,
2018 10:17:22 AM UTC Success
```

odacli describe-job

Use the odacli describe-job command to display details about a specific job, including the job ID, status, tasks, and the job created date and time stamp.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To view a specific job, status, and tasks:

```
odacli describe-job -i jobid [-j] [-h]
```

Parameters

Parameter	Description
jobid, -i <i>jobid</i>	Identifies the job. To get the job identifier (jobid), run the list-jobs command.
json, -j	(Optional) Displays JSON output.
help, -h	(Optional) Displays help for using the command.

Example 11-99 Displaying Details for a Job

To display details of a specific job with jobid 02df22c8-c21f-4162-8265-97f7826c243a:

odacli describe-job -i 02df22c8-c21f-4162-8265-97f7826c243a

odacli list-scheduled-executions

Use the command odacli list-scheduled-executions to display a list of jobs that were executed.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-scheduled-executions [-j] [-h]

Parameter	Description
help, -h	(Optional) Displays help for using the command.



Parameter	Description
json, -j	(Optional) Displays JSON output. The default is false.

Example 11-100 Displaying a List of Scheduled and Executed Jobs

Display a list of scheduled tasks, the status, and the date and time that the task was executed. In the following example, three (3) scheduled tasks were executed. One task, Schedule ID 04b5750c-0d13-42cf-aba3-85416e8edafb, was executed twice.

To learn more about a scheduled backup, run the command odacli list-schedules. The output displays the ID, name, description, and schedule for each task.

```
# odacli list-schedules
ID
                               Name
Description
___________
_____
d136cc72-4a80-4ab8-9f1e-120b995b2794 metastore maintenance
internal metastore maintenance
04b5750c-0d13-42cf-aba3-85416e8edafb AgentState metastore cleanup
internal agentstateentry metastore maintenance
7ee1e2aa-80a8-4297-97f7-365b84bcce4d backupreport maintenance
backup reports deletion
(Continued)
CronExpression
                       Disabled
-----
0 0 0 1/1 * ? *
                        true
0 0 0 1/1 * ? *
                       false
0 0 0 1/3 * ? *
                       false
```

Log Commands

Use the odacli log commands to specify the options to collect and delete logs.

odaadmcli manage diagcollect

Use the odaadmcli manage diagcollect command to collect diagnostic logs for Oracle Database Appliance components.

odacli list-logspaceusage

Use the odacli list-logspaceusage command to display the log file usage.

odacli create-logcleanjob

Use the odacli create-logcleanjob command to create a job to purge log files for a specified time period.

odacli list-logcleanjobs

Use the odacli list-logcleanjobs command to list the jobs to purge log files.

odacli describe-logcleanjob

Use the odacli describe-logcleanjobcommandto describe a log cleanup job.

odacli create-auto-logclean-policy

Use the odacli create-auto-logclean-policy command to create a policy for a job to automatically purge log files for a specified time period when certain criteria are met.

odacli list-auto-logclean-policy

Use the odacli list-auto-logclean-policy command to list the jobs to purge log files.

odaadmcli manage diagcollect

Use the odaadmcli manage diagcollect command to collect diagnostic logs for Oracle Database Appliance components.

File Path

\$ORACLE HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To collect diagnostic logs for components:

```
odaadmcli manage diagcollect [-h] [--dataMask] [--dataSanitize] [--
fromTime] [--toTime] [--Components]
```

Parameter	Description
help, -h	(Optional) Displays help for using the command.
dataMask	(Optional) Masks sensitive data. The default is No.
dataSanitize	(Optional) Sanitizes (redacts) sensitive data. The default is No.



Parameter	Description
fromTime	(Optional) Specifies the time from when you want to collect data. The timestamp formats can be of the type: mon/dd/yyyy hh:mm:ss, or yyyy-mm-dd hh:mm:ss, or yyyy-mm-ddThh:mm:ss, or yyyy-mm-dd.
toTime	(Optional) Specifies the time till when you want to collect data. The timestamp formats can be of the type: mon/dd/yyyy hh:mm:ss, or yyyy-mm-dd hh:mm:ss, or yyyy-mm-ddThh:mm:ss, or yyyy-mm-dd.
Components	(Optional) Specifies the comma-separated list of components for which you want to collect data. The supported values are:
	all, ips, oda, odalite, dcs, odabackup, odapatching, odadataguard, odaprovisioning, odaconfg, odasystem, odastorage, database, asm, crsclient, dbclient, dbwlm, tns, rhp, procinfo, afd, crs, cha, wls, emagent, oms, ocm, emplugins, em, acfs, install, cfgtools, os, ashhtml, ashtext, awrhtml, awrtext
verbose	Displays detailed message.

Usage Notes

The following types of sensitive information can be redacted using the --dataMask or the --dataSanitize option:

- Host names
- IP addresses
- Database names
- Tablespace names
- Service names
- Ports
- Operating System user names

For example, when the --dataMask option is used, all instances of a sensitive name such as a database name called "payrolldb" are replaced with "********" in the TFA collection.

For example, when the --dataSanitize option is used, all instances of a sensitive name such as a database name called "payrolldb" are replaced with another string, such as "oCjlN7F8P", in the TFA collection.

Example 11-101 Masking Sensitive Data in Log Collection

/opt/oracle/oak/bin/odaadmcli manage diagcollect --dataMask
DataMask is set as true
TFACTL command is: /opt/oracle/tfa/tfa_home/bin/tfactl



Data mask is set.

Collect data within last 12 hours as default

Please wait for several minutes for the collection to complete.

odacli list-logspaceusage

Use the odacli list-logspaceusage command to display the log file usage.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To list jobs and view job details and status:

odacli list-logspaceusage [-c] [-h]

Parameters

Parameter	Description
components, -c	Describes the list of components delimited by comma. The values can be gi database dcs. For example,gi,dcs.
help, -h	(Optional) Displays help for using the command.

Example 11-102 Displaying a List of Logs

To display log file space usage for a list of components:

```
odacli list-logspaceusage
Timestamp: July 25, 2018 7:31:39 PM UTC

Component Size(MB) Partition LogUsagePercentage
PartitionFreePercentage

dcs 477.00 /dev/mapper/VolGroupSys-LogVolOpt 0.79
81.00

gi 1863.68 /dev/mapper/VolGroupSys-LogVolU01 1.85
86.00
```



odacli create-logcleanjob

Use the odacli create-logcleanjob command to create a job to purge log files for a specified time period.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To list jobs and view job details and status:

odacli create-logcleanjob [-h] [-c] [-o] [-u]

Parameters

Parameter	Description
help,-h	(Optional) Displays help for using the command.
components, -c	(Optional) Specifies the list of components, separated by comma. The values are gi database dcs For example, gi,dcs.
olderthan, -o	(Optional) Cleans logs older than specified time interval. Default is 30 if it is not specified.
unit,-u	(Optional) Unit for theolderthan parameter. Default is Day if it is not specified.

Example 11-103 Creating Jobs to Purge Logs

To create jobs to purge logs:

odacli create-logcleanjob
Job details

ID: e03d90b5-41dd-45e0-8b7a-1480d6d7f86f

Description: log file cleanup

Status: Created

Created: July 25, 2018 8:06:56 PM UTC

Message:

Task Name Start Time End Time Status



./odacli describe-job -i e03d90b5-41dd-45e0-8b7a-1480d6d7f86f

Job details

ID: e03d90b5-41dd-45e0-8b7a-1480d6d7f86f

Description: log file cleanup

Status: Success

Created: July 25, 2018 8:06:56 PM UTC

Message:

Task Name Start Time End Time Status

Clean DCS logs July 25, 2018 8:06:56 PM UTC July 25, 2018 8:06:56 PM UTC Success

odacli list-logcleanjobs

Use the odacli list-logcleanjobs command to list the jobs to purge log files.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To list jobs and view job details and status:

odacli list-logcleanjobs [-h]

Parameter	Description
help, -h	(Optional) Displays help for using the command.



Example 11-104 Listing Jobs to Purge Logs

To list jobs to purge logs:

odacli describe-logcleanjob

Use the odacli describe-logcleanjobcommandto describe a log cleanup job.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To list jobs and view job details and status:

odacli describe-logcleanjob [-h]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
jobid, -i	Displays the summary of the log cleanup with the specified job ID.

Example 11-105 Displaying Log Cleanup Jobs

To display log cleanup jobs:



July 25, 2018 8:06:56 PM UTC

e03d90b5-41dd-45e0-8b7a-1480d6d7f86f 0 0 bytes gi /u01/app/12.2.0.1/grid July 25, 2018 8:06:59 PM UTC

odacli create-auto-logclean-policy

Use the odacli create-auto-logclean-policy command to create a policy for a job to automatically purge log files for a specified time period when certain criteria are met.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To list jobs and view job details and status:

odacli create-auto-logclean-policy [-h] [-c] [-o] [-u] [-uMB] [-f] [-uPer]

Parameters

Parameter	Description
help,-h	(Optional) Displays help for using the command.
components, -c	(Optional) Specifies the list of components, separated by comma. The values are gi database dcs For example, gi dcs.
olderthan, -o	(Optional) Cleans logs older than specified time interval. Default is 30 if it is not specified.
olderThanUnit, -u	(Optional) Unit for theolderthan parameter. Default is Day if it is not specified.
freeSpaceBelowPercentage, -f	Starts purge when free disk space is below the specified number of percentage of the total partition size. Valid range is 20-50. Default is 20.
usageOverMB, -uMB	Starts purge when log usage is over the specified number of MB. Valid range is 10%-50% of partition size.
usageOverPercentage, -uPer	Starts purge when log usage is over the specified number of percentage of total partition space. Valid range is 10-50.

Example 11-106 Creating Automatic Jobs to Purge Logs

To create a policy for automatic jobs to purge logs:

odacli create-auto-logclean-policy -c 'dcs' -o 30 -uPer 30
Component UsageOverPercentage freeSpaceBelowPercentage UsageOverMB



OlderThan	OlderThanUnit			
dcs		30		- 20
0	30		Day	

odacli list-auto-logclean-policy

Use the odacli list-auto-logclean-policy command to list the jobs to purge log files.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

To list jobs and view job details and status:

odacli list-auto-logclean-policy [-h] [-c]

Parameters

Parameter	Description
help,-h	(Optional) Displays help for using the command.
components, -c	(Optional) Specifies the list of components, separated by comma. The values are gi database dcs For example, gi, dcs.

Example 11-107 Listing Jobs to Purge Logs

To list jobs to purge logs:

odacli list-auto-logclean-policy
Component UsageOverPercentage freeSpaceBelowPercentage UsageOverMB
OlderThan OlderThanUnit

gi	40		20
0	60	Day	
database	40		20
0	60	Day	
dcs	30		20
0	30	Day	



odacli Oracle Auto Service Request Commands

Use the Oracle Auto Service Request (Oracle ASR) commands to configure, update, test, and delete Oracle ASR on the system.

- odacli configure-asr
- · odacli update-asr
- · odacli describe-asr
- odacli test-asr
- odacli delete-asr

odacli configure-asr

Use the odacli configure-asr command to configure Oracle Auto Service Request (Oracle ASR) after deploying the appliance.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
odacli configure-asr -u username -a asrpassword [-r proxyserver] [-t proxyport]
[-y proxyuser] [-ppwd proxypassword] [-s snmpversion] -i[asrip] -e
[internal|external] [-j] [-h]
```

Description
(Optional) Identifies the external Oracle ASR Manager IP address.
Defines the My Oracle Support password associated with the user name. Use this option to specify the password interactively. When using this option, do not enter the password in the command-line.
Defines the Oracle ASR Configuration Type. The default is internal.
(Optional) Displays help for using the command.
(Optional) Displays JSON output.
(Optional) Defines the proxy user password.
(Optional) Defines the proxy server port.
(Optional) Defines the Proxy Server Address.
(Optional) Defines the proxy user name needed to authenticate the proxy server.



Parameter	Description
snmpversion, -s [V3]	(Optional) Defines Simple Network Management Protocol (SNMP) Version 3.
username, -u	Defines the Oracle ASR user name. The user name is the My Oracle Support user name under which the server is registered.

Usage Notes

All log files for Oracle ASR are located in the <code>/var/opt/asrmanager/log/directory.</code>

To configure an external Oracle ASR Manager, you must define the Oracle ASR Configuration Type as external (-e external). For example, odacli configure-asr -e external -i 198.51.100.1

Example 11-108 Configuring Oracle ASR with a Proxy Server

This example configures Oracle ASR for user name scott.tiger@example.com. A proxy server, www-proxy.example.com, and port 80 are defined.

Example 11-109 Configuring an External Oracle ASR

This example configures Oracle Database Appliance to use an external Oracle ASR instance at IP address 10.20.30.40.

```
# odacli configure-asr --asrip 10.20.30.40 --asrtype External
{
   "jobId" : "ea054a2f-d18d-4253-83bc-b57434e3598e",
   "status" : "Created",
   "message" : "Please run the script '/tmp/activateExternalAssets.pl' on
the ASRManager host once the current job is successful.",
   "reports" : [ ],
   "createTimestamp" : "November 20, 2016 22:12:34 PM EST",
   "description" : "Configure ASR",
   "updatedTime" : "November 20, 2016 22:12:34 PM EST"
}
```



When the job completes successfully, run the /tmp/activateExternalAssets.pl script on the Oracle ASR Manager host.

odacli update-asr

Use the odacli update-asr command to make changes to Oracle Auto Service Request (Oracle ASR) configuration details after deploying the appliance.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

update-asr -u username -a asrpassword [-r proxyserver] [-t proxyport] [-y proxyuser [-ppwd proxypassword] [-s snmpversion] -i[asrip] -e [internal | external] [-j] [-h]

Parameters

Parameter	Description
asrip, -i	(Optional) Identifies the external Oracle ASR Manager IP address.
asrpassword, -a	Defines the My Oracle Support password associated with the user name. Use this option to specify the password interactively. When using this option, do not enter the password in the command-line.
asrtype, -e [internal external]	Defines the Oracle ASR Configuration Type. The default is internal.
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output.
proxypassword, -ppwd	(Optional) Defines the proxy user password.
proxyport, -t	(Optional) Defines the proxy server port.
proxyserver, -r	(Optional) Defines the Proxy Server Address.
proxyuser, -y	(Optional) Defines the proxy user name needed to authenticate the proxy server.
snmpversion, -s [v3]	(Optional) Defines Simple Network Management Protocol (SNMP) Version 3.
username, -u	Defines the Oracle ASR user name. The user name is the My Oracle Support user name under which the server is registered.

Usage Notes

- Enter the password during Oracle ASR configuration.
- All log files for Oracle ASR are located in the /var/opt/asrmanager/log/directory.



- You cannot use the update-asr command to change the Oracle ASR type. For example, from internal to external. To change the Oracle ASR type, delete the existing configuration using the odacli delete-asr and then re-configure Oracle ASR using the odacli configure-asr command.
- To configure an external Oracle ASR Manager, you must define the Oracle ASR Configuration Type as external (-e external). For example, odacli update-asr -e external -i 198.51.100.1

Example 11-110 Updating Oracle ASR with a New Proxy Server

This example updates Oracle ASR for user name scott.tiger@example.com. The password is not defined in the command-line. You are prompted to enter the password during configuration. The proxy server is updated to www-proxy2.example.com.

odacli describe-asr

Use the odacli describe-asr command to display Oracle Auto Service Request (Oracle ASR) configuration details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

describe-asr [-h]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Example 11-111 Displaying Oracle ASR Details

odacli describe-asr

ASR details



ID: e841d74a-687b-4e87-9548-1baa2090d48e Name: UserName: scott.tiger@example.com ProvyServerName: www-proxy.example.com

ProxyPort: 80 ProxyUserName: SnmpVersion: V3 State: N/A

Created: July 15, 2016 8:53:54 AM PST Updated: July 15, 2016 8:53:54 AM PST

odacli test-asr

Use the odacli test-asr command to test the Oracle Auto Service Request (Oracle ASR) configuration.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli test-asr [-h]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Usage Notes

This command internally invokes the SNMP test trap by invoking /SP/alertmgmt/rules/1 testrule=true.

Example 11-112 Testing the Oracle ASR Configuration



odacli delete-asr

Use the odacli delete-asr command to remove the Oracle Auto Service Request (Oracle ASR) configuration from the system.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

```
# odacli delete-asr [-h]
```

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Example 11-113 Deleting Oracle ASR From the System

```
# odacli delete-asr
{
"jobId" : "5d70bd17-ec4a-48da-8196-1364105db99d",
"status" : "Running",
"message" : null,
"reports" : [],
"createTimestamp" : 1469409622451,
"description" : "Delete ASR",
"updatedTime" : 1469409622458
}
```

odacli OS Commands

Use the odacli OS commands to list and update operating system (OS) parameters.

- odacli list-osconfigurations
 - Use the command odacli list-osconfigurations to display the current HugePage and memlock values and view suggested values based on the total available space.
- odacli update-osconfigurations
 - Use the command odacli update-osconfigurations to update the HugePage and memlock values.

odacli list-osconfigurations

Use the command odacli list-osconfigurations to display the current HugePage and memlock values and view suggested values based on the total available space.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli list-osconfigurations [-h] [-j]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
json, -j	(Optional) Displays JSON output. The default is false.

Usage Notes

The command displays the configured values for HugePage and memlock from the /etc/sysctl.conf and /etc/security/limits.conffiles. Based on the total available space, suggested values are calculated for the parameters.

Example 11-114 Displaying a List of Configured and Suggested Memlock and HugePage Configurations

odacli list-osconfigurations

Parameter SuggestedValue	User	ConfiguredValue	
Memlock	grid	295971180KB	289034355KB
Memlock	oracle	295971180KB	289034355KB
HugeSpace	default	101430MB	101161MB

odacli update-osconfigurations

Use the command ${\tt odacli}$ update-osconfigurations to update the HugePage and memlock values.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli



Syntax

odacli update-osconfigurations [-h] [-hs] [-j] [-m]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.
hugespace, -hs	(Optional) Updates the HugePage value.
json, -j	(Optional) Displays JSON output. The default is false.
memlock, -m	(Optional) Updates the memlock value.

Usage Notes

The command updates memlock in the /etc/security/limits.conffile and HugePage in the /etc/sysctl.conf file with the suggested values.

You can update memlock or hugepage. If no option is provided, then both parameters are updated to the suggested values.

Example 11-115 Updating the HugePage and Memlock Parameters to the Suggested Values

```
odacli update-osconfigurations
"jobId" : "954cf7a5-9cad-451c-8820-3140a716af26",
"status" : "Created",
"message" : "Successfully submitted a request to configure OS
parameters.",
"reports" : [ ],
"createTimestamp" : "February 06, 2018 00:03:51 AM MST",
"resourceList" : [ ],
"description" : "Configuring OS Parameter",
"updatedTime" : "February 06, 2018 00:03:51 AM MST"
[root@rwsoda6s002 ~]# odacli describe-job -i
"954cf7a5-9cad-451c-8820-3140a716af26"
ID: 954cf7a5-9cad-451c-8820-3140a716af26
Description: Configuring OS Parameter
Status: Success
Created: February 6, 2018 12:03:51 AM MST
                                                        End Time
Task Name
                   Start Time
Status
Setting up memlock. February 6, 2018 12:03:51 AM MST February 6, 2018 12:03:51 AM MST
Success
Setting up HugeSpace February 6, 2018 12:03:51 AM MST February 6, 2018 12:03:51 AM MST
Success
```



odaadmcli Hardware Monitoring Commands

Use the hardware monitoring commands to display hardware configurations.

odaadmcli show cooling

Use the odaadmcli show cooling command to show cooling details.

odaadmcli show env hw

Use the odaadmcli show env_hw command to display information about the environment and hardware.

odaadmcli show fs

Use the odaadmcli show fs command to display filesystem details.

odaadmcli show memory

Use the odaadmcli show memory command to display memory details.

odaadmcli show network

Use the odaadmcli show network command to show network details.

odaadmcli show power

Use the odaadmcli show power command to display power supply details.

odaadmcli show processor

Use the odaadmcli show processor command to display processor details.

odaadmcli show server

Use the odaadmcli show server command to display server details.

odaadmcli show cooling

Use the odaadmcli show cooling command to show cooling details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To show cooling details:

odaadmcli show cooling [-h]

Parameter	Description
help, -h	(Optional) Displays help for using the command.



odaadmcli show env_hw

Use the odaadmcli show env_hw command to display information about the environment and hardware.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To display environment and hardware details:

odaadmcli show env_hw [-h]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Example 11-116 Displaying Environment and Hardware Details

To display the hardware details, enter the command odaadmcli show env_hw. The results show a bare metal Oracle Database Appliance system.

```
# odaadmcli show env_hw
BM ODA Lite X7-2 Medium
```

odaadmcli show fs

Use the odaadmcli show fs command to display filesystem details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To display filesystem details:

odaadmcli show fs [-h]

Parameter	Description
help, -h	(Optional) Displays help for using the command.



Example 11-117 Displaying Filesystem Details

odaadmcli show fs

Туре	Total Space	Free Space	Total DG Space	Free DG Space
ext3	30237M	7763M	Total Dd Space	riee Do Space
exts			_	_
ext3	484M	416M	-	-
ext3	60475M	38149M	-	_
ext3	100793M	22060M	-	-
acfs	102400M	102158M	4894016M	2418668M
acfs	102400M	100501M	4894016M	2418668M
acfs	102400M	100601M	4894016M	2418668M
(Continued)				
Diskaro	up Mount Point			
DIBRIGIO	/			
	/			
	/boot			
	/opt			
	/u01			
DATA	/u02/app/or	acle/oradata/A	ACFSDB1	

odaadmcli show memory

DATA

DATA

Use the odaadmcli show memory command to display memory details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

/u02/app/oracle/oradata/ACFSDB2

/u02/app/oracle/oradata/EE12NCDB

Syntax

To show memory details:

```
odaadmcli show memory [-h]
```

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Example 11-118 Display Memory Details

odaadmcli show memory

NAME	HEALTH	HEALTH_DETAILS	PART_NO.	SERIAL_NO.
DIMM_0	OK	-	3A4K40BB1-CRC	00CE01154602EADA96
DIMM_11	OK	-	3A4K40BB1-CRC	00CE01154602EADADA
DIMM_3	OK	-	3A4K40BB1-CRC	00CE01154602EADBC7



DIMM_8	OK -	3	A4K40BB1-CRC	00CE01154602EADBA0
(Continu	ed)			
LOCATION	MANUFACTURER	MEMORY_SIZE	CURR_CLK_SPEED	ECC_Errors
P0/D0	Samsung	32 GB	2400 MHz	0
P0/D1	Samsung	32 GB	2400 MHz	0
P0/D3	Samsung	32 GB	2400 MHz	0
P0/D8	Samsung	32 GB	2400 MHz	0

odaadmcli show network

Use the odaadmcli show network command to show network details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To show network details:

odaadmcli show network [-h]

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Example 11-119 Showing Network Details

odaadmcli show network NAME HEALTH HEALTH_DETAILS LOCATION PART_NO MANUFACTURER MAC_ADDRESS LINK_DETECTED DIE_TEMP i210 Ethernet_NIC_0 OK NET0 INTEL 00:10:E0:DD:9D:14 no (em1) N/A X710/X557-AT Intel Ethernet_NIC_1 OK NET13C:FD:FE:78:93:92 no (p2p3) N/A X710/X557-AT Intel Ethernet_NIC_2 OK NET2 3C:FD:FE:78:93:91 yes (p2p2) N/A NET3 X710/X557-AT Intel Ethernet_NIC_3 OK 3C:FD:FE:78:93:90 yes (p2p1) N/A Ethernet_NIC_4 NET4 BCM57414 Broadcom OK B0:26:28:3F:D8:B8 yes (p7p2) N/AEthernet_NIC_5 NET5 X710/X557-AT Intel OK 3C:FD:FE:78:93:93 no (p2p4) N/A Ethernet_NIC_6 OK NET6 BCM57414 Broadcom B0:26:28:3F:D8:B0 yes (p7p1) N/A



odaadmcli show power

Use the odaadmcli show power command to display power supply details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

Run this command on the master node, to display power supply details on Oracle Database Appliance High-Availability (HA) models:

```
odaadmcli show power [-h]
```

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Example 11-120 Displaying Power Supply Details

odaadmcli show power

NAME Power_Supply	HEALTH y_0 OK	HEALTH_DETAILS -	PART_NO. 7079395		AL_NO. Z+1514CE056G
(Continued)					
LOCATION	INPUT_POWER	OUTPUT_POWER	INLET_TEMP		EXHAUST_TEMP
PS0	Present	112 watts	28.000 degr	ee C	34.938 degree C

odaadmcli show processor

Use the odaadmcli show processor command to display processor details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To show processor details:

odaadmcli show processor [-h]

Parameter	Description
help, -h	(Optional) Displays help for using the command.



Example 11-121 Displaying Processor Details

odaadmcli show processor

NAME HEALTH HEALTH_DETAILS PART_NO. LOCATION MODEL
CPU_0 OK - 060F P0 (CPU 0) Intel(R) Xeon(R) CPU
E5-2630

(Continued)
MAX_CLK_SPEED TOTAL_CORES ENABLED_CORES
2.200 GHz 10 10

odaadmcli show server

Use the odaadmcli show server command to display server details.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To show server details:

```
odaadmcli show server [-h]
```

Parameters

Parameter	Description
help, -h	(Optional) Displays help for using the command.

Example 11-122 Displaying Server Details

odaadmcli show server

Power State : On Open Problems : 0

Model : ORACLE SERVER X7-2

Type : Rack Mount
Part Number : 7320190
Serial Number : 1605NM10JJ
Primary OS : Not Available
ILOM Address : 10.209.8.215

ILOM MAC Address : 00:10:E0:95:98:F0

Description: Oracle Database Appliance X7-2 Small 1606NM1s02

Locator Light : Off

Actual Power Consumption: 135 watts
Ambient Temperature: 24.250 degree C
Open Problems Report: System is healthy



Storage Commands

Understand the commands to perform storage operations and diagnostics.

odaadmcli expand storage

Use the odaadmcli expand storage command to expand storage.

odaadmcli show disk

Use the odaadmcli show disk command to display the status of a single disk or of all disks on the system.

odaadmcli show diskgroup

Use the odaadmcli show diskgroup command to list configured diskgroups or display a specific diskgroup configuration.

odaadmcli show controller

Use the odaadmcli show controller command to display details of the controller.

odaadmcli show raidsyncstatus

Use the odaadmcli show raidsyncstatus command to display the RAID SYNC status.

odaadmcli show storage

Use the odaadmcli show storage command to show the storage controllers, expanders, and disks.

· odaadmcli stordiag

Use the odaadmcli stordiag command to collect detailed information for each disk or NVMe.

odaadmcli power disk

Use the odaadmcli power disk command to power a disk on or off.

odacli validate-storagetopology

Use the odacli validate-storagetopology command to check the cable connections between the system controllers and the storage shelf, as well as the cable connection to the storage expansion shelf (if one is installed).

odaadmcli expand storage

Use the odaadmcli expand storage command to expand storage.

File Path

\$ORACLE HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

odaadmcli expand storage -ndisk number of disks to be added - enclosure $\{0/1\}$ [-h]



Parameters

Parameter	Description
enclosure {0 1}	Defines the JBOD or shelf number. The base storage shelf is 0. The storage expansion shelf is 1.
	This option is only available for multi-node platforms. It is not supported on Oracle Database Appliance single node platforms.
help, -h	(Optional) Displays help for using the command.
-ndisk	Defines the number of disks to be added in the enclosure.

Usage Notes

On high-availability (HA) Oracle Database Appliance hardware models, run the command only on the master node.

Various storage options are available. On multi-node platforms, the base storage is SSD and you can choose to add either SSD or HDD disks. When adding a storage expansion shelf, all disks must be the same type (you cannot combine SSD and HDD disks).



In addition to reviewing the expand storage command, it is important to follow the procedures for adding storage. Cabling validation and disk placement is important. In some cases, you must move disks to different slots to successfully expand storage.

odaadmcli show disk

Use the odaadmcli show disk command to display the status of a single disk or of all disks on the system.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To display the status of all disks on the system:

```
odaadmcli show disk [-h]
```

To display the status of a single disk:

odaadmcli show disk disk name [-h]



Parameters

Parameter	Description
disk_name	(Optional) Define the disk resource name. The resource name format is pd_{03} .
help, -h	(Optional) Displays help for using the command.

Example 11-123 Displaying the Status of All Disks

To display the status of all the disks on the system:

Example 11-124 Displaying the Status of a Single Disk

To display the status of a disk named pd_00:

```
# odaadmcli show disk pd_00
The Resource is : pd_00
ActionTimeout : 1500
ActivePath : /dev/nvme0n1
AsmDiskList : |data_00||reco_00|
AutoDiscovery : 1
AutoDiscoveryHi : |data:80:NVD||reco:20:NVD|
CheckInterval: 300
ColNum : 0
CriticalWarning: 0
DependListOpr : add
Dependency: |0|
DiskId : 360025380144d5332
DiskType : NVD
Enabled: 1
ExpNum: 19
HbaPortNum : 10
IState : 0
Initialized : 0
IsConfigDepende : false
ModelNum : MS1PC2DD3ORA3.2T
MonitorFlag : 1
MultiPathList : |/dev/nvme0n1|
Name : pd_00
NewPartAddr : 0
OSUserType : |userType:Multiuser|
PlatformName : X7_1_LITE_S
PrevState : Invalid
PrevUsrDevName :
SectorSize : 512
SerialNum : S2LHNAAH000001
```



Size : 3200631791616

SlotNum : 0

SmartDiskWarnin : 0
SmartTemperatur : 37

State : Online

StateChangeTs : 1465263789

StateDetails : Good

TotalSectors : 6251233968

TypeName : 0

UsrDevName : NVD_S00_S2LHNAAH101026

VendorName : Samsung

gid : 0 mode : 660 uid : 0

odaadmcli show diskgroup

Use the odaadmcli show diskgroup command to list configured diskgroups or display a specific diskgroup configuration.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To list configured diskgroups:

```
odaadmcli show diskgroup [-h]
```

To display DATA configurations:

```
odaadmcli show diskgroup [DATA] [-h]
```

To display RECO configurations:

```
odaadmcli show diskgroup [RECO] [-h]
```

Parameters

Parameter	Description
DATA	(Optional) Displays the DATA diskgroup configurations.
RECO	(Optional) Displays the RECO diskgroup configurations.
help, -h	(Optional) Displays help for using the command.

Example 11-125 Listing All Diskgroups

```
# odaadmcli show diskgroup
```

DiskGroups



DATA RECO

Example 11-126 Displaying DATA Configurations

odaadmcli show diskgroup DATA

ASM_DISK	PATH	DISK	STATE	STATE_DETAILS
data_00	/dev/NVD_S00_S2LHNAAH101026p1	pd_00	ONLINE	Good
data_01	/dev/NVD_S01_S2LHNAAH101008p1	pd_01	ONLINE	Good

odaadmcli show controller

Use the odaadmcli show controller command to display details of the controller.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To display details of the controller:

```
odaadmcli show controller id [-h]
```

Parameters

Parameter	Description
controller_id, id	Defines the controller.
help, -h	(Optional) Displays help for using the command.

Example 11-127 Showing Controller Details

```
# odaadmcli show controller 1
Controller [1] information:
        sun-controller-id = nvme:1b:00.00
        sun-id = nvme:1b:00.00
        sun-controller-manufacturer = Samsung
       pci-vendor-id = 0x0000144d
        sun-controller-model = 0xa821
       pci-device-id = 0x0000a821
        sun-controller-type = NVMe
        sun-card-manufacturer = Sun Microsystems
       pci-subvendor-id = 0x0000108e
        sun-card-model = 0xa803
       pci-subdevice-id = 0x0000a803
       pci-address = 1b:00.0
        sun-version-firmware = KPYA7R3Q
        sun-serial-number = S2LHNAAH101008
        sun-product-name = MS1PC2DD3ORA3.2T
```



```
pci-slot-number = 11
nvme-power-control = 1
sun-nac-name = /SYS/DBP/NVME1
```

odaadmcli show raidsyncstatus

Use the odaadmcli show raidsyncstatus command to display the RAID SYNC status.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To display the status of RAID SYNC:

```
odaadmcli show raidsyncstatus [-h]
```

Parameters

Parameter	Description
help,-h	(Optional) Displays help for using the command.

Example 11-128 Displaying the RAID SYNC Status

To display the RAID SYNC details and status:

```
# odaadmcli show raidsyncstatus
Raid Type Raid Device Raid Status maintainPdFailHistory Rebuildrate
H/W Raid /dev/sda Optimal ON 30%
```

odaadmcli show storage

Use the ${\tt odaadmcli}$ show storage command to show the storage controllers, expanders, and disks.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To display the storage controllers, expanders, and disks:

```
odaadmcli show storage [-h]
```

To show storage errors:

odaadmcli show storage -errors [-h]



Parameters

Parameter	Description
errors	(Optional) Shows storage errors.
help, -h	(Optional) Displays help for using the command.

Example 11-129 Displaying Storage Devices

The following example displays details about the storage devices on an appliance.

```
# odaadmcli show storage
==== BEGIN STORAGE DUMP ======
Host Description: Oracle Corporation: ORACLE SERVER X6-2
Total number of controllers: 2
    Id = 0
   Pci Slot = 10
    Serial Num = S2LHNAAH101026
    Vendor = Samsung
   Model = MS1PC2DD3ORA3.2T
   FwVers = KPYA7R30
   strId = nvme:19:00.00
      Pci Address = 19:00.0
      Id = 1
      Pci Slot = 11
      Serial Num = S2LHNAAH101008
     Vendor = Samsung
    Model = MS1PC2DD3ORA3.2T
    FwVers = KPYA7R3Q
     strId = nvme:1b:00.00
  Pci Address = 1b:00.0
Total number of expanders: 0
Total number of PDs: 2
   /dev/nvme0n1 Samsung NVD 3200gb slot: 0 pci : 19
   /dev/nvmeln1 Samsung NVD 3200gb slot: 1 pci : 1
==== END STORAGE DUMP =======
```

odaadmcli stordiag

Use the odaadmcli stordiag command to collect detailed information for each disk or NVMe.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli



Syntax

To collect storage diagnostics for disks and NVM Express (NVMe):

```
odaadmcli stordiag n [-h]
```

Parameters

Parameter	Description
-n disk_name	Defines the disk resource name. The resource name format is $pd_{0.3}$.
help, -h	(Optional) Displays help for using the command.

Example 11-130 Displaying NVMe Details

To display detailed information for NVMe pd_00:

odaadmcli stordiag pd_00

odaadmcli power disk

Use the odaadmcli power disk command to power a disk on or off.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odaadmcli

Syntax

To power a disk on or off:

```
odaadmcli power disk {on|off|status} disk_name [-h]
```

Parameters

Parameter	Description
disk_name	Defines the disk resource name. The resource name format is pd_[03].
{on off status}	Power on a disk, power off a disk, display status.
help, -h	(Optional) Displays help for using the command.

Example 11-131 Powering a Disk Off

This example shows how to power off a disk.

```
\# odaadmcli power disk off pd_00 Disk 'pd_00' is already part of ASM
```

Are you sure you want to power OFF the disk?: 'pd_00'? [yes/no]:



yes
Powered OFF pd_00

Example 11-132 Checking the Disk Status

This example shows how to get the status of disk pd_00.

odaadmcli power disk status pd_00
The disk is powered ON

odacli validate-storagetopology

Use the <code>odacli validate-storagetopology</code> command to check the cable connections between the system controllers and the storage shelf, as well as the cable connection to the storage expansion shelf (if one is installed).

Oracle recommends that you run the <code>odacli validate-storagetopology</code> command before deploying the system to ensure that the cabling is correct. This will avoid and prevent problems during deployment due to incorrect or missing cable connections. If the cabling is not correct, you will see errors in your output.

File Path

\$ORACLE_HOME/opt/oracle/dcs/bin/odacli

Syntax

odacli validate-storagetopology [-h]

Parameters

Parameter	Description	
help, -h	(Optional) Displays help for using the command.	



Troubleshooting Oracle Database Appliance

Understand tools you can use to validate changes and troubleshoot Oracle Database Appliance problems.

- Viewing Component Information on the Appliance
 View details of all the components installed on the appliance, and the RPM drift information.
- Errors When Logging into the Web Console
 If you have problems logging into the Web Console, then it may be due to your browser or credentials.
- Errors when re-imaging Oracle Database Appliance
 Understand how to troubleshoot errors that occur when re-imaging Oracle Database Appliance.
- Using the Oracle ORAchk Health Check Tool
 Use Oracle ORAchk Health Check Tool to audit configuration settings and check
 system health.
- About Oracle Trace File Analyzer Collector
 Oracle Trace File Analyzer (TFA) Collector simplifies diagnostic data collection on
 Oracle Grid Infrastructure and Oracle Real Application Clusters systems.
- Running Oracle Trace File Analyzer (TFA) Collector Commands
 Understand the installed location of tfactl and the options for the command.
- Running the Disk Diagnostic Tool
 Use the Disk Diagnostic Tool to help identify the cause of disk problems.
- Running the Oracle Database Appliance Hardware Monitoring Tool
 The Oracle Database Appliance Hardware Monitoring Tool displays the status of
 different hardware components in Oracle Database Appliance server.
- Configuring a Trusted SSL Certificate for Oracle Database Appliance
 The Web Console and DCS Controller use SSL-based HTTPS protocol for secure
 communication. Understand the implications of this added security and the options
 to configure SSL certificates.
- Disabling the Web Console
 You can also disable the Web Console. Disabling the Web Console means you
 can only manage your appliance through the command-line interface.
- Preparing Log Files for Oracle Support Services
 If necessary, use the command odaadmcli manage diagcollect to collect diagnostic files to send to Oracle Support Services.

Viewing Component Information on the Appliance

View details of all the components installed on the appliance, and the RPM drift information.

Viewing the Bill of Materials in the Web Console

Use the Appliance tab in the Web Console to view information about your deployment and the installed components. The Advanced Information tab displays information about the following components:

- Grid Infrastructure Version, and the home directory
- Database Version, Home location, and Edition
- Location and details about the databases configured
- All patches applied to the appliance
- Firmware Controller and Disks
- ILOM information
- BIOS version
- List of RPMs

In the List of RPMs section, click **Show** and then click **RPM Drift** to view the differences between the RPMs installed on the appliance, and the RPMs shipped in the latest Oracle Database Appliance Patch Bundle Update release.

Click **Download** to save the components report. You can use this report to help diagnose any deployment issues.

Viewing the Bill of Materials from the Command Line

The bill of materials is also available through the command line for bare metal and virtualized platforms deployments. The information about the installed components is collected according to a set schedule, and stored in the location <code>/opt/oracle/dcs/Inventory/</code> for bare metal deployments and in the <code>/opt/oracle/oak/Inventory/</code> directory for virtualized platforms. The file is stored in the format <code>oda_bom_TimeStamp.json</code>. Use the command <code>describe-system</code> to view the bill of materials on the command line. See the <code>Oracle Database Command-Line Interface</code> chapter for command options and usage notes.

Example 12-1 Example Command to View the Bill of Materials from the Command Line for Bare Metal Deployments

Time Stamp: July 29, 2018 7:00:12 PM UTC



```
Installed RPMS : acl-2.2.49-7.el6_9.1.x86_64,
RPMS
                                                aide-0.14-11.el6.x86_64,
                                                alsa-lib-1.1.0-4.el6.x86_64,
                                                at-3.1.10-49.el6.x86_64,
                                                atk-1.30.0-1.el6.x86_64,
                                                attr-2.4.44-7.el6.x86_64,
                                                audit-2.4.5-6.el6.x86_64,
                                                audit-
libs-2.4.5-6.el6.x86_64,
                                                audit-libs-
python-2.4.5-6.el6.x86_64,
                                                augeas-
libs-1.0.0-10.el6.x86_64,
authconfig-6.1.12-23.el6.x86_64,
                                                avahi-
libs-0.6.25-17.el6.x86 64,
                                                b43-
openfwwf-5.2-10.el6.noarch,
basesystem-10.0-4.0.1.el6.noarch,
                                                bash-4.1.2-48.el6.x86_64,
                                                bc-1.06.95-1.el6.x86_64,
                                                bind-
libs-9.8.2-0.62.rc1.el6_9.5.x86_64,
                                                bind-
utils-9.8.2-0.62.rc1.el6_9.5.x86_64,
binutils-2.20.51.0.2-5.47.el6_9.1.x86_64,
biosdevname-0.7.2-1.el6.x86_64,
                                                bridge-
utils-1.2-10.el6.x86_64,
busybox-1.15.1-21.el6_6.x86_64,
                                                bzip2-1.0.5-7.el6_0.x86_64,
                                                bzip2-
libs-1.0.5-7.el6_0.x86_64,
                                                ca-
certificates-2017.2.14-65.0.1.el6_9.noarch,
                                                cairo-1.8.8-6.el6_6.x86_64,
celt051-0.5.1.3-0.el6.x86_64,
checkpolicy-2.0.22-1.el6.x86_64,
chkconfig-1.3.49.5-1.el6.x86_64,
                                                cloog-
ppl-0.15.7-1.2.el6.x86_64,
                                                compat-
libcap1-1.10-1.x86_64,
                                                compat-libstdc+
+-33-3.2.3-69.el6.x86_64,
```



```
compat-
readline5-5.2-17.1.el6.x86_64,
                                                compat-sap-c+
+-4.8.2-16.el6.x86_64,
ConsoleKit-0.4.1-6.el6.x86_64,
                                                ConsoleKit-
libs-0.4.1-6.el6.x86_64,
                                                ConsoleKit-
x11-0.4.1-6.el6.x86_64,
coreutils-8.4-46.0.1.el6.x86_64,
                                                coreutils-
libs-8.4-46.0.1.el6.x86_64,
                                                cpio-2.10-13.el6.x86_64,
                                                cpp-4.4.7-18.el6.x86_64,
cpupowerutils-1.3-2.el6.x86_64,
cpuspeed-1.5-22.0.1.el6.x86_64,
cracklib-2.8.16-4.el6.x86_64,
                                                cracklib-
dicts-2.8.16-4.el6.x86_64,
crash-7.1.4-1.0.1.el6_7.x86_64,
crda-3.13_2015.10.22-3.el6.x86_64,
createrepo-0.9.9-27.el6_9.noarch,
cronie-1.4.4-16.el6_8.2.x86_64,
                                                cronie-
anacron-1.4.4-16.el6_8.2.x86_64,
                                                crontabs-1.10-33.el6.noarch,
                                                cryptsetup-
luks-1.2.0-11.el6.x86_64,
                                                cryptsetup-luks-
libs-1.2.0-11.el6.x86_64,
                                                cups-
libs-1.4.2-78.el6_9.x86_64,
. . . .
. . . .
```

Example 12-2 Example Command to View the Bill of Materials from the Command Line for Virtualized Platforms

oakcli describe-system -b

Example 12-3 Example Command to View the Bill of Materials Report from the Stored Location

```
# ls -la /opt/oracle/dcs/Inventory/
total 264
-rw-r--r-- 1 root root 83550 Apr 26 05:41 oda_bom_2018-04-26_05-41-36.json
```

Errors When Logging into the Web Console

If you have problems logging into the Web Console, then it may be due to your browser or credentials.



Oracle Database Appliance uses self-signed certificates. Your browser determines how you log into the Web Console. Depending on the browser and browser version, you may receive a warning or error that the certificate is invalid or not trusted because it is self-signed, or that the connection is not private. Ensure that you accept the self-signed certificate for the agent and Web Console.

Follow these steps to log into the Web Console:

- 1. Open a browser window.
- 2. Go to the following URL: https://ODA-host-ip-address:7093/mgmt/index.html
- Get the security certificate (or certificate), confirm the security exception, and add an exception.
- 4. Log in with your Oracle Database Appliance credentials.
 - If you have not already set the oda-admin password, then a message is displayed, advising you to change the default password to comply with your system security requirements.
- 5. If you have not added an exception for the agent security certificate, then a message about accepting agent certificate is displayed.
- 6. Using a different tab in your browser, go to the following URL: https://ODA-host-ip-address:7070/login
- Get the security certificate (or certificate), confirm the security exception, and add an exception.
- 8. Refresh the Web Console URL: https://ODA-host-ip-address:7093/mgmt/index.html

Related Topics

- Creating the Appliance
 Create the appliance using the Web Console.
- http://www.oracle.com/technetwork/indexes/products/browser-policy-2859268.html



Errors when re-imaging Oracle Database Appliance

Understand how to troubleshoot errors that occur when re-imaging Oracle Database Appliance.

If re-imaging Oracle Database Appliance fails, with old header issues such as errors in storage discovery, or in running GI root scripts, or disk group RECO creation, then use the force mode with cleanup.pl.

```
# perl cleanup.pl -f
```

To ensure that re-imaging is successful, remove the old headers from the storage disks by running the secure erase tool. Verify that the OAK/ASM headers are removed.

```
# cleanup.pl -erasedata
# cleanup.pl -checkHeader
```

Retry the re-imaging operation.

Related Topics

Re-imaging Oracle Database Appliance
 Bare metal operating system re-imaging installs Oracle Database Appliance operating system software on the local (boot) drive.

Using the Oracle ORAchk Health Check Tool

Use Oracle ORAchk Health Check Tool to audit configuration settings and check system health.

Oracle ORAchk Health Check Tool performs proactive heath checks for the Oracle software stack and scans for known problems.

Oracle ORAchk Health Check Tool audits important configuration settings for Oracle RAC two-node deployments in the following categories:

- Operating system kernel parameters and packages
- Oracle Database
- Database parameters, and other database configuration settings
- Oracle Grid Infrastructure, which includes Oracle Clusterware and Oracle Automatic Storage Management

ORAchk is aware of the entire system. It checks the configuration to indicate if best practices are being followed.



For more information about ORAchk, see My Oracle Support note 1268927.2, "ORAchk Health Checks for the Oracle Stack" at https://support.oracle.com/rs?type=doc&id=1268927.2



Note:

Before running ORAchk, check for the latest version of ORAchk, and download and install it.

Running ORAchk on Oracle Database Appliance 19.4 Baremetal Systems for New Installation

When you provision or upgrade to Oracle Database Appliance 19.4, the ORAchk RPMs are installed in the directory <code>/opt/oracle.SupportTools/orachk/</code>. You can verify that ORAchk is installed by running the following command:

```
[root@oak bin]# rpm -q orachk
orachk-18.3.0_20180808-2.x86_64
```

If an older version of ORAchk exists, then copy the latest version of orachk that you downloaded from My Oracle Support into the <code>/opt/oracle.SupportTools/orachk/directory</code>, and run the following command:

```
orachk -upgrade
```

The command upgrades your orachk utility to the latest version.

To run orachk, use the following command:

[root@oak bin]# orachk

```
This computer is for [S]ingle instance database or part of a [C]luster to run

RAC database [S|C] [C]: S

orachk did not find the inventory location on oak from environment. Does oak

have Oracle software installed [y/n][n]? n

...

Detailed report (html) -
/opt/oracle.SupportTools/orachk/orachk_oak_091918_182425/
orachk_oak_091918_182
425.html

UPLOAD [if required] -
/opt/oracle.SupportTools/orachk/orachk_oak_091918_182425.zip
```

Running ORAchk on Oracle Database Appliance 19.4 Virtualized Platform

When you provision or upgrade to Oracle Database Appliance 19.4, the ORAchk RPMs are installed in the directory /opt/oracle.SupportTools/orachk/.

To run orachk, use the following command:

```
[root@oak bin]# oakcli orachk
```



Running ORAchk on Oracle Database Appliance Baremetal Systems for Releases Earlier than 19.4

- Open the command-line interface as root.
- 2. Navigate to the ORAchk tool in the /suptools directory.

/u01/app/12.2.0.1/grid/suptools/orachk

3. Run the utility.

./orachk

When all checks are finished, a detailed report is available. The output displays the location of the report in an HTML format and the location of a zip file if you want to upload the report.

Review the Oracle Database Appliance Assessment Report and system health and troubleshoot any issues that are identified.

The report includes a summary and filters that enable you to focus on specific areas. For example, you can choose the filter to show failed checks only, show checks with a Fail, Warning, Info, or Pass status, or any combination.

About Oracle Trace File Analyzer Collector

Oracle Trace File Analyzer (TFA) Collector simplifies diagnostic data collection on Oracle Grid Infrastructure and Oracle Real Application Clusters systems.

TFA behaves in a similar manner to the ion utility packaged with Oracle Clusterware. Both tools collect and package diagnostic data. However, TFA is much more powerful than ion, because TFA centralizes and automates the collection of diagnostic information.

TFA provides the following key benefits and options:

- Encapsulation of diagnostic data collection for all Oracle Grid Infrastructure and Oracle RAC components on all cluster nodes into a single command, which you run from a single node
- Option to "trim" diagnostic files during data collection to reduce data upload size
- Options to isolate diagnostic data collection to a given time period, and to a particular product component, such as Oracle ASM, RDBMS, or Oracle Clusterware
- Centralization of collected diagnostic output to a single node in Oracle Database Appliance, if desired
- On-Demand Scans of all log and trace files for conditions indicating a problem
- Real-Time Scan Alert Logs for conditions indicating a problem (for example, Database Alert Logs, Oracle ASM Alert Logs, and Oracle Clusterware Alert Logs)





Refer to My Oracle Support note 1513912.1 "TFA Collector - Tool for Enhanced Diagnostic Gathering" for more information. https://support.oracle.com/rs?type=doc&id=1513912.1

Running Oracle Trace File Analyzer (TFA) Collector Commands

Understand the installed location of tfact1 and the options for the command.

About Using tfactl to Collect Diagnostic Information

When you provision or upgrade to Oracle Database Appliance 19.4, Oracle Trace File Analyzer (TFA) Collector is installed in the directory /opt/oracle/tfa/tfa_home, You can invoke the command line utility for TFA, tfactl from the directory /opt/oracle/tfa/tfa_home/bin/tfactl, or simply type tfactl.

You can use the following command options to run tfact1:

```
/opt/oracle/tfa/tfa_home/bin/tfactl diagcollect -ips|-oda|-odalite|-dcs|-
odabackup|
-odapatching|-odadataguard|-odaprovisioning|-odaconfig|-odasystem|-
odastorage|-database|
-asm|-crsclient|-dbclient|-dbwlm|-tns|-rhp|-procinfo|-afd|-crs|-cha|-wls|
-emagent|-oms|-ocm|-emplugins|-em|-acfs|-install|-cfgtools|-os|-ashhtml|-
ashtext|
-awrhtml|-awrtext -mask -sanitize
```

Table 12-1 Command Options for tfactl Tool

Option	Description
-h	(Optional) Describes all the options for this command.
-ips	(Optional) Use this option to view the diagnostic logs for the specified component.
-oda	(Optional) Use this option to view the logs for the entire Appliance.
-odalite	(Optional) Use this option to view the diagnostic logs for the odalite component.
-dcs	(Optional) Use this option to view the DCS log files.
-odabackup	(Optional) Use this option to view the diagnostic logs for the backup components for the Appliance.
-odapatching	(Optional) Use this option to view the diagnostic logs for patching components of the Appliance.



Table 12-1 (Cont.) Command Options for tfactl Tool

Option	Description	
-odadataguard	(Optional) Use this option to view the diagnostic logs for Oracle Data Guard component of the Appliance.	
-odaprovisioning	(Optional) Use this option to view provisioning logs for the Appliance.	
-odaconfig	(Optional) Use this option to view configuration-related diagnostic logs.	
-odasystem	(Optional) Use this option to view system information.	
-odastorage	(Optional) Use this option to view the diagnostic logs for the Appliance storage.	
-database	(Optional) Use this option to view database-related log files.	
-asm	(Optional) Use this option to view the diagnostic logs for the Appliance.	
-crsclient	(Optional) Use this option to view the diagnostic logs for the Appliance.	
-dbclient	(Optional) Use this option to view the diagnostic logs for the Appliance.	
-dbwlm	(Optional) Use this option to view the diagnostic logs for the specified component.	
-tns	(Optional) Use this option to view the diagnostic logs for TNS.	
-rhp	(Optional) Use this option to view the diagnostic logs for Rapid Home Provisioning.	
-afd	(Optional) Use this option to view the diagnostic logs for Oracle ASM Filter Driver.	
-crs	(Optional) Use this option to view the diagnostic logs for Oracle Clusterware.	
-cha	(Optional) Use this option to view the diagnostic logs for the Cluster Health Monitor.	
-wls	(Optional) Use this option to view the diagnostic logs for Oracle WebLogic Server.	
-emagent	(Optional) Use this option to view the diagnostic logs for the Oracle Enterprise Manager agent.	
-oms	(Optional) Use this option to view the diagnostic logs for the Oracle Enterprise Manager Management Service.	
-ocm	(Optional) Use this option to view the diagnostic logs for the specified component.	
-emplugins	(Optional) Use this option to view the diagnostic logs for Oracle Enterprise Manager plug-ins.	



Table 12-1 (Cont.) Command Options for tfactl Tool

Option	Description
-em	(Optional) Use this option to view the diagnostic logs for Oracle Enterprise Manager deployment.
-acfs	(Optional) Use this option to view the diagnostic logs for Oracle ACFS storage.
-install	(Optional) Use this option to view the diagnostic logs for installation.
-cfgtools	(Optional) Use this option to view the diagnostic logs for the configuration tools.
-os	(Optional) Use this option to view the diagnostic logs for the operating system.
-ashhtml	(Optional) Use this option to view the diagnostic logs for the specified component.
-ashtext	(Optional) Use this option to view the diagnostic logs for the Appliance.
-awrhtml	(Optional) Use this option to view the diagnostic logs for the Appliance.
-awrtext	(Optional) Use this option to view the diagnostic logs for the specified component.
-mask	(Optional) Use this option to choose to mask sensitive data in the log collection.
-sanitize	(Optional) Use this option to choose to sanitize (redact) sensitive data in the log collection.

Usage Notes

You can use Trace File Collector (the tfactl command) to collect all log files for the Oracle Database Appliance components.

The following types of sensitive information can be redacted using the -mask or the -sanitize option:

- Host names
- IP addresses
- Database names
- Tablespace names
- Service names
- Ports
- Operating System user names

For example, when the -mask option is used, all instances of a sensitive name such as a database name called "payrolldb" are replaced with "*******" in the TFA collection.

For example, when the <code>-sanitize</code> option is used, all instances of a sensitive name such as a database name called "payrolldb" are replaced with another string, such as "oCjlN7F8P", in the TFA collection.



Running the Disk Diagnostic Tool

Use the Disk Diagnostic Tool to help identify the cause of disk problems.

The tool produces a list of 14 disk checks for each node. To display details, where n represents the disk resource name, enter the following command:

```
# odaadmcli stordiag n
```

For example, to display detailed information for NVMe pd 00:

```
# odaadmcli stordiag pd_00
```

Running the Oracle Database Appliance Hardware Monitoring Tool

The Oracle Database Appliance Hardware Monitoring Tool displays the status of different hardware components in Oracle Database Appliance server.

The tool is implemented with the Trace File Analyzer collector. Use the tool both on bare-metal and on virtualized systems. The Oracle Database Appliance Hardware Monitoring Tool reports information only for the node on which you run the command. The information it displays in the output depend on the component that you select to review.

Bare Metal Platform

You can see the list of monitored components by running the command odaadmcli show -h

To see information about specific components, use the command syntax odaadmcli show component, where component is the hardware component that you want to query. For example, the command odaadmcli show power shows information specifically about the Oracle Database Appliance power supply:

Virtualized Platform

You can see the list of monitored components by running the command oakclishow -h

To see information about specific components, use the command syntax <code>oakcli show component</code>, where <code>component</code> is the hardware component that you want to query. For

example, the command oakcli show power shows information specifically about the Oracle Database Appliance power supply:

```
# oakcli show power
NAME
              HEALTH HEALTH DETAILS PART_NO. SERIAL_NO.
Power Supply_0 OK
                                   7047410
                                           476856F+1242CE0020
Power Supply_1 OK
                                   7047410
                                             476856F+1242CE004J
(Continued)
LOCATION INPUT
                    POWER OUTPUT POWER INLET TEMP
                                                  EXHAUST TEMP
                                                  34.188 degree C
PS0
         Present
                    88 watts 31.250 degree C
                                31.250 degree C 34.188 degree C
PS1
         Present
                    66 watts
```

Note:

Oracle Database Appliance Server Hardware Monitoring Tool is enabled during initial startup of ODA_BASE on Oracle Database Appliance Virtualized Platform. When it starts, the tool collects base statistics for about 5 minutes. During this time, the tool displays the message "Gathering Statistics..." message.

Configuring a Trusted SSL Certificate for Oracle Database Appliance

The Web Console and DCS Controller use SSL-based HTTPS protocol for secure communication. Understand the implications of this added security and the options to configure SSL certificates.

The Web Console provides an added layer of security using certificates and encryption, when an administrator interacts with the appliance. Encryption of data ensures that:

- Data is sent to the intended recipient, and not to any malicious third-party.
- When data is exchanged between the server and the browser, data interception cannot occur nor can the data be edited.

When you connect to the Web Console through HTTPS, the DCS Controller presents your browser with a certificate to verify the identity of appliance. If the web browser finds that the certificate is not from a trusted Certificate Authority (CA), then the browser assumes it has encountered an untrusted source, and generates a security alert message. The security alert dialog boxes display because Web Console security is enabled through HTTPS and SSL, but you have not secured your Web tier properly with a trusted matching certificate from a Certificate Authority. It is possible to purchase commercial certificates from a Certificate Authority or create your own and register them with a Certificate Authority. However, the server and browser certificates must use the same public certificate key and trusted certificate to avoid the error message produced by the browser.

There are three options to configure your certificates:



- Create your own key and Java keystore, ensure it is signed by a Certificate Authority (CA) and then import it for use.
- Package an existing Privacy Enhanced Mail (PEM) format key and certificates in a new Java keystore.
- Convert an existing PKCS or PFX keystore to a Java keystore and configure it for the Web Console.



For Oracle Database Appliance High-Availability hardware models, run the configuration steps on **both** nodes.

The following topics explain how to configure these options:

- Option 1: Creating a Key and Java Keystore and Importing a Trusted Certificate
 Use keytool, a key and certificate management utility, to create a keystore and a
 signing request.
- Option 2: Packaging an Existing PEM-format Key and Certificates in a New Java Keystore

Use the OpenSSL tool to package Privacy Enhanced Mail (PEM) files in a PKCS keystore.

- Option 3: Converting an Existing PKCS or PFX Keystore to a Java Keystore
 If you have an existing PKCS or PFX keystore for your server's domain, convert it
 to a Java keystore.
- Configuring the DCS Server to Use Custom Keystore
 After packaging or converting your keystore into Java keystore, configure the DCS server to use your keystore.
- Configuring the DCS Agent for Custom Certificate
 After you import the certificate into the keystore, configure the DCS agent to use
 the same certificate.

Option 1: Creating a Key and Java Keystore and Importing a Trusted Certificate

Use keytool, a key and certificate management utility, to create a keystore and a signing request.

1. Create the keystore:

```
keytool -genkeypair -alias your.domain.com -storetype jks -keystore your.domain.com.jks -validity 366 -keyalg RSA -keysize 4096
```

- 2. The command prompts you for identifying data:
 - 1. What is your first and last name? your.domain.com
 - 2. What is the name of your organizational unit? yourunit
 - 3. What is the name of your organization? yourorg
 - 4. What is the name of your City or Locality? yourcity



- 5. What is the name of your State or Province? yourstate
- 6. What is the two-letter country code for this unit? US
- 3. Create the certificate signing request (CSR):

keytool -certreq -alias your.domain.com -file your.domain.com.csr -keystore your.domain.com.jks -ext san=dns:your.domain.com

- 4. Request a Certificate Authority (CA) signed certificate:
 - a. In the directory where you ran Step 1 above, locate the file your.domain.com.csr.
 - **b.** Submit the file to your Certificate Authority (CA).

Details vary from one CA to another. Typically, you submit your request through a website; then the CA contacts you to verify your identity. CAs can send signed reply files in a variety of formats, and CAs use a variety of names for those formats. The CA's reply must be in PEM or PKCS#7 format.

- c. There may be a waiting period for the CA's reply.
- Import the CA's reply. The CA's reply will provide one PKCS file or multiple PEM files.
 - a. Copy the CA's files into the directory where you created the keystore in Step 1 above.
 - **b.** Use keytool to export the certificate from the keystore:

```
keytool -exportcert -alias your.domain.com -file /opt/oracle/dcs/
conf/keystore-cert.crt
-keystore your.domain.name.jks
```

6. Use keytool to import the keystore certificate and the CA reply files:

```
keytool -importcert -trustcacerts -alias your.domain.com
-file /opt/oracle/dcs/conf/keystore-cert.crt -keystore /opt/oracle/dcs/
conf/dcs-ca-certs
```

To import PKCS file, run the command:

```
keytool -importcert -trustcacerts -alias your.domain.com -file
CAreply.pkcs -keystore /opt/oracle/dcs/conf/dcs-ca-certs
```

CAreply.pkcs is the name of the PKCS file provided by the CA and your.domain.com is the complete domain name of your server.

If the CA sent PEM files, then there may be one file, but most often there are two or three. Import the files to your keystore with commands in the order shown below, after substituting your values:

```
keytool -importcert -alias root -file root.cert.pem -keystore /opt/
oracle/dcs/conf/dcs-ca-certs -trustcacerts
keytool -importcert -alias intermediate -file
intermediate.cert.pem /opt/oracle/dcs/conf/dcs-ca-certs -trustcacerts
keytool -importcert -alias intermediat2 -file
intermediat2.cert.pem /opt/oracle/dcs/conf/dcs-ca-certs -trustcacerts
```



 $\label{lem:com-file} \textbf{keytool-importcert-alias} \ your.domain.com\ - file\ server.cert.pem\ / \texttt{opt/oracle/dcs/conf}/dcs-ca-certs\ - \texttt{trustcacerts}$

root.cert.pem is the name of the root certificate file and intermediate.cert.pem is the name of the intermediate certificate file. The root and intermediate files link the CA's signature to a widely trusted root certificate that is known to web browsers. Most, but not all, CA replies include roots and intermediates.

server.cert.pem is the name of the server certificate file. The file links your domain name with your public key and the CA's signature.

Option 2: Packaging an Existing PEM-format Key and Certificates in a New Java Keystore

Use the OpenSSL tool to package Privacy Enhanced Mail (PEM) files in a PKCS keystore.

If you have an existing private key and certificates for your server's domain in PEM format, importing them into a Java keystore requires the OpenSSL tool. OpenSSL can package the PEM files in a PKCS keystore. Java keytool can then convert the PKCS keystore to a Java keystore.

- Install OpenSSL.
- Copy your private key, server certificate, and intermediate certificate into one directory.
- 3. Package the key and certificates into a PKCS keystore as follows:

```
openssl pkcs12 -export -in server.cert.pem -inkey private.key.pem -
certfile
intermediate.cert.pem -name "your.domain.com" -out your.domain.com.p12
```

server.cert.pem is the name of the server certificate file, your.domain.com is the complete domain name of your server, private.key.pem is the private counterpart to the public key in server.cert.pem, and intermediate.cert.pem is the name of the intermediate certificate file.

Convert the resulting PKCS keystore file, <code>your.domain.com.p12</code> into a Java keystore.

Option 3: Converting an Existing PKCS or PFX Keystore to a Java Keystore

If you have an existing PKCS or PFX keystore for your server's domain, convert it to a Java keystore.

1. Run the command:

```
\verb|keytool -importkeystore -srckeystore | your.domain.com.p12 - srcstoretype | PKCS12| \\
```

-destkeystore /opt/oracle/dcs/conf/dcs-ca-certs -deststoretype jks



your.domain.com.p12 is the existing keystore file and your.domain.com is the complete domain name of your server.

2. Configure the DCS server as explained in the topic *Configuring the DCS Server to Use Custom Keystore*.

Configuring the DCS Server to Use Custom Keystore

After packaging or converting your keystore into Java keystore, configure the DCS server to use your keystore.

1. Login to the appliance.

```
ssh -l root oda-host-name
```

2. Generate the obfuscated keystore password:

```
java -cp /opt/oracle/dcs/bin/dcs-controller-n.n.n.-SNAPSHOT.jar
  org.eclipse.jetty.util.security.Password keystore-password
```

For example:

```
[root@oda]# java -cp /opt/oracle/dcs/bin/dcs-controler-SNAPSHOT.jar
org.eclipse.jetty.util.security.Password test
12:46:33.858 [main] DEBUG org.eclipse.jetty.util.log
- Logging to Logger[org.eclipse.jetty.util.log] via
org.eclipse.jetty.util.log.Slf4jLog
12:46:33.867 [main] INFO org.eclipse.jetty.util.log
- Logging initialized @239ms to org.eclipse.jetty.util.log.Slf4jLog
test
OBF:1z0flvu91vv11z0f
MD5:098f6bcd4621d373cade4e832627b4f6
[root@scaoda7s001 conf]#
```

Copy the password that starts with OBF:.

3. Update the DCS controller configuration file.

```
cd /opt/oracle/dcs/conf
```

Update the following parameters in dcs-controller.json:

```
"keyStorePath": "keystore-directory-path/your.domain.com.jks"
"trustStorePath": /opt/oracle/dcs/conf/dcs-ca-certs
"keyStorePassword": "obfuscated keystorepassword"
"certAlias": "your.domain.com"
```

4. Restart the DCS Controller.

```
initctl stop initdcscontroller
initctl start initdcscontroller
```

5. Access the Web Console at https://oda-host-name:7093/mgmt/index.html.



Configuring the DCS Agent for Custom Certificate

After you import the certificate into the keystore, configure the DCS agent to use the same certificate.

1. Update the DCS agent configuration file:

```
cd /opt/oracle/dcs/conf
```

Update the following parameters in the dcs-agent. json file:

```
"keyStorePath": "keystore-directory-path/your.domain.com.jks"
"trustStorePath": /opt/oracle/dcs/conf/dcs-ca-certs
"keyStorePassword": "obfuscated keystorepassword"
"certAlias": "your.domain.com"
```

2. Restart the DCS agent:

```
initctl stop initdcsagent
initctl start initdcsagent
```

- **3.** Access the agent at https://oda-host-name:7070.
- 4. Update the CLI certificates.

```
cp -f /opt/oracle/dcs/conf/dcs-ca-certs
/opt/oracle/dcs/dcscli/dcs-ca-certs
```

5. Update the DCS command-line configuration files:

```
[root@]# cd /opt/oracle/dcs/dcscli
```

Update the following parameters in dcscli-adm.conf and dcscli.conf:

```
TrustStorePath=/opt/oracle/dcs/conf/dcs-ca-certs
TrustStorePassword=keystore_password
```

Disabling the Web Console

You can also disable the Web Console. Disabling the Web Console means you can only manage your appliance through the command-line interface.

1. Log in to the appliance:

```
ssh -l root oda-host-name
```

2. Stop the DCS controller. For HA systems, run the command on both nodes.

```
initctl stop initdcscontroller
```



Preparing Log Files for Oracle Support Services

If necessary, use the command odaadmcli manage diagcollect to collect diagnostic files to send to Oracle Support Services.

Use the Bill Of Materials report saved in the <code>/opt/oracle/dcs/Inventory/</code> directory, to enable Oracle Support to help troubleshoot errors, if necessary.

If you have a system fault that requires help from Oracle Support Services, then you may need to provide log records to help Oracle support diagnose your issue.

You can use Trace File Collector (the tfact1 command) to collect all log files for the Oracle Database Appliance components.

You can also collect log file information by running the command odaadmcli manage diagcollect. This command consolidates information from log files stored on Oracle Database Appliance into a single log file for use by Oracle Support Services. The location of the file is specified in the command output.

Example 12-4 Collecting log file information for a time period, masking sensitive data

```
# odaadmcli manage diagcollect --dataMask --fromTime 2019-08-12 --toTime
2019-08-25
DataMask is set as true
FromTime is set as: 2019-08-12
ToTime is set as: 2019-08-25
TFACTL command is: /opt/oracle/tfa/tfa_home/bin/tfactl
Data mask is set.
Collect data from 2019-08-12
Collect data to 2019-08-25
```



A

Oracle Database Appliance Software Configuration Defaults

Oracle Database Appliance software configuration defaults.

- Directory Paths for Oracle Database Appliance
 Locate the storage and mount configuration file paths for Oracle Database Appliance.
- Location of Log Files
 Log files are available for actions performed in the command-line interface and
 Web Console and are useful when you need to track and debug jobs.
- Oracle Groups and User Configurations for Oracle Database Appliance
 Review the groups and default users when you use the Web Console to deploy
 the appliance. All passwords are set to the Master password that you define during
 deployment.

Directory Paths for Oracle Database Appliance

Locate the storage and mount configuration file paths for Oracle Database Appliance.

Oracle homes on Oracle Database Appliance follow Optimal Flexible Architecture guidelines.

Directory Paths for Oracle Database Appliance

Item	Directory Path
Grid home	/u01/app/release-specific_name/gi owner
Grid base	/u01/app/ <i>gi owner</i>
Oracle home	<pre>/u01/app/rdbms owner/product/ rdbms_version/ dbhome_home_sequence_number</pre>
Oracle base	/u01/app/rdbms owner
Oracle Inventory	/u01/app/oraInventory

Location of Log Files

Log files are available for actions performed in the command-line interface and Web Console and are useful when you need to track and debug jobs.

You can also use the Oracle Appliance Manager Web Console to view job activity, including the tasks that make up the job. The status of each task appears in the Web Console and you can drill down to get greater details.

If you log a Service Request, upload all of the logs in the $\protect\operatorname{\mathsf{Nopt/oracle/dcs/log}}$ directory.

Patching Log Files

All patching-related information is logged in the dcs-agent log file at /opt/oracle/dcs/log/dcs-agent.log.

DCS Agent Log Directories

Agent-specific activities are logged in the dcs-agent log.

The DCS Agent, controller, and command-line interface output appears in the /opt/oracle/dcs/log/dcs-agent.log file.

If an error occurs in the command-line interface layer, then the output will show in the $\protect\operatorname{\footnotemap}{\protect}}}}}}}}} \label{fig:controlled}$

Storage Logs

Storage-related activity is logged in the oakd log file.

/opt/oracle/oak/log/hostname/oak/oakd.log

For example, /opt/oracle/oak/log/myhost/oak/oakd.log

Use the odaadmcli manage diagcollect command to collect diagnostic logs for storage components. The files are saved in the oakdiag log file.

/opt/oracle/oak/log/hostname/oakdiag/file name.tar.gz

For example, /opt/oracle/oak/log/myhost/oakdiag/oakStorage-myhost-20161120_2217.tar.gz

Database Logs

Online logs are stored in the /u03/app/db user/redo/ directory.

Oracle Fast Recovery Area (FRA) is located in the /u03/app/db user/fast_recovery_area directory.

Database alert logs are stored in the location <code>\$ORACLE_BASE/diag/rdbms/database_unique_name</code>.

Oracle Auto Service Request (Oracle ASR) Log Files

All log files for Oracle ASR are located in the /var/opt/asrmanager/log/ directory.



Oracle Groups and User Configurations for Oracle Database Appliance

Review the groups and default users when you use the Web Console to deploy the appliance. All passwords are set to the Master password that you define during deployment.

Default Operating System Groups and User Configurations

Table A-1 Default Operating System Groups and Users Configuration for Oracle Database Appliance

Groups and Users	Default Value
Oracle Grid Infrastructure installation owner	grid, UID 1001
Oracle Database installation owner	oracle, UID 1000
Oracle Database system administrator	sys
Oracle Database generic administrator	system
Oracle Inventory system privileges group	oinstall, GID 1001
Oracle ASM Administrators system privileges	asmadmin, GID 1004
Oracle ASM Users system privileges	asmdba, GID 1006
Oracle ASM Operator system privileges	asmoper, GID 1005
Oracle Database Administrators system privileges	dba, GID 1003
Oracle Database Operator system privileges	dbaoper, GID 1002

Oracle Groups and User Configurations

You can use the Web Console or the odacli create-appliance command and a JSON file to deploy the appliance. The following configurations are supported:

- 2 Users with 6 groups (operating system role separation)
- Single User with 6 groups (no operating system role separation)
- Single user with 2 groups (no operating system role separation)

You can customize groupname, username, and UID.



B

Oracle Database Appliance Storage Defaults

Review this section to understand Oracle Database Appliance storage architecture and options and how to determine usable storage.

About Database File Storage

Use Oracle Automatic Storage Management (Oracle ASM) or Oracle Automatic Storage Management Cluster File System (Oracle ACFS) for database files storage.

Oracle ACFS Mount Points and Storage Space

Review Oracle ASM Cluster file system (ACFS) mount points for Oracle Database Appliance.

Displaying Mounted Disk Details

Use the Oracle Automatic Storage Management lsdg command to display mounted disk groups and their information for Oracle Database Appliance.

Usable Space on Oracle Database Appliance X8-2S and X8-2M Review the table for the approximate amount of usable space for Oracle Database Appliance X8-2S and X8-2M.

Usable Space on Oracle Database Appliance X8-2-HA Review the table for the approximate amount of usable space for high performance and high capacity storage on Oracle Database Appliance X8-2-HA.

Usable Free Space with Oracle ASM
 When Oracle ASM calculates usable Free Space, it determines the amount of space to reserve in the case of a disk failure.

About Database File Storage

Use Oracle Automatic Storage Management (Oracle ASM) or Oracle Automatic Storage Management Cluster File System (Oracle ACFS) for database files storage.

Database file systems are used exclusively for storing database files, and they include a DATA file system for database data files and a RECO file system for storing archive files and backups. Oracle Database Appliance supports Oracle Automatic Storage Management Cluster File System (Oracle ACFS) or Oracle Automatic Storage Management (Oracle ASM) database file storage. You determine the type of database storage when you create the database.

About Oracle ASM Database Storage

With Oracle ASM, database datafiles are stored in DATA diskgroup. On X8-2, X7-2S, and X7-2L systems, which do not have REDO diskgroup, redo and archive files are stored in RECO diskgroup. On X7-2-HA systems, redo logs are stored in the REDO diskgroup.

Reserved storage is the amount of Oracle Automatic Storage Management (Oracle ASM) storage required to maintain redundancy in the event of a disk failure. If you use

the reserve storage capacity, then the system continues to run, and it is protected through Oracle ASM mirroring. However, in the event of a disk failure, the system is then running in a non-protected and degraded mode. In this event, you must replace disks immediately. If there is no reserved space available, then rebalance cannot restore redundancy after a disk failure.

If you specify mirroring for a file, then Oracle ASM automatically stores redundant copies of the file extents in separate failure groups. Failure groups apply to normal, high, and flex redundancy disk groups. You can define the failure groups for each disk group when you create or alter the disk group.

See Also:

Oracle Automatic Storage Management Administrator's Guide in the Oracle Database documentation library for information about Oracle ASM Mirroring and Disk Group Redundancy.

About Oracle ACFS Database Storage

With Oracle ACFS, an Oracle ACFS file system is created from DATA diskgroup for each database to store datafiles, and an Oracle ACFS file system is created from RECO diskgroup for redo and fast recovery area for all databases.

Each database created under ACFS has it own mount points, /u02/app/oracle/oradata/dbid. When you delete a database, you should clean up the files.

Storage Configuration Options

When Oracle Database Appliance is deployed, you can configure how the storage capacity is shared between DATA diskgroup and RECO diskgroup. You can choose anywhere from 10% to 90% for DATA and the remainder for RECO. The amount of usable storage is determined by the percentage configured for DATA. You can run the command 1sdg to determine the usable storage on the DATA disk group.

Oracle ACFS Mount Points and Storage Space

Review Oracle ASM Cluster file system (ACFS) mount points for Oracle Database Appliance.

If you select Oracle Automatic Storage Management (Oracle ASM) for database storage when you create a database, then an Oracle ASM Cluster file system (ACFS) is not created. All files are in an Oracle ASM diskgroup.

If you select Oracle ACFS for database storage, then each database has its own Oracle ACFS mount point:

- DATA diskgroup: /u02/app/oracleuser/oradata/db name
- RECO diskgroup: /u03/app/oracleuser.

With Oracle ACFS, the following are created:

 A 100G ACFS is created from +DATA diskgroup for each database. This Oracle ACFS automatically extends the space on demand.



 A common Oracle ACFS with 25% of +RECO diskgroup is created with auto extension on. This file system is used for fast recovery area and redo logs for all databases.

Table B-1 Oracle ACFS Mount Points and Related Oracle ASM Disk Groups and Volume Information

File System	Oracle ASM Disk Group	Oracle ASM Dynamic Volume	Mount Point
DATA	+DATA	/dev/asm/dat <i>dbname-nnn</i> For example: /dev/asm/	/u02/app/oracleuser/oradata/ dbname
		datodacn-123	For example: /u02/app/example/ oradata/odacn
RECO	+RECO	/dev/asm/reco-nn	/u03/app/ <i>oracleuser</i>
			This mount point is shared by all databases for fast_recovery_area and redo logs.
			For fast_recovery_area, the path is: /u03/app/oracleuser/fast_recovery_area/db_name
			For redo logs, the path is: /u03/app/ oracleuser/redo/db_name

Example B-1 Oracle ACFS Storage Space

When the Oracle ACFS file systems are created, they do not initially consume all of the storage in the appliance. Space is preserved for additional repositories, or in some cases, database files stored directly in Oracle ASM. You can check for available storage space in your file systems by running the operating system command \mathtt{df}_{-k} as shown in the following example.

# df -k					
Filesystem	1K-blocks	Used	Available	Use%	
Mounted on					
/dev/mapper/VolGroupSys-LogVolRoot	30963708	14203568	15187276	49%	/
tmpfs	65952292	647800	65304492		
1% /dev/shm					
/dev/sda1	495844	43872	426372	10%	/
boot					
/dev/mapper/VolGroupSys-LogVolOpt	61927420	18594420	40187272	32%	/
opt					
/dev/mapper/VolGroupSys-LogVolU01	103212320	49621560	48347880	51%	/
u01					
/dev/asm/reco-62	76546048	1469676	75076372		
2% /u03/app/oracle					
/dev/asm/datrdb2-268	104857600	3872368	100985232		
4% /u02/app/oracle/oradata/rdb2					
/dev/asm/datndb11-268	104857600	247160	104610440		
<pre>1% /u02/app/oracle/oradata/ndb11</pre>					
/dev/asm/datndb12-268	104857600	247160	104610440		
1% /u02/app/oracle/oradata/ndb12					



Displaying Mounted Disk Details

Use the Oracle Automatic Storage Management lsdg command to display mounted disk groups and their information for Oracle Database Appliance.

To display information about a specific disk group, specify the disk group in the command.

- 1. Log in as a grid user.
- 2. Run the Oracle Automatic Storage Management 1sdg command.

Example B-2 Determining Storage on the DATA Disk Group

```
ASMCMD [+] > lsdg data

State Type Rebal Sector Block AU Total_MB Free_MB Req_mir_free_MB Usable_file_MB

MOUNTED NORMAL N 512 4096 4194304 12288 8835 1117 3859

(continued)
Offline_disks Voting_files Name
```

Usable Space on Oracle Database Appliance X8-2S and X8-2M

Review the table for the approximate amount of usable space for Oracle Database Appliance X8-2S and X8-2M.

Oracle Database Appliance X8-2S and X8-2M use 6.4TB NVMe. The usable data capacity varies because it is derived by converting disk hardware terabytes (based on 1 kilobyte equals 1,000 bytes) into software storage terabytes (based on 1 kilobyte equals 1,024 bytes) and splitting the usable capacity into Oracle Automatic Storage Management (Oracle ASM) disk groups.

The estimated usable space is the aggregate for DATA and RECO disk groups and is calculated based on the number of drives, when configured for 15% reserved space. Raw and usable storage capacity is based on storage industry conventions for terabytes (based on 1 kilobyte equals 1,000 bytes). The high redundancy values in the table describe the space needed to recover from one failure only.

Table B-2 Usable Disk Capacity on Oracle Database Appliance X8-2S and X8-2M

Number of Drives	of Drives Raw Storage Usable Storage with Normal Redundancy		Usable Storage with High Redundancy		
X8-2S/X8-2M 2 drives	12.8 TB	5.4 TB	Not Applicable		
X8-2M 4 drives	25.6 TB	10.9 TB	7.3 TB		



Table B-2 (Cont.) Usable Disk Capacity on Oracle Database Appliance X8-2S and X8-2M

Number of Drives	Raw Storage	Usable Storage with Normal Redundancy	Usable Storage with High Redundancy
X8-2M	38.4 TB	16.3 TB	10.9 TB
6 drives			
X8-2M	51.2 TB	21.8 TB	14.5 TB
8 drives			
X8-2M	64 TB	27.2 TB	18.1 TB
10 drives			
X8-2M	76.8 TB	32.6 TB	21.8 TB
12 drives			

Usable Space on Oracle Database Appliance X8-2-HA

Review the table for the approximate amount of usable space for high performance and high capacity storage on Oracle Database Appliance X8-2-HA.

Usable Space for High Performance

Oracle Database Appliance X8-2-HA use 7.68TB solid state drives (SSDs). The usable data capacity varies because it is derived by converting disk hardware terabytes (based on 1 kilobyte equals 1,000 bytes) into software storage terabytes (based on 1 kilobyte equals 1,024 bytes) and splitting the usable capacity into Oracle Automatic Storage Management (Oracle ASM) disk groups.

The tables in this topic describe the usable storage disk group sizes for Oracle Database Appliance X8-2-HA based on number of drives when configured for 15% reserved space. Raw and usable storage capacity is based on storage industry conventions for terabytes (based on 1 kilobyte equals 1,000 bytes).

For high performance storage, the usable storage is the aggregate for DATA and RECO disk groups. The high redundancy values in the table describe the space needed to recover from one failure only.

Table B-3 Usable Disk Capacity for High Performance on Oracle Database Appliance X8-2-HA

Number of Drives	Raw Storage	Usable Storage with Normal Redundancy	Usable Storage with High Redundancy
6 SSD drives	46 TB	19 TB	13 TB
12 SSD drives	92 TB	39 TB	26 TB
18 SSD drives	138 TB	59 TB	39 TB
24 SSD drives	184 TB	78 TB	52 TB
48 SSD drives	369 TB	156 TB	104 TB



Note:

For an Oracle Database Appliance Virtualized Platform:

- For non-CDB databases, the REDO disk group has 50% free disk space.
- For CDB databases, an Oracle ASM Cluster file system (ACFS) mount point is created per CDB database, based on the template log file size. If this is a Single Instance (SI) Oracle Database, then multiply by 3. If the database is an Oracle RAC database, then multiply by 4.

Usable Space for High Capacity

SSD storage capacity is for the FLASH disk group. HDD storage capacity is the aggregate for DATA and RECO disk groups. Usable storage calculations account for 15% reserved space required to maintain full redundancy in case of disk failure. Raw and usable storage capacity is based on storage industry conventions for terabytes (based on 1 kilobyte equals 1,000 bytes). The high redundancy values in the table describe the space needed to recover from one failure only.

Table B-4 Usable Disk Capacity for High Capacity on Oracle Database Appliance X8-2-HA

Number of Drives	Raw Storage			Usable Storage with Normal Redundancy		Usable Storage with High Redundancy	
6 SSD drives and 18 HDD drives	•	SSDs: 46 TB HDDs: 252 TB	•	SSDs: 19 TB HDDs: 107 TB	•	SSDs: 13 TB HDDs: 71 TB	
12 SSD drives and 36 HDD drives	•	SSDs: 92 TB HDDs: 504 TB	•	SSDs: 39 TB HDDs: 214 TB	•	SSDs: 26 TB HDDs: 142 TB	

Usable Free Space with Oracle ASM

When Oracle ASM calculates usable Free Space, it determines the amount of space to reserve in the case of a disk failure.

For Oracle Database Appliance with 2 or 4 NVMe drives, this reserved space is not required. When you query Oracle ASM or Oracle Database Appliance commands to view the amount of storage available, the <code>usable_File_MB</code> value may report a negative number.

Table B-5 Oracle ASM Calculations

Number of Drives	Redundancy	Total_MB	Free_MB	Req_mir_free _MB	Usable_file_M B	Name
2	NORMAL	4894016	4893372	0	1220644	RECO/
4	NORMAL	1231176	1230996	610468	305150	RECO/



Note: 1TB = MB divided by 1024^2



How Oracle ASM and Oracle Database Appliance Define Capacity

The following table describes how capacity terms are defined by Oracle ASM and Oracle Database Appliance.

Table B-6 Definition of Terminology

Term	Oracle ASM Definition	Oracle Database Appliance Definition
Total_MB	Size of the disk group in MB	Total usable storage. For example, for 2 NVMe drives, total usable storage is 5.8TB.
Free_MB	Free space in the disk group in MB, without regard to redundancy.	Total usable storage after formatting to Oracle ASM disk groups. For example, for 2 NVMe drives, total usable storage is 5.8TB.
Req_mir_free_MB	Amount of space that must be available in the disk group to restore full redundancy after the worst failure that can be tolerated by the disk group.	Total usable storage after formatting to Oracle ASM disk groups. For example, for 2 NVMe drives, total usable storage is 5.8TB.
Usable_file_MB	Amount of free space, adjusted for mirroring, that is available for new files.	Total usable space taking into consideration the mirroring level. Oracle ASM also calculates the amount of space required.



C

Creating an Appliance Using JSON File

Understand the process to create an appliance using the command odacli create-appliance and view an example JSON file.

- Loading and Saving Appliance Configurations
 You can load a saved JSON file and use it to configure your appliance, and save an existing configuration as a JSON file from the Web Console.
- Readme for the Command odacli create-appliance
 If you want to create the appliance outside of the Web Console, then review the readme file for details on how to create a JSON file to use with the command-line interface.
- Example JSON Files to Create a Single Node Appliance with the CLI
 Follow these JSON file examples to create a JSON file to deploy a single node
 appliance with the command odacli create-appliance.
- Example JSON File to Create a Multi-Node Appliance with the CLI Follow the JSON file example to create a JSON file to deploy a multi-node appliance with the command odacli create-appliance.

Loading and Saving Appliance Configurations

You can load a saved JSON file and use it to configure your appliance, and save an existing configuration as a JSON file from the Web Console.

Using a Saved Configuration to Create a New Appliance in the Web Console

You can load a saved configuration from your client machine, and create a new appliance.

- 1. Log into the Web Console.
- 2. In the Create Appliance page, click Browse next to Load Configuration.
- 3. Select the JSON file from the local machine, being used to access the Web Console.
- 4. The appliance configuration values from the JSON file are populated in the fields on the Create Appliance page.
- Make any changes required, and submit the request to create the appliance Note that for security requirements, you must enter passwords manually.

Saving an Appliance Configuration from the Web Console

You can save an appliance configuration and use it to create another appliance.

- 1. Log into the Web Console.
- 2. If you have already configured your appliance, then in the Create Appliance page, click **Save Configuration**.

The configuration is saved as a JSON file on the local machine, being used to access the Web Console.

Readme for the Command odacli create-appliance

If you want to create the appliance outside of the Web Console, then review the readme file for details on how to create a JSON file to use with the command-line interface.

You can use the command odacli create-appliance and a JSON file that includes your appliance configuration settings to deploy the appliance instead of using the Web Console.



It is important to review the readme and the examples carefully before creating your JSON file. If you do not enter your network and Oracle ILOM information correctly based on your setup, you will lose network access to both the host and Oracle ILOM.

Readme

The readme is located in the <code>/opt/oracle/dcs/sample</code> directory. Review the readme carefully along with the provided JSON example files. Create a JSON file with the necessary changes based on your environment and requirements.

Example JSON Files to Create a Single Node Appliance with the CLI

Follow these JSON file examples to create a JSON file to deploy a single node appliance with the command odacli create-appliance.

Use the example JSON files and the information located in the readme as a template to create a file for your environment. Examples and the readme are located in the /opt/oracle/dcs/sample directory.



If you do not enter your network and Oracle ILOM information correctly based on your setup, then network access is lost to both the host and Oracle ILOM.

When using the example to create your JSON file, change the definitions to match your environment. The password must meet password requirements.



Example C-1 JSON File to Create a Single Node Oracle Database Appliance with Role Separation

The following is an example of a JSON file that creates a single node appliance on Oracle Database Appliance. The example uses role separation.

```
"instance" : {
  "name" : "odambox",
  "instanceBaseName" : "odambox-c",
  "dbEdition" : "EE",
  "timeZone" : "UTC",
  "ntpServers" : ["10.0.3.14"],
  "dnsServers" : ["10.0.4.10","10.0.4.11","10.0.4.12"],
  "domainName" : "example.com",
  "isRoleSeparated" : true,
  "osUserGroup" : {
    "groups" : [ {
      "groupId" : 1001,
      "groupName" : "oinstall",
      "groupRole" : "oinstall"
    }, {
      "groupId" : 1002,
      "groupName" : "dbaoper",
      "groupRole" : "dbaoper"
      "groupId" : 1003,
      "groupName" : "dba",
      "groupRole" : "dba"
    }, {
      "groupId" : 1004,
      "groupName" : "asmadmin",
      "groupRole" : "asmadmin"
    }, {
      "groupId" : 1005,
      "groupName" : "asmoper",
      "groupRole" : "asmoper"
    }, {
      "groupId" : 1006,
      "groupName" : "asmdba",
      "groupRole" : "asmdba"
    } ],
    "users" : [ {
      "userId" : 1000,
      "userName" : "oracle",
      "userRole" : "oracleUser"
      "userId" : 1001,
      "userName" : "grid",
      "userRole" : "gridUser"
    } ]
"nodes" : [ {
  "nodeNumber" : "0",
```



```
"nodeName" : "odambox",
  "network" : [ {
     "nicName" : "btbond1",
     "ipAddress" : "10.0.1.11",
     "subNetMask" : "255.255.240.0",
     "gateway" : "10.0.0.1",
     "networkType" : [ "Public" ],
     "isDefaultNetwork" : true
   },
  ],
  "ilom" : {
    "ilomName":"odambox-c",
    "ipAddress": "10.0.2.10",
    "subNetMask": "255.255.240.0",
    "gateway": "10.0.0.1"
  }
} ],
"grid" : {
  "diskGroup" : [ {
    "diskGroupName" : "DATA",
    "redundancy" : "NORMAL",
    "diskPercentage" :80
 }, {
    "diskGroupName" : "RECO",
    "redundancy" : "NORMAL",
    "diskPercentage" :20
 } ],
"scan" : {
   "scanName": "odambox-scan",
   "ipAddresses":[
  "10.0.1.11"
  ]
 },
"vip":[
  {
  "nodeNumber": "0",
  "vipName": "odambox-vip",
  "ipAddress":"10.0.1.11"
  }
 ],
  "language" : "en",
  "enableAFD":"TRUE"
},
"database" : {
  "dbName" : "myTestDb",
  "databaseUniqueName": "myTestDb_sealkj",
  "dbEdition" : "EE",
  "dbVersion" : "12.2.0.1",
  "dbHomeId":null,
  "instanceOnly" : false,
  "isCdb" : true,
  "pdBName" : "pdb1",
  "pdbAdminuserName" : "pdbuser",
  "enableTDE":true,
  "adminPassword" : "password",
```

```
"dbType" : "SI",
  "dbTargetNodeNumber" : null,
  "dbClass" : "OLTP",
  "dbShape" : "odb1",
  "dbStorage" : "ACFS",
  "dbCharacterSet" : {
    "characterSet" : "AL32UTF8",
    "nlsCharacterset" : "AL16UTF16",
    "dbTerritory" : "AMERICA",
    "dbLanguage" : "AMERICAN"
  },
  "dbConsoleEnable" : false,
  "backupConfigId":null,
  "rmanBkupPassword": null
},
"asr" :{
  "asrType": "INTERNAL",
  "userName": "john.smith@example.com",
  "password": "password",
  "proxyServerName": "www-proxy.example.com",
  "proxyPort": "80",
  "proxyUserName":"proxy-user",
  "proxyPassword":"proxy-password",
  "snmpVersion": "v2"
```

Example C-2 JSON File to Create a Single Node Oracle Database Appliance without Role Separation

The following is an example of a JSON file that creates an Oracle Database Appliance without using role separation. This example creates two groups (oinstall and dba) and one user ("oracle").

```
"instance" : {
  "name" : "odambox",
  "instanceBaseName" : "odambox-c",
  "dbEdition" : "EE",
  "timeZone" : "UTC",
  "ntpServers" : ["10.0.3.14"],
  "dnsServers" : ["10.0.4.10","10.0.4.11","10.0.4.12"],
  "domainName" : "example.com",
  "isRoleSeparated" : false,
  "osUserGroup" : {
    "groups" : [ {
      "groupId" : 1001,
      "groupName" : "oinstall",
      "groupRole" : "oinstall"
      "groupId" : 1002,
      "groupName" : "dba",
      "groupRole" : "dba"
    } ],
   "users" : [ {
```



}

```
"userId" : 1000,
      "userName" : "oracle",
      "userRole" : "oracleUser"
    } ]
},
"nodes" : [ {
  "nodeNumber" : "0",
  "nodeName" : "odambox",
  "network" : [ {
     "nicName" : "btbond1",
     "ipAddress" : "10.0.1.11",
     "subNetMask" : "255.255.240.0",
     "gateway" : "10.0.0.1",
     "networkType" : [ "Public" ],
     "isDefaultNetwork" : true
    },
  ],
  "ilom" : {
    "ilomName":"odambox-c",
    "ipAddress":"10.0.2.10",
    "subNetMask": "255.255.240.0",
    "gateway":"10.0.0.1"
} ],
"grid" : {
  "diskGroup" : [ {
    "diskGroupName" : "DATA",
    "redundancy" : "NORMAL",
    "diskPercentage" :80
  }, {
    "diskGroupName" : "RECO",
    "redundancy" : "NORMAL",
    "diskPercentage" :20
  } ],
"scan" : {
   "scanName": "odambox-scan",
   "ipAddresses":[
  "10.0.1.11"
  ]
  },
"vip":[
  "nodeNumber":"0",
  "vipName": "odambox-vip",
  "ipAddress":"10.0.1.11"
  ],
  "language" : "en",
  "enableAFD":"TRUE"
},
"database" : {
  "dbName" : "myTestDb",
  "databaseUniqueName": "myTestDb_sealkj",
  "dbEdition" : "EE",
```

```
"dbVersion" : "12.2.0.1",
    "dbHomeId":null,
    "instanceOnly" : false,
    "isCdb" : true,
    "pdBName" : "pdb1",
    "pdbAdminuserName" : "pdbuser",
    "enableTDE":true,
    "adminPassword" : "password",
    "dbType" : "SI",
    "dbTargetNodeNumber" : null,
    "dbClass" : "OLTP",
    "dbShape" : "odb1",
    "dbStorage" : "ACFS",
    "dbCharacterSet" : {
      "characterSet" : "AL32UTF8",
      "nlsCharacterset" : "AL16UTF16",
      "dbTerritory" : "AMERICA",
      "dbLanguage" : "AMERICAN"
    },
    "dbConsoleEnable" : false,
    "backupConfigId":null,
    "rmanBkupPassword": null
  "asr" :{
    "asrType": "INTERNAL",
    "userName": "john.smith@example.com",
    "password": "password",
    "proxyServerName": "www-proxy.example.com",
    "proxyPort": "80",
    "proxyUserName": "proxy-user",
    "proxyPassword": "proxy-password",
    "snmpVersion": "v2"
}
```

Example JSON File to Create a Multi-Node Appliance with the CLI

Follow the JSON file example to create a JSON file to deploy a multi-node appliance with the command odacli create-appliance.

Use the example JSON files and the information located in the readme as a template to create a file for your environment. Examples and the readme are located in the /opt/oracle/dcs/sample directory.

Note:

It is important to review the readme and the examples carefully before creating your JSON file. If you do not enter your network and Oracle ILOM information correctly based on your setup, then network access is lost to both the host and Oracle ILOM.



Example C-3 JSON File to Create a Multi-Node Oracle Database Appliance with Role Separation

The following is an example of a JSON file that creates a multi-node appliance on Oracle Database Appliance bare metal platform. The example uses role separation. When using the example to create your JSON file, change the definitions to match your environment. The password must meet password requirements.

```
"instance":{
   "name": "odahabox",
   "instanceBaseName": "odahabox",
   "dbEdition": "EE",
   "timeZone": "UTC",
   "ntpServers" : ["10.0.3.14"],
   "dnsServers" : ["10.0.4.10","10.0.4.11","10.0.4.12"],
   "domainName": "example.com",
   "isRoleSeparated":true,
   "osUserGroup":{
      "groups":[
            "groupId":1001,
            "groupName": "oinstall",
            "groupRole": "oinstall"
            "groupId":1002,
            "groupName": "dbaoper",
            "groupRole": "dbaoper"
            "groupId":1003,
            "groupName": "dba",
            "groupRole": "dba"
            "groupId":1004,
            "groupName": "asmadmin",
            "groupRole": "asmadmin"
            "groupId":1005,
            "groupName": "asmoper",
            "groupRole": "asmoper"
            "groupId":1006,
            "groupName": "asmdba",
            "groupRole": "asmdba"
      ],
      "users":[
            "userId":101,
            "userName": "grid",
```



```
"userRole": "gridUser"
            "userId":102,
            "userName": "oracle",
            "userRole": "oracleUser"
      ]
   "objectStoreCredentials":null
},
"nodes":[
   {
      "nodeNumber": "0",
      "nodeName": "odahaboxc1n2",
      "network":[
         {
            "nicName": "btbond1",
            "ipAddress": "10.31.98.133",
            "subNetMask": "255.255.240.0",
            "gateway": "10.31.96.1",
            "networkType":[
                "Public"
            "isDefaultNetwork":true
      ],
      "ilom":{
         "ilomName": "odahabox2-c",
         "ipAddress": "10.31.16.140",
         "subNetMask": "255.255.240.0",
         "gateway":"10.31.16.1"
      "nodeNumber": "1",
      "nodeName": "odahaboxc1n1",
      "network":[
            "nicName": "btbond1",
            "ipAddress": "10.31.98.132",
            "subNetMask": "255.255.240.0",
            "gateway": "10.31.96.1",
            "networkType":[
                "Public"
            "isDefaultNetwork":true
      ],
      "ilom":{
         "ilomName": "odahabox1-c",
         "ipAddress": "10.31.16.139",
         "subNetMask": "255.255.240.0",
         "gateway": "10.31.16.1"
```

```
],
"grid":{
   "diskGroup":[
         "diskGroupName": "DATA",
         "redundancy": "HIGH",
         "diskPercentage":80
         "diskGroupName": "RECO",
         "redundancy": "HIGH",
         "diskPercentage":20
      },
         "diskGroupName": "REDO",
         "redundancy": "HIGH",
         "diskPercentage":null
   ],
   "scan":{
      "scanName": "odahaboxc1-scan",
      "ipAddresses":[
         "10.31.98.182",
         "10.31.98.183"
      ]
   },
   "vip":[
         "nodeNumber": "0",
         "vipName": "odahaboxc1n2-vip",
         "ipAddress":"10.31.98.159"
      },
         "nodeNumber": "1",
         "vipName": "odahaboxcln1-vip",
         "ipAddress":"10.31.98.158"
   ],
   "language": "en",
   "enableAFD": "TRUE"
"database":{
   "dbName": "myTestDb",
   "databaseUniqueName":"myTestDb_sea1kj",
   "dbVersion": "12.2.0.1",
   "dbHomeId":null,
   "instanceOnly":false,
   "isCdb":true,
   "pdBName": "pdb1",
   "pdbAdminuserName": "pdbuser",
   "enableTDE":true,
   "adminPassword": "password",
   "dbType": "RAC",
   "dbTargetNodeNumber":null,
```

```
"dbClass":"OLTP",
  "dbShape":"odb1",
  "dbStorage":"ACFS",
  "dbCharacterSet":{
        "characterSet":"AL32UTF8",
        "nlsCharacterset":"AL16UTF16",
        "dbTerritory":"AMERICAN,
        "dbLanguage":"AMERICAN"
    },
    "dbConsoleEnable":false,
    "backupConfigId":null
},
  "asr":null
}
```



D

Database Shapes for Oracle Database Appliance

Use the information in this appendix to select database shapes, or templates, for your planned databases.

About Database Shapes and Classes

Review this information to help determine the database shape (also known as a database template) and class to use based on the common workload your databases perform.

Database Shapes for the OLTP Class

Use Oracle Database Appliance OLTP Database Shapes if your database workload is primarily online transaction processing (OLTP).

Database Shapes for the In-Memory Class

Use Oracle Database Appliance In-Memory (IMDB) database shapes if your database workload can fit in memory, and can benefit from in-memory performance capabilities.

Database Shapes for the DSS Class

Use DSS database shapes if your database workload is primarily decision support services (DSS) or data warehousing.

About Database Shapes and Classes

Review this information to help determine the database shape (also known as a database template) and class to use based on the common workload your databases perform.

Oracle Database Appliance shapes define databases with parameters selected specifically to optimize performance on Oracle Database Appliance. In addition, these shapes help you to set up appropriate instance caging and to acquire an appropriate license.

Oracle Database Appliance enables you to consolidate many databases into a single system. Consolidation can minimize idle resources, maximize efficiency, and lower costs. By using instance caging in conjunction with Oracle Database Resource Manager (the Resource Manager), you can provide desired levels of service across multiple instances on a single Oracle Database Appliance.

Oracle Database Appliance shapes are already tuned for the size of each database instance workload. They are designed to run on a specific number of cores. Caging ensures that each database workload is restricted to the set of cores allocated by the shape, enabling multiple databases to run concurrently with no performance degradation, up to the capacity of Oracle Database Appliance. You can select database shape sizes larger than your current needs to provide for planned growth, which you accommodate later by adjusting System Global Area (SGA) and Program Global Area (PGA) sizes as well as the number of cores.

Note:

Oracle strongly recommends that you use the Oracle Database Appliance shapes, because they implement best practices and are configured specifically for Oracle Database Appliance.

Choosing a Database Shape

Database shapes are configured specifically for the type of database workload that you want to carry out on your databases on Oracle Database Appliance. Choose the shape that best matches the common workload your databases perform (OLTP, DSS, In-Memory).

The database sizing tables provide shape names and sizing based on the number of CPUs and memory attributes for each type of database workload.

Identify the shape type that is appropriate to your database workload and hardware:

- Use Oracle Database Appliance OLTP Database Shapes if your database workload is primarily online transaction processing (OLTP).
- Use Oracle Database Appliance DSS database shapes if your database workload is primarily decision support services (DSS) or data warehousing.
- Use Oracle Database Appliance In-Memory (IMDB) database shapes if your database workload can fit in memory, and can benefit from in-memory performance capabilities.

Use the database shape tables to help select the best shapes for your databases. When using these tables remember the following:

- The information in the tables assumes that you are creating local disk backups.
 Consider the space requirements for your database and the policy for local disk backups versus external backups. Typically, external backups have more space available for the database than local backups.
- The log file size assumes three (3) REDO log groups for each instance with a log switch every 15 minutes when the system is running at full capacity.

Database Shapes for the OLTP Class

Use Oracle Database Appliance OLTP Database Shapes if your database workload is primarily online transaction processing (OLTP).

The tables list the online transaction processing (OLTP) database shape sizes for Oracle Database Appliance X8-2S, X8-2M, and X8-2-HA.

The information in the table assumes the following:

 You are creating local disk backups. Consider the space requirements for your database and the policy for local disk backups versus external backups. Typically, external backups have more space available for the database than local backups.



Table D-1 Oracle Database Appliance X8-2S OLTP Database Shapes

Shape	CPU Cores	SGA (GB)	PGA (GB)	Processes	Log File Size (GB)	Log Buffer (MB)
odb1s	1	2	1	200	4	32
odb1	1	4	2	200	4	32
odb2	2	8	4	400	4	32
odb4	4	16	8	800	4	64
odb6	6	24	12	1200	8	256
odb08	8	32	16	1600	8	256
odb10	10	40	20	2000	8	256
odb12	12	48	24	2400	16	256
odb16	16	64	32	3200	16	256
odb12	12	48	24	2400	16	256

Table D-2 Oracle Database Appliance X8-2-HA and X8-2M OLTP Database Shapes

Shape	CPU Cores	SGA (GB)	PGA (GB)	Processes	Log File Size (GB)	Log Buffer (MB)
odb1s	1	2	1	200	4	32
odb1	1	4	2	200	4	32
odb2	2	8	4	400	4	32
odb4	4	16	8	800	4	64
odb6	6	24	12	1200	8	256
odb08	8	32	16	1600	8	256
odb10	10	40	20	2000	8	256
odb12	12	48	24	2400	16	256
odb16	16	64	32	3200	16	256
odb20	20	80	40	4000	16	256
odb24	24	96	48	4800	16	256
odb28	28	112	56	5600	16	256
odb32	32	128	64	6400	16	256

Database Shapes for the In-Memory Class

Use Oracle Database Appliance In-Memory (IMDB) database shapes if your database workload can fit in memory, and can benefit from in-memory performance capabilities.

The table lists the In-Memory database shape sizes for Oracle Database Appliance X8-2S, X8-2M, and X8-2-HA.

The information in the table assumes the following:

You are creating local disk backups. Consider the space requirements for your database and the policy for local disk backups versus external backups. Typically, external backups have more space available for the database than local backups.

Table D-3 Oracle Database Appliance X8-2S In-Memory Database Shapes

Shape	CPU Cores	SGA (GB)	PGA (GB)	In-Memory (GB)	Processes	Log File Size (GB)	Log Buffer (MB)
odb1s	1	2	1	1	200	4	32
odb1	1	4	2	2	200	4	32
odb2	2	8	4	4	400	4	32
odb4	4	16	8	8	800	4	64
odb6	6	24	12	12	1200	8	256
odb08	8	32	16	16	1600	8	256
odb10	10	40	20	20	2000	8	256
odb12	12	48	24	24	2400	16	256
odb16	16	64	32	32	3200	16	256

Table D-4 Oracle Database Appliance X8-2M and X8- 2-HA In-Memory Database Shapes

Shape	CPU Cores	SGA (GB)	PGA (GB)	In-Memory (GB)	Processes	Log File Size (GB)	Log Buffer (MB)
odb1s	1	2	1	1	200	4	32
odb1	1	4	2	2	200	4	32
odb2	2	8	4	4	400	4	32
odb4	4	16	8	8	800	4	64
odb6	6	24	12	12	1200	8	256
odb08	8	32	16	16	1600	8	256
odb10	10	40	20	20	2000	8	256
odb12	12	48	24	24	2400	16	256
odb16	16	64	32	32	3200	16	256
odb20	20	80	40	42	4000	16	256
odb24	24	96	48	48	4800	16	256
odb28	28	112	56	56	5600	16	256
odb32	32	128	64	64	6400	16	256

Database Shapes for the DSS Class

Use DSS database shapes if your database workload is primarily decision support services (DSS) or data warehousing.

The table lists the DSS database shape sizes for Oracle Database Appliance X8-2S, X8-2M, and X8-2-HA.

The information in the table assumes the following:

 You are creating local disk backups. Consider the space requirements for your database and the policy for local disk backups versus external backups. Typically, external backups have more space available for the database than local backups.

Table D-5 Oracle Database Appliance X8-2S DSS Database Shapes

Shape	CPU Cores	SGA (GB)	PGA (GB)	Processes	Redo log file size (GB)	Log buffer (MB)
odb1s	1	1	2	200	4	32
odb1	1	2	4	200	4	32
odb2	2	4	8	400	4	32
odb4	4	8	16	800	4	64
odb6	6	12	24	1200	8	256
odb08	8	16	32	1600	8	256
odb10	10	20	40	2000	8	256
odb12	12	24	48	2400	16	256
odb16	16	32	64	3200	16	256

Table D-6 Oracle Database Appliance X8-2M and X8-2-HA DSS Database Shapes

Shape	CPU Cores	SGA (GB)	PGA (GB)	Processes	Log File Size (GB)	Log Buffer (MB)
odb1s	1	1	2	200	4	32
odb1	1	2	4	200	4	32
odb2	2	4	8	400	4	32
odb4	4	8	16	800	4	64
odb6	6	12	24	1200	8	256
odb08	8	16	32	1600	8	256
odb10	10	20	40	2000	8	256
odb12	12	24	48	2400	16	256
odb16	16	32	64	3200	16	256
odb20)	20	40	80	4000	16	256
odb24	24	48	96	4800	16	256
odb28	28	56	112	5600	16	256
odb32	32	64	128	6400	16	256

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