

Oracle® Database Appliance Simulator Labs



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ORACLE®

Oracle Database Appliance Simulator Labs, Release 19.28 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](#)
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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>.

Access to Oracle Support

Oracle customer access to and use of Oracle support services will be pursuant to the terms and conditions specified in their Oracle order for the applicable services.

Related Documents

For more information about Oracle Database Appliance, go to <http://www.oracle.com/goto/oda/docs> and click the appropriate release.

For more information about using Oracle Database, go to <http://docs.oracle.com/database/> and select the database release from the menu.

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.
<i>italic</i>	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

Setting Up the Oracle Database Appliance Simulator

Understand the tasks for setting up, deploying, and patching Oracle Database Appliance.

The Oracle Database Appliance X8-2 simulator application is a container-base simulator on Oracle Cloud Infrastructure (OCI) that simulates the operation of an Oracle Database Appliance X8-2 single-node or high-availability (2 nodes) system. You must have an OCI account to run the Oracle Database Appliance simulator. When you launch the Oracle Database Appliance simulator on the OCI Marketplace, a simulator VM is started in your tenancy. If you use the Always Free OCI account, due to the 1 GB memory limitation, it is recommended that you set up the simulator with the single-node option. Following are the steps to set up the simulator environment so that you can run the Oracle Database Appliance hands-on labs to learn how to deploy, patch, and manage an Oracle Database Appliance.

- [Prerequisites for Setting up the Simulator](#)
Understand the prerequisites for setting up the Oracle Database Appliance simulator.
- [Installing the Simulator](#)
Follow these steps to install the simulator.
- [Accessing the Oracle Database Appliance Simulator](#)
Follow these steps to access the simulator.
- [Creating a Restore Point or Snapshot for the Oracle Database Simulator](#)
You can create a restore point or snapshot at the end of a lab and go back to it, so you do not have to restart the lab from the beginning.
- [About BUI Agent Certificate Issue](#)
Understand the common BUI issues you may encounter when setting up the Oracle Database Appliance simulator.
- [Restarting the Simulator in a Container](#)
If the ODACLI commands fails, then check if the Oracle Database simulator is running in the container.

Prerequisites for Setting up the Simulator

Understand the prerequisites for setting up the Oracle Database Appliance simulator.

Requirements

- You must have an OCI account and credentials.
- You must also have the VM IP address to access the simulator VM and setup the environment for the Oracle Database Appliance hands-on labs.

Create a Key with PuTTYgen

If you use Putty to create a key, you must create a key with PuTTYgen:

1. Generate key of type RSA.
2. Save the private key.

3. Under Public key for pasting into OpenSSH `authorized_keys` file: copy all contents in the box and paste into a text file and save as a `.pub` file. This is the key you use when you setup the Oracle Database Appliance simulator instance.

! Important

You must configure network security rules first to access Oracle Database Appliance BUI.

Configure Network Security Rules

1. Open your OCI application VM and click on your VCN link above Virtual Cloud Network.
2. Click **Security Lists** in the left panel and click on the **Default Security List** for `your_vcn` in the middle of the screen.
3. Click **Add Ingress Rules** and fill in following information:

```
SOURCE TYPE :CIDR
SOURCE CIDR  : 0.0.0.0/0
IP PROTOCOL  : TCP
```

4. Click **Add Ingress Rule**. Similarly add egress rule for outgoing traffic, if not already added.

Installing the Simulator

Follow these steps to install the simulator.

Podman is installed in the simulator VM by default.

1. Log into the simulator VM:

```
ssh -i key opc@IP address      (OCI public IP address)
```

2. Switch to `root` user:

```
$sudo -s
```

3. Navigate to the simulator directory, where `19.xx.0.0.0` is the release number.

```
# cd simulator_19.xx.0.0.0
```

4. Run the following command to make sure that podman is running:

```
# podman ps
```

5. You may see a default container running already, for example, `oda-1`. If that is the case, then you are set up to connect to the container to run the ODACLI commands already. Run the following command:

```
# ./connectContainer.sh -n odasim-1
```

6. No password is required for an OCI VM.

To access the Oracle Database Appliance simulator:

Ensure that you have access to the port number assigned to the container.

1. Go to the simulator log directory.

```
cd ${SIMULATOR_HOME} //log
```

where `SIMULATOR_HOME` is the directory from which you ran the `createOdaSimulatorContainer` command.

2. Run the `cat` command for the most recent log file.

```
cat
ODA Simulator system info:
Executed on: 2023_06_14_06_33_PM
Executed by:
num= 1
dept= oda
hostpubip=

USERS:
Container : oda-1
ODA Console: https://ip_of_simulator_machine :7095/mgmt/index.html
ODA cli access: Connect to the host and run following command:
sh connectContainer.sh -n oda-1
```

Note the port number, for example, 7095.

Following are optional steps for manually managing the containers.

Note that if you are running the simulator standalone on a Linux system, then you must run the following steps.

1. Run the following command to make sure podman is running and to view which containers are running:

```
# podman ps
```

2. If you see any unwanted container running, run the cleanup script to start fresh:

```
# ./cleanup_odasimulator_sw.sh
```

3. Run the simulator setup script:

```
# ./setup_odasimulator_sw.sh noportainer
```

For always free OCI account with 1GB memory, it is recommended that you set up the simulator with one user and the single node option.

4. If a default container is not running, you can manually create a single node container for a user.

```
# ./createOdaSimulatorContainer.sh -d oda -t single -o noportainer
```

5. A single container called oda-1 is created. To view the options, use the following command:

```
# ./createOdaSimulatorContainer.sh -help
```

6. For standard OCI account with minimum 2GB memory, it is recommended that you set up the simulator with the high-availability option:

```
# ./createOdaSimulatorContainer.sh -d oda -t ha -o noportainer
```

7. For each Oracle Database Appliance X8-2-HA simulator user, two containers, oda-1-node0 and oda-1-node1, are created. Ignore any warning messages about Agent or Zookeeper. Ensure that you can connect to the container. Note the assigned port numbers in the following output. The port numbers are necessary for logging into the simulator Browser User Interface (BUI).

```
ODA Simulator system info:
Executed on: 2023_06_11_03_23_PM
Executed by:
num= 1
dept= oda
hostpubip= ip_of_simulator_machine

USERS:
Container : oda-1-node0
ODA Console: https://ip_of_simulator_machine:7095/mgmt/index.html
ODA cli access: Connect to the host and run following command:
sh connectContainer.sh -n oda-1-node0
Container : oda-1-node1
ODA Console: https://ip_of_simulator_machine:7097/mgmt/index.html
ODA cli access: Connect to the host and run following command:
sh connectContainer.sh -n oda-1-node1
```

After you have completed the labs, you must clean up the environment by deleting the user containers. The following command deletes instances oda-1-node0 and oda-1-node1:

```
# ./deleteOdaSimulatorContainer.sh -t ha -i 1 -n 1 -d oda
```

Clean up your log files from the lab by deleting your logs in the /simulator_19.28.0.0.0/log directory. To completely reset the lab, run the following command:

```
# ./cleanup_odasimulator_sw.sh
```

This deletes all the containers and the volumes.

Accessing the Oracle Database Appliance Simulator

Follow these steps to access the simulator.

For CLI access, connect by SSH to the simulator VM, connect by `sudo` to `root`, and connect to the container, for example, `odasim-1`. No password is required.

```
# ./connectContainer.sh -n odasim-1
```

For a high-availability system, you can access both nodes, for example, oda-1-node0 , oda-1-node1.

```
# ./connectContainer.sh -n oda-1-node1
```

For BUI access, use the VM IP address and port number, for example, 7095, 7097.

```
# https://server_IP:xxxx/mgmt/index.html
```

Creating a Restore Point or Snapshot for the Oracle Database Simulator

You can create a restore point or snapshot at the end of a lab and go back to it, so you do not have to restart the lab from the beginning.

For example, once you complete Lab 3, you create a restore point at the beginning of Lab 4. During Lab 4, if there is any error, then you can go back to the restore point at the beginning of Lab 4 instead of starting from Lab 1 again. To create a snapshot, run the following command from the simulator directory:

```
# ./snapshot.sh
Usage: snapshot.sh [-c | -r | -l] [] | -h
```

Options:

create [ha single]	Create a new snapshot of the simulator
restore [ha single]	Restore the simulator to a previous snapshot
list [ha single]	List all snapshots created with their IDs
help, -h	Display this help and exit is mandatory. You only need the name of the environment without 'node0' or 'node1' in case the simulator environment is HA is either 'ha' or 'single'. Default is 'single'

Use this script to create and restore snapshots of the Oracle Database Appliance simulator. This is useful when trying different scenarios or for creating backups.

```
# ./snapshot.sh create oda-1
/scratch/user/simulator_19.28_ade/simulator_19.28.0.0.0/snapshots.dat doesn't exist. Creating a new one...
Snapshot with ID: 1 has been created successfully. Timestamp: Wed Jun 22 14:01:24 PDT 2023
# ./snapshot.sh list oda-1
```

ID	CONTAINER NAME	DEPLOYMENT TYPE	TIMESTAMP
1	oda-1	single	Wed Jun 22 14:01:24 PDT 2023

```
# ./snapshot.sh restore 1 oda-1  
Snapshot with ID: 1 has been restored successfully!
```

About BUI Agent Certificate Issue

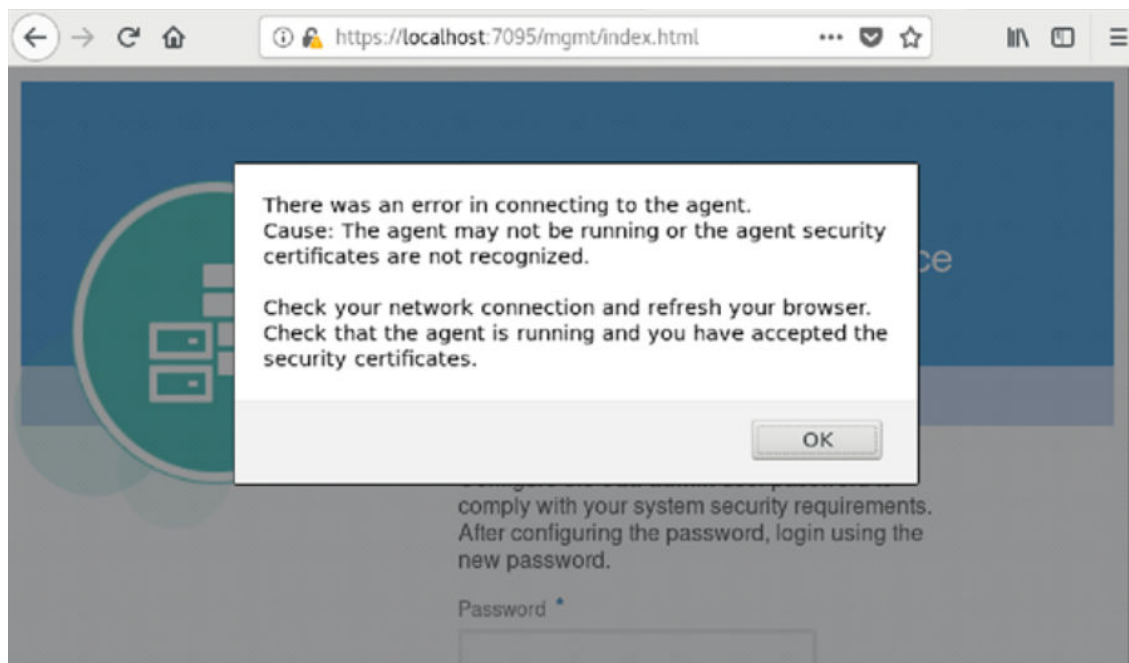
Understand the common BUI issues you may encounter when setting up the Oracle Database Appliance simulator.

Requirements

You may encounter a BUI Agent Certificate Issue. See the following example:

```
https://server IP:7095/mgmt/index.html  
Your assigned port number maybe different
```

You may see a BUI agent security certificate error message:



To fix it, you must add a certificate exception to the BUI agent port, with is your assigned port number -1. In this case, the port number is 7094.

```
https://server IP:7094  
( Your port number maybe different)
```

Go through the certificate exception process and add the exception. Then go back to your assigned port.

```
https://server IP:7095/mgmt/index.html
```

Go through the certificate exception process again and add the exception. Then you can access the BUI to create the appliance.

Restarting the Simulator in a Container

If the ODACLI commands fails, then check if the Oracle Database simulator is running in the container.

Run the following command to check the status of the simulator:

```
# /opt/oracle/dcs/bin/statusOdaStack.sh
```

If the simulator is not running, then start the simulator as follows:

```
# /opt/oracle/dcs/bin/startOdaStack.sh
```

2

Connecting to the Oracle Database Appliance OCI Lab Environment

Understand the tasks for connecting to the lab environment.

- [About Oracle Database Appliance Simulator Lab Exercises](#)
Understand the Oracle Database Appliance simulator lab exercises.
- [Requirements for Oracle Database Appliance Simulator Lab Exercises](#)
Understand the requirements for running Oracle Database Appliance simulator lab exercises.
- [Connecting to the Simulator Using the BUI](#)
Follow these steps to connect to the simulator.
- [Connecting to the Simulator Using ODACLI Commands](#)
Follow these steps to connect to the simulator using ODACLI commands.

About Oracle Database Appliance Simulator Lab Exercises

Understand the Oracle Database Appliance simulator lab exercises.

The exercises in this guide use a container-based Oracle Database Appliance simulator to perform these labs. Performing deployment and patching on an actual ODA would require you to have your own system, and would take a rather long time. The simulator provides a similar experience, but is faster, and you get your own simulator to complete the labs. The simulator simulates an Oracle Database Appliance X8-2 single node or a high-availability (2-node) database appliance.

If you are using the simulator in the OCI Marketplace with an Always Free OCI Account, the memory is limited to 1GB. In this case, set up the simulator with the single-node option due to memory limitation. For more information, refer to the Readme.

Keep in mind this is a simulation. Not all features are supported by the simulator, and no database is actually created and running. Unlike on an actual appliance, the simulator may not display an error if you enter invalid data, and some of the detailed output and screen shots displayed in the command output may not be apply to an actual appliance.

Some command line operations require specifying long UUIDs or file names. Use copy/paste to enter long entries. If you accidentally exit the simulator, simply reconnect to it. It will remember your state.

After the Oracle Database Appliance simulator is set up in the OCI VM, you must log into the Oracle Database Appliance simulator VM with your credentials or key. You can perform the labs in this book with both Command Line Interface (CLI) and a web Browser User Interface (BUI) similar to how you work on an actual Oracle Database Appliance.

Requirements for Oracle Database Appliance Simulator Lab Exercises

Understand the requirements for running Oracle Database Appliance simulator lab exercises.

You need a web browser on your local system to perform the BUI tasks in the labs. Make sure you have the public Oracle Database Appliance simulator VM IP address and the simulator container port number (for example, 7095).

Make sure to log in as odaadmin with **Enable Multi-User Access** checked. You need a console on your local system to connect to the Oracle Database Appliance simulator container and switch to odaadmin (su odaadmin) user to run the CLI commands in the labs. Make sure you have the container name (for example, odasim-1). By default, a container called odasim-1 is created. Firefox and Chrome are the recommended web browsers for this lab. If you run into BUI agent credential issue, refer to the Troubleshooting section in the Readme document for details.

Connecting to the Simulator Using the BUI

Follow these steps to connect to the simulator.

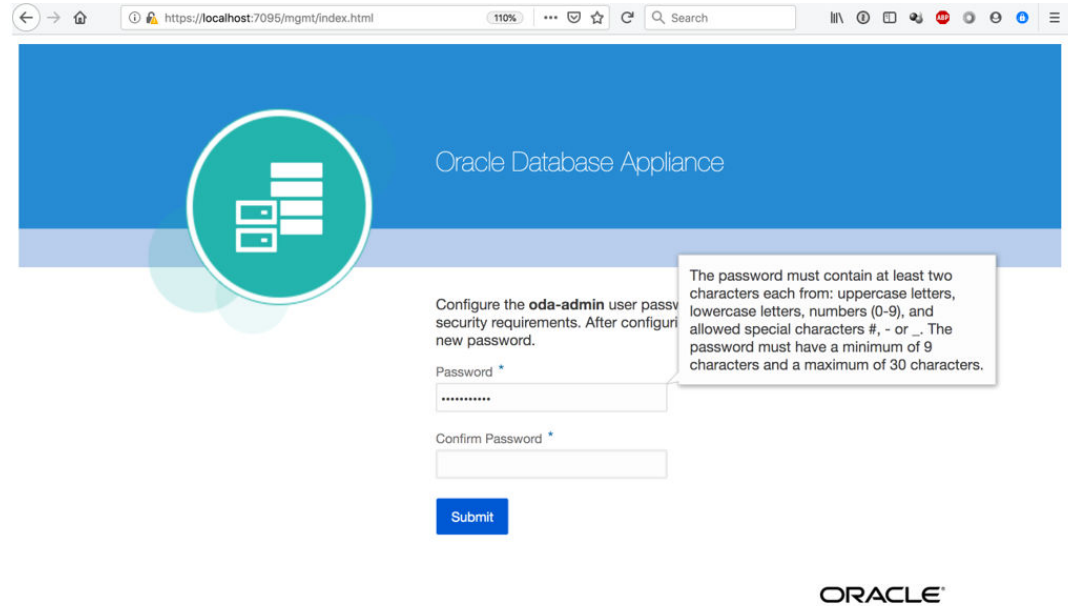
Connect to the simulator as follows:

1. Use the OCI VM public IP address and port number to log into the Browser User Interface (BUI) and enable multi-user access:

`https://IP Address:xxxx/mgmt/index.html` (for example: 7095)

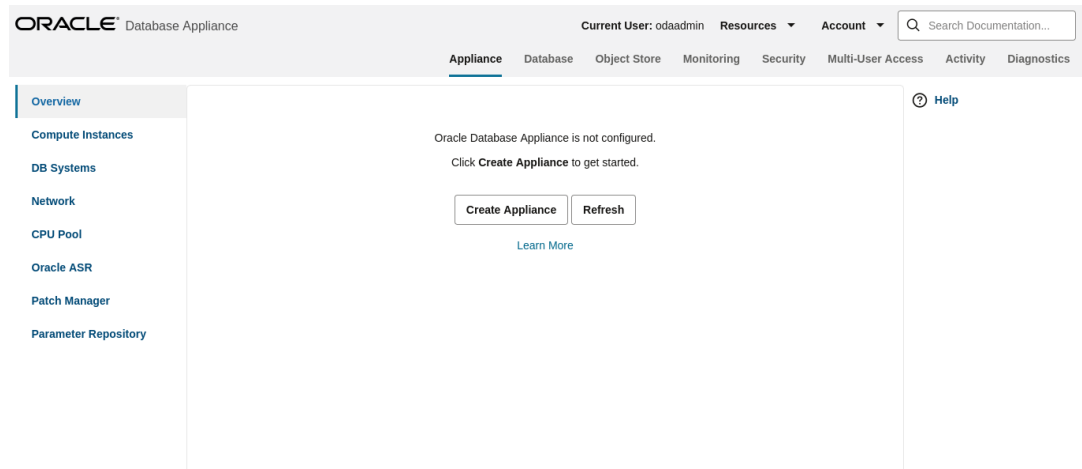
2. You must first complete running the `odacli configure-firstnet` command and then run the `odacli update-repository` command in the Lab 1 (using CLI). Note that if you run into BUI agent credentials issue, refer to the Troubleshooting section in the Readme document for details.

3. Set a new password based on the required rules. For simplicity, you can use a password similar to `WELcome12##` or use your own unique password.



The screenshot shows a web browser window with the URL `https://localhost:7095/mgmt/index.html`. The page title is "Oracle Database Appliance". It features a blue header with a green circular icon containing a server rack. The main content area has a blue background with a white circle containing a server rack icon. Below this, there is a form titled "Configure the **oda-admin** user password security requirements. After configuring, you can set a new password." The form includes a "Password" field with a strength indicator (*****), a "Confirm Password" field, and a "Submit" button. A tooltip on the right side of the form states: "The password must contain at least two characters each from: uppercase letters, lowercase letters, numbers (0-9), and allowed special characters #, - or _ . The password must have a minimum of 9 characters and a maximum of 30 characters." The Oracle logo is visible in the bottom right corner.

4. You can then login as `odaadmin` with the new password. The Appliance page is displayed after you log into Oracle Database Appliance.



The screenshot shows the Oracle Database Appliance dashboard. The top navigation bar includes the Oracle logo, "Database Appliance", and user information: "Current User: odaadmin", "Resources", and "Account". A search bar is on the right. The main navigation menu on the left includes "Overview", "Compute Instances", "DB Systems", "Network", "CPU Pool", "Oracle ASR", "Patch Manager", and "Parameter Repository". The "Appliance" tab is selected in the top navigation. The main content area displays a message: "Oracle Database Appliance is not configured. Click **Create Appliance** to get started." Below this message are two buttons: "Create Appliance" and "Refresh". A "Learn More" link is also present. A "Help" button is in the top right corner.

Connecting to the Simulator Using ODACLI Commands

Follow these steps to connect to the simulator using ODACLI commands.

Run the following script to connect to the container. This script is usually located in the simulator directory (for example, `simulator_19.xx.0.0.0`).

1. To access the default single node simulator (for example, `odasim-1`), run the following command. You need to switch to the `odaadmin` user with earlier password you set with the Browser UI to run the CLI commands.

```
# ./connectContainer.sh -n odasim-1
[root@odasim-1 /]# su odaadmin
[odaadmin@odasim-1 /]$
```

2. Or if you have created a 2-node Oracle Database Appliance (high-availability) simulator, you can access each node independently. To access the first node (`node0`), run the following command.

```
# ./connectContainer.sh -n oda-1-node0
[root@oda-1-node0 /]#
```

3. To access the second node (`node1`), run the following command:

```
# ./connectContainer.sh -n oda-1-node1
[root@oda-1-node1 /]#
```

Note

Make sure you have a command line window and a web browser open for the lab exercises as some lab exercises require ODACLI command line input and entries in the web browser (BUI).

3

Oracle Database Appliance Simulator Lab Exercises

Perform these simulator lab exercises.

The lab exercises use a mix of command line and web-based administration tools. On the BUI, if you encounter any certificate warnings, simply accept them. Note in the output examples below, the text you type is in bold, and the text output in the simulator is not. Note that some examples in the lab may show steps for a 2-node high-availability simulator, and if you are running a single-node simulator, then you can ignore the information for the second node.

- [Lab 1 - Deploy Appliance](#)
Simulator lab exercise to deploy Oracle Database Appliance.
- [Lab 2 - Manage Databases](#)
In this lab, we will create and delete databases in the appliance. We can do this using the command line (CLI) or BUI.
- [Lab 3 - Patch and Update](#)
If you just completed Lab 2, the simulator should have two databases, db3 and db4.
- [Lab 4 - Virtualization: Create Application and Database KVMs](#)
Virtualization provides many benefits to customers such as cost savings through consolidation and better resource utilization, Virtual Machine (VM) isolation that provides better security, and KVM license hard partitioning support.
- [Lab 5 - Multi-User Access](#)
Oracle Database Appliance Multi-User Access can enhance the security of your appliance and provide an efficient mechanism for role separation.
- [Lab 6 - Monitoring and Resources](#)
Use either the command line or the BUI to monitor Oracle Database Appliance software, hardware, and feature usage.

Lab 1 - Deploy Appliance

Simulator lab exercise to deploy Oracle Database Appliance.

- [Step 1 - Add the Appliance to the Network](#)
On an actual appliance, after you first install Oracle Database Appliance into your data center rack, you must configure it to use the IP address your network administrator has assigned it.
- [Step 2 - Update the Repository with the Oracle Database Appliance Software](#)
When you receive your Oracle Database Appliance, you must download the Oracle software prior to deployment from *My Oracle Support*.
- [Step 3 - Enable Multi-User Access](#)
You can deploy the appliance using either the BUI or the command line. The command line is useful for scripted and silent installations. This lab uses the BUI.
- [Step 4 - Deploy the Appliance](#)
You can deploy the appliance using either the BUI or the command line. The command line is useful for scripted and silent installations. This lab uses the BUI.

- [Step 5 - Validate the Deployment](#)
Validate the deployment.
- [Step 6 - Networking](#)
Check the network.

Step 1 - Add the Appliance to the Network

On an actual appliance, after you first install Oracle Database Appliance into your data center rack, you must configure it to use the IP address your network administrator has assigned it.

The easiest way to do this is to first configure Oracle ILOM using a network or serial connection. Oracle Database Appliance includes a command `odacli configure-firstnet` to make it very easy to get Oracle Database Appliance on the network. Once your appliance is on the network, you can complete the rest of the deployment steps from any networked computer.

Note

You must use ODACLI command to set up the network before you log into the Browser User Interface (BUI).

Run the network configuration command `odacli configure-firstnet` at the Linux prompt. Respond to the prompts as in the example below. Since this is a simulation, to configure the network, you can use any IP address (for example, 192.168.0.100) to complete this step.

```
[root@xx ~]$ odacli configure-firstnet
bonding interface is:
Using bonding public interface (yes/no) [yes]:
Select the Interface to configure the network on ( ) [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 : 192.168.0.100
Enter the Netmask address to configure : 255.255.255.0
Enter the Gateway address to configure[192.168.0.1] :
INFO: Restarting the network
Shutting down interface :           [ OK ]
Shutting down interface em1:        [ OK ]
Shutting down interface plp1:       [ OK ]
Shutting down interface plp2:       [ OK ]
Shutting down loopback interface:    [ OK ]
Bringing up loopback interface:      [ OK ]
Bringing up interface :              [ OK ]
Bringing up interface em1:           [ OK ]
Bringing up interface plp1: Determining if ip address 192.168.16.24 is
already in use for device plp1...    [ OK ]
Bringing up interface plp2: Determining if ip address 192.168.17.24 is
already in use for device plp2...    [ OK ]
Bringing up interface btbond1: Determining if ip address 192.168.0.100 is
already in use for device btbond1... [ OK ]
INFO: Restarting the DCS agent
```

Note

If this is an Oracle Database Appliance X8-2-HA system, then you must run the command `odacli configure-firstnet` on the second node (`node1`). Log into `node1` and run the command `odacli configure-firstnet` again. You can use 192.168.0.101 for the IP address for `node1`.

Step 2 - Update the Repository with the Oracle Database Appliance Software

When you receive your Oracle Database Appliance, you must download the Oracle software prior to deployment from *My Oracle Support*.

Refer to the *Oracle Database Appliance Release Notes* for the latest Oracle Database Appliance release, for details about the patches to download. Specifically, you must download the Oracle Grid Infrastructure Clone files, Oracle Database Clone files, and the Server Patch Bundle.

For our lab exercises, the simulated versions of these files in the simulator already exist. For the labs, you will first deploy the Oracle Database Appliance with the Oracle Database Appliance release 19.27 patches, and then in the third lab you will patch the Oracle Database Appliance and databases to the latest 19.28 release.

The clone files are listed below. The other file in the directory contains patches, and will be used in the patching lab. Note about file paths: you must specify the full path of the files you specify in the `odacli update-repository` command.

Table 3-1 Oracle Database Appliance Patches

Filename	Description
<code>odacli-dcs-19.27.0.0.0-date-DB-19.27.0.0.zip</code>	Oracle Database 19.27 Clone Files
<code>odacli-dcs-19.27.0.0.0-date-GI-19.27.0.0.zip</code>	Oracle Grid Infrastructure 19.27 Clone Files
<code>odacli-dcs-19.28.0.0.0-date-ODAVM-19.28.0.0.zip</code>	DB 19.28 DB System Template (used in lab 4)
<code>oda-sm-19.28.0.0.0-date-server.zip</code>	Oracle Database Appliance 19.28 Patch Bundle (used in lab 3)
<code>odacli-dcs-19.28.0.0.0-date-DB-19.28.0.0.zip</code>	DB 19.28 Clone Files (used in lab 3)
<code>odacli-dcs-19.28.0.0.0-date-GI-19.28.0.0.zip</code>	Oracle Grid Infrastructure 19.28 Clone Files (used in lab 3)

You must update the Oracle Database Appliance repository, so that Oracle Database Appliance knows about the files. Run the `odacli update-repository` command for each clone file.

Hint: to reduce amount of manual typing and typing errors, use copy and paste functions to copy the file name or tab function to auto complete a file name. Also, use the up arrow to repeat the previous command, and then edit the file name.

Note: On an actual Oracle Database Appliance, you must update the DCS agent first, before updating the repositories. It is release dependent, so check the patching steps in the *Oracle Database Appliance Deployment and User's Guide* for your hardware model.

On an actual Oracle Database Appliance, local boot drive storage space is limited. It is recommended that you copy only the Oracle Grid Infrastructure clone file first, update the

repository, deploy the Oracle Database Appliance, and then copy the database clone files to Oracle ACFS storage to deploy databases. Check the latest Oracle Database Appliance documentation for the steps.

Go to the command line window and entering the following odacli commands.

```
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-  
dcs-19.27.0.0.0-date-GI-19.27.0.0.zip  
  
{  
  
  "jobId" : "4d428b05-a33f-4fe0-82ec-56849503aa28",  
  "status" : "Running",  
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.27.0.0.0-date-  
GI-19.27.0.0.zip",  
  "reports" : [ ],  
  "createTimestamp" : "June 8, 2025 00:05:38 AM UTC",  
  "resourceList" : [ ],  
  "description" : "Repository Update",  
  "updatedAtTime" : "June 8, 2025 00:05:38 AM UTC"  
}  
  
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-  
dcs-19.27.0.0.0-date-DB-19.27.0.0.zip  
  
{  
  "jobId" : "bblcaa66-7d19-4de1-a074-f475f4a2505a",  
  "status" : "Running",  
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.27.0.0.0-date-  
DB-19.27.0.0.zip",  
  "reports" : [ ],  
  "createTimestamp" : "June 8, 2025 00:08:58 AM UTC",  
  "resourceList" : [ ],  
  "description" : "Repository Update",  
  "updatedAtTime" : "June 8, 2025 00:08:58 AM UTC"  
}
```

When you run commands using the ODACLI command line tool, most operations are asynchronous, meaning that they return a job ID immediately while the job runs in the background. This means that to get information on long running background jobs, you can query the status of the job. At this point, the clone files are all loaded into the repository, so we are ready to deploy the appliance and create a database.

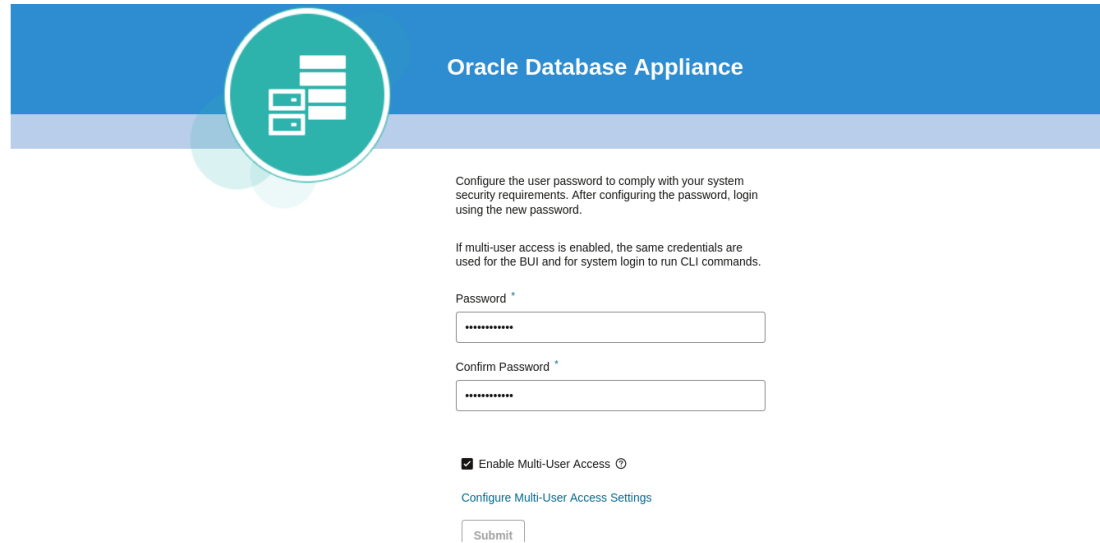
You can also use the Browser-based User Interface (BUI) to update the Oracle Database Appliance repository, by pasting the complete file path of the patch file or even clone file in the patch bundle location box of the Repository Manager in the web BUI. However, it is not necessary as you have used command line to update the repository (clone files) already.

Step 3 - Enable Multi-User Access

You can deploy the appliance using either the BUI or the command line. The command line is useful for scripted and silent installations. This lab uses the BUI.

After you configure the firstnet and update the repository, log into Oracle Database Appliance BUI using **odaadmin** and the previously-created password (for example, **WELcome12##**)

Multi-User access can only be enabled during initial provisioning of Oracle Database Appliance. Select the **Enable Multi-User Access** checkbox.



The screenshot shows the Oracle Database Appliance configuration interface. It features a blue header with the Oracle Database Appliance logo and title. Below the header, there is a section for configuring the user password. The text indicates that the password must comply with system security requirements and that the same credentials are used for both the BUI and system login. There are two password input fields: 'Password' and 'Confirm Password', both with asterisks indicating they are required. Below these fields is a checkbox labeled 'Enable Multi-User Access' which is checked. A link 'Configure Multi-User Access Settings' is provided. At the bottom, there is a 'Submit' button.

Oracle Database Appliance

Configure the user password to comply with your system security requirements. After configuring the password, login using the new password.

If multi-user access is enabled, the same credentials are used for the BUI and for system login to run CLI commands.

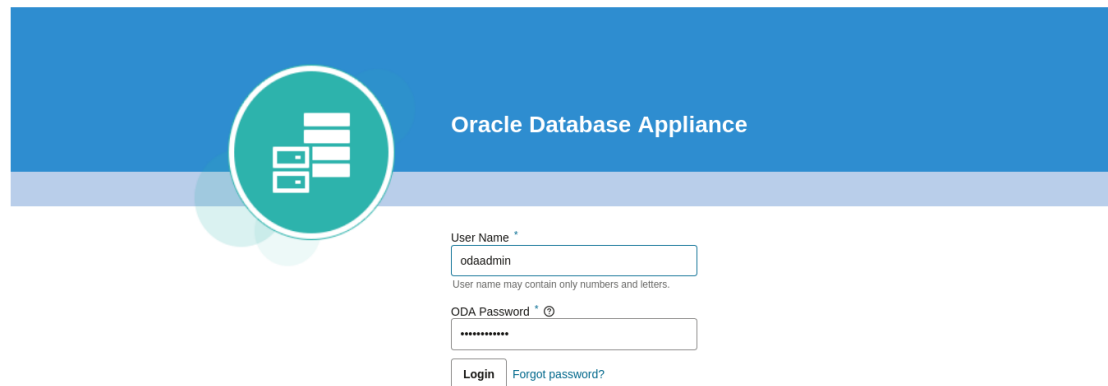
Password *

Confirm Password *

☒ Enable Multi-User Access ⓘ

[Configure Multi-User Access Settings](#)

Log into BUI.



The screenshot shows the Oracle Database Appliance login interface. It features a blue header with the Oracle Database Appliance logo and title. Below the header, there is a section for logging into the BUI. There are two input fields: 'User Name' and 'ODA Password'. The 'User Name' field contains the text 'odaadmin'. Below the 'User Name' field, there is a note: 'User name may contain only numbers and letters.' The 'ODA Password' field has an asterisk and an eye icon. Below the password field, there is a 'Login' button and a link 'Forgot password?'.

Oracle Database Appliance

User Name *

odaadmin

User name may contain only numbers and letters.

ODA Password * ⓘ

[Forgot password?](#)

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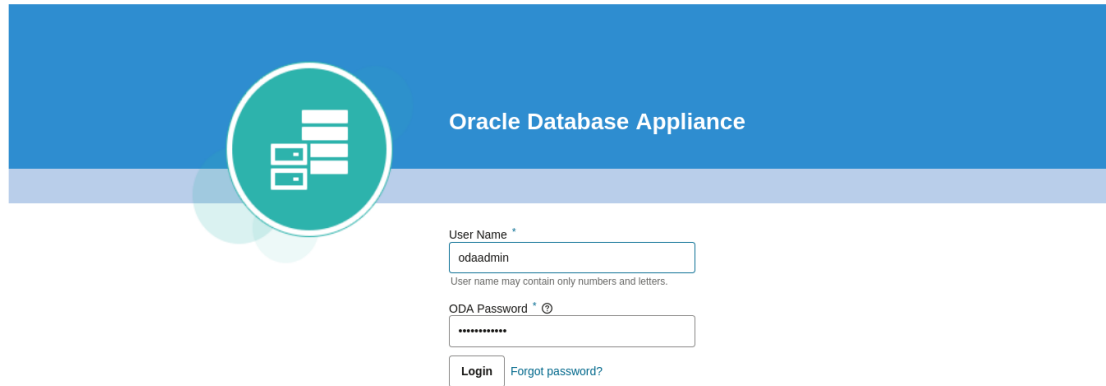
ORACLE

Step 4 - Deploy the Appliance

You can deploy the appliance using either the BUI or the command line. The command line is useful for scripted and silent installations. This lab uses the BUI.

After you configure the firstnet and update the repository, log into Oracle Database Appliance BUI using `odaadmin` and previously created password (for example, `WELcome12##`).

`https://OCI public IP Address>:xxxx/mgmt/index.html`




Oracle Database Appliance

User Name *

odaadmin

User name may contain only numbers and letters.

ODA Password * 

Login [Forgot password?](#)

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ORACLE®

This takes you to the **Appliance** tab in the BUI. It should show that the appliance is not yet deployed.

Click **Create Appliance** to start the deployment wizard. Fill in the first page of the form as shown below. Most fields are self-explanatory. A possible exception is the Data Storage Percentage. This will affect how much space is allocated for backups. By default, 80% is allocated for data and 20% is allocated for archive logs. You can also specify a different percentage. Select Disk Group Redundancy as Flex. You can specify individual database storage redundancy later, either Mirror (double mirroring) or High (triple mirroring). Create a password. Be aware there is a password complexity test that will reject simple passwords such as test and other common variants. However, WELcome12## will work if you want to use that password for these lab exercises.

You can also load a configuration file, for example, `oda.json` that was saved previously to avoid manual entries. To create a configuration file, you manually fill in all the information then click **Save Configuration** at the end.

Click on each tab. In the Network Information page, you can configure the network for the public Client Access network here. Since this is a single node simulator, the information is pre-populated from the configure-firstnet process. You can also configure the Oracle ILOM network if you choose. Enter values for the IP Address, Subnet Mask, Gateway, and specify the interface to be used for the public network.

In the User and Group Selection screen, enter the 19xx ID. If multi-user access is enabled, you should enter the 9xxx IDs.

Next is the Database screen. Specify the database name and other database related information as shown below. Select DB Version as 19.28.0.0.250715.

To configure Oracle ASR, specify credentials here. This is also where you can save the configuration file, for example, `oda.json` for later use.

Click **Submit** to continue and click **Yes** in the confirmation box. This will bring up a link to the job status. Similar to ODACLI, operations are asynchronous, and return immediately with a job ID. That job ID can then be used to monitor progress. This allows the administrator to perform other tasks, if desired while the operations completes.

Click the job ID to see the status.

In the simulation, the deployment job status will complete within 1-2 minutes. You can see the various steps running, and their status changing to Success as they complete. Click the

Refresh button to more quickly refresh the screen. In an actual appliance, the deployment takes about 60-90 minutes to complete.

Step 5 - Validate the Deployment

Validate the deployment.

Click on the **Database** tab at the top right of the BUI. The deployed database is displayed.

Click on the database name for more details about the database. Drill down to the Database Home to see information about the database home.

You can also verify that the appliance is properly deployed by clicking the **Appliance** tab to see more details.

Step 6 - Networking

Check the network.

You can check the network by clicking on the **Network** tab on the BUI Appliance page.

You can also create a new VLAN by clicking **Create Network** and specifying the network information.

Click on the **Create** button, then submit the job.

This concludes Lab 1.

Lab 2 - Manage Databases

In this lab, we will create and delete databases in the appliance. We can do this using the command line (CLI) or BUI.

You must complete Lab 1 before starting Lab 2.

- [Step 1 - Create a new database using the BUI](#)
Uses the BUI to create a new database.
- [Step 2 - View the Databases and Database Homes Using the CLI](#)
This lab uses ODACLI to view databases and database homes.
- [Step 3 - Delete a Database](#)
This lab uses the BUI to delete a database.
- [Step 4 - Create a Database with the CLI](#)
This lab uses ODACLI to create a database.
- [Step 5 - Delete and Recreate a Database](#)
This lab uses ODACLI to delete a database.
- [Step 6 - Create a CPU Pool for a Database](#)
This lab uses the BUI to create a CPU pool.
- [Step 7 - Delete a Database Home](#)
You can delete a database home using the BUI or the command line. This lab uses BUI to delete a database home.
- [Step 8 - Create Database Backups on Local Disk, External NFS Storage, or on Oracle Cloud](#)
Backing up and restoring Oracle databases on Oracle Database Appliance involves two simple steps: Create a backup policy and attach the backup policy to a database.

Step 1 - Create a new database using the BUI

Uses the BUI to create a new database.

On the Oracle Database Appliance BUI, click the **Database** tab in the web page. You will see the database db1 created during deployment.

In the upper right-hand corner, there is a **Create Database** button. Click it. It brings up the Create Database wizard.

Choose **Create Database**, and click **Next**.

Specify the **DB Name**, for example, db2, and if you are creating a CDB, a **PDB Name**. Also remember to scroll down and enter a password that would in an actual appliance be used for SYS, SYSTEM, and PDB Admin.

When finished, click on the **Create** button. Click **Yes** to confirm. Beware of the password complexity checker—"wELcome12##" will pass the test.

This will bring up a link to the job status. Similar to ODA CLI, operations on the BUI are asynchronous, and return immediately with a job ID. That job ID can then be used to monitor progress. This allows the administrator to perform other tasks if desired while long running operations complete.

Click the job ID to see the status. In the simulation, the job will complete within 30 seconds. You can see the various steps running, and their status changing to Success as they complete. Click the **Refresh** button to refresh the screen more quickly.

On an actual appliance, these steps take about 20 minutes to complete.

Once the operation completes, click on the **Database** tab at the top right of the web page. This should show the newly-created database.

See detailed database information by clicking on the database name, for example, db2. You can also view the newly-created home by clicking on the Database Home link in the left-hand column of the **Database** tab.

Step 2 - View the Databases and Database Homes Using the CLI

This lab uses ODA CLI to view databases and database homes.

You can also manage databases from the command line. Go to the command line window. Use the `odacli list-databases` command to view your databases. Then use `odacli describe-database` to see the details for a specific database. Be sure to use the database ID shown in the `odacli list-databases` command, not the ID shown in the example.

```
$ odacli describe-database -i d1e615c3-5855-4b19-9ad0-40b620ac5f13
```

```
Database details
```

```
-----  
ID: d1e615c3-5855-4b19-9ad0-40b620ac5f13  
Description: db2  
DB Name: db2  
DB Version: 19.27.0.0.250415  
DB Type: SI  
DB Role: PRIMARY  
DB Target Node Name: node_0  
DB Edition: EE
```

```
DBID:
Instance Only Database: false
CDB: false
PDB Name:
PDB Admin User Name:
SEHA Enabled: false
Class: OLTP
Shape: odb1
Storage: ASM
DB Redundancy: MIRROR
CharacterSet: AL32UTF8
National CharacterSet: AL16UTF16
Language: AMERICAN
Territory: AMERICA
Home ID: a1314be1-2c6f-411f-b2c7-61444449f02b
Console Enabled: false
TDE Wallet Management:
TDE Enabled: false
Level 0 Backup Day: Sunday
AutoBackup Enabled: true
Created: June 8, 2025 1:18:48 AM UTC
DB Domain Name: example.com
Associated Networks:
```

Step 3 - Delete a Database

This lab uses the BUI to delete a database.

You can also delete a database from the **Database** tab. Click the **Database** tab to view the list of databases.

Click the **Action** dropdown to the right of the db1 database, and then select **Delete**. Click **Yes** to confirm, and then close the status box.

The Database list should reflect the delete operation. Click **Refresh**, if necessary. After the database delete operation, only db2 is left.

Step 4 - Create a Database with the CLI

This lab uses ODACLI to create a database.

There are many options you can specify when using the CLI to create a new database. Type `odacli create-database -h` to see the options. Note that only the database name is required. Create a new database and database home named db3 as follows. You will be prompted for a password for SYS, SYSTEM, and PDB admin. To meet password complexity requirements, use `WELcome12##` for this lab.

```
$ odacli create-database -n db3 -v 19.23.0.0.240416
```

Job details

```
-----
ID: 2051bf5b-4815-4cd2-8d85-e51367ba3269
Description: Database service creation with db name: db3
```

```
Status: Created
Created: June 8, 2025 1:45:49 AM UTC
Message:
```

Task Name	Start Time
End Time	Status

\$ odacli describe-job -i 2051bf5b-4815-4cd2-8d85-e51367ba3269	

Job details

```
ID: 2051bf5b-4815-4cd2-8d85-e51367ba3269
Description: Database service creation with db name: db3
Status: Success
Created: June 8, 2025 1:45:49 AM UTC
Message:
```

Task Name	Start Time	
End Time	Status	

Validating dbHome available space	June 8, 2025 1:45:50 AM UTC	June
8, 2025 1:45:50 AM UTC Success		
Setting up ssh equivalence	June 8, 2025 1:45:50 AM UTC	June
8, 2025 1:45:50 AM UTC Success		
Setting up ssh equivalence	June 8, 2025 1:45:50 AM UTC	June
8, 2025 1:45:50 AM UTC Success		
Creating ACFS database home	June 8, 2025 1:45:51 AM UTC	June
8, 2025 1:45:51 AM UTC Success		
Validating dbHome available space	June 8, 2025 1:45:51 AM UTC	June
8, 2025 1:45:51 AM UTC Success		
Configuring user access to ACFS DBHome base storage	June 8, 2025 1:45:51 AM	
UTC June 8, 2025 1:45:51 AM UTC Success		
Creating DbHome Directory	June 8, 2025 1:45:51 AM	

In an actual appliance, this command would run a job in the background for approximately 40 minutes. As with the GUI, you can monitor the progress if you choose, but the Linux prompt returns immediately. Because this is a simulation, you should see your new database and home almost immediately. Verify creation of the new database using the following odacli command:

```
$ odacli list-databases
```

ID	DB Name	DB Type	DB
Version	CDB	Class	Shape
Storage	Status	DbHomeID	

d1e615c3-5855-4b19-9ad0-40b620ac5f13	db2	SI	
19.27.0.0.250415 false OLTP	odb1	ASM	CONFIGURED
a1314be1-2c6f-411f-b2c7-61444449f02b			
324a42ea-bba2-477d-8bca-5a26af159f1c	db3	SI	
19.27.0.0.250415 false OLTP	odb1	ASM	CONFIGURED
ecfa440e-2482-40c1-8ccd-67316cd48ba2			

Note

When you log in as an `odaadmin` user and create a database, the database runs with the `odaadmin` user as the owner. It is recommended that you create the database logging in as an `oracle` user.

Step 5 - Delete and Recreate a Database

This lab uses ODACLI to delete a database.

You can also use CLI to delete a database. Run `odacli delete-database` to remove database `db2`. Be sure to use the ID of your `db2` database, which is likely different from the one in this workbook. Note that you can also use the database name instead of the ID.

```
$ odacli delete-database -i d1e615c3-5855-4b19-9ad0-40b620ac5f13
{
  "jobId" : "ccde4700-3c1e-423a-8079-477f49f8cd5f",
  "status" : "Running",
  "message" : null,
  "reports" : [ {
    "taskId" : "TaskZJsonRpcExt_10048",
    "taskName" : "Validate db d1e615c3-5855-4b19-9ad0-40b620ac5f13 for
deletion",
    "taskResult" : "OK",
    "startTime" : " June 8, 2025 01:49:40 AM UTC",
    "endTime" : " June 8, 2025 01:49:40 AM UTC",
    "status" : "Success",
    "taskDescription" : null,
    "parentTaskId" : "TaskSequential_10046",
    "jobId" : "ccde4700-3c1e-423a-8079-477f49f8cd5f",
    "tags" : [ ],
    "reportLevel" : "Info",
```

```
$ odacli list-databases
ID                               DB Name  DB Type  DB
Version      CDB      Class    Shape    Storage  Status
DbHomeID
-----
-----
324a42ea-bba2-477d-8bca-5a26af159f1c  db3      SI
19.27.0.0.250415      false    OLTP     odb1     ASM      CONFIGURED
ecfa440e-2482-40c1-8ccd-67316cd48ba2
```

Using the CLI, create a new database `db4`.

```
$ odacli create-database -n db4 -v 19.23.0.0.240416
```

Enter SYS, SYSTEM and PDB Admin user password:
Retype SYS, SYSTEM and PDB Admin user password:

Job details

```
-----
```

```

ID: aa259376-4ac0-474a-8730-8c8e1c8ac504
Description: Database service creation with db name: db4
Status: Created
Created: June 8, 2025 1:51:50 AM UTC
Message:

```

Task Name	Start Time
End Time	Status
-----	-----
-----	-----

```
# odacli list-databases
```

ID	DB Name	DB Type	DB
Version	CDB	Class	Shape
DbHomeID	Storage	Status	
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
324a42ea-bba2-477d-8bca-5a26af159f1c	db3	SI	
19.27.0.0.250415	false	OLTP	odb1
ecfa440e-2482-40c1-8ccd-67316cd48ba2			ASM
deac01db-aaa8-4f4e-a511-aea042be3a18	db4	SI	
19.27.0.0.250415	false	OLTP	odb1
c3c63738-703e-4c1d-98de-95b551b67468			ASM
			CONFIGURED

Step 6 - Create a CPU Pool for a Database

This lab uses the BUI to create a CPU pool.

You can create a CPU pool for a bare-metal database to improve CPU resource management and quality of service for a database.

Click the **Appliance** tab, then click **CPU Pool** on the left, and then click **Create**.

Specify the CPU Pool Name as `cpupool1`, select CPU Pool Type as Bare Metal, and Number of CPU Cores as 2, then click **Create**.

You can see that CPU Pool `cpupool1` has been created.

Step 7 - Delete a Database Home

You can delete a database home using the BUI or the command line. This lab uses BUI to delete a database home.

Go to the **Database** tab, then click on the Database Home to see all the database homes. Click on **Actions**, then click **Delete** (for example, `home1`).

You can see that the database home is deleted.

Step 8 - Create Database Backups on Local Disk, External NFS Storage, or on Oracle Cloud

Backing up and restoring Oracle databases on Oracle Database Appliance involves two simple steps: Create a backup policy and attach the backup policy to a database.

To back up to an external NFS storage, you must create an NFS mount point first.

To back up to the Oracle Cloud, you must obtain and create Object Store credentials first. A default backup policy is created but it is not associated with the database unless you explicitly modify the database and attach the policy.

To create a new backup policy, click on the **Backup Policy** tab and then click **Create**.

Then, name the Backup Policy (for example, DiskBackup), Backup Destination (Internal FRA/ Local Disk or External FRA/External NFS Storage or Object Store/Oracle Cloud), and Recovery Window in days, then click **Create**.

To back a database to an external NFS storage, you need to specify a mount point such as `/u03/app/oracle/oradata/nfs_backup`.

You can see the DiskBackup policy has been created.

Next, you select the database, for example, `db4`, that you want to backup. Attach the backup policy to the `db4` database by clicking **Modify** under Actions.

Assign a CPU pool to `db4` at the same time.

Select DiskBackup as the Backup Policy and `cpupool1` as the CPU pool for `db4`, and then click **Modify**.

Once the job is completed, you can verify that the backup policy is listed under Database Information of the database, for example, `db4`. You can also see that a CPU pool is assigned to `db4`.

Once this configuration is completed, Oracle Database Appliance will start backing up the database to the disk regularly and produce backup reports. Click on the database name to view the database details and then switch to the Backup Information tab.

You can also click **Manual Backup**, then click **Start** to back up a database manually.

You can see the details of the Backup Report by clicking on the Backup Report ID.

In addition to backing up to local disk, you can back up to Oracle Cloud or NFS location. To back up databases in Oracle Database Appliance to Oracle Cloud, you must obtain Object Store credentials first.

Once you have your credentials, click the **Object Store** tab, then click **Create**.

Enter the required Object Store Credentials including the name.

You can now create a backup policy, specify the Object Store as the backup destination, and attach a database to the policy. Oracle Database Appliance will start backing up the database to the Oracle Cloud regularly.

This concludes Lab 2.

Lab 3 - Patch and Update

If you just completed Lab 2, the simulator should have two databases, `db3` and `db4`.

For Lab 3, you will use the CLI to update the repository and BUI to update the Oracle Database Appliance infrastructure including the server. You will also use the BUI to patch a database home from release 19.27 to 19.28.

Starting with Oracle Database Appliance release 19.11, patching of Oracle Database Appliance is out-of-place. The new Oracle Grid Infrastructure home will be placed on the local system/boot drive, and all new database homes will be placed on Oracle ACFS file system on

the data drives. In an Oracle Database Appliance high-availability system, the database homes will be placed on the shared storage.

Note: On an actual Oracle Database Appliance, you may have to update the server repository and the DCS agent before updating the database and Oracle Grid Infrastructure clone files in the repositories. This is release dependent, so check the patching steps in the Oracle Database Appliance documentation first.

- [Step 1 - Update the Oracle Database Appliance Repository with Latest Patches](#)
You must download the server patch file for Oracle Database appliance release 19.28.
- [Step 2 - Update the DCS Agent \(If not done already\)](#)
The next step is to update the DCS agent on both nodes for a high-availability system with the BUI, before updating the server. Use ODACLI to update the DCS agent.
- [Step 3 - Update the Server](#)
The next step is to update the server. The server update includes firmware, operating system, and Oracle Grid Infrastructure updates.
- [Step 4 - Patch a Database: Update a Database to point to a New Database Home](#)
Because you may not want to patch all databases at once, first identify which database home corresponds to which database.

Step 1 - Update the Oracle Database Appliance Repository with Latest Patches

You must download the server patch file for Oracle Database appliance release 19.28.

Refer to the *Oracle Database Appliance Release Notes* for the latest Oracle Database Appliance patches.

The server patch updates the firmware and operating system. You must patch the server before you patch the databases. When patching databases, you can choose to patch a subset, if required. However, it is recommended to patch all databases to keep them current.

For this lab, we have downloaded simulated release 19.28 patches for the server, Oracle Grid Infrastructure, and database clone files to your simulator.

You must update the repositories with the latest server patch, Oracle Grid Infrastructure, and database clone files, as well as additional applicable database clone files. For example, if you plan to patch Oracle Database from release 19.27 to 19.28, you must update the repository with the 19.27 Oracle Grid Infrastructure and database clone files first.

Before you start patching the server, you can check the current installed components from the BUI. Go to the **Infrastructure Patching** tab. Note all the installed 19.27 components. Since you have not updated the repository to 19.28, all components are displayed as up to date. Next, update the server repository. The server patch file is `oda-sm-19.28.0.0.0-date-server.zip`.

```
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/oda-sm-19.28.0.0.0-date-server.zip
```

```
{
  "jobId" : "b3794603-4fbb-42a4-89ee-791d420e68a6",
  "status" : "Running",
  "message" : "/opt/oracle/dcs/patchfiles/oda-sm-19.28.0.0.0-date-server.zip",
  "reports" : [ ],
  "createTimestamp" : "June 8, 2025 06:29:42 AM UTC",
  "resourceList" : [ ],
```

```

    "description" : "Repository Update",
    "updatedAt" : "June 8, 2025 06:29:42 AM UTC"
  }

```

For an actual Oracle Database Appliance, you may need to update the DCS agent first, before updating repository with the 19.28 Oracle Grid Infrastructure and database clone files, if you want to create a 19.28 database or patch a database to 19.28. See the *Oracle Database Appliance Deployment and User's Guide* for your hardware model.

Run the following commands to update the Oracle Database Appliance repository with these patches. You must use the full path for the file names.

```
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-
dcs-19.28.0.0.0-date-GI-19.28.0.0.zip
```

```

{
  "jobId" : "529141f1-c5fb-42a6-ad1e-0b5540781a71",
  "status" : "Waiting",
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.28.0.0.0-date-
GI-19.28.0.0.0.zip",
  "reports" : [ ],
  "createTimestamp" : "June 8, 2025 06:32:43 AM UTC",
  "resourceList" : [ ],
  "description" : "Repository Update",
  "updatedAt" : "June 8, 2025 06:32:43 AM UTC"
}

```

```
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-
dcs-19.28.0.0.0-date-DB-19.28.0.0.zip
```

```

{
  "jobId" : "6478c708-bef8-4d5a-83a6-b411fe9b3e7d",
  "status" : "Running",
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.28.0.0.0-date-
DB-19.28.0.0.0.zip",
  "reports" : [ ],
  "createTimestamp" : "June 8, 2025 06:33:13 AM UTC",
  "resourceList" : [ ],
  "description" : "Repository Update",
  "updatedAt" : "June 8, 2025 06:33:13 AM UTC"
}

```

After you update the repository, you can use the web console to see the 19.28.0.0.0 available component versions.

Step 2 - Update the DCS Agent (If not done already)

The next step is to update the DCS agent on both nodes for a high-availability system with the BUI, before updating the server. Use ODA CLI to update the DCS agent.

From the BUI, go to the **Appliance** tab, click **Infrastructure Patching**, and click **Refresh** to check the DCS Agent status.

1. In the BUI, click **Appliance** and then click **Infrastructure Patching** on the lefthand pane.

2. Using ODACLI, update the DCS agent:

```
[root@odal opt]# /opt/oracle/dcs/bin/odacli update-dcsagent -v 19.28.0.0.0
```

Step 3 - Update the Server

The next step is to update the server. The server update includes firmware, operating system, and Oracle Grid Infrastructure updates.

Follow these steps to update the server:

1. Using ODACLI, update the DCS admin, DCS components, and DCS agent:

```
[root@odal opt]# /opt/oracle/dcs/bin/odacli update-dcsadmin -v 19.28.0.0.0
[root@odal opt]# /opt/oracle/dcs/bin/odacli update-dcscomponents -v
19.28.0.0.0
[root@odal opt]# /opt/oracle/dcs/bin/odacli update-dcsagent -v 19.28.0.0.0
```

If the DCS components are updated, then the message "status" : "Success" is displayed on the command line. For failed updates, fix the error and then proceed with the update.

Note

You must log into the Browser User Interface again after running the `odacli update-dcscomponents` command.

2. In the BUI, click the **Appliance** tab, and then click **Infrastructure Patching** on the lefthand pane.
3. In the SERVER section, view the Component Details. If you just updated the Patch Repository, click **Refresh**.

After the patch is uploaded to the Patch Repository, the Component Details on the page are updated with the Installed Version and Available Version for each component.

4. Click **Precheck** to run patching prechecks. On an actual appliance, you must run the patching prechecks before updating the server and other components. Click **View Pre-check Reports** to view the patching prechecks report. If there are no errors in the report, then click **Apply Patch** to begin the job to patch the server components. For high-availability systems, when updating the server on the bare metal system, you can select the **Node to Update**. You can choose the node that you want to update or you can choose to update both nodes.

Note

Since this is a simulator, the prechecks report is not generated.

5. In the STORAGE section, click **Refresh** to refresh the Component Details. Click **Precheck** to run patching prechecks. You must run the patching prechecks before updating the storage components. Click **View Pre-check Reports** to view the patching prechecks report. If there are no errors in the report, then click **Apply Patch** to begin the job to patch the storage components. Click **View Jobs** for the job status.

Note

Since this is a simulator, the prechecks report is not generated.

For high-availability environment, you can select the **Rolling** check box to perform rolling patching of storage components.

Patching an actual Oracle Database Appliance will take some time, whereas the simulator speeds up the whole process. The Linux prompt returns immediately, and the patch runs in the background. You can monitor the progress of the patch job by checking the **Activity** tab.

Step 4 - Patch a Database: Update a Database to point to a New Database Home

Because you may not want to patch all databases at once, first identify which database home corresponds to which database.

You can use either the command `odacli update-dbhome` or the BUI to update the database homes, and thus the databases, running on the appliance. Each home is updated independently, giving you control over when you patch your databases.

To update the database homes using the BUI, follow these steps:

1. Navigate to the **Database Home** tab.
2. Select the database home you want to patch.
3. Select the **Patch Version** for the database home.
4. To patch multiple database homes, select each database home to be patched and the patch version for each database home.
5. Select the **Node to Update**. You can choose the node that you want to update or you can choose to update all nodes.
6. Click **Patch**. Select **Precheck** to run pre-checks before patching the database.

Note

Since this is a simulator, the prechecks report is not generated.

7. On the Patch page, for the database to be patched, click **Actions** and select **Apply** to patch the database.

Now, we will use the CLI to patch database db4. The `odacli list-databases` command displays details about each database, its ID and its database home ID. Those database homes will be the ones we will patch by supplying the database home ID to the patching command. You can also see more information, such as the name of the database home, using the `odacli list-dbhomes` command.

```
$ odacli list-databases
```

ID	DB Name	DB Type	DB
Version	CDB	Class	Shape
DbHomeID	Storage	Status	

```

-----
-----
-----
324a42ea-bba2-477d-8bca-5a26af159f1c    db3      SI
19.27.0.0.250415      false      OLTP    odb1      ASM      CONFIGURED
ecfa440e-2482-40c1-8ccd-67316cd48ba2
deac01db-aaa8-4f4e-a511-aea042be3a18    db4      SI
19.27.0.0.250415      false      OLTP    odb1      ASM      CONFIGURED
c3c63738-703e-4c1d-98de-95b551b67468

```

```
$ odacli list-dbhomes
```

```

ID                                     Name                                     DB
Version                               Home
Location                               Status
-----
-----
a1314bel-2c6f-411f-b2c7-61444449f02b    OraDB19000_home2
19.27.0.0.250415                          /u01/app/odaorahomebase/odaadmin/
product/19.0.0.0/dbhome_2 CONFIGURED
ecfa440e-2482-40c1-8ccd-67316cd48ba2    OraDB19000_home3
19.27.0.0.250415                          /u01/app/odaorahomebase/odaadmin/
product/19.0.0.0/dbhome_3 CONFIGURED
c3c63738-703e-4c1d-98de-95b551b67468    OraDB19000_home4
19.27.0.0.250415                          /u01/app/odaorahomebase/odaadmin/
product/19.0.0.0/dbhome_4 CONFIGURED

```

```

$ odacli update-dbhome -i c3c63738-703e-4c1d-98de-95b551b67468 -v 19.28.0.0.0
{
  "jobId" : "af879f3e-9c50-4dfd-86db-5d380a42f8d2",
  "status" : "Created",
  "message" : null,
  "reports" : [ ],
  "createTimestamp" : " June 8, 2025 06:59:59 AM UTC",
  "resourceList" : [ ],
  "description" : "DB Home Patching: Home Id is
c3c63738-703e-4c1d-98de-95b551b67468",
  "updatedAtTime" : " June 8, 2025 06:59:59 AM UTC"
}

```

Use the clipboard to copy the DB home ID for db4. Then use the DB home ID with the `odacli update-dbhome` command to update the home for db4. Verify that the job has completed successfully using the command `odacli describe-job`.

```
$ odacli describe-job -i af879f3e-9c50-4dfd-86db-5d380a42f8d2
```

```
Job details
```

```

-----
ID:      af879f3e-9c50-4dfd-86db-5d380a42f8d2
Description: DB Home Patching: Home Id is
c3c63738-703e-4c1d-98de-95b551b67468

```

Status: Success
 Created: June 8, 2025 6:59:59 AM UTC
 Message:

Task Name	Start Time	End Time	Status
Adding USER SSH_EQUIVALENCE	June 8, 2025 7:00:02 AM UTC		
June 8, 2025 7:00:02 AM UTC		Success	
Adding USER SSH_EQUIVALENCE	June 8, 2025 7:00:02 AM UTC		
June 8, 2025 7:00:02 AM UTC		Success	

Verify that database home db4 is updated to the release 19.28. You can use either the BUI or CLI for verification.

```
# odacli list-dbhomes
```

ID	Name	DB
Version	Home	
Location	Status	
a1314be1-2c6f-411f-b2c7-61444449f02b	OraDB19000_home2	
19.27.0.0.250415	/u01/app/odaorahomebase/odaadmin/	
product/19.0.0.0/dbhome_2 CONFIGURED		
ecfa440e-2482-40c1-8ccd-67316cd48ba2	OraDB19000_home3	
19.27.0.0.250415	/u01/app/odaorahomebase/odaadmin/	
product/19.0.0.0/dbhome_3 CONFIGURED		
c3c63738-703e-4c1d-98de-95b551b67468	OraDB19000_home4	
19.28.0.0.250715	/u01/app/odaorahomebase/odaadmin/	
product/19.0.0.0/dbhome_4 CONFIGURED		

You can also use the BUI to update the database homes by navigating to the **Database** tab and then selecting the Database Home on the left panel. You have already updated database db4 by pointing to a new home using the command line.

This concludes Lab 3.

Lab 4 - Virtualization: Create Application and Database KVMs

Virtualization provides many benefits to customers such as cost savings through consolidation and better resource utilization, Virtual Machine (VM) isolation that provides better security, and KVM license hard partitioning support.

Kernel-based VM (KVM) is an industry standard virtualization technology that is also used in Oracle Cloud and other public clouds.

You will use Oracle Database Appliance BUI to create an application KVM, called Compute Instance, and a database KVM, called Database System.

- [Step 1 - Create an Application KVM \(Compute Instance\)](#)
Understand the steps to create an application KVM.

- [Step 2 - Create a Database KVM \(Database System\)](#)
Understand the steps to create a database KVM.

Step 1 - Create an Application KVM (Compute Instance)

Understand the steps to create an application KVM.

Before you create an application KVM on Oracle Database Appliance, you must create the following:

- CPU Pool
- VM Storage
- Virtual Disk
- Virtual Network

You must create a guest operating system (Linux or Windows) ISO image to create the application KVM instance. After that, you must configure the guest operating system, networking (set IP address) so that you can access the VM to install applications. You can also modify and delete an application KVM.

First, create a CPU Pool for the application KVM. In the BUI, click **CPU Pool**, and then click **Create**. Enter the following information, then click **Create**.

You can see the CPU pool `cpupool1` is created. A CPU pool is optional and not required to create an application KVM.

Next, create the VM Storage.

Select the **VM Storage** tab, and then click **Create VM Storage**.

The screenshot shows the Oracle Database Appliance BUI interface. The top navigation bar includes 'System: dshost1', 'Current User: odaadmin', and tabs for 'Appliance', 'Database', 'Object Store', 'Monitoring', 'Security', 'Multi-User Access', 'Activity', and 'Diagnostics'. The left sidebar lists 'Overview', 'Compute Instances', 'DB Systems', 'Network', 'CPU Pool', 'Oracle ASR', 'Patch Manager', and 'Parameter Repository'. The main content area is titled 'Create VM Storage' and contains the following fields:

- Storage Name ***: A text input field containing 'vmstor1'.
- Storage Size ***: A numeric input field containing '5', with a unit dropdown set to 'GB'.
- ASM Disk group**: A dropdown menu showing 'Select ASM Disk group'.
- Redundancy**: A dropdown menu set to 'Mirror'.

At the bottom right of the form are 'Cancel' and 'Create >' buttons.

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Enter the following information for `vmstor1`, and then click **Create**. VM Storage can be used by different application KVMs. You can see `vmstor1` is created.

Next, create a virtual disk `vdisk` to be used by the application KVM. Select the **Virtual Disks** tab and click **Create Virtual**

Disk.

ORACLE® Database Appliance

System: dshost1 | Current User: odaadmin | Resources | Account | Search Documentation...

Appliance | Database | Object Store | Monitoring | Security | Multi-User Access | Activity | Diagnostics

Overview | Compute Instances | DB Systems | Network | CPU Pool | Oracle ASR | Patch Manager | Parameter Repository

VM Instances | VM Storage | **Virtual Disks** | Virtual Networks

Create Virtual Disk

Use the options below to create a new Virtual Disk, or clone an existing Virtual Disk.

☒ Create Virtual Disk
☐ Clone Virtual Disk

Cancel Next >

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Select **Create Virtual Disk**, then click **Next**.

ORACLE® Database Appliance

System: dshost1 | Current User: odaadmin | Resources | Account | Search Documentation...

Appliance | Database | Object Store | Monitoring | Security | Multi-User Access | Activity | Diagnostics

Overview | Compute Instances | DB Systems | Network | CPU Pool | Oracle ASR | Patch Manager | Parameter Repository

VM Instances | VM Storage | **Virtual Disks** | Virtual Networks

Create Virtual Disk

Virtual Disk Name *
vdisk1

Disk Size *
1 GB

VM Storage Name *
vmstor1

☒ Sparse ☐ Shared

< Back Cancel Create >

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Enter the following information for `vdisk1`, and then click **Create**. You can see `vdisk1` is created.

The screenshot shows the Oracle Database Appliance interface. The top navigation bar includes 'System: dshost1', 'Current User: odaadmin', 'Resources', and 'Account'. The main navigation tabs are 'Appliance', 'Database', 'Object Store', 'Monitoring', 'Security', 'Multi-User Access', 'Activity', and 'Diagnostics'. The left sidebar contains 'Overview', 'Compute Instances', 'DB Systems', 'Network', 'CPU Pool', 'Oracle ASR', 'Patch Manager', and 'Parameter Repository'. The 'Virtual Disks' tab is selected, showing a table with one entry: `vdisk1`. The entry details include ID: 8d28de0d-482f-4bff-a582-983fd8e989d8, Size: 1.00 GB, State: CONFIGURED, and Created: Fri, Jan 13, 2023, 09:05:03 PM GMT. The VM Storage is `vmstor1`, Shared: NO, and Sparse: NO. There are 'Create' and 'Refresh' buttons at the top right of the table.

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Create a virtual network for the KVM:

Select the **Virtual Networks** tab, and then click **Create Virtual Network**.

Specify the Virtual Network information, then click **Create**.

The screenshot shows the Oracle Database Appliance interface with the 'Virtual Networks' tab selected. The 'Create Virtual Network' form is displayed. The form fields are: Name (vnet1), IP Address (192.168.16.23), VLAN ID (1), Network Type (Bridged), Subnet Mask (255.255.255.248), Bridge Name, Gateway (192.168.16.17), and Interface (btbond1). There are 'Cancel' and 'Create' buttons at the bottom right of the form.

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You can see the virtual network `vnet1` is created.

ORACLE® Database Appliance

System: dshost1 | Current User: odaadmin | Resources | Account | Search Documentation...

Appliance | Database | Object Store | Monitoring | Security | Multi-User Access | Activity | Diagnostics

Overview | **Compute Instances** | DB Systems | Network | CPU Pool | Oracle ASR | Patch Manager | Parameter Repository

VM Instances | VM Storage | Virtual Disks | **Virtual Networks** | Help

Search

Sort by: Created: New to Old | Create | Refresh

Page 1 of 1 (1 of 1 items) | < | 1 | > |

vnet1 ID: 8cd2d3ae-692d-4b6a-bf43-a4ac59d15946 Copy Type: Bridged Bridge: brvnet1 Uniform: NO	Name: vnet1 Interface: btbond1 State: CONFIGURED Created: Fri, Jan 13, 2023, 09:06:30 PM GMT	Actions
--	---	---------

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Create an application KVM (Compute Instance):

Select the **VM Instances** tab, and then click **Create**.

ORACLE® Database Appliance

System: dshost1 | Current User: odaadmin | Resources | Account | Search Documentation...

Appliance | Database | Object Store | Monitoring | Security | Multi-User Access | Activity | Diagnostics

Overview | **Compute Instances** | DB Systems | Network | CPU Pool | Oracle ASR | Patch Manager | Parameter Repository

VM Instances | VM Storage | Virtual Disks | Virtual Networks | Help

VM Instance is not available.
Click **Create** to create a new VM.

Create | Refresh

[Learn More](#)

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Select **Create VM Instance**, then click **Next**.

ORACLE® Database Appliance

System: dshost1 Current User: odaadmin Resources Account Search Documentation...

Appliance Database Object Store Monitoring Security Multi-User Access Activity Diagnostics

Overview Compute Instances DB Systems Network CPU Pool Oracle ASR Patch Manager Parameter Repository

VM Instances VM Storage Virtual Disks Virtual Networks Help

Create VM Instance

VM Name * vm1 CPU Pool Name Select CPU Pool Virtual Disk Names vdisk1 x

VM Description Maximum number of vCPUs to use 1 Virtual Networks Click to see available vNetworks

Disk Group Select Disk group Number of vCPUs to use * 1 Specify VM disk size 1 GB

VM Storage Name * vmstor1 Maximum Memory Size 1 GB

Source Installation * /debisen/Downloads/OL77_x86_64.iso Memory Size * 1 GB

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Specify the information for `vm1`, then click **Create**. Note the Source Installation path to the Linux ISO image. Note that the VM disk size is 10GB. VM disk is the local system boot disk where the Linux image is installed.

You can see `vm1` instance is created.

ORACLE® Database Appliance

System: dshost1 Current User: odaadmin Resources Account Search Documentation...

Appliance Database Object Store Monitoring Security Multi-User Access Activity Diagnostics

Overview Compute Instances DB Systems Network CPU Pool Oracle ASR Patch Manager Parameter Repository

VM Instances VM Storage Virtual Disks Virtual Networks Help

Search Sort by: Created: New to Old Create Refresh

Page 1 of 1 (1 of 1 items) 1

vm1
ID: 0cd4014d-4608-4775-8cf2-4071b75734fd Copy
OS Type: NONE
Current State: ONLINE
Current Node: VM Storage: vmstor1
OS Variant: NONE
Target State: ONLINE
Created: Fri, Jan 13, 2023, 09:07:51 PM GMT Actions

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You can see the detailed information by clicking on `vm1`.

If you want to modify the VM instance, then click the **VM Instance** tab. For `vm1`, click the Actions dropdown and then click **Modify**.

To delete an application KVM, from the **VM Instances** tab, click the Actions dropdown, and then click **Delete**.

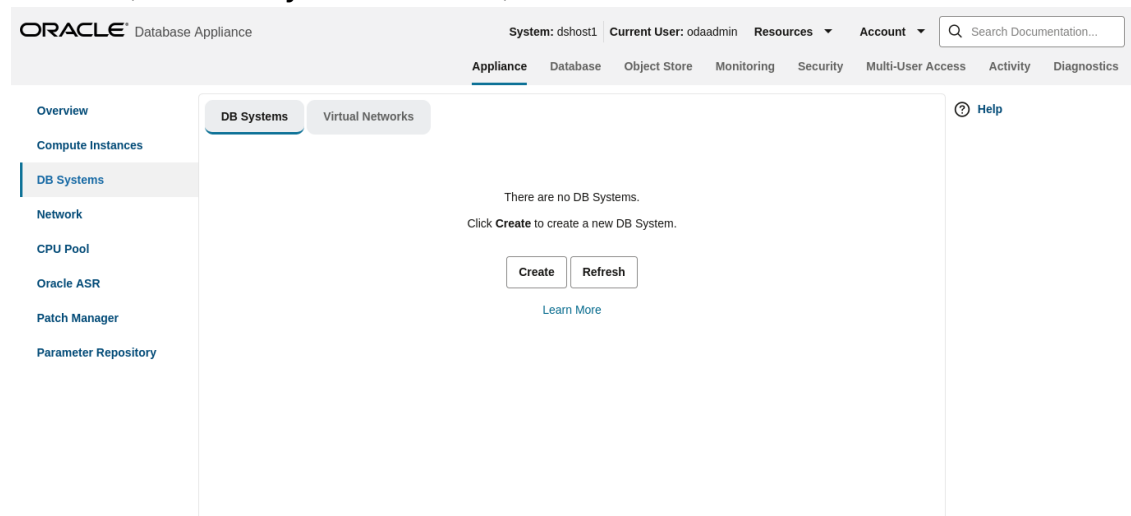
Step 2 - Create a Database KVM (Database System)

Understand the steps to create a database KVM.

To create a database KVM (Database System) in Oracle Database Appliance, you must first download the DB system image (database VM template) into the appliance, then update the repository so that the database VM template is saved in Oracle Database Appliance.

```
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-  
dcs-19.28.0.0.0-date-ODAVM-19.28.0.0.zip  
{  
  "jobId" : "2d45004d-923b-45d9-b27c-cfbda391edb6",  
  "status" : "Running",  
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.28.0.0.0-date-  
ODAVM-19.28.0.0.zip",  
  "reports" : [ ],  
  "createTimestamp" : "June 8, 2025 07:45:04 AM UTC",  
  "resourceList" : [ ],  
  "description" : "Repository Update",  
  "updatedAt" : "October 26, 2022June 8, 2025 07:45:05 AM UTC"  
}
```

In the BUI, select **DB Systems** on the left, and click **Create**.



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Enter the System Information, Network Information, CPU Pool and Database Information, then click **Create**.

The screenshot shows the Oracle Database Appliance configuration interface. The left sidebar contains navigation links: Overview, Compute Instances, DB Systems (selected), Network, CPU Pool, Oracle ASR, Patch Manager, and Parameter Repository. The main content area is titled 'System Information' and contains several configuration fields:

- DB System Name ***: dbssystem1
- Region**: Other (dropdown)
- CPU Pool Name**: Select CPU Pool (dropdown)
- Domain Name ***: us.oracle.com
- Time Zone**: GMT (dropdown)
- Force Run**: ☐ Force Run ⓘ
- Use Reserved CPU Cores**: ☐ Use Reserved CPU Cores
- Disk Group for VM Storage ***: DATA (dropdown)
- DNS Servers**: (empty text field)
- Memory Size**: Size... (dropdown) ^ GB (dropdown)
- VM Storage Redundancy**: Select Redundancy (dropdown)
- System Password ***: (password field with asterisks)
- Public Network**: Select Public Network (dropdown)
- NTP Servers**: (empty text field)
- Confirm Password ***: (password field with asterisks)

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Note the database shape selected will determine the number of CPU cores assigned to the database. A database CPU pool is automatically created, or a database CPU Pool can be selected. A default network is also be automatically assigned to the database, or a network can be selected. Make sure CDB is selected.

You can see that a database KVM dbssystem1 is created.

The screenshot shows the Oracle Database Appliance configuration interface with the 'DB Systems' tab selected. The left sidebar is the same as the previous screenshot. The main content area shows a list of database systems:

DB System	Shape	Memory	Grid Version	Status	Updated	ID	Cores	Image	DB Version	Created	Current state
dbssystem1	odb2	16.00 GB	23.1.0.0.0	CONFIGURED	Fri, Jan 13, 2023, 09:10:13 PM GMT	fe58dd13-8087-4743-8628-7e7dbbcbdf6c	2	23.1.0.0.0	23.1.0.0.0	Fri, Jan 13, 2023, 09:10:11 PM GMT	UNKNOWN

Additional details shown for dbssystem1:

- VMs**: VM host name: node0.us.oracle.com
- Actions**: (dropdown menu)

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You can find the details for dbssystem1 by clicking on it.

You can modify the DB System by clicking Actions and then selecting **Modify**.

You can change the database shape from odb2 (2 cores) to odb4 (4 cores).

Click the **DB Systems** tab on the left to verify that dbssystem1 has 4 cores now.

This concludes Lab 4.

Lab 5 - Multi-User Access

Oracle Database Appliance Multi-User Access can enhance the security of your appliance and provide an efficient mechanism for role separation.

With multi-user access, you can provide separate access to database administrators to manage databases and create multiple users with different roles that restrict them from accessing resources created by other users and restrict the set of operations they can perform.

In this lab, you will create two new users, `user1` and `user2`, assign a resource, for example, database to `user1`, then create a database using `user2`. You will verify that both users have access to different resources.

- [Step 1 - Create New Users](#)
Understand the steps to create new users.
- [Step 2 - Grant a Resource to a User](#)
Understand the steps to grant a resource to a user.
- [Step 3 - Create a Resource by a User](#)
Understand the steps to create a resource.

Step 1 - Create New Users

Understand the steps to create new users.

Navigate to the **Multi-User Access** tab in the BUI. Create a new user, `user1`, and provide a temporary password. The password for `user1` must be changed on the first login.

The screenshot shows the Oracle Database Appliance BUI interface. The top navigation bar includes 'System: dshost1', 'Current User: odaadmin', and tabs for 'Resources', 'Account', 'Appliance', 'Database', 'Object Store', 'Monitoring', 'Security', 'Multi-User Access' (selected), 'Activity', and 'Diagnostics'. A search bar is on the right. The left sidebar has 'Users' selected, with sub-links for 'Roles', 'Entitlements', and 'Resources'. The main content area is titled 'Create User' and contains a form with the following fields: 'User ID' (containing 'newUserId2'), 'Roles' (containing 'ODA-DB'), a checked checkbox for 'Generate mTLS certificate', 'ODA Password' (masked with asterisks), and 'Confirm ODA password' (masked with asterisks). At the bottom right of the form are 'Cancel' and 'Create' buttons. A help icon is in the top right corner of the form area.

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Go to the **Users** tab on the left to verify that the new user, `user1`, is created.

Create a second user, `user2` using the same process.

Go to the **Users** tab on the left to verify that `user2` is created.

Step 2 - Grant a Resource to a User

Understand the steps to grant a resource to a user.

You will grant a resource, db5, to user1. Go the **Resources** tab on the left, click on **Show Advanced Search**, select ODA_DB, and click **Search**. On db5, click **Actions**, and then select **Grant Resource Access**.

The screenshot shows the Oracle Database Appliance interface. The top navigation bar includes 'System: dshost1', 'Current User: odaadmin', and tabs for 'Resources', 'Account', 'Appliance', 'Database', 'Object Store', 'Monitoring', 'Security', 'Multi-User Access', 'Activity', and 'Diagnostics'. The left sidebar has 'Users', 'Roles', 'Entitlements', and 'Resources' (selected). The main content area is titled 'Resources' and shows a list of three resources:

Resource Name	ID	Type	Primary Owner	Active	Location	Actions
backupdb	693d9ccf-70e7-474e-b9d3-354e92330cac	ODA_DBSTORAGE	odaadmin	true	/u02/app/oracle/oradata/backupdb/u03/app/oracle/fast_recovery_area/u04/app/oracle/redo/backupdb/	Actions
OraDB23000_home1	3f3b7c74-ea62-4d05-a1d6-c6544c6c2cd4	ODA_DBHOME	odaadmin	true	/u01/app/odaorahomebase/odaadmin/product/23.0.0.0/dbhome_1	Actions
backupdb	eedcfa71-25e8-45c6-bbb1-01e78a54bc1d	ODA_DB	odaadmin	true		Actions

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In the User Name drop-down, select user1, then click **Grant**.

The screenshot shows the 'Grant Resource Access' dialog box. It contains a text prompt: 'Grant user shared access to DCS resource backupdb. Select the user name to whom access is to be granted.' Below this is a 'User Name' dropdown menu with 'newUser1' selected. At the bottom right are 'Cancel' and 'Grant' buttons.

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To verify that user1 has access to db5, click on the **Resources** tab on the left again. Note that user1 now has shared access to db5. Note that this database was originally created by the odaadmin user.

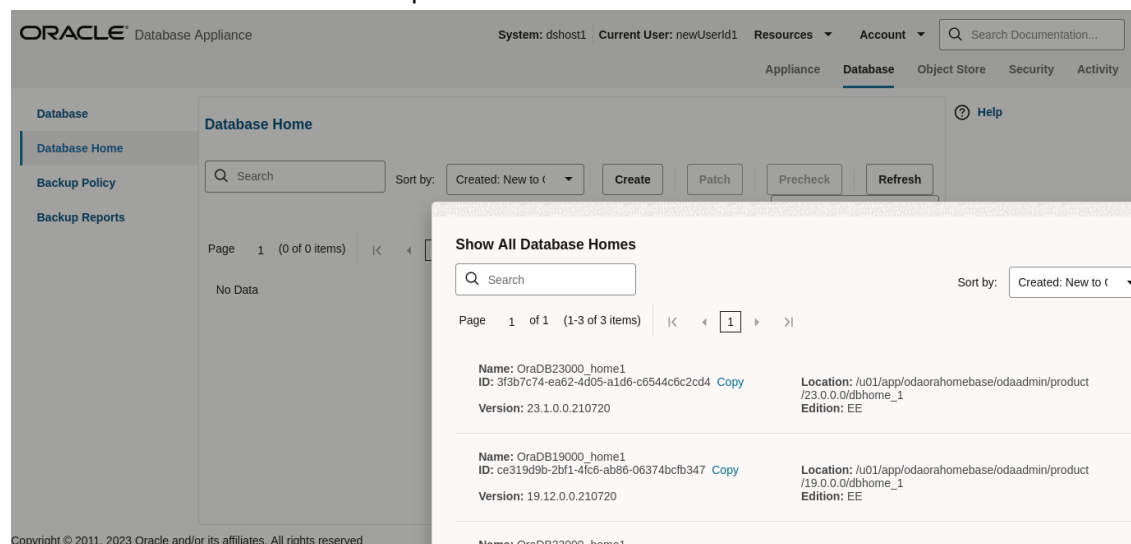
Note

When you create a new user, you cannot grant or revoke access for that user immediately after creation since the user is in inactive state. The drop down list for user selection is read-only which means you can only select from an existing list of users. The ODA-DB user was not listed in the drop down at first because the ODA-DB user was in an inactive state. Once the user account is activated, it is listed the Grant and Revoke access list.

Log in as `user1` to verify access to `db5`.

Specify the temporary password created by the `odaadmin` user, and you are prompted to provide a new password. You can use a password similar to `WELCOME12##` or create your own.

When you log in with the new password, note that the Current User is displayed as `user1`. Note that there are fewer tabs on the top for `user1`.



Click on the **Database** tab, and note that `user1` has access to `db5`.

Step 3 - Create a Resource by a User

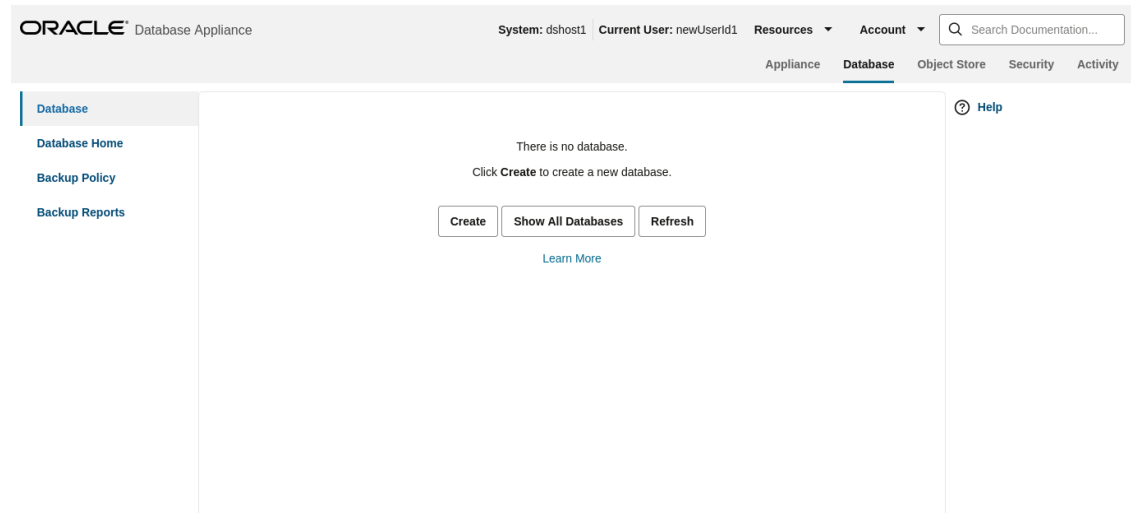
Understand the steps to create a resource.

Log in as `user2`, create a database, and have exclusive access to the database. First, log in as `user2` with the temporary password created by `odaadmin`.

A new password for `user2` is required. You can use a password similar to `WELCOME12##`, or create your own.

Log in as `user2` with the new password.

Click on the **Database** tab. There are no database available to user2. Click **Create Database**.



Create a new database, user2db1.

Click **Create** and verify that the database is created.

Log in as user1 to verify that user1 does not have access to user2db1.

You can verify that user1 only has access to db5.

Log in as odaadmin to review resources and user access.

When logged in as the odaadmin user, you can view all the databases.

Click on the **Multi-User Access** tab, then click on the **Resources** tab on the left. Use the Advanced Search feature and search for ODA_DB, You can see the Primary Owner of the database and Shared Access users for the databases. The user1 has access to db5, and user2 has access to user2db1.

This concludes Lab 5.

Lab 6 - Monitoring and Resources

Use either the command line or the BUI to monitor Oracle Database Appliance software, hardware, and feature usage.

Oracle Database Appliance also provides security reports, diagnostic information, and context sensitive online help (documentation, FAQ, blogs). An Oracle Enterprise Manager plug-in is available if you want to use Oracle Enterprise Manager to monitor your IT infrastructure. This lab will demonstrate how to monitor Oracle Database Appliance with BUI and ODACLI commands.

- [Step 1 - Advanced Information, Security Reports, Diagnostics, Online Help](#)
Understand how to view resources in the BUI.
- [Step 2 - Hardware Monitoring and Feature Tracking](#)
The BUI displays Oracle Database Appliance hardware status and tracks feature usage including High Water Marks.
- [Step 3 - Review Appliance Configuration](#)
ODACLI assists in the fast deployment, patching, and easy management of Oracle Database Appliance.

- [Step 4 - Review Storage Configuration](#)
Review the following odaadmcli commands that provide information about Oracle Database Appliance configuration.
- [Step 5 - Review Network Status](#)
Review the following odaadmcli commands that provide information about Oracle Database Appliance configuration.

Step 1 - Advanced Information, Security Reports, Diagnostics, Online Help

Understand how to view resources in the BUI.

To view the Oracle Database Appliance software components, click on the **Advanced Information** tab on the Appliance Overview page.

The screenshot shows the Oracle Database Appliance BUI interface. The top navigation bar includes 'System: dshost1', 'Current User: odaadmin', and tabs for 'Appliance', 'Database', 'Object Store', 'Monitoring', 'Security', 'Multi-User Access', 'Activity', and 'Diagnostics'. The 'Appliance' tab is active, and the 'Advanced Information' sub-tab is selected. The main content area displays basic information like 'Node Name: node0.us.oracle.com' and 'Last Collection Time: Sun Jun 26 2022 01:00:00 GMT+0000'. Below this is a list of expandable sections: 'Grid Infrastructure', 'Database Homes', 'Firmware Controller', 'Firmware Disk', 'ILOM', 'BIOS', and 'List of Operating System RPMs'. A 'Download' button and a 'Refresh' button are visible on the right.

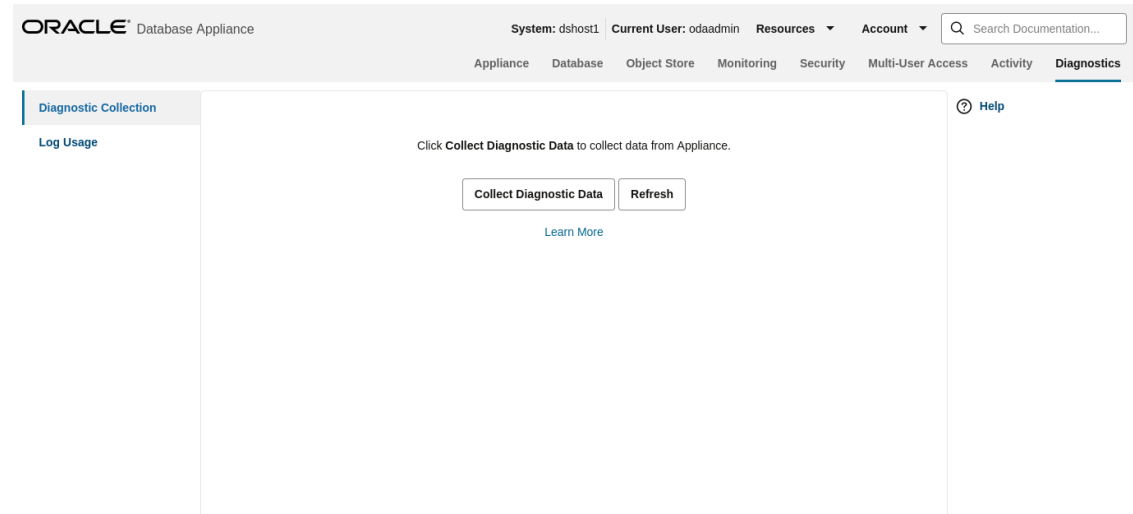
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To view security-related information, click on the **Security** tab on the Appliance page.

The screenshot shows the Oracle Database Appliance BUI interface with the 'Security' tab selected. The 'Audit Records' sub-tab is active. The main content area displays a list of audit records. At the top, there is a search bar and a 'Sort by: Created: New to Old' dropdown. Below the search bar, there is a table of audit records. The first record shows a 'MODIFY' operation on 'BM_CPU_POOL' by 'odaadmin' on 'Fri, Jan 13, 2023, 09:14:50 PM GMT'. The second record shows a 'CREATE' operation on 'BM_CPU_POOL' by 'odaadmin' on 'Fri, Jan 13, 2023, 09:13:17 PM GMT'. The third record shows a 'CREATE' operation on 'DBSYSTEM' by 'odaadmin' on 'Fri, Jan 13, 2023, 09:10:11 PM GMT'.

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To view diagnostic and log usage information, click on the **Diagnostics** tab on the Appliance page.



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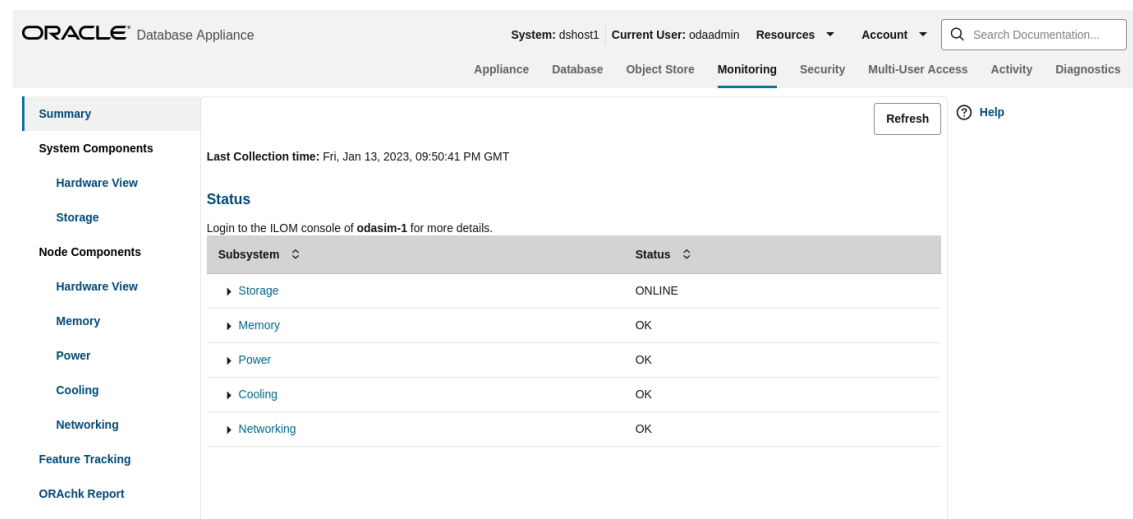
To view context sensitive in-line help information, click on **Help**.

You can also click inside the search box on the top right corner to search the Oracle Database Appliance documentation by topics.

To view online help information such as Oracle Database Appliance documentation, FAQ, and blogs, click on the **Resources** tab on the Appliance page.

Step 2 - Hardware Monitoring and Feature Tracking

The BUI displays Oracle Database Appliance hardware status and tracks feature usage including High Water Marks.



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Hardware Status

ORACLE® Database Appliance

System: dshost1Current User: odaadminResourcesAccount

ApplianceDatabaseObject StoreMonitoringSecurityMulti-User AccessActivityDiagnostics

Summary

System Components

Hardware View

Storage

Node Components

Hardware View

Memory

Power

Cooling

Networking

Feature Tracking

ORAchk Report

Locate Button/LED

Service Action Required LED

System OK LED

On/Standby button

Serial# & RFID Tag

Service Required LED: Top Fan Module

Service Required LED: Rear Power Supply

Service Required LED: Over Temperature Warning

SP OK LED

Do Not Service LED

(See Service Manual for LED descriptions)

NVMe SSDs (x12)

FillerFillerFillerFiller

FillerFillerFillerFiller

SSD0SSD1FillerFiller

Help

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Storage Configuration

ORACLE® Database Appliance

System: dshost1Current User: odaadminResourcesAccount

ApplianceDatabaseObject StoreMonitoringSecurityMulti-User AccessActivityDiagnostics

Summary

System Components

Hardware View

Storage

Node Components

Hardware View

Memory

Power

Cooling

Networking

Feature Tracking

ORAchk Report

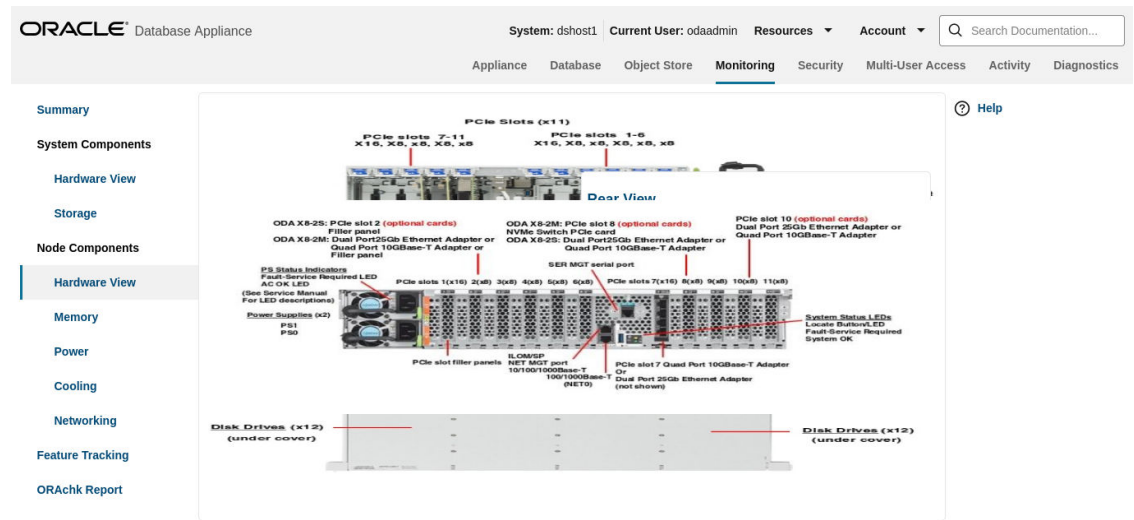
Storage

Name	State	Disk Type	ASM Disk List	Disk Size(GB)	Multipath List	Total Sectors	Sector Size(Bytes)
pd_00	ONLINE	NVD	data_00;reco_00	5961.63	/dev/nvme0n1	12502446768	512
pd_04	ONLINE	NVD	data_04;reco_04	5961.63	/dev/nvme1n1	12502446768	512

Help

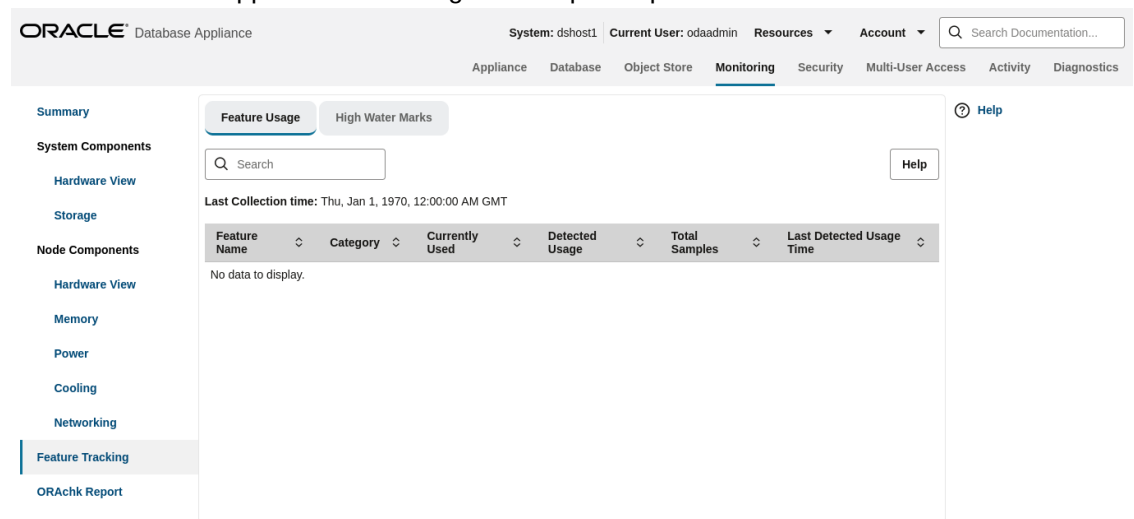
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Hardware View



Feature Tracking

The Feature Tracking output displayed in the simulator may not match the display on an actual Oracle Database Appliance. Following is a sample output:



High Water Marks

The High Water Marks output displayed in the simulator may not match the display on an actual Oracle Database Appliance.

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Step 3 - Review Appliance Configuration

ODACLI assists in the fast deployment, patching, and easy management of Oracle Database Appliance.

The Oracle Database Appliance command line interfaces (odacli, odaadmcli) are tools that can also be used to install, configure, and interrogate the status of Oracle Database Appliance.

Review the following `odaadmcli` commands that provide information about Oracle Database Appliance configuration. The sample output displayed in the simulator may not match exactly with the sample output on an actual appliance. For more details, refer to the Oracle Database Appliance documentation library for the latest release.

Note

The Oracle Database Appliance simulator does not support `odaadmcli` commands. The `odaadmcli` command examples in this guide are representative of the sample output when running the `odaadmcli` commands on an actual Oracle Database Appliance deployment.

Command: `odaadmcli show server`

Description: Displays the server/node status, including Oracle ILOM IP address, firmware version, power consumption, and other details. This is helpful for an at-a-glance view of basic server and node information.

```
$ sudo odaadmcli show server
```

```
Power State           : On
Open Problems         : 0
Model                  : ODA X7-2-HA
Type                   : Rack Mount
```

```
Part Number       : ODA X7-2-HA
Serial Number     : 1750XD0003
Primary OS        : Not Available
ILOM Address      : 10.145.203.81
ILOM MAC Address  : 00:10:E0:DA:CD:66
Description       : Oracle Database Appliance X7-2 High
Availability 1750XD0003
Locator Light     : Off
Actual Power Consumption : 302 watts
Ambient Temperature : 20.250 degree C
Open Problems Report : System is healthy
```

Command: odacli describe-system

Description: Displays Oracle Database Appliance deployment status.

```
$ sudo odacli describe-
system
```

Appliance
Information

```
                                ID:
oda
```

Platform:

```
                                Data Disk Count:
9
```

```
                                CPU Core Count:
36
```

```
                                Created: June 8, 2025 8:25:14 PM
GMT
```

System
Information

```
                                Name:
oda
```

Domain Name:

```
example.com
```

```

Time Zone:
GMT
```

```

DB Edition:
EE
```

```

DNS Servers:
1.1.1.1
```

```

NTP
Servers:
```

```

Disk Group
Information
```

```
-----
```

```

DG Name          Redundancy
Percentage
```

```
-----
```

```

Data             Flex
80
```

```

Reco             Flex
20
```

```

Redo             High
100
```

```

Flash            Flex                100
```

Command: odaadmcli show processor

Description: This command displays information about the CPUs running in the system.

```

$ sudo odaadmcli show
processor
```

```

NAME HEALTH HEALTH_DETAILS PART_NO. LOCATION
MODEL
CPU_0 OK - SR3AX P0 (CPU 0) Intel(R) Xeon(R) Gold
6140 CP 2.300 GHz 18 NA
```

```

        CPU_1 OK      -          SR3AX    P1 (CPU 1) Intel(R) Xeon(R) Gold
6140 CP 2.300 GHz      18          NA

```

Command: odaadmcli show memory

Description: This command displays information about the memory.

```
$ sudo odaadmcli show memory
```

```

NAME HEALTH HEALTH_DETAILS PART_NO. SERIAL_NO. LOCATION MANUFACTURER
MEMORY_SIZE CURR_CLK_SPEED ECC_Errors

DIMM_0 OK - 3A4K40BB2-CTD 00CE021743373400D8 P0/D0 Samsung 32 GB 2666 MHz 0
DIMM_11 OK - 3A4K40BB2-CTD 00CE02174337340065 P0/D1 Samsung 32 GB 2666 MHz 0
DIMM_12 OK - 3A4K40BB2-CTD 00CE0217433734000D P1/D0 Samsung 32 GB 2666 MHz 0
DIMM_14 OK - 3A4K40BB2-CTD 00CE02174237318364 P1/D2 Samsung 32 GB 2666 MHz 0
DIMM_16 OK - 3A4K40BB2-CTD 00CE0217423731A19A P1/D4 Samsung 32 GB 2666 MHz 0
DIMM_19 OK - 3A4K40BB2-CTD 00CE02174237318394 P1/D7 Samsung 32 GB 2666 MHz 0
DIMM_2 OK - 3A4K40BB2-CTD 00CE02174337340078 P0/D2 Samsung 32 GB 2666 MHz 0
DIMM_21 OK - 3A4K40BB2-CTD 00CE0217423731A195 P1/D9 Samsung 32 GB 2666 MHz 0
DIMM_23 OK - 3A4K40BB2-CTD 00CE02174237318365 P1/D1 Samsung 32 GB 2666 MHz 0
DIMM_4 OK - 3A4K40BB2-CTD 00CE0217433734007B P0/D4 Samsung 32 GB 2666 MHz 0
DIMM_7 OK - 3A4K40BB2-CTD 00CE02174337340013 P0/D7 Samsung 32 GB 2666 MHz 0
DIMM_9 OK - 3A4K40BB2-CTD 00CE02174337340101 P0/D9 Samsung 32 GB 2666 MHz 0

```

Command: odaadmcli show power

Description: This command displays information about the power details for the appliance.

```

$ sudo odaadmcli show power
NAME          HEALTH HEALTH_DETAILS PART_NO. SERIAL_NO. LOCATION INPUT_POWER
OUTPUT_POWER INLET_TEMP EXHAUST_TEMP
Power_Supply_0 OK - 7333459 465824T+1647D30456 PS0 Present 135 watts 20
degrees C 42.500 degree C
Power_Supply_1 OK - 7333459 465824T+1647D30762 PS1 Present 146 watts 20
degrees C 51.500 degree C

```

Command: odaadmcli show cooling

Description: This command displays information about the cooling of the appliance.

```
$ sudo odaadmcli show cooling
```

```

NAME HEALTH HEALTH_DETAILS LOCATION FAN % FAN SPEED

Fan_0 OK - FM0 35 % 6900 RPM
Fan_1 OK - FM0 34 % 5900 RPM
Fan_10 OK - FM2 32 % 6200 RPM
Fan_11 OK - FM2 31 % 5500 RPM
Fan_12 OK - FM3 32 % 6300 RPM
Fan_13 OK - FM3 31 % 5500 RPM
Fan_14 OK - FM3 32 % 6300 RPM
Fan_15 OK - FM3 31 % 5500 RPM
Fan_2 OK - FM0 36 % 6800 RPM
Fan_3 OK - FM0 34 % 5900 RPM

```

```

Fan_4 OK - FM1 35 % 6800 RPM
Fan_5 OK - FM1 34 % 5900 RPM
Fan_6 OK - FM1 32 % 6300 RPM
Fan_7 OK - FM1 29 % 5100 RPM
Fan_8 OK - FM2 32 % 6300 RPM
Fan_9 OK - FM2 31 % 5500 RPM

```

Step 4 - Review Storage Configuration

Review the following odaadmcli commands that provide information about Oracle Database Appliance configuration.

Command: odaadmcli show disk

Description: This command is helpful for getting a view into the device mapping and current state of the hard disks. The output lists the drives in the ODA X7-2-HA.

```
$ sudo odaadmcli show disk
```

TYPE	NAME	STATE	PATH	STATE_DETAILS
	e0_pd_00		/dev/sdbv	
HDD		ONLINE		Good
	e0_pd_01		/dev/sdbw	
HDD		ONLINE		Good
	e0_pd_02		/dev/sdbx	
HDD		ONLINE		Good
	e0_pd_03		/dev/sdbz	
HDD		ONLINE		Good
	e0_pd_04		/dev/sdbz	
HDD		ONLINE		Good
	e0_pd_05		/dev/sdca	
HDD		ONLINE		Good
	e0_pd_06		/dev/sdcb	
HDD		ONLINE		Good
	e0_pd_07		/dev/sdcc	
HDD		ONLINE		Good
	e0_pd_08		/dev/sdcd	
HDD		ONLINE		Good
	e0_pd_09		/dev/sdce	
HDD		ONLINE		Good
	e0_pd_10		/dev/sdcf	
HDD		ONLINE		Good
	e0_pd_11		/dev/sdcg	
HDD		ONLINE		Good
	e0_pd_12		/dev/sdch	
HDD		ONLINE		Good
	e0_pd_13		/dev/sdci	
HDD		ONLINE		Good
	e0_pd_14		/dev/sdcj	
HDD		ONLINE		Good
	e0_pd_15		/dev/sdck	
SSD		ONLINE		Good
	e0_pd_16		/dev/sdcl	
SSD		ONLINE		Good

	e0_pd_17		/dev/sdcm	
SSD		ONLINE		Good
	e0_pd_18		/dev/sdcn	
SSD		ONLINE		Good
	e0_pd_19		/dev/sdco	
SSD		ONLINE		Good
	e0_pd_20		/dev/sdcp	
SSD		ONLINE		Good
	e0_pd_21		/dev/sdcq	
SSD		ONLINE		Good
	e0_pd_22		/dev/sdcr	
SSD		ONLINE		Good
	e0_pd_23		/dev/sdcs	
SSD		ONLINE		Good

Command: odaadmcli show diskgroup

Description: Lists Oracle ASM disk groups configured on Oracle Database Appliance.

DATA is where the database data files are stored.

FLASH is where the hot files or small databases can be placed to improve performance.

RECO is where the backups, archive logs, and redo logs of the database are stored.

REDO is where the redo logs of the database are stored.

```
$ sudo odaadmcli show diskgroup
```

```
DiskGroups
-----
DATA
FLASH
RECO
REDO
```

Command: odaadmcli show fs

Description: Lists the details of the Oracle Database Appliance X8-2 file systems, including total Space, Free Space, Disk Group, and other details.

The sample output displayed in the simulator may not match exactly with the sample output on an actual appliance. For more details, refer to the Oracle Database Appliance documentation library for the latest release.

```
$ sudo odaadmcli show fs
```

Type	Total Space	Free Space	Total DG Space	Free DG Space
Diskgroup	Mount Point			
ext3	30109M	25254M	-	
-	/			
ext3	476M	405M	-	
-	/boot			
ext3	60347M	22117M	-	
-	/opt			
ext3	100665M	72839M	-	
-	/u01			

```
acfs          5120M          4625M          112116480M          111977204M
DATA /opt/oracle/dcs/commonstore
```

Command: odaadmcli show raidsyncstatus

Description: Lists the status of the boot disk HW RAID.

```
$ sudo odaadmcli show raidsyncstatus
```

Raid Type	Raid Device	Partitions	RaidStatus	Recovery
S/W Raid	md0	sdb2 sda2	UU	
No		N/A		
S/W Raid	md1	sdb3 sda3	UU	
No		N/A		

Command: odaadmcli show storage

Description: The following command displays the storage controllers and drives.

```
$ sudo odaadmcli show storage
```

```
==== BEGIN STORAGE DUMP =====
Host Description: Oracle Corporation:ORACLE SERVER X7-2
Total number of controllers: 2
    Id          = 0
    Serial Num  = 500605b00d3e88c0
    Vendor      = LSI Logic
    Model       = ORCL-EXT-SAS3
    FwVers      = 13.00.00.00
    strId       = mpt3sas:3b:00.0
    Id          = 1
    Serial Num  = 500605b00d3e8450
    Vendor      = LSI Logic
    Model       = ORCL-EXT-SAS3
    FwVers      = 13.00.00.00
    strId       = mpt3sas:5e:00.0

Total number of expanders: 2
    Id          = 0
    Serial Num  = 50800200022f163f
    Vendor      = ORACLE
    Model       = DE3-24C
    FwVers      = 0306
    strId       = Secondary
    WWN         = 50800200022e41be
    Id          = 1
    Serial Num  = 50800200022f163f
    Vendor      = ORACLE
    Model       = DE3-24C
    FwVers      = 0306
    strId       = Primary
    WWN         = 50800200022e447e
```

```

Total number of PDs: 24
      /dev/sdaa      HGST      HDD 9796gb slot: 0  exp:
0   H7210A520SUN01T
      /dev/sdab      HGST      HDD 9796gb slot: 1  exp:
0   H7210A520SUN01T
      /dev/sdac      HGST      HDD 9796gb slot: 2  exp:
0   H7210A520SUN01T
      /dev/sdad      HGST      HDD 9796gb slot: 3  exp:
0   H7210A520SUN01T
      /dev/sdae      HGST      HDD 9796gb slot: 4  exp:
0   H7210A520SUN01T
      /dev/sdaf      HGST      HDD 9796gb slot: 5  exp:
0   H7210A520SUN01T
      /dev/sdag      HGST      HDD 9796gb slot: 6  exp:
0   H7210A520SUN01T
      /dev/sdah      HGST      HDD 9796gb slot: 7  exp:
0   H7210A520SUN01T
      /dev/sdai      HGST      HDD 9796gb slot: 8  exp:
0   H7210A520SUN01T
      /dev/sdaj      HGST      HDD 9796gb slot: 9  exp:
0   H7210A520SUN01T
      /dev/sdak      HGST      HDD 9796gb slot: 10 exp:
0   H7210A520SUN01T
      /dev/sdal      HGST      HDD 9796gb slot: 11 exp:
0   H7210A520SUN01T
      /dev/sdam      HGST      HDD 9796gb slot: 12 exp:
0   H7210A520SUN01T
      /dev/sdan      HGST      HDD 9796gb slot: 13 exp:
0   H7210A520SUN01T
      /dev/sdao      HGST      HDD 9796gb slot: 14 exp:
0   H7210A520SUN01T
      /dev/sdap      HGST      SSD 3200gb slot: 15 exp:
0   HBCAC2DH2SUN3.2T
      /dev/sdaq      HGST      SSD 3200gb slot: 16 exp:
0   HBCAC2DH2SUN3.2T
      /dev/sdar      HGST      SSD 3200gb slot: 17 exp:
0   HBCAC2DH2SUN3.2T
      /dev/sdas      HGST      SSD 3200gb slot: 18 exp:
0   HBCAC2DH2SUN3.2T
      /dev/sdat      HGST      SSD 3200gb slot: 19 exp:
0   HBCAC2DH2SUN3.2T
      /dev/sdau      HGST      SSD 800gb slot: 20 exp:
0   HBCAC2DH4SUN800G
      /dev/sdav      HGST      SSD 800gb slot: 21 exp:
0   HBCAC2DH4SUN800G
      /dev/sdaw      HGST      SSD 800gb slot: 22 exp:
0   HBCAC2DH4SUN800G
      /dev/sdax      HGST      SSD 800gb slot: 23 exp:
0   HBCAC2DH4SUN800G
==== END STORAGE DUMP =====

```

Step 5 - Review Network Status

Review the following odaadmcli commands that provide information about Oracle Database Appliance configuration.

Command: odaadmcli show network

Description: Displays the MAC address, health status, and temperature of the network ports.

```
$ sudo odaadmcli show network
```

NAME	HEALTH	HEALTH_DETAILS	LOCATION	PART_NO	MANUFACTURER
MAC_ADDRESS	LINK_DETECTED				
DIE_TEMP					
Ethernet_NIC_0	OK	-	NET0	i210	INTEL
00:10:E0:DA:CD:62	no (em1)	N/A			
Ethernet_NIC_1	OK	-	NET1	BCM57417	Broadcom
00:10:E0:DA:CD:63	yes (em2)	N/A			
Ethernet_NIC_2	OK	-	NET2	BCM57417	Broadcom
00:10:E0:DA:CD:64	yes (em3)	N/A			
Ethernet_NIC_3	-	-	NET3	X540	INTEL
00:0A:F7:CF:36:38	yes (p1p2)	-			
Ethernet_NIC_4	-	-	NET4	X540	INTEL
00:0A:F7:CF:36:30	yes (p1p1)	-			

This concludes Lab 6.

Glossary

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