Oracle® Database Appliance Oracle® Database Appliance Simulator Labs





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Simulator Labs for Oracle Database Appliance - Release 19.16



Preface

This document provides instructions for Oracle Database Appliance simulator labs. Additionally, this document provides you with practices for key new features.

Audience

Read Oracle Database Appliance Release Notes if you want to learn about features, options, and enhancements that are new in Oracle Database Appliance release 19.16.

Documentation Accessibility

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

Access to Oracle Support

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Related Documents

For more information, see the following documents in the Oracle Database Appliance documentation set:

- Oracle Database Appliance Deployment and User's Guide
- Oracle Database Appliance Frequently Asked Questions
- Oracle Database Licensing Information User Manual
- Oracle Database Security Guide

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 text or the glossary. | |
| italic | Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values. | |
| monospace | Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter. | |



Setting Up the Oracle Database Appliance Simulator

- About the Simulator
- Accessing the ODA Simulator
- Prerequisites for Setting up the Simulator
- Installing the Simulator
- Creating a Restore Point or Snapshot for the Oracle Database Simulator
- BUI Agent Certificate Issue
- Restarting ODA Simulator in a Container



About the Simulator

Overview

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 highavailability (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 1GB 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.



Accessing the ODA 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 the second node or container, for example, 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



Prerequisites for Setting up the 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.
- 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.
- 5. Similarly add egress rule for outgoing traffic, if not already added.



Installing the Simulator

Docker is installed in the Simulator VM by default.

Log into the simulator VM:

```
ssh -i key opc@IP address
```

(OCI public IP address)

Switch to root user:

\$sudo -s

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

cd simulator_19.xx.0.0.0

Run the following command to make sure that the docker is running:

docker ps

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

No password is required for an OCI VM. Note that if you run the simulator on a Mac system, then use the Mac password to login.

To access the Oracle Database Appliance simulator through GUI or Browser User Interface (BUI):

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

Go to the simulator log directory.



//log

Run the cat command for the most recent log file.

```
cat
ODA Simulator system info:
Executed on: 2021_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 in a Linux or Mac system, then you must run the following steps.

Run the following command to make sure the docker is running and to view which containers are running:

#docker ps

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

#./cleanup_odasimulator_sw.sh

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.



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

A single container called **oda-1** is created.

To view the options, use the following command:

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

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

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: 2021_04_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-node0
```



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 o**da-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 19.11.0.0.0/log directory.

To completely reset the lab, run the following command:

./cleanup_odasimulator_sw.sh

This deletes all the containers.



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 | -1] [] | -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_19.12_ade/simulator_19.12.0.0.0/snapshots.dat doesn't ex
ist. Creating a new one...
Snapshot with ID: 1 has been created successfully. Timestamp: Wed Sep 22 14:01:2
4 PDT 2021
# ./snapshot.sh list oda-1
ID CONTAINER NAME DEPLOYMENT TYPE TIMESTAMP
1 oda-1 single Wed Sep 22 14:01:24 PDT 2021
# ./snapshot.sh restore 1 oda-1
Snapshot with ID: 1 has been restored successfully!
```



BUI Agent Certificate Issue

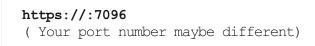
You may encounter a BUI Agent Certificate Issue. See the following example:

| https://server IP:7097/mgmt/index.html | | |
|--|------------------------|--|
| Your assigned port | number maybe different | |

You may see a BUI agent security certificate error message:

| Applications Places | Firefox | Mon 11 | :33 | 40 | ø |
|--------------------------|--|---------|------|----|-----|
| | Oracle Database Appliance Appliance - Mozilla Firefox | | - | • | × |
| 🚸 Oracle Linux | × 👔 Portainer 🛛 🗙 🌍 Oracle Database Appl | liano 🗙 | + | | |
| ↔ ∀ ☆ | ④ ♣ https://localhost:7095/mgmt/index.html ···· ♥ | ☆ | lil/ | | ≡ |
| | There was an error in connecting to the agent. Cause: The agent may not be running or the agent security certificates are not recognized. Check your network connection and refresh your browser. Check that the agent is running and you have accepted the security certificates. OK Comply with your system security requirem After configuring the password, login using new password. Password * | ents. | | | |
| paul@localhost:/simulato | or_19.6/log Oracle Database Appliance Applianc | | | | 1/4 |

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 7097-1 or 7096.



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



https://:7097/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 ODA 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



About Oracle Database Appliance Simulator Lab Exercises

- Connecting to the Oracle Database Appliance OCI Lab Environment
- Connecting to the Simulator Using BUI
- Connecting to the Simulator Using ODACLI



Connecting to the Oracle Database Appliance OCI Lab Environment

Overview

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 <bold>Always Free OCI Account</bold>, 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

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 ODA simulator container and switch to odaadmin (su odaadmin) user to run the CLI commands in the labs. Make sure you have the container name (e.g 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 BUI

Connect to the simulator as follows:

1. Use the OCI VM public IP address and port number to log into ODA BUI and enable Multi-User Access

https://<IP Address>:xxxx/mgmt/index.html (e.g. 7095)

2. You must first complete odacli configure-firstnet and run the odacli update-repository commands in the Lab 1 (using CLI)

Note that if you run into BUI agent credential issue, refer to the Troubleshooting section in the Readme document for details.

| 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 (N/A for DB System) Note: You cannot disable or enable Multi-User Access after you have provisioned the appliance Configure Multi-User Access Settings Submit |

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

You can then login as odaadmin with the new password.



| Oracle Database Appliance |
|---------------------------|
| |
| User Name * odaadmin |
| ODA Password 🚳 |
| ••••• |
| Login Forgot password? |

The Appliance page is displayed after you log into Oracle Database Appliance.

| ORACLE | Database Appliance | Current User: odaadm | in 🗎 Resources 🔻 Account 🔻 | 9 Search OD4 Documentation for |
|-------------------|--------------------|--|-----------------------------|----------------------------------|
| | | Appliance Database Object Store | Monitoring Security Multi-U | Iser Access Activity Diagnostics |
| Appliance | | | | Help |
| Overview | | | | |
| Compute Instances | | | | |
| DB Systems | | | | |
| Network | | | | |
| CPU Pool | | | | |
| Oracle ASR | | | | |
| Patch Manager | | Oracle Database Appliance is not configured. | | |
| | | Click Create Appliance to get started. | | |
| | | Create Appliance | | |
| | | Learn More | | |
| | | | | |
| | | | | |
| | | | | |



Connecting to the Simulator Using ODACLI

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)

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 /]$
```

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 (nodeO), run the following command.

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

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

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

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

Note:



Simulator Labs Overview

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
- Lab 2 Manage Databases
- Lab 3 Patch and Update
- Lab 4 Virtualization: Create Application and Database KVMs
- Lab 5 Multi-User Access
- Lab 6 Monitoring and Resources



Lab 1 - Deploy Appliance

- Step 1 Enable Multi-User Access
- Step 2 Add the Appliance to the Network
- Step 3 Update the Repository with the Oracle Database Appliance Software
- Step 4 Deploy the Appliance
- Step 5 Validate the Deployment
- Step 6 Networking

Step 1 - 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 odaad min and the previously-created password (for example, WELcome12##)

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

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

| 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 * Confirm Password * Enable Multi-User Access (N/A for DB System) Note: You cannot disable or enable Multi-User Access after you have provisioned the appliance Configure Multi-User Access Settings |

Log into BUI:



| Oracle Database Appliance |
|---------------------------|
| |
| User Name * |
| odaadmin |
| ODA Password 🚱 |
| ••••• |
| Login Forgot password? |

Step 2 - 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 ILOM using a network or serial connection. Oracle Database Appliance includes a command oda cli 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.

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.

```
[oracle@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 eml:
                                     [ OK ]
                                     [ OK ]
Shutting down interface plp1:
Shutting down interface p1p2:
                                     [ OK ]
Shutting down loopback interface:
                                            [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface :
                          [ OK ]
Bringing up interface eml: [ OK ]
Bringing up interface plp1: Determining if ip address 192.168.16.24 is already i
n use for device plpl... [ OK ]
Bringing up interface p1p2: Determining if ip address 192.168.17.24 is already i
n use for device p1p2... [ OK ]
Bringing up interface btbond1: Determining if ip address 192.168.0.100 is alread
y in use for device btbond1...
                                [ OK ]
INFO: Restarting the DCS agent
```

If this is an Oracle Database Appliance X8-2-HA system, you must run the command odac li configure-firstnet on the second node (node-1). Log into node-1 and run the command odacli configure-firstnet again. You can use 192.168.0.101 for the IP address for node-1.

Step 3 - 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 19.15 patches, and then in the third lab you will patch the Oracle Database Appliance and databases to the latest 19.16 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-r epository command.

| Filename | Description |
|--|--|
| odacli-dcs-19.15.0.0.0-date-GI-19.15.0.0.zip | Oracle Grid Infrastructure 19.15 Clone Files |



| odacli-dcs-19.15.0.0.0- <i>date</i> -DB-19.15.0.0.zip | Oracle Database 19.15 Clone Files |
|--|--|
| odacli-dcs-19.16.0.0.0- <i>date</i> -ODAVM-19.16.0.0.zip | DB 19.16 DB System Template (used in lab 4) |
| oda-sm-19.16.0.0.0- <i>date</i> -server.zip | ODA 19.16 Patch Bundle (used in lab 3) |
| odacli-dcs-19.16.0.0.0- <i>date</i> -GI-19.16.0.0.zip | Oracle Grid Infrastructure 19.16 Clone Files (used in lab 3) |
| odacli-dcs-19.16.0.0.0- <i>date</i> -DB-19.16.0.0.zip | DB 19.16 Clone Files (used in lab 3) |
| odacli-dcs-12.1.0.2.0- <i>date</i> -DB-19.15.0.0.zip | DB 12.1 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-19.15.0.0.-
date-GI-19.15.0.0.zip
{
    "jobId" : "4d428b05-a33f-4fe0-82ec-56849503aa28",
    "status" : "Running",
    "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.15.0.0.0-date-GI-19.15.0
    .0.zip",
    "reports" : [ ],
    "createTimestamp" : "July 26, 2022 00:05:38 AM UTC",
    "resourceList" : [ ],
    "description" : "Repository Update",
    "updatedTime" : "July 26, 2022 00:05:38 AM UTC"
```

```
}
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-dcs-19.15.0.0.o-
date-DB-19.15.0.0.zip
{
    "jobId" : "bblcaa66-7d19-4de1-a074-f475f4a2505a",
    "status" : "Running",
    "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.15.0.0.0-date-DB-19.15.0
.0.zip",
    "reports" : [ ],
    "createTimestamp" : "July 26, 2022 00:08:58 AM UTC",
    "resourceList" : [ ],
    "description" : "Repository Update",
    "updatedTime" : "July 26, 2022 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 patch manager in the web BUI. However, it is not necessary as you have used command line to update the repository (clone files) already.

| ORACLE | Database Appliance Current User: odaadmin Besources v Account v Q. Search ODA Documentation for., Appliance Database Object Store Monitoring Security Multi-User Access Activity Diagnostics |
|--|--|
| Appliance Overview | Update Repository Update Server/Storage Cleanup Repository |
| Compute Instances DB Systems Network | Update Patch Repository Download the Oracle Database Appliance patch bundles from My Oracle Support and save the concatenated zip file in a directory on the appliance. For multi-node systems, save the concatenated file in a directory on each node. Then, enter a comma-separated list of absolute file paths (without spaces) for the patch bundles on the appliance. |
| CPU Pool Oracle ASR Patch Manager | Note: After updating the Patch Repository or components, refresh the page to display the latest information. Patch Bundle Location: Update Repository |

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 odaad min and previously created password (for example, WELcome12##)

| https://OCI public IP Address>:xxxx/mgm | nt/index.html |
|---|---|
| | Oracle Database Appliance |
| | User Name * odaadmin ODA Password @ Login Forgot password? |

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

| ORACLE | Database Appliance | Current | t User: odaadmir | Resources * | Account + Q Search C | DA Documentation for |
|-------------------|--------------------|---|------------------|--------------------|----------------------|----------------------|
| | | Appliance Database | e Object Store | Monitoring Securit | ty Multi-User Access | Activity Diagnostics |
| Appliance | | | | | • Help | |
| Overview | | | | | | |
| Compute Instances | | | | | | |
| DB Systems | | | | | | |
| Network | | | | | | |
| CPU Pool | | | | | | |
| Oracle ASR | | | | | | |
| Patch Manager | | Oracle Database Appliance is not config | ured. | | | |
| | | Click Create Appliance to get started | d. | | | |
| | | Create Appliance | | | | |
| | | | | | | |
| | | Learn More | | | | |
| | | | | | | |
| | | Learn More | | | | |

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.

| | Dilance Current User: oda-admin 陷 Resources * Account * 🔍 Search ODA Documentation |
|----------------------|---|
| | Appliance Database Object Store Monitoring Security Activity Diagnostics |
| Overview | Create Appliance |
| Compute Instances | System Information Network Information User and Group Selection Database Informal > |
| DB Systems | Parameter No. 61 and and |
| Network | Load Configuration Browse No file selected. |
| CPU Pool | Diagnostics Information |
| Oracle ASR | Redact sensitive information such as IP and MAC addresses, host names, user names, database and tablespace names, and ports in diagnostic collections. |
| Patch Manager | Enable Trace File Redaction 🔿 Yes 💿 No |
| Parameter Repository | |
| | Configure and enable Oracle Auto Service Request (Oracle ASR) now or later. |
| | Enable ASR: Ves No |
| | < Cancel Save Configuration Reload Submit > |
| | |
| | |

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 configure-firstnet process. You can also configure the 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 as shown below.

| Customize Users & Groups 🔹 Yes 🔵 | No | Allow OS Role Separation . Yes No |
|----------------------------------|---------------------|-----------------------------------|
| GI User * | GI UserID * | |
| grid | 1900 | |
| DB User * | D8 UserID * | |
| oracle | 1901 | |
| install Group * | Install GroupID * | |
| oinstall | 1901 | |
| DBA Oper Group * | DBA Oper GroupID * | |
| dbaoper | 1902 | |
| DBA Group * | DBA GroupID * | |
| dba | 1903 | |
| ASM Admin Group * | ASM Admin GroupID * | |
| asmadmin | 1904 | |
| ASM Oper Group * | ASM Oper GroupID * | |
| asmoper | 1905 | |
| ASM DBA Group * | ASM DBA GroupID * | |
| asmdba | 1906 | |

Next is the Database screen.



| atabase Information | | | | | | |
|--|--|--------------------------------|------------------------------|-------|--------------------|-----------------------------|
| Create Initial Database 🔹 Yes 🔿 No | | | | | | |
| Reload DB Version | | | | | | |
| 06 Name * | Database Edition | | SYS and PDB Admin User Passw | ord * | | |
| db1 | Enterprise Edition | | | | | |
| 08 Unique Name | Database Class | | Confirm Password * | | | |
| db1u | OLTP | | | | | |
| 8 Version | Shape | | Character Set | | | |
| 19.13.0.0.211019 + | odb1(1 Core, 8GB Memory) | | AL32UTF8 | | | |
| DE 🔿 Yes 🔹 No | Storage | | National Character Set | | | |
| | ASM | | AL16UTF16 | | | |
| | Database Redundancy | | Language | | | |
| | Mirror | | AMERICAN | | | |
| | Configure EM Express 🔿 Yes | No | Territory | | | |
| | | | AMERICA | | | |
| | | | Enable TDE 🔿 Yes 🔹 No | | | |
| | | | TDE Wallet Password | | | |
| | | | | | | |
| | | | Confirm TDE Wallet Password | | | |
| | | | | | | |
| | | | | | | |
| agnostics Information | | | | | | |
| Redact sensitive information such as IP and MAC addresse | s, host names, user names, database and ta | blespace names, and ports in d | liagnostic collections. | | | |
| | | | | | | |
| inable Trace File Redaction 🔿 Yes 🔹 No | | | | | | |
| Configure and enable Oracle Auto Service Request (Oracle | ASR) now or later. | | | | | |
| nable ASR: 🔿 Yes 🔹 No | | | | | | |
| | | | | | | |
| | | | | | 1 | |
| | | | | | Save Configuration | Save Configuration < Cancel |

Specify the database name and other database related information as shown below. Select DB Version as **19.13**.

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.

| ORACLE Delater Applance | | Current User: adaadmin | Resources + Assound + St, Search-Olde Documentation for. |
|-------------------------|---|--------------------------------------|--|
| | | Applance Existence Object Store Int. | mining Security Multi-class Actually Diagnostics |
| Applance | | | 0 |
| Daminu | | | |
| Compute Instances | | | |
| DB Typiters | | | |
| Tertacrit | | | |
| Onthe | | | |
| Crack Alk | | | |
| fact Merope | Circuite Cataloane Applicator is loading configured. Preview gis 16 Addinity page to see job distails. | | |
| | Job Status × | | |
| | | | |
| | The job to provision the appliance is submitted. | | |
| | Click the link to display job details. | | |
| | 807107-2845-408-842-26496-SHR | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

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.

| ORACLE Database Applance | | Current Uber, adiadmin 🔒 Ressum + Acount + 🤗 Inech (20) Decomentation for, |
|---|--|--|
| | | Applance Database Object Store Monitoring Security Multi-User Access Activity Diagnositics |
| e e | | Called Dispession Reheats Back |
| vavisioning service creation | | |
| 8: N017117-2545-4c88-682-30#96c5385c | | |
| nated: Fil Feb 25 2022 4 56 27 PM | | |
| fereage: tatwa: Success | | |
| | | |
| tope of 10 (1-5 of 40 tores) = 1 = 1 = 2 = 3 = 4 = 5 = 10 = 3 = 9 | | |
| Setting up Network | | |
| Start Time: Ini Feb 25 2022 14:56:30 GMT-0800 (Pacific Standard Time) | End Time: Ini Arb 25 2022 16:56:30 GMT-0800 (Pacific Standard Tene) | Statue: Success |
| OS usergroup 'aondba'creation | | |
| Start Time: Pri Feb 25 2022 16:56:30 GMT-0800 (Pacific Standard Time) | End Time: Its Feb 25 2022 16:56:30 GMT-0800 (facific Standard Time) | Station: Success |
| OS-usergroup 'asmoper'metion | | |
| Start Time: Hi Feb 25 2022 16 56:30 GMT-0800 (Paofis Standard Time) | End Time: Hi Feb 25 3002 16:56 30 GMT-0800 (Pacific Standard Time) | Status: Success |
| Cri usergroup 'aumadmin'creation | | |
| Start Time: Ini Feb 25 2022 16:56:30 GMT-0800 (Pacific Standard Time) | End Time: Ini Arb 25 2022 16:56:30 GMT-0800 (Pacific Standard Time) | Stative: Success |
| 05 unergroup (dbaloniation | | |
| Rart Time: Ini Neb 25 2022 16 56:30 GMIT-0600 (Pacific Standard Time) | End Time: Ini Asto 25 2022 16 56 30 GAT 0820 (Barille Standard Time) | Elabor Locates |

Step 5 - Validate the Deployment

Next, click on the **Database** tab at the top right of the BUI. The deployed database is displayed. The web pages refresh every few seconds, so if the database does not show up at first, wait till the page refreshes. Click on the database name for more details about the database. Click on the **Database Home** link in the left-hand column, when viewing the **Database** tab to see information about the database home. Note this may take up to a minute to display.

You can also verify that the appliance is properly deployed by clicking the **Appliance** tab to see more details. The view is similar to the screen displayed as follows, taking into account that this is a simulation:

| RACLE | Database Appliance | | | | Current User: edaadmin | Resources + | Account + 9, Search ODA Documenter |
|------------------|--------------------|-------------------------------------|----------------------------|---------------------|----------------------------|------------------|-------------------------------------|
| | | | | Appl | ance Database Object Store | Monitoring Secur | ity Multi-User Access Activity Diag |
| plance | Basic Informatio | an Advanced Information | | | | | 0 |
| ompute Instances | System Informa | ation | | | | | |
| 8 Systems | | Platform: | | | | | |
| interork | | Data Disk Count: CPU Core Count: | | | | | |
| PU Post | | DCS Agent | | | | | |
| Nacle ASR | | | 19.13.0.0.0 | | | | |
| | | Created: | Fri Feb 25 2022 4:56:27 PM | | | | |
| ch Manager | | Host Name: | | | | | |
| | | Domain Name: | | | | | |
| | | Time Zone: | | | | | |
| | | DNS Servers: | 3.5.53 | | | | |
| | | NTP Servers: | | | | | |
| | Disk Group Info | ormation | | | | | |
| | | | | | | Refresh | |
| | Name | Redundancy | Physical Total Space | Physical Free Space | Logical Free Space | | |
| | reame | | | | | | |
| | > DATA | PLEX. | 11.0 TB | 10.0 TB | 3.33 TB - 5.0 TB | | |

Step 6 - Networking

You can check the network by clicking on the **Network** tab on the left hand pane in the BUI.



| ORACLE | Dutabase Appliance | | | Account + 9, Search CDI Decumentation for. |
|---|--|---|--|--|
| Applance Overview Compute Instances OR System Particular CPU Fool Oracle ASR Patch Manager | Show Robustles Show Interface march Q Page of 1 (2nd 5 hound) c < 1 > > > Public-network Scatter 52 2022 45627 PM. States: CONFIGURED Network: Type: Hobit Subnot Muke: 255.255.55 Scatter: CONFIGURED Network: Type: Hobit Subnot Muke: 255.255.55 Scatter: Configured Scatter: Configured Scatter: End Scatter: Road Scatter: configured Scatter: Road Scatter: Road Scatter: Road Scatt Scatter: Road Scatt Scatter: Road Scatter | Hode0 IP Address: 192.168.0.100 V/P Address: 192.168.0.100 V/P Address: 192.168.0.100 | Cruth Network Sort by Created New to Od • Referent Actions * | 0 Hay |

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

| DRACLE' | Database Appliance | | | | | | | | Multi-User Acco | |
|-------------------|------------------------|--|-----------------|----------|-----|---|----|--------------|-----------------|--|
| oplance | | | | | - | | | | 0 may | |
| Overview | Create Network | | | | | | | | | |
| Compute Instances | | | | | | | | | | |
| DB Systems | Enable Vian 💌 Yes 🔿 Ne | | Default Network | Yes . No | | | | | | |
| Network - | Name * | | Subnet Mask * | | M.* | | | | | |
| | backup | | 255215215215252 | | 100 | - | A | | | |
| CPU Pool | # Address.* | | Gateway | | | | | | | |
| Oracle ASR | 192.168.0.200 | | 192.168.0.201 | | | | | | | |
| | Network Type | | Interface * | | | | | | | |
| Patch Manager | Backup | | btbond1 | | | | | | | |
| | | | | | | | 11 | ancel Create | | |

Click on the **Create** button, then submit the job. Following is an example that shows the backup VLAN has been created.

| ORACLE | Dutabase Appliance | | | | | | Account = 9, 5 | | |
|---|--|---|----------|-----------------|-------------|-----|------------------|------------|-------------|
| legilance Consuler Consuler DB Systems Nations CPU Heat Oracle ADR Patch Manager | Dane Notanula Dane Interfaces aserth Q. Page of1 (1/2 of 2/dmmt) x < 1 > x backup Created: fin feb 25 2022 5:06:48 PM. backup Dataset: Confidence x < 1 > x backup Created: Explore Backup x < 1 > x backup Created: Explore Backup x < 1 > x backup Created: Explore Backup x < 1 > x backup Created: Explore Backup x < 1 > x backup Explore Backup x < 1 > x ba | Node0 17 Address: 192,368,0,200 | Applance | Chant Store | Create Nets | ork | Multi User Acces | s Activity | Diagnostics |
| | Public-network Created: Fir Feb 25 2022 4:56:27 PM States: CONFIGURED Network Type: Public Subart Mark: 255:255:255:0 Gateways 192; 56:80:0 Interface Type: Bond ScAN Rame: robt?-scan SCAN IIP Address: 192; 16:80:100 | Node0 IP Address: 192,168.0.100 VIP Nomer node0-vip VIP Address: 192,168.0.100 | | | Actions * | | | | |

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 Web GUI
- Step 2 Delete a Database
- Step 3 View the Databases and Database Homes Using the CLI
- Step 4 Create a New Database with the CLI
- Step 5 Delete and Recreate a Database
- Step 6 Create a CPU Pool for a Database
- Step 7 Delete a Database Home
- Step 8 Create Database Backups on Local Disk, External NFS Storage, or on Oracle Cloud

Step 1 - Create a new database using the Web GUI

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.

| ORACLE | Dutabase Appliance | | Current User: odiademin 🗿 Resources = 4. Scource = 9, Snorth OD4 Documentation for: Appliance Database Object Score Manhoring Security Multi-Ober Access Activity Diagnostics | | |
|---|---|--|--|-----------------|--------|
| Database Database Database Home Storage Database Home Backup Policy | numb Q Page of 5: (1 of 3 here) X 1 X | | Sort by Created New to Old • Reheah | Create Database | © Help |
| | 001 10:635064-4475-4876-9471-608721255950 Copy States: CONFIGURED Created: Fin Feb 25 2022 4:5627 FM | CDB: false DB Version: 19.13.0.0.211019 System Name: cda | Shape: odb1 Storage: ASM | Actions * | |

Choose Create Database, and click Next.

| ORACLE | Dutatase Applance Content User: odasdenin 🐌 Resource x Account = 🔍 Seath OCA Documentation En: Applance Database Object Store Monitoring Security Multi-User-Access Account Diagnostica |
|--|---|
| Dutabase Dutabase Dutabase Home Strage Dutabase Home Backup Policy | Create Database Image: The option below to create a database, or done a database. Database can be clored from one appliance to another appliance, or to the same appliance. Image: The option below to create a database, or done a database. Database can be clored from one appliance to another appliance, or to the same appliance. Image: The option below to create a database. Image: Create a Database Create a Database Image: The option below Image: Create a Database Image: Create a Database Image: Create a Database |

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.



| ORACLE | Database Appliance | | | Appliance Detabuse | | | Account # 9 Search ODI Deci ty Multi-User Access Activity | |
|-----------------------|----------------------|------------------------------|----|------------------------------|---------------|----------|--|--|
| latabase | Create Database | | | | | | O Hulp | |
| Database | | | | | | | | |
| Database Home Storage | C8 Name * | Database Edition | | SYS and PDB Admin User Passe | ed* | | | |
| Database Nome | 412 | Enterprise Edition | | | | | | |
| Database Porte | DB Unique Name | Database Class | | Confirm Password * | | | | |
| Backup Policy | | 0(79 | | | | | | |
| | Use Existing DB Home | Shape | | Character Set | | | | |
| | Nes . No | odb1(3 Core, 8G8 Memory) | | AU32V778 | 1.1 | | | |
| | DB Venion | Storage | | National Character Set | | | | |
| | 19.13.0.0.211019 | ASM | | AL16UTF16 | | | | |
| | CDB Ves No | Database Redundancy | | Language | | | | |
| | | Mirror | | AMERICAN | | | | |
| | | Networks * | | Sambory | | | | |
| | | Public network × | | AMERICA | | | | |
| | | CPU Pool Name | | Enable TDE 🔷 Yes 🔹 No | | | | |
| | | Select CPU Pool | | TDE Wallet Password | | | | |
| | | Configure DM Express 🔿 Yes • | No | Confirm TDE Wallet Password | | | | |
| | | | | | C Back Canoel | Create > | | |

This will bring up a link to the job status. Similar to ODACLI, 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.

| ORACLE | Database Appliance | Current User: odaadmin 🔒 Resources 👻 Appliance Database Object Store Monitoring Secur | Account + 9, Search ODA Documentation for., ity Multi-User Access Activity Diagnostics |
|--|---|--|---|
| search | Q. | | Collect Diagnostics Refresh Back |
| Database service creatio | on with db name: db2 | | |
| 0:09365000-c345-4531-b8 | r7-942460f81974 | | |
| reated: Fri Feb 25 2022 5:1 | | | |
| Aessage: | | | |
| Status: Success | | | |
| Page of 6 (1-5 of 26 its | ems) K < 1 2 3 4 5 6 > X | | |
| Validating dbHome availat Start Time: Fri Feb 25 202 | ble space 22 17:18:50 GMT-0800 (Pacific Standard Time) | End Time: Fri Feb 25 2022 17:18:50 GMT-0800 (Pacific Standard Time) | Status: Success |
| Setting up ssh equivalance Start Time: Fri Feb 25 202 | e 12 17:18:50 GMT-0800 (Pacific Standard Time) | End Time: Fri Feb 25 2022 17:18:50 GMT-0800 (Pacific Standard Time) | Status: Success |
| Setting up ssh equivalance Start Time: Fri Feb 25 202 | e 22 17:18:50 GMT-0800 (Pacific Standard Time) | End Time: Fri Feb 25 2022 17:18:51 GMT-0800 (Pacific Standard Time) | Status: Success |
| Creating ACFS database h Start Time: Fri Feb 25 202 | ome 12 17:18:51 GMT-0800 (Pacific Standard Time) | End Time: Fri Feb 25 2022 17:18:52 GMT-0800 (Pacific Standard Time) | Status: Success |
| Validating dbHome availab | ble space 12 17:18:52 GMT-0800 (Pacific Standard Time) | End Time: Fri Feb 25 2022 17:18:52 GMT-0800 (Pacific Standard Time) | Status: Success |

Once the operation completes, click on the **Appliance** tab and then the **Database** tab at the top right of the web page. This should show the newly-created database. The web pages refreshes every few seconds, so if the database does not show up at first, wait till the page refreshes.



| ORACLE | Database Appliance | Appliance | Current User: odaadmin Database Object Store | | Q Search ODA Documentation for i-User Access Activity Diagnostics |
|---|--|--|---|-------------------------|--|
| Database Database Database Home Storage | search Q. Page of 1 (1-2 of 2 items) K < 1 | Sort by: | Created: New to Old + | Refresh Create Database | 0 Help |
| Database Home Backup Policy | db2 IID: d1e615c3-5855-4b19-9ad0-40b620ac5f13 Copy Status: CONFIGURED Created: Fri Feb 25 2022 5:18:48 PM | CDB: false DB Version: 19.13.0.0.211019 System Name: oda | Shape: odb1 Storage: ASM | Actions * | |
| | db1 ID: 63fc04ef-4e75-4f1b-9a71-6087212b5b50 Copy Status: CONFIGURED Created: Fri Feb 25 2022 4:56:27 PM | CDB: false DB Version: 19.13.0.0.211019 System Name: oda | Shape: odb1 Storage: ASM | Actions * | |

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 - Delete a Database

You can also delete a database from the **Database** tab. Click the **Appliance** tab and then **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 deletion. Click **Refresh**, if necessary.

| ORACLE | Database Appliance | Applance | | Resources * Account * | Q Search ODA Documentation for -User Access Activity Diagnostics |
|---|---|--|-----------------------------|-----------------------------|---|
| Database Database Database Home Storage | search Q. Page of 1 (1-2 of 2 herm) × < 1 > × | Sort by: | Created: New to Old + Re | efresh Create Database | O Help |
| Database Home Backup Policy | db2 ID: d1e615c3-5855-4b19-9ad0-40b620ac5f13 Copy Status: CONFIGURED Created: Fri Feb 25 2022 5:18:48 PM | CDB: false DB Version: 19.13.0.0.211019 System Name: oda | Shape: odb1 Storage: ASM | Actions * | |
| | db1 ID: 63tc04ef-4e75-4f1b-9a71-6087212b5b50 Copy Status: CONFIGURED Created: Fri Feb 25 2022 4:56:27 PM | CDB: false DB Version: 19.13.0.0.211019 System Name: oda | Shape: odb1 Storage: ASM | Actions 💌 View Modify | |
| | | | | Move Upgrade Delete | |

After the database delete operation, only db2 is left.

| Activity Diagnostics |
|----------------------|
| |
| |
| |
| |



Step 3 - View the Databases and Database Homes Using the CLI

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-databas e to see the details for a specific database. Be sure to use the database ID shown in the odacli list-databa ses command, not the ID shown in the example.

| atabase details | |
|--|---|
| ID: d1e615c3-5855- | 4b19-9ad0-40b620ac5f13 |
| Description: | db2 |
| DB Name: | db2 |
| DB Version: | 19.15.0.0.220118 |
| DB Type: | SI |
| DB Role: | PRIMARY |
| DB Target Node Name: | _ |
| DB Edition: | EE |
| DBID: | |
| Instance Only Database: | |
| | false |
| PDB Name: | |
| PDB Admin User Name: | |
| SEHA Enabled: | |
| Class: | - |
| Shape: | |
| Storage: | |
| DB Redundancy: | |
| CharacterSet: | |
| National CharacterSet: | |
| Language: | |
| Territory: | a1314be1-2c6f-411f-b2c7-61444449f02b |
| Console Enabled: | |
| TDE Wallet Management: | Tatse |
| TDE Mariet Management: TDE Enabled: | falso |
| Level 0 Backup Day: | |
| AutoBackup Enabled: | - |
| - | |
| | - |
| Associated Networks: | |
| DB Domain Name: | July 26, 2022 1:18:48 AM UTC example.com |

Step 4 - Create a New Database with the CLI

There are many options you can specify when using the CLI to create a new database. Type odacli create-d atabase -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.

| <pre>\$ odacli cr</pre> | eate-database | -n db3 -v 19.1 | 15.0.0 | | | |
|-------------------------|--------------------------------|--|----------------------------|--------------------------|--------------|-----------|
| Job details | 5 | | | | | |
| | Description: Status: | 2051bf5b-4815 Database serv Created July 26, 2022 | vice creati | on with db | | |
| Task Name Time | nebbuge. | Status | Start Ti | me | | End |
| | | | | | | |
| | | 2051bf5b-4815- | | e51367ba32 | 69 | |
| Job details | | | | | | |
| | ID: Description: Status: | 2051bf5b-4815 Database serv Success July 26, 2022 | 5-4cd2-8d85 vice creati | -e51367ba3 on with db | 269 | |
| Task Name | Messaye. | | Start Ti | me | | End |
| Time | | Status | | | | |
| Validating | | ole space | | 2022 1:45 | :50 AM UTC | July 26 |
| Setting up | ssh equivalance 50 AM UTC | ce | July 26, | 2022 1:45 | :50 AM UTC | July 26 |
| Setting up | ssh equivalance 5:50 AM UTC | ce | July 26, | 2022 1:45 | :50 AM UTC | July 26 |
| Creating AC | FS database ho 5:51 AM UTC | ome | July 26, | 2022 1:45 | :51 AM UTC | July 26 |
| Validating | | ole space | July 26, | 2022 1:45 | :51 AM UTC | July 26 |
| Configuring | user access t | UTC Success | | ge July 26 | , 2022 1:45: | 51 AM UTC |
| | Home Directory | | | 2022 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
TD
                               DB Name
                                       DB Type DB Version
CDB
        Class
               Shape Storage Status DbHomeID
    _____ ___
                               db2 SI 19.15.0.0.220419
d1e615c3-5855-4b19-9ad0-40b620ac5f13
false OLTP odb1 ASM CONFIGURED a1314be1-2c6f-411f-b2c7-6144444
9f02b
324a42ea-bba2-477d-8bca-5a26af159f1c db3 SI 19.15.0.0.220419
      OLTP odb1 ASM CONFIGURED ecfa440e-2482-40c1-8ccd-67316
false
cd48ba2
```

Step 5 - Delete and Recreate 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" : "July 26, 2022 01:49:40 AM UTC",
   "endTime" : "July 26, 2022 01:49:40 AM UTC",
   "status" : "Success",
   "taskDescription" : null,
   "parentTaskId" : "TaskSequential 10046",
   "jobId" : "ccde4700-3c1e-423a-8079-477f49f8cd5f",
   "tags" : [],
   "reportLevel" : "Info",
$ odacli list-databases
TD
                                      DB Name DB Type DB Version
CDB
          Class Shape Storage
                                     Status
                                                  DbHomeID
                           _____ ____
```

```
_____

      324a42ea-bba2-477d-8bca-5a26af159f1c
      db3
      SI
      19.15.0.0.220419

      false
      OLTP
      odb1
      ASM
      CONFIGURED
      ecfa440e-2482-40c1-8ccd-673

16cd48ba2
$ 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" : "July 26, 2022 01:49:40 AM UTC",
    "endTime" : "July 26, 2022 01:49:40 AM UTC",
    "status" : "Success",
    "taskDescription" : null,
    "parentTaskId" : "TaskSequential 10046",
    "jobId" : "ccde4700-3c1e-423a-8079-477f49f8cd5f",
    "tags" : [],
    "reportLevel" : "Info",
$ odacli list-databases
                                               DB Name DB Type DB Version
ID
       Class Shape Storage Status
CDB
                                                              DbHomeID
                                     _____ ___ ____
                                                                                   _____
_____

      324a42ea-bba2-477d-8bca-5a26af159f1c
      db3
      SI
      19.15.0.0.220419

      false
      OLTP
      odb1
      ASM
      CONFIGURED
      ecfa440e-2482-40c1-8ccd-673

16cd48ba2
```

Using the CLI, create a new database db4.

```
$ odacli create-database -n db4 -v 19.15.0.0
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
```



| | | eated: J ssage: | uly 26, 2022 | 2 1:51:50 AM | UTC |
|--------------------------------------|----------|--------------------|------------------|-------------------|--|
| Task Name Time | | | Status | Start Time | End |
| | | | | | |
| # odacli l | ist-data | bases | | | |
| ID CDB | Class | Shape | Storage | DB Name Status | DB Type DB Version DbHomeID |
| ID CDB | Class | Shape | Storage | DB Name Status | DB Type DB Version DbHomeID |
| | | | | | |
| 324a42ea-b false 16cd48ba2 | | | 6af159f1c ASM | db3 CONFIGURED | SI 19.15.0.0.220419 ecfa440e-2482-40c1-8ccd-673 |
| deac01db-e | | | 042be3a18 ASM | db4 CONFIGURED | SI 19.14.0.0.220419 c3c63738-703e-4c1d-98de-95b |

Step 6 - Create a CPU Pool for a Database

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

Click **CPU Pool** on the left, then click **Create a CPU Pool**.

| ORACLE | Database Appliance | | System: edia Current User: ediaadmin 🐌 Resources * Account * 🔍 Search COA Documentation fo Applance: Database Object Store Microbaring Security Multi-UserAcceus Activity Diagnesis |
|-------------------|--------------------|---|--|
| Appliance | | | 0 m/s |
| Overview | | | |
| Compute Instances | | | |
| DB Systems | | | |
| Network | | | |
| CPU Post | | | |
| Onacle ASR | | | |
| Patch Manager | | There are no CPU Pools. | |
| | | Click Create CPU Pool to create a new CPU Pool. | |
| | | Create CPU Pool | |
| | | Learn More | |
| | | | |

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



| DRACLE | Database Appliance | System: eda Current User: edaadmin 🐌 Resources * Accourt * 🤤 Invest-CDI Decommission for |
|-------------------|--------------------|--|
| pplance | Create CPU Pool | Applance Distributer Object Store Monitoring Security Multi-Uner Access Activity Disposition |
| Overview | | |
| Compute Instances | OPU Pool Name * | Number of CPU Cores.* |
| DB Systems | (pupor) | 2 |
| Pertwork | CPU Pool Type | Societ to Use |
| CPU Pool | Bare Metal + | All Society + |
| Oracle #5R | | Carol Cruste > |
| Patch Manager | | Cancer United 2 |

You can see that CPU Pool cpupool1 has been created:

| ORACLE | Database Appliance | System: eds. Current Unic: edsaddnin 🐌 Resurves + Accourt + 🔍 Secrit OLD Documentation Em. Applienz: Database Object Store Monitoring Security Multi-Unit-Acces Activity Disposition |
|--|--|---|
| Appliance Denvice Compute Instances DB Systems Nationsk CPU Paol Oracle ASR Petch Manager | much Q. Page of 1 (1 of 1 have) x 1 x Grappot1 Bit: fit:1 have) x 4 x Re: fit:0:055 heir/- hasti #938-520bd895cfl Copy Type: IM Configured and xxxxxxxxxx X X Configured and xxxxxxxxx X X X Configured and xxxxxxxx X X X | Sort by Control None to Old + Refresh Remop CPU Real Count CPU Real Control CPU Real Control Provided Resources: NONE Stude: COARIGURED |

Step 7 - Delete a Database Home

You can delete a database home using the BUI or the command line. We will use 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 on **Delete DB Home** (for home1).

| ORACLE | Dutabase Appliance | System: edia Current User: ediaadimin 3 Resources = Account = 9 , Smith DOI Documentation Applance Distribute Object Stars Monitoring Security Multi-User Access Activity Diagno |
|--|---|--|
| Database Database Database Home Storage Database Home | eventh 9, Pope of 5 (1-4) of 4 lowed) 6 (1-5) = 10 O 0xx0010000,home4 0 | Sort by Created New to Old • Refeath Create Database None Autor Pacheck Palares Ignore Missing Patches |
| Backup Policy | ID: c1c63738-703a-4c1d-988e578657468 Copy Venilon: 13.13.05.0211919 Partch Venilon: Select Zetth Venilon 4 | Location: /v0'(app)/odecrahomeban/iodadmini/product/19.0.0.0/dbhome_4 Actions. * Edition: II Created: Fir Feb 25 2022 5:51:50 PM |
| | Orad 8119000, home3 Rit ecta480-a902 - 490 | Lecation: ///UisppIotison/homebane/odaadmin/product/1930.0/dbhome_3 Actions = Edition: EE Greated: Fn Feb 25 2022 5:45:50 PM |
| | O Had819000,home2 Bit x1318be1-2x84-411162c1-6164444902b Copy Version: 18.18.0.0211019 Petch Version: set | Lecation: /v01/spp:/ofisorahomebase.lodaadmin/product/18:0.0/dbhome_2 Actions. * Edition: El Created: Ini Pob 25 2022 5:18:49 PM |
| | C Cha0819000,home1 Re: 2024611a-1665-467-3594-468177eb1c4a Copy Version: 13.13.02.2199 Patch Version: Select Anth Version: v | Lecation: //01/app/totionshomebasis/oracle/product/18.0.0/dbhome_1 // Vew Datase Edition: UI Greated: Fri Feb 25 2022 456:27 FM Deter D Hone Vew Prepath reports |

You can see that home1 database home has been deleted.



| ORACLE | Cutabase Appliance | System: oda Cantent User: ediaadmin 🔒 Resures × Account × 🔍 Snanh COA Documentation Appliance <u>Database</u> Object Stars Manitoring Security Multi-User Access Activity Diagnee |
|---|---|--|
| Database Database Database Home Storage | memb % Pope of 1 O OmaDB10000.home4 | Sort by Created New to Did + Referent Create Database None Pack Pack Products |
| Database Home Backup Policy | Bit: Colstate: Field: Field: | Lecation: /v0/lapp/odacrahomebase/odaadmin/product/19.0.0.0/dbhome_4 Addew = Edition: III Created: Fri Feb 25 2022 5:55:50 PM |
| | © Grad#19600,home3 Bit ectu4480-3482-49C1-8ccd-473156548ba2 Copy Werkley 113.13.02.131919 Public Version: Select Anni Version: • | Leverlion: /v0/lapp/indexrshomebase/odaadmin/product/19.0.00(rbhome_3 Advance = Edition: IE Crusted: Ini Feb 25 2022:54550 PM |
| | Orad/0119000_horme2 Bb a1158b-6-308/a1116-b27-4584448962b: Copy Vension: 13:136-0.211019 Petch Vension: * | Lecation: AdVapp/tolaorshomebase/tolaadmin/product/19.0.0.0/dbhome_2 Antons = Editions: 18 Created: Fri Feb 25 2022 5:1849 PM |

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 is very simple. There are two simple steps involved to create a database backup locally or on Oracle Cloud. These can be done using the web GUI:

- 1. Create a backup policy
- 2. Attach a 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.

There is a default backup policy associated with the database. To create a new backup policy, click on the **Backup Policy** tab and then click **Create Backup Policy**.

| ORACLE | Database Appliance | Spitzen: oda: Current User: odiaadmini Bi Resurces + Account + R, Sound COX Decomentation for Applance: Database: Object Sour: Ministering: Security: Multi-User-Access: Activity: Diagnostica |
|---|---|---|
| Database Database Database Home Storage | neerst Q, Page of 1 (1 of 1 hons) = i = 1 = i Name: default | Son by Created New to Old + Refresh Creater Biology Palay |
| Durahase Home Backup Policy | Destination: Internal FRA Compression Applicable: (ASOC Compression Exabled: true System Name: cola Created: Fri Feb 25 2022 4.56/27 PM | Recovery Window (depu): ? Actors * Creascheck Enabled: Twe |

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**.



| ORACLE | Database Appliance | | | System: oda Current User: odaade | nin 🔒 Resources + Account + 🔍 Search CDH Documentation for. 14 Monitoring Security Multi-Cher Access Activity Diagnostics |
|-----------------------|--|-----------------------------------|------|----------------------------------|--|
| Database | Create Backup Policy | | | | O Help |
| Database | Backup Policy Name * | Object Store Credential 1 | Name | External FRA Mount Point | |
| Database Home Storage | dolbachup | | | | |
| Database Home | Backup Destination | Container Name | | TDE Wallet Backup Location | |
| | Internal FRA | | | | |
| Backup Policy | Compression Algorithm | Recovery Window (days) | | | |
| | BASIC | A. (1997) 100 | ~ A. | | |
| | Enable Compression | | | | |
| | Enable Crosscheck S Select Badde Creacheck to determine if the management catalog correspond to data 5 | | | | |
| | | | | < | Cancel Create > |

You can see the **DiskBackup** policy has been created.

| ORACLE | Database Appliance | System: edia Current User: ediaedin Applance: Database Object Scor | nin 🖡 Resources 🕆 Account 🕈 e Monitoring Security Multi-U | |
|---|---|---|--|--|
| Database Database | $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | Sort by Created New to Old + Refeet | Creater Backup Pulicy | |
| Database Home Database Home Backup Policy | Name: disblockup Destination: Internal FFA Compension Application: EASC Compension Enabled: True System Name: of Created: Fn Feb 25 2022 6:02:18 PM | ID1 83624965-4530-4666-6420-475425607138 Copy Receivery Window (days): 1 Creascheck Enabled: true | Actions * | |
| | Mamar: default Destinational Internal FRA Compression Adjunctions (AASC Compression Enabled): true System Name: cola Created: Fin Feb 25 2022 456 (27 PM | ID: Infc05ece-6584-6a29-56c4-ed079565c5a2_Copy Receivery Window (dopt) 7 Creascheck Enabled (run | Actions * | |

Next you select the database, for example, db4, that you want to backup. The db4 database has the default backup policy, so modify the database first by clicking **Modify** under **Actions**. Assign a CPU pool to db4 at the same time.

| ORACLE | Dutabase Appliance | | | in BResources + Account + 9, Sneich CON Decommon Monitoring Security Multi-User Access Activity D |
|---|--|--|-------------------------------------|--|
| Database Database Database Home Storage | march Q. Page of1 (1-2 of 2 mms) x (1) > | | Sort by Created New to Old v Refeet | Create Database |
| Database Home Backup Policy | db4 B0. deac01db-eaa8-dMe-a511-aea642be3a18 Copy Setter: COMINGUED Created: Fri Feb 25 2022 55150 FM | CDB: faise DB: Version: 13.13.00.211015 System Name: oda | Shaper odb1 Storage: ASM | Actions + View Modely |
| | (6) ID: 334a42Heir bba2-477d-8bca-5a264159Htc. Copy Statue: CONFIGURED Created: ht Feb 25 2022 54550 FM | CDB: failse DB: Version: 15.13.0.0.211019 System Name: oda | Shape: odb1 Storage: ASM | Miyee Upgrade Delete |

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

| ORACLE Database Ap | pliance | | | System: | Current User: oda | admin 9, | Search ODA D | oumentation for | Res | ources + | Account , |
|-----------------------|-----------------------------|--------------|---------------------------------|--------------|-------------------|---------------|--------------|-----------------|----------|----------|-------------|
| | | | | | Appliance | Database | Object Store | Monitoring | Security | Activity | Diagnostics |
| Database | Modify Database | | | | | | | | O Help | | |
| Database | | | | | | | | | | | |
| Database Home Storage | Used to modify the database | class, shape | e, redundancy, backup policy, a | and attach/d | letach networks. | | | | | | |
| | Database Name: db4 | | | | | | | | | | |
| Database Home | Database Class | | Attach Networks | | Backup Po | licy | | | | | |
| Backup Policy | OLTP | * | | | diskback. | p | * | | | | |
| | Database Shape | | Detach Networks | | Backup En | cryption Pass | word | | | | |
| | odb1(1 Core, 8GB Memory) | | | | | | | | | | |
| | Database Redundancy | | CPU Pool Name | | Confirm Ba | ickup Encrypt | ion Password | | | | |
| | Mirror | | cpupool1 | * | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | < Cancel | 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.

| ORACUE (sector testers | Aprile and Constitute Andrew Constitute Andrew Constitute April 1997 |
|--|--|
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| Butuleus Information | |
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| 46 death do and the children of the children o | |
| Description: doi: | |
| DB Name (Int | |
| 66 Western 15 Table 2 House | |
| Diff Types 1 | |
| 18 Rule Transfer | |
| 28 fabries (2 | |
| 180. | |
| CDB failer | |
| File Name | |
| POB Administrative Name: | |
| Character Set A 100/00 | |
| Mild Character Set 6, 1997719 | |
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| Ward Space 10(10) | |
| fram Special Tel 5:10 | |
| 800 | |
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| West Space Vicen | |
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| Ranking Policy Research 1974 | |
| Burding Controller Name for Denning Ann | |
| Constant on face of allocations | |
| 14 General Name control on | |
| Notes the second s | |

You can see the backup reports under the **Backups** heading below.

| Backups | | | |
|------------------|-----------------|---------------------------------|------------------------------------|
| Delete Backups | Manual Backup | Update Database Backup Schedule | Update Archive Log Backup Schedule |
| Database Backup | Reports Archive | Log Backup Reports | |
| Page (0 of 0 | items) K X | 1 > N | |
| No items to disp | play. | | |

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

| Dutabase Appliance | | | c adaadmin 🔒 Resources * Account * 9, Search CDI Deciment Direct Store Monitoring Security Multi-User Access Activity Dir |
|---------------------------------------|-------------------------------|----------------------------------|--|
| Manual Backup | | | 0 Help |
| Dutabase Name: db4 | Backup Policy Name: dothackup | Backup Destination: Internal FRA | |
| Backup Type | Component | | |
| Level 2 incremental Backup + | Database v | | |
| (Backs up all blocks in the database) | | | |
| Backup Tap | Keep Days * | | |
| | | | |
| | | | < Canval Start > |
| | | | < Cancel Start 2 |

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



| ORACLE Database Applance | System edu Current Unit eduatedes 🔒 Resources + Account + 🔍 Search Oth Desarrent |
|---|--|
| | Appliance Database Object Store Manifolding Security Multi-chair Access Activity Dis |
| | Save Backup Report Refeat |
| (kup Report | |
| IR: 3x011x79-11x2-4753-xx20-16482188c144 | |
| Name: Backup Report (b)4 | |
| OB Researce ID: deaching - each-dhie ad 11-aead-42belia18 | |
| Tag auto | |
| DR ID: CK | |
| DB Name did | |
| DB Unique Name: dbd | |
| Backup Type: Regular-L0 | |
| Keep Days | |
| Backup Location: FRA | |
| Of Backup Handle: | |
| 10 Backup Handle | |
| | |
| PITR Time Stamp: 7:57eb 25 2022 6:09:07 PM | |
| Storuge: AGM | |
| PITR SCN: 2773405 | |
| Reset Logo Time Stamp: Nr Feb 25 2022 6/09/07 PM | |
| Reset Logs SCN: 1534332 | |
| Oracle Home Version: 19.13.0.0.211019 | |
| SQL Patches: | |
| Barkup Log Location: | |
| TOI Walket Location: | |
| 08 Cently Location: | |
| Status: CONFIGURED | |
| Beckup Report Log Detail: | |
| Gravited: Pri Poli 25 2022 6:09:07 PM | |
| Wpdated: Ini Telo 25 2022 6 09:07 PM | |
| 08 Data Size: 1751M | |
| 06 REDO Size: 3000M | |
| RIMAN Backup Pieren: | |
| Compression Algorithm: 545C | |
| GPU Peet cpupcell | |
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| Database Class: CV7P | |
| Database Type: St | |
| Database Shape: odb/1 | |
| Database Edition: UI | |
| Dutations Renigs: AGM | |
| Database Redundancy MillOR | |

In addition to backing up to local disk, you can back up to Oracle Cloud. 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 Object Store Credential**.



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

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| | Endpoint URL * | Paramined * | |
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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 web BUI to patch a database home from release 19.15 to 19.16, and upgrade a database from release 12.2 to 19.16.

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 highavailability 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 ODA Repository with Latest Patches
- Step 2 Update the DCS Agent (If not done already)
- Step 3 Update the Server
- Step 4 Patch a Database: Update a Database to point to a New Database Home
- Step 5 Upgrade a Database

Step 1 - Update the ODA Repository with Latest Patches

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

You must download the server patch file for Oracle Database appliance release 19.15. 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 19.16.0.0.0 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 19.15 to 19.16, you must update the repository with the 19.16 Oracle Grid Infrastructure and database clone files first.

Before you start patching the server, you can check the current installed components from the web console. Go to the **Appliance** tab, click on **Patch Manager** on the left, and then click the **Update Server/Storage** tab. Note all the installed 19.15.0.0.0 components. Since you have not updated the repository to 19.16.0.0.0, all components are displayed as up to date.

Next, update the server repository. The server patch file is oda-sm-19.16.0.0.0-date-server.zip.



```
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/oda-sm-19.16.0.0.0-date
-server.zip
{
    "jobId" : "b3794603-4fbb-42a4-89ee-791d420e68a6",
    "status" : "Running",
    "message" : "/opt/oracle/dcs/patchfiles/oda-sm-19.16.0.0.0-date-server.zip",
    "reports" : [],
    "createTimestamp" : "July 26, 2022 06:29:42 AM UTC",
    "resourceList" : [],
    "description" : "Repository Update",
    "updatedTime" : "July 26, 2022 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 19.16 Oracle Grid Infrastructure and database clone files, if you want to create a 19.16 database or patch a database to 19.16. 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-19.16.0.0-
date-GI-19.16.0.0.zip
{
  "jobId" : "529141f1-c5fb-42a6-ad1e-0b5540781a71",
  "status" : "Waiting",
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.16.0.0.0-date-GI-19.16.0
.0.zip",
 "reports" : [],
  "createTimestamp" : "July 26, 2022 06:32:43 AM UTC",
  "resourceList" : [ ],
  "description" : "Repository Update",
  "updatedTime" : "July 26, 2022 06:32:43 AM UTC"
}
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-dcs-19.16.0.0-
date-GI-19.16.0.0.zip
{
  "jobId" : "6478c708-bef8-4d5a-83a6-b411fe9b3e7d",
  "status" : "Running",
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.16.0.0.0-date-DB-19.16.0
.0.zip",
  "reports" : [],
  "createTimestamp" : "July 26, 2022 06:33:13 AM UTC",
  "resourceList" : [],
```

```
"description" : "Repository Update",
  "updatedTime" : "July 26, 2022 06:33:13 AM UTC"
}
$ odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-dcs-19.16.0.0-
date-DB-12.2.0.1.zip
{
  "jobId" : "76e5156b-160f-41fc-b9aa-580992902d9f",
  "status" : "Running",
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.16.0.0.0-date-DB-12.2.0.
1.zip",
 "reports" : [],
  "createTimestamp" : "April 26, 2022 07:06:26 AM UTC",
  "resourceList" : [],
  "description" : "Repository Update",
  "updatedTime" : "April 26, 2022 07:06:27 AM UTC"
}
```

After you update the repository, you can use the web console to see the 19.16.0.0.0 available component versions.

| * Account * 9, Search COX Decumentation 6 | Current User: adaadmin 💧 Nesources | System: edu | | | CH | RACLE Database Applian |
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| | Caseeri va | | | | No items to display. | |

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 web console, before actually updating the server. The DCS agent is the Oracle Database Appliance software that provides the intelligence and automation. In the patching screens, select **Update Server**, then click **Apply Patch**, then click **Submit**, and then click **OK** in the Updating DCS Agent window.



| ORACLE Database Appliance | | | | | System ada Cur | tent User: adap | delle B Recurce | x + Account + 9, Search DDH Documentation for. |
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| | No items to display. | | | | | | | |

From the BUI, go to the **Appliance** tab, click **Patch Manager**, and click **Refresh** to verify that the DCS Agent is up-to-date.

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It is recommended that you run the prechecks for the operating system, Oracle ILOM, and Oracle Grid Infrastructure before patching by clicking **Precheck**. Note that the simulator output maybe different.



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Step 3 - Update the Server

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

To update the server, select **Update Server**, then click **Apply Patch**.

After the job is completed, you can refresh the browser to see that Node0 has all 19.16.0.0.0 components installed, and everything is up-to-date.

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| | | | Applance Datab | ase Object Store Monitoring | Security Multi-Over Access | scivity Diagnosti |
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| - Sarage | os | 7.9 | up-to-date | | | |
| | ILOM | 5.0.0.22/132677 | up-to-date | | | |
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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.

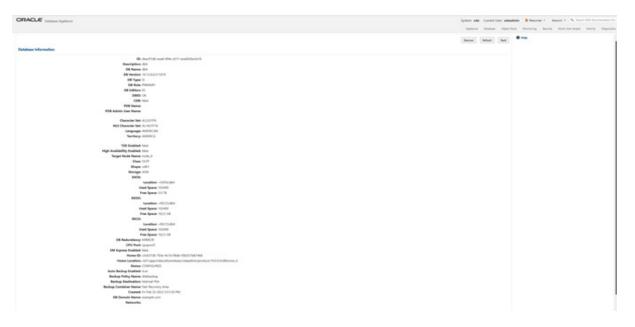
Step 4 - Patch a Database: Update a Database to point to a New Database Home

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

To use the BUI to identify the database homes, go to the **Database** tab.



Click on the database name, for example, db4 to identify the database home ID for patching.



Note the Database home ID, or the Database home location. You will need this to patch the database by pointing it to a home.

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.

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
                                                 DB Type DB Version
TD
                                      DB Name
CDB
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                  Shape
                                      Status
                                                   DbHomeID
                           Storage
324a42ea-bba2-477d-8bca-5a26af159f1c
                                     db3
                                                SI
                                                          19.15.0.0.220419
false OLTP odb1 ASM
                                    CONFIGURED ecfa440e-2482-40c1-8ccd-673
16cd48ba2
deac01db-eaa8-4f4e-a511-aea042be3a18
                                                         19.15.0.0.220419
                                     db4
                                                 ST
false
          OLTP
                 odb1
                           ASM
                                    CONFIGURED c3c63738-703e-4c1d-98de-95b
551b67468
$ odacli list-dbhomes
ΤD
                                                          DB Version
                                      Name
Home Location
                                           Status
a1314be1-2c6f-411f-b2c7-61444449f02b
                                       OraDB19000 home2
                                                          19.15.0.0.220419
/u01/app/odaorahomebase/odaadmin/product/19.0.0.0/dbhome 2 CONFIGURED
ecfa440e-2482-40c1-8ccd-67316cd48ba2 OraDB19000 home3
                                                          19.15.0.0.220419
/u01/app/odaorahomebase/odaadmin/product/19.0.0.0/dbhome 3 CONFIGURED
c3c63738-703e-4c1d-98de-95b551b67468 OraDB19000 home4
                                                           19.15.0.0.220419
/u01/app/odaorahomebase/odaadmin/product/19.0.0.0/dbhome 4 CONFIGURED
```

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

```
$ odacli update-dbhome -i c3c63738-703e-4c1d-98de-95b551b67468 -v 19.16.0.0.0
{
    "jobId" : "af879f3e-9c50-4dfd-86db-5d380a42f8d2",
    "status" : "Created",
    "message" : null,
    "reports" : [],
    "createTimestamp" : "July 26, 2022 06:59:59 AM UTC",
    "resourceList" : [],
    "description" : "DB Home Patching: Home Id is c3c63738-703e-4c1d-98de-95b551b6
7468",
    "updatedTime" : "July 26, 2022 06:59:59 AM UTC"
```

| } | | | | | | | |
|--|---|--|--------------------|--|--|--|--|
| \$ odacli describe-job -i af879f3e-9c50-4dfd-86db-5d380a42f8d2 | | | | | | | |
| Job details | | | | | | | |
| ID: Description: 5b551b67468 | | -4dfd-86db-5d380a42f8d2 ing: Home Id is c3c63738-703e-4c1 | _d-98de-9 | | | | |
| Status: Created: Message: | Success July 26, 2022 6:59:59 AM UTC | | | | | | |
| Task Name Time | Status | Start Time | End | | | | |
| Adding USER SSH_EQUIVALE , 2022 7:00:02 AM UTC Adding USER SSH_EQUIVALE , 2022 7:00:02 AM UTC | Success NCE | July 26, 2022 7:00:02 AM UTC July 26, 2022 7:00:02 AM UTC | July 26 July 26 | | | | |

Verify that database home db4 is updated to the release 19.16. You can use either the BUI or CLI for verification.

| # odacli list-dbhomes | | |
|---|---|--|
| ID Home Location | Name Status | DB Version |
| a1314be1-2c6f-411f-b2c7-6144449f02b /u01/app/odaorahomebase/odaadmin/product ecfa440e-2482-40c1-8ccd-67316cd48ba2 /u01/app/odaorahomebase/odaadmin/product c3c63738-703e-4c1d-98de-95b551b67468 /u01/app/odaorahomebase/odaadmin/product | OraDB19000_home3 :/19.0.0.0/dbhome_3 OraDB19000_home4 | CONFIGURED 19.15.0.0.220419 CONFIGURED 19.15.0.0.220419 |

You can also use the GUI web console to update the database homes by clicking **Patch** on the left panel, and then select **Apply** in the Patch drop-down. We have already updated the db4 database by pointing to a new home using the command line already.



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Step 5 - Upgrade a Database

To upgrade a database from release 12.2 to 19.16, we must first create an Oracle Database release 12.2 database.

Create an Oracle 12.2 database db5. Select Create a Database, then click Next.

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Fill in the information and click **Create**.

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You can see Oracle Database release 12.2 database db5 is created.

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Now we will upgrade database db5 from release 12.2 to 19.16 by clicking Actions and then select Upgrade.



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Then, select a new database home, for example, OraDB19000_home4. Database upgrade is also an out-of-place operation, which means the existing home of the database is not modified.

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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)
- Step 2 Create a Database KVM (Database System)

Step 1 - Create an Application KVM (Compute Instance)

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 CPU Pool**. Enter the following information, then click **Create**.

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Next, create the VM Storage. Select the VM Storage tab, and then click Create VM Storage.

Enter the following information for vmstorage1, and then click **Create**. VM Storage can be used by different application KVMs.

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

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Enter the following information for vdisk1, and then click Create.

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Create a virtual network for the KVM. Select the **Virtual Networks** tab, and then click **Create Virtual Network**.

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

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Create an application KVM (Compute Instance). Select the **VM Instances** tab, and then click **Create VM Instance**.



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Specify the information for AppKVM1, 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.

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You can see the detailed information for AppKVM1 by clicking on AppKVM1.



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If you want to modify the VM instance, then click the **VM Instance** tab. For AppKVM1, click the **Actions** dropdown and then click **Modify**.

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



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Step 2 - Create a Database KVM (Database System)

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-19.16.0.0.0
-date-ODAVM-19.16.0.0.zip
{
    "jobId" : "2d45004d-923b-45d9-b27c-cfbda391edb6",
    "status" : "Running",
    "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.16.0.0.0-date-ODAVM-19.1
6.0.0.zip",
    "reports" : [],
    "createTimestamp" : "July 26, 2022 07:45:04 AM UTC",
    "resourceList" : [],
    "description" : "Repository Update",
    "updatedTime" : "July 26, 2022 07:45:05 AM UTC"
}
```

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

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



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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.

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| CD8 • Nes No | Database Redundancy | National Character Set |
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| | | Confirm TDE Walter Password |
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| | | Save Configuration Canoel Create > |
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You can see that a database KVM <code>dbsystem1</code> is created.

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| Test Manager | Wile Will have name odd numplecon | Garnett autor (2000/005) | | |

You can find the details for <code>dbsystem1</code> by clicking on it.



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

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

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Click the **DB Systems** tab on the left to verify that <code>dbsystem1</code> has 4 cores now.

| ORACLE (unders Applace) | | | | | in Bhenrie + Annet + 5, Sect-10 decreases to |
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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
- Step 2 Grant a Resource to a User
- Step 3 Create a Resource by a User

Step 1 - 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.

| ORACLE | Database Appliance | System: oda Current | User: odaadmin | Resource | is * Aco | ount + 9, Searc | h ODA Docu | mentation for |
|--------------------------|---|--|--------------------|-----------------|------------|-------------------|------------|---------------|
| | | Appliance Database | Object Store | Monitoring | Security | Multi-User Access | Activity | Diagnostics |
| Aulti-User Access | Create User | | | | | O Help | | |
| Users | | | | | | | | |
| Roles | Use the options below to create a new user. If multi-user access is er to run CU commands. | habled, the same credentials | s are used for the | BUI and for sys | item login | | | |
| Entitlements | User ID * | Roles * | | | | | | |
| Resources | user1 | ODA-D8 × | | | | | | |
| | Generate mTIS certificate | ODA Password * | | | | | | |
| | C delease mills definitate | | | | | | | |
| | | Confirm ODA password * | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | < Cance | el Create | > | | |
| | | | | | | | | |
| Enstiements Resources | | ODA-D8 × ODA Pasoword * Confirm ODA pasoword * | | < Cance | el Create | > | | |

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



| ORACLE | Database Appliance | | Q Search ODA Documentation for 6-User Access Activity Diagnostics |
|-------------------------------------|--|---|--|
| Multi-User Access Users Roles | search Q. Page of 1 (1-5 of 5 items) X < 1 > | Sort by: User ID + Refresh Create User | Help |
| Entitlements Resources | grid ID: ee8625df-8bff-49fe-9962-f600ff/97966e Account Status: Active | Roles: ODA-GRID User Type: System | |
| | oakdroot ID: b196ba2f-1f30-49c6-81d6-624752febf15 Account Status: Active | Roles: CDA-OAKDROOT User Type: System | |
| | odaadmin ID: 63c082db-de04-45dd-baed-66b569f0e808 Account Statua: Active | Roles: ODA-ADMINISTRATOR User Type: System | |
| | oracle ID: e95a29bd-9d16-4c35-90ff-60258b/63664 Account Status: Active | Roles: CDA-DB User Type: System | |
| | user1 ID: 41074189-6a90-4b0b-8a8d-d57d81342906 Account Status: Inactive | Roles: ODA-D8 Actions * User Type: Custom | |

Create a second user, user2 using the same process.

| ORACLE | Database Appliance | System: oda Current User: odaadmin 🔋 Resources 👻 Account 👻 🔍 Search ODA Documentation fo | r |
|-------------------|--|---|---|
| | | Appliance Database Object Store Monitoring Security Multi-User Access Activity Diagnostic | 8 |
| Multi-User Access | Create User | O Help | |
| Users | | | |
| Roles | Use the options below to create a new user. If mult to run CU commands. | -user access is enabled, the same credentials are used for the BUI and for system login | |
| Entitlements | User ID * | Roles * | |
| Resources | user2 | ODA-DB × | |
| | Generate mTLS certificate | ODA Pasoword * | |
| | | •••••• | |
| | | Confirm ODA password * | |
| | | | |
| | | | |
| | | < Cancel Create > | |
| | | | |

Go to the $\ensuremath{\textbf{Users}}$ tab on the left to verify that $\ensuremath{\texttt{user2}}$ is created.

| DRACLE | Database Appliance | System: oda Current User: odaadmin 🚺 Resources * Account * 9, Search ODA Documentation Appliance Database Object Store Monitoring Security <u>Multi-User Access</u> Activity Diagnos |
|------------------|--|---|
| ulti-User Access | search Q | Sort by: User ID + Refresh Create User |
| Roles | Page of 1 (1-6 of 6 items) ⊨ < 1 > ∞ | |
| Entitlements | grid | |
| | ID: ee8625df-8bff-49fe-9962-f600f69796fe Account Status: Active | Roles: ODA-GRID |
| Resources | Account Status: Active | User Type: System |
| | oakdroot | |
| | ID: b196ba2f-1f30-49c6-81d6-624752febf15 Account Status: Active | Roles: ODA-OAKDROOT User Type: System |
| | odaadmin | |
| | ID: 63c082db-de04-45dd-baed-66b569f0e808 | Roles: ODA-ADMINISTRATOR |
| | Account Status: Active | User Type: System |
| | oracle | |
| | ID: e95a29bd-9d16-4c35-90ff-60258bf63664 Account Status: Active | Roles: ODA-DB |
| | Account Status: active | User Type: System |
| | user1 | |
| | ID: 41074189-6a90-4b0b-8a8d-d57d81342906 Account Status: Inactive | Roles: ODA-DB Actions v User Type: Custom |
| | Account Status: macure | user type: Castom |
| | user2 ID: b7d3e24d-c7c1-4b09-8cec-31e0cc136c0c | Roles: ODA-DB |
| | ID: 57d3e24d-c7c1-4609-8cec-31e0cc136c0c Account Status: Inactive | Roles: ODA-DS Actions * User Type: Custom |



Step 2 - 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**.

| ORACLE | Database Appliance | | System: oda Appliance | | | Q Search ODA Documentation for User Access Activity Diagnostics |
|-------------------|--|-------------------------|--|-----------------|-------------|---|
| Multi-User Access | search Q | Show Advanced Search | | Sort by: Name | • Refresh | O Help |
| Users | Search resources using the below filters. | | resources are shown. | Just by. Hank | | |
| Roles | | Resource Type | | Resource Name | | |
| Entitlements | Show All Resources | OCA_D8 | * | | | |
| Resources | Search Reset Search Filters | | | | | |
| | Page of 1 (1-3 of 3 items) \times | < 1 > × | | | | |
| | db3 ID: 324a42ea-bba2-477d-8bca-5a20 | laf159f1c Copy | Type: ODA_DB | | Actions * | |
| | Primary Owner: odaadmin Active: true Location: ecfa440e-2482-40c1-8ccc | -67316cd48ba2 | Shared Access: Created: Fri Feb 25 20 | 22 5:45:50 PM | | |
| | db4 ID: deac01db-eaa8-4f4e-a511-aea0 Primary Owner: odaadmin | 42be3a18 Copy | Type: ODA_D8 Shared Access: | | Actions * | |
| | Active: true Location: c3c63738-703e-4c1d-98d | e-95b551b67468 | Created: Fri Feb 25 20 | 22 5:51:50 PM | | |
| | db5 | | | | | |
| | ID: 19245968-7775-4e9c-9448-3ad4 | Wo41c5e1 Copy | Type: ODA_D8 | | Actions = | |
| | Primary Owner: odaadmin Active: true | | Shared Access: Created: Fri Feb 25 20 | 22.11.14.20.044 | Grant Resou | rce Access |
| | Location: /u01/app/odaorahomeba | se/odaadmin/product/19. | | EE TEPEEVEN | Revoke Reso | ource Access |

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

| ORACLE | Database Appliance | System: oda Current User: odaadmin Resources * Account * Q Search ODA Documentation for |
|---------------------------|---|---|
| Multi-User Access | Grant Resource Access | • Help |
| Roles | Grant user shared access to DCS resource db5 . Select the User Name * | e user name to whom access is to be granted. |
| Entitlements Resources | usert + | |
| | | < Cancel Grant > |

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.



| ORACLE | Database Appliance | | | iurrent User: odaadmin 🔋 Re atabase Object Store Monito | ring Security Multi- | Q Search ODA Documentation for User Access Activity Diagnostic |
|-------------------|---|--------------------------------------|--|--|----------------------|--|
| Multi-User Access | search Q 🖸 | Show Advanced Search | | Sort by: Name | * Refresh | Help |
| Users | Search resources using the below filters. | If no filters are specified, all res | ources are shown. | | | |
| Roles | | Resource Type | | Resource Name | | |
| Entitlements | Show All Resources | ODA_DB | - | | | |
| Resources | Search Reset Search Filters | | | | | |
| | Page of 1 (1-3 of 3 items) K | < 1 > × | | | | |
| | db3 | | | | | |
| | ID: 324a42ea-bba2-477d-8bca-5a26 | | Type: ODA_D8 | | Actions + | |
| | Primary Owner: odaadmin Active: true | | Shared Access: Created: Fri Feb 25 2022 | 6.46-60.064 | | |
| | Location: ecfa440e-2482-40c1-8ccd | | Created In Feb 25 2022 | 242.30 FM | | |
| | db4 | | | | | |
| | ID: deac01db-eaa8-4f4e-a511-aea04 | | Type: ODA_DB | | Actions * | |
| | Primary Owner: odaadmin Active: true | | Shared Access: Created: Fri Feb 25 2022 | 6-61-60 084 | | |
| | Location: c3c63738-703e-4c1d-98d | | Created, mired as aver | 2.31.30 FM | | |
| | db5 | | | | | |
| | ID: 19245968-7775-4e9c-9448-3ad4 | | Type: ODA_DB | | Actions v | |
| | Primary Owner: odaadmin Active: true | | Shared Access: user1 Created: Fri Feb 25 2022 | 11:14:00 PM | | |
| | Location: /u01/app/odaorahomeba | | | 11.19.00 1.00 | | |

Log in as user1 to verify access to db5.

| Oracle Database Appliance |
|--------------------------------|
| User Name * user1 OCA Password |

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.



| Oracle Database Appliance |
|--|
| Your ODA account is inactive as temporary password has not been changed on first login. Configure the user1 user password to comply with your system security requirements. After configuring the password, login using the new password. ODA Password * |
| |
| Confirm ODA Password * |
| |
| Submit |

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.

| ORACLE | Database Appliar | nce | | System: oda | Current User: user1 | Resources * | Account * | 9. Search O | CA Documer | ntatio |
|---------------|--|--------------------|---------------------------------|---------------|---------------------|-------------------|-----------|--------------|------------|--------|
| | | | | | | Appliance | Database | Object Store | Security | A |
| liance | Basic Informat | tion Advanced Info | umation | | | | | O Help | | |
| retview | | | | | | | | | | |
| twork | System Inform | nation | | | | | | | | |
| J Pool | ID: 5e4ccd02-b380-420b-9ed6-7a28156238a7 | | | | | | | | | |
| | | Platform: X8-25 | | | | | | | | |
| Patch Manager | | Data Disk Count: 2 | | | | | | | | |
| | | CPU Core Count: 8 | | | | | | | | |
| | | DCS Agent: 1 | | | | | | | | |
| | | | 9.14.0.0.0 | | | | | | | |
| | | Created: r | ri Feb 25 2022 4:56:27 PM | | | | | | | |
| | | Host Name: 0 | da | | | | | | | |
| | Domain Name: example.com | | | | | | | | | |
| | Time Zone: GMT | | | | | | | | | |
| | DNS Servers: 1.1.1.1 | | | | | | | | | |
| | | NTP Servers: | | | | | | | | |
| | - 13 | | | | | | | | | |
| | Disk Group Inf | formation | | | | | | | | |
| | | | | | | | Refresh | | | |
| | | | | | 20000 V | | | | | |
| | Name | Redundancy | Physical Total Space | Physical Free | Space Lo | ogical Free Space | 2 | | | |
| | Name > DATA | Redundancy | Physical Total Space 11.0 TB | Physical Free | | agical Free Space | | | | |

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

| ORACLE | Database Appliance System: oda Current User: user1 🐌 Resources * Account * 🔍 Search ODA Documentation Arc. |
|--|--|
| Database | Applance Database Object Store Security Activity |
| Database Database Home Backup Policy | search Q, Sont by: Created New to Old + Refresh Create Database Show All Databases |
| | db5 Shape: odb1 Actions * ID: 19245968-7775-4e9c-9448-3ad64c41c5e1 COB: false Shape: odb1 Actions * Status: CONFIGURED DB Version: 19.14.0.0.220118 Storage: ASM |
| | Created: Fri Feb 25 2022 11:14:18 PM System Name: oda |
| | |



Step 3 - Create a Resource by a User

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.

| Oracle Database Appliance |
|---------------------------|
| |
| User Name * user2 |
| ODA Password |
| |
| Login Forgot password? |

A new password for user2 is required. You can use a password similar to WELcome12##, or create your own.

| Oracle Database Appliance |
|---|
| Your ODA account is inactive as temporary password has not been changed on first login. Configure the user2 user password to comply with your system security requirements. After configuring the password, login using the new password. ODA Pawword * |
| |
| Confirm ODA Password * |
| |
| Submit |

Log in as user2 with the new password.



| | Database Appli | ance | | System: oda Current | User: user2 | Resources * | Account * | 9. Search O | OA Documer | ntation A |
|---------------|--------------------|---|-------------------------------|---------------------|-------------|-----------------|-----------|--------------|------------|-----------|
| | | | | | | Appliance | Database | Object Store | Security | Acti |
| oliance | Basic Informa | Advanced Info | ormation | | | | | O Help | | |
| etwork | System Infor | mation | | | | | | | | |
| U Pool | | | e4ccd02-b380-420b-9ed6-7a2815 | 5238a7 | | | | | | |
| | | Platform: X | | | | | | | | |
| Patch Manager | Data Disk Count: 2 | | | | | | | | | |
| | | CPU Core Count: 8 | | | | | | | | |
| | | DCS Agent: 19.14.0.0 | | | | | | | | |
| | | GI: 19.14.0.0 Created: Fri Feb 25 2022 456:27 PM | | | | | | | | |
| | | Created: H1 HeD 25 2022 43622 HM | | | | | | | | |
| | | Hart Name of a | | | | | | | | |
| | Host Name: oda | | | | | | | | | |
| | | Domain Name: example.com Time Zone: GMT | | | | | | | | |
| | | DNS Servers: 1.1.1.1 | | | | | | | | |
| | | NTP Servers: | | | | | | | | |
| | | | | | | | | | | |
| | Disk Group In | nformation | | | | | | | | |
| | | | | | | | Refresh | | | |
| | Name | Redundancy | Physical Total Space | Physical Free Space | Log | ical Free Space | | | | |
| | | | 11.0 TB | 10.0 TB | 2.22 | TB - 5.0 TB | | | | |
| | ► DATA | FLEX | 11.0 18 | 10.0 18 | 3.33 | 18-5018 | | | | |

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

| ORACLE | Database Appliance | | System: oda | Current User: user2 | Resources * | Account * | 9. Search O | OA Documen | tation for | |
|---------------|--------------------|--------------------------|-------------------|---------------------|-------------|-----------|--------------|------------|------------|--|
| | | | | | Appliance | Database | Object Store | Security | Activity | |
| Database | | | | | | | O Help | | | |
| Database | | | | | | | | | | |
| Database Home | | | | | | | | | | |
| Backup Policy | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | There is no o | fatabase | | | | | | | |
| | | Click Create Database to | | ise. | | | | | | |
| | | | | | | | | | | |
| | | Create Database 5 | how All Databases | | | | | | | |
| | | Learn N | tore | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Create a new database, user2db1.



| ORACLE | Database Appliance | | System: oda | Current User: user2 | Resources * | Account * | Search O | DA Documen | station for |
|---------------|----------------------|----------------------------|-------------|------------------------|---------------|-----------|--------------|------------|-------------|
| | | | | | Appliance | Database | Object Store | Security | Activity |
| Database | Create Database | | | | | | O Help | | |
| Database | | | | | | | | | |
| Database Home | D8 Name * | Database Edition | | SYS and PDB Admin Us | er Password * | | | | |
| | user2db1 | Enterprise Edition | × . | | | | | | |
| Backup Policy | D8 Unique Name | Database Class | | Confirm Password | | | | | |
| | user2db1u | OUTP | | | | | | | |
| | Use Existing DB Home | Shape | | Character Set | | | | | |
| | O Yes ® No | odb1(1 Core, 8G8 Memory) | * | AL32UTF8 | * | | | | |
| | DB Version | Storage | | National Character Set | | | | | |
| | 19.14.0.0.220118 + | ASM | | AL16UTF16 | * | | | | |
| | CD8 O Yes . No | Database Redundancy | | Language | | | | | |
| | | Mirror | * | AMERICAN | * | | | | |
| | | Networks * | | Territory | | | | | |
| | | Public-network × | | AMERICA | * | | | | |
| | | CPU Pool Name | | Enable TDE 📀 Yes 🖲 | No | | | | |
| | | Select CPU Pool | | TDE Wallet Password | | | | | |
| | | Configure EM Express 🔿 Yes | • No | Confirm TDE Wallet Pas | sword | | | | |
| | | | | < 1 | Back Cancel (| Create > | | | |

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

| ORACLE | Database Appliance | | | System: o | da Cur | ment User: user2 | Resources * | Account * | 9. Search C | OA Documer | tation for |
|--|---|--|----------|--|--------|-----------------------------|---------------|-----------|--------------|------------|------------|
| | | | | | | | Appliance | Database | Object Store | Security | Activity |
| Database Database Database Home Backup Policy | search Page of 1 (1 of 1 i | Q . tems) к с 1 > х | Sort by: | Created: New to Old + | Refres | sh Create Data | base Show All | Databases | O Help | | |
| | user2db1 ID: 9686d067-89a8-43 Status: CREATING Created: Sat Feb 26 2 | 008-aa3f-ed7cc72e7533 Copy 022 3:27:17 PM | D8 Versi | se ion: 19.14.0.0.220118 Name: oda | | Shape: odb1 Storage: ASM | 3 | lations + | | | |
| | | | | | | | | | | | |

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

| Oracle Database Appliance |
|--|
| Utur Name * user1 COA Password © Login Forgot password? |

You can verify that user1 only has access to db5.



| Database Appliance | System: od | a Current User: user1 🔋 R | | Search ODA Documentation for Object Store Security Activity |
|--|---|---|--|--|
| search Q, Page of 1 (1 of 1 item) K < 1 > - × | Sort by: Created: New to Old * | Refresh Create Database | Show All Databases | O Help |
| db5 ID: 19245968-7775-4e9c-9448-3ad44c41c5e1 Copy Status: CONFIGURED Created: Fri Feb 25 2022 11:14:18 PM | CDB: false DB Version: 19.14.0.0.220118 System Name: oda | Shape: odb1 Storage: ASM | Actions * | |
| | search Q. Page of1 (1 of 1 item) K < < 1 > X co5 ID: 19245968-7775-4e%-9448-3ad44c41c5e1 Copy Status: CONFIGURED CONFIGURED | Database Appliance search Q. Sort by: Created. New to Old • Page of 1 (1 of 1 items) K. (1) > | Database Appliance Sort by: Created: New to Old Refeash Create Database Rape of 1 (1 of 1 items) K 1 > X X <t< td=""><td>Database Appliance Appliance search 9. Page of 1 (1 of 1 item) # 1 > x</td></t<> | Database Appliance Appliance search 9. Page of 1 (1 of 1 item) # 1 > x |

Log in as odaadmin to review resources and user access.

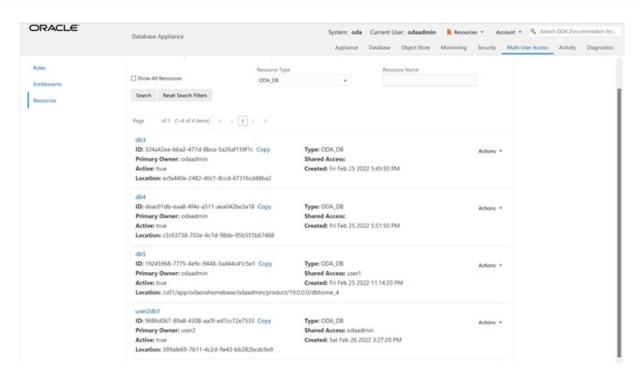
| Oracle Database Appliance |
|---------------------------|
| |
| User Name * odaadmin |
| CDA Password D |
| |
| Login Forgot password? |

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

| ORACLE | Database Appliance | System: oda Appliance | Current User: odaadmin Database Object Store | | Q Search ODA Documentation for User Access Activity Diagnostic |
|---|--|--|---|-------------------------|---|
| Database Database | search Q, Page of 5 (1-4 of 4 items) K < 1 > | Sort by: | Created: New to Old + | Refresh Create Database | O Help |
| Database Home Storage Database Home Backup Policy | user2db1 ID: 9686d067-8948-4308-aa3f-ed7cc72e7533 Copy Status: CONFIGURED Created: Sat Feb 26 2022 3:27:17 PM | CDB: false DB Version: 19.14.0.0.220118 System Name: oda | Shape: odb1 Storage: ASM | Actions + | |
| | db5 ID: 19245968-7775-4e9c-9448-3ad44c41c5e1 Copy Status: CONFIGURED Created: Fri Feb 25 2022 11:14:18 PM | CDB: false DB Version: 19.14.0.0.220118 System Name: oda | Shape: odb1 Storage: ASM | Actions + | |
| | db4 ID: deac01db-eaa8-4f4e-a511-aea042be3a18 Copy Status: CONFIGURED Created: Fri Feb 25 2022 5:51:50 PM | CDB: faise DB Version: 19.14.0.0.220118 System Name: oda | Shape: odb1 Storage: ASM | Actions + | |
| | db3 ID: 324a42ea-bba2-477d-8bca-5a26af159f1c Copy Status: CONFIGURED Created: Fri Feb 25 2022 5:45:50 PM | CDB: faise DB Version: 19.13.0.0.211019 System Name: oda | Shape: odb1 Storage: ASM | Actions * | |

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 web 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
- Step 2 Hardware Monitoring and Feature Tracking
- Step 3 Review Appliance Configuration
- Step 4 Review Storage Configuration
- Step 5 Review Network Status

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

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

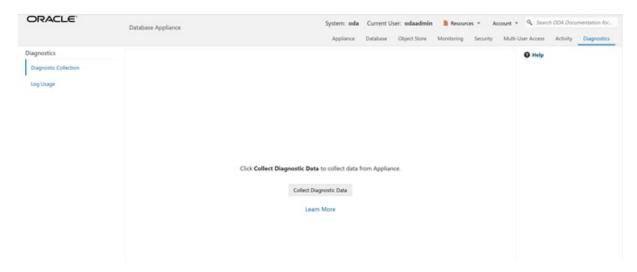
| ORACLE | Database Appliance | | | Current User: odaade Database Object Sto | | e v Q Search ODA Documentation for ulti-User Access Activity Diagnostic |
|--|---|--|--|--|---|--|
| Appliance Overview Compute Instances DB Systems | Basic Information Advanced I Node Name: scaoda7142.us.oracle.r Time) # Grid Infrastructure | nformation | e Oct 19 2021 11:29:20 | GMT-0700 (Pacific Day | Refresh Download | O Help |
| Network CPU Pool | GI Version Home | Active Version Information | Active Version Information | Active Version Information | Software Version Information | |
| Oracle ASR Patch Manager | 19.13.0.0.211019 /u01/app /19.13.0.0/grid | Oracle Clusterware active version on the cluster is [19.0.0.0] | The cluster upgrade state is [NORMAL] | The cluster active patch level is [573139142]. | Oracle Clustenware version on node [scaoda7142] is [19.0.0.0.0] | |
| | Database Homes Firmware Controller | | | | | |
| | Firmware Disk | | | | | |
| | ILOM | | | | | |
| | BIOS | | | | | |
| | List of Operating System RP | Ms | | | | |

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



| ORACLE | Database Appliance | | Q_k Search ODA Documentation for S-User Access Activity Diagnostics |
|-------------------------------------|--|---|--|
| Multi-User Access Users Roles | search Q, Page of 1 (1-5 of 5 items) × < 1 > × | Sort by: User ID + Refresh Create User | O Help |
| Entitlements Resources | grid ID: ee8625df-85/f-49fe-9962-1600f69796/e Account Status: Active | Roles: CDA-GRID User Type: System | |
| | oakdroot ID: b196ba2f-1f30-49c6-81d6-624752febf15 Account Status: Active | Roles: ODA-OAKDROOT User Type: System | |
| | odaadmin ID: 63c082db-de04-45dd-baed-66b569f0e808 Account Status: Active | Roles: ODA-ADMINISTRATOR User Type: System | |
| | oracle ID: e95a29bd-9d16-4c35-90ff-60258b663664 Account Status: Active | Roles: CDA-DB User Type: System | |
| | user1 ID: 41074189-6a90-4b0b-8a8d-d57d81342906 Account Status: Inactive | Roles: CDA-DB Actions * User Type: Custom | |

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



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



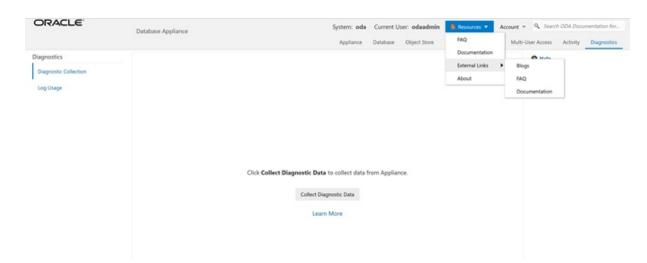
| ORACLE | Database Applia | ince | | System: odla Current User: or Appliance Database Obje | daadmin 🔒 Resource | s v Account v Q. Search ODA Documentation for Security Multi-User Access Activity Diagnostics |
|--|---|--|---|--|--------------------|---|
| Appliance Overview Compute Instances DB Systems Network CPU Rool Oracle ASR Patch Manager | Bask Informa System Informa Disk Group In | ID: 5 Platform: 5 Data Disk Count 2 CPU Core Count 8 DCS Agent: 1 Gt: 1 Created: F Host Name: 0 Domain Name: 0 Domain Name: 0 DMS Servers: 1 NTP Servers: | e4ccd02-b380-420b-9ed6-7a2815 8-25 9.14.0.0.0 9.14.0.0.0 1 Feb 25 2022 4:56:27 PM da sample.com MT | 6238#7 | | Appliance × FAQs |
| | Name | Redundancy | Physical Total Space | Physical Free Space | Logical Free S | |
| | ► DATA | FLEX | 11.0 TB | 10.0 TB | 3.33 TB - 5.0 TE | |
| | ► RECO | FLEX | 490.0 G8 | 325.0 GB | 108.33 G8 - 16 | with the CLI Follow the JSON file example to create a JSON file to deploy a multi-node appliance with the command odacti create-appliance. |

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

| ORACLE | Database Applia | ince | | System: oda Current User: o Appliance Database Obj | | Account * | tecliance |
|--|--------------------------------|--|--|---|---------------------------------------|-----------|---|
| Appliance Overview Compute Instances | Basic Informa System Inform | | rmation | | | | Backup Config Backup Policy Database DB System |
| DB Systems Network CPU Rool Oracle ASR Patch Manager | | Platform: 20 Data Disk Count: 2 CPU Core Count: 8 DCS Agent: 19 Git 19 | 8.14.0.0.0 8.14.0.0.0 i Feb 25 2022 4:56:27 PM da sample.com | 6238#7 | | | KVM |
| | Disk Group In Name DATA | Redundancy FLEX | Physical Total Space 11.0 TB | Physical Free Space 10.0 TB | Logical Free Space 333 TB - 5.0 TB | | |
| | RECO | FLEX | 490.0 GB | 325.0 G8 | 108.33 GB - 162.5 G | 8 | |

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





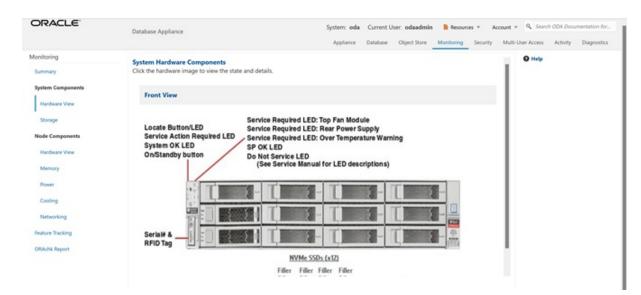
Step 2 - Hardware Monitoring and Feature Tracking

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

| DRACLE | Database Appliance | | nt + 9 Search ODA Documentation for Nutl-User Access Activity Diagnostic |
|--|---|---|---|
| onitoring Summary System Components Hardware View | Last Collection time: Sat Feb 26 2022 2:20:56 PM Status Login to the ILOM console of odasim-1 for more details. | Apparente Canadase Copiet soler <u>excending</u> promy in | Help |
| Storage | Subsystem | Status | |
| Node Components | ► Storage | ONLINE | |
| Hardware View | Memory | © OK | |
| Memory | Power | © OK | |
| Power | Cooling | © OK | |
| Cooling | Networking | © OK | |
| Networking | | | |
| Feature Tracking | | | |
| ORAchk Report | | | |

Hardware Status





Storage

| DRACLE | Database Appl | lance | | | System: oda | Current User: odaadmir | Resources | * Acc | count v 9 Searc | ch ODA Docu | mentation fo |
|----------------------------------|---------------|-------|------------------|---------------|---------------------------------|--------------------------------|------------------------------|----------|-------------------|-------------|--------------|
| | | | | | Appliance I | Database Object Store | Monitoring 5 | Security | Multi-User Access | Activity | Diagnosti |
| onitoring | 100000000 | | | | | | | | O Help | | |
| Summary | Storage | | | | | | | | | | |
| System Components | | | | | | | | | | | |
| Hardware View | | | | | | | | | | | |
| Storage | | | | 2 014 | UNE (100%) | | | | | | |
| | | | | | | | | | | | |
| Node Components | | | | | | | | | | | |
| Node Components Hardware View | | | | | | | | | | | |
| | | | | | | | | | | | |
| Hardware View | | | | ONLINE C | FFUNE UNKNOWN | | | | | | |
| Hardware View Memory | Name | State | Disk Type | CNUME COUNT | FFLME CHRONOWN Disk Size(GB) | Multipath List | Total Sectors | 5 | | | |
| Hardware View Memory Power | Name pd_00 | State | Disk Type NVD | | | Multipath List /dev/nvme0n1 | Total Sectors 12502446768 | | | | |
| Memory Power Cooling | | | | ASM Disk List | Disk Size(GB) | | | 5 | | | |

Hardware View



| ORACLE | Database Appliance | System: oda Current User: odaadmin B Resources × Account × 9, Search ODA Documentation for Appliance Database Object Store Monitoring Security Multi-User Access Activity Diagnostic |
|--|--|--|
| Monitoring Summary | Node Hardware Components Click the hardware image to view the state and details. | O Help |
| System Components Hardware View | Top View | Rear View |
| Storage | Pile Banks (KFI) Pile Banks (KFI) Pile Banks (KFI) Pile Banks (KFI) Pile Banks (KFI) | REVER Types of Types with the REVERTS As and types with the REVERTS of the REVERT |
| Node Components Hardware View Memory | | |
| Power | | Provide and the second |
| Cooling Networking | | Section 2. Section 1000 |
| Feature Tracking | | |
| ORAchk Report | Far. Stadion (14) | |
| | Das. Dotes (r/2) (under server) | |
| | Conversion of the | |

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:

| ORACLE | Database Appliance | | | Appliance Datat | Current User: oda-ad | Imin Account v 🔘 Help v Monitoring Security Activity |
|------------------------------------|--------------------------------------|--------------|----------------|-----------------|----------------------|---|
| Monitoring Summary | Feature Usage High Water Marks | | | | - | Help |
| System Components Hardware View | Last Collection time: Wed Jun 23 202 | 1 1:00:01 PM | | | | пер |
| Storage | Feature Name | Category | Currently Used | Detected Usage | Total Samples | Last Detected Usage Tin |
| Node Components | Object Store | Object Store | false | 0 | 1 | |
| Hardware View | Automatic Service Request (ASR) | Server | false | 0 | 1 | |
| Memory | | | | | | |
| Power | | | | | | |
| Cooling | | | | | | |
| Networking | | | | | | |
| Feature Tracking | | | | | | |
| ORAchk Report | | | | | | |

High Water Marks

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



| DRACLE | Database Appliance | Appliance D | Current User: oda-admin Ar atabase Object Store Monitoring | Security Act |
|-------------------|---|-----------------|---|--------------|
| onitoring | | | | _ |
| Summary | Feature Usage High Water Marks | | | Help Downlos |
| lystem Components | 30000 | | | hep Downor |
| Hardware View | Last Collection time: Wed Jun 23 2021 1:00:01 PM | | | |
| Storage | Measured Feature Name | High Water Mark | Last Changed Time | Category |
| Node Components | Maximum usage of CPU | 0.00 % | Wed Jun 23 2021 1:00:01 PM | DCS Agent |
| Hardware View | Maximum usage of Memory | 331.29 MB | Wed Jun 23 2021 1:00:01 PM | DCS Agent |
| Memory | Maximum number of threads | 91 | Wed Jun 23 2021 1:00:01 PM | DCS Agent |
| Power | Maximum number of open file descriptors | 48 | Wed Jun 23 2021 1:00:01 PM | DCS Agent |
| Cooling | Maximum number of Object Store tenants | 0 | Wed Jun 23 2021 1:00:01 PM | Object Store |
| Networking | Maximum number of enabled CPU cores | 2 | Wed Jun 23 2021 1:00:01 PM | Server |
| Feature Tracking | Maximum number of disks | 2 | Wed Jun 23 2021 1:00:01 PM | Storage |
| ORAchk Report | Maximum number of ASM Disks Groups | 0 | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Maximum size of ASM Disk Groups | 0.00 bytes | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Maximum usage of ASM Disk Groups | 0.00 % | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Maximum number of ASM Disks Groups with redundancy 'NORMAL' | 0 | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Maximum number of ASM Disks Groups with redundancy 'HIGH' | 0 | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Maximum number of ASM Disks Groups with redundancy 'EXTERN' | 0 | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Maximum number of ASM Disks Groups with redundancy 'FLEX' | 0 | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Maximum ASM Disk Groups compatibility | | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Minimum ASM Disk Groups compatibility | | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Maximum number of non-ACFS file systems | 3 | Wed Jun 23 2021 1:00:01 PM | Storage |
| | Maximum size of non-ACFS file systems | 465.72 GB | Wed Jun 23 2021 1:00:01 PM | Storage |

Step 3 - Review Appliance Configuration

Oracle Database Appliance Command Line Interface

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. ODACLI assists in the fast deployment, patching, and easy management 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.

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
           Open Problems
Model
                                        : On
                                      : 0
                                        : ODA X7-2-HA
          Type: Rack MountPart Number: ODA X7-2-HASerial Number: 1750XD0003Primary OS: Not AvailableILOM Address: 10.145.203.81ILOM MAC Address: 00:10:E0:DA:CD:66. Oracle Database Ar
           Type
                                        : Rack Mount
           Description
                                        : Oracle Database Appliance X7-2 High Availabi
lity 1750XD0003
                               : Off
           Locator Light
           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.

| Domain | Name: example.com | |
|---------------------|------------------------|----------------------|
| Time | Zone: GMT | |
| DB Ed | lition: EE | |
| DNS Se | ervers: 1.1.1.1 | |
| NTP Se | rvers: | |
| | | |
| DG Name | Redundancy | Percentage |
| | Redundancy | Percentage |
| DG Name | Redundancy | Percentage |
| DG Name Data | Redundancy Flex | Percentage 80 |

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
MAX CLK SPEED TOTAL CORES ENABLED CORES
     CPU 0 OK
                               SR3AX PO (CPU 0) Intel(R) Xeon(R) Gold 6140
                 _
                         NA
CP 2.300 GHz
                18
     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 00CE02174337340008 P0/D0 Samsung 32 GB 2666 MHz 0
DIMM_11 OK - 3A4K40BB2-CTD 00CE0217433734000D P1/D0 Samsung 32 GB 2666 MHz 0
DIMM_12 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_19 OK - 3A4K40BB2-CTD 00CE02174237318394 P1/D7 Samsung 32 GB 2666 MHz 0
DIMM_21 OK - 3A4K40BB2-CTD 00CE0217423731A195 P1/D9 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_4 OK - 3A4K40BB2-CTD 00CE0217433734007B P0/D4 Samsung 32 GB 2666 MHz 0
DIMM_4 OK - 3A4K40BB2-CTD 00CE0217433734007B P0/D4 Samsung 32 GB 2666 MHz 0
DIMM_4 OK - 3A4K40BB2-CTD 00CE0217433734007B P0/D4 Samsung 32 GB 2666 MHz 0
```

Command: odaadmcli show power

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

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_6 OK - FM1 32 % 6300 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 oda | admcli show disk | | | |
|--------------------|------------------|-------------|------|--|
| | NAME | PATH | TYPE | |
| STATE | STATE_D | ETAILS | | |
| | 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/sdby | 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 | | 1100 | |
| | e0 pd 07 | /dev/sdcc | HDD | |
| ONLINE | Good | / 40 / 3400 | HDD | |
| | | /dev/sdcd | HDD | |
| ONT THE | e0_pd_08 | /uev/sucu | עעח | |
| 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 | | | |
| ONLINE | e0_pd_13 Good | /dev/sdci | HDD | |
| ONLINE | e0_pd_14 Good | /dev/sdcj | HDD | |
| ONLINE | e0_pd_15 Good | /dev/sdck | SSD | |
| ONLINE | e0_pd_16 Good | /dev/sdcl | SSD | |
| | 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 | - | SSD | |
| ONLINE | e0_pd_22 Good | /dev/sdcr | | |
| ONLINE | e0_pd_23 Good | /dev/sdcs | SSD | |
| | | | | |

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.

| Туре | Total Space | Free Space | Total DG Space | Free DG Space | Diskgroup |
|----------|-------------|------------|----------------|---------------|-----------|
| Mount Po | pint | | | | |
| ext3 | 30109M | 25254M | - | - | |
| / | | | | | |
| ext3 | 476M | 405M | - | - | |
| /boot | | | | | |
| ext3 | 60347M | 22117M | _ | - | |
| /opt | | | | | |
| ext3 | 100665M | 72839M | - | - | |
| /u01 | | | | | |
| acfs | 5120M | 462.5M | 112116480M | 111977204M | DATT |

Command: odaadmcli show raidsyncstatus

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

| \$ sudo oc | daadmcli show : | raidsyncstatus | | |
|------------------------|-----------------|----------------|---------------------|-----------|
| Raid Type ercentage | Raid Device | Partitions | RaidStatus Recovery | RecoveryP |
| S/W Raid N/A | md0 | sdb2 sda2 | UU No | |
| S/W Raid N/A | mdl | sdb3 sda3 | UU No | |

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
             Тd
                       = 0
             Serial Num = 500605b00d3e88c0
             Vendor = LSI Logic
                      = ORCL-EXT-SAS3
             Model
             FwVers
                      = 13.00.00.00
             strId = mpt3sas:3b:00.0
                       = 1
             Id
             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
             Τd
                       = 1
             Serial Num = 50800200022f163f
             Vendor = ORACLE
                     = DE3-24C
             Model
             FwVers
                       = 0306
             strId
                      = Primary
                       = 50800200022e447e
             WWN
Total number of PDs: 24
             /dev/sdaa
                            HGST
                                             HDD 9796qb slot: 0 exp: 0
                                                                            Η
7210A520SUN010T
             /dev/sdab
                            HGST
                                             HDD 9796qb slot: 1
                                                                  exp: 0
                                                                            Η
7210A520SUN010T
             /dev/sdac
                            HGST
                                             HDD 9796qb slot: 2 exp: 0
                                                                            Η
7210A520SUN010T
             /dev/sdad
                            HGST
                                             HDD 9796qb slot: 3
                                                                  exp: 0
                                                                            Η
7210A520SUN010T
             /dev/sdae
                                             HDD 9796qb slot: 4
                            HGST
                                                                  exp:
                                                                        0
                                                                            Η
7210A520SUN010T
             /dev/sdaf
                            HGST
                                              HDD 9796qb slot: 5 exp: 0
                                                                            Η
```



| HGST | HDD 9796gb slot: 6 exp: 0 H |
|-------|--|
| UCCT | HDD 9796qb slot: 7 exp: 0 H |
| 11001 | 1100 9790gb S10C. 7 exp. 0 11 |
| HGST | HDD 9796gb slot: 8 exp: 0 H |
| | |
| HGST | HDD 9796gb slot: 9 exp: 0 H |
| IICOM | |
| HGST | HDD 9796gb slot: 10 exp: 0 H |
| HGST | HDD 9796qb slot: 11 exp: 0 H |
| 11001 | |
| HGST | HDD 9796gb slot: 12 exp: 0 H |
| | |
| HGST | HDD 9796gb slot: 13 exp: 0 H |
| | |
| HGST | HDD 9796gb slot: 14 exp: 0 H |
| ЦССТ | SSD 3200qb slot: 15 exp: 0 H |
| 11651 | 55D 5200gb 510C. 15 ekp. 0 11 |
| HGST | SSD 3200qb slot: 16 exp: 0 H |
| | |
| HGST | SSD 3200gb slot: 17 exp: 0 H |
| | |
| HGST | SSD 3200gb slot: 18 exp: 0 H |
| UCOD | SSD 3200qb slot: 19 exp: 0 H |
| пдэт | SSD 3200gb slot: 19 exp: 0 H |
| HGST | SSD 800qb slot: 20 exp: 0 H |
| | |
| HGST | SSD 800gb slot: 21 exp: 0 H |
| | |
| HGST | SSD 800gb slot: 22 exp: 0 H |
| IICOM | |
| HGST | SSD 800gb slot: 23 exp: 0 H |
| | |
| | |
| | HGST HGST HGST HGST HGST HGST HGST HGST |

Step 5 - Review Network Status

Review the following ${\tt odaadmcli}$ command 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 odaadm | cli show netwo | ork | | | | |
|----------------|----------------|-------------------|----------|---------|--------------|-------|
| NAME | HEAI | TH HEALTH DETAILS | LOCATION | PART NO | MANUFACTURER | MAC A |
| DDRESS | LINK DETECTEI | DIE TEMP | | — | | — |
| Ether | net_NIC_0 OK | _ | NETO | i210 | INTEL | 00:10 |
| :E0:DA:CD:62 | no (eml) | N/A | | | | |
| Ether | net_NIC_1 OK | - | NET1 | BCM5741 | 7Broadcom | 00:10 |
| :E0:DA:CD:63 | yes (em2) | N/A | | | | |
| Ether | net_NIC_2 OK | - | NET2 | BCM5741 | 7Broadcom | 00:10 |
| :E0:DA:CD:64 | yes (em3) | N/A | | | | |
| Ether | net_NIC_3 - | - | NET3 | X540 | INTEL | 00:0A |
| :F7:CF:36:38 | yes (p1p2) | - | | | | |
| Ether | net_NIC_4 - | - | NET4 | X540 | INTEL | 00:0A |
| :F7:CF:36:30 | yes (p1p1) | - | | | | |

This concludes Lab 6.

