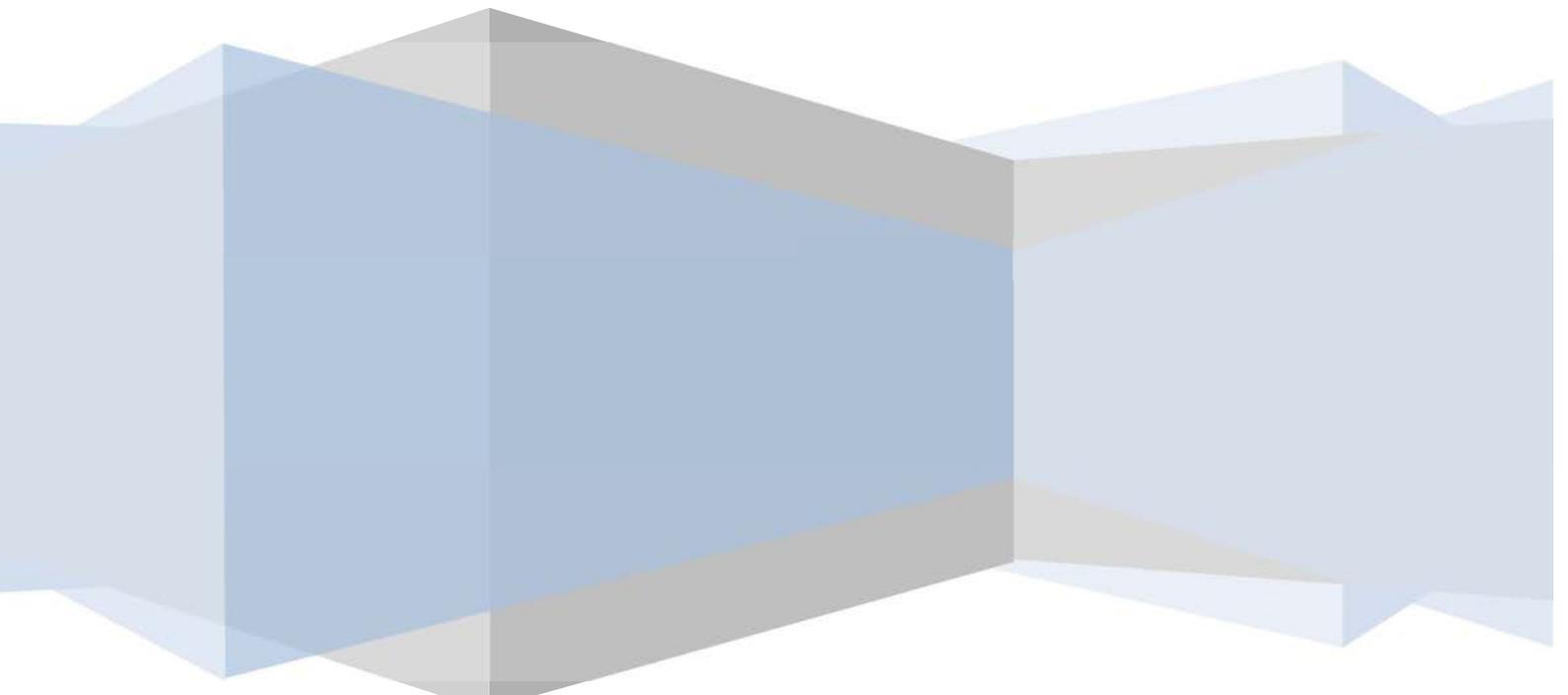


Oracle Corporation

Oracle Database Appliance

X8-2-HA 19.9 Hands-on Lab Manual (OCI)



Contents

ODA X8-2-HA 19.9 OCI Simulator Labs in OCI	3
Connecting to the OCI ODA Lab Environment	3
To connect to the ODA Simulator Command Line Interface (CLI)	4
To connect to the ODA Simulator Browser User Interface (BUI)	4
Simulator Labs Overview	7
Lab 1: Deploy Appliance	7
Step 1: Put the ODA on the Network	7
Step 2: Update the Repository with the ODA Software	9
Step 3: Deploy the Appliance	11
Step 4: Validate the Deployment	16
Step 5: Networking	17
Lab 2: Manage Databases	18
Step 1: Create a new database via the Web GUI	19
Step 2: Delete a Database	21
Step 3: View the Databases and Homes via the CLI	22
Step 4: Create a New Database with the CLI	23
Step 5: Delete and Recreate a Database	25
Step 6: Delete a Database Home	26
Step 7: Create Database Backup on local disk, external NFS storage or on the Oracle Cloud	27
Lab 3: Patch and Update	33
Step 1: Update the ODA Repository with Latest Patches	33
Step 2: Update the DCS Agent	35
Step 3: Update the server	36
Step 4: Patch Database Homes (Updating Database)	37
Step 5: Upgrading Database	41
Lab 4: Monitoring and Administration	45
Step 1: BUI Hardware Monitoring and Feature Tracking	45
Step 2: Review Appliance Configuration	49
Step 3: Review the Storage Configuration	51
Step 4: Review Network Status	54
Troubleshooting	55
Restarting ODA Simulator in a Container	55
BUI Agent Certificate Issue	55

ODA X8-2-HA 19.9 OCI Simulator Labs in OCI

We will use a container-based Oracle Database Appliance (ODA) simulator to complete 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 will provide a very similar experience, but is faster, and you get your own simulator to complete the labs. The simulator simulates an ODA X8-2-HA, a 2-node database appliance.

Keep in mind this is a simulation. Not all features are supported by the simulator, and no database is actually created and running. The simulator may be more forgiving than a real ODA if you enter invalid data, and some of the detailed output and screen shots it provides may not be completely accurate.

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

Connecting to the OCI ODA Lab Environment

After the ODA Simulator is setup in the OCI VM, you'll need to log into the ODA Simulator VM with your credentials to access the ODA Simulator Command Line Interface (CLI) and a web browser to access the Browser User Interface (BUI) like a real ODA.

You need to use a console on your local system to ssh into the ODA simulator and be root (su -s) to run the commands. You also need to have the container names (e.g. odapm-1-node0, odapm-1-node1) to access the CLI. You'll need a web browser on your local system with provided ODA simulator VM IP address and a port number (e.g. 7097) to access the BUI.

Firefox and Chrome are recommended web browsers for this lab. If you run into a BUI agent certificate issue. See the Troubleshooting section for details.

Because ODA X8-2-HA is a 2-node system, you will be given **two** set of credentials, one for node-0 and one for node-1. Use node-0 for most of the lab exercises.

To connect to the ODA Simulator Command Line Interface (CLI)

Run the following script to connect to the container. This script is usually located in the simulator directory (e.g. simulator_19.9.0.0.0)

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

To connect to the ODA Simulator Browser User Interface (BUI)

1. You must first complete `odacli configure-first net` and run the `odacli update-repository` commands in the Lab 1 (using CLI) before you can start deploying ODA in BUI
2. Use the VM IP address and port number provided to log into ODA BUI
 - a. Go to `https://<IP Address>:xxxx/mgmt/index.html` (e.g. 7097)

Note if you run into BUI agent credential issue, please see Troubleshooting section

Configure the **oda-admin** user password security requirements. After configuring a new password.

Password *

Confirm Password *

Submit

The password must contain at least two characters each from: uppercase letters, lowercase letters, numbers (0-9), and allowed special characters #, - or _ . The password must have a minimum of 9 characters and a maximum of 30 characters.

ORACLE

The first thing is to set a new password based on the required rules. For simplicity, you can use something like "WELcome12##" or come up with your own unique password.

You can then login as oda-admin with the new password

User Name *

oda-admin

Password *

Login

Forgot password?

ORACLE

Appliance

Appliance

Network

Oracle ASR

Patch Manager

Oracle Database Appliance is not configured.
Click **Create Appliance** to get started.

Create Appliance

[Learn More](#)

Simulator Labs Overview

This workshop consists of the following four labs:

- Lab 1: Deploy Appliance
- Lab 2: Managing Databases
- Lab 3: Patch and Update
- Lab 4: Monitoring and Administration

Labs will use a mix of command line and web-based administration tools. On the 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.

Lab 1: Deploy Appliance

Go to the Node-0 console command line window to start the lab.

Step 1: Put the ODA on the Network

After you first install the ODA 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 via a network or serial connection. The ODA includes a command called "odacli configure-firstnet" to make it very easy to get the ODA on the network. Once you've put the ODA on the network, you can complete all 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 we are only simulating configuring the network, you can use any IP address (e.g. 192.168.0.100) to complete this step.

odacli configure-firstnet

bonding interface is:

Using bonding public interface (yes/no) [yes]:

Select the Interface to configure the network on () [btbond1]:

Configure DHCP on btbond1 (yes/no) [no]:

INFO: You have chosen Static configuration

Use VLAN on btbond1 (yes/no) [no]:

Enter the IP address to configure : **192.168.0.100**

Enter the Netmask address to configure : **255.255.255.0**

Enter the Gateway address to configure[192.168.0.1] :

INFO: Restarting the network

Shutting down interface : [OK]

Shutting down interface em1: [OK]

Shutting down interface plp1: [OK]

Shutting down interface plp2: [OK]

Shutting down loopback interface: [OK]

Bringing up loopback interface: [OK]

Bringing up interface : [OK]

Bringing up interface em1: [OK]

Bringing up interface plp1: Determining if ip address 192.168.16.24 is already in use for device plp1... [OK]

Bringing up interface plp2: Determining if ip address 192.168.17.24 is already in use for device plp2... [OK]

Bringing up interface btbond1: Determining if ip address 192.168.0.100 is already in use for device btbond1... [OK]

Note because this is an ODA X8-2-HA system, you'll also need to run configure firstnet on node-1. Log into node-1 and run the odacli configure-firstnet again. Use 192.168.0.101 for the IP address for node-1.

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 : 192.168.0.101
Enter the Netmask address to configure : 255.255.255.0
Enter the Gateway address to configure[192.168.0.1] :
INFO: Restarting the network
Shutting down interface : [ OK ]
Shutting down interface em1: [ OK ]
Shutting down interface plp1: [ OK ]
Shutting down interface plp2: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface : [ OK ]
Bringing up interface em1: [ OK ]
Bringing up interface plp1: Determining if ip address 192.168.16.24 is already
in use for device plp1... [ OK ]
Bringing up interface plp2: Determining if ip address 192.168.17.24 is already
in use for device plp2... [ OK ]
Bringing up interface btbond1: Determining if ip address 192.168.0.101 is
already in use for device btbond1... [ OK ]
```

Step 2: Update the Repository with the ODA Software

The ODA does not ship with the database software pre-loaded, due to regulatory concerns. You must download the Oracle software prior to deployment from My Oracle Support. Go to the ODA documentation web site, the ODA Patch section of the Release Note will provide links to the ODA software. Specifically, we need to download the Grid Infrastructure Clone files, the RDBMS Clone files, and the Server Patch Bundle. We've already downloaded simulated versions of these files in the simulator.

The clone files are listed below. The other file in the directory contain patches, and will be used in the patching lab.

Note about file paths: you must specify the full path of the files you pass to the "odacli update-repository" command.

Filename	Description
odacli-dcs-19.8.0.0.0-200714-GI-19.8.0.0.zip	Grid Infrastructure 19.8 Clone Files
odacli-dcs-19.8.0.0.0-200714-DB-19.8.0.0.zip	DB 19.8 Clone Files
oda-sm-19.9.0.0.0-201020-server.zip	ODA 19.9 Patch Bundle (used in lab 3)
odacli-dcs-19.9.0.0.0-201020-DB-19.9.0.0.zip	DB 19.9 Clone Files (used in lab 3)
odacli-dcs-19.9.0.0.0-201020-DB-18.12.0.0.zip	DB 18.12 Clone Files (used in lab 3)

You must update the ODA repository so it knows about the files. This is done with the 'odacli update-repository' command for each clone file (copy/paste is your friend).

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, then edit the file name.

```
# odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-dcs-19.8.0.0.0-200714-GI-19.8.0.0.zip
{
  "jobId" : "2c6c8847-847f-49cf-8fed-1d5f2c6d44fb",
  "status" : "Running",
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.8.0.0.0-200714-GI-19.8.0.0.zip",
  "reports" : [ ],
  "createTimestamp" : "November 10, 2020 03:30:42 AM UTC",
  "resourceList" : [ ],
  "description" : "Repository Update",
  "updatedAt" : "November 10, 2020 03:30:43 AM UTC"
}

# odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-dcs-19.8.0.0.0-200714-DB-19.8.0.0.zip
{
  "jobId" : "afae2bcf-56fa-46c4-85a5-55dc5c3da474",
  "status" : "Running",
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.8.0.0.0-200714-DB-19.8.0.0.zip",
  "reports" : [ ],
  "createTimestamp" : "November 10, 2020 03:31:51 AM UTC",
  "resourceList" : [ ],
  "description" : "Repository Update",
  "updatedAt" : "November 10, 2020 03:31:52 AM UTC"
}
```

When you run commands using the odacli command line tool, most operations are asynchronous, meaning they return a job id immediately while the job runs in the background. This means that in order 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.

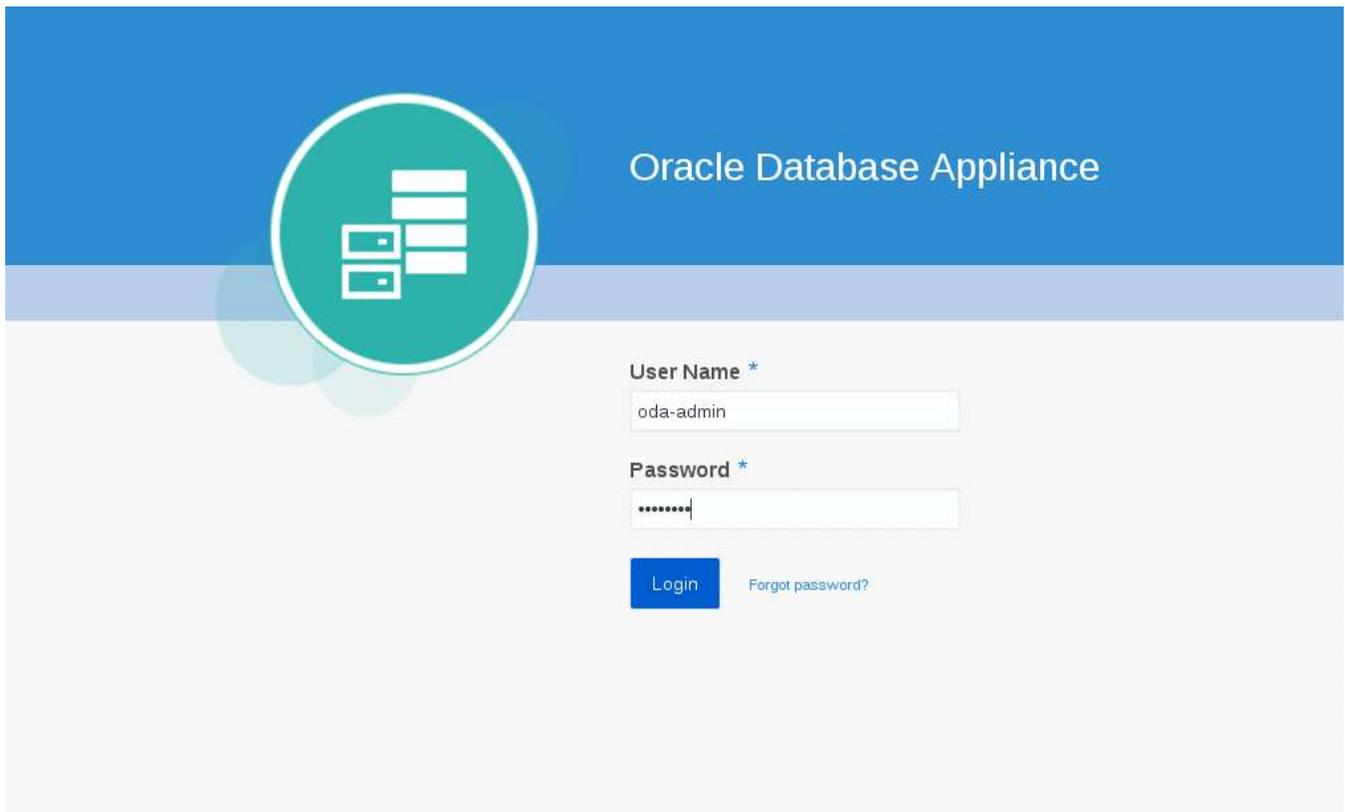
You can also use the Browser-based User Interface (BUI) to update the ODA repository, by pasting the complete file path of the patch file or even clone file in the patch bundle location box of the patch manager in the web console. However, it's not necessary as you have used command line to update the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

The screenshot shows the Oracle Database Appliance web console. The top navigation bar includes the Oracle logo, 'Database Appliance', and an 'About' dropdown. Below this is a secondary navigation bar with tabs for 'Appliance', 'Database', 'Object Store', 'Monitoring', and 'Activity'. The left sidebar contains a tree view with 'Appliance' selected, and sub-items for 'Appliance', 'Network', 'Oracle ASR', and 'Patch Manager'. The main content area has three tabs: 'Update Repository' (active), 'Update Server/Storage', and 'Cleanup Repository'. Under the 'Update Patch Repository' tab, there is a heading 'Update Patch Repository', a paragraph of instructions, a note, a text input field for 'Patch Bundle Location', and an 'Update Repository' button.

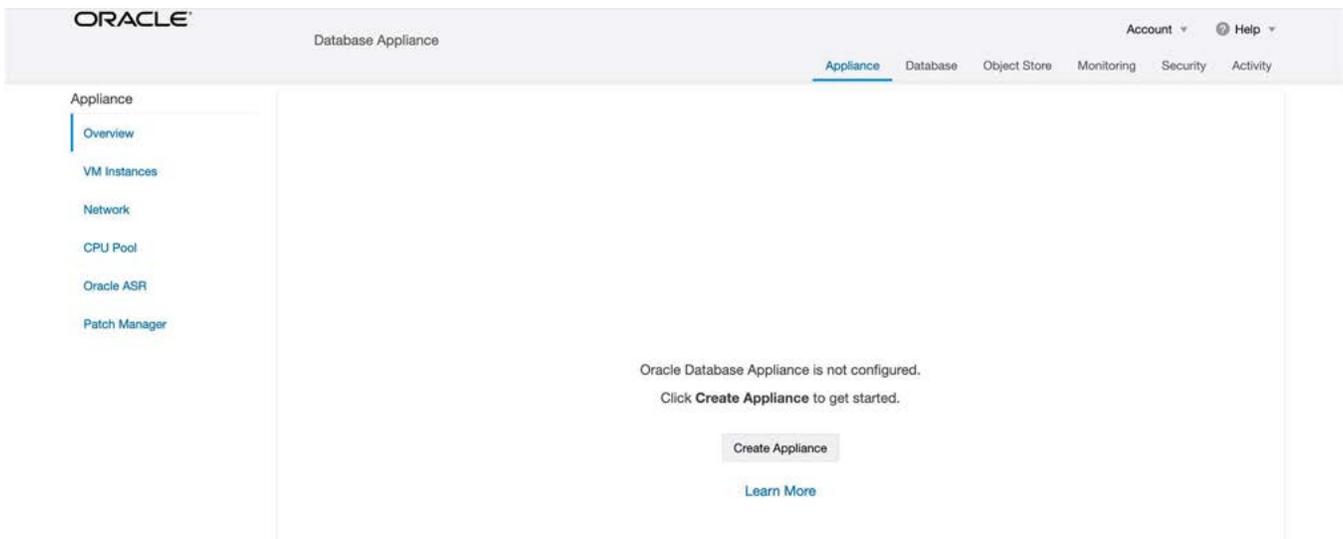
Step 3: Deploy the Appliance

A customer can deploy the appliance using either the BUI or the command line. The command line is useful for scripted and silent installations. Most customers (and this lab) will use the BUI.

After you configured the firstnet and update the repository, go to the unique URL provided by the instructor to log into ODA BUI (<https://<IP Address>:xxxx/mgmt/index.html>) using oda-admin and previously created password (e.g. WELcome12##)



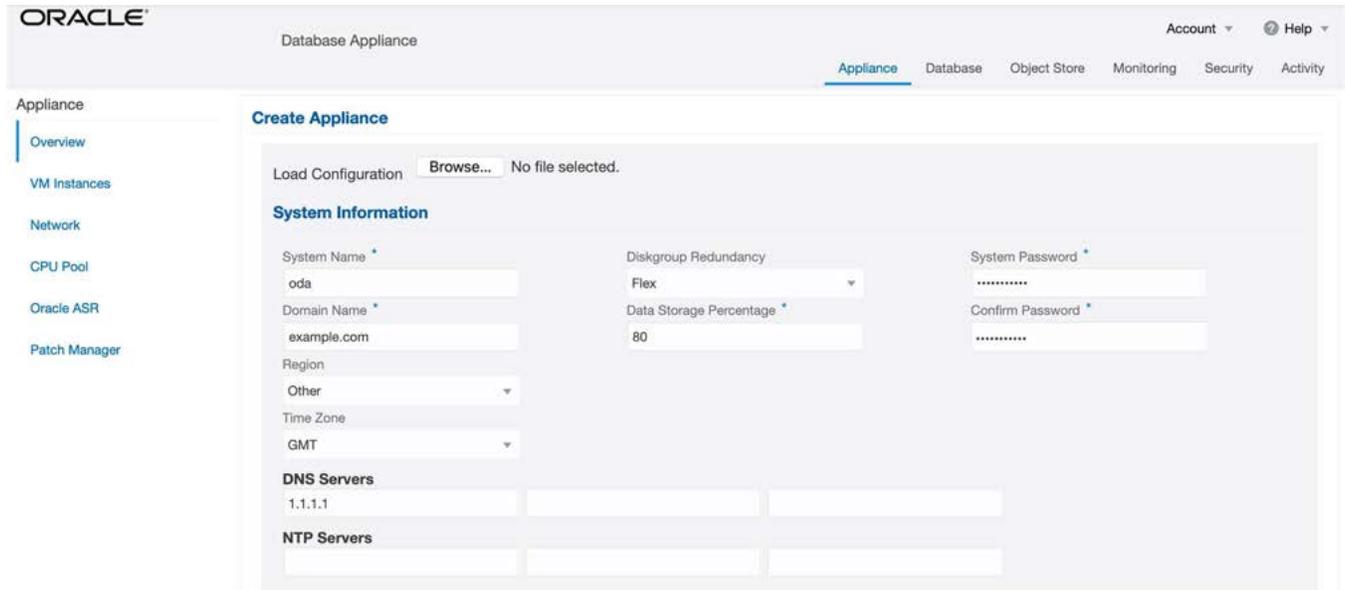
This will take you to the appliance tab of the ODA Appliance Manager. It should show that the appliance has not been deployed as shown below:



Click "Create Appliance" to start the deployment wizard. Fill in the first page of the form as shown below. Most fields should be 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 Diskgroup Redundancy "Flex", then you will be able 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 like "test" and other common variants. However, "WELcome12##" will work if you'd like to use that password.

You can also load a configuration file (e.g. 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.



Scroll down to continue. This brings up the Network screen. You can configure the network for the public "Client Access" network here. 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 the public network.

Network Information

Note: Use the command `odacli configure-firstnet` to configure the public network before creating the appliance. Configuring the public network provides the information needed for the Client Access Network.

Client Access Network

Node0

Host Name *

oda0

IP Address *

192.168.0.100

Node1

Host Name *

oda1

IP Address *

192.168.0.101

Subnet Mask *

255.255.255.0

Gateway *

192.168.0.1

Interface *

btbond1

SCAN and VIP Network

Node0

VIP Name *

node0-vip

VIP Address *

192.168.0.102

Node1

VIP Name *

node1-vip

VIP Address *

192.168.0.103

SCAN Name *

oda-scan

SCAN IP Address

192.168.0.104

192.168.0.105

ILOM Network

Node0

ILOM Host Name

IP Address

Node1

ILOM Host Name

IP Address

Subnet Mask

Gateway

Must be a valid IP address

User and Group Selection

Customize Users & Groups Yes No

Allow OS Role Separation Yes No

Scroll down to continue. This brings up the Database screen. Specify the database name and other database related information as shown below. Select DB Version 19.8.0.0.200714.

Database Information

Create Initial Database: Yes No

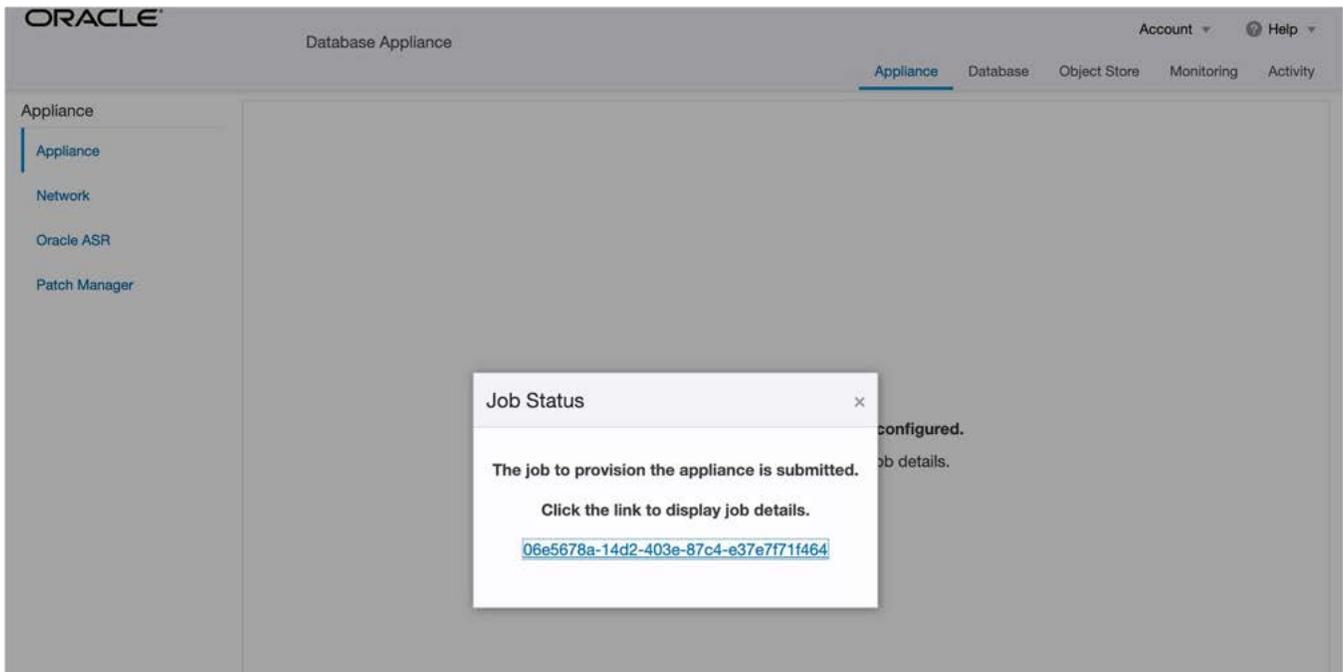
DB Name * <input type="text" value="db1"/>	Database Edition Enterprise Edition ▼	Password * <input type="password" value="....."/>
DB Unique Name <input type="text"/>	Deployment RAC ▼	Confirm Password * <input type="password" value="....."/>
DB Version 19.8.0.0.200714 ▼	Shape odb1(1 Core, 8GB Memory) ▼	Character Set AL32UTF8 ▼
CDB <input checked="" type="radio"/> Yes <input type="radio"/> No	Database Class OLTP ▼	National Character Set AL16UTF16 ▼
PDB Name * <input type="text" value="pdb1"/>	Storage ASM ▼	Language AMERICAN ▼
PDB Admin User <input type="text"/>	Database Redundancy Mirror ▼	Territory AMERICA ▼
	Data Files on Flash Storage <input type="radio"/> Yes <input checked="" type="radio"/> No	Configure EM Express <input type="radio"/> Yes <input checked="" type="radio"/> No
		Enable TDE <input type="radio"/> Yes <input checked="" type="radio"/> No
		TDE Wallet Password <input type="password"/>
		Confirm TDE Wallet Password <input type="password"/>

ASR Information

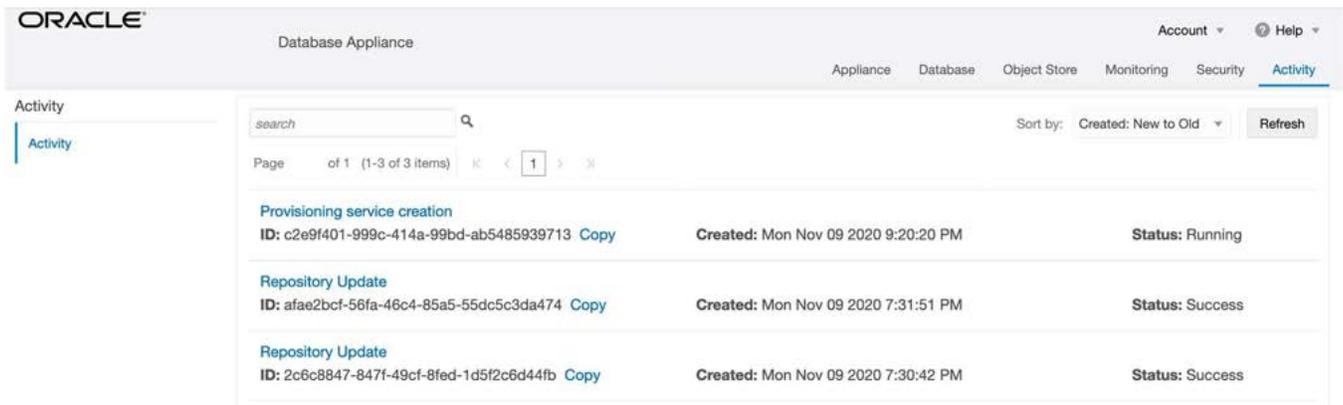
Enable ASR: Yes No

To configure ASR, specify credentials here. This is also where you can save the configuration file (e.g. 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. Like with 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 long running operations complete. Click the job ID to see the status.



In the simulation, the deployment job status will complete within 1-2 minutes. You can see the various steps running, and their status changing to 'Success' as they complete. Click the Refresh button to more quickly refresh the screen. In a real ODA, deployment takes about 60-90 minutes to complete.



Step 4: Validate the Deployment

Next click on the "Database" tab at the top right of the web page. This should show the deployed database. The web pages refresh every few seconds, so if the database does not show up at first, be patient. Click on the database name for more detail 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.

You can also verify the appliance has been properly deployed by clicking the "Appliance" tab to see more details. It should look similar to the view below (remember this is a simulation):

The screenshot shows the Oracle Database Appliance management interface. The 'Appliance' tab is selected, displaying 'Basic Information' and 'Advanced Information' sections. The 'Appliance Information' section includes details such as ID, Platform, Data Disk Count, CPU Core Count, DCS Agent, GI, and Created date. The 'System Information' section lists Host Name, Domain Name, Time Zone, DNS Servers, and NTP Servers. The 'Disk Group Information' section contains a table with columns for Name, Redundancy, Physical Total Space, Physical Free Space, and Logical Free Space.

Name	Redundancy	Physical Total Space	Physical Free Space	Logical Free Space
DATA	FLEX	11.0 TB	10.0 TB	3.33 TB - 5.0 TB
RECO	FLEX	490.0 GB	325.0 GB	108.33 GB - 162.5 GB
FLASH	FLEX	490.0 GB	325.0 GB	108.33 GB - 162.5 GB

Step 5: Networking

You can check the network by click on the "Network" tab on the left.

The screenshot shows the Oracle Database Appliance management interface with the 'Network' tab selected. It displays a list of networks, with one network selected and its details shown. The details include network type, status, subnet mask, gateway, interface name, and IP addresses for Node0 and Node1.

Network Name	Created	Status	Network Type	Subnet Mask	Gateway	Interface Name	Interface Type	SCAN Name	SCAN IP Address	Node0 IP Address	Node0 VIP Name	Node0 VIP Address	Node1 IP Address	Node1 VIP Name	Node1 VIP Address
Public-network	Mon Nov 09 2020 9:20:21 PM	CONFIGURED	Public	255.255.255.0	192.168.0.1	btbond1		oda-scan	192.168.0.104,192.168.0.105	192.168.0.100	node0-vip	192.168.0.102	192.168.0.101	node1-vip	192.168.0.103

You can also create a new VLAN by clicking the "Create Network" button and filled in the network information below. Then hit "Create"

You can click on Create button, then submit the job. Below shows the backup VLAN has been created.

Network Name	Created	Status	Network Type	Subnet Mask	Gateway	Interface Name	Interface Type	Node0 IP Address	Node1 IP Address
backup	Mon Nov 09 2020 9:27:37 PM	CONFIGURED	Backup	255.255.255.252	192.168.0.201	btbond1.199	VLAN	192.168.0.200	192.168.0.202
Public-network	Mon Nov 09 2020 9:20:21 PM	CONFIGURED	Public	255.255.255.0	192.168.0.1	btbond1	SCAN Name: oda-scan SCAN IP Address: 192.168.0.104,192.168.0.105	192.168.0.100 VIP Name: node0-vip VIP Address: 192.168.0.102	192.168.0.101 VIP Name: node1-vip VIP Address: 192.168.0.103

This concludes Lab 1.

Lab 2: Manage Databases

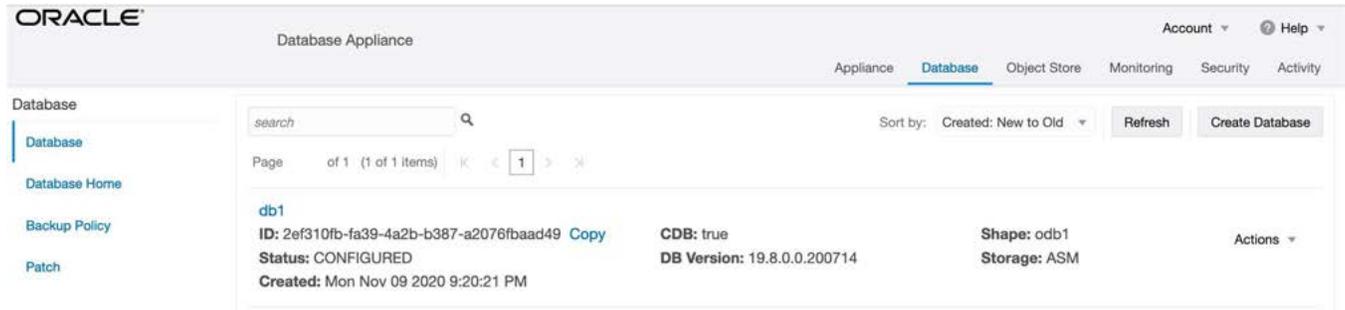
In this lab, we will create and delete additional databases in the appliance. We can do this via the BUI or the command line (CLI).

You must complete Lab 1 before starting Lab 2.

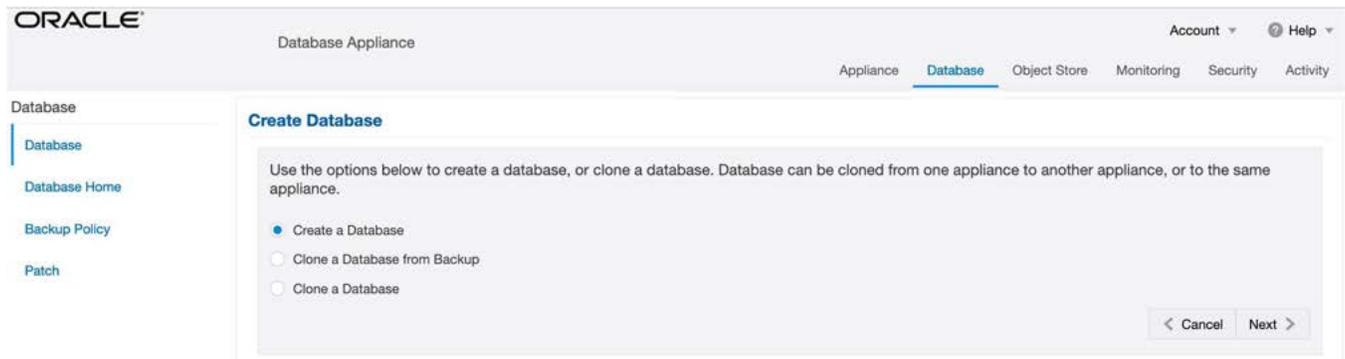
Step 1: Create a new database via the Web GUI

On the ODA BUI, click the database tab in the web page.

You should see the database db1 created during deployment. In the upper right-hand corner, there is a "Create Database" button. Click it. It will bring up the "Create Database" Wizard.



Choose "Create Database", and click "Next"



Specify the DB Name like db2, and if you are creating a CDB, a PDB Name. Also remember to scroll down and enter a password that would (in a real ODA) 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.

The screenshot shows the Oracle Database Appliance 'Create Database' configuration page. The interface includes a top navigation bar with 'ORACLE' and 'Database Appliance' labels, and a secondary navigation bar with 'Appliance', 'Database', 'Object Store', 'Monitoring', 'Security', and 'Activity' tabs. A left sidebar lists 'Database', 'Database Home', 'Backup Policy', and 'Patch'. The main content area is titled 'Create Database' and contains the following configuration fields:

- DB Name ***: db2
- DB Unique Name**: (empty)
- Use Existing DB Home**: Yes No
- DB Version**: 19.8.0.0.200714
- CDB**: Yes No
- Database Edition**: Enterprise Edition
- Deployment**: RAC
- Shape**: odb1(1 Core, 8GB Memory)
- Database Class**: OLTP
- Storage**: ASM
- Database Redundancy**: Mirror
- Data Files on Flash Storage**: Yes No
- Networks ***: Public-network X
- Configure EM Express**: Yes No
- Password ***: (masked)
- Confirm Password ***: (masked)
- Character Set**: AL32UTF8
- National Character Set**: AL16UTF16
- Language**: AMERICAN
- Territory**: AMERICA
- Enable TDE**: Yes No
- TDE Wallet Password**: (masked)
- Confirm TDE Wallet Password**: (masked)

At the bottom right, there are three buttons: '< Back', 'Cancel', and 'Create >'.

This will bring up a link to the job status. Like with 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 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. In a real ODA, these steps take about 20 minutes to complete.

ORACLE Database Appliance

Account Help

Appliance Database Object Store Monitoring Security Activity

search Refresh Back

Database service creation with db name: db2
 ID: bb2254ba-ed1a-465f-98ba-7bc56717833b
 Created: Mon Nov 09 2020 9:30:51 PM
 Message:
 Status: Running

Page 1 of 2 (1-5 of 10 items)

Validating dbHome available space Start Time: Mon Nov 09 2020 21:30:56 GMT-0800 (Pacific Standard Time)	End Time: Mon Nov 09 2020 21:30:56 GMT-0800 (Pacific Standard Time)	Status: Success
Validating dbHome available space Start Time: Mon Nov 09 2020 21:30:56 GMT-0800 (Pacific Standard Time)	End Time: Mon Nov 09 2020 21:30:56 GMT-0800 (Pacific Standard Time)	Status: Success
Setting up ssh equivalence Start Time: Mon Nov 09 2020 21:30:59 GMT-0800 (Pacific Standard Time)	End Time: Mon Nov 09 2020 21:31:00 GMT-0800 (Pacific Standard Time)	Status: Success
Validating dbHome available space Start Time: Mon Nov 09 2020 21:31:09 GMT-0800 (Pacific Standard Time)	End Time: Mon Nov 09 2020 21:31:09 GMT-0800 (Pacific Standard Time)	Status: Success
Validating dbHome available space Start Time: Mon Nov 09 2020 21:31:09 GMT-0800 (Pacific Standard Time)	End Time: Mon Nov 09 2020 21:31:10 GMT-0800 (Pacific Standard Time)	Status: Success

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

ORACLE Database Appliance

Account Help

Appliance **Database** Object Store Monitoring Security Activity

Database

Database Home Backup Policy Patch

search Sort by: Created: New to Old Refresh Create Database

Page 1 of 1 (1-2 of 2 items)

db2 ID: 16a51016-41eb-49db-867a-66d0131179d3 Copy Status: CREATING Created: Mon Nov 09 2020 9:30:52 PM	CDB: false DB Version: 19.8.0.0.200714	Shape: odb1 Storage: ASM	Actions
db1 ID: 2ef310fb-fa39-4a2b-b387-a2076fbaad49 Copy Status: CONFIGURED Created: Mon Nov 09 2020 9:20:21 PM	CDB: true DB Version: 19.8.0.0.200714	Shape: odb1 Storage: ASM	Actions

See detailed database information by clicking on the database name. You can also view the newly create 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" if not at the view that lists databases. Click the "Action" dropdown to the right of the db1 database, then select "Delete." Click "yes" to confirm, and then close the status box. The database list should reflect the deletion. Press "Refresh" if necessary.

The screenshot shows the Oracle Database Appliance console interface. The top navigation bar includes 'Appliance', 'Database', 'Object Store', 'Monitoring', 'Security', and 'Activity'. The left sidebar has 'Database', 'Database Home', 'Backup Policy', and 'Patch'. The main content area displays a list of databases:

ID	Status	CDB	DB Version	Shape	Storage	Actions
16a51016-41eb-49db-867a-66d0131179d3	CREATING	false	19.8.0.0.200714	odb1	ASM	Actions
2ef310fb-fa39-4a2b-b387-a2076fbaad49	CONFIGURED	true	19.8.0.0.200714	odb1	ASM	Actions

The 'Actions' dropdown for db1 is open, showing the following options: View, Modify, Move, Upgrade, and Delete.

After the database delete operation, only db2 is left.

The screenshot shows the Oracle Database Appliance console interface after the deletion of db1. The main content area now only displays the db2 database:

ID	Status	CDB	DB Version	Shape	Storage	Actions
16a51016-41eb-49db-867a-66d0131179d3	CONFIGURED	false	19.8.0.0.200714	odb1	ASM	Actions

Step 3: View the Databases and Homes via the CLI

You can also manage databases from the command line. Select the tab to go to the command line (CLI) tool.

Use the `odacli list-databases` command to view your databases. Then use `odacli describe-database` to see the details for a specific database. Be sure to use the database ID shown in the list-database command, not the ID shown in the example.

odacli list-databases

ID	DB Name	DB Type	DB Version	CDB	Class	Shape	Storage	Status	DbHomeID
16a51016-41eb-49db-867a-66d0131179d3 42c5-ad03-5a90dea5594f	db2	Rac	19.8.0.0.200714	false	Oltp	Odb1	Asm	Configured	c5556b62-cdc1-

odacli describe-database -i 16a51016-41eb-49db-867a-66d0131179d3

Database details

```
-----
ID: 16a51016-41eb-49db-867a-66d0131179d3
Description: db2
DB Name: db2
DB Version: 19.8.0.0.200714
DB Type: Rac
DB Role: PRIMARY
DB Target Node Name:
DB Edition: EE
DBID:
Instance Only Database: false
CDB: false
PDB Name:
PDB Admin User Name:
SEHA Enabled: false
Class: Oltp
Shape: Odb1
Storage: Asm
DB Redundancy: MIRROR
CharacterSet: AL32UTF8
National CharacterSet: AL16UTF16
Language: AMERICAN
Territory: AMERICA
Home ID: c5556b62-cdc1-42c5-ad03-5a90dea5594f
Console Enabled: false
TDE Enabled: false
Level 0 Backup Day: Sunday
AutoBackup Enabled: true
Created: November 10, 2020 5:30:52 AM UTC
DB Domain Name: example.com
Associated Networks:
```

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-database -h` to see the options. Note only the database name is really required. Create a new 18.8 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, we suggest using `WELcome12##` for this lab.

```
# odacli create-database -h
```

```
Usage: create-database [options]
```

```
Options:
```

```
--associated-networks, -nn  
    Associated network names (in format networkName1, networkName2, ...)  
--backupconfigid, -bi  
    Backup Config ID  
--backupconfigname, -bn  
    BackupConfig Name
```

```
... output deleted for brevity ...
```

```
# odacli create-database -n db3 -v 19.8.0.0
```

```
Password for SYS, SYSTEM and PDB Admin:
```

```
Job details
```

```
-----  
ID: 880bca82-a79a-4bec-82fb-ec8777ec960d  
Description: Database service creation with db name: db3  
Status: Created  
Created: November 10, 2020 5:37:02 AM UTC  
Message:
```

```
Task Name          Start Time          End Time  
Status
```

```
# odacli describe-job -i 880bca82-a79a-4bec-82fb-ec8777ec960d
```

```
Job details
```

```
-----  
ID: 880bca82-a79a-4bec-82fb-ec8777ec960d  
Description: Database service creation with db name: db3  
Status: Success  
Created: November 10, 2020 5:37:02 AM UTC  
Message:
```

```
Task Name          Start Time          End Time  
Status
```

```
-----  
Validating dbHome available space          November 10, 2020 5:37:06 AM UTC          November 10,  
2020 5:37:06 AM UTC          Success  
Validating dbHome available space          November 10, 2020 5:37:07 AM UTC          November 10,
```

In a real ODA, this command would run a job in the background for approximately 30 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 odacli command:

odacli list-databases

ID	DB Name	DB Type	DB Version	CDB	Class	Shape	Storage	Status	DbHomeID
16a51016-41eb-49db-867a-66d0131179d3	db2	Rac	19.8.0.0.200714	false	Oltp	Odb1	Asm	Configured	c5556b62-cdcl-42c5-ad03-5a90dea5594f
40b87040-7a7c-4439-9fd8-9df176e307c2	db3	Rac	19.8.0.0.200714	false	Oltp	Odb1	Asm	Configured	c0628ee5-4bcb-490c-9996-067f23e6bf17

Step 5: Delete and Recreate a Database

You can also delete a database via the CLI. 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 in lieu of the ID.

odacli delete-database -i 16a51016-41eb-49db-867a-66d0131179d3

```
{
  "jobId" : "5c66ec45-9f31-4351-bac7-9b8b83dffac3",
  "status" : "Running",
  "message" : null,
  "reports" : [ ],
  "createTimestamp" : "November 10, 2020 05:41:09 AM UTC",
  "resourceList" : [ ],
  "description" : "Database service deletion with db name: db2 with id : 16a51016-41eb-49db-867a-66d0131179d3",
  "updatedAt" : "November 10, 2020 05:41:10 AM UTC"
}
```

odacli list-databases

ID	DB Name	DB Type	DB Version	CDB	Class	Shape	Storage	Status	DbHomeID
40b87040-7a7c-4439-9fd8-9df176e307c2	db3	Rac	19.8.0.0.200714	false	Oltp	Odb1	Asm	Configured	c0628ee5-4bcb-490c-9996-067f23e6bf17

And, using the CLI, create a new 19.7 database db4.

```
# odacli create-database -n db4 -v 19.8.0.0
```

```
Password for SYS,SYSTEM and PDB Admin:
```

```
Job details
```

```
-----  
ID: 5e9b1fc6-471e-428f-9dea-35e750cbe2bf  
Description: Database service creation with db name: db4  
Status: Created  
Created: November 10, 2020 5:43:08 AM UTC  
Message:
```

```
Task Name                               Start Time                               End  
Time                                     Status
```

```
# odacli list-databases
```

```
-----  
ID                               DB Name  DB Type  DB Version  CDB    Class  Shape  Storage  Status  DbHomeID  
-----  
40b87040-7a7c-4439-9fd8-9df176e307c2  db3      Rac      19.8.0.0.200714  false  Oltp   Odb1   Asm      Configured  c0628ee5-4bcb-  
490c-9996-067f23e6bf17  
bab8738a-861d-4c97-90a9-b5da1f4e92c9  db4      Rac      19.8.0.0.200714  false  Oltp   Odb1   Asm      Configured  20ad8392-b7d6-  
4aa5-b394-927d09f70cf7
```

Step 6: Delete a Database Home

You can delete a database home via 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).

The screenshot shows the Oracle Database Appliance GUI with the 'Database' tab selected. The left sidebar contains 'Database', 'Database Home', 'Backup Policy', and 'Patch'. The main content area displays a table of database homes. The table has columns for ID, Location, Created, Version, Edition, and Actions. The entries are:

ID	Location	Created	Version	Edition	Actions
OraDB19000_home3 ID: 20ad8392-b7d6-4aa5-b394-927d09f70cf7	/u01/app/oracle/product/19.0.0.0/dbhome_3	Mon Nov 09 2020 9:43:10 PM	19.0.0.0.200714	EE	Actions
OraDB19000_home2 ID: c0628ee5-4bcb-490c-9996-067f23e6bf17	/u01/app/oracle/product/19.0.0.0/dbhome_2	Mon Nov 09 2020 9:37:04 PM	19.0.0.0.200714	EE	Actions
OraDB19000_home1 ID: c5556b62-cdc1-42c5-ad03-5a90dea5594f	/u01/app/oracle/product/19.0.0.0/dbhome_1	Mon Nov 09 2020 9:30:53 PM	19.0.0.0.200714	EE	Actions
OraDB19000_home1 ID: b3022bae-a142-4fd0-9d8c-dd2b9a556557	/u01/app/oracle/product/19.0.0.0/dbhome_1	Mon Nov 09 2020 9:20:21 PM	19.0.0.0.200714	EE	Actions

The 'home1' entry is missing from the list, indicating it has been deleted. The 'Actions' dropdown for the bottom entry shows 'View Database' and 'Delete DB Home' options.

You can see the home1 database home has been deleted.

The screenshot shows the Oracle Database Appliance GUI with the 'Database' tab selected. The left sidebar contains 'Database', 'Database Home', 'Backup Policy', and 'Patch'. The main content area displays a table of database homes. The table has columns for ID, Location, Created, Version, Edition, and Actions. The entries are:

ID	Location	Created	Version	Edition	Actions
OraDB19000_home3 ID: 20ad8392-b7d6-4aa5-b394-927d09f70cf7	/u01/app/oracle/product/19.0.0.0/dbhome_3	Mon Nov 09 2020 9:43:10 PM	19.0.0.0.200714	EE	Actions
OraDB19000_home2 ID: c0628ee5-4bcb-490c-9996-067f23e6bf17	/u01/app/oracle/product/19.0.0.0/dbhome_2	Mon Nov 09 2020 9:37:04 PM	19.0.0.0.200714	EE	Actions
OraDB19000_home1 ID: c5556b62-cdc1-42c5-ad03-5a90dea5594f	/u01/app/oracle/product/19.0.0.0/dbhome_1	Mon Nov 09 2020 9:30:53 PM	19.0.0.0.200714	EE	Actions

The 'home1' entry is now present in the list, indicating it has been restored.

Step 7: Create Database Backup on local disk, external NFS storage or on the Oracle Cloud

Backing up and restoring Oracle databases in ODA is very simple. There are two simple steps involved to create a database backup locally or on the Oracle Cloud. These can be done via web GUI

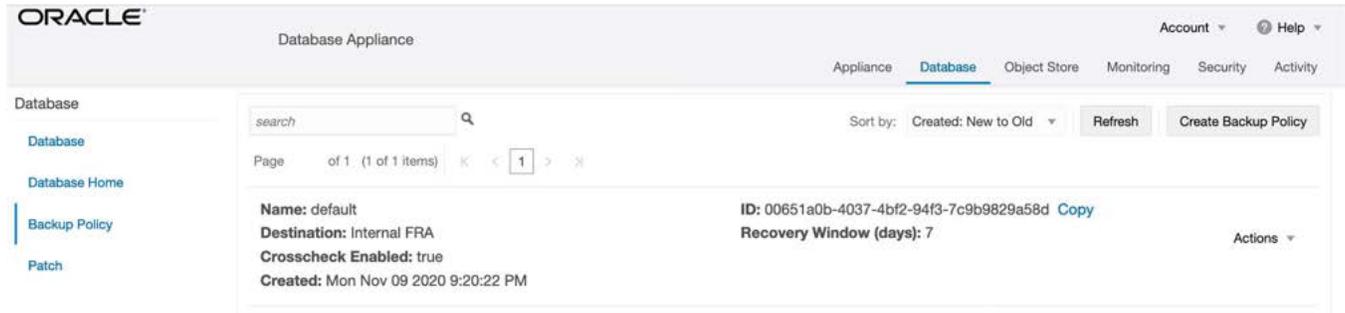
1. Create a backup policy

2. Attach a backup policy to a database

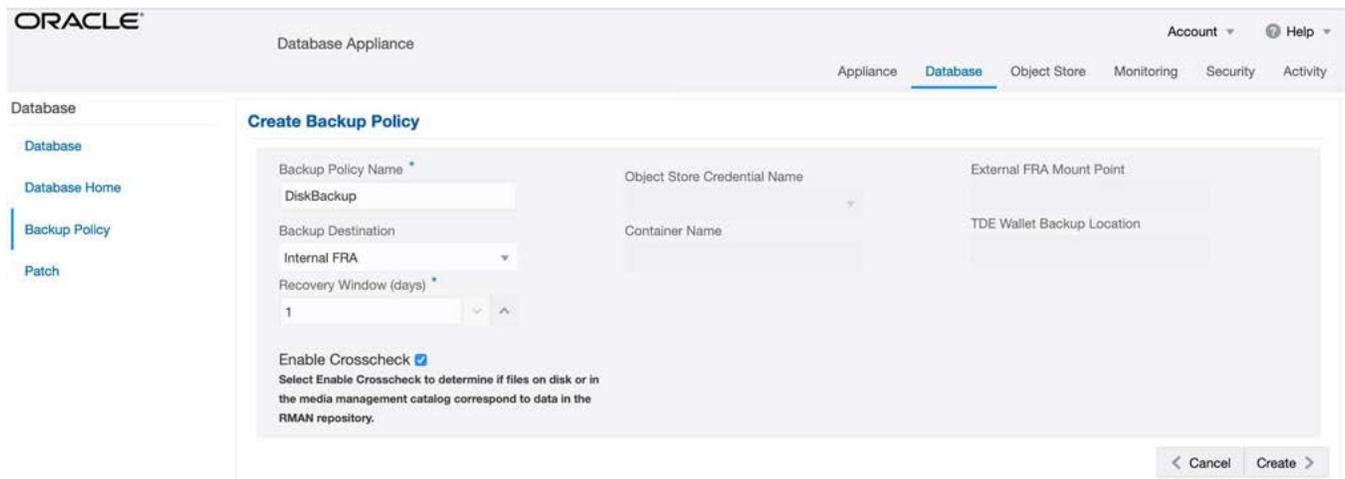
To back up to an external NFS storage, you must create an NFS mount point first.

To back up to the Oracle Cloud, you must obtain and create Object Store credentials first.

There's a default backup policy associated with the database, to create a new backup policy, click on "Backup Policy" tab and then "Create Backup Policy"



Then name the Backup Policy (i.e. DiskBackup), Backup Destination (Internal FRA/Local Disk or External FRA/External NFS Storage or Object Store/Oracle Cloud), and Recovery Window in days, then click "Create". To back a database to an external NFS storage, you need to specify a mount point such as /u03/app/oracle/oradata/nfs_backup.



You can see the DiskBackup policy has been created.

Oracle Database Appliance interface showing backup policies. The 'Database' tab is active. The interface displays a list of backup policies with the following details:

Name	ID	Destination	Crosscheck Enabled	Created	Recovery Window (days)	Actions
DiskBackup	7cf4d0ad-025d-4525-9f57-540e616bc414	Internal FRA	true	Mon Nov 09 2020 9:49:35 PM	1	Actions
default	00651a0b-4037-4bf2-94f3-7c9b9829a58d	Internal FRA	true	Mon Nov 09 2020 9:20:22 PM	7	Actions

Next you select the database (i.e. db4) you want to backup. The db4 database has a default backup policy, so we will need to modify the database first by clicking "Modify" under Actions.

Oracle Database Appliance interface showing database information. The 'Database' tab is active. The interface displays a list of databases with the following details:

Name	ID	Status	Created	CDB	DB Version	Shape	Storage	Actions
db4	bab8738a-861d-4c97-90a9-b5da1f4e92c9	CONFIGURED	Mon Nov 09 2020 9:43:09 PM	false	19.8.0.0.200714	odb1	ASM	View, Modify, Move, Upgrade, Delete
db3	40b87040-7a7c-4439-9fd8-9df176e307c2	CONFIGURED	Mon Nov 09 2020 9:37:03 PM	false	19.8.0.0.200714	odb1	ASM	

Select "DiskBackup" as the Backup Policy then click "Modify"

Oracle Database Appliance interface showing the 'Modify Database' form. The form is used to modify the database class, shape, redundancy, backup policy, and attach/detach networks. The following information is displayed:

- Database Name: db4
- Database Class: OLTP
- Database Shape: odb1(1 Core, 8GB Memory)
- Database Redundancy: Mirror
- Attach Networks: [Empty]
- Detach Networks: [Empty]
- Backup Policy: DiskBackup
- Confirm Backup Encryption Password: [Empty]

Once the job is completed, you can verify the backup policy is listed under "Database Information" of the database (i.e. db4). Once this is done, ODA will start backing up the database to the disk regularly and produce backup reports.

Database Information

ID: bab8738a-861d-4c97-90a9-b5da1f4e92c9

Description: db4

DB Name: db4

DB Version: 19.8.0.0.200714

DB Type: RAC

DB Role: PRIMARY

DB Edition: EE

DBID:

CDB: false

PDB Name:

PDB Admin User Name:

Character Set: AL32UTF8

NLS Character Set: AL16UTF16

Language: AMERICAN

Territory: AMERICA

TDE Enabled: false

High Availability Enabled: false

Target Node Name:

Class: OLTP

Shape: odb1

Storage: ASM

DATA:

Location: +DATA/db4

Used Space: 102400

Free Space: 5.0 TB

REDO:

Location: +RECO/db4

Used Space: 102400

Free Space: 162.5 GB

RECO:

Location: +RECO/db4

Used Space: 102400

Free Space: 162.5 GB

DB Redundancy: MIRROR

CPU Pool:

EM Express Enabled: false

Home ID: 20ad8392-b7d6-4aa5-b394-927d09f70cf7

Home Location: /u01/app/oracle/product/19.0.0.0/dbhome_3

Status: CONFIGURED

Auto Backup Enabled: true

Backup Policy Name: DiskBackup

Backup Destination: Internal FRA

Backup Container Name: Fast Recovery Area

Created: Mon Nov 09 2020 9:43:09 PM

DB Domain Name: example.com

Networks:

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

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

Manual Backup

Database Name: db4

Backup Policy Name: DiskBackup

Backup Destination: Internal FRA

Backup Type

Level 0 Incremental Backup

(Backs up all blocks in the database)

Component

Database

Backup Tag

Keep Days

Cancel Start

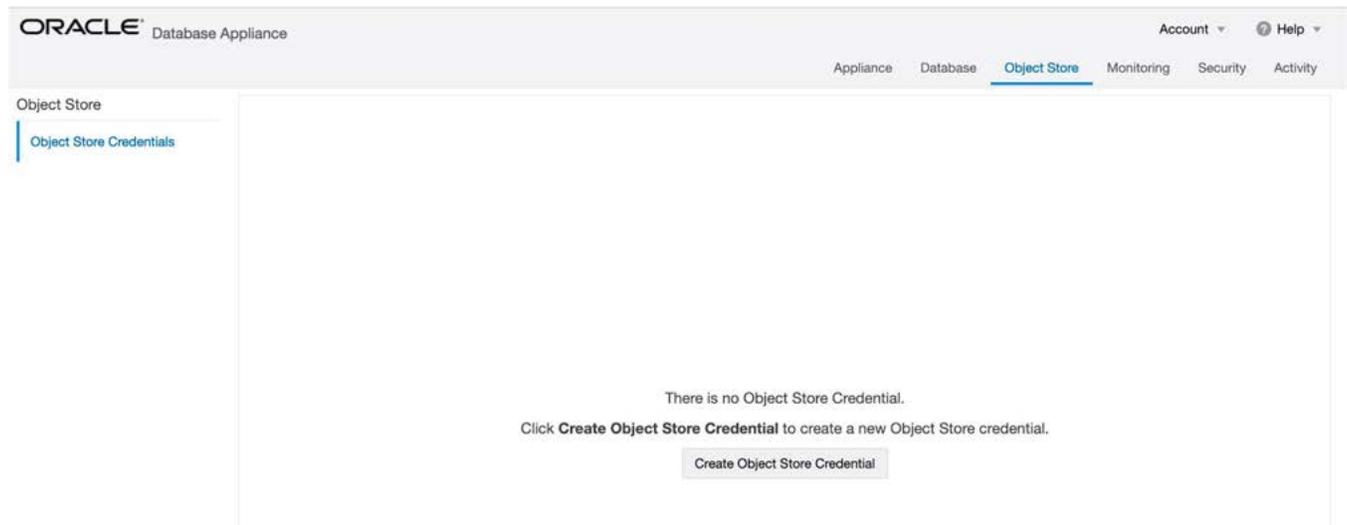
You can see the details of the Backup Report by clicking on the Backup Report ID.

Save Backup Report Refresh Back

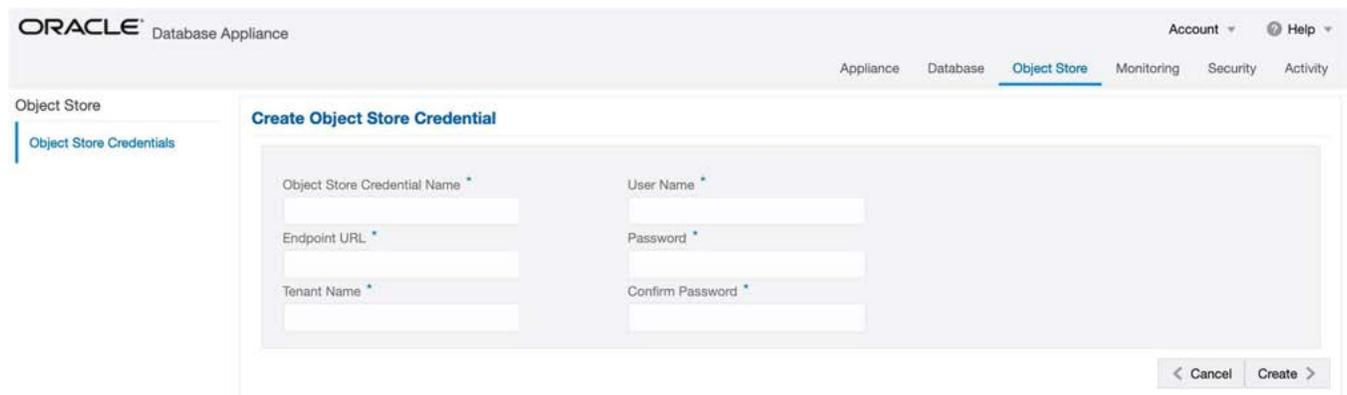
Backup Report

ID: d5029055-fa20-4ab6-8fe4-42ba1c5bcc8a
 Name: Backup_Report_db4
 DB Resource ID: bab8738a-861d-4c97-90a9-b5da1f4e92c9
 Tag: auto
 DB ID: OK
 DB Name: db4
 DB Unique Name: db4
 Backup Type: Regular-L0
 Keep Days:
 Backup Location: FRA
 CF Backup Handle:
 SPF Backup Handle:
 PITR Time Stamp: Mon Nov 09 2020 9:54:04 PM
 Storage: ASM
 PITR SCN: 2719821
 Reset Logs Time Stamp: Mon Nov 09 2020 9:54:04 PM
 Reset Logs SCN: 1890734
 Oracle Home Version: 19.8.0.0.200714
 SQL Patches:
 Backup Log Location:
 TDE Wallet Location:
 DB Config Location:
 Status: CONFIGURED
 Backup Report Log Detail:
 Created: Mon Nov 09 2020 9:54:03 PM
 Updated: Mon Nov 09 2020 9:54:03 PM
 DB Data Size: 1755M
 DB REDO Size: 3740M
 RMAN Backup Pieces:
 Compression Algorithm: BASIC
 CPU Pool:
 Number of Cores:
 Database Class: OLTP
 Database Type: RAC
 Database Shape: odb1
 Database Edition: EE
 Database Storage: ASM
 Database Redundancy: MIRROR
 CDB: false
 PDB Name:

In addition to backing up to local disk, you can back up to the Oracle Cloud. To backup databases in ODA to the Oracle Cloud, you must obtain Object Store credentials first. Once that's done, you can click "Object Store" tab, then "Create Object Store Credential"



Enter the required Object Store Credentials including the name. Once that's done, then you can create a backup policy, attached a database to the policy, and specify the Object Store as the backup destination. ODA will then start backing up the database to the Oracle Cloud regularly.



This concludes lab 2.

Lab 3: Patch and Update

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

You will use the CLI to update the repository and BUI to update the ODA infrastructure including DCS agent and the server.

You will also use the web BUI to update a database home (update database 19.8 to 19.9) and upgrade a database (18.12 to 19.9)

Step 1: Update the ODA Repository with Latest Patches

Patches for ODA are posted in the Oracle Database Appliance Release Notes. There you will find the links to the patches. The ODA X8-2-HA appliance has one patch that must be applied: 1. A server patch that also includes RDBMS patches. The server patch will patch the firmware, OS, Grid Infrastructure, and the databases. You must patch the server before you patch the databases. When patching databases, you can choose to patch a subset if required (although we recommend all databases be kept current on patching). We have downloaded simulated 19.9.0.0.0 patches for the server and database to your simulator.

Before you start patching the server, you can check the current installed components from the web console. Go to Appliance tab, click on Patch Manager on the left. Note all the installed 19.8.0.0 components. Since you have not updated the repository to 19.9.0.0, everything is shown up to date.

The server patch is oda-sm-19.9.0.0.0-201020-server.zip. The server patch also includes latest database updates for 19.x, 18.x, 12.2.1.2, 12.1.0.2 and 11.2.0.4.

You also need to update repository with the 19.9 clone files if you want to create a 19.9 database.

Type the following to update the ODA repository with these patches. **You must use the full path for the file names**

```

# odacli update-repository -f /opt/oracle/dcs/patchfiles/oda-sm-
19.9.0.0.0-201020-server.zip
{
  "jobId" : "151f6bf2-36de-462d-8e6c-e519abc2d6d7",
  "status" : "Running",
  "message" : "/opt/oracle/dcs/patchfiles/oda-sm-19.9.0.0.0-201020-server.zip",
  "reports" : [ ],
  "createTimestamp" : "November 10, 2020 05:58:59 AM UTC",
  "resourceList" : [ ],
  "description" : "Repository Update",
  "updatedAt" : "November 10, 2020 05:59:04 AM UTC"
}

# odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-dcs-
19.9.0.0.0-201020-DB-19.9.0.0.zip
{
  "jobId" : "9bb6e918-f0d1-4c02-a2c4-3914ab349060",
  "status" : "Running",
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.9.0.0.0-201020-DB-19.9.0.0.zip",
  "reports" : [ ],
  "createTimestamp" : "November 10, 2020 06:00:16 AM UTC",
  "resourceList" : [ ],
  "description" : "Repository Update",
  "updatedAt" : "November 10, 2020 06:00:21 AM UTC"
}

```

Now you can use the web console to see the 19.9.0.0 available component versions.

The screenshot shows the Oracle Database Appliance web console interface. The top navigation bar includes 'Appliance', 'Database', 'Object Store', 'Monitoring', 'Security', and 'Activity'. The left sidebar lists various system components like 'Overview', 'VM Instances', 'Network', 'CPU Pool', 'Oracle ASR', and 'Patch Manager'. The main content area is titled 'Update Repository' and 'Update Server/Storage'. It displays a table of component details for nodes 'oda-1-node0' and 'oda-1-node1'. Below the table, there are update options: 'Update Server' (selected), 'Update Storage', and 'Rolling'. A dropdown menu allows selecting nodes to update, currently set to '--All Nodes--'. At the bottom, there are 'Precheck' and 'Apply Patch' buttons, a search bar, and a 'Patch Pre-Check Reports' section with a 'Deselect All' checkbox.

Component	Installed Version	Available Version
OAK	19.8.0.0.0	19.9.0.0.0
GI (OraGrid12000)	19.8.0.0.0	19.9.0.0.0
DCSAGENT	19.8.0.0.0	19.9.0.0.0
ILOM	4.0.3.80.r127198	5.0.0.22.r132877
BIOS	52001701	up-to-date
OS	7.7	7.8
FIRMWARECONTROLLER (c0, c1)	VDV1RL02	up-to-date
FIRMWAREDISK (c2d0, c2d1)	1102	up-to-date

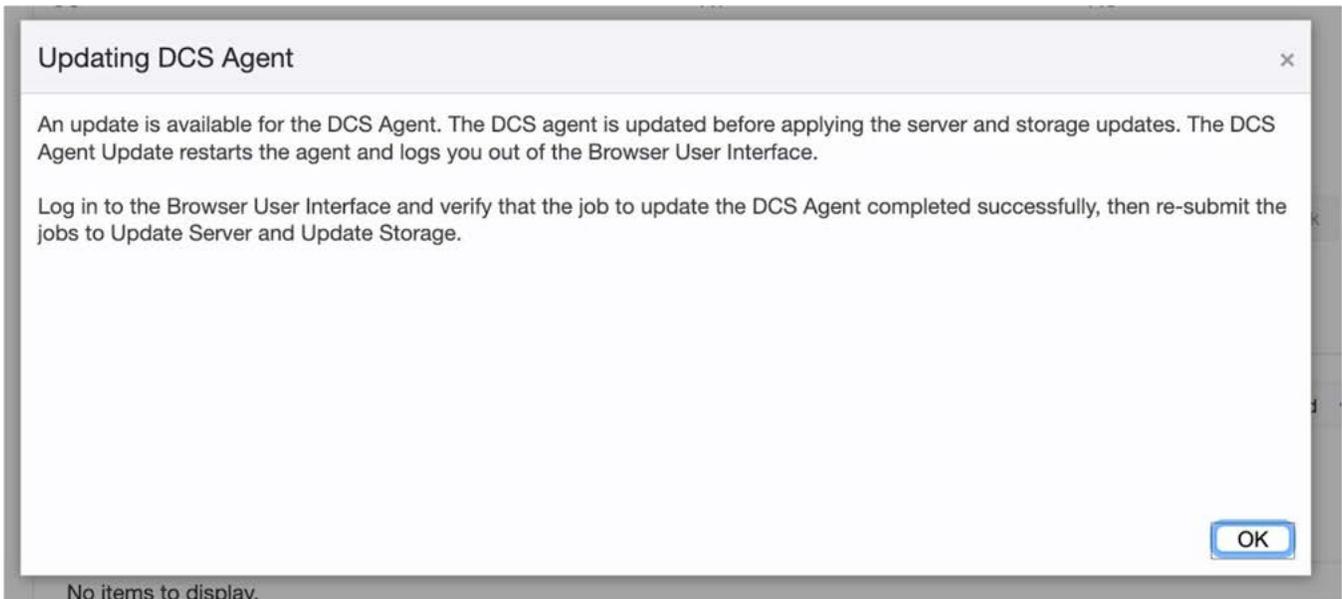
We recommend that you run the precheck for OS, ILOM, and GI before patching by click the "Precheck" button.



The screenshot shows a web interface for "Patch Pre-Check Reports". At the top, there is a search bar with the placeholder text "search" and a magnifying glass icon. To the right, there is a "Sort by:" dropdown menu set to "Created: New to Old", and two buttons: "Refresh" and "Delete". Below the search bar, the title "Patch Pre-Check Reports" is displayed. Underneath, it says "Page 1 of 1 (1 of 1 items)" with navigation arrows and a box containing the number "1". On the far right, there is a "Deselect All" checkbox. The main content area contains a single table row with a checked checkbox, the text "Patch pre-checks for [ORACHKSERVER]", an ID "ID: fd7d771f-a139-49f0-a839-dc5ff7bdfb0f" with a "Copy" link, a "Created:" timestamp "Tue Jul 14 2020 2:15:12 PM", and a "Status:" of "Success".

Step 2: Update the DCS Agent

The next step is to update the DCS Agent on both nodes with the web console before actually updating the server. The DCS Agent is the Oracle Database Appliance software that provides the intelligence and automation. Select "Update Server" radio button, select "Apply Patch", then Submit, then click OK on Updating DCS Agent.



The screenshot shows a dialog box titled "Updating DCS Agent" with a close button (X) in the top right corner. The main text inside the dialog reads: "An update is available for the DCS Agent. The DCS agent is updated before applying the server and storage updates. The DCS Agent Update restarts the agent and logs you out of the Browser User Interface." Below this, it says: "Log in to the Browser User Interface and verify that the job to update the DCS Agent completed successfully, then re-submit the jobs to Update Server and Update Storage." In the bottom right corner, there is an "OK" button. At the very bottom of the dialog, it says "No items to display."

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

ORACLE Database Appliance Account Help

Appliance Database Object Store Monitoring Security Activity

Appliance

- Overview
- VM Instances
- Network
- CPU Pool
- Oracle ASR
- Patch Manager**

Update Repository **Update Server/Storage** Cleanup Repository

Component Details Refresh

	oda-1-node0	oda-1-node1
Component	Installed Version	Available Version
OAK	19.8.0.0.0	19.9.0.0.0
GI (OraGrid12000)	19.8.0.0.0	19.9.0.0.0
DCSAGENT	19.9.0.0.0	up-to-date
ILOM	4.0.3.80.r127198	5.0.0.22.r132877
BIOS	52001701	up-to-date
OS	7.7	7.8
FIRMWARECONTROLLER (c0, c1)	VDV1RL02	up-to-date
FIRMWAREDISK (c2d0, c2d1)	1102	up-to-date

Update Options:

Update Server Update Storage Rolling Precheck Apply Patch

* Select Node to Update

--All Nodes--

search Sort by: Created: New to Old Refresh Delete

Patch Pre-Check Reports

Page (0 of 0 items) < 1 >

Deselect All

No items to display.

Step 3: Update the server

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

To update Server, select Update Server, pick All Nodes, then hit Apply Patch.

After the job is completed, you can refresh the browser to see that the both node0 and node1 tabs have all 19.9.0.0.0 components installed, and everything is up-to-date.

ORACLE Database Appliance Account Help

Appliance Database Object Store Monitoring Security Activity

Appliance

- Overview
- VM Instances
- Network
- CPU Pool
- Oracle ASR
- Patch Manager**

Update Repository **Update Server/Storage** Cleanup Repository

Component Details Refresh

	oda-1-node0	oda-1-node1
Component	Installed Version	Available Version
OAK	19.9.0.0.0	up-to-date
GI (OraGrid12000)	19.9.0.0.0	up-to-date
DCSAGENT	19.9.0.0.0	up-to-date
ILOM	5.0.0.22.r132877	up-to-date
BIOS	52001701	up-to-date
OS	7.8	up-to-date
FIRMWARECONTROLLER (c0, c1)	VDV1RL02	up-to-date
FIRMWAREDISK (c2d0, c2d1)	1102	up-to-date

Update Options:

Update Server Update Storage Rolling

Precheck Apply Patch

* Select Node to Update

--All Nodes--

search Sort by: Created: New to Old Refresh Delete

Patch Pre-Check Reports

Page (0 of 0 items) 1

Deselect All

Patching a real ODA will take some time, 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 Database Homes (Updating Database)

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, and ...

ORACLE Database Appliance

Account Help

Appliance Database Object Store Monitoring Security Activity

Database

Database

Database Home

Backup Policy

Patch

search

Sort by: Created: New to Old Refresh Create Database

Page 1 of 1 (1-2 of 2 items)

db4	ID: bab8738a-861d-4c97-90a9-b5da1f4e92c9 Copy	CDB: false	Shape: odb1	Actions
	Status: CONFIGURED	DB Version: 19.8.0.0.200714	Storage: ASM	
	Created: Mon Nov 09 2020 9:43:09 PM			
db3	ID: 40b87040-7a7c-4439-9fd8-9df176e307c2 Copy	CDB: false	Shape: odb1	Actions
	Status: CONFIGURED	DB Version: 19.8.0.0.200714	Storage: ASM	
	Created: Mon Nov 09 2020 9:37:03 PM			

...click on the database name (e.g. db4) to identify the database home ID for patching.

Database Information

```

ID: bab8738a-861d-4c97-90a9-b5da114e92c9
Description: db4
DB Name: db4
DB Version: 19.9.0.0.201020
DB Type: RAC
DB Role: PRIMARY
DB Edition: EE
DBID: OK
CDB: false
PDB Name:
PDB Admin User Name:

Character Set: AL32UTF8
NLS Character Set: AL16UTF16
Language: AMERICAN
Territory: AMERICA

TDE Enabled: false
High Availability Enabled: false
Target Node Name:
Class: OLTP
Shape: odb1
Storage: ASM
DATA:
  Location: +DATA/db4
  Used Space: 102400
  Free Space: 5.0 TB
REDO:
  Location: +RECO/db4
  Used Space: 102400
  Free Space: 162.5 GB
RECO:
  Location: +RECO/db4
  Used Space: 102400
  Free Space: 162.5 GB
DB Redundancy: MIRROR
CPU Pool:
EM Express Enabled: false
Home ID: 20ad8392-b7d6-4aa5-b394-927d09f70cf7
Home Location: /u01/app/oracle/product/19.0.0.0/dbhome_3
Status: CONFIGURED
Auto Backup Enabled: true
Backup Policy Name: DiskBackup
Backup Destination: Internal FRA
Backup Container Name: Fast Recovery Area
Created: Mon Nov 09 2020 9:43:09 PM
DB Domain Name: example.com
Networks:

```

Note either the Home ID, or the Home location. You will need this to patch the database home.

You can use either CLI `'odacli update-dbhome'` command or 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 will list each database, its ID and its database home ID. Those database homes will be the ones we will patch by supplying the database home ID to the patching command. You can also see more information, such as the name of the database home, using the `'odacli list-dbhomes'` command.

odacli list-databases

ID	DB Name	DB Type	DB Version	CDB	Class	Shape	Storage	Status	DbHomeID
40b87040-7a7c-4439-9fd8-9df176e307c2	db3	Rac	19.8.0.0.200714	false	Oltp	Odbl	Asm	Configured	c0628ee5-4bcb-490c-9996-067f23e6bf17
bab8738a-861d-4c97-90a9-b5da1f4e92c9	db4	Rac	19.8.0.0.200714	false	Oltp	Odbl	Asm	Configured	20ad8392-b7d6-4aa5-b394-927d09f70cf7

odacli list-dbhomes

ID	Name	DB Version	Home Location
c5556b62-cdc1-42c5-ad03-5a90dea5594f	OraDB19000_home1	19.8.0.0.200714	/u01/app/oracle/product/19.0.0.0/dbhome_1
c0628ee5-4bcb-490c-9996-067f23e6bf17	OraDB19000_home2	19.8.0.0.200714	/u01/app/oracle/product/19.0.0.0/dbhome_2
20ad8392-b7d6-4aa5-b394-927d09f70cf7	OraDB19000_home3	19.8.0.0.200714	/u01/app/oracle/product/19.0.0.0/dbhome_3

Use the clipboard to copy the DB Home ID for db3. Then use that with the 'odacli update-dbhome' command to update the home for db3. Verify the job has completed successfully using 'odacli describe-job'.

```
# odacli update-dbhome -i 20ad8392-b7d6-4aa5-b394-927d09f70cf7 -v 19.9.0.0
```

```
{
  "jobId" : "ffc00059-3a16-489a-b5f9-bc8f4de1cba9",
  "status" : "Created",
  "message" : null,
  "reports" : [ ],
  "createTimestamp" : "November 10, 2020 07:07:30 AM UTC",
  "resourceList" : [ ],
  "description" : "DB Home Patching: Home Id is 20ad8392-b7d6-4aa5-b394-927d09f70cf7",
  "updatedAt" : "November 10, 2020 07:07:30 AM UTC"
}
```

```
# odacli describe-job -i ffc00059-3a16-489a-b5f9-bc8f4de1cba9
```

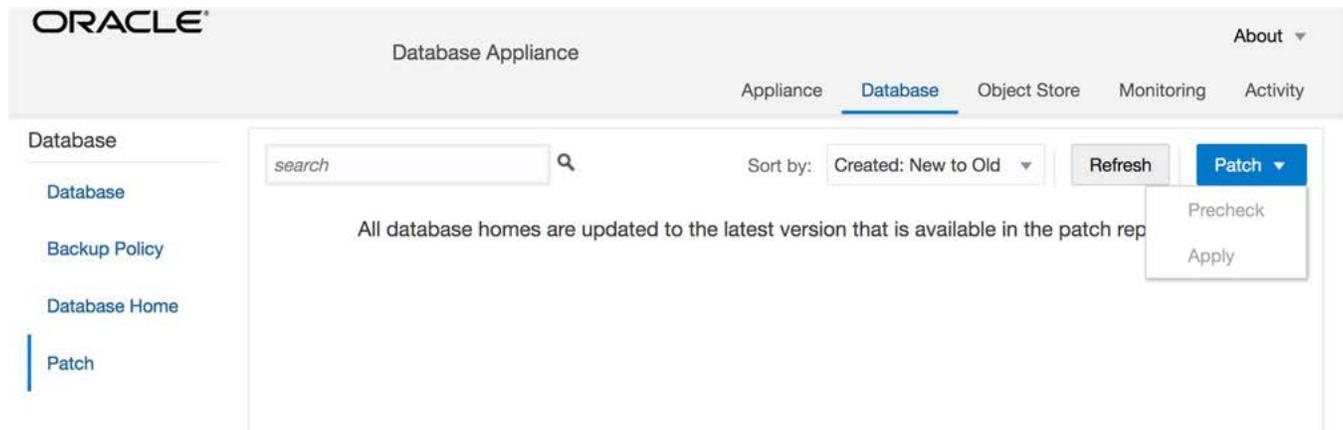
Job details

```
-----
ID: ffc00059-3a16-489a-b5f9-bc8f4de1cba9
Description: DB Home Patching: Home Id is 20ad8392-b7d6-4aa5-b394-927d09f70cf7
Status: Success
Created: November 10, 2020 7:07:30 AM UTC
Message:
```

Task Name	Start Time	End Time
Status		

Verify that the db3 database home has been updated to latest (201020) You can use either the BUI or CLI (odacli list-dbhomes).

You can also use the GUI web console to update the database homes by clicking "Patch" on the left panel, then select Apply in the Patch drop-down. We already updated the db4 database home via command line already.

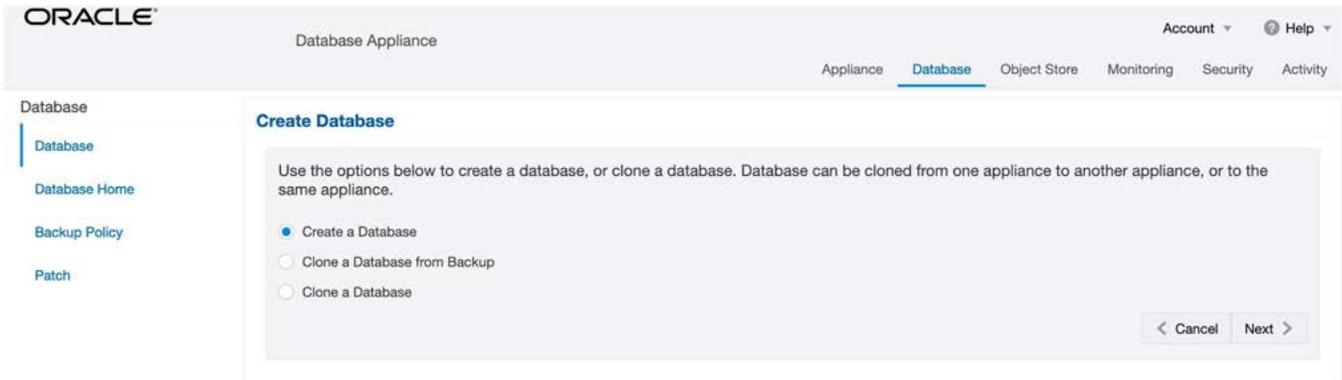


Step 5: Upgrading Database

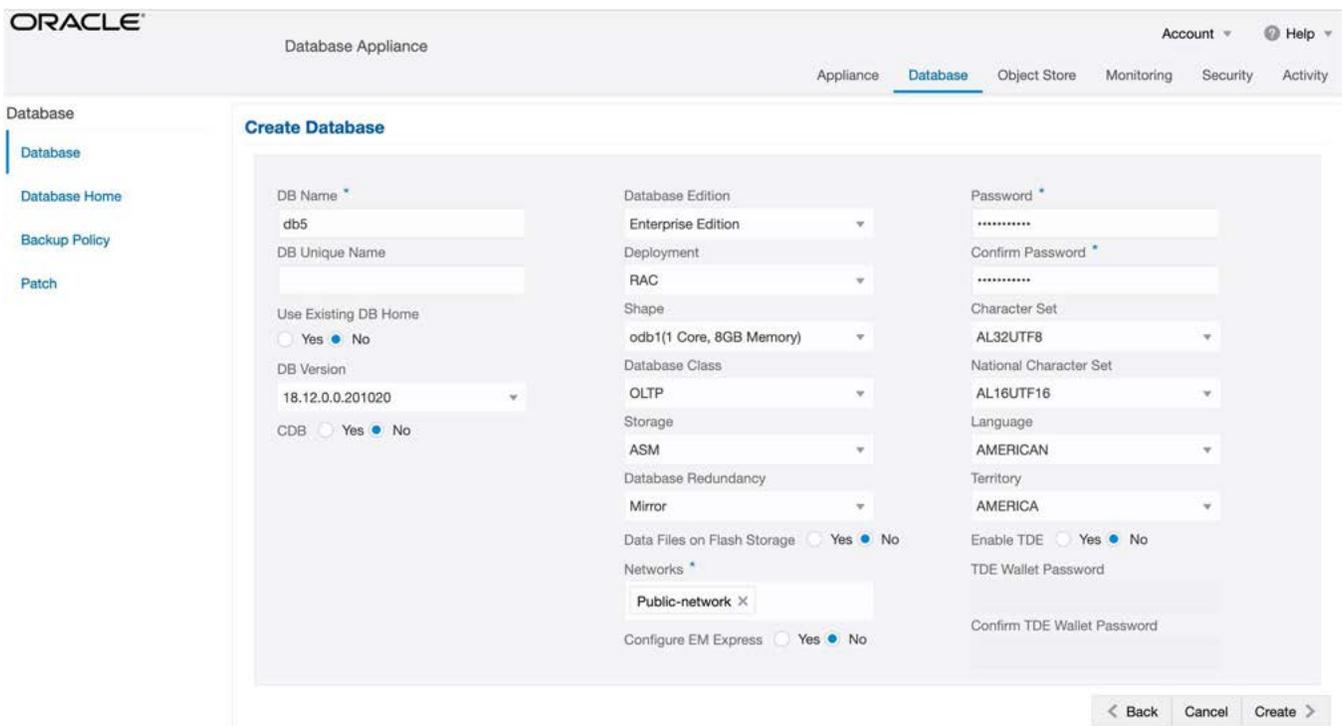
To upgrade a database, we must first have an Oracle 18.x database. We will need to update the repository and create an Oracle 18.12 database.

```
# odacli update-repository -f /opt/oracle/dcs/patchfiles/odacli-  
dcs-19.9.0.0.0-201020-DB-18.12.0.0.zip  
{  
  "jobId" : "9bb6e918-f0d1-4c02-a2c4-3914ab349060",  
  "status" : "Running",  
  "message" : "/opt/oracle/dcs/patchfiles/odacli-dcs-19.9.0.0.0-201020-DB-  
18.12.0.0.zip",  
  "reports" : [ ],  
  "createTimestamp" : "November 10, 2020 06:00:16 AM UTC",  
  "resourceList" : [ ],  
  "description" : "Repository Update",  
  "updatedAt" : "November 10, 2020 06:00:21 AM UTC"
```

We can now create an Oracle 18.11 database (db5). Select "Create a Database", then "Next"



Fill in the information and click "Create"



You can see Oracle database 18.12 (db5) is created.

ORACLE Database Appliance

Account Help

Appliance Database Object Store Monitoring Security Activity

Database

Database

Database Home

Backup Policy

Patch

search

Sort by: Created: New to Old Refresh Create Database

Page of 1 (1-3 of 3 items) 1

db5	ID: 319b259f-e104-4061-ad19-70dc57241ee7 Copy	CDB: false	Shape: odb1	Actions
	Status: CONFIGURED	DB Version: 18.12.0.0.201020	Storage: ASM	
	Created: Mon Nov 09 2020 11:16:59 PM			
db4	ID: bab8738a-861d-4c97-90a9-b5da1f4e92c9 Copy	CDB: false	Shape: odb1	Actions
	Status: CONFIGURED	DB Version: 19.9.0.0.201020	Storage: ASM	
	Created: Mon Nov 09 2020 9:43:09 PM			
db3	ID: 40b87040-7a7c-4439-9fd8-9df176e307c2 Copy	CDB: false	Shape: odb1	Actions
	Status: CONFIGURED	DB Version: 19.8.0.0.200714	Storage: ASM	
	Created: Mon Nov 09 2020 9:37:03 PM			

Now we will upgrade database db5 from 18.12 to 19.9 by click Actions button and select Upgrade.

ORACLE Database Appliance

Account Help

Appliance Database Object Store Monitoring Security Activity

Database

Database

Database Home

Backup Policy

Patch

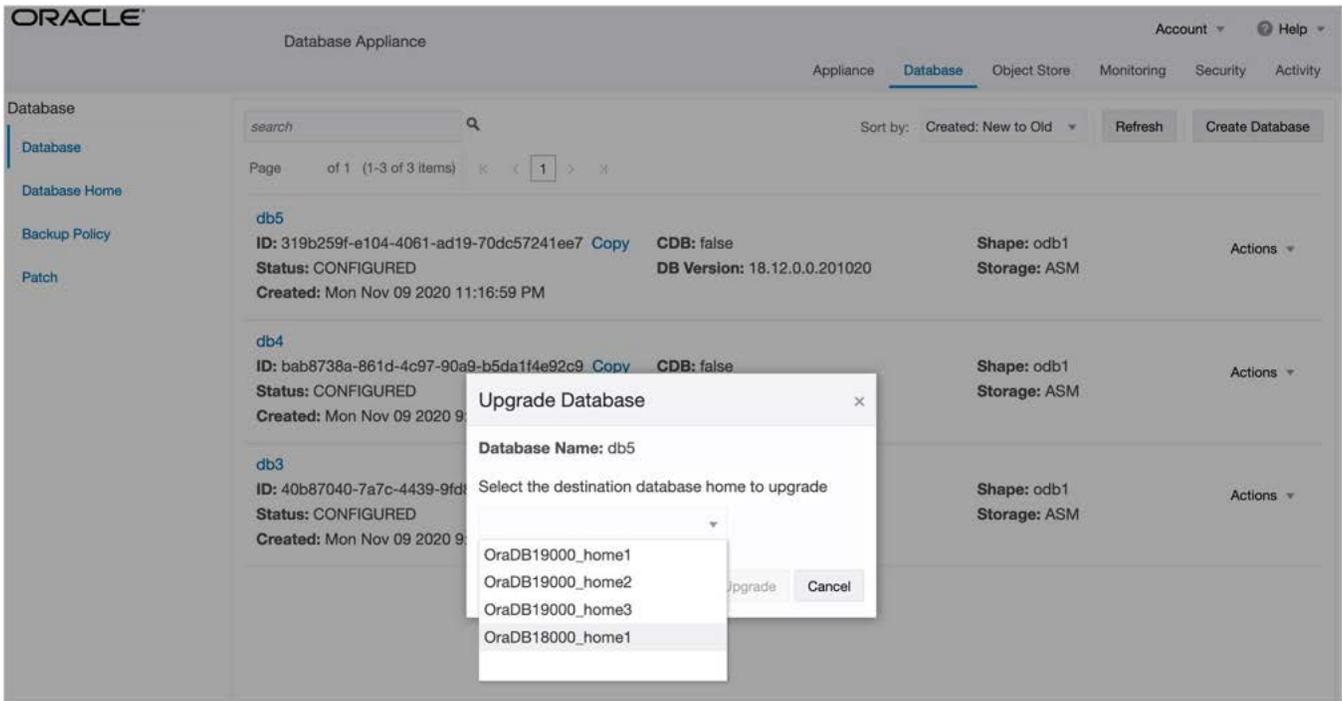
search

Sort by: Created: New to Old Refresh Create Database

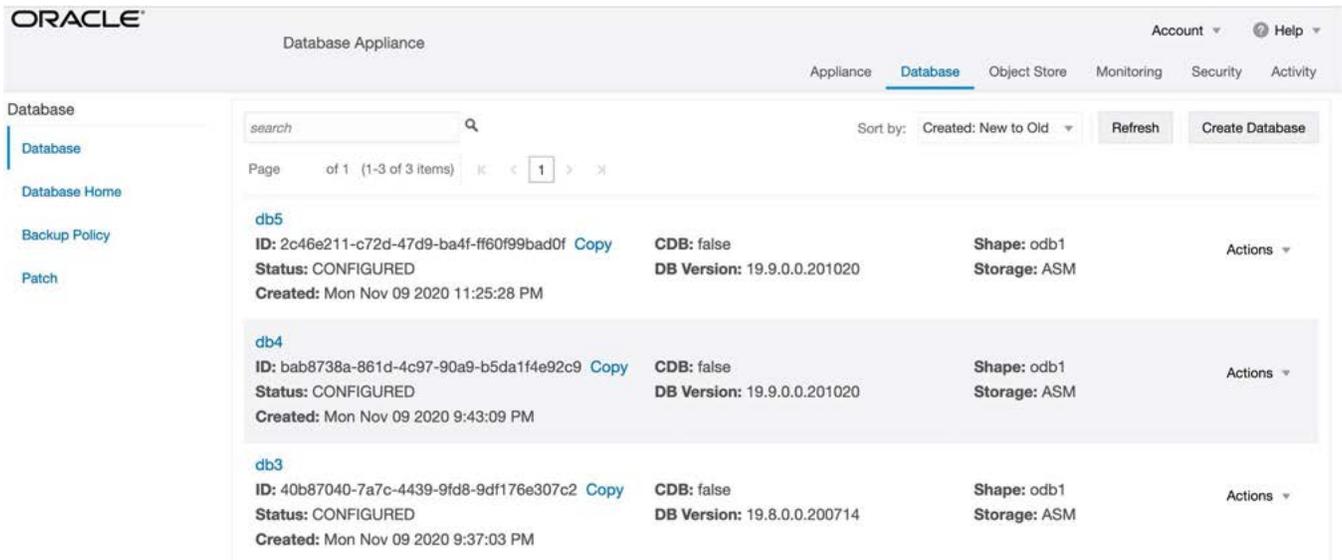
Page of 1 (1-3 of 3 items) 1

db5	ID: 319b259f-e104-4061-ad19-70dc57241ee7 Copy	CDB: false	Shape: odb1	Actions
	Status: CONFIGURED	DB Version: 18.12.0.0.201020	Storage: ASM	View
	Created: Mon Nov 09 2020 11:16:59 PM			Modify
db4	ID: bab8738a-861d-4c97-90a9-b5da1f4e92c9 Copy	CDB: false	Shape: odb1	Move
	Status: CONFIGURED	DB Version: 19.9.0.0.201020	Storage: ASM	Upgrade
	Created: Mon Nov 09 2020 9:43:09 PM			Delete
db3	ID: 40b87040-7a7c-4439-9fd8-9df176e307c2 Copy	CDB: false	Shape: odb1	Actions
	Status: CONFIGURED	DB Version: 19.8.0.0.200714	Storage: ASM	
	Created: Mon Nov 09 2020 9:37:03 PM			

Then select a new database home (i.e. OraDB19000_home3). Database upgrade is an out-of-place operation, which existing home is not touched.



You can see db5 has been upgraded from 18.12 to 19.9



This concludes Lab 3.

Lab 4: Monitoring and Administration

Step 1: BUI Hardware Monitoring and Feature Tracking

The BUI shows ODA hardware status and tracks feature usage including High Water Marks.

ORACLE Database Appliance

Account Help

Appliance Database Object Store **Monitoring** Security Activity

Monitoring

Summary Refresh

Last Collection time: Mon Nov 09 2020 11:28:05 PM

Status
Login to the ILOM console of **oda-1-node1, oda-1-node0** for more details.

Subsystem	Status
Storage	ONLINE
Enclosures	OK
Memory	OK
Power	OK
Cooling	OK
Networking	OK

System Components

- Hardware View
- Storage
- Enclosures

Node Components

- Hardware View
- Memory
- Power
- Cooling
- Networking
- Feature Tracking
- ORAchk Report

Hardware Status

Monitoring

Summary

System Components

Hardware View

Storage

Enclosures

Node Components

Hardware View

Memory

Power

Cooling

Networking

Feature Tracking

ORAchk Report

System Hardware Components

Click the hardware image to view the state and details.

Front View

Service Required LED Top Fan Module
Service Required LED Rear Power Supply
Service Required Led Over Temp
SP OK LED
Don Not Service LED

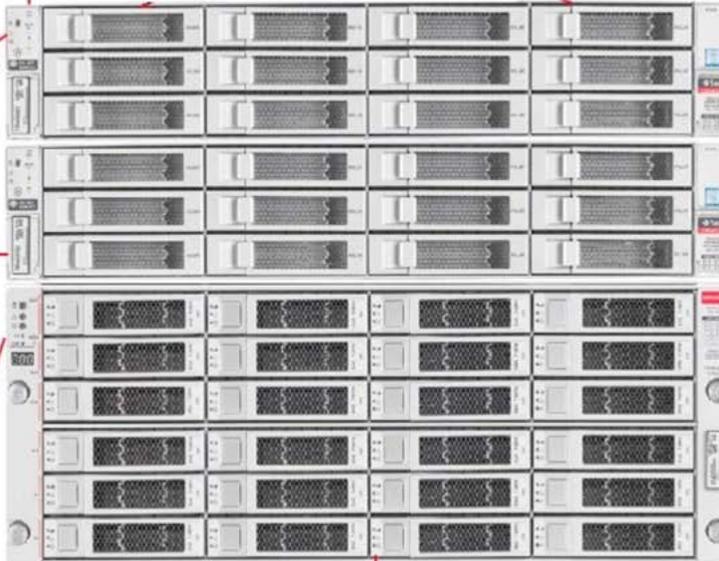
Locate button/LED
Service Required LED
System OK
On/Standby button
(See Service Manual
For LED
descriptions)

Serial #
RFID Tag

Locate Button/LED
Service Action Required
OK (Operational)
PSU Service Required
IOM Service Required

Drive OK/Activity
Service Action Required
Service Action Allowed

RFID Tag &
Serial Number



Storage

Feature Tracking

ORACLE Database Appliance About ▾

Appliance Database Object Store Monitoring Activity

Monitoring

Monitoring

Feature Tracking

Feature Usage High Water Marks

search Help

Last Collection time: Fri Jul 19 2019 3:20:17 PM

Feature Name	Category	Currently Used	Detected Usage	Total Samples	Last Detected Usage Time
Object Store	Object Store	false	0	6	Fri Jul 19 2019 3:20:17 PM
Automatic Service Request (ASR)	Server	false	0	6	Fri Jul 19 2019 3:20:17 PM
Storage Expansion Shelf	Storage	false	0	6	Fri Jul 19 2019 3:20:17 PM

High Water Marks

ORACLE Database Appliance About ▾

Appliance Database Object Store Monitoring Activity

Monitoring

Monitoring

Feature Tracking

Feature Usage High Water Marks

search Help Download

Last Collection time: Fri Jul 19 2019 3:20:17 PM

Measured Feature Name	High Water Mark	Last Changed Time	Category
Maximum usage of CPU	0.01 %	Fri Jul 19 2019 3:20:17 PM	DCS Agent
Maximum usage of Memory	579.14 MB,	Fri Jul 19 2019 3:20:17 PM	DCS Agent
Maximum number of threads	161	Fri Jul 19 2019 3:20:17 PM	DCS Agent
Maximum number of open file descriptors	252	Fri Jul 19 2019 3:20:17 PM	DCS Agent
Maximum number of Databases	6	Fri Jul 19 2019 3:20:17 PM	Database
Maximum number of EE Databases	1	Fri Jul 19 2019 3:20:17 PM	Database
Maximum number of SE Databases,	5	Fri Jul 19 2019 3:20:17 PM	Database
Maximum number of CDBs	1	Fri Jul 19 2019 3:20:17 PM	Database
Maximum number of non-CDBs	5	Fri Jul 19 2019 3:20:17 PM	Database
Maximum number of RAC Databases	5	Fri Jul 19 2019 3:20:17 PM	Database
Maximum number of RAC One Databases	1	Fri Jul 19 2019 3:20:17 PM	Database
Maximum number of Single Instance Databases	0	Fri Jul 19 2019 3:20:17 PM	Database

The Oracle Appliance Manager command line interfaces (odacli, odaadmcli) are tools that can also be used to install, configure, and interrogate the status of ODA. They are free with the Oracle Database Appliance to assist in the fast deployment and easy management of the Oracle Database Appliance, and the fast deployment, patching and maintenance of Oracle.

Some basic odaadmcli commands to explore the ODA configuration are outlined in the following sections.

Step 2: Review Appliance Configuration

Below are sample output. Please see ODA Documentation for details.

```
odaadmcli show server
```

Show the server/node status, including ILOM IP address, firmware version, power consumption, etc. This is helpful for an at-a-glance view of basic server/node information.

```
$ sudo odaadmcli show server
```

```
Power State           : On
Open Problems         : 0
Model                 : ODA X7-2-HA
Type                  : Rack Mount
Part Number           : ODA X7-2-HA
Serial Number         : 1750XD0003
Primary OS            : Not Available
ILOM Address          : 10.145.203.81
ILOM MAC Address      : 00:10:E0:DA:CD:66
Description           : Oracle Database Appliance X7-2 High Availability 1750XD0003
Locator Light         : Off
Actual Power Consumption : 302 watts
Ambient Temperature   : 20.250 degree C
Open Problems Report  : System is healthy
```

```
$ sudo oadcli describe-system
```

Appliance Information

```
-----  
ID: oda  
Platform:  
Data Disk Count: 9  
CPU Core Count: 36  
Created: July 19, 2019 8:25:14 PM GMT
```

System Information

```
-----  
Name: oda  
Domain Name: example.com  
Time Zone: GMT  
DB Edition: EE  
DNS Servers: 1.1.1.1  
NTP Servers:
```

Disk Group Information

```
-----  
DG Name          Redundancy          Percentage  
-----  
Data              Flex                80  
Reco              Flex                20  
Redo              High                100  
Flash             Flex                100
```

odaadmcli show processor

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	P0 (CPU 0)	Intel(R) Xeon(R) Gold 6140 CP	2.300 GHz	18	NA
CPU_1	OK	-	SR3AX	P1 (CPU 1)	Intel(R) Xeon(R) Gold 6140 CP	2.300 GHz	18	NA

odaadmcli show memory

```
$ sudo odaadmcli show memory
```

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

odaadmcli show power

```
$ sudo odaadmcli show power
```

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

odaadmcli show cooling

```
$ sudo odaadmcli show cooling
```

NAME	HEALTH	HEALTH_DETAILS	LOCATION	FAN %	FAN SPEED
Fan_0	OK	-	FM0	35 %	6900 RPM
Fan_1	OK	-	FM0	34 %	5900 RPM
Fan_10	OK	-	FM2	32 %	6200 RPM
Fan_11	OK	-	FM2	31 %	5500 RPM
Fan_12	OK	-	FM3	32 %	6300 RPM
Fan_13	OK	-	FM3	31 %	5500 RPM
Fan_14	OK	-	FM3	32 %	6300 RPM
Fan_15	OK	-	FM3	31 %	5500 RPM
Fan_2	OK	-	FM0	36 %	6800 RPM
Fan_3	OK	-	FM0	34 %	5900 RPM
Fan_4	OK	-	FM1	35 %	6800 RPM
Fan_5	OK	-	FM1	34 %	5900 RPM
Fan_6	OK	-	FM1	32 %	6300 RPM
Fan_7	OK	-	FM1	29 %	5100 RPM
Fan_8	OK	-	FM2	32 %	6300 RPM
Fan_9	OK	-	FM2	31 %	5500 RPM

Step 3: Review the Storage Configuration

odaadmcli show disk

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

```
$ sudo odaadmcli show disk
```

NAME	PATH	TYPE	STATE	STATE_DETAILS
e0_pd_00	/dev/sdbv	HDD	ONLINE	Good
e0_pd_01	/dev/sdbw	HDD	ONLINE	Good
e0_pd_02	/dev/sdbx	HDD	ONLINE	Good
e0_pd_03	/dev/sdbz	HDD	ONLINE	Good
e0_pd_04	/dev/sdbz	HDD	ONLINE	Good
e0_pd_05	/dev/sdca	HDD	ONLINE	Good
e0_pd_06	/dev/sdcb	HDD	ONLINE	Good
e0_pd_07	/dev/sdcc	HDD	ONLINE	Good
e0_pd_08	/dev/sdcd	HDD	ONLINE	Good
e0_pd_09	/dev/sdce	HDD	ONLINE	Good
e0_pd_10	/dev/sdcf	HDD	ONLINE	Good
e0_pd_11	/dev/sdcg	HDD	ONLINE	Good
e0_pd_12	/dev/sdch	HDD	ONLINE	Good
e0_pd_13	/dev/sdci	HDD	ONLINE	Good
e0_pd_14	/dev/sdcj	HDD	ONLINE	Good
e0_pd_15	/dev/sdck	SSD	ONLINE	Good
e0_pd_16	/dev/sdcl	SSD	ONLINE	Good
e0_pd_17	/dev/sdcm	SSD	ONLINE	Good
e0_pd_18	/dev/sdcn	SSD	ONLINE	Good
e0_pd_19	/dev/sdco	SSD	ONLINE	Good
e0_pd_20	/dev/sdcq	SSD	ONLINE	Good
e0_pd_21	/dev/sdcq	SSD	ONLINE	Good
e0_pd_22	/dev/sdcr	SSD	ONLINE	Good
e0_pd_23	/dev/sdcs	SSD	ONLINE	Good

```
odaadmcli show diskgroup
```

List ASM diskgroups that have been configured by Appliance Manager on the ODA's storage.

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 database's backups, archive logs, and redo logs are stored.

REDO is where the database's redo logs are stored.

```
$ sudo odaadmcli show diskgroup
```

```
DiskGroups
```

```
-----
```

```
DATA
```

```
FLASH
```

```
RECO
```

```
REDO
```

```
odaadmcli show fs
```

```
$ sudo odaadmcli show fs
```

Type	Total Space	Free Space	Total DG Space	Free DG Space	Diskgroup	Mount Point
ext3	30109M	25254M	-	-	-	/
ext3	476M	405M	-	-	-	/boot
ext3	60347M	22117M	-	-	-	/opt
ext3	100665M	72839M	-	-	-	/u01
acfs	5120M	4625M	112116480M	111977204M	DATA	/opt/oracle/dcs/commonstore

List the details on the ODA X7-2-HA file systems, including total Space, Free Space, Disk Group, etc. **Note: Due to a simulator bug, your output will look slightly different. The output below is what you should really see.**

```
odaadmcli show raidsyncstatus
```

List the status of the boot disk HW RAID.

```
$ sudo odaadmcli show raidsyncstatus
```

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

odaadmcli show storage

The following command shows the storage controllers and drives.

```
$ sudo odaadmcli show storage

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

  Id = 1
  Serial Num = 500605b00d3e8450
  Vendor = LSI Logic
  Model = ORCL-EXT-SAS3
  FwVers = 13.00.00.00
  strId = mpt3sas:5e:00.0

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

  Id = 1
  Serial Num = 50800200022f163f
  Vendor = ORACLE
  Model = DE3-24C
  FwVers = 0306
  strId = Primary
  WWN = 50800200022e447e

Total number of PDs: 24
/dev/sdaa HGST HDD 9796gb slot: 0 exp: 0 H7210A520SUN010T
/dev/sdab HGST HDD 9796gb slot: 1 exp: 0 H7210A520SUN010T
/dev/sdac HGST HDD 9796gb slot: 2 exp: 0 H7210A520SUN010T
/dev/sdad HGST HDD 9796gb slot: 3 exp: 0 H7210A520SUN010T
/dev/sdae HGST HDD 9796gb slot: 4 exp: 0 H7210A520SUN010T
/dev/sdaf HGST HDD 9796gb slot: 5 exp: 0 H7210A520SUN010T
/dev/sdag HGST HDD 9796gb slot: 6 exp: 0 H7210A520SUN010T
/dev/sdah HGST HDD 9796gb slot: 7 exp: 0 H7210A520SUN010T
/dev/sdai HGST HDD 9796gb slot: 8 exp: 0 H7210A520SUN010T
/dev/sdaj HGST HDD 9796gb slot: 9 exp: 0 H7210A520SUN010T
/dev/sdak HGST HDD 9796gb slot: 10 exp: 0 H7210A520SUN010T
/dev/sdal HGST HDD 9796gb slot: 11 exp: 0 H7210A520SUN010T
/dev/sdam HGST HDD 9796gb slot: 12 exp: 0 H7210A520SUN010T
/dev/sdan HGST HDD 9796gb slot: 13 exp: 0 H7210A520SUN010T
/dev/sdao HGST HDD 9796gb slot: 14 exp: 0 H7210A520SUN010T
/dev/sdap HGST SSD 3200gb slot: 15 exp: 0 HBCAC2DH2SUN3.2T
/dev/sdaq HGST SSD 3200gb slot: 16 exp: 0 HBCAC2DH2SUN3.2T
/dev/sdar HGST SSD 3200gb slot: 17 exp: 0 HBCAC2DH2SUN3.2T
/dev/sdas HGST SSD 3200gb slot: 18 exp: 0 HBCAC2DH2SUN3.2T
/dev/sdat HGST SSD 3200gb slot: 19 exp: 0 HBCAC2DH2SUN3.2T
/dev/sdau HGST SSD 800gb slot: 20 exp: 0 HBCAC2DH4SUN800G
/dev/sdav HGST SSD 800gb slot: 21 exp: 0 HBCAC2DH4SUN800G
/dev/sdaw HGST SSD 800gb slot: 22 exp: 0 HBCAC2DH4SUN800G
/dev/sdax HGST SSD 800gb slot: 23 exp: 0 HBCAC2DH4SUN800G

==== END STORAGE DUMP =====
```

Step 4: Review Network Status

```
odaadmcli show network
```

Show the MAC address, health status and temp of the network ports.

```
$ sudo odaadmcli show network
```

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

This concludes Lab 4.

Troubleshooting

Restarting ODA Simulator in a Container

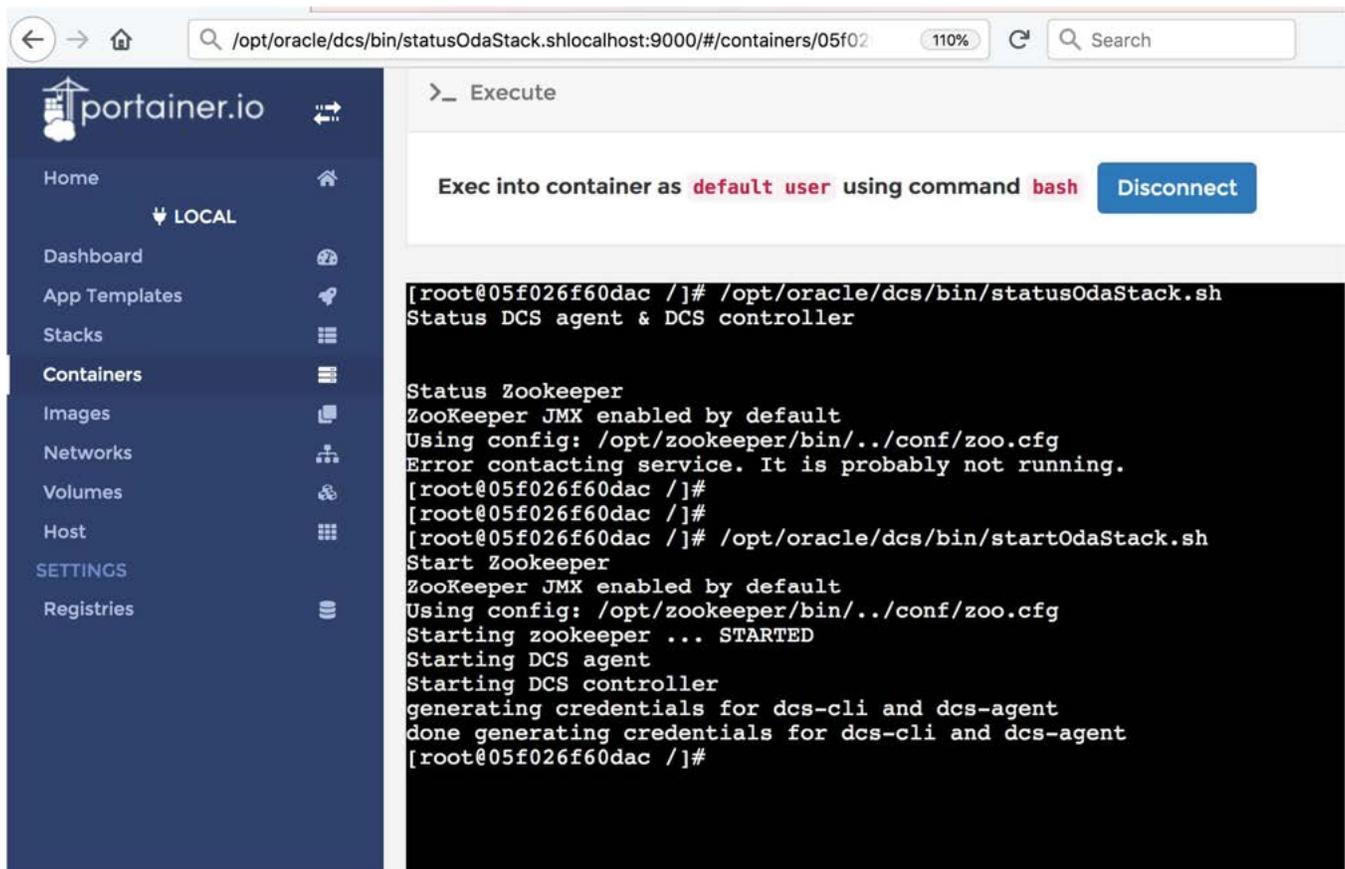
If the `odacli configure-firstnet` commands fails, you can check if the ODA Simulator is running in the container.

To ensure that the ODA Simulator is running in the container, you can run the following status command:

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

If it's not running, run the following start command:

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

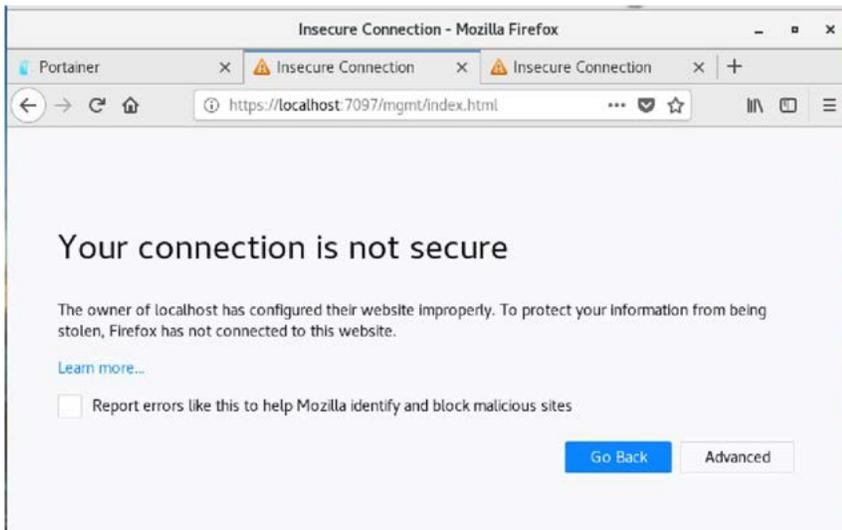


BUI Agent Certificate Issue

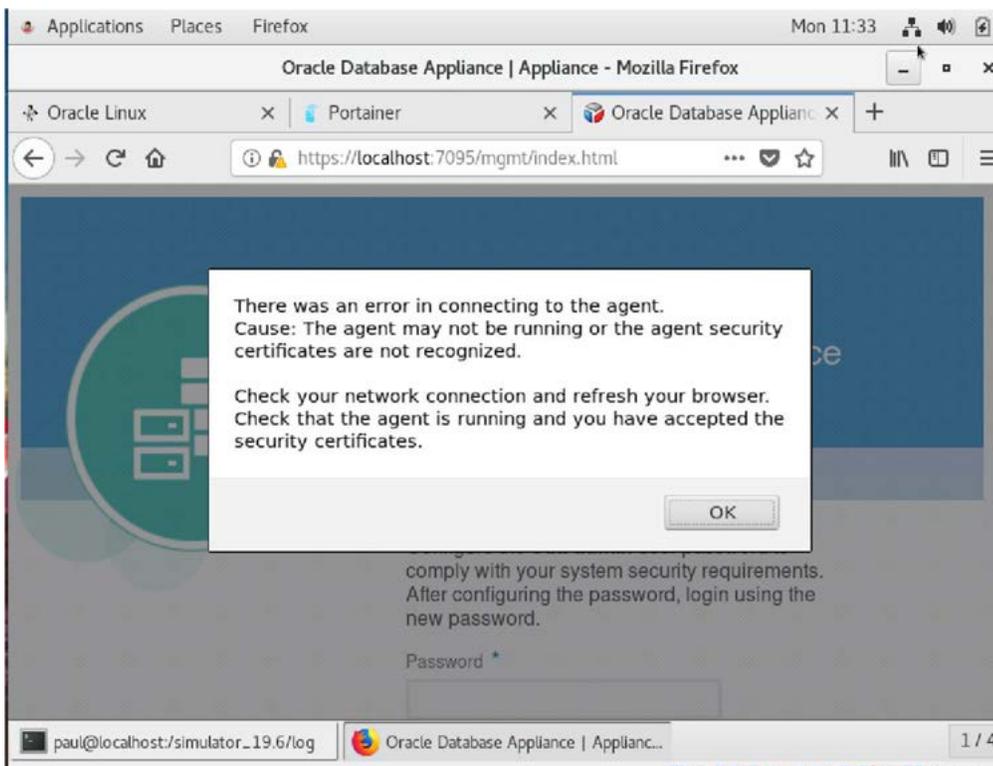
You may run into a BUI agent certificate issue. See the example below.

<https://<server IP>:7097/mgmt./index.html> (your assigned port number maybe different)

You'll see the "Your connection is not secure" message.

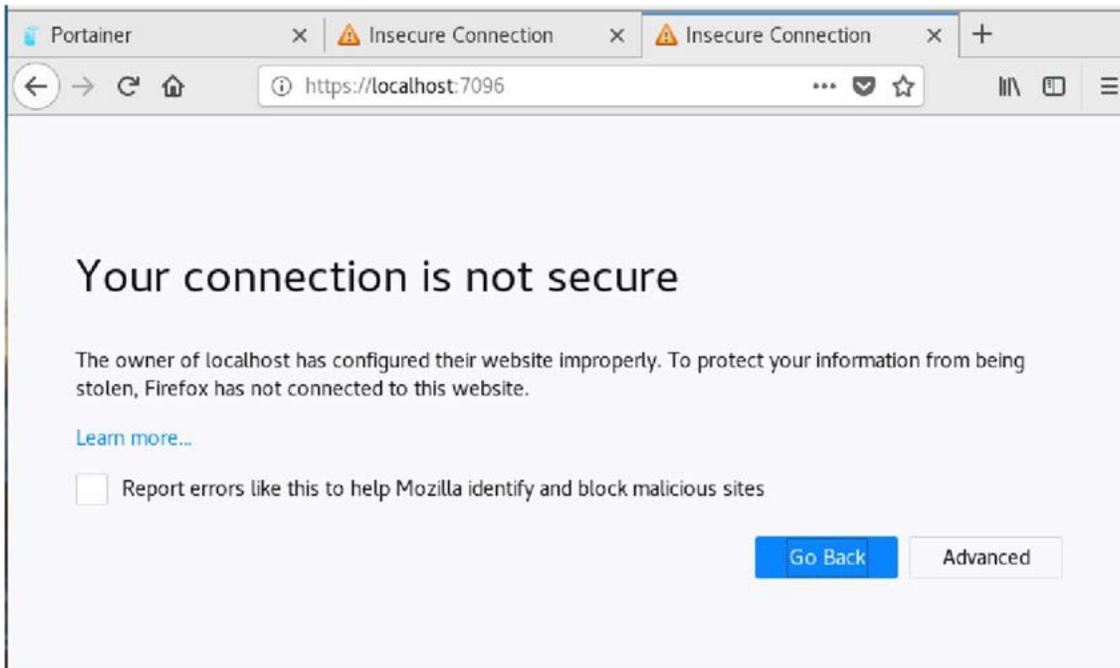


You go through the certificate exception process but still get the following error message.

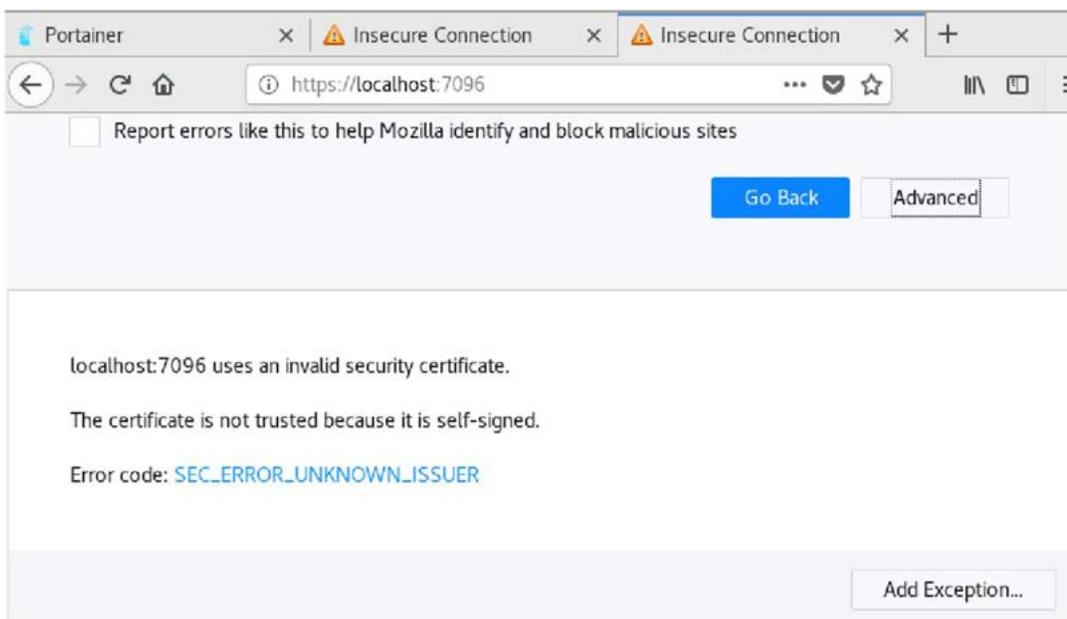


To fix it, you need to add a certificate exception to the BUI agent port, with is your assigned port number -1. In this case, it's 7097-1 or 7096.

`https://<server IP>:7096/mgmt./index.html` (you port number maybe different)

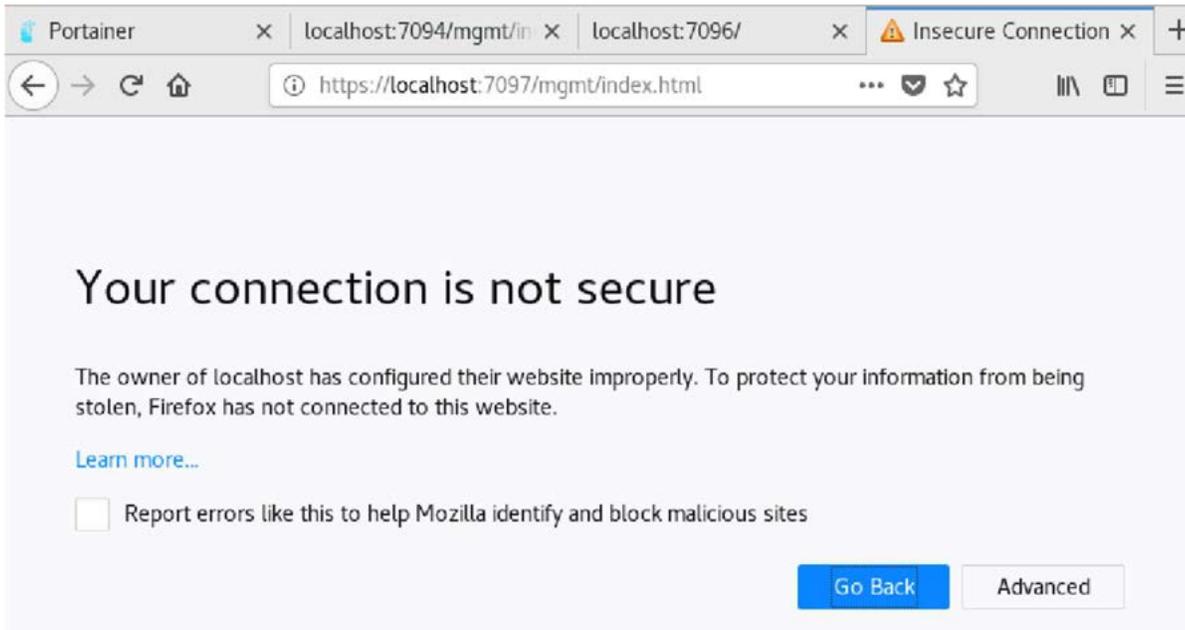


Go through the certificate exception process and add the exception.

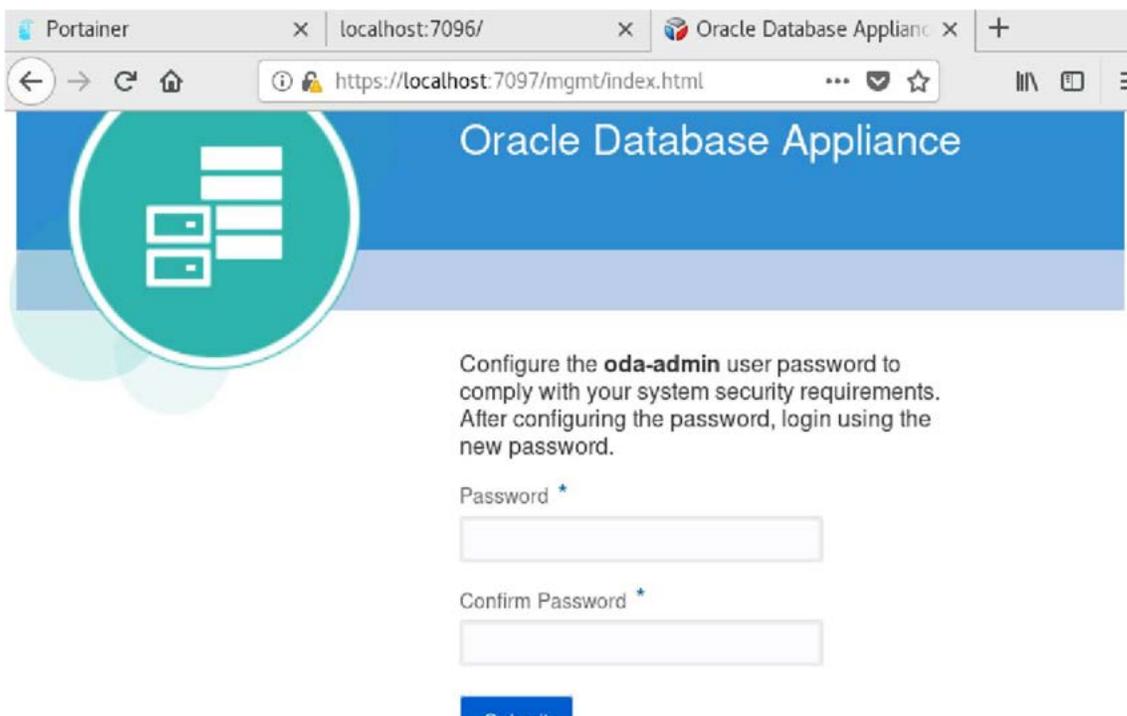


Then go back to your assigned port number.

https://<server IP>:7097/mgmt./index.html



Go through the certificate exception process again and add the exception. Then you'll be able to access the BUI to create the Appliance.



Title and Copyright Information

Oracle Database Appliance Licensing Information User Manual, Release 19.8

F32288-01

Copyright © 2000, 2020, Oracle and/or its affiliates.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs (including any operating system, integrated software, any programs embedded, installed or activated on delivered hardware, and modifications of such programs) and Oracle computer documentation or other Oracle data delivered to or accessed by U.S. Government end users are "commercial computer software" or "commercial computer software documentation" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, reproduction, duplication, release, display, disclosure, modification, preparation of derivative works, and/or adaptation of i) Oracle programs (including any operating system, integrated software, any programs embedded, installed or activated on delivered hardware, and modifications of such programs), ii) Oracle computer documentation and/or iii) other Oracle data, is subject to the rights and limitations specified in the license contained in the applicable contract. The terms governing the U.S. Government's use of Oracle cloud services are defined by the applicable contract for such services. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Inside are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Epyc, and the AMD logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.