



200

Oracle Public Cloud Workshop

Fusion Middleware Cloud Services

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Introduction

In this lab, you will learn how to connect to the Database Cloud Service using SQL Developer and connect an IDE (JDeveloper) to your Java Cloud Service

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Objectives

- ☐ Connect SQL Developer to the Database Service
- ☐ Connect JDeveloper to the Java Service
- ☐ Build and Deploy an Application to the Java Service
- ☐ Test the Deployed Java Application

Required Artifacts

- ☐ The following labs assume that the steps outlined in lab guide 100 have been completed.

Outline

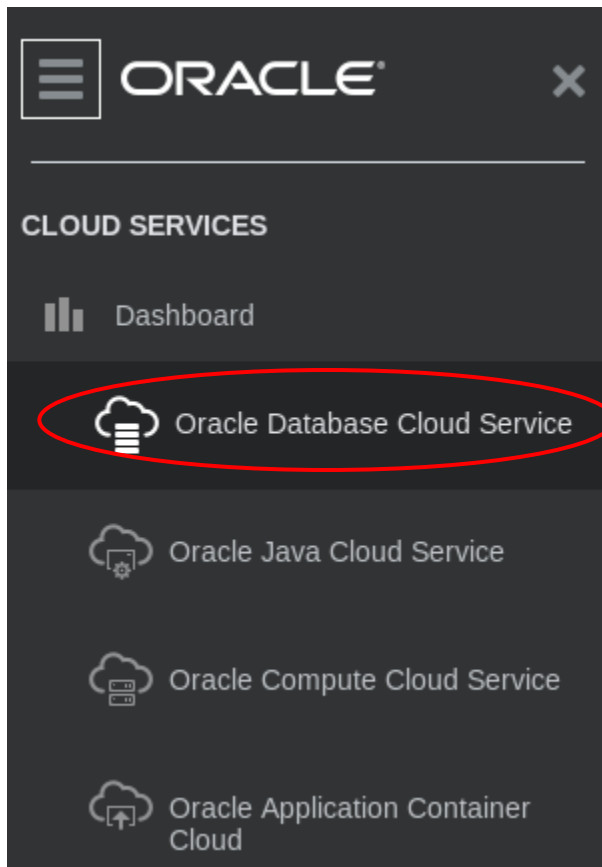
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Connecting to the Java and Database Services

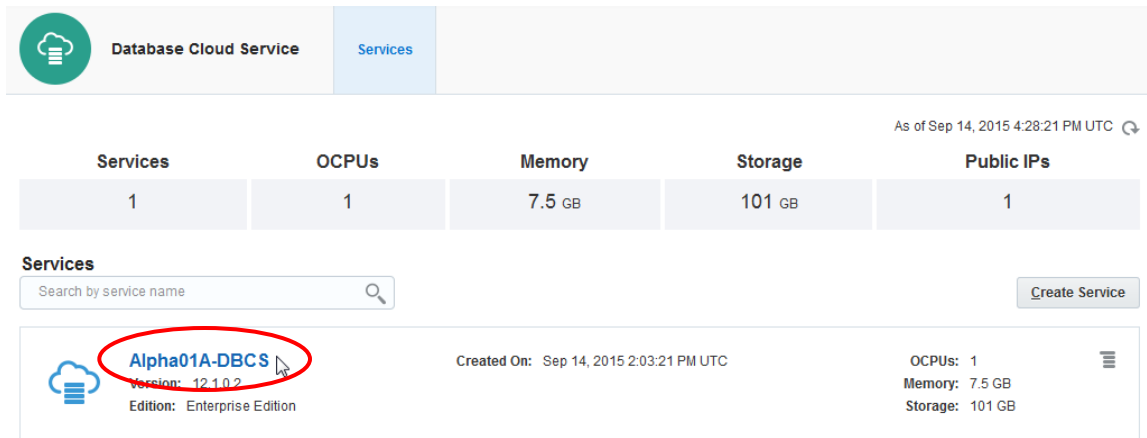
Connect to Database Cloud Service

STEP 1: Create SSH tunnel to Database Cloud Service

- ☐ Using the **Consoles** drop down, select to the **Database Service Cloud** console. From the console click on the **Alpha01A-DBCS** Instance.



- ☐ From the console click on the **Alpha01A-DBCS** instance.



Database Cloud Service Services

As of Sep 14, 2015 4:28:21 PM UTC

Services	OCPUs	Memory	Storage	Public IPs
1	1	7.5 GB	101 GB	1

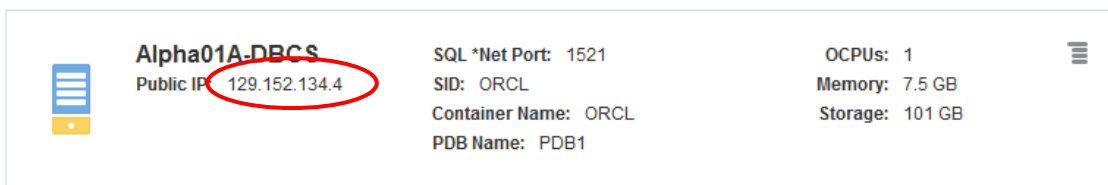
Services

Search by service name

Alpha01A-DBCS
Version: 12.1.0.2
Edition: Enterprise Edition
Created On: Sep 14, 2015 2:03:21 PM UTC
OCPUs: 1
Memory: 7.5 GB
Storage: 101 GB

- ☐ Write down the Public IP Address for the **Alpha01A-DBCS** Instance.

Nodes



Alpha01A-DBCS
Public IP: 129.152.134.4
SQL *Net Port: 1521
SID: ORCL
Container Name: ORCL
PDB Name: PDB1
OCPUs: 1
Memory: 7.5 GB
Storage: 101 GB

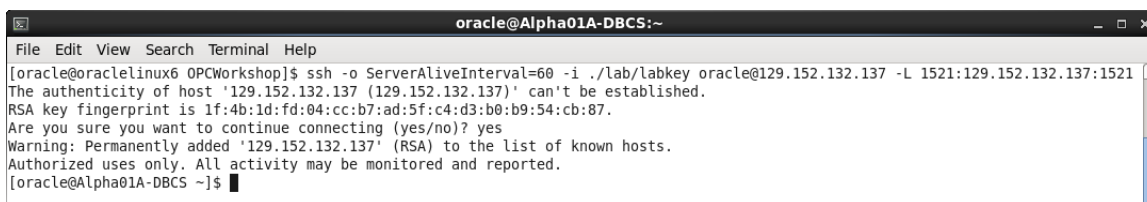
- ☐ Click on the Virtual Box Terminal Window icon to load a Terminal Window.



- ☐ Enter the following command in the terminal window to create an SSH Tunnel on Port **1521**. This will allow SQL Developer running on your Virtual Box image to connect into the Database Cloud Service Image.

```
ssh -o ServerAliveInterval=60 -i ./lab/labkey oracle@<DB ip> -L 1521:<DB IP>:1521
```

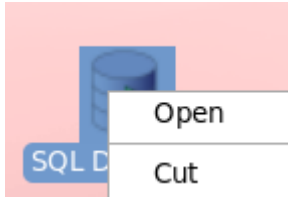
- ☐ If prompted to accept the RSA key, **enter yes** and hit return



```
oracle@Alpha01A-DBCS:~
File Edit View Search Terminal Help
[oracle@oraclelinux6 OPCWorkshop]$ ssh -o ServerAliveInterval=60 -i ./lab/labkey oracle@129.152.132.137 -L 1521:129.152.132.137:1521
The authenticity of host '129.152.132.137 (129.152.132.137)' can't be established.
RSA key fingerprint is 1f:4b:1d:fd:04:cc:b7:ad:5f:c4:d3:b0:b9:54:cb:87.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '129.152.132.137' (RSA) to the list of known hosts.
Authorized uses only. All activity may be monitored and reported.
[oracle@Alpha01A-DBCS ~]$
```

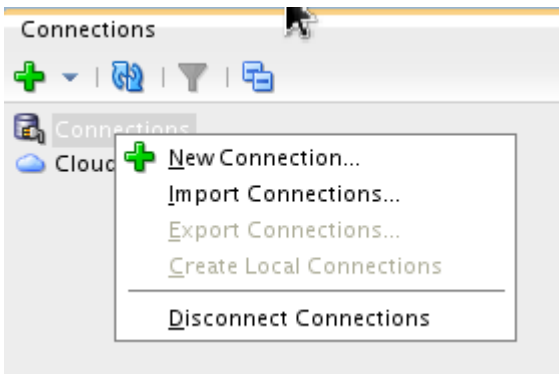
STEP 2: Explore Alpha Office Schema with SQL Developer

- ☐ From the Desktop, Right click on **SQL Developer** and select **Open**



- ☐ Right click on **Connections** and select **New Connection**

Note: Cloud Connections are only used for the Database Cloud Service - Schema.



- ☐ Enter the following Connection Details

```
Connection Name = AlphaDBConnection
Username = alpha
Password = oracle
Click on the check box to Save Password
Select the Service Name radio button
Service name = PDB1.<Your ID Domain>.oraclecloud.internal
```

Connection Name: AlphaDBConnection

Username: alpha

Password: •••••

☒ Save Password

Oracle

Connection Type: Basic Role: default

Hostname: localhost

Port: 1521

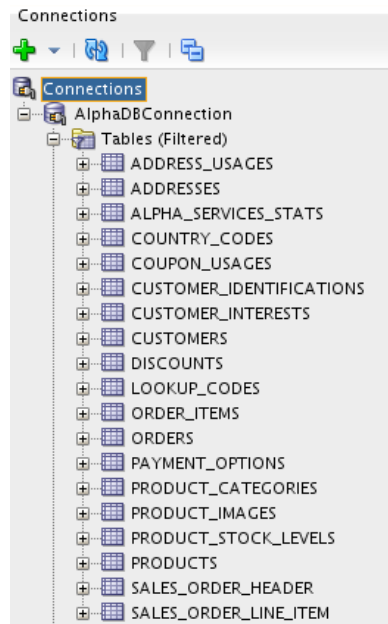
☐ SID: xe

☒ Service name: PDB1.usoracle16033.oraclecloud.internal

☐ OS Authentication ☐ Kerberos Authentication

- ☐ Click **Test** to confirm information is entered correctly. If you get a status of **Success** located in the bottom left corner of the dialog box, Click **Save** to store your connection information, and then Click **Connect** to exit the dialog

- ☐ Now from the Left hand Connections Panel expand the newly created **AlphaDBConnection** > **Tables** to view the tables that make up the Alpha Office schema.



- ☐ Select the **PRODUCTS** table to view column details.

AlphaDBConnection - PRODUCTS						
Columns Data Constraints Grants Statistics Triggers Flashback Dependencies Details Partitions Indexes SQL						
Actions...						
COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS	
1 PRODUCT_ID	NUMBER(15,0)	No	(null)	1	(null)	
2 PARENT_CATEGORY_ID	NUMBER(15,0)	Yes	(null)	2	(null)	
3 CATEGORY_ID	NUMBER(15,0)	Yes	(null)	3	(null)	
4 PRODUCT_NAME	VARCHAR2(150 BYTE)	No	(null)	4	(null)	
5 PRODUCT_STATUS	VARCHAR2(30 BYTE)	No	(null)	5	(null)	
6 COST_PRICE	NUMBER(8,2)	Yes	(null)	6	(null)	
7 LIST_PRICE	NUMBER(8,2)	No	(null)	7	(null)	
8 MIN_PRICE	NUMBER(8,2)	No	(null)	8	(null)	
9 WARRANTY_PERIOD_MONTHS	NUMBER(2,0)	Yes	(null)	9	(null)	
10 EXTERNAL_URL	VARCHAR2(200 BYTE)	Yes	(null)	10	(null)	
11 ATTRIBUTE_CATEGORY	VARCHAR2(30 BYTE)	Yes	(null)	11	(null)	
12 ATTRIBUTE1	VARCHAR2(150 BYTE)	Yes	(null)	12	(null)	
13 ATTRIBUTE2	VARCHAR2(150 BYTE)	Yes	(null)	13	(null)	
14 ATTRIBUTE3	VARCHAR2(150 BYTE)	Yes	(null)	14	(null)	
15 ATTRIBUTE4	VARCHAR2(150 BYTE)	Yes	(null)	15	(null)	
16 ATTRIBUTE5	VARCHAR2(150 BYTE)	Yes	(null)	16	(null)	
17 CREATED_BY	VARCHAR2(60 BYTE)	No	(null)	17	(null)	
18 CREATION_DATE	DATE	No	(null)	18	(null)	
19 LAST_UPDATED_BY	VARCHAR2(60 BYTE)	No	(null)	19	(null)	
20 LAST_UPDATE_DATE	DATE	No	(null)	20	(null)	
21 OBJECT_VERSION_ID	NUMBER(15,0)	No	(null)	21	(null)	

- ☐ Click on **Data** tab to view table data for all products.

PRODUCT_ID	PARENT_CATEGORY_ID	CATEGORY_ID	PRODUCT_NAME	PRODUCT_STATUS	COST_PRICE
1	1039	1002	1011 Crayola Original Markers - Broad Line, Classic Colors	AVAILABLE	3.19
2	1040	1002	1011 Expo Low Odor Chisel Tip Dry Erase Markers, 4 Colored Markers	AVAILABLE	4.99
3	1041	1003	1013 Scotch Magic Tape Deluxe Dispenser Value Pack	AVAILABLE	17.99
4	1042	1003	1013 Scotch Gift Wrap Tape in Handheld Dispenser 3/4" x 600" 2-pk.	AVAILABLE	6.29
5	1043	1003	1013 Scotch Chameleon Tape Dispenser with Scotch Magic Tape	AVAILABLE	9.25
6	1044	1004	1015 Bankers Box Stor/File Basic Strength Letter/Legal, 10-Pack	AVAILABLE	19.99
7	1045	1004	1015 Iris Open-Top Large File Bin	AVAILABLE	11.99
8	1046	1004	1015 Iris File-a-Stack Storage Box, Silver	AVAILABLE	14.79
9	1047	1004	1016 AT-A-GLANCE 2014 Recycled Monthly Academic Planner Black 6-7/8" X 8-3/4"	AVAILABLE	16.99

Connect to Java Cloud Service

STEP 3: Create an SSH tunnel to Java Cloud Service

- ☐ Go to **Java Cloud Service** instance page (you can get there from the Java Cloud Service Console and then selecting the **Alpha01A-JCS**). Make note of the IP for the Administration Server



Administration Server Domain: Alpha01A_domain

Managed Server: Alpha01A_server_1

Public IP: 129.152.134.239

OCPU's: 1

Memory: 7.5 GB

Storage: 52 GB

- ☐ Open a Terminal Window



- ☐ Create SSH Tunnel on Port 9001

Note: JCS by default creates a Channel configuration on 9001 for T3 traffic.

```
ssh -o ServerAliveInterval=60 -i ./lab/labkey opc@<Admin ip> -L
9001:<Admin ip>:9001
```

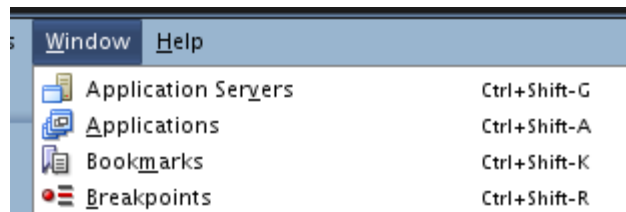


STEP 4: Create Connection to Weblogic Domain

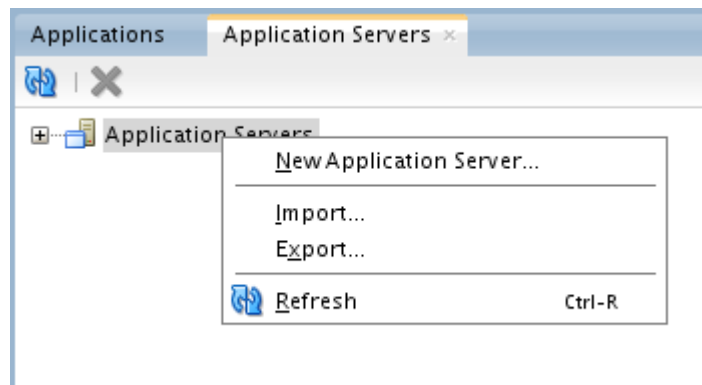
- ☐ From the Desktop, Right click on **JDeveloper 12c** and select **Open**



- ☐ Select **Window -> Application Servers** to open Application Server Pane.



- ☐ Right click on **Application Servers** and select **New Application Server**



- ☐ If you receive the following screen, leave the default of **Standalone Server** for Step 1 and click **Next**



- ☐ Enter Connection Name of **AlphaJCSConnection** and click **Next**



Create Application Server Connection - Step 1 of 5

Name and Type

Specify a unique name and type for the connection identifier.

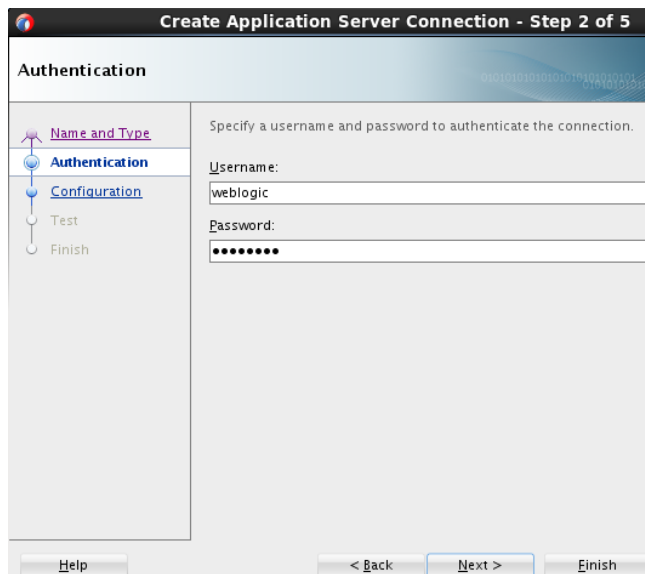
Create connection in: IDE Connections

Connection Name:
AlphaJCSConnection

Connection Type:
WebLogic 12.x

Help < Back Next >

- ☐ Enter Username = **weblogic** and Password = **Alpha2014_** and click **Next**



Create Application Server Connection - Step 2 of 5

Authentication

Specify a username and password to authenticate the connection.

Username:
weblogic

Password:
••••••••

Help < Back Next > Finish

- ☐ Enter Port = **9001**, leave the SSL Port blank, and WebLogic Domain = **Alpha01A_domain** and click **Next**.

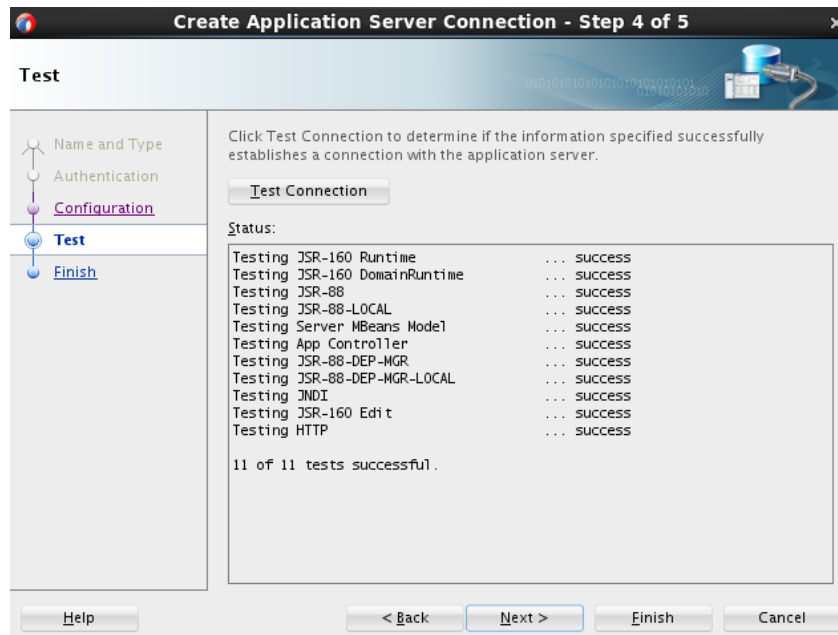
Note: localhost is used because the ssh tunnel will cause you to be connected to the WLS Admin server.

The screenshot shows a wizard window titled "Create Application Server Connection - S". The "Configuration" step is selected in the left-hand navigation pane, which also lists "Usage", "Name and Type", "Authentication", "Test", and "Finish". The main area contains the following configuration fields:

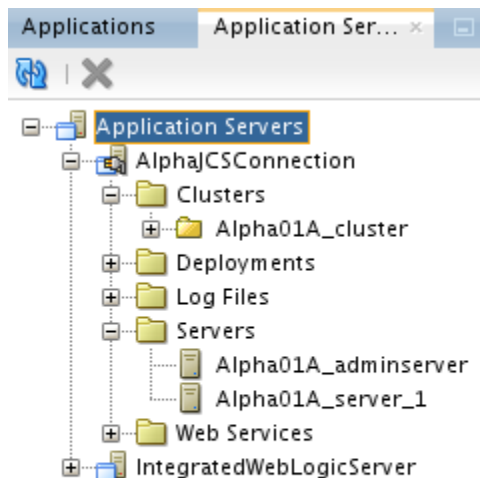
- WebLogic Server connections use a host name and The Domain of the target will be verified
- WebLogic Hostname (Administration Server): localhost
- Port: 9001
- SSL Port: (blank)
- ☐ Always use SSL
- WebLogic Domain: Alpha01A_domain

At the bottom of the window are three buttons: "Help", "< Back", and "Next >".

- ❑ Click **Test Connection** to verify configuration. Once you get success click **Finish**



- ❑ Now From the **Application Servers** pane expand the newly create **AlphaJCSConnection**, and view both **Servers** and **Clusters**. Using JDeveloper, you also have the ability to view Log Files and Deployments for Weblogic Server running on the JCS.

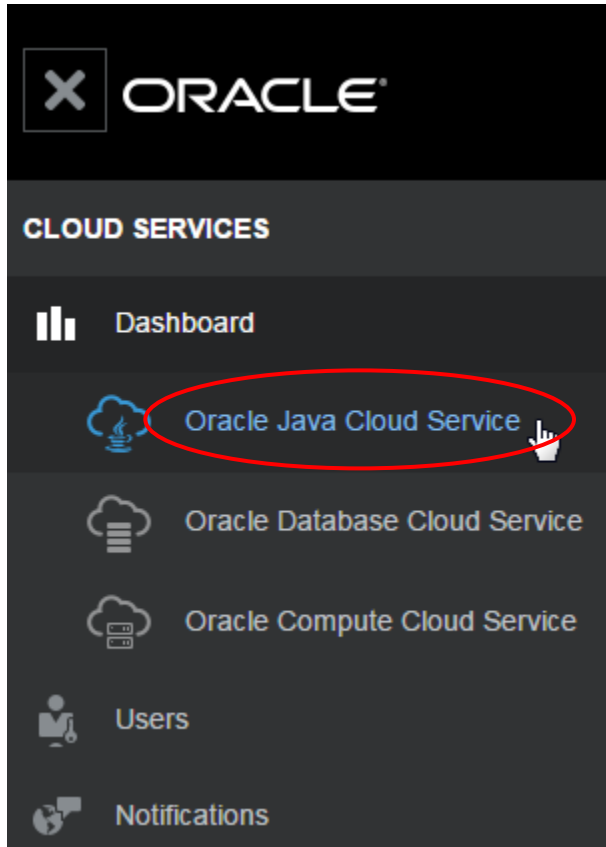


Deploying and Test the Java Application

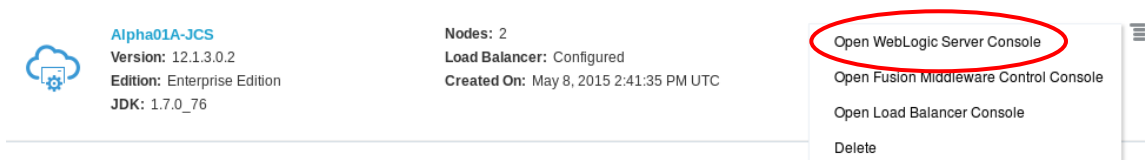
Configure Weblogic

STEP 5: Connect to the Weblogic Server Console

- ☐ Make sure you are logged in to cloud.oracle.com, using the **Consoles** drop down, select to the **Java Service Cloud** console.



- ☐ Click on the  icon found on the far right of the **Alpha01A-JCS** Service listing. Select **Open WebLogic Server Console**.



- ☐ Log into the WebLogic Console

Username = **weblogic**
Password = **Alpha2014_**



A screenshot of the WebLogic Welcome screen. It has a blue border and a light blue background. At the top, it says "Welcome". Below that, it says "Log in to work with the WebLogic Server domain". There are two input fields: "Username:" with the text "weblogic" and "Password:" with masked characters ".....". A "Login" button is located to the right of the password field.

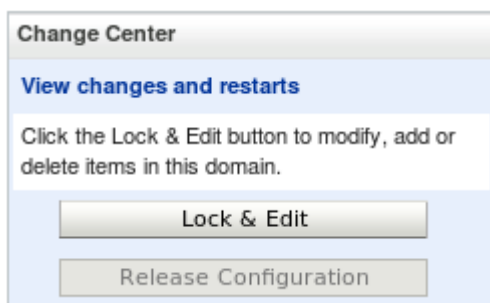
STEP 6: Load Required Libraries to WebLogic

Our test application uses the jersey libraries for the development of REST api's. We need to load the jersey library into WebLogic.

- ☐ Go to WebLogic Console and click on **Deployments**

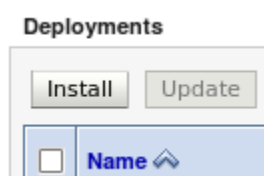


- ☐ Before we can make changes to the configuration we need to go into Edit Mode. Click **Lock & Edit**



A screenshot of the "Change Center" dialog box. It has a title bar "Change Center" and a subtitle "View changes and restarts". Below the subtitle, it says "Click the Lock & Edit button to modify, add or delete items in this domain." There are two buttons: "Lock & Edit" and "Release Configuration".

- ☐ On Deployment page click **Install**



A screenshot of the "Deployments" page in the WebLogic console. It has a title "Deployments" and two buttons: "Install" and "Update". Below the buttons, there is a table with a checkbox and a column header "Name" with a sort icon.

- ☐ Click on **u01** from the Current location navigate to the following location:

/u01/app/oracle/middleware/wlserver/common/deployable-libraries

- ☐ Select **jersey-bundle-1.9.war** and click **Next**

Install Application Assistant

Back Next Finish Cancel

Locate deployment to install and prepare for deployment

Select the file path that represents the application root directory, archive file, exploded archive directory, or application module descriptor that you want to install. You can a

Note: Only valid file paths are displayed below. If you cannot find your deployment files, [upload your file\(s\)](#) and/or confirm that your application contains the required deploy

Path: /u01/app/oracle/middleware/wlserver/common/deployable-libraries/jersey-bundle-1.9.war

Recently Used Paths: (none)

Current Location: 129.152.132.243 / u01 / app / oracle / middleware / wlserver / common / deployable-libraries

- ☐ active-cache-1.0.jar
- ☐ jax-rs-2.0.war
- ☒ jersey-bundle-1.9.war
- ☐ jst-1.2.war
- ☐ jst-2.0.war
- ☐ jsr311-api-1.1.1.war
- ☐ jstl-1.1.2.war
- ☐ jstl-1.2.war
- ☐ pubsub-1.0.war
- ☐ weblogic-sca-1.2.war

Back Next Finish Cancel

- ☐ Click **Next** again to **Install the deployment as a library**

Install Application Assistant

Back Next Finish Cancel

Install Application Assistant

Back Next Finish Cancel

Choose targeting style

Targets are the servers, clusters, and virtual hosts on which this deployment will run. There are several ways you can target an application.

☐ Install this deployment as an application

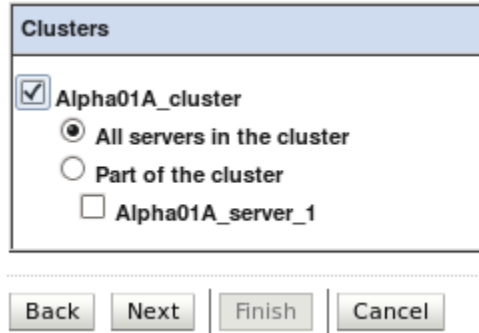
The application and its components will be targeted to the same locations. This is the most common usage.

☒ Install this deployment as a library

Application libraries are deployments that are available for other deployments to share. Libraries should be available on all of the targets running their referencing applications.

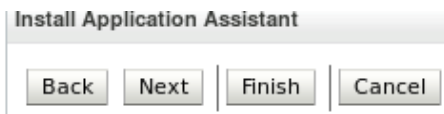
Back Next Finish Cancel

- ☐ Select **Alpha01A_cluster > All servers in the cluster**, then click **Next**

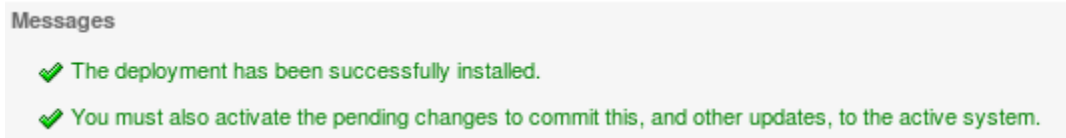


The screenshot shows a dialog box titled "Clusters". It contains a list of clusters with checkboxes. The first cluster, "Alpha01A_cluster", is selected with a checked checkbox. Below it, there are two radio buttons: "All servers in the cluster" (which is selected) and "Part of the cluster". Under "Part of the cluster", there is a checkbox for "Alpha01A_server_1" which is unchecked. At the bottom of the dialog, there are four buttons: "Back", "Next", "Finish", and "Cancel".

- ☐ Click **Finish**.



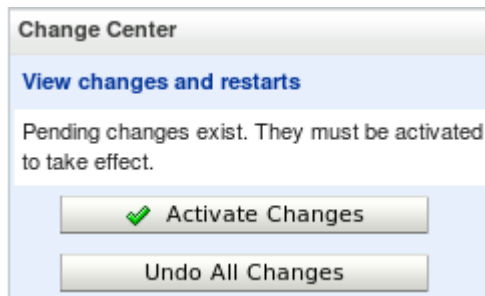
The screenshot shows a dialog box titled "Install Application Assistant". It contains four buttons: "Back", "Next", "Finish", and "Cancel".



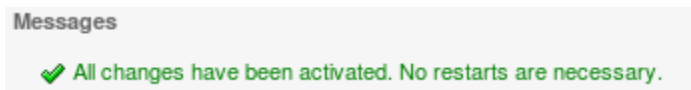
The screenshot shows a "Messages" panel with two green checkmark messages:

- ✓ The deployment has been successfully installed.
- ✓ You must also activate the pending changes to commit this, and other updates, to the active system.

- ☐ In the **Change Center** click **Activate Changes**.



The screenshot shows a "Change Center" dialog box. It has a title bar "Change Center" and a section "View changes and restarts". Below this, it says "Pending changes exist. They must be activated to take effect." There are two buttons: "Activate Changes" (with a green checkmark icon) and "Undo All Changes".



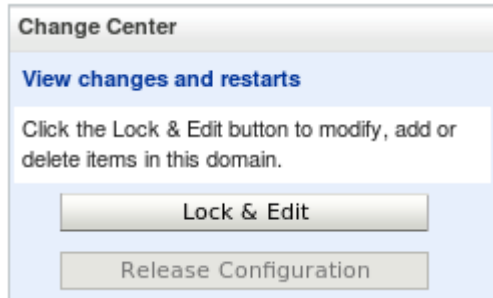
The screenshot shows a "Messages" panel with one green checkmark message:

- ✓ All changes have been activated. No restarts are necessary.

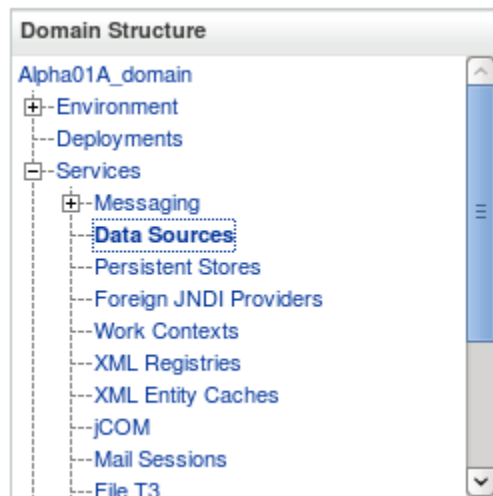
STEP 7: Create required Data Source

In this step we will create a Data Source that will allow our application connectivity to the Database Cloud Service containing our demo data.

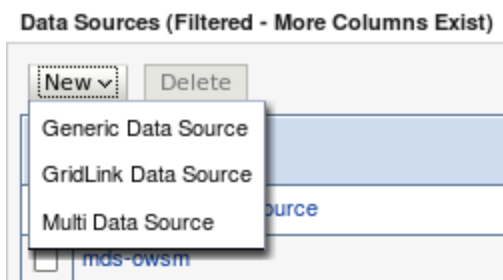
- ☐ In the WebLogic Console click **Lock & Edit** in Change Center



- ☐ In Domain Structure Expand **Services** and select **Data Sources**



- ☐ On the Data Sources screen, click **New -> Generic Data Source**



- ☐ Enter the following JDBC Details and click **Next**

```
Name = AlphaOfficeAccessDS
JNDI Name = jdbc/AlphaOfficeAccessDS
```


Back Next Finish Cancel

JDBC Data Source Properties


The following properties will be used to identify your new JDBC data source.

* Indicates required fields

What would you like to name your new JDBC data source?

 * Name: AlphaOfficeAccessDS

What JNDI name would you like to assign to your new JDBC Data Source?

 JNDI Name: jdbc/AlphaOfficeAccessDS

- ☐ Click **Next** until prompted for Database Name, Host Name, Port, etc.
- ☐ Enter Data Source Details and click **Next**

```
Database Name = PDB1.<Domain ID>.oraclecloud.internal
Host Name = Alpha01A-DBCS
Port = 1521
Database User Name = alpha
Password = oracle
```

Create a New JDBC Data Source

Back Next Finish Cancel

Connection Properties

Define Connection Properties.

What is the name of the database you would like to connect to?

Database Name: PDB1.usoracle16033.oraclecl

What is the name or IP address of the database server?

Host Name: Alpha01A-DBCS

What is the port on the database server used to connect to the database?

Port: 1521

What database account user name do you want to use to create database connections?

Database User Name: alpha

What is the database account password to use to create database connections?


Password:

Confirm Password:

- ☐ Make the following correction to the URL Field. Change the ":" following the 1521 to a "/". It should read ":1521/". See the example below

```
URL = jdbc:oracle:thin:@Alpha01A-DBCS:1521/PDB1.<Your Domain Id>.oraclecloud.internal
```

- ☐ Click **Test.Configuration**. If the connection test succeeded, click **Next**.
- ☐ Select **Alpha01A_cluster** and click **Finish**



Clusters

☒ Alpha01A_cluster

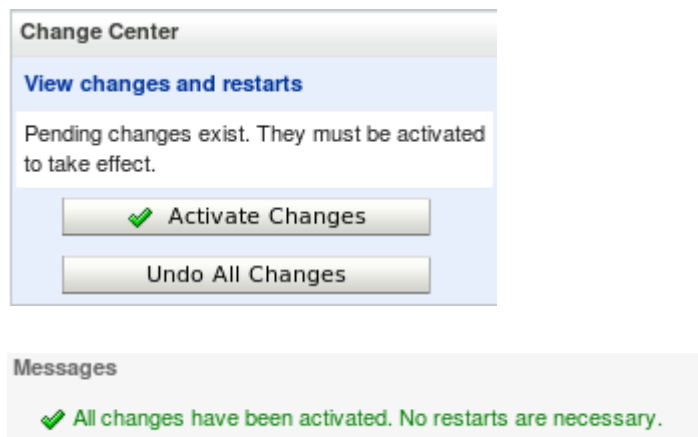
☒ All servers in the cluster

☐ Part of the cluster

☐ Alpha01A_server_1

Back Next Finish Cancel

- ☐ In Change Center click **Activate Changes**.



Change Center

View changes and restarts

Pending changes exist. They must be activated to take effect.

☒ Activate Changes

Undo All Changes

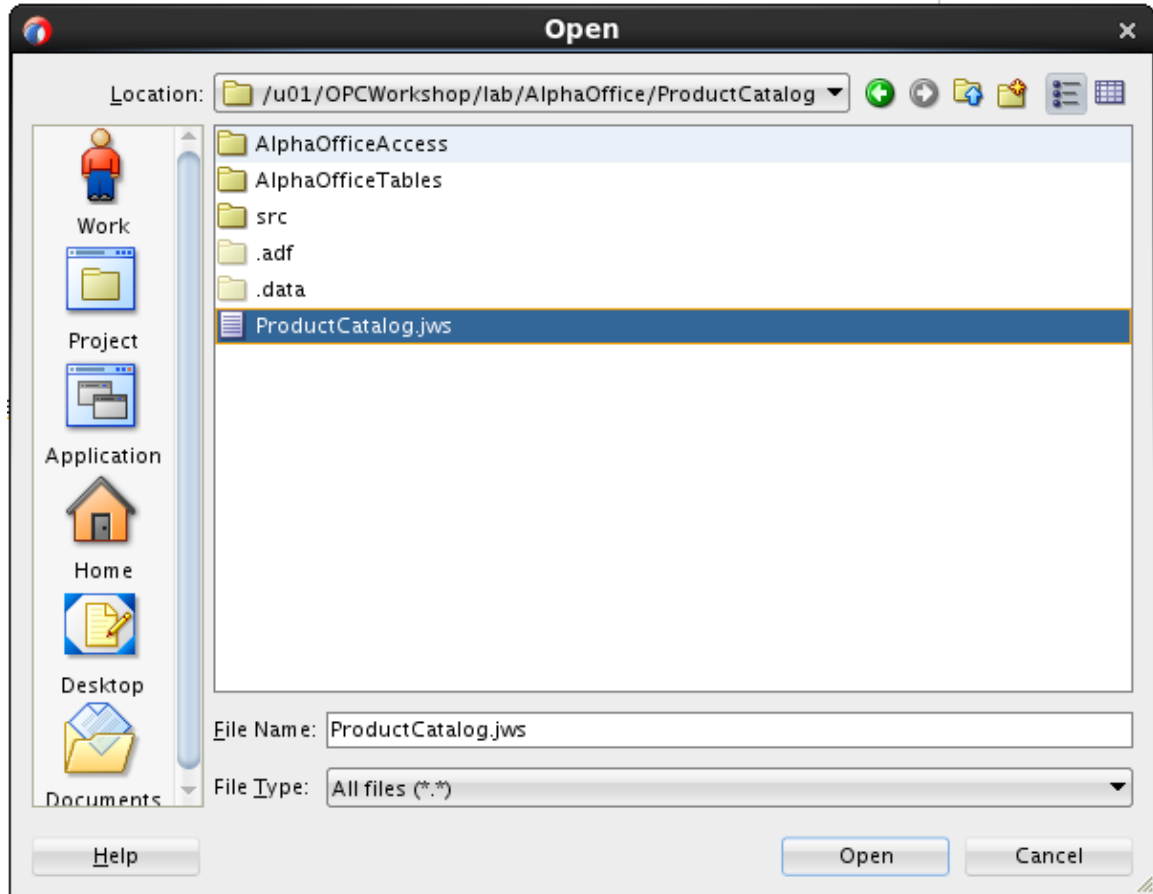
Messages

☒ All changes have been activated. No restarts are necessary.

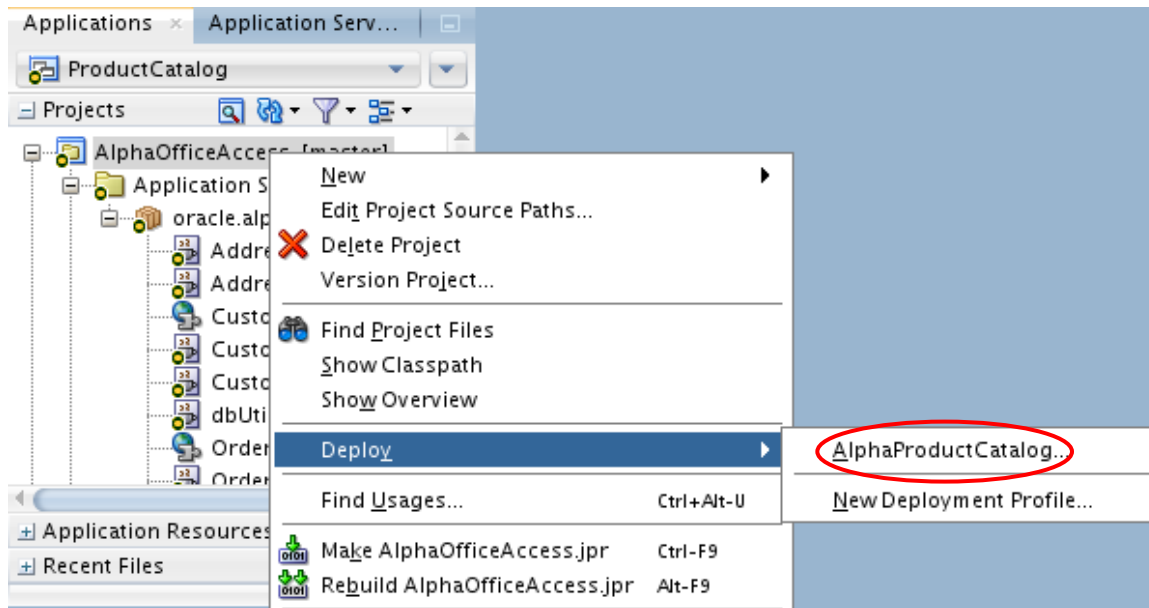
Deploy Application

STEP 8: Deploy Application

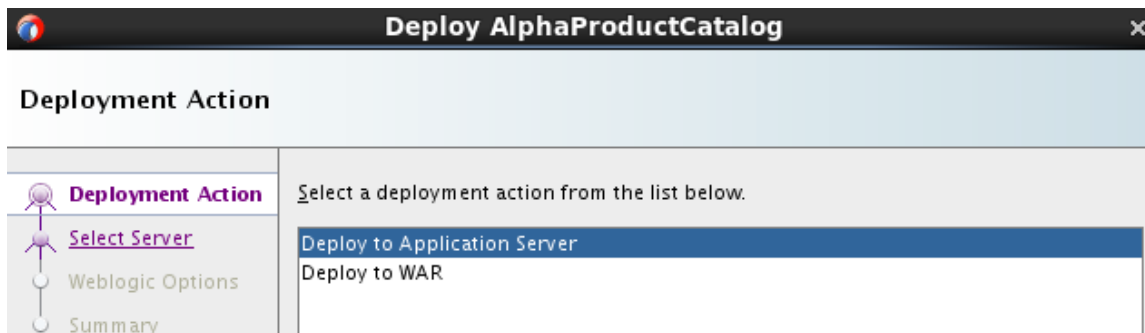
- ☐ In JDeveloper 12c, if the ProductCatalog Application is not already in the Applications tab, select **File -> Open** and navigate to /u01/OPCWorkshop/lab/AlphaOffice/ProductCatalog and open **ProductCatalog.jws**



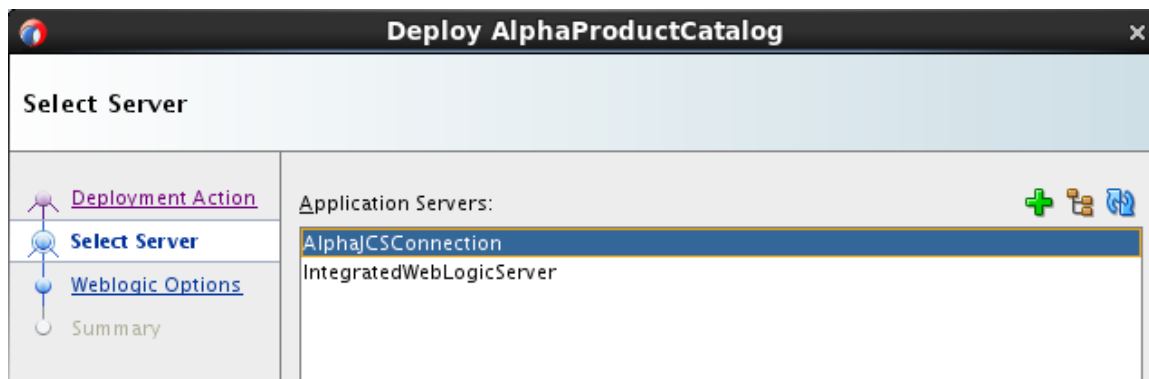
- ❑ From JDeveloper 12c, right click on **AlphaOfficeAccess** project. Select **Deploy -> AlphaProductCatalog**



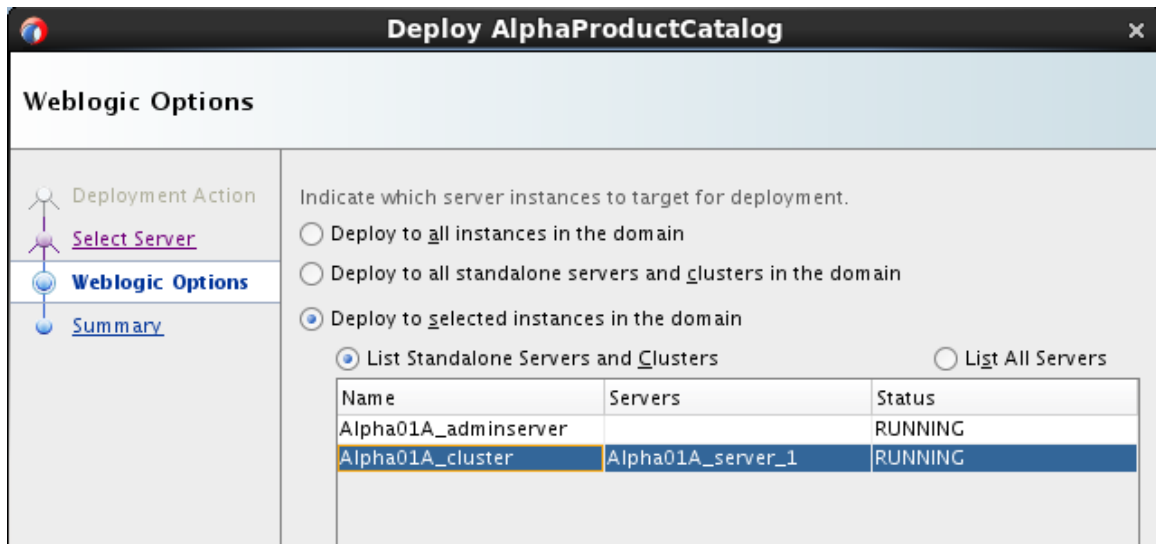
- ❑ Select **Deploy to Application Server** and click on **Next**



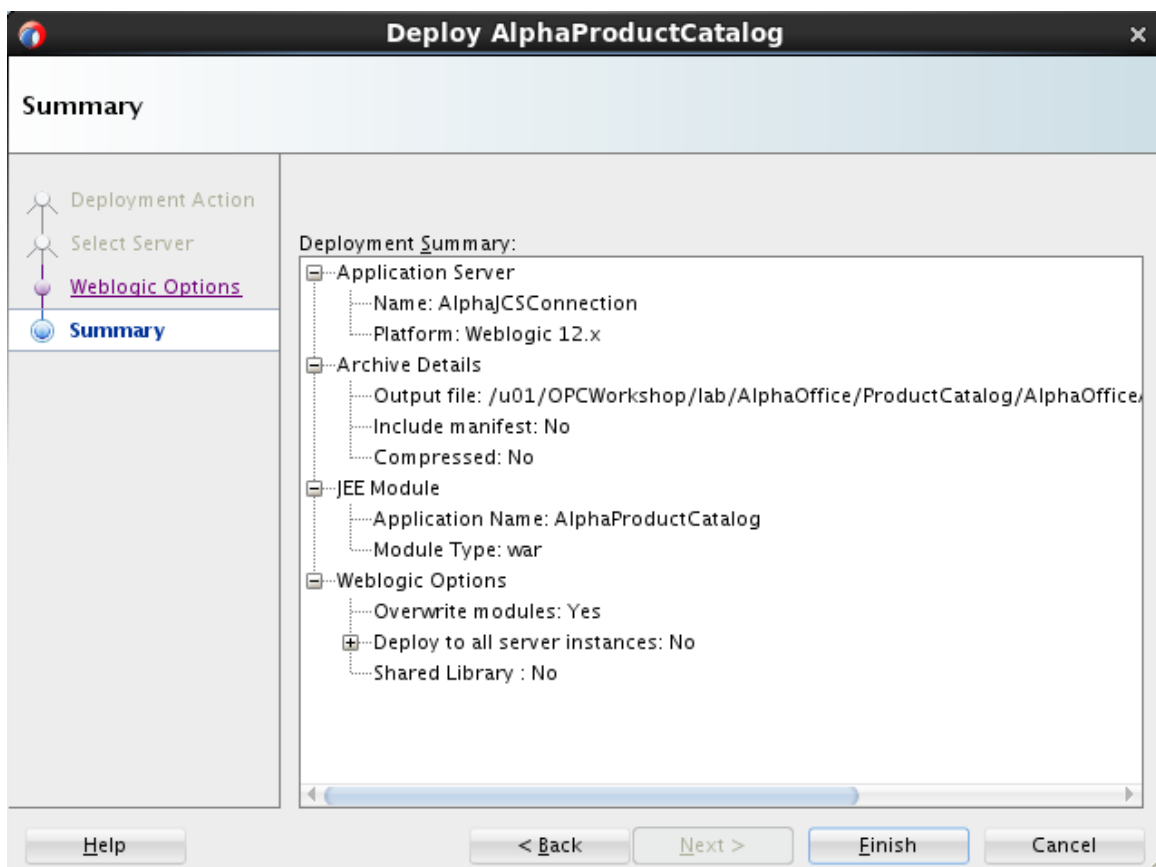
- ❑ Select **AlphaJCSCConnection** as the Application Server and click **Next**



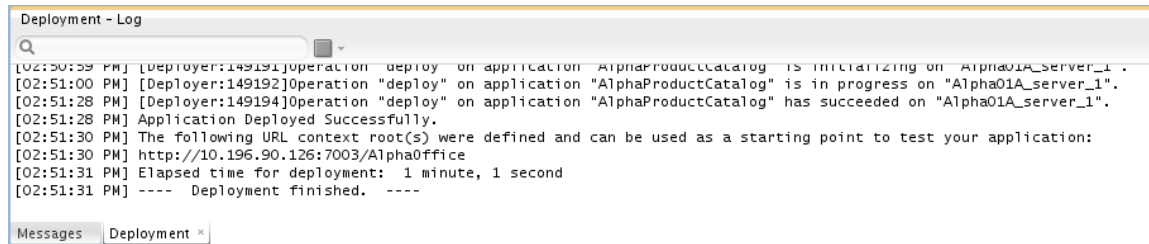
- ☐ Select **Deploy to selected instances in the domain. List Standalone Servers in the Cluster** and select **Alpha01A_cluster**. Click **Next**.



- ☐ Click on **Finish**



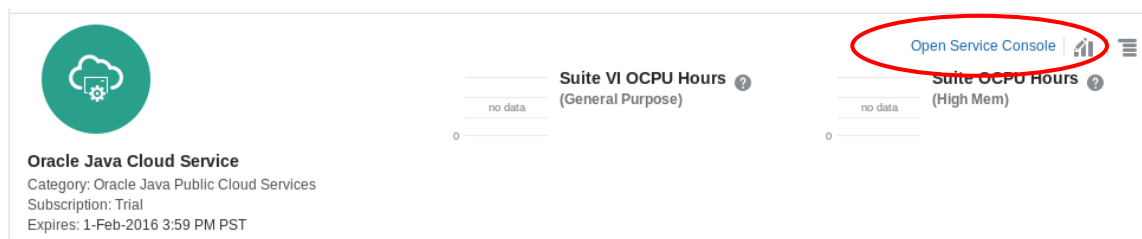
- ☐ **Monitor** the deployment in the log window. If the log window is not visible, from the top menu **select Window > Log**. Click on **Deployment** tab.



```


[02:50:59 PM] [Deployer:149191]operation "deploy" on application "AlphaProductCatalog" is initializing on "Alpha01A_server_1".
[02:51:00 PM] [Deployer:149192]operation "deploy" on application "AlphaProductCatalog" is in progress on "Alpha01A_server_1".
[02:51:28 PM] [Deployer:149194]operation "deploy" on application "AlphaProductCatalog" has succeeded on "Alpha01A_server_1".
[02:51:28 PM] Application Deployed Successfully.
[02:51:30 PM] The following URL context root(s) were defined and can be used as a starting point to test your application:
[02:51:30 PM] http://10.196.90.126:7003/Alpha0ffice
[02:51:31 PM] Elapsed time for deployment: 1 minute, 1 second
[02:51:31 PM] ---- Deployment finished. ----
  
```

- ☐ To test the application, you will first need the **IP** of the Oracle Traffic Director (OTD) Server. If your Java Cloud Service Console is not already visible, navigate to it using either the console dropdown or from the main dashboard by clicking on **Open Service Console** for the **Oracle Java Cloud Service**



- ☐ Select the **Cloud icon** next to **Alpha01A-JCS** in the list of Services



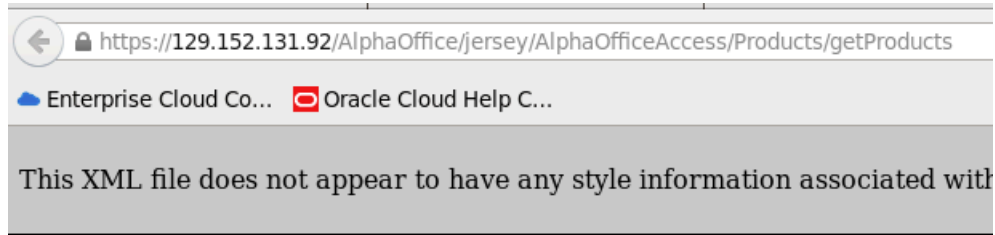
- ☐ Write down the **Public IP Address** of **Load Balancer**. (Note: if the load balance is not visible, click on the refresh icon  until the Load Balancer is visible)



- ☐ Using the **Load Balance Public IP**, enter the following URL:

`https://<loadBalancerIp>/AlphaOffice/jersey/AlphaOfficeAccess/Products/getProducts`

- ☐ If you receive a message that the connection is Untrusted, as before, click on "I Understand the Risks," and add the Exception

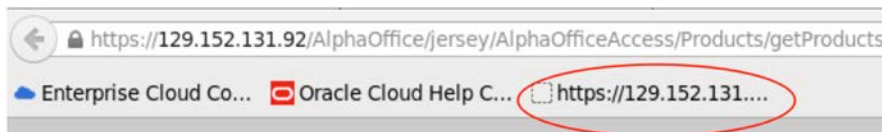


```

- <ProductAPIList>
  - <products>
    <categoryId>1011</categoryId>
    <costPrice>3.19</costPrice>
    - <externalUrl>
      Images/OfficeSupplyProducts/Write/Write-Crayola_Markers.jpg
    </externalUrl>
    <listPrice>4</listPrice>
    <minPrice>2</minPrice>
    <parentCategoryId>1002</parentCategoryId>
    <productId>1039</productId>
    - <productName>
      Crayola Original Markers, Broad Line, Classic Colors

```

- ☐ If you receive an error, double check all previous steps especially ones where you need to click "Activate Changes" in weblogic. Drag this URL to your Browser's bookmark bar for later use



- ☐ This Lab is completed.