Modern
Business
in the Cloud

ORACLE

200

Oracle Public
Cloud Workshop

Fusion Middleware

Cloud Services

Contact: Dennis Foley dennis.foley@oracle.com

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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

Please direct comments to: Dennis Foley (dennis.foley@oracle.com)

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

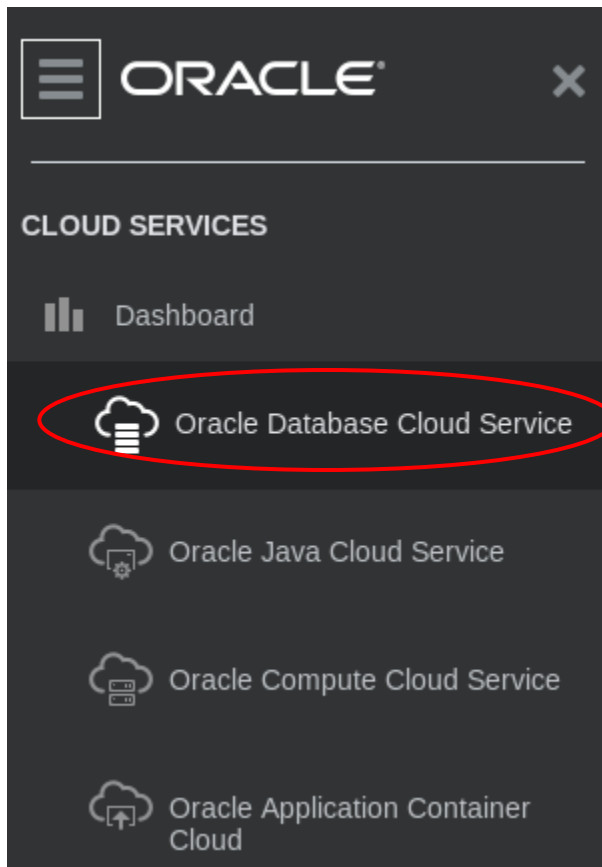- ☐ The following labs assume that the steps outlined in lab guide 100 have been completed.

Outline
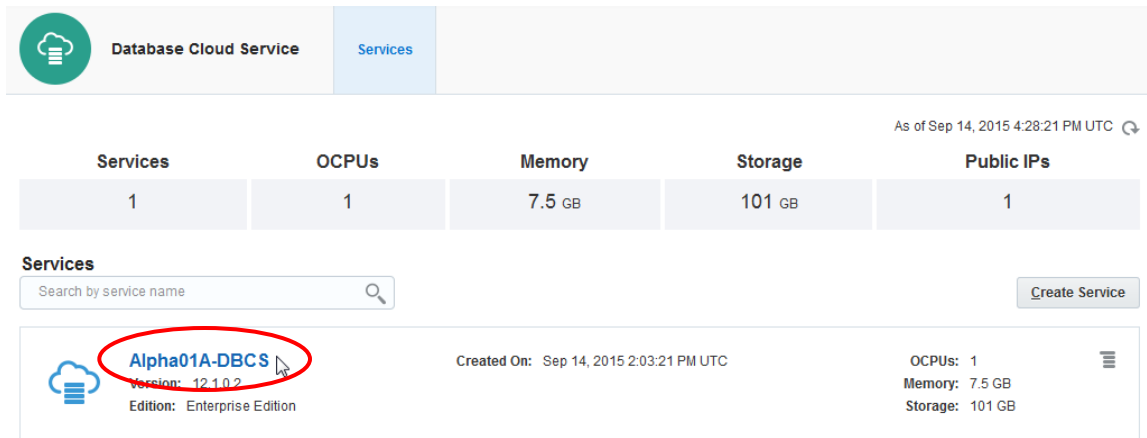
Connecting to the Java and Database Services

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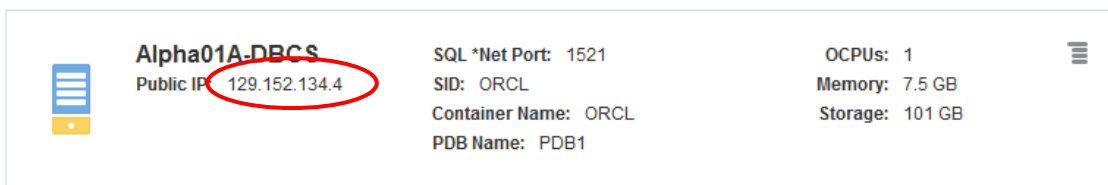
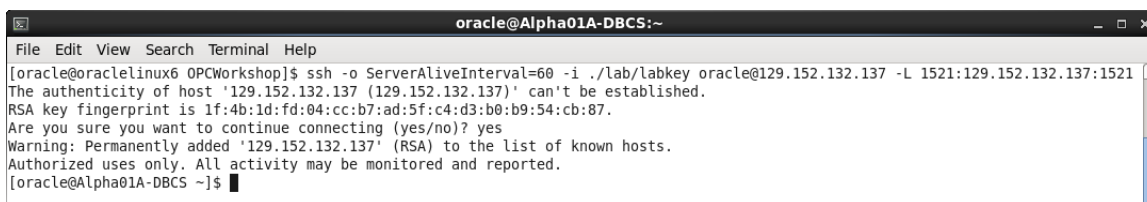☐ Write down the Public IP Address for the **Alpha01A-DBCS** Instance.

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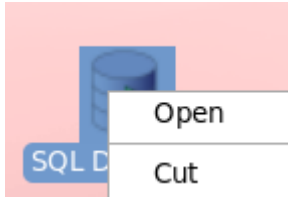
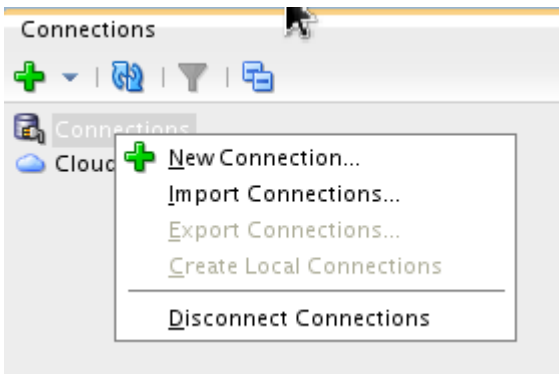☐ If prompted to accept the RSA key, **enter yes** and hit return

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   ⊠   Connection Color

Oracle

Connection Type Basic ▼   Role default ▼

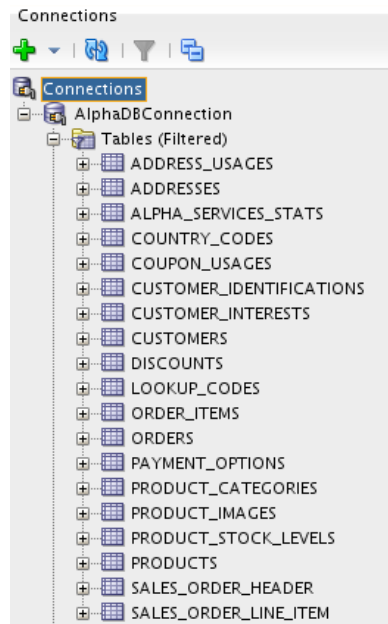| Hostname	localhost
Port	1521
○ SID	xe
⦿ Service name	PDB1.usoracle16033.oraclecloud.internal

☐ OS Authentication ☐ Kerberos Authentication   Advanced...

☐ 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.

Connections

Connections
  AlphaDBConnection
    Tables (Filtered)
      ADDRESS_USAGES
      ADDRESSES
      ALPHA_SERVICES_STATS
      COUNTRY_CODES
      COUPON_USAGES
      CUSTOMER_IDENTIFICATIONS
      CUSTOMER_INTERESTS
      CUSTOMERS
      DISCOUNTS
      LOOKUP_CODES
      ORDER_ITEMS
      ORDERS
      PAYMENT_OPTIONS
      PRODUCT_CATEGORIES
      PRODUCT_IMAGES
      PRODUCT_STOCK_LEVELS
      PRODUCTS
      SALES_ORDER_HEADER
      SALES_ORDER_LINE_ITEM

☐   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.

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

☐   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.
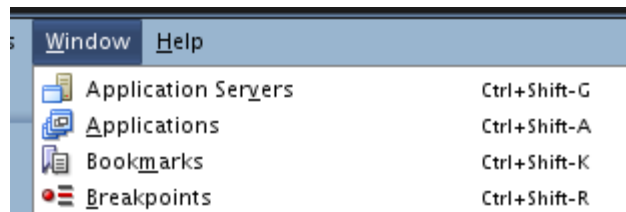
☐ Right click on **Application Servers** and select **New Application Server**
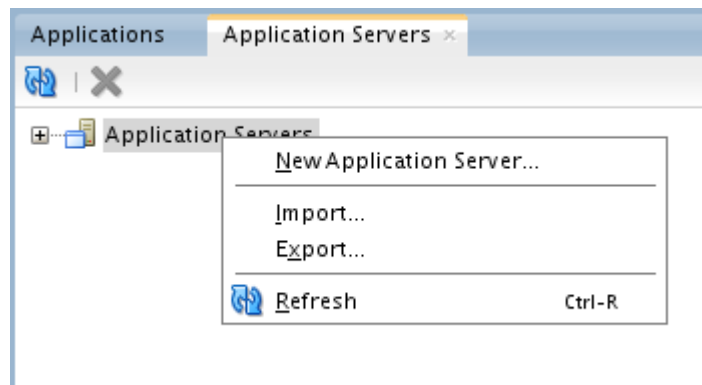
☐ If you receive the following screen, leave the default of **Standalone Server** for Step 1 and click **Next**

☐ Enter Connection Name of **AlphaJCSConnection** and click **Next**
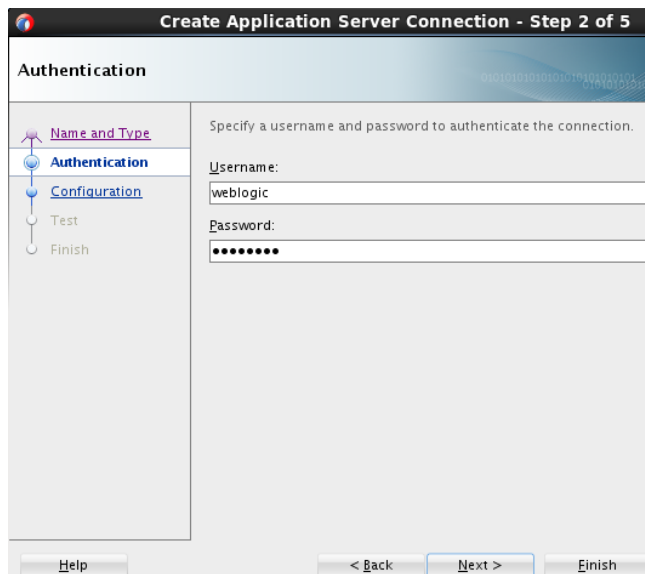
☐ Enter Username = **weblogic** and Password = **Alpha2014_** and click **Next**

☐ 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.

☐ Click **Test Connection** to verify configuration. Once you get success click **Finish**
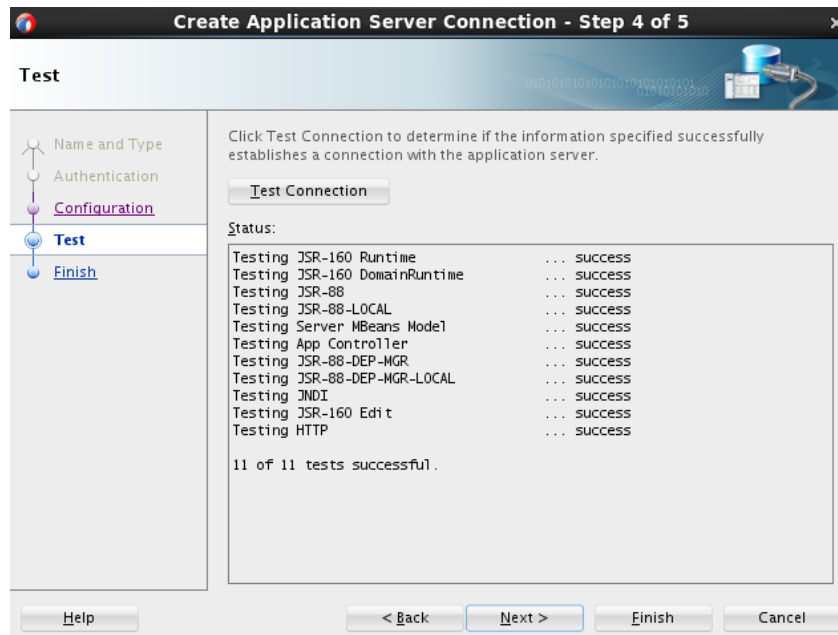
☐ Now From the **Application Servers** pane expand the newly create **AlphaJCSConnection,** and view both **Servers** and **Clusters**. Using JDeveloper, you also have the ability to view Log Files and Deployments for Weblogic Server running on the JCS.
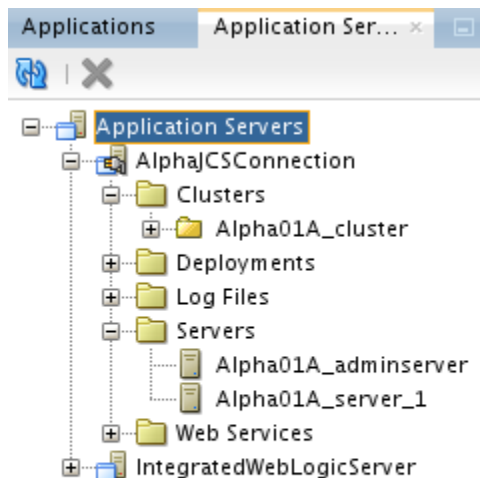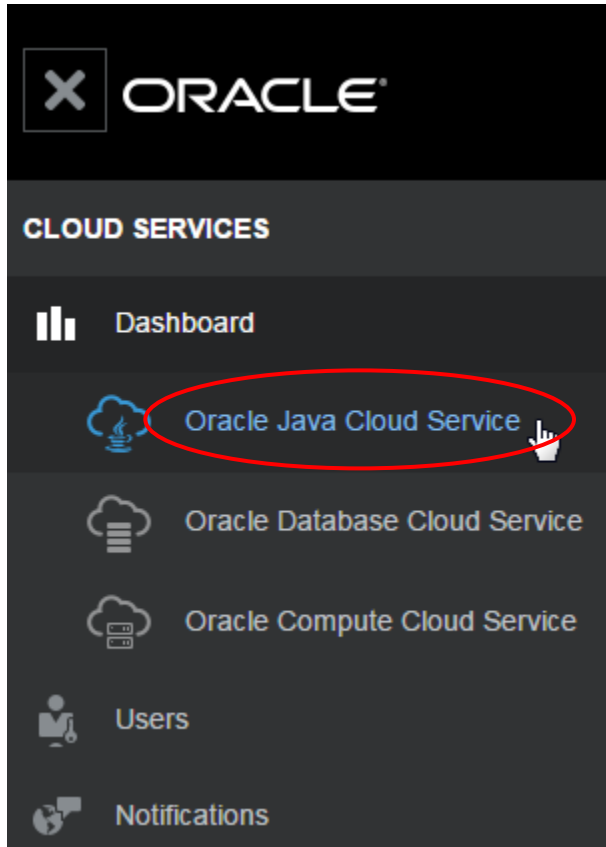
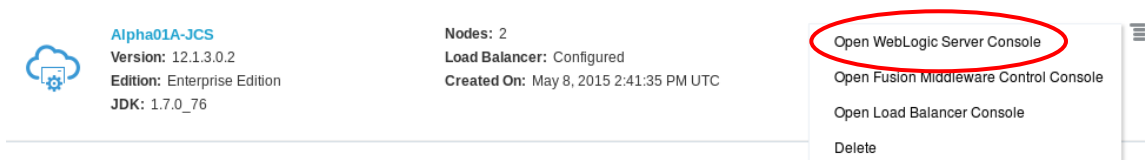# Deploying and Test the Java Application

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_
```
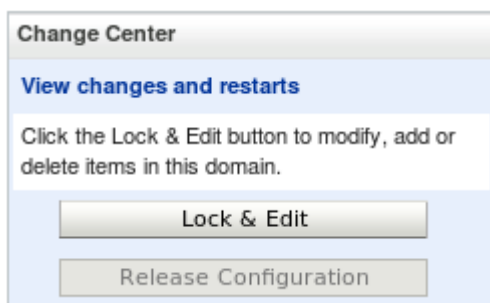
STEP 6: Load Required Libraries to WebLogic

Our test application uses the jersey libraries for the development of REST api's. We need to load the jersey library into WebLogic.
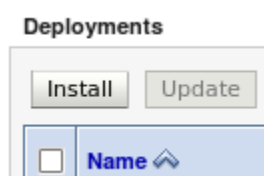
☐ Go to WebLogic Console and click on **Deployments**

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

☐ On Deployment page click **Install**

☐   Click on **uO1** 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**

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

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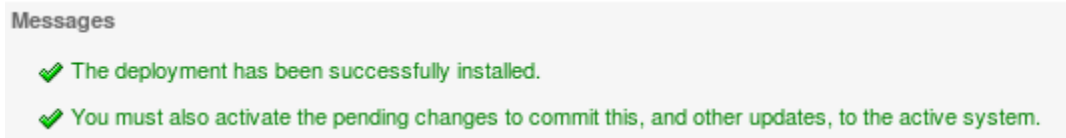
Clusters

☑ **Alpha01A_cluster**
    ◉ **All servers in the cluster**
    ◯ **Part of the cluster**
       ☐ **Alpha01A_server_1**

[Back]   [Next]   [Finish]   [Cancel]

☐   Click **Finish**.
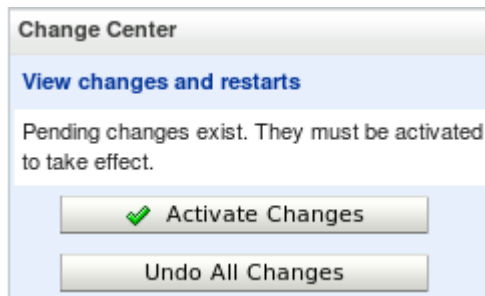
Install Application Assistant

[Back]   [Next]   [Finish]   [Cancel]
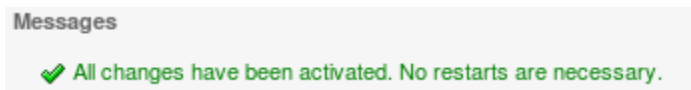
Messages

  ✔ 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**.

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.

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

Change Center

View changes and restarts

Click the Lock & Edit button to modify, add or delete items in this domain.

| Lock & Edit |

| Release Configuration |
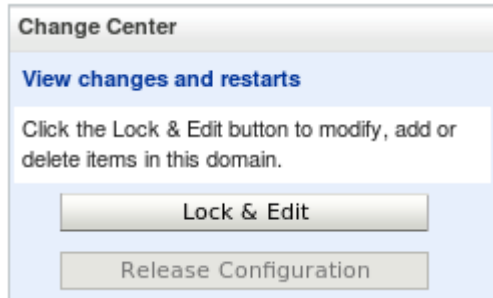
☐ In Domain Structure Expand **Services** and select **Data Sources**

Domain Structure

Alpha01A_domain
⊞ Environment
─ Deployments
⊟ Services
   ⊞ Messaging
   ─ **Data Sources**
   ─ Persistent Stores
   ─ Foreign JNDI Providers
   ─ Work Contexts
   ─ XML Registries
   ─ XML Entity Caches
   ─ jCOM
   ─ Mail Sessions
   ─ File T3
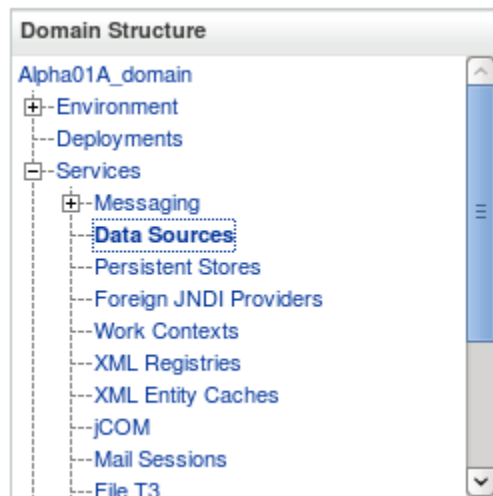
☐ On the Data Sources screen, click **New -> Generic Data Source**

Data Sources (Filtered - More Columns Exist)

| New ˅ | Delete |

Generic Data Source

GridLink Data Source

Multi Data Source

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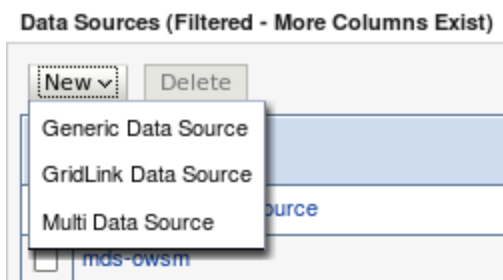
☐ Enter the following JDBC Details and click **Next**

```
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**
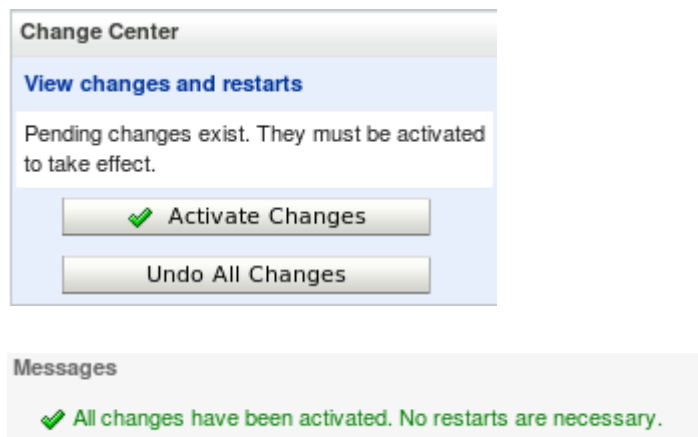
[Back] | [Next] || [Finish] || [Cancel]

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

Change Center

View changes and restarts

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

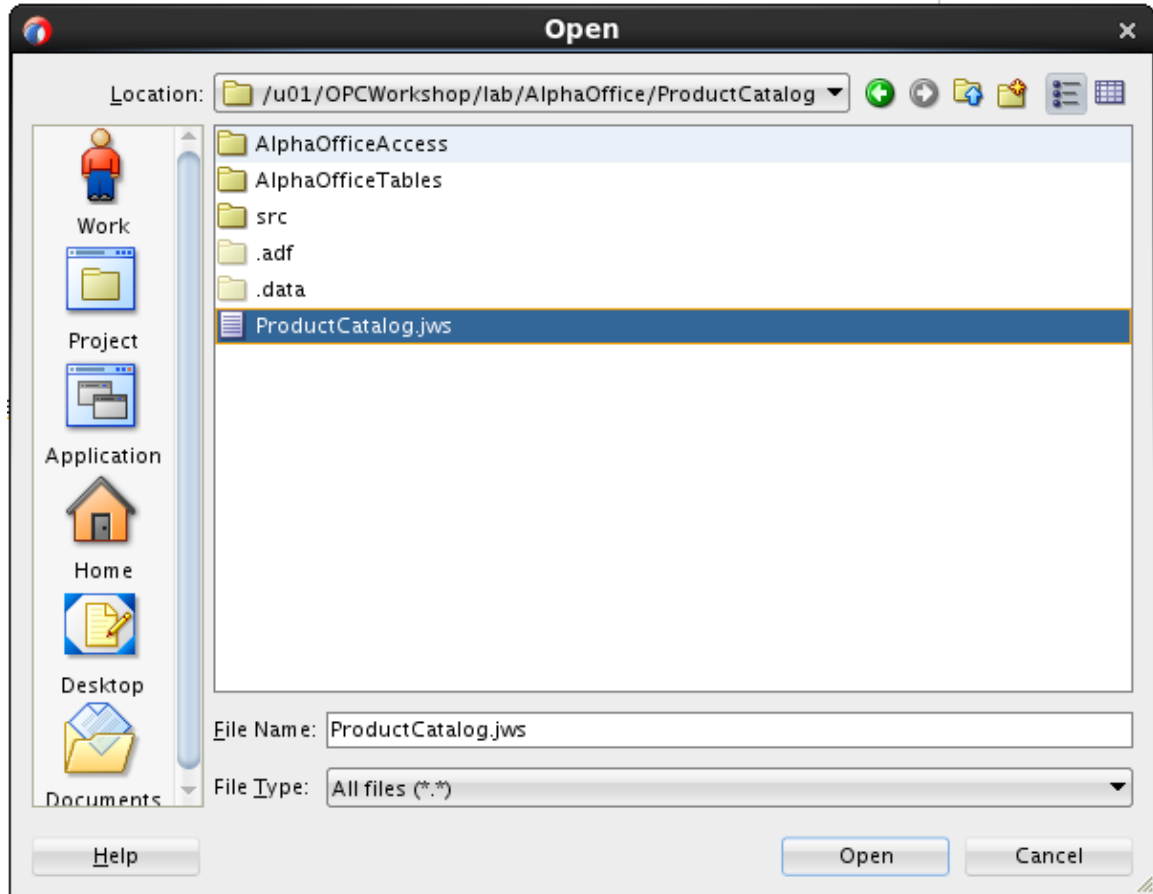　[✔ Activate Changes]

　[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**
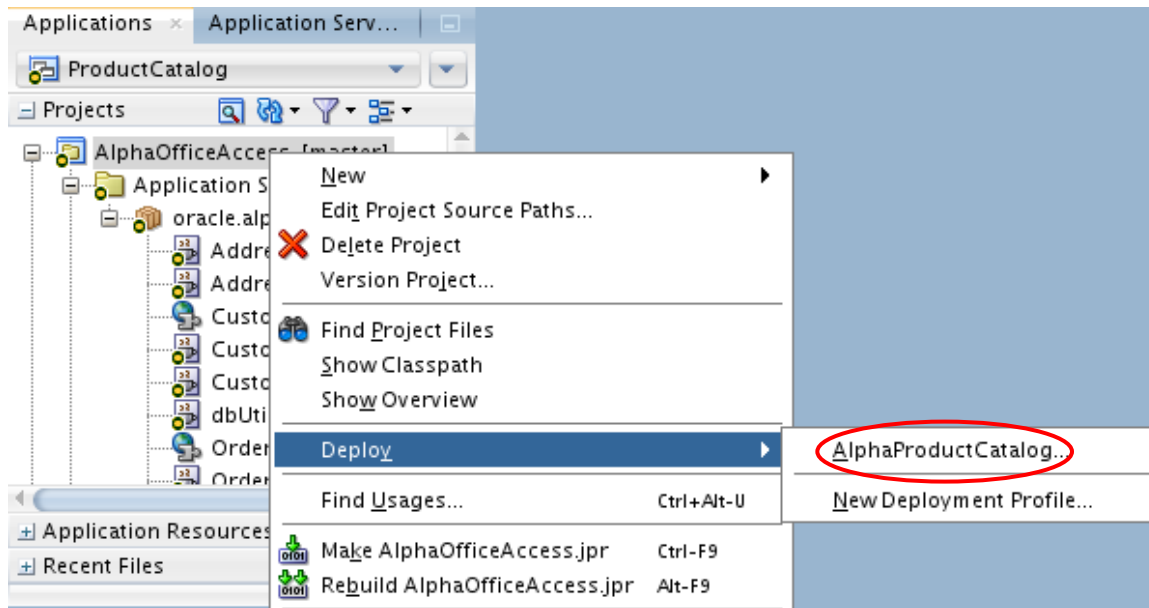
☐ Select **Deploy to Application Server** and click on **Next**
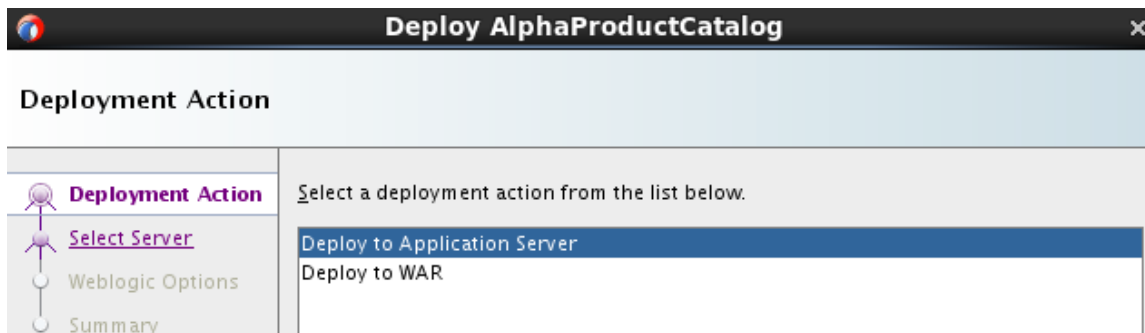
☐ Select **AlphaJCSConnection** as the Application Server and click **Next**
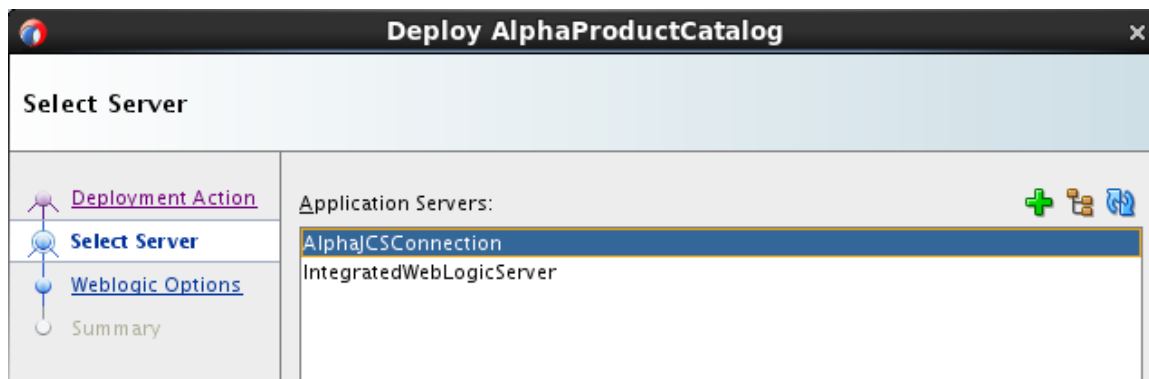
☐   Select **Deploy to selected instances in the domain. List Standalone
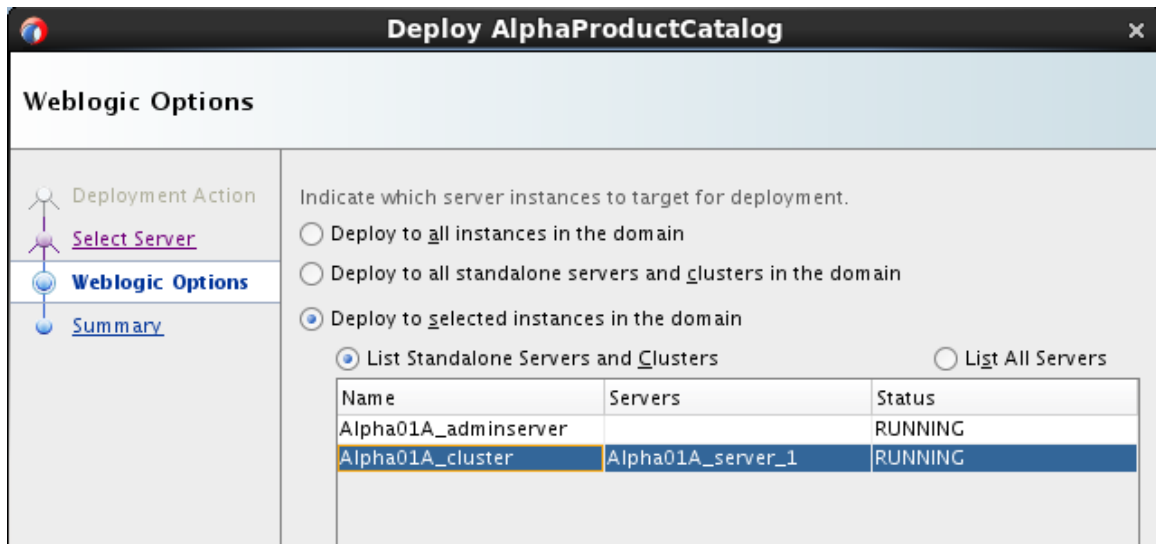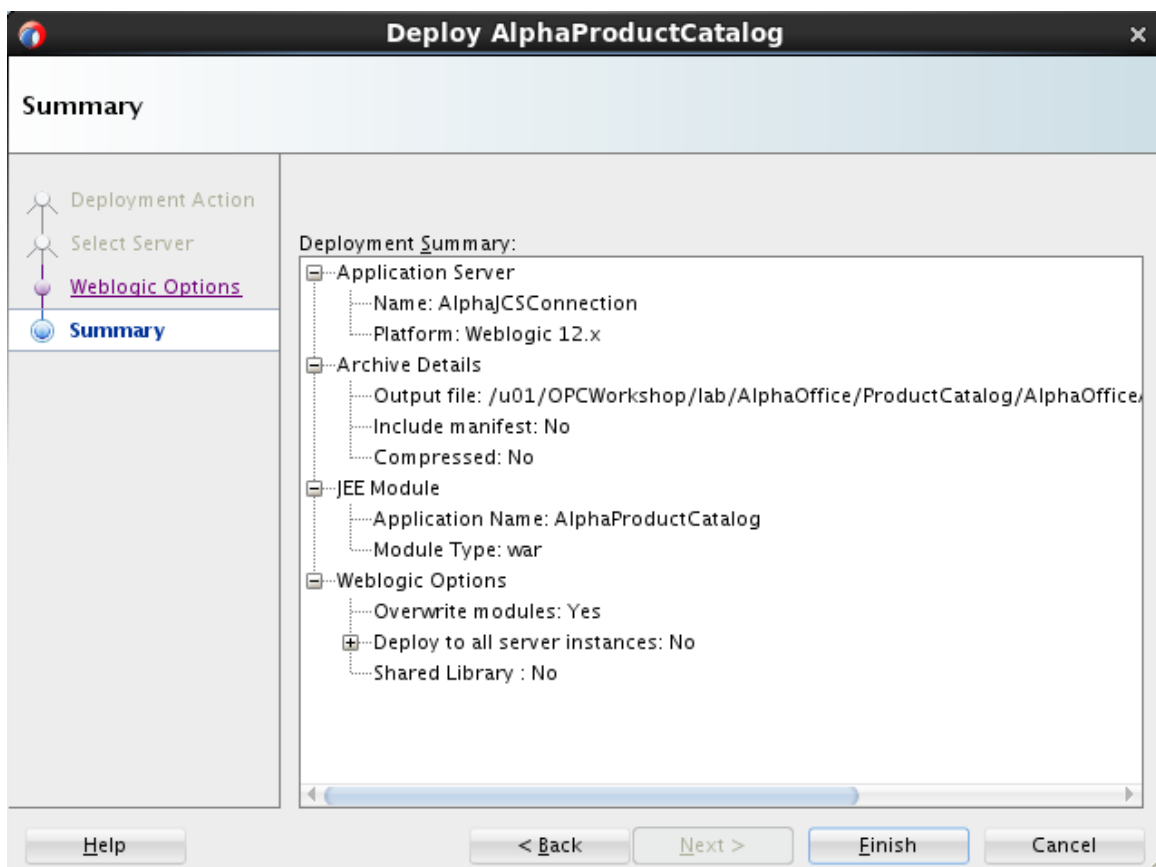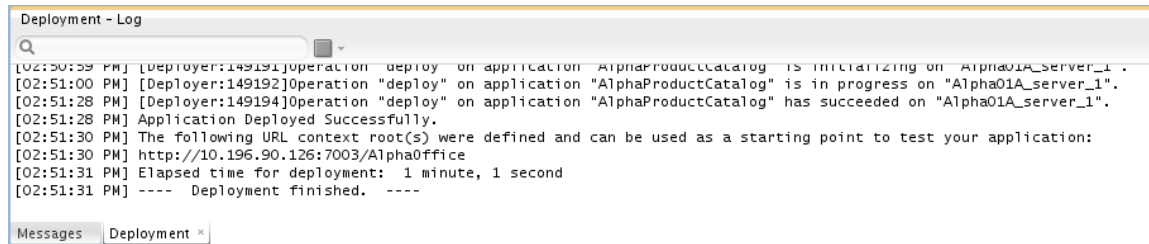   Servers in the Cluster** and select **Alpha01A_cluster**. Click **Next**.

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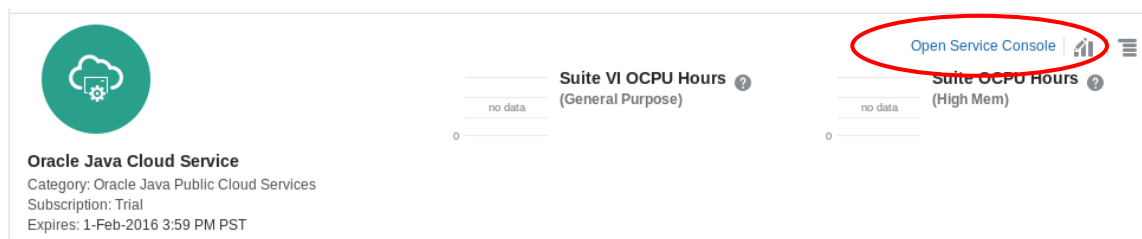
☐ **Monitor** the deployment in the log window. If the log window is not visible, from the top menu **select Window > Log.** Click on **Deployment** tab.

```
Deployment – Log

Q                              ■ ▾
[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.  ----

Messages   Deployment ×
```

☐ 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**

Open Service Console

Suite VI OCPU Hours ⊙
(General Purpose)
no data
0

Suite OCPU Hours ⊙
(High Mem)
no data
0

Oracle Java Cloud Service
Category: Oracle Java Public Cloud Services
Subscription: Trial
Expires: 1-Feb-2016 3:59 PM PST

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

Alpha01A-JCS
Version: 12.1.3.0.2
**Edition:** Enterprise Edition
JDK: 1.7.0_76

☐ 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)

Load Balancer
Public IP: 129.152.133.160
Host: alpha01a-jcs-lb-1
Content endpoint: https://129.152.133.160

OCPUs: 1.0
Memory: 7.5 GB
Storage: 20 GB

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

```
https://<loadBalancerIp>/AlphaOffice/jersey/AlphaOfficeAccess/Pro
ducts/getProducts
```

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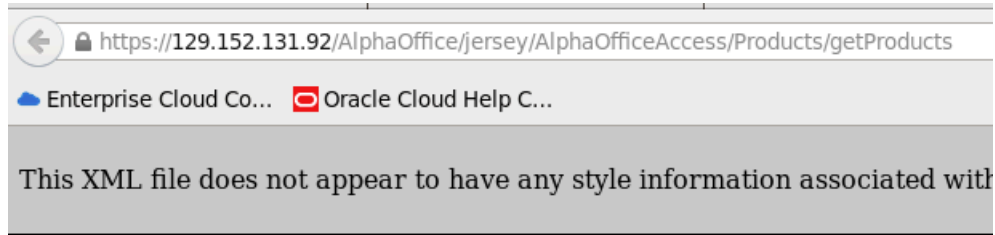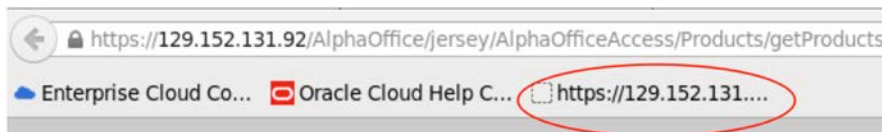

☐   If you receive an error, double check all previous steps especially ones where you need to click "Activate Changes" in weblogic. Drag this URL to your Browser's bookmark bar for later use

☐   This Lab is completed.