200

Oracle Public Cloud Workshop

Fusion Middleware

Cloud Services

Contact: Dennis Foley dennis.foley@oracle.com

January 21, 2015

Introduction

In this lab, you will learn how to connect to the Database Cloud Service using SQL Developer, connect an IDE (JDeveloper) to your Java Cloud Service and connect to a Developer 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
- ☐ Explore the Developer Service
- ☐ Download Source from the Developer Service GIT Repository
- ☐ 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

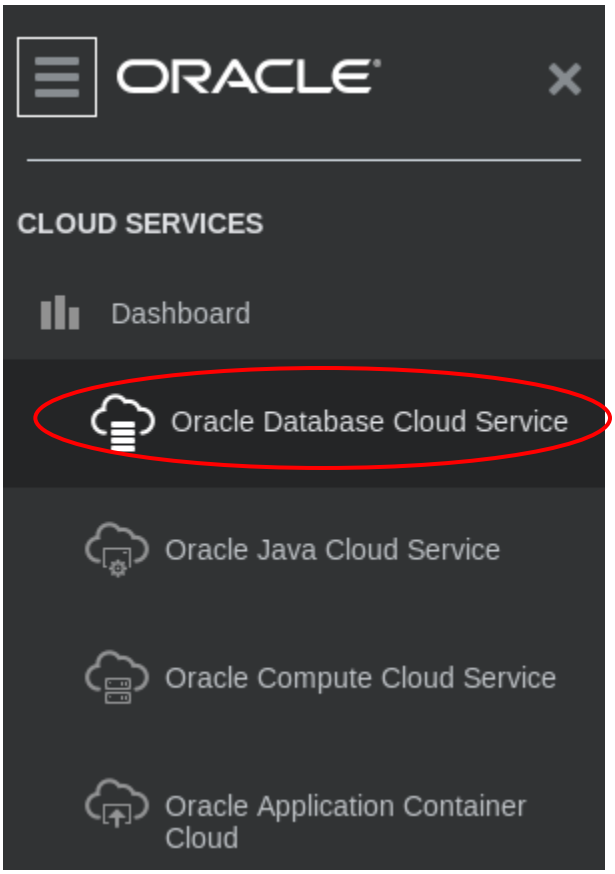
Revised: January 21, 2016

Connecting to the Java and Database Services

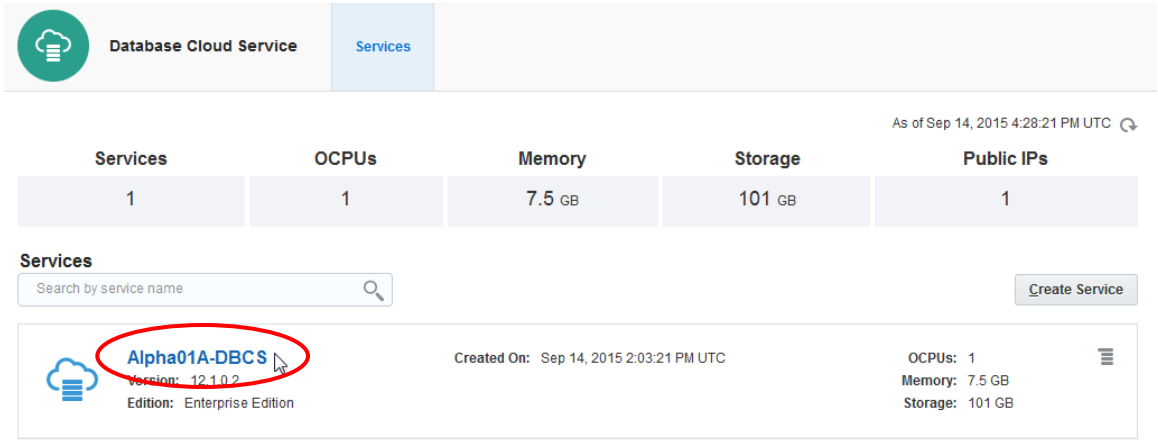
Connect to Database Cloud Service

STEP 1: Create SSH tunnel to Database Cloud Service

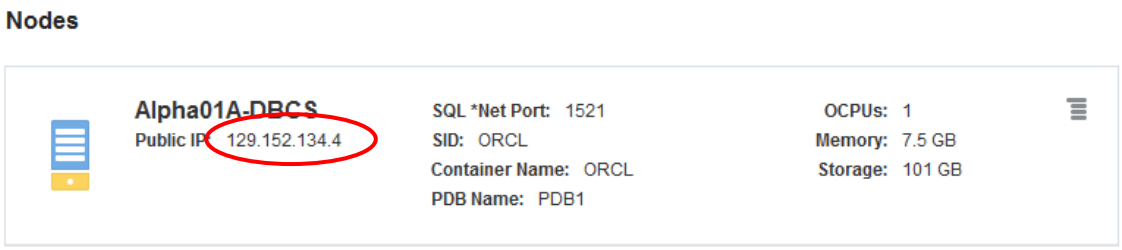
☐ Using the **Consoles** drop down, select to the **Database Service Cloud** console. From the console click on the **Alpha01A-DBCS** Instance.



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



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

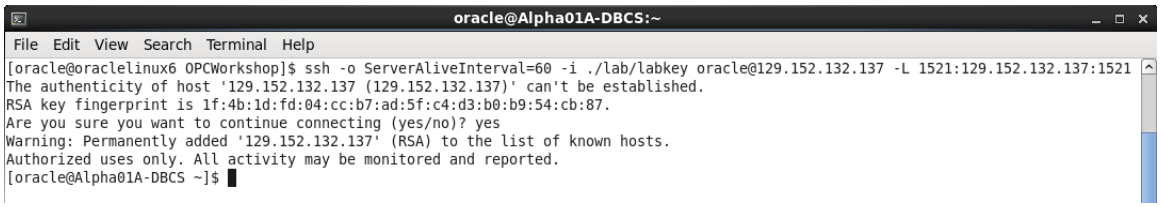


☐ Click on the Virtual Box Terminal Window icon to load a Terminal Window.

☐ 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.

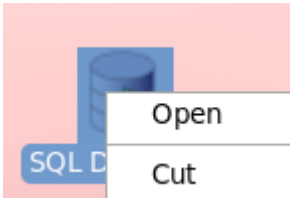
```
ssh -o ServerAliveInterval=60 -i ./lab/labkey oracle@<DB ip> -L
1521:<DB IP>:1521
```

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



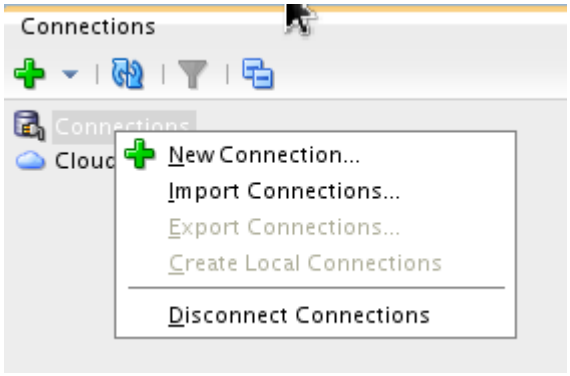
STEP 2: Explore Alpha Office Schema with SQL Developer

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



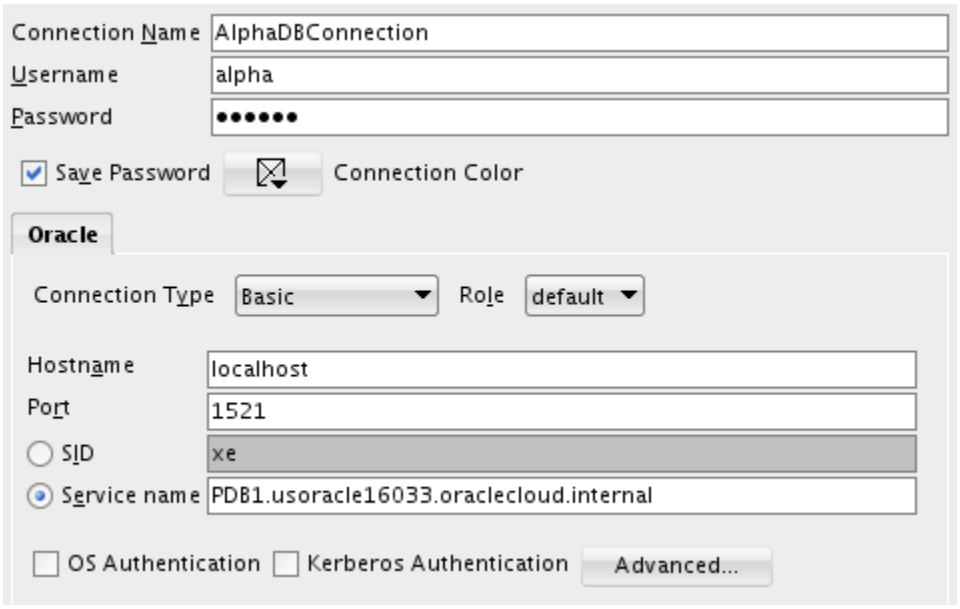
☐ Right click on **Connections** and select **New Connection**

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



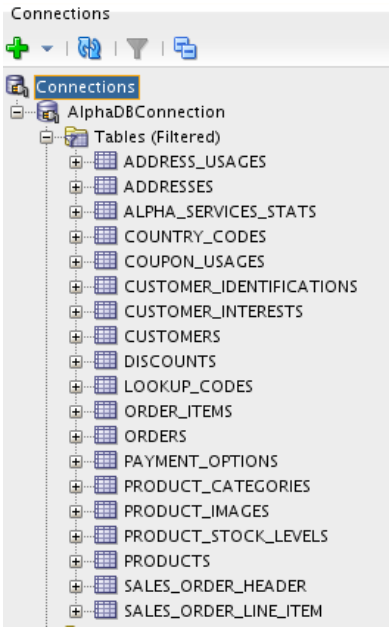
☐ Enter the following Connection Details

```
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
```



☐ 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.

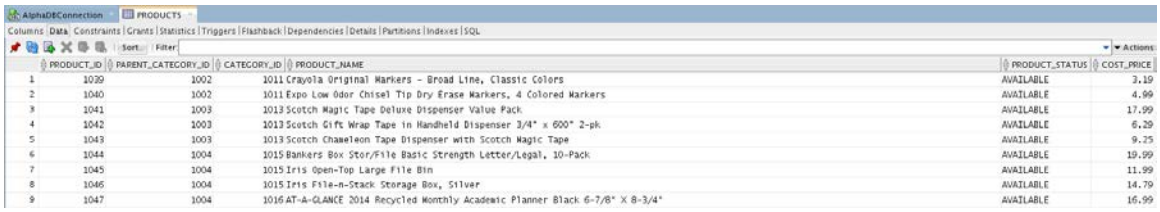
AlphaDBConnection | PRODUCTS

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-n-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

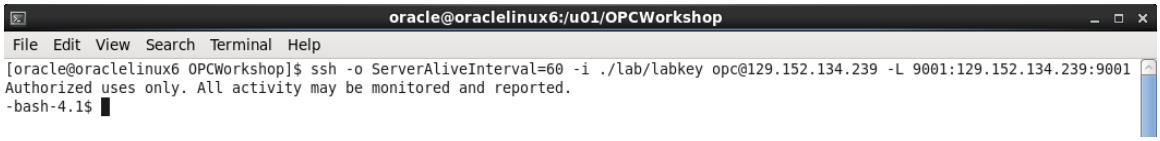
☐ Go to **Java Cloud Service** instance page (you can get there from the Java Cloud Service Console and then selecting the **Alpha01A-JCS**). Make note of the IP for the Administration Server

☐ Open a Terminal Window

☐ Create SSH Tunnel on Port 9001

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

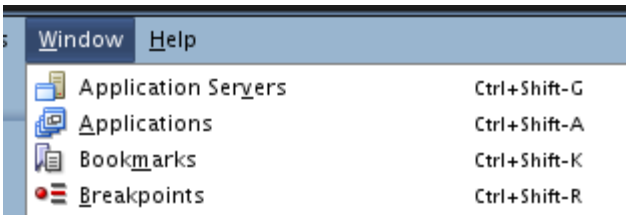
```
ssh -o ServerAliveInterval=60 -i ./lab/labkey opc@<Admin ip> -L
9001:<Admin ip>:9001
```



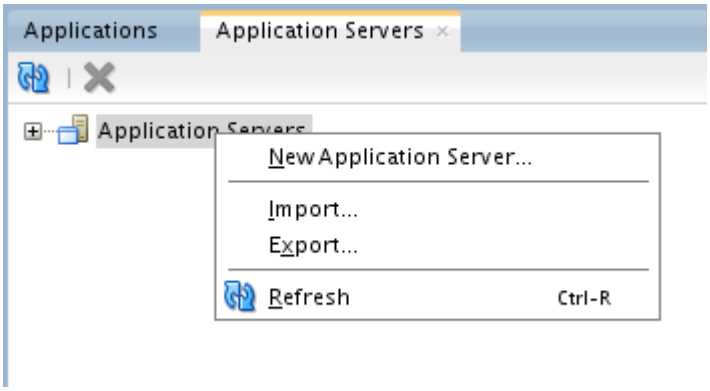
STEP 4: Create Connection to Weblogic Domain

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

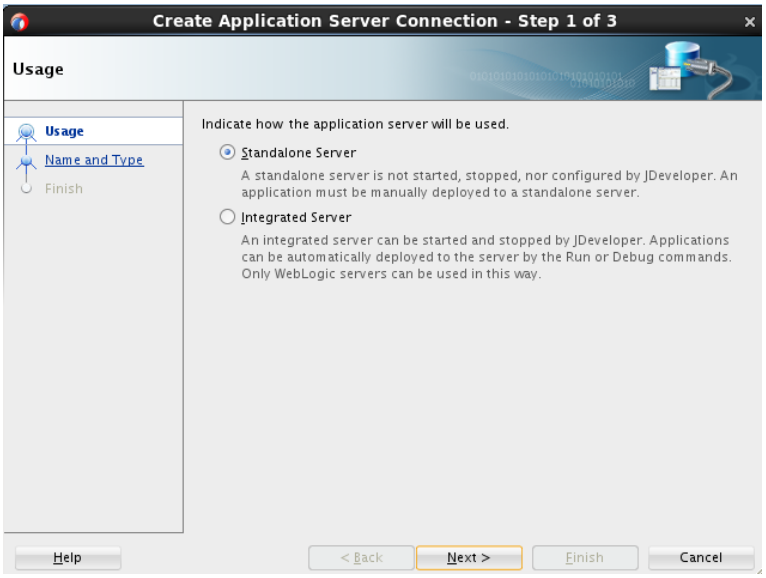
☐ Select **Window -> Application Servers** to open Application Server Pane.



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

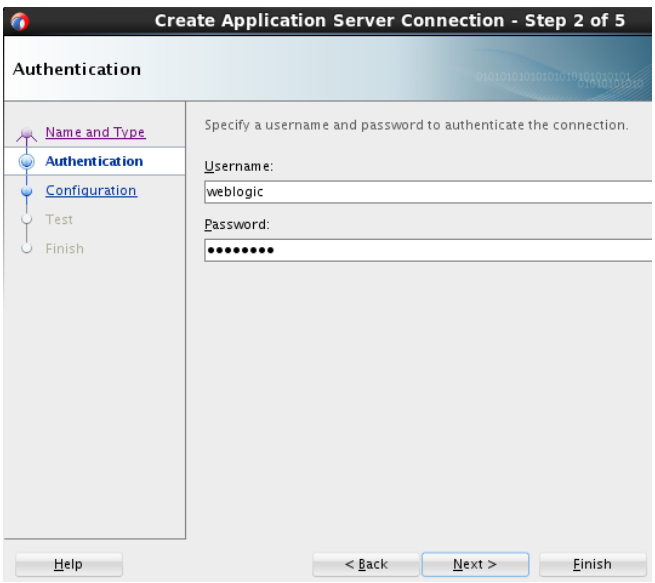


☐ If you receive the following screen, leave the default of **Standalone Server** for Step 1 and click **Next**



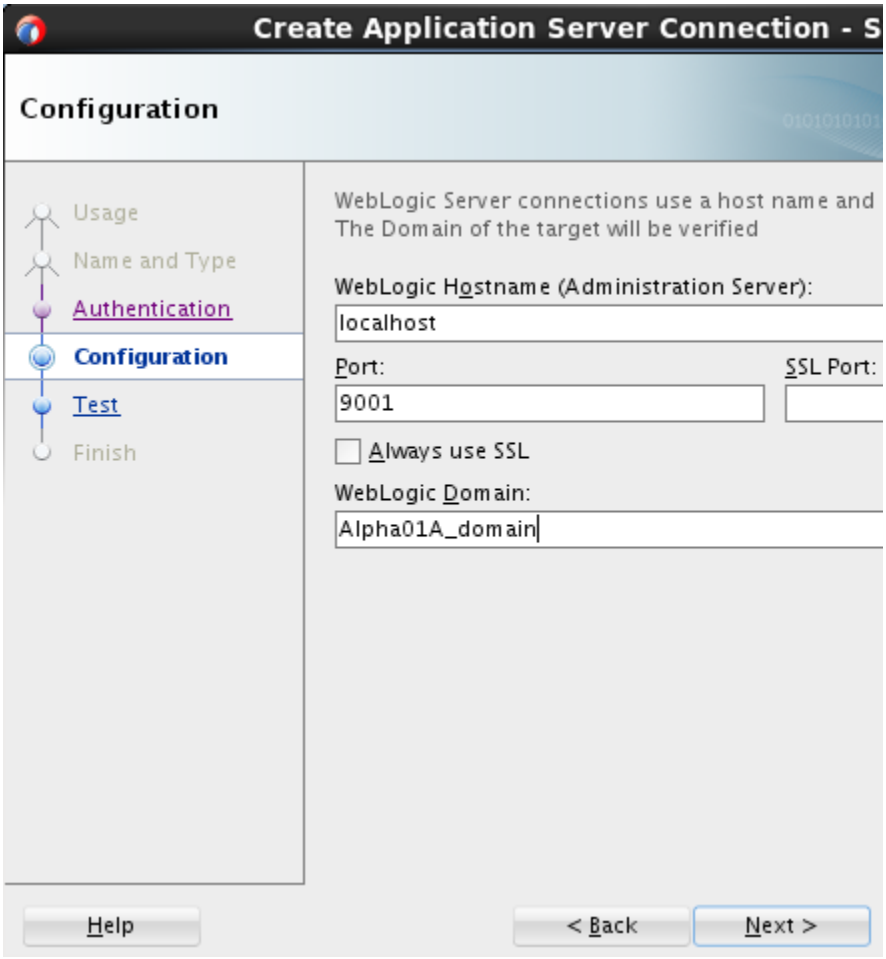
☐ Enter Connection Name of **AlphaJCSConnection** and click **Next**

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

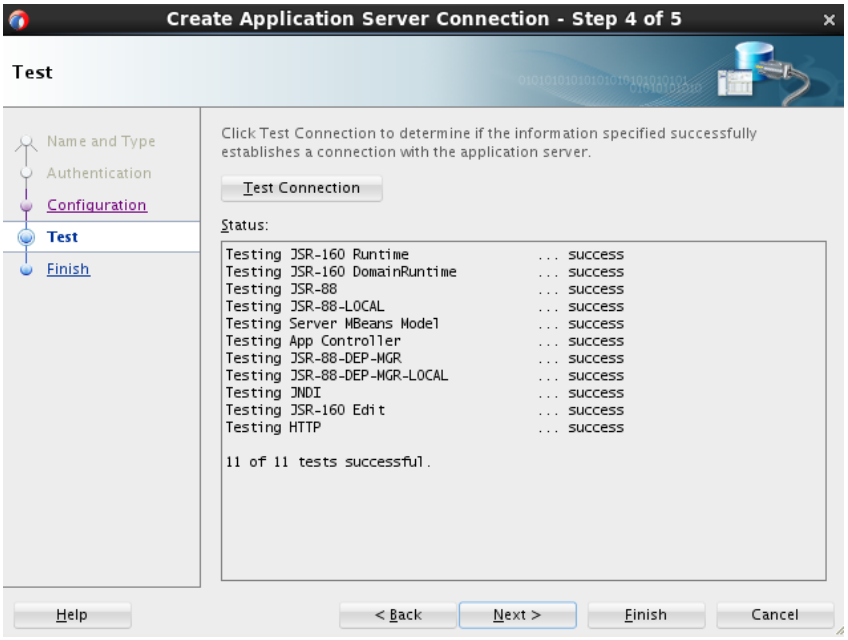


☐ Enter Port = **9001**, leave the SSL Port blank, and WebLogic Domain = **Alpha01A_domain** and click **Next.**

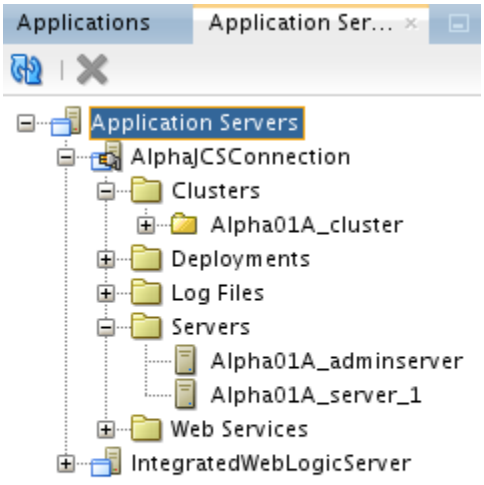
Note: localhost is used because the ssh tunnel will cause you to be connected to the WLS Admin server.



☐ 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.



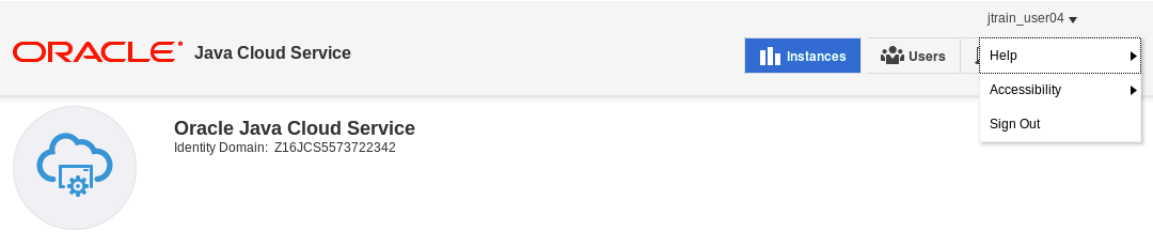
Exploring the Developer Cloud Service

Integrating with Developer Cloud Service

STEP 5: Connect to a Developer Cloud Service

In this step we will log out of our Java Cloud Service Account, and we will log in to Developer Cloud Service (DCS). For this lab a DCS has been created and source code has been loaded into the DCS's GIT repository. We will connect JDeveloper to that GIT repository and download the source code into out local copy of JDeveloper.

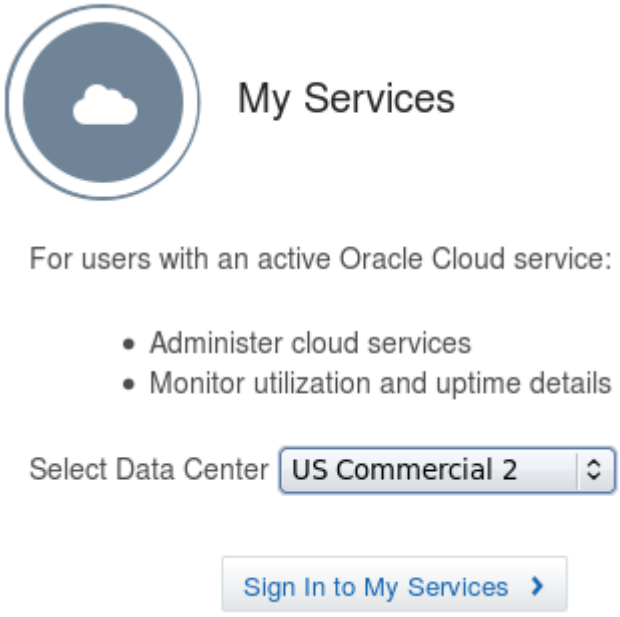
☐ If you are still logged into the JCS Dashboard, **Click** on **the drop down** for the JCS user, and **select Sign Out**



☐ In your browser, enter the following URL: https://cloud.oracle.com

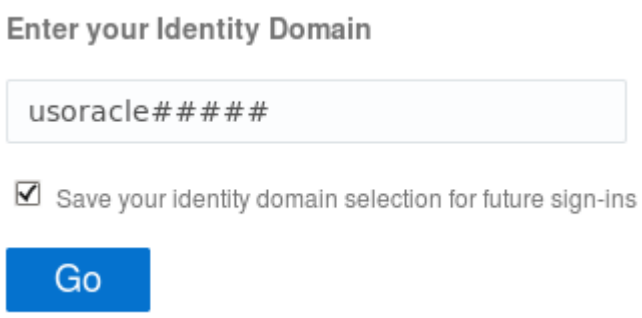
☐ Click **Sign In** in the upper right hand Side

☐ Under My Services change Data Center to **US Commercial 2** and click on **Sign In to My Services**



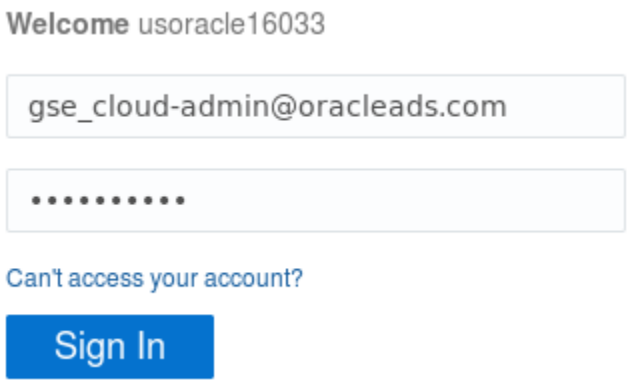
☐ If your identity domain is not already set, enter it, check to box to save it, and click **Go**

NOTE: the **Identity Domain, User Name** and **Password** values will be given to you from your instructor.

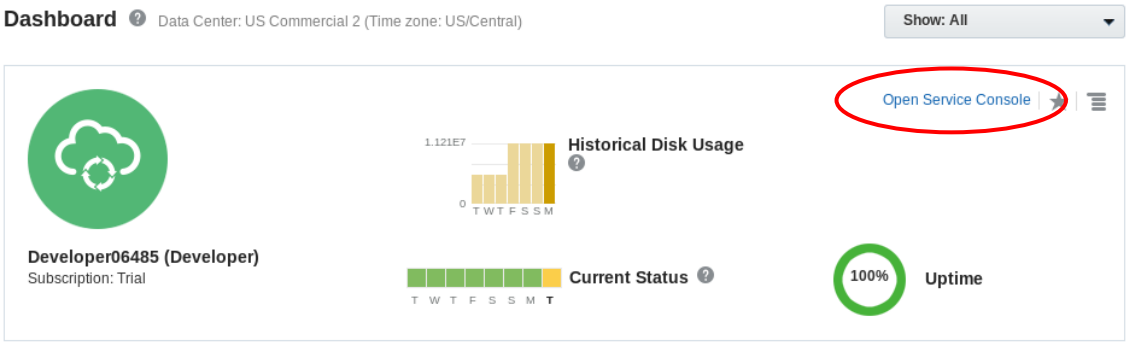


☐ Once your Identity Domain is set, enter your User Name and Password and click **Sign In**

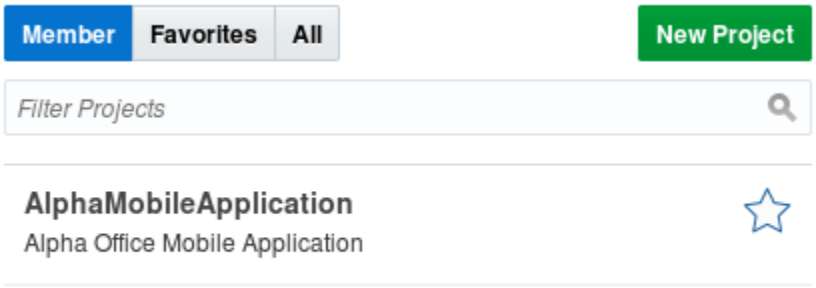
NOTE: the **Identity Domain, User Name** and **Password** values will be given to you from your instructor.



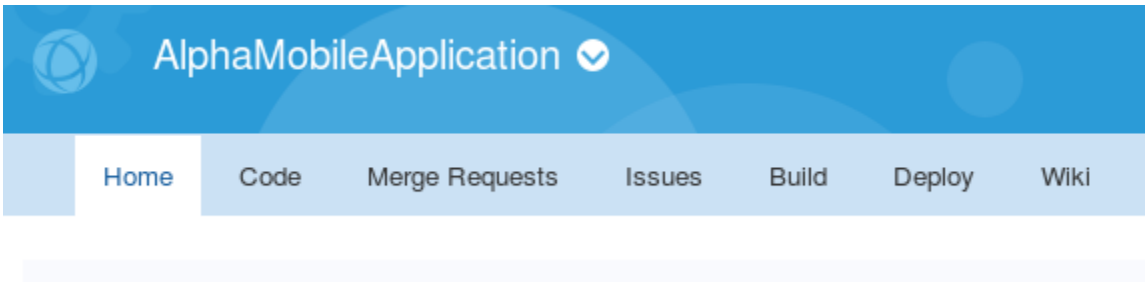
☐ Click on **Open Service Console** for the Oracle Developer Cloud Service



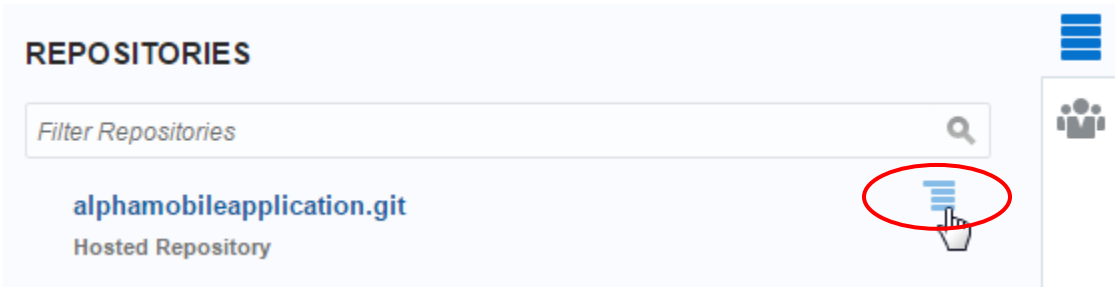
☐ From the Service Console you will view all the projects that have in this developer Service. Click on the **AlphaMobileApplication**.



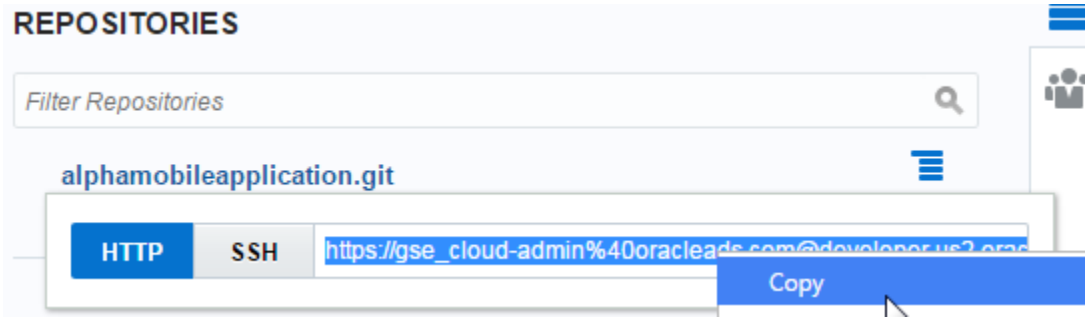
☐ You are now looking at the Dashboard for the project you will checkout into your local JDeveloper Environment. **Explore each of the tabs** available for the project (Home, Code, Merge Requests, Issues, etc.)



☐ Return to the **Home** Tab. To copy the https URL used to access the Git repository, hover over and click on the **Hamburger menu** to the right of the **Hosted Repository** link found in the **Repositories** section.



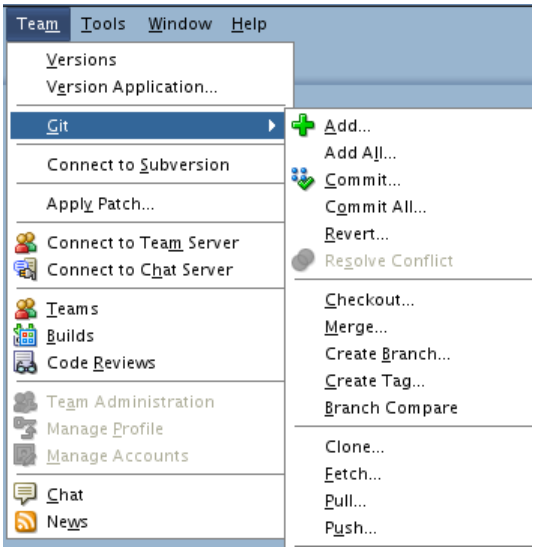
☐ **Copy** the **https URL** displayed in the pop up window. You will use this URL when connecting JDeveloper to the Developer Service Git Repository.



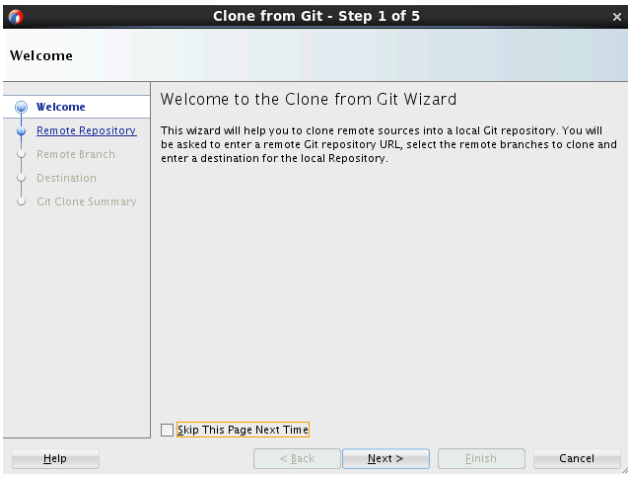
JDeveloper GIT Configuration

STEP 6: JDeveloper GIT Configuration

☐ From the JDeveloper menu select **Team -> Git -> Clone.** This step accesses the DCS repository and checks the code into to your local JDeveloper.

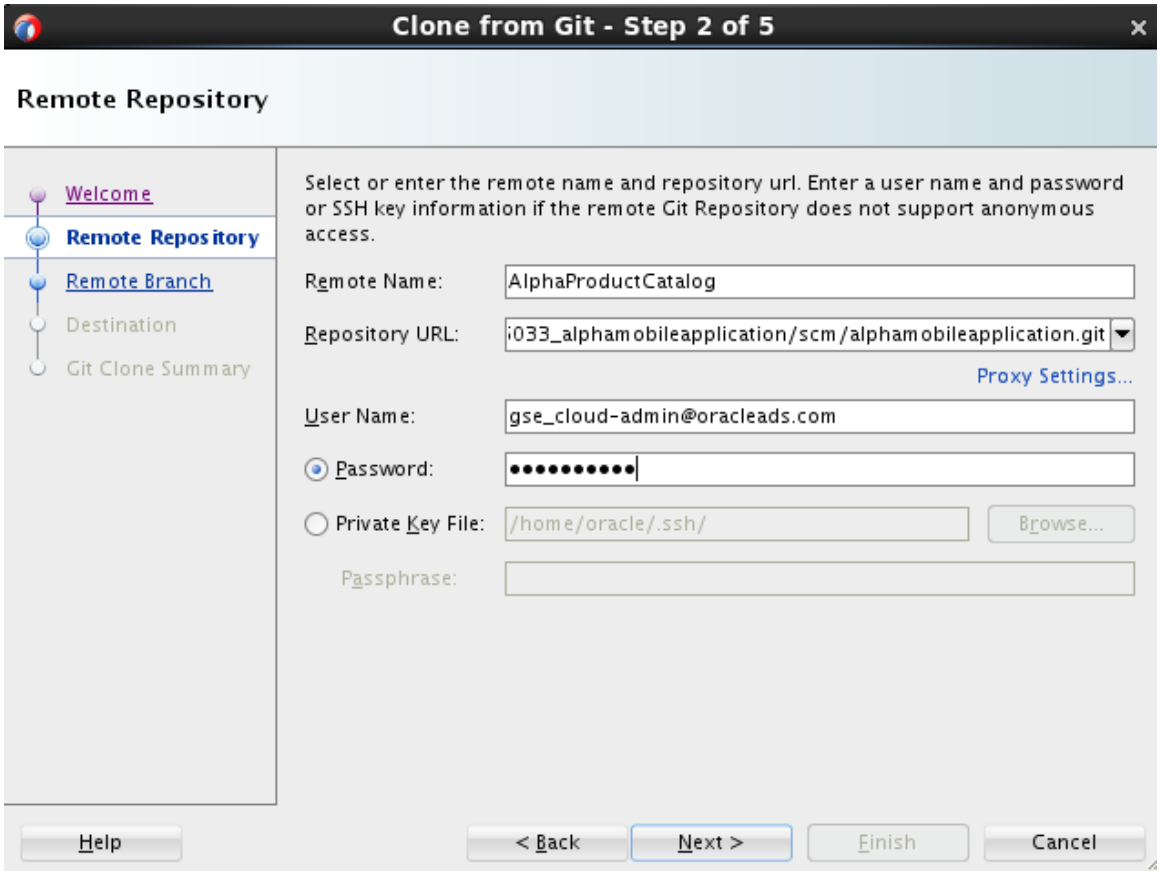


☐ **Click Next** on the Clone Wizard dialog

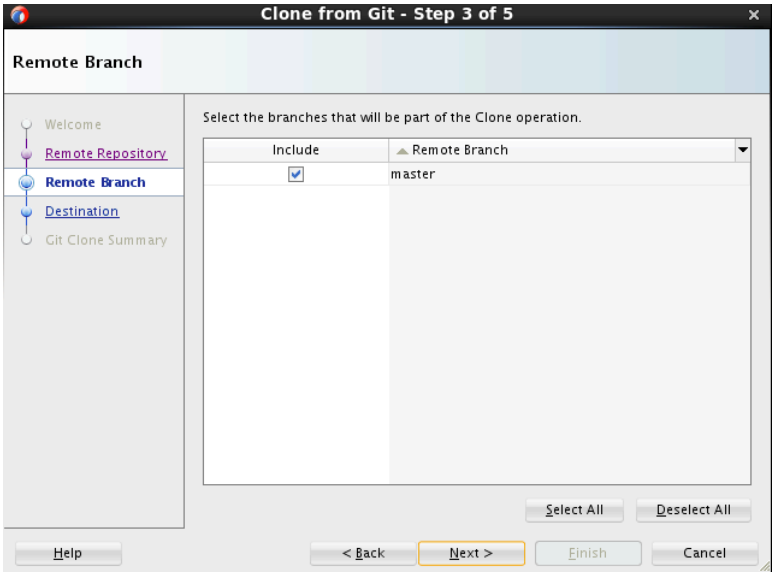


☐ **Enter** the following into the dialog and **click** on **Next**

```
Remote Name = AlphaProductCatalog
Repository URL =
   <Enter (or paste using cntl/v) the https URL coppied from the
Developer Service>
User Name = <username supplied by instructor>
Password = <password supplied by instructor>
```

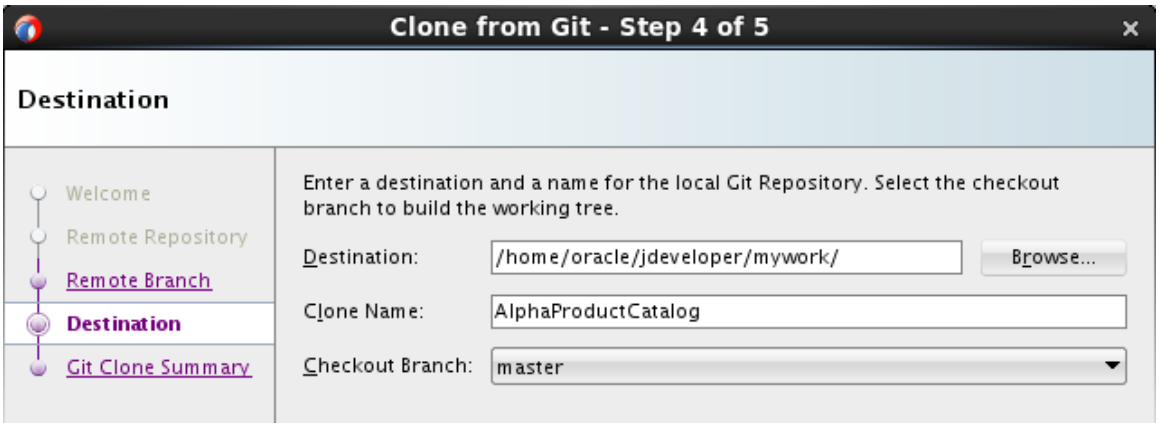


☐ **Click Next** to select the Master Branch

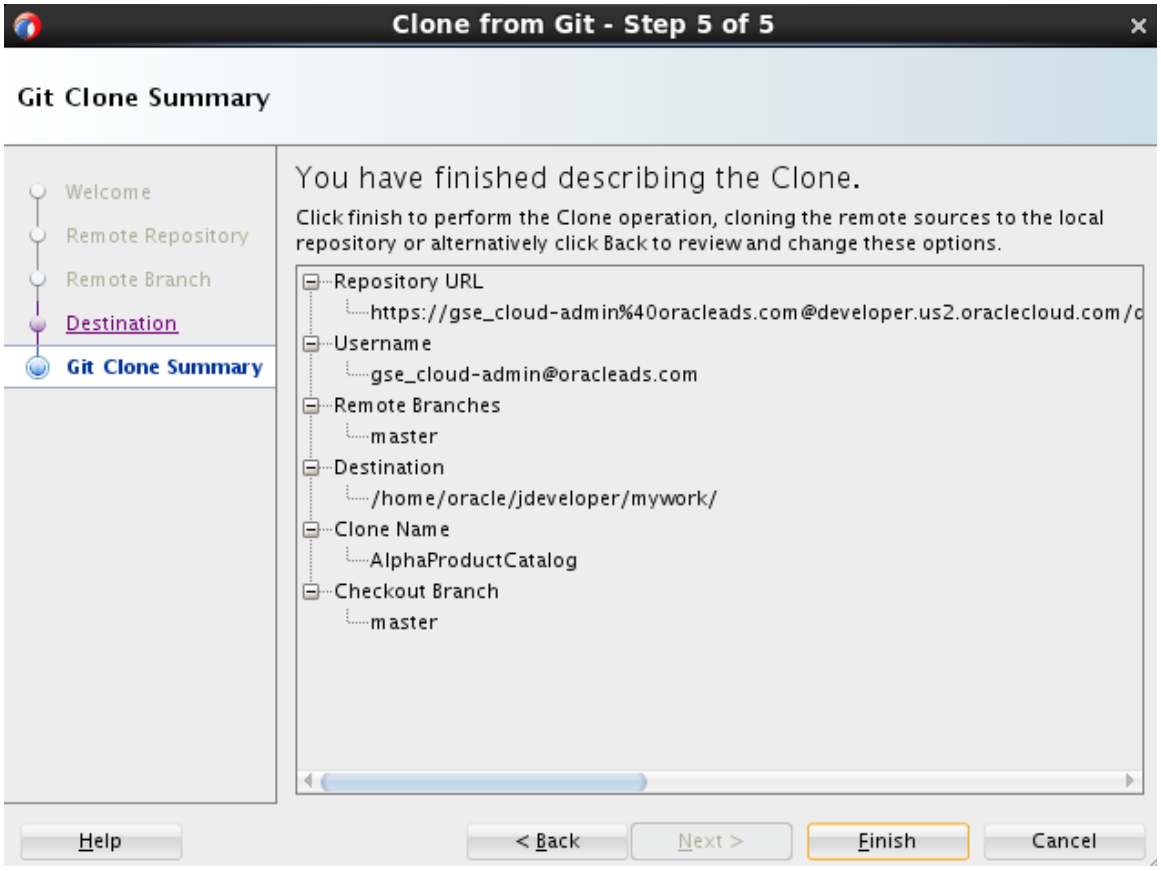


☐ **Enter** the following in the dialog and **click** on **Next**

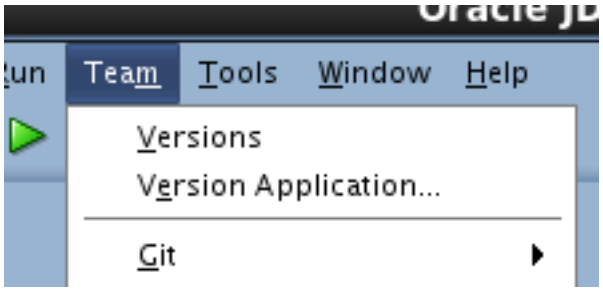
```
Destination = <Accept the default>
Clone Name = AlphaProductCatalog
Checkout Branch = master
```



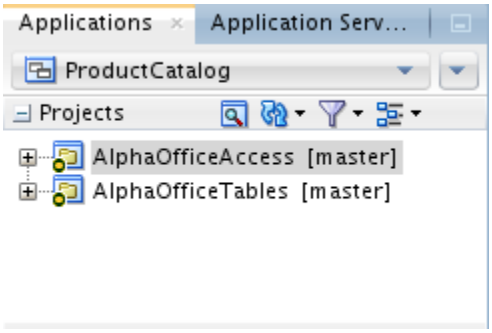
☐ **Click** on **Finish** to download the source code



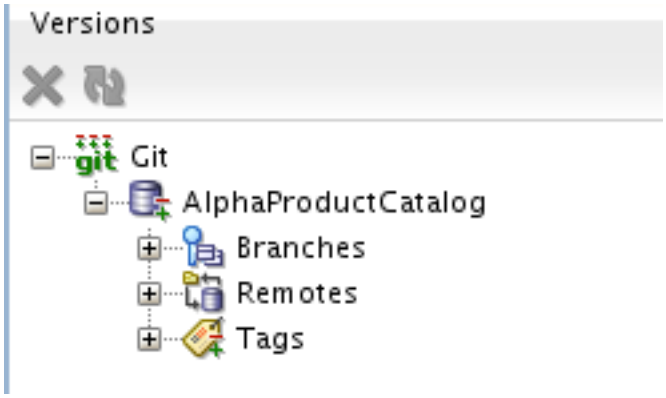
☐ To view the connection to the Git Repository, **click** on JDeveloper menu items **Team > Versions**



☐ Click on the **Applications** Tab.



☐ On the left side of the JDeveloper windows you will see a list of the Git repositories. Click on **AlphaProductCatalog** to Explore

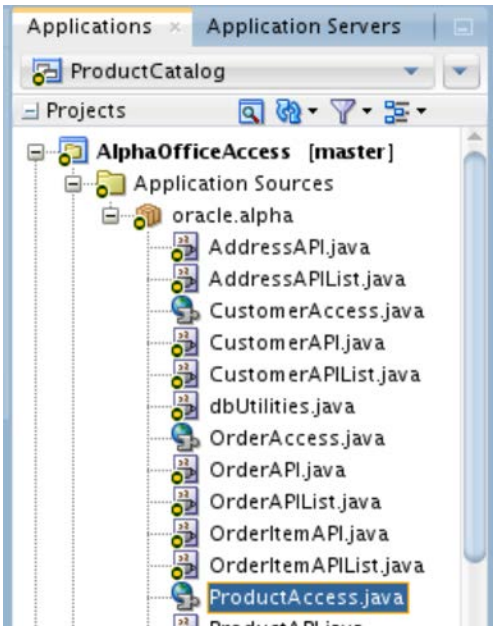


Explore Alpha Office Application Code

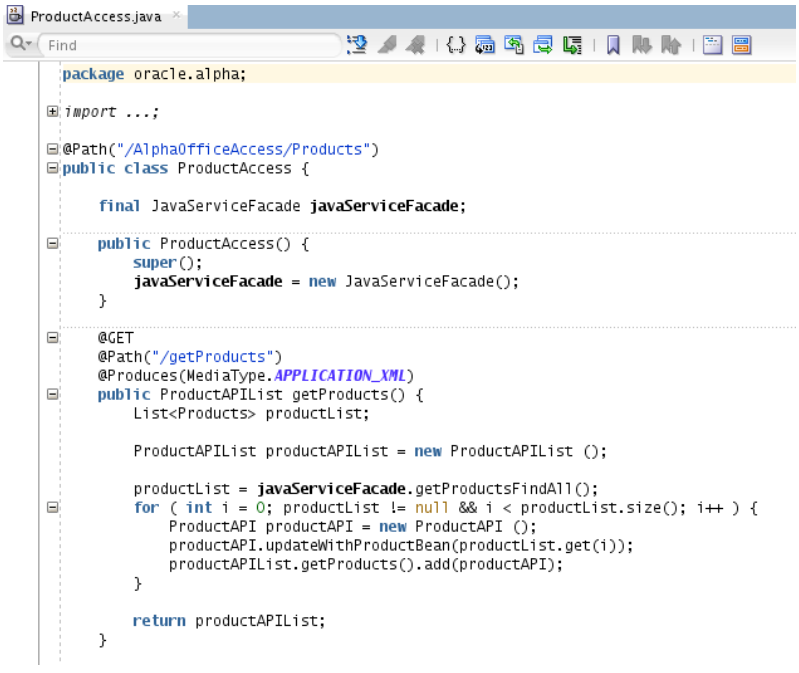
STEP 7: Explore Alpha Office Application Code

In this step we'll explore the code checked out from the DBCS Git repository.

☐ In JDeveloper, click on the **Applications** tab, and expand **AlphaOfficeAccess > Application Sources > oracle.alpha.** Right click on **ProductAccess.java** and select **Open**



☐ **Review** the code for the Alpha Office application.



STEP 8: Modify and Check in Code

Now we will have you modify a file and commit the changes back to the GIT repository

☐ Double click or Right click and select open on the File **Studen01.java**

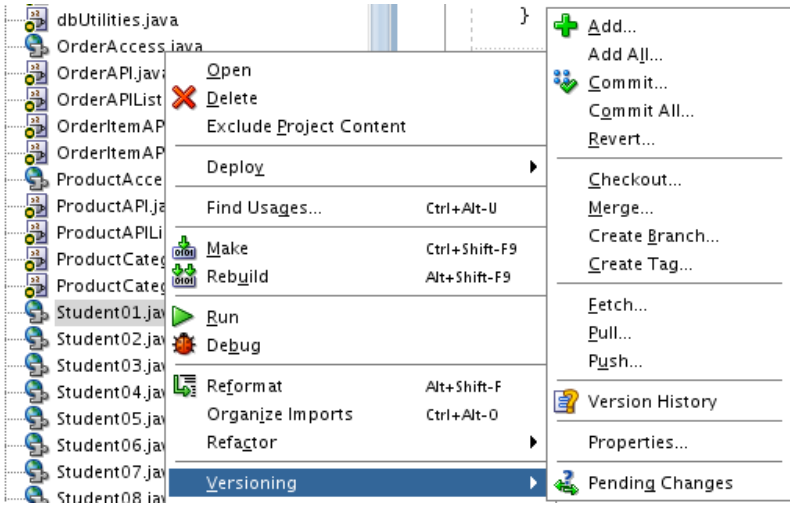
☐ Modify the following lines:

```
String firstName = “<insert your first name>”
String lastName = “<insert your last name>”
```

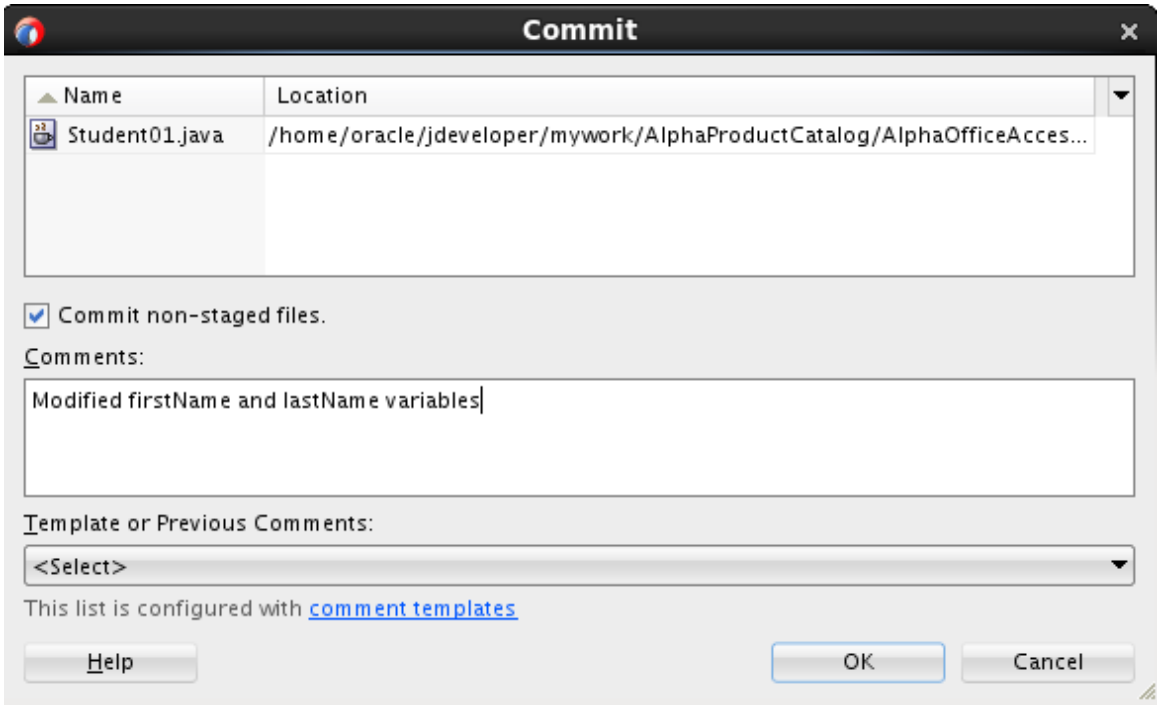
```
public String sayHello() {
    String message;
    String firstName = "Dennis";
    String lastName = "Foley";
```

☐ Click Save All 

☐ Right click on file **StudentXX.java**, select **Versioning -> Commit**



☐ Click on the **Commit non-staged files**, and enter comment "**Modified firstName and lastName variables**" and click **Ok**

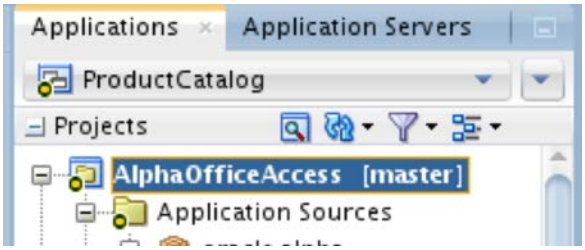


☐ Notice the GIT message in the log window for the commit to the local repository.

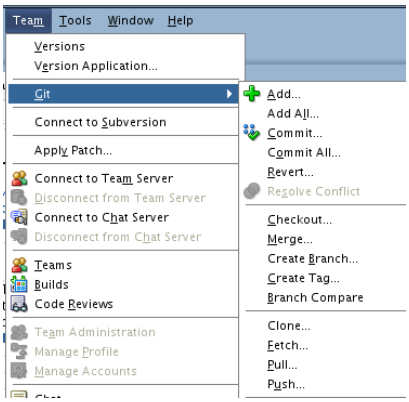
```
Build after save finished

git add /home/oracle/jdeveloper/mywork/AlphaProductCatalog/AlphaOfficeAccess/src/oracle/alpha/Student01.java
git commit -m Modified firstName and lastName variables /home/oracle/jdeveloper/mywork/AlphaProductCatalog/AlphaOfficeAccess/src/oracle/alpha/Student01.java
```

STEP 9: Push Changes to Developer Cloud Service

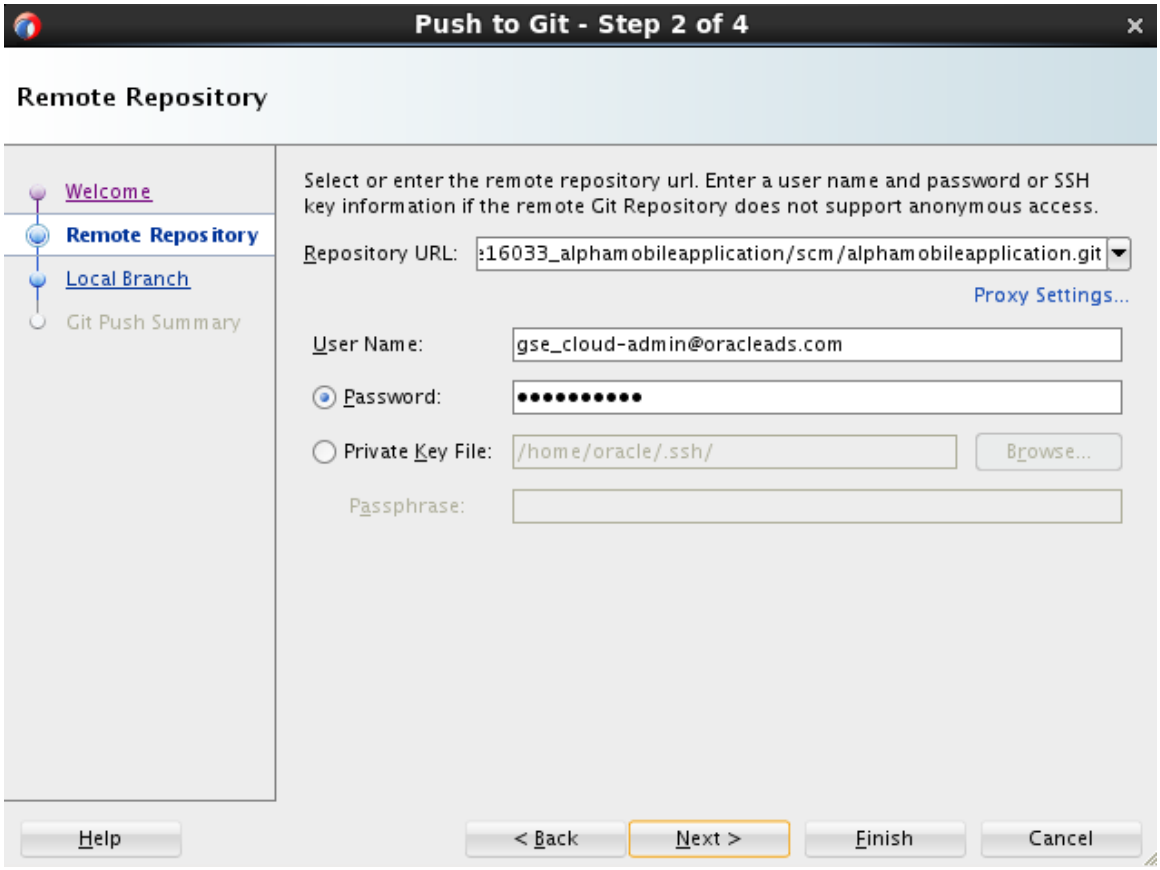
☐ Select the **AlphaOfficeAccess** Project



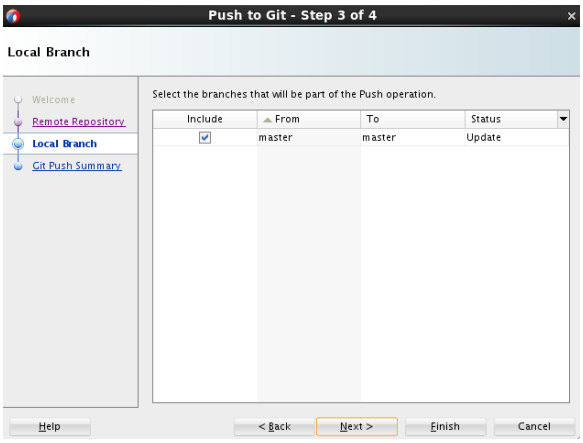
☐ From the JDeveloper menu select **Team -> Git -> Push**



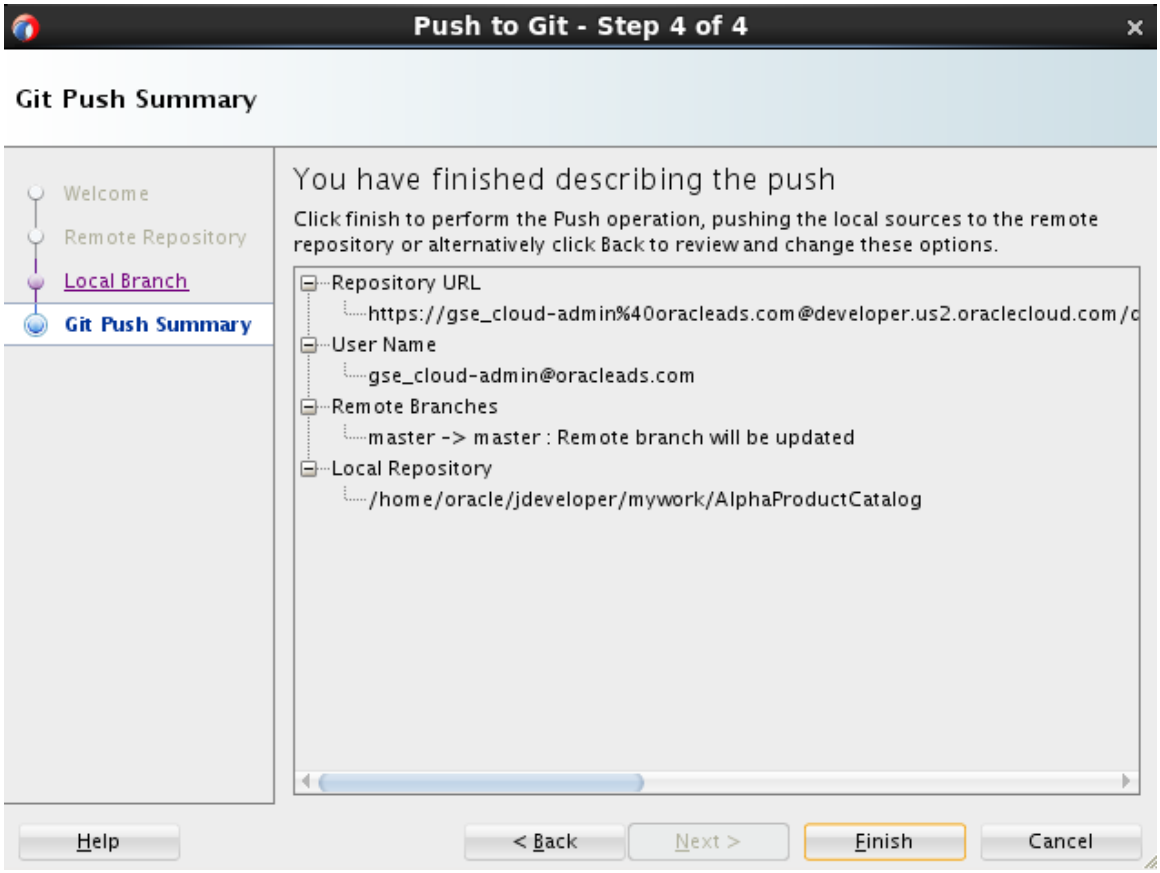
☐ Click **Next** on Welcome Page. Leave defaults for Remote Repository and click **Next**

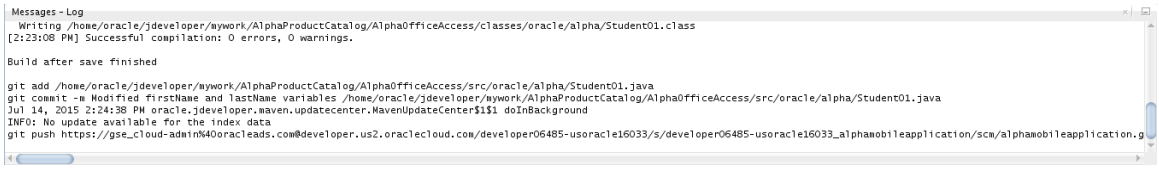


☐ Leave defaults for Local Branch and click **Next**



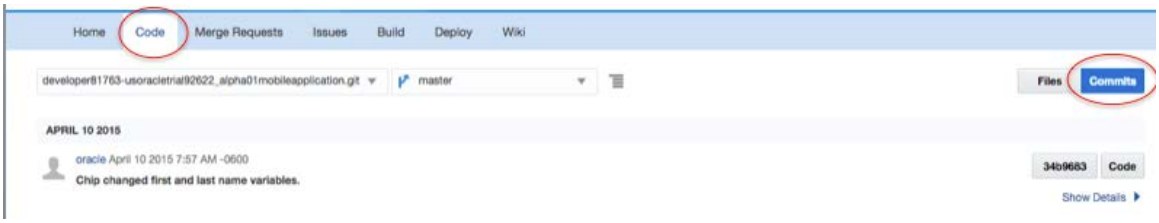
☐ Review summary page and click **Finish**



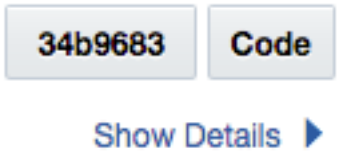


STEP 10: View updates in Developer Cloud Service

☐ Switch back to Firefox and the Developer Cloud Service. Click on **Code** icon/tab. Then click on the **Commits button** on the first right side of the page.

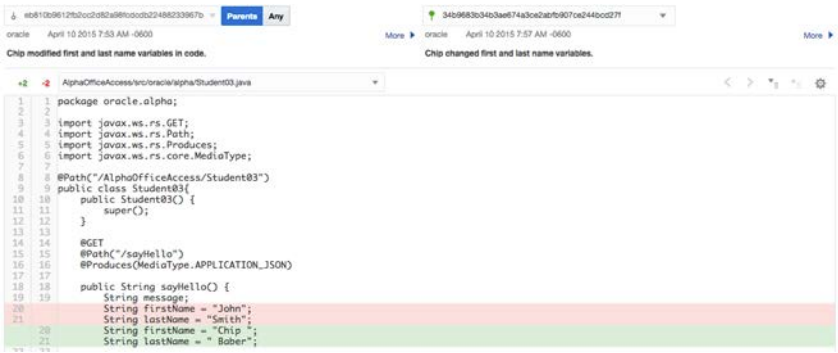


☐ Click on the Show Details link to list the changes for a given commit record.



☐ Click on one of the **Change Records** to view the modifications made to a given file.

☐ You can view the change you just made to your file

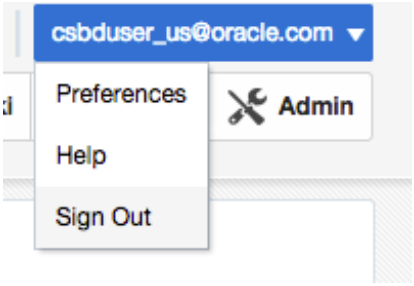


Deploying and Test the Java Application

Configure Weblogic

STEP 11: Reconnect to the Oracle Java Cloud Service

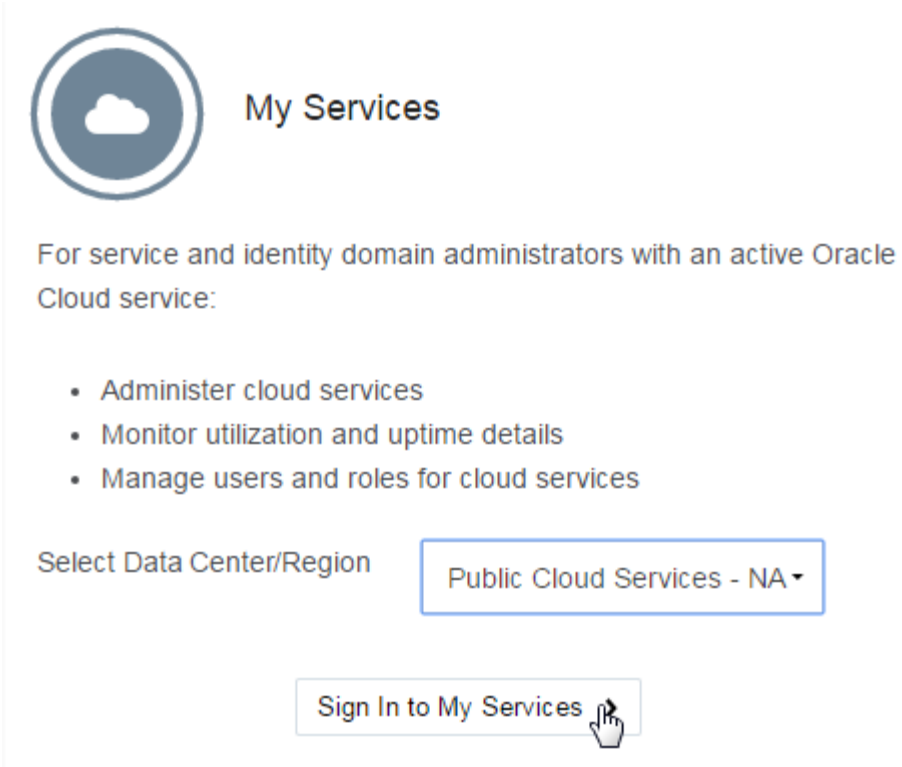
☐ If you are still logged into the **Developer Cloud** service, **Sign Out.** You will need to connect back into the **Java Cloud** Service



☐ From your browser, re-enter the URL **http://cloud.oracle.com**

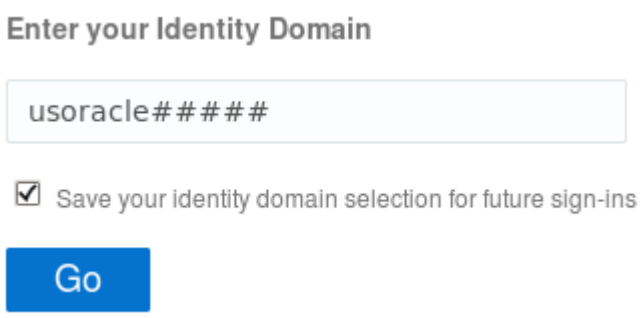
☐ Click **Sign In** in the upper right hand Side

☐ Under My Services change Data Center **to Public Cloud Services - NA** and click on **Sign In to My Services**



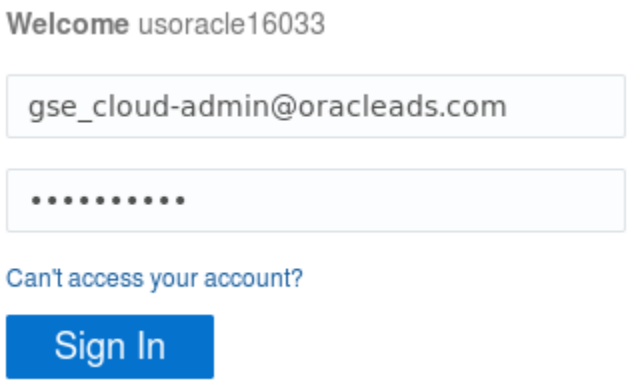
☐ If your identity domain is not already set, enter it, check to box to save it, and click **Go**

NOTE: the **Identity Domain, User Name** and **Password** values will be given to you from your instructor.



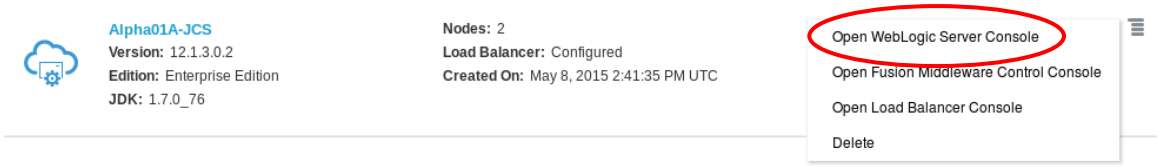
☐ Once your Identity Domain is set, enter your User Name and Password and click **Sign In**

NOTE: the **Identity Domain, User Name** and **Password** values will be given to you from your instructor.



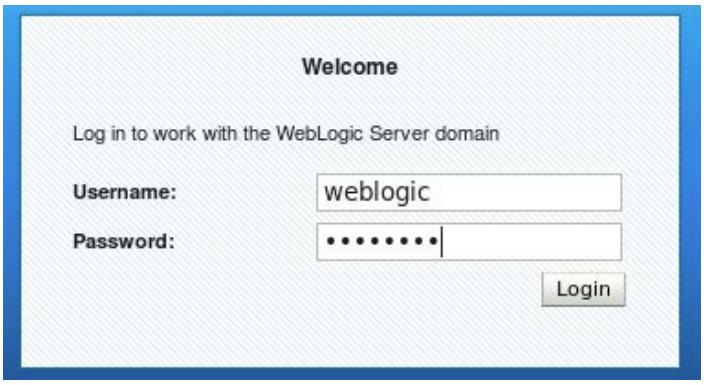
☐ Click on **Open Service Console** for the **Oracle Java Cloud Service**

☐ **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_
```

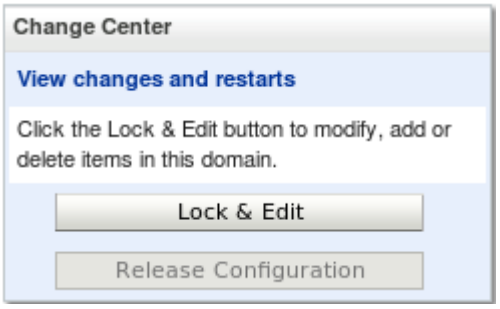


STEP 12: Load Required Libraries to WebLogic

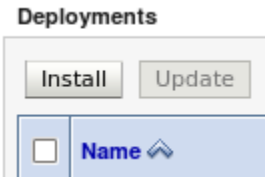
Our test application uses the jersey libraries for the development of REST api's. We need to load the jersey library into WebLogic.

☐ 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**



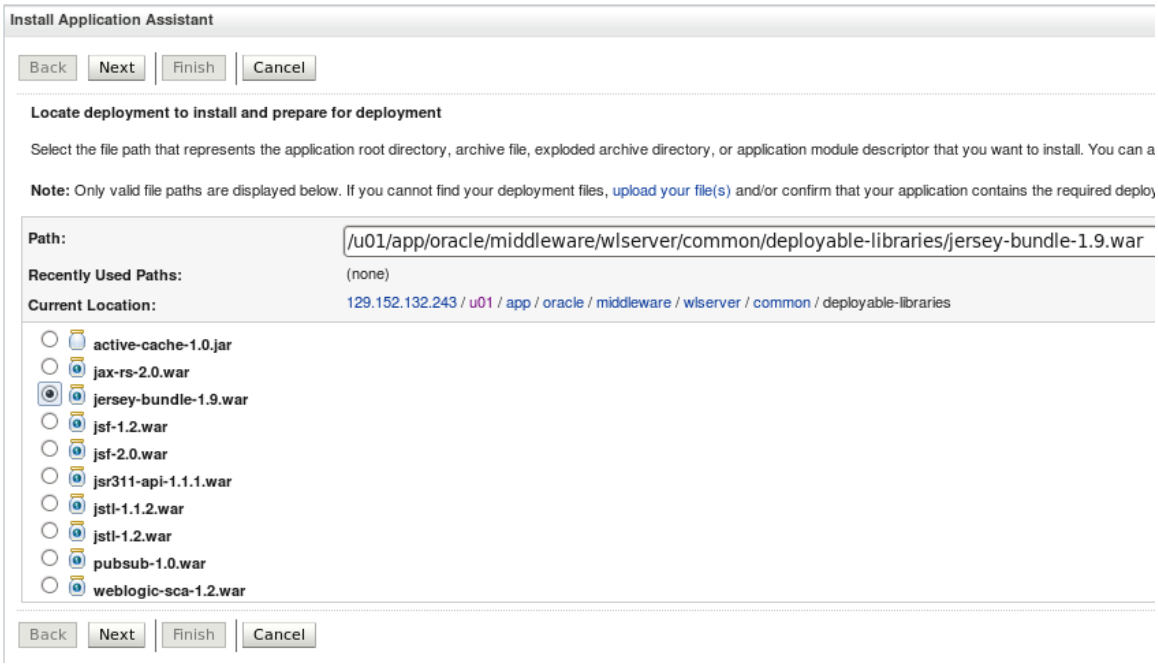
☐ On Deployment page click **Install**



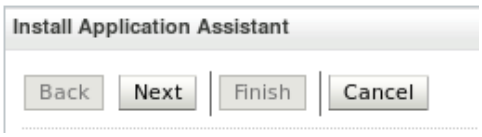
☐ Click on **u01** from the Current location navigate to the following location:

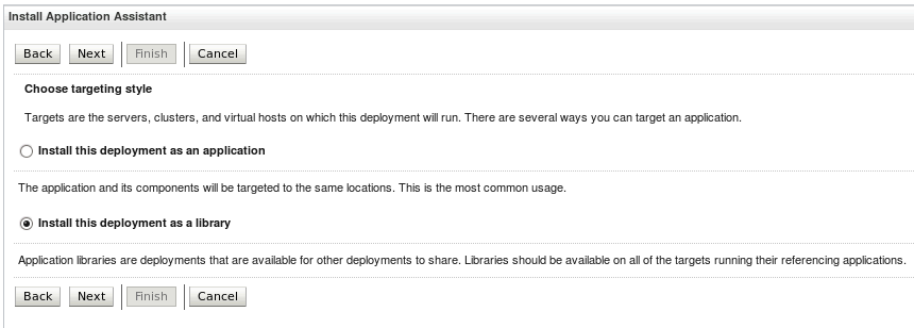
/u01/app/oracle/middleware/wlserver/common/deployable-libraries

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

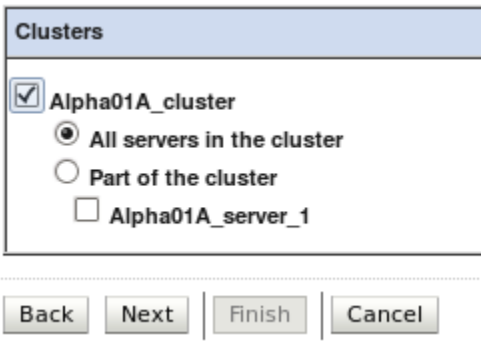


☐ Click **Next** again to **Install the deployment as a library**

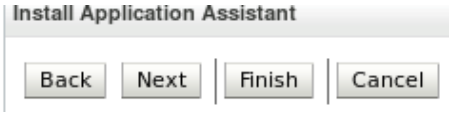


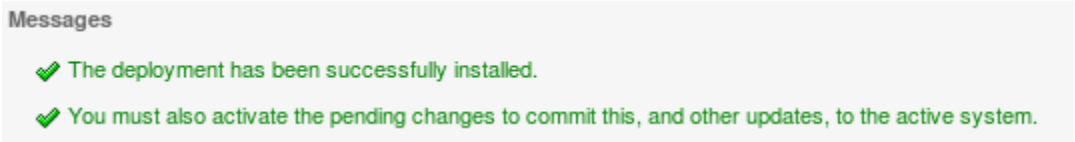


☐ Select **Alpha01A_cluster > All servers in the cluster,** then click **Next**

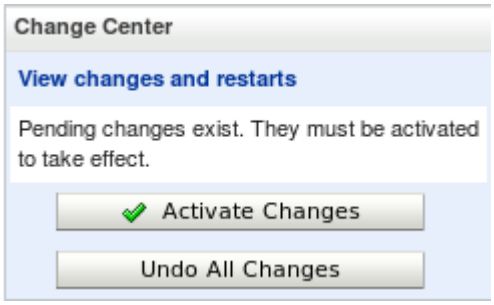


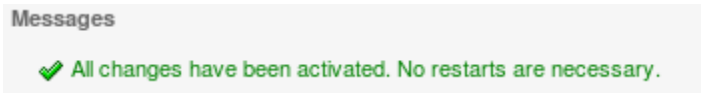
☐ Click **Finish**.





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

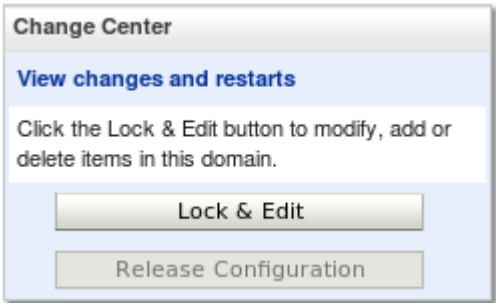




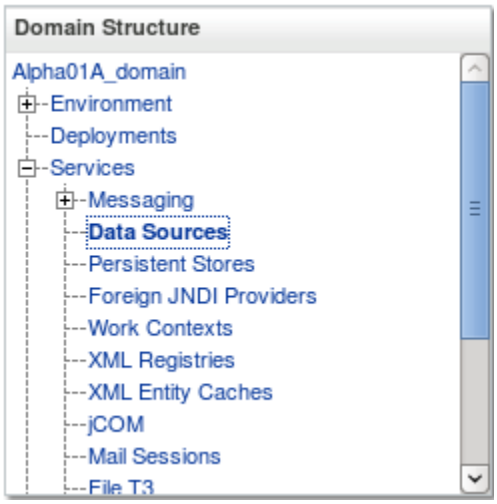
STEP 13: Create required Data Source

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

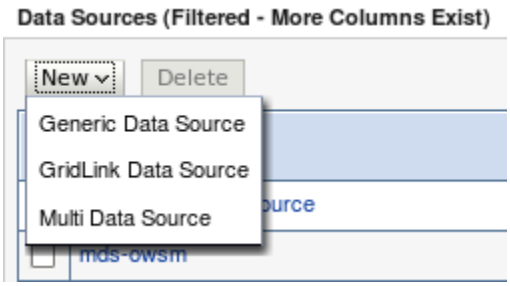
☐ In the WebLogic Console click **Lock & Edit** in Change Center



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



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



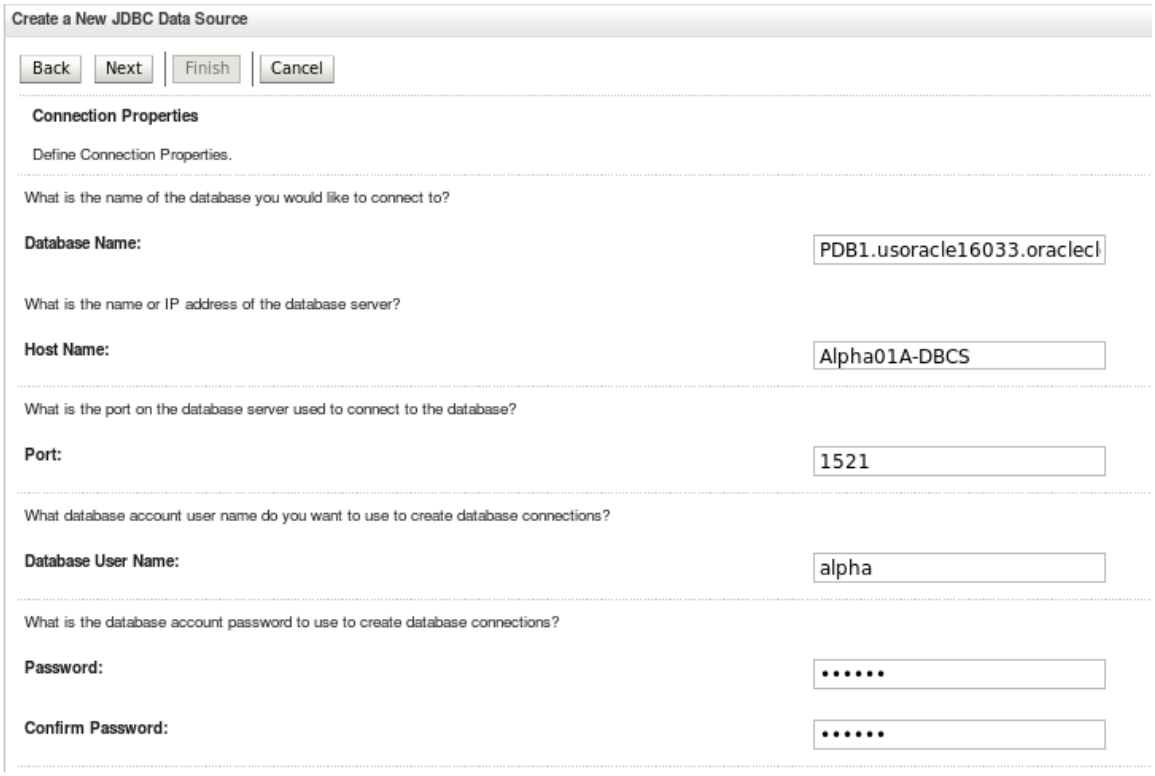
☐ Enter the following JDBC Details and click **Next**

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

☐ 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
```

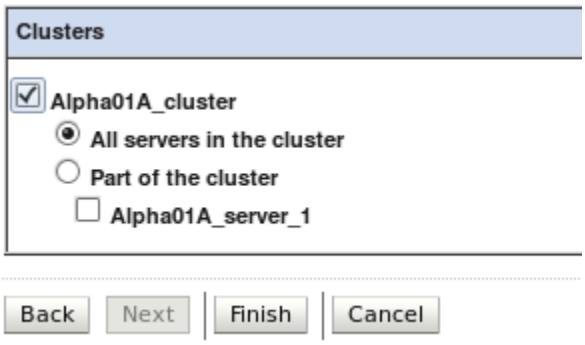


☐ Make the following correction to the URL Field. Change the ":" following the 1521 to a "/". It should read **":1521/".** See the example below

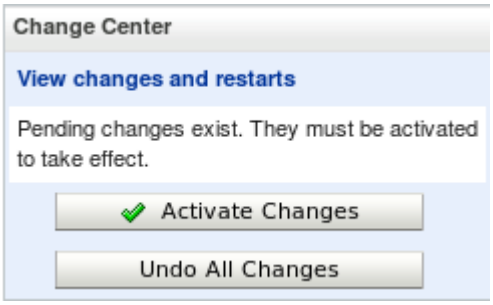
```
URL = jdbc:oracle:thin:@Alpha01A-DBCS:1521/PDB1.<Your Domain
Id>.oraclecloud.internal
```

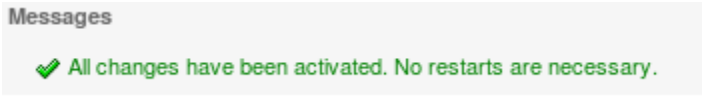
☐ Click **Test.Configuration**. If the connection test succeeded, click **Next**.

☐ Select **Alpha01A_cluster** and click **Finish**



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

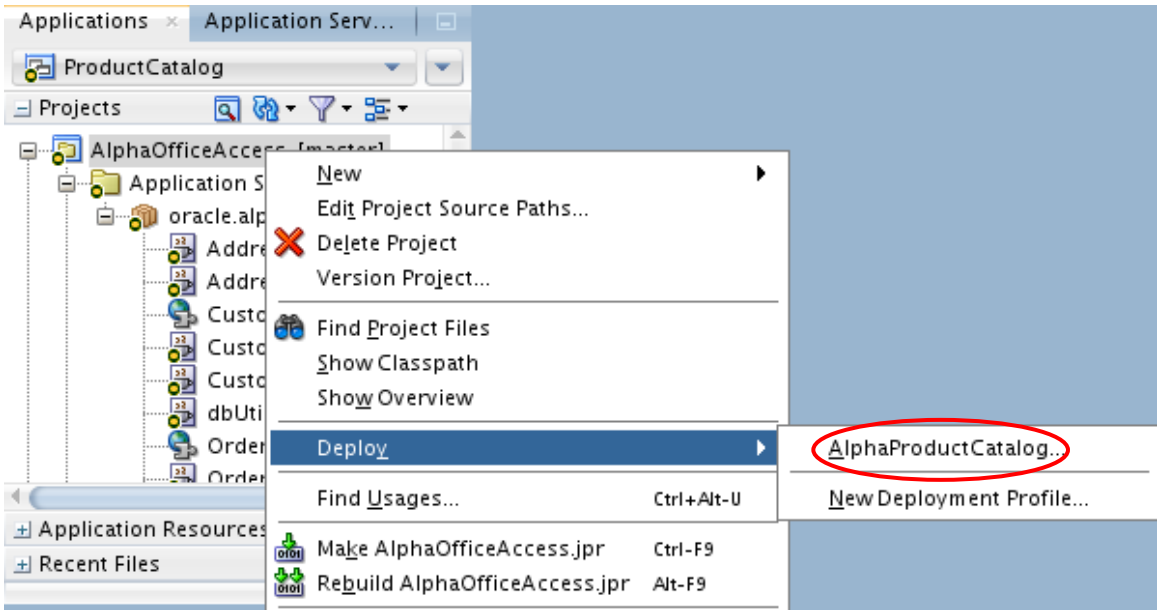




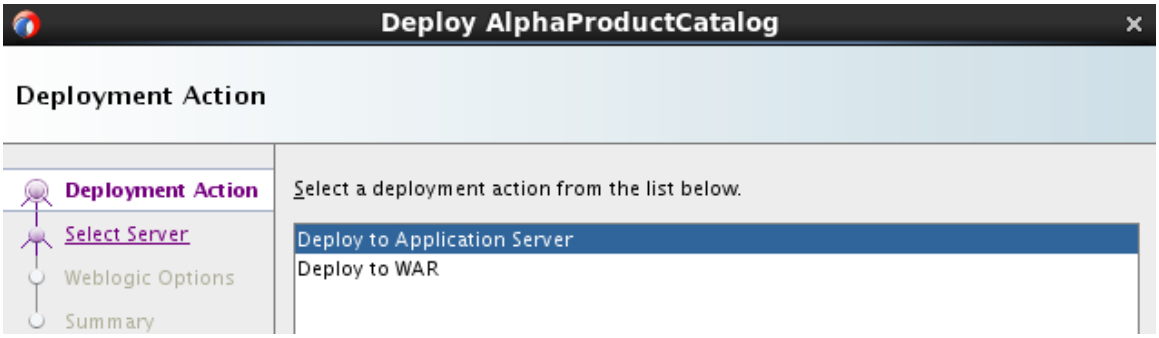
Deploy Application

STEP 14: Deploy Application

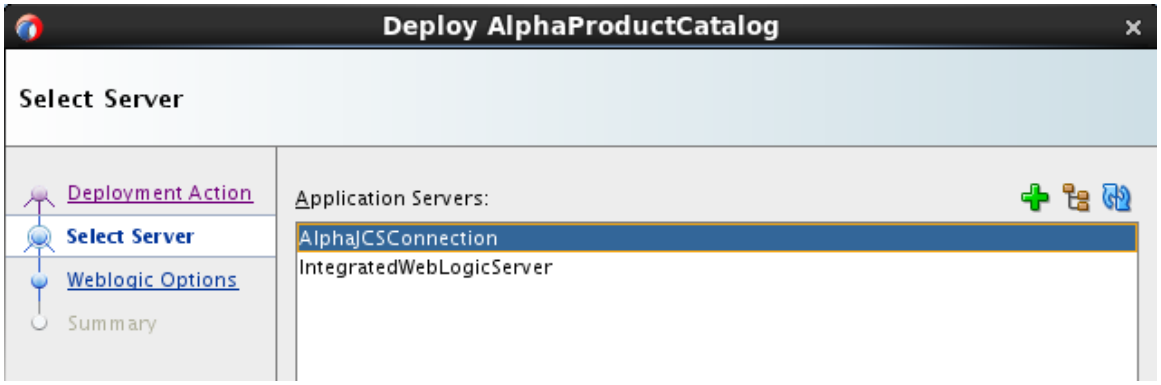
☐ From JDeveloper 12c, right click on **AlphaOfficeAccess** project. Select **Deploy -> AlphaProductCatalog**



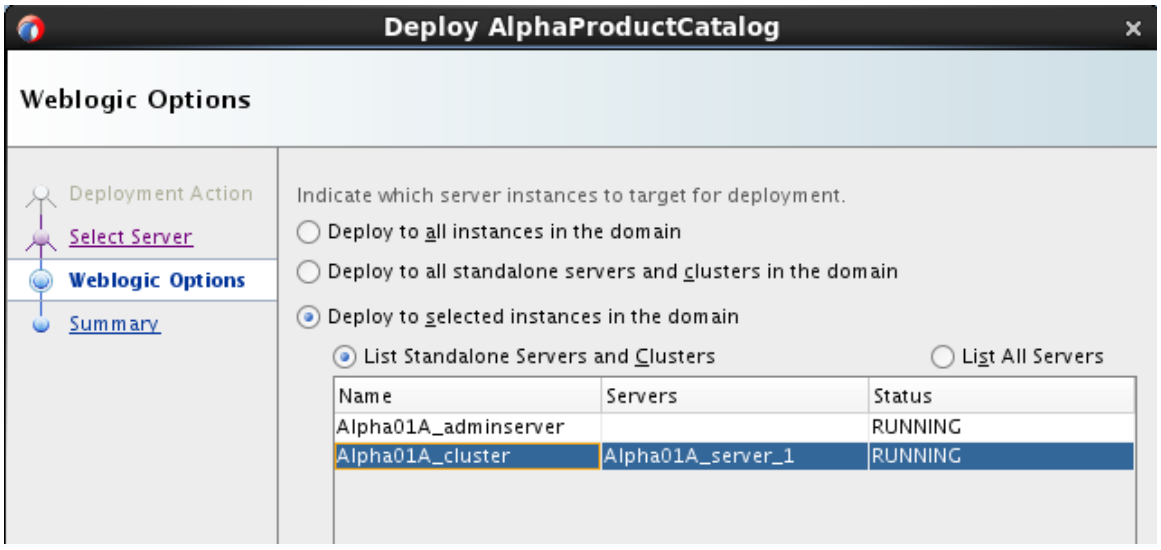
☐ Select **Deploy to Application Server** and click on **Next**



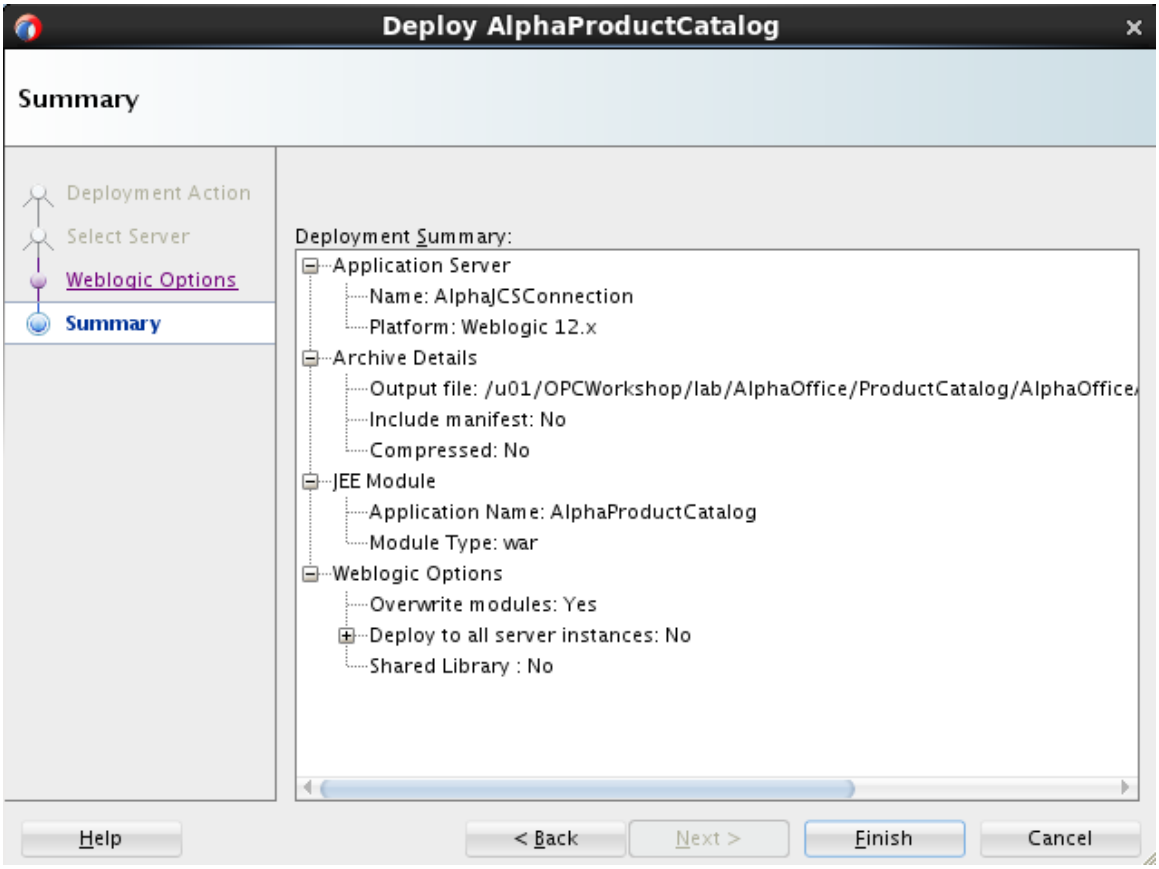
☐ Select **AlphaJCSConnection** as the Application Server and click **Next**



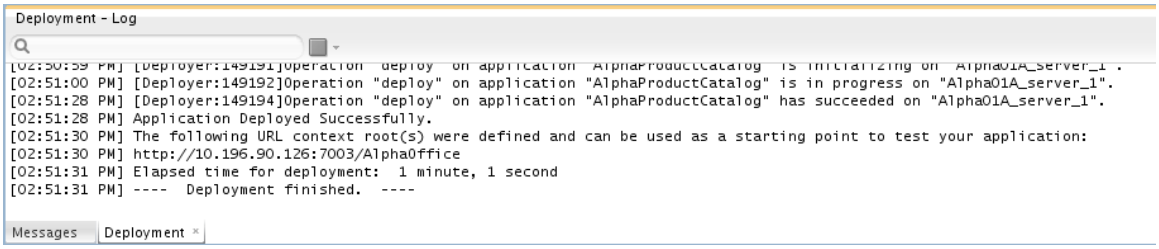
☐ Select **Deploy to selected instances in the domain. List Standalone Servers in the Cluster** and select **Alpha01A_cluster**. Click **Next**.



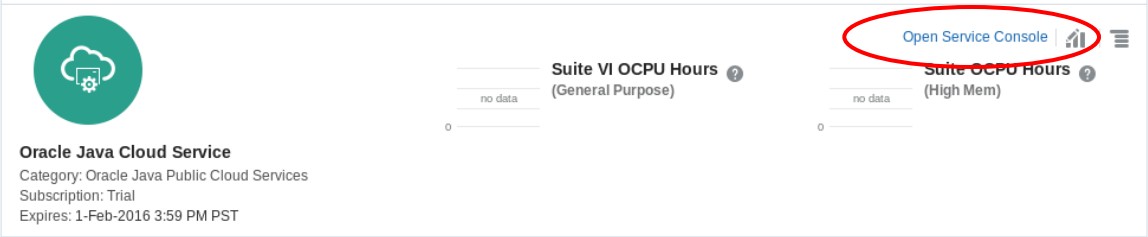
☐ Click on **Finish**



☐ **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.



☐ 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**



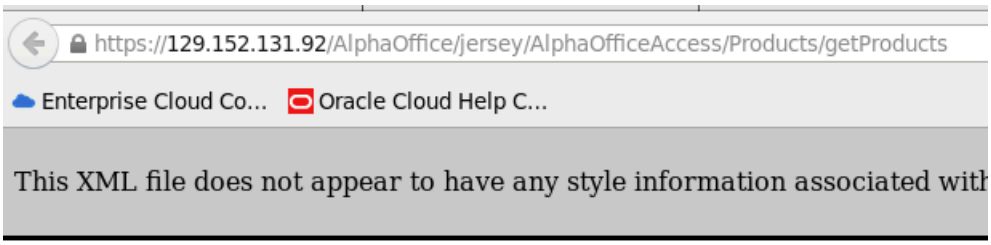
☐ Select the **Cloud icon** next to **Alpha01A-JCS** in the list of Services

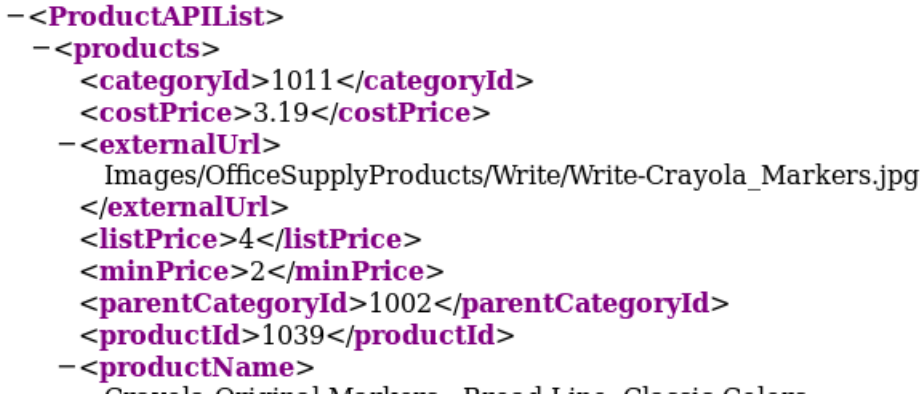
☐ Write down the **Public IP Address** of **Load Balancer.** (Note: if the load balance is not visible, click on the refresh icon until the Load Balancer is visible)

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

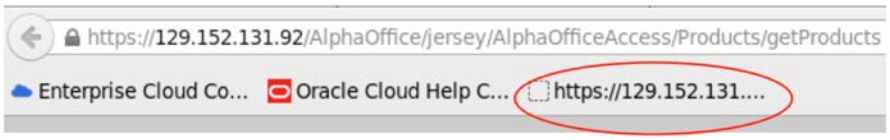
```
https://<loadBalancerIp>/AlphaOffice/jersey/AlphaOfficeAccess/Products/getProducts
```

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



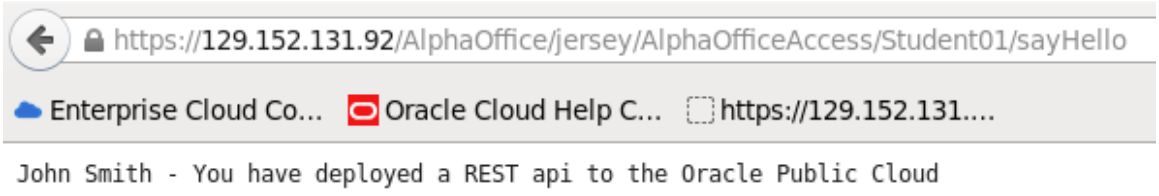


☐ If you receive an error, double check all previous steps especially ones where you need to click "Activate Changes" in weblogic. Drag this URL to your Browser's bookmark bar for later use



☐ You can also test out the Student code you modified, checked into the Developer Service and then deployed to the JCS. Enter the following URL from your browser, replacing <**Studentxx**> with the number you were assigned:

```
https://<loadBalancerIp>/AlphaOffice/jersey/AlphaOfficeAccess/Student01/sayHello
```



☐ This Lab is completed.