

200 Oracle Public Cloud Workshop

Fusion Middleware Cloud Services

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June 8, 2015

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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

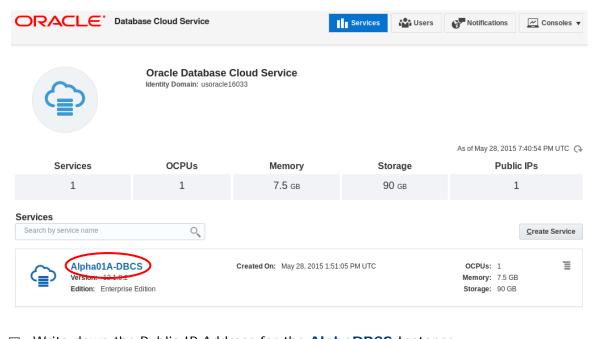
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Connecting to the Java and Database Services

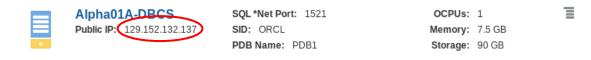
Connect to Database Cloud Service

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.



☐ Write down the Public IP Address for the **AlphaDBCS** 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.

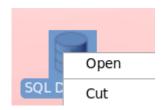
```
ssh -o ServerAliveInterval=60 -i ./lab/labkey oracle@<DB ip> -L 1521:<DB IP>:1521
```

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



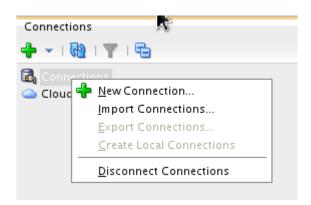
STEP 2: Explore Alpha Office Schema with SQL Developer

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



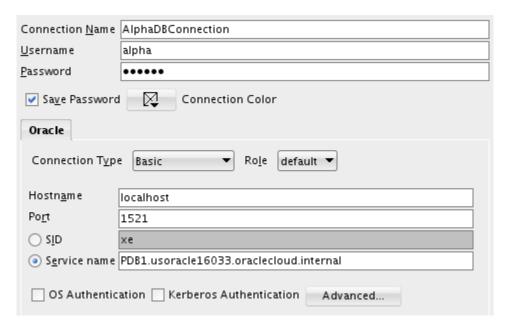
☐ Right click on Connections and select New Connection

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



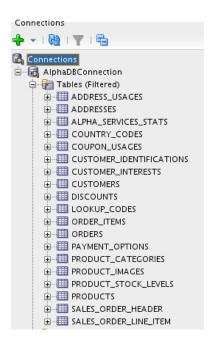
☐ Enter the following Connection Details



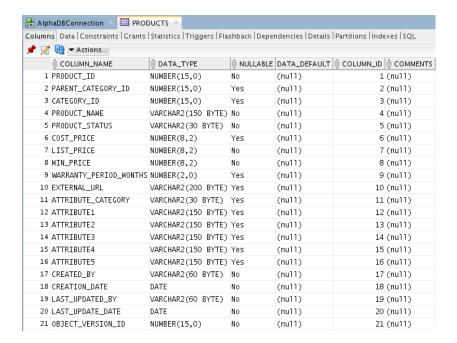


☐ Click **Test** to confirm information is entered correctly. If you get a status of **Success** located in the bottom left corner of the dialog box, Click **Save** to store your connection information, and then Click **Connect** to exit the dialog

□ 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.



☐ 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



OCPUs: 1

Memory: 7.5 GB

Storage: 52 GB

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STEP 4: Create Connection to Weblogic Domain

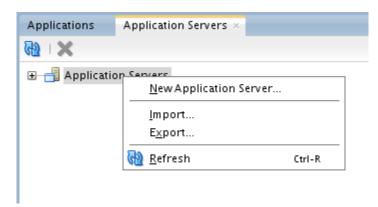
☐ From the Desktop, Right click on JDeveloper 12c and select Open



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



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

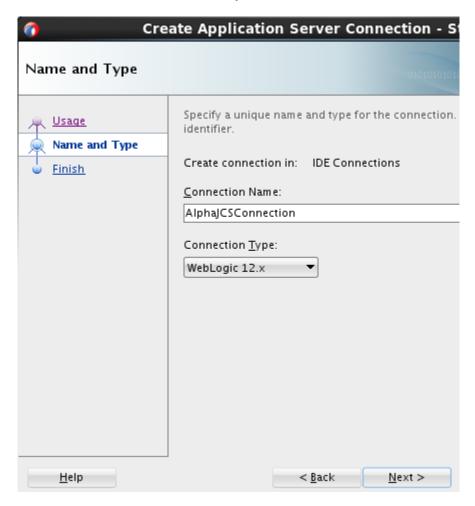


☐ If you receive the following screen, leave the default of **Standalone Server** for Step 1 and click **Next**



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☐ Enter Connection Name of AlphaJCSConnection and click Next



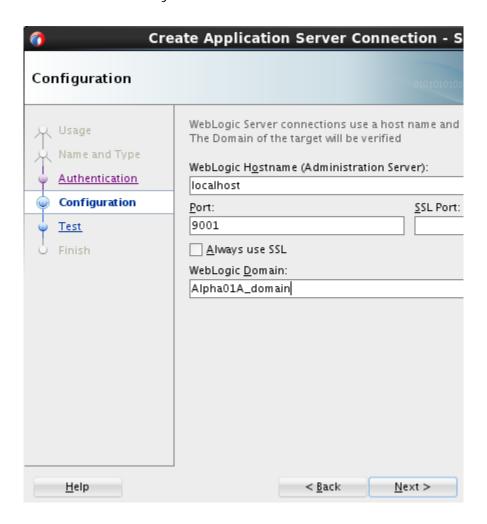
☐ Enter Username = weblogic and Password = Alpha2014_ and click Next



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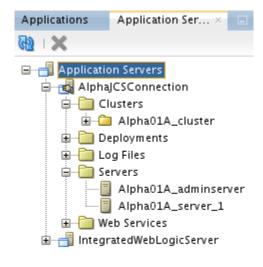
☐ Enter Port = 9001, leave the SSL Port blank, and WebLogic Domain = Alpha01A_domain and click Next. Note: localhost is used because the ssh tunnel will cause you to be connected to the WLS Admin server.



☐ 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.



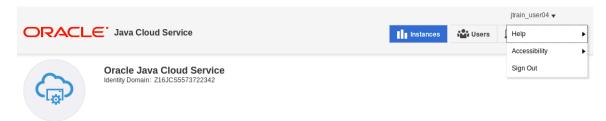
Exploring the Developer Cloud Service

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 using a different user account. This user has a 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**



For users with an active Oracle Cloud service:

- Administer cloud services
- Monitor utilization and uptime details

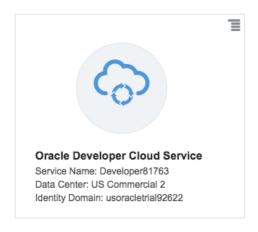


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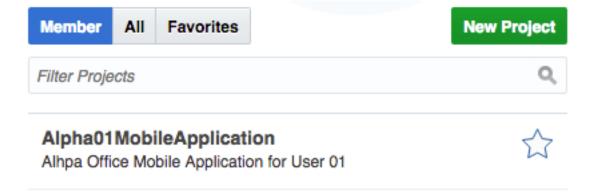
☐ Sign into the Oracle Cloud with the following credentials:



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



☐ From the Service Console you will view all the projects that have been checked into this developer Service. Click on the **AlphaO1MobileApplication**.



☐ 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.



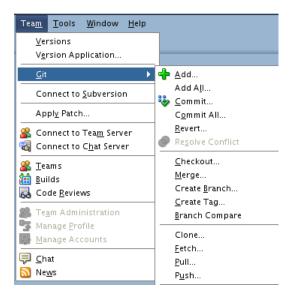
☐ Copy the https URL displayed in the pop up window. You will use this URL when connecting JDeveloper to the Developer Service Git Repository.



JDeveloper GIT Configuration

STEP 6: JDeveloper GIT Configuration

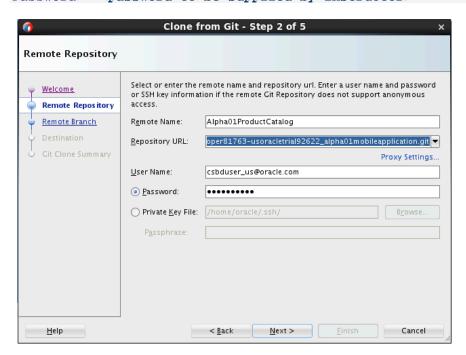
From the JDeveloper menu select **Team -> Git -> Clone**. This step accesses the DCS repository and checks the code into to your local JDeveloper.



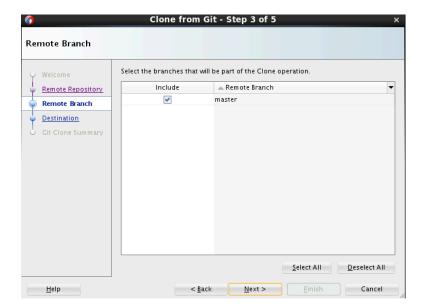
☐ Click Next on the Clone Wizard dialog



☐ Enter the following into the dialog and click on Next



☐ Click Next to select the Master Branch



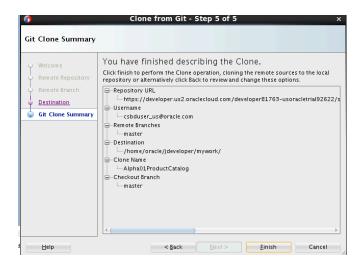
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☐ Enter the following in the dialog and click on Next

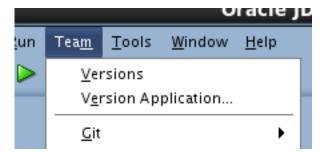
Destination = <Accept the default>
Clone Name = AlphaProductCatalog
Checkout Branch = master



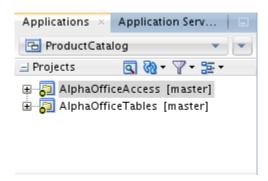
☐ Click on Finish to download the source code



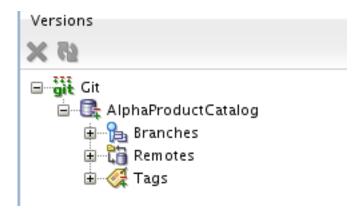
☐ To view the connection to the Git Repository, **click** on JDeveloper menu items **Team > Versions**



☐ 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



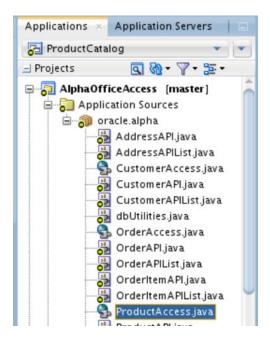
Explore Alpha Office Application Code

STEP 7: Explore Alpha Office Application Code

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

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□ 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.

```
📴 ProductAccess.java 🐣
Q- Find
                                          package oracle.alpha;
     import ...;
     ⊟ @Path("/AlphaOfficeAccess/Products")
     □ public class ProductAccess {
           final JavaServiceFacade javaServiceFacade;
           public ProductAccess() {
               super();
javaServiceFacade = new JavaServiceFacade();
           @GET
     @Path("/getProducts")
@Produces(MediaType.APPLICATION_XML)
public ProductAPIList getProducts() {
     List<Products> productList;
               ProductAPIList productAPIList = new ProductAPIList ();
               productList = javaServiceFacade.getProductsFindAll();
               for ( int i = 0; productList != null && i < productList.size(); i++ ) {
   ProductAPI productAPI = new ProductAPI ();</pre>
     productAPI.updateWithProductBean(productList.get(i));
                    productAPIList.getProducts().add(productAPI);
               return productAPIList;
```

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 **StudenXX.java**

Note: Student number XX will be assigned by the instructor

```
👶 Student01.java
                                        package oracle.alpha:
     ⊞ import ...;
     ■@Path("/AlphaOfficeAccess/StudentO1")
    □ public class Student01 {
□ public Student01 \( \)
          public Student01() {
              super();
          @GFT
           @Path("/sayHello")
           @Produces(MediaType.APPLICATION_JSON)
           public String sayHello() {
               String message;
String firstName = "John";
String lastName = "Smith";
               message = new String (firstName + " " + lastName + " - You have deployed a REST api to the Oracle Public Cloud");
               return message;
Student 01 🕶
Source History
```

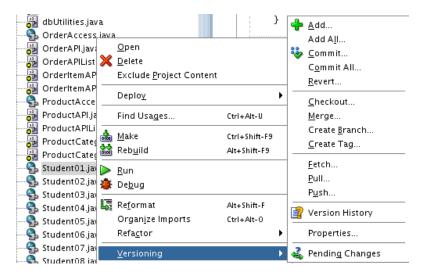
☐ Modify the following lines:

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

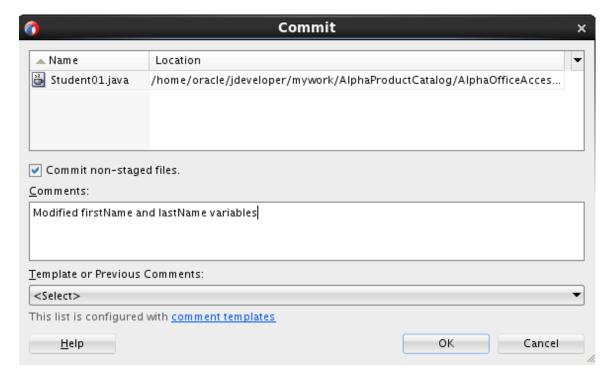
public String sayHello() {
   String message;
   String firstName = "Dennis";
   String lastName = "Foley";
```

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- ☐ 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



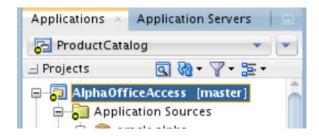
Notice the GIT message in the log window for the commit to the local repository.

Build after save finished

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

STEP 9: Push Changes to Developer Cloud Service

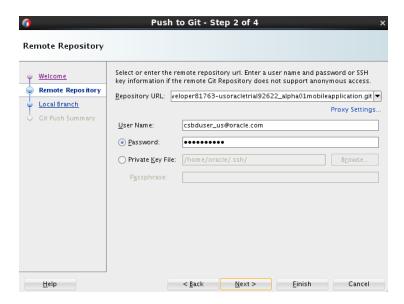
□ Select the AlphaOfficeAccess Project



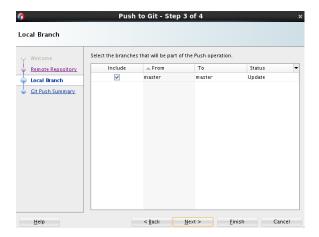
☐ From the JDeveloper menu select Team -> Git -> Push



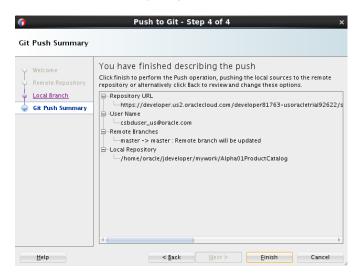
☐ Click **Next** on Welcome Page. Leave defaults for Remote Repository and click **Next**



□ Leave defaults for Local Branch and click Next



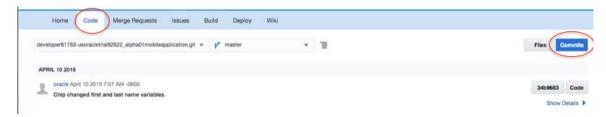
☐ Review summary page and click Finish



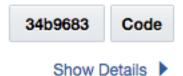


STEP 10: View updates in Developer Cloud Service

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.



 $\hfill \Box$ 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.



oracle April 10 2015 7:57 AM -0600

Chip changed first and last name variables.



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

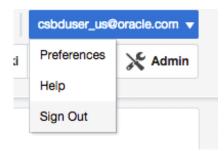
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Deploying and Test the Java Application

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 US and click on Sign In to My Services



For service and identity domain administrators with an active Oracle Cloud service:

- · Administer cloud services
- Monitor utilization and uptime details
- Manage users and roles for cloud services

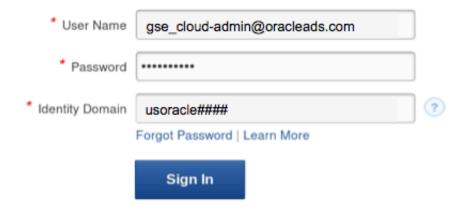
Select Data Center/Region

Public Cloud Services - Ut

Sign In to My Services >

☐ Enter your Username, Password and Identity Domain then click Sign In

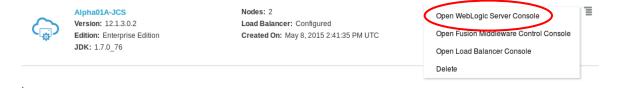
Sign In to Oracle Cloud



☐ Click on Open Service Console for the 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_
```

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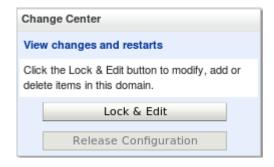
STEP 12: Load Required Libraries to WebLogic

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

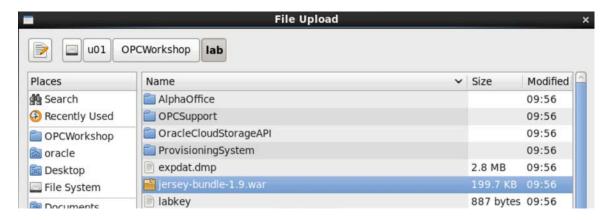
Deployments



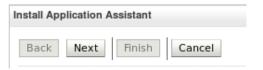
Revised: June 8, 2015 Copyright © 2012, Oracle Corporation ☐ Click on upload your file(s) link



- ☐ Under **Deployment Archive** click **Browse**.
- □ Navigate to /u01/OPCWorkshop/lab. Select jersey-bundle-1.9.war and click OPEN

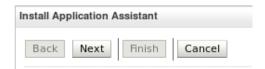


Click Next. You will receive a message that the file was successfully uploaded.

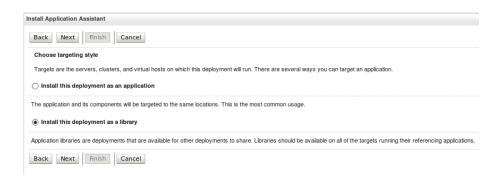




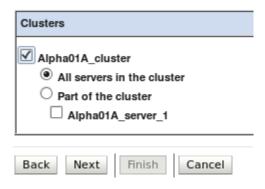
☐ Click Next again to Install the deployment as a library



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



☐ Click **Finish**.



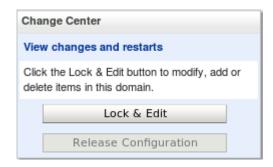
☐ In the Change Center click Activate Changes.



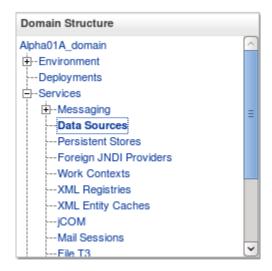
STEP 13: Create required Data Source

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

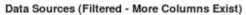
☐ In the WebLogic Console click **Lock & Edit** in Change Center

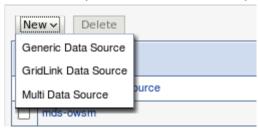


☐ In Domain Structure Expand Services and select Data Sources



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

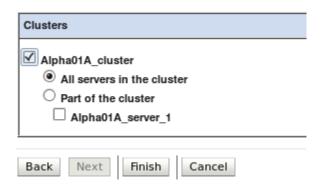




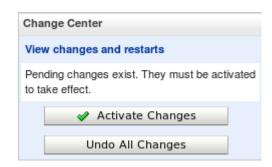
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☐ Enter the following JDBC Details and click Next Name = AlphaOfficeAccessDS JNDI Name = jdbc/AlphaOfficeAccessDS Back Next Finish Cancel JDBC Data Source Properties The following properties will be used to identify your new JDBC data source. * Indicates 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? Mame: 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 Next Finish Cancel Back 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



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

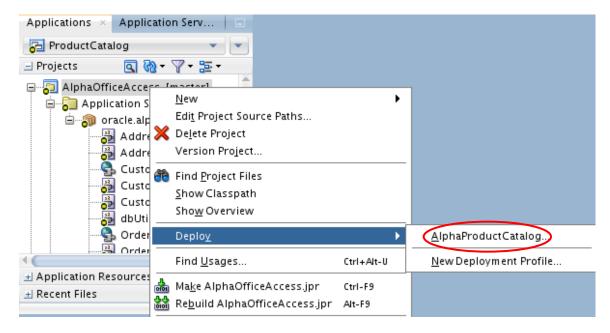


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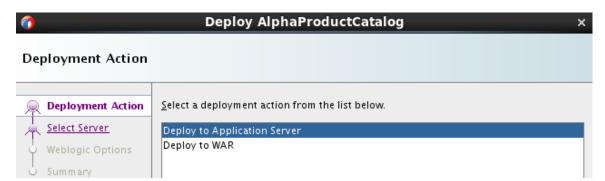
Deploy Application

STEP 14: Deploy Application

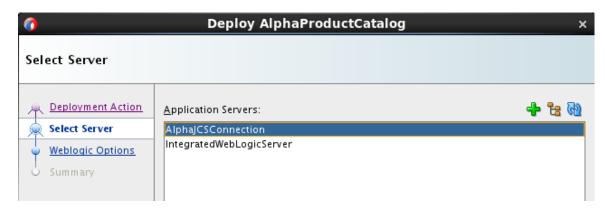
□ From JDeveloper 12c, right click on AlphaOfficeAccess project. Select Deploy
 -> AlphaProductCatalog



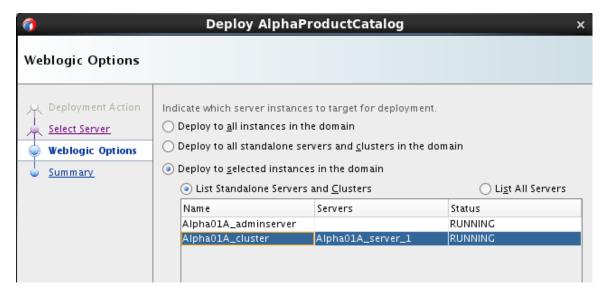
☐ Select **Deploy to Application Server** and click on **Next**



☐ Select AlphaJCSConnection as the Application Server and click Next

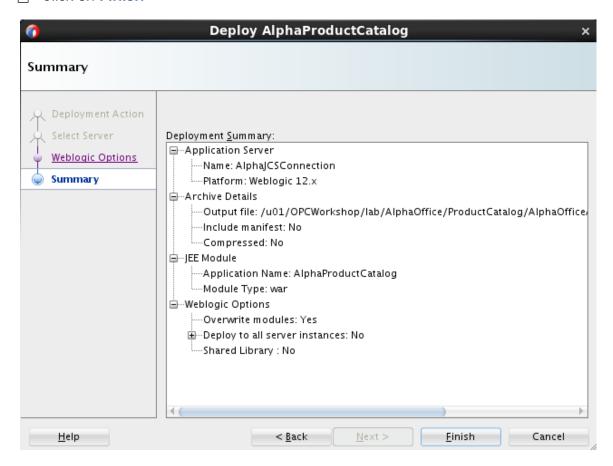


☐ Select Deploy to selected instances in the domain. List Standalone Servers in the Cluster and select Alpha01A_cluster. Click Next.



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☐ 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

[U2:50:59 PM] [Deployer:149191] [Operation deproy on application AlphaProductCatalog is initializing on AlphaOlA_server_1 .
[02:51:00 PM] [Deployer:149194] [Operation "deploy" on application "AlphaProductCatalog" is in progress on "AlphaOlA_server_1".
[02:51:28 PM] [Deployer:149194] [Operation "deploy" on application "AlphaProductCatalog" has succeeded on "AlphaOlA_server_1".
[02:51:28 PM] Application Deployed Successfully.
[02:51:20 PM] Application Deployed Successfully.
[02:51:30 PM] hetfollowing URL context root(5) were defined and can be used as a starting point to test your application:
[02:51:30 PM] http://10.196.90.126:7003/AlphaOffice
[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 **Java Cloud Service**



☐ 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)



Public IF: 129.152.133.160

Host: alphaola iss lb 1

Content endpoint: https://129.152.133.160

OCPUs: 1.0 Memory: 7.5 GB

Storage: 20 GB

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☐ Using the Load Balance Public IP, enter the following URL:
https:// <loadbalancerip>/AlphaOffice/jersey/AlphaOfficeAccess/Products/getProducts</loadbalancerip>
If you are receive a message that the connection is Untrusted, as before, click on "I Understand the Risks," and add the Exception
https://129.152.131.92/AlphaOffice/jersey/AlphaOfficeAccess/Products/getProducts
► Enterprise Cloud Co □ Oracle Cloud Help C
This XML file does not appear to have any style information associated with
- <productapilist> -<products></products></productapilist>
☐ 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
♦ https://129.152.131.92/AlphaOffice/jersey/AlphaOfficeAccess/Products/getProducts
► Enterprise Cloud Co ☐ Oracle Cloud Help C ☐ https://129.152.131
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/Studentxx/sayHello</loadbalancerip>
0 https://120.152.121.02/AlphaOffice.for/AlphaOffice.Access/forder-to-1/2
https://129.152.131.92/AlphaOffice/jersey/AlphaOfficeAccess/Student01/sayHello
► Enterprise Cloud Co □ Oracle Cloud Help C □ https://129.152.131
John Crith - Van hous deployed a DEST and to the Ornale Bublic Cloud

John Smith - You have deployed a REST api to the Oracle Public Cloud

Deleting Alpha01B-JCS

Freeing up Resources by Delete Alpha01B-JCS

STEP 15: Delete the JCS Instance created during lab 100

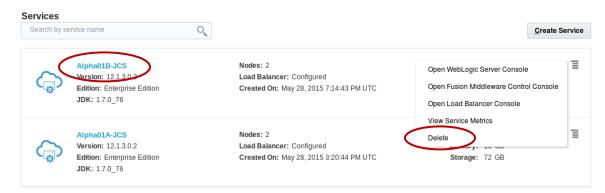
If you created a JCS Instance in Lab 100, and you desire to continue with the lab 300 (when you will "Scale Out" Alpha01A-JCS Server), then due to capacity restrictions placed on your Student Account Domains, you will need to delete the JCS Instance you created in Lab 100.

☐ 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 **Java Cloud Service**

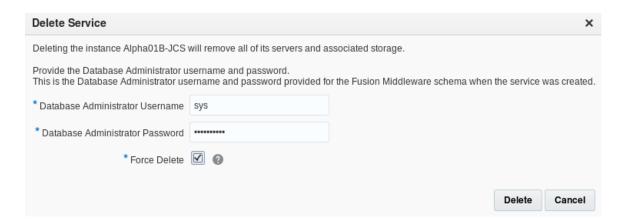


From the list of JCS Instances, click on icon

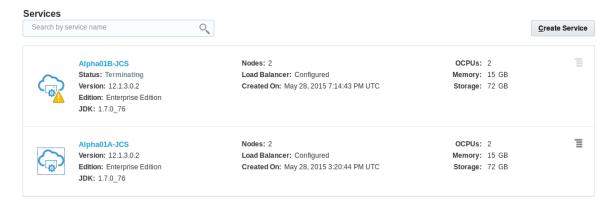
Alpha01B-JCS instances that you created during lab 100. Ensure that you are deleting the 01B instance. Select Delete Service.



□ Enter sys for the Database Administration user, and Alpha2014_ for the password. Select the Force Delete check box, and click on the Delete Service button.



☐ Your Alpha01B-JCS instance should now be in a Terminating state



☐ This Lab is completed.