Oracle Cloud Developer Workshop

Cloud-Native DevOps Lab 01

V1.0

ORACLE LAB BOOK | OCT 2018

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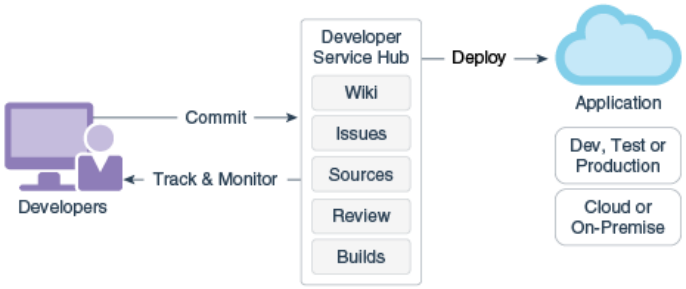
Overview

Oracle Developer Cloud Service is a cloud-based software development Platform as a Service (PaaS) and a hosted environment for your application development infrastructure. It provides an open-source standards-based solution to manage the application development life cycle effectively through integration with Hudson, Git, Maven, issues, and wikis. Using Oracle Developer Cloud Service, you can commit your application source code to the Git repository on the Oracle Cloud, track assigned issues and defects online, share information using wiki pages, peer review the source code, and monitor project builds. After successful testing, you can deploy the project to Oracle Java Cloud Service - SaaS Extension, publicly available Oracle Java Cloud Service instances, Oracle Application Container Cloud Service instances, or to an on-premise production environment.



The key features of Oracle Developer Cloud Service include:

Project creation, configuration, and user management

- Version control and source code management with Git
- Storage of application dependencies and libraries with Maven
- Continuous build integration with Hudson
- Wiki for document collaboration
- Issue tracking system to track tasks, defects, and features
- Repository branch merge after code review

Oracle Developer Cloud Service is available as a web interface accessible from a web browser and from Integrated Development Environments (IDEs) such as Oracle Enterprise Pack for Eclipse (OEPE), Oracle JDeveloper, and NetBeans IDE.

This workshop shows how to deploy Spring Boot sample application to Application Container Cloud Services using Oracle Developer Cloud Services.

The Spring Boot sample application is a web application serving simple JSP pages.

This tutorial demonstrates how to:

- create Oracle Developer Cloud Service project cloning an existing external Git repository
- configure build job for sample application
- configure Application Container Cloud Service deployment in Developer Cloud Service
- build and deploy sample application using Developer Cloud Service

Pre-Requisites

- Oracle Public Cloud Service account including Developer Cloud Servic

Practice 1: Create Oracle Developer Cloud Service project

Overview

In this practice, you sign in to the Oracle Public Cloud - Oracle Developer Cloud Services console using your credentials provided by the instructor and create a development project.

Assumptions

Note: Some of the UIs might look a little different than the screenshots included in the instructions, but students can still use the instructions to complete the hands-on labs.

Before You Begin

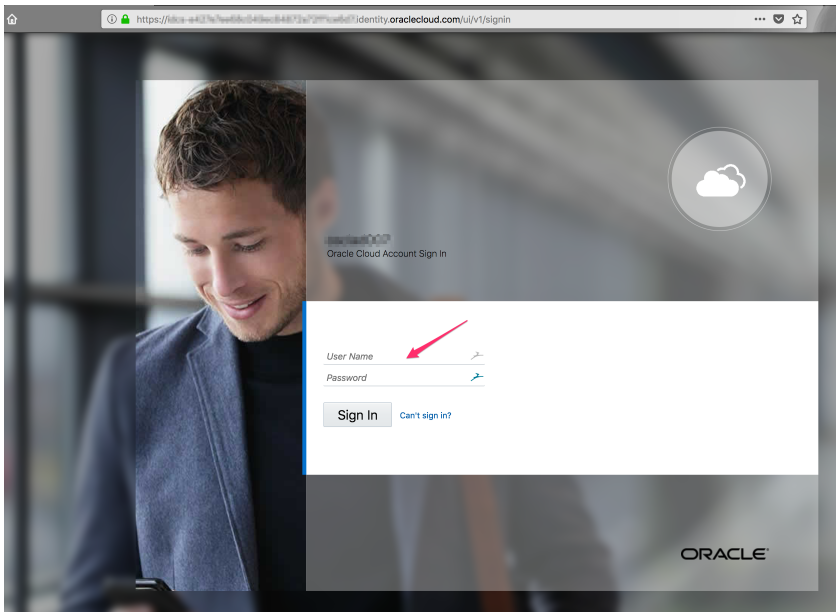
To sign in to the Console, you need the following:

- Username and Password (provided by the instructor)
- URL for the Console (provided by the instructor)
- Please use Firefox browser (Recommended)

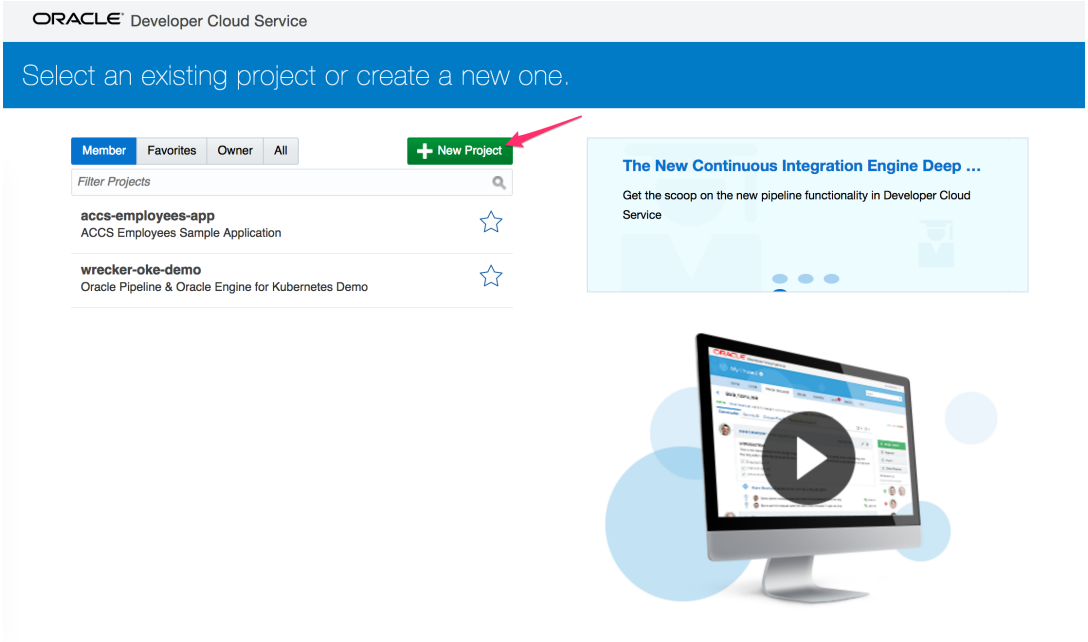
Duration: 5 minutes

Tasks

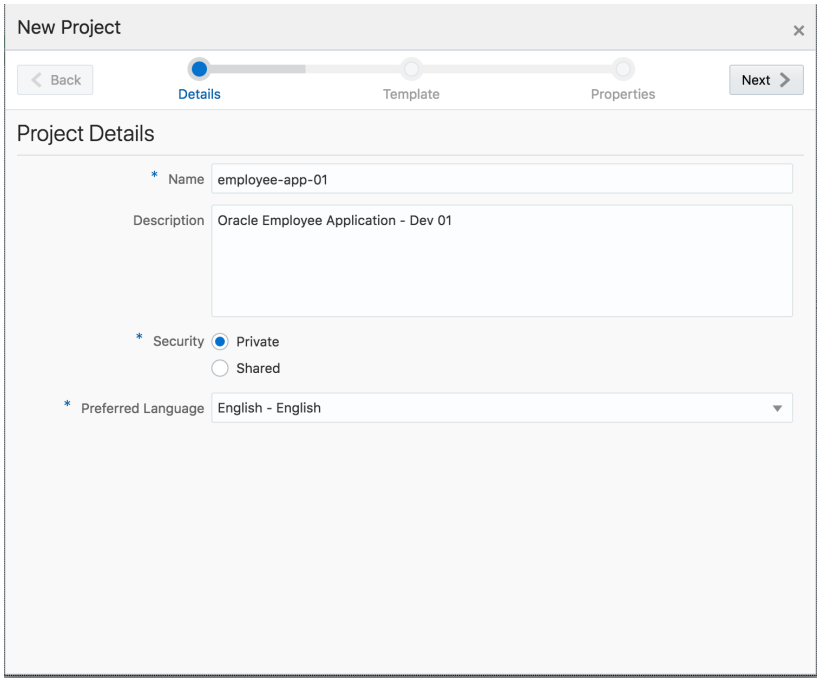
1. Sign In
   a. Open a supported browser and go to the Console URL.
   b. Enter your username and password and click Sign In.



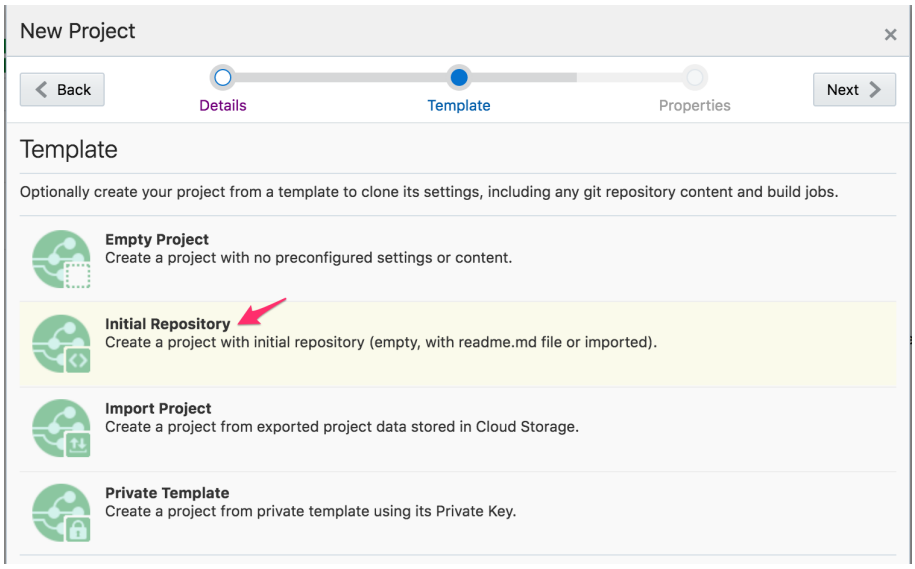
When you sign in to the Console, the home page is displayed.



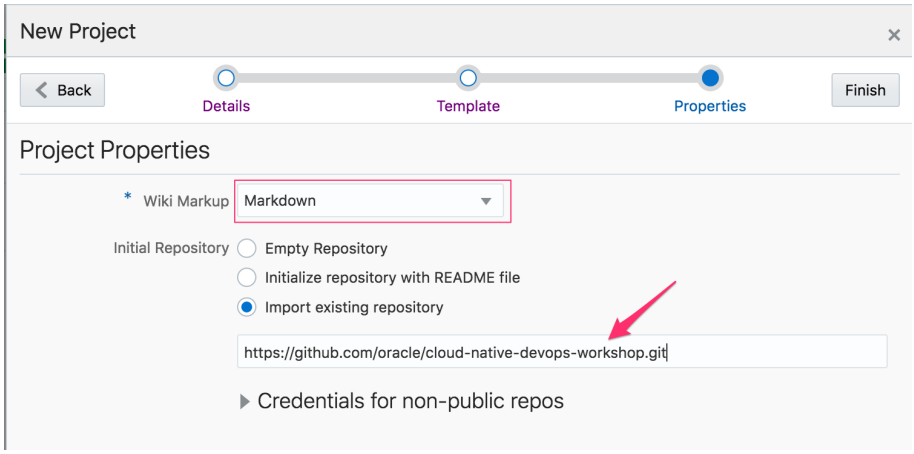
2. Create a New Project
   a. Enter the name of the project and set the desired properties. Click **Next**.
      Use the name provided by the instructor : “employee-app-[your number]”



b. Select "*Initial Repository*" as a Template and Click **Next**.

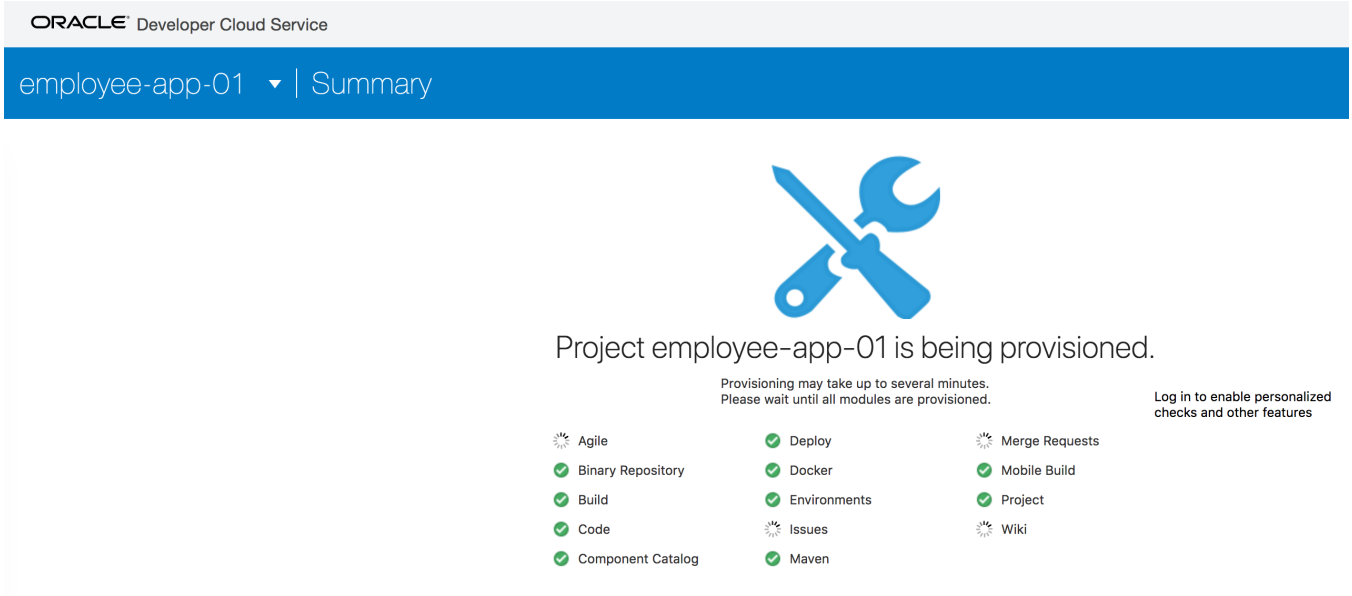


c. On the Properties page select "*Markdown*" as Wiki Markup Language and "*Import existing repository*" as SCM Properties. Enter or copy the https://github.com/oracle/cloud-native-devops-workshop.git repository address.

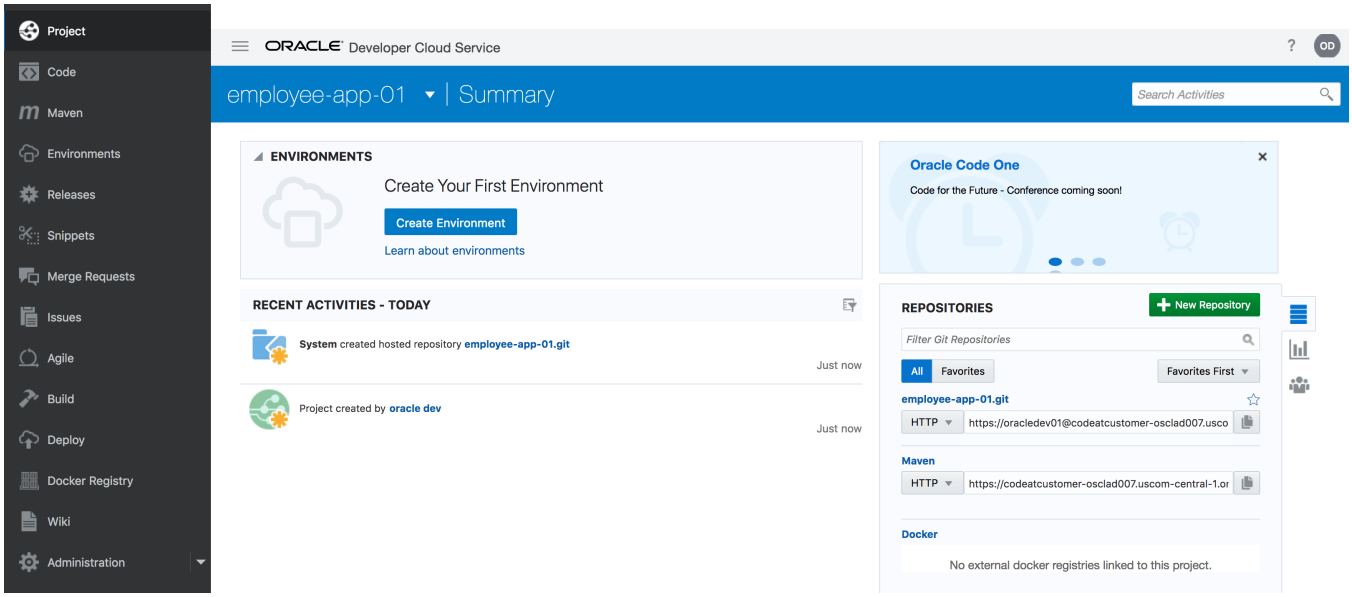


Now click **Finish** to create the project and to clone the specified repository.

During project creation, all tools needed to help on the Development Project are provisioned as : Repository of Sharing Code with a clone the specified repository (Git), a Maven Repository, a Build Server, and so on.



After the creation process, the Project Home Page is presented.



Practice 2: Configure build job for Spring Boot sample application

Overview

Once the project provisioning is ready let's create the build job to compile and package the sample Spring Boot application to the desired format for Application Container Cloud Services.

Before You Begin

You should have completed Practice 1.

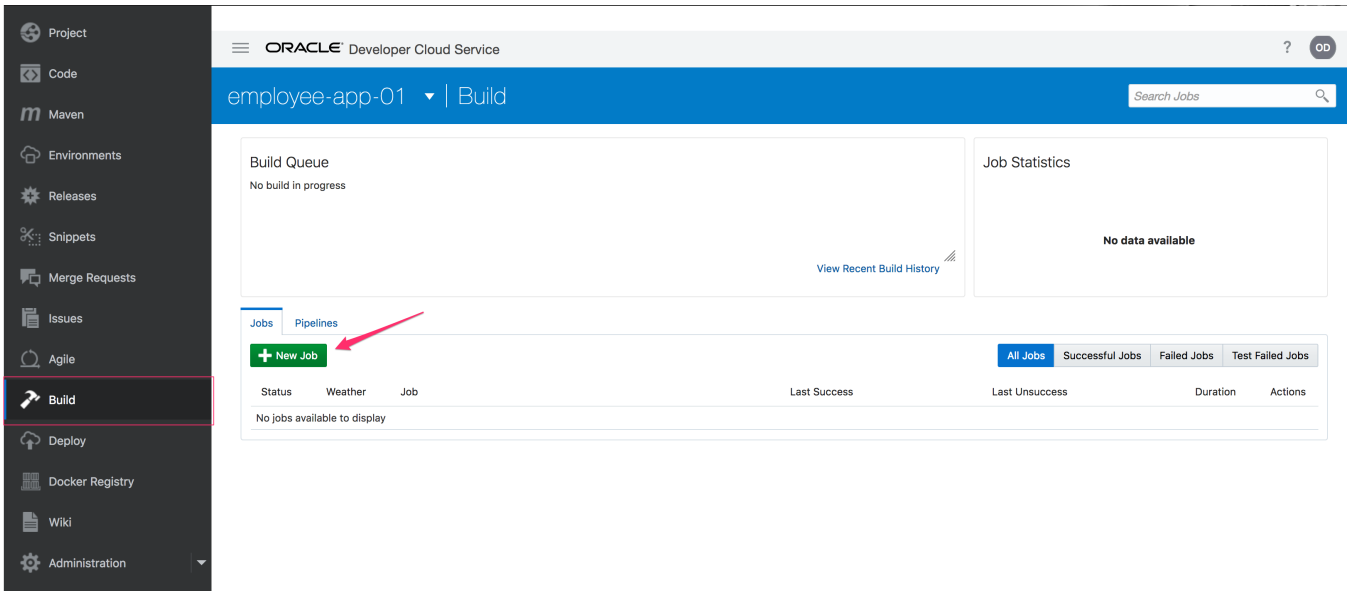
Before you can configure a new build job:

- You must have access to OCI VM Template. This machine will be applied to run the job.

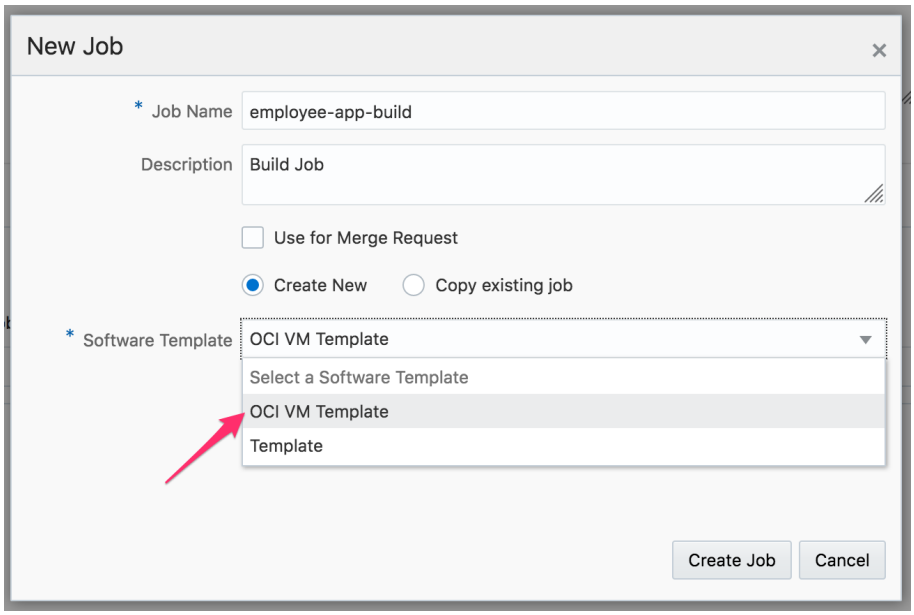
Duration: 5 minutes

Tasks – Create a new Build Job

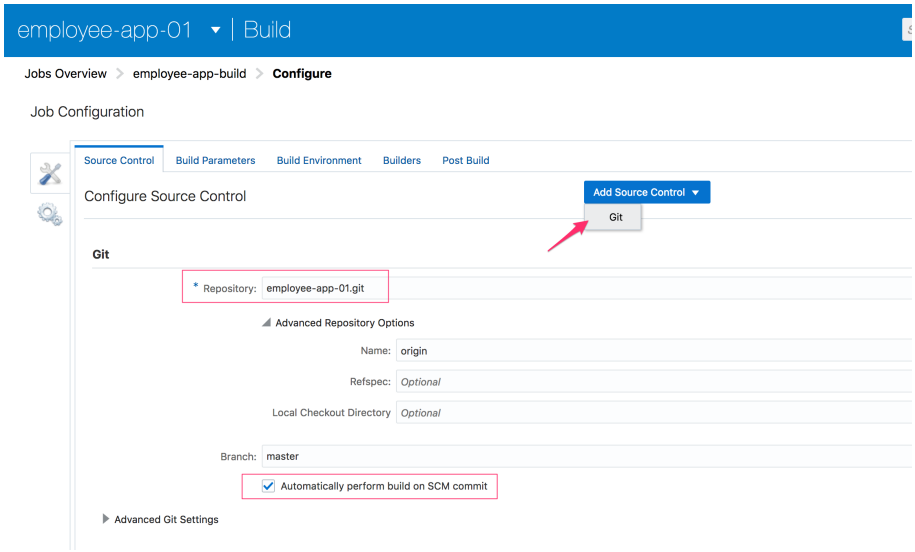
Select **Build** item on the left side menu and click the **New Job** button.



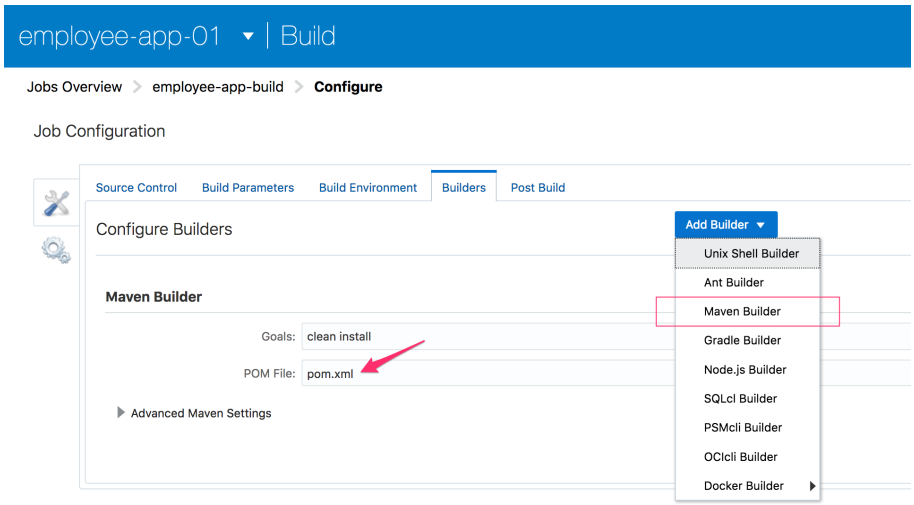
Enter a name for the new job. Select the *Create New*. On the *Software Template* select **OCI VM Template**. Thus, Click on **Create job**



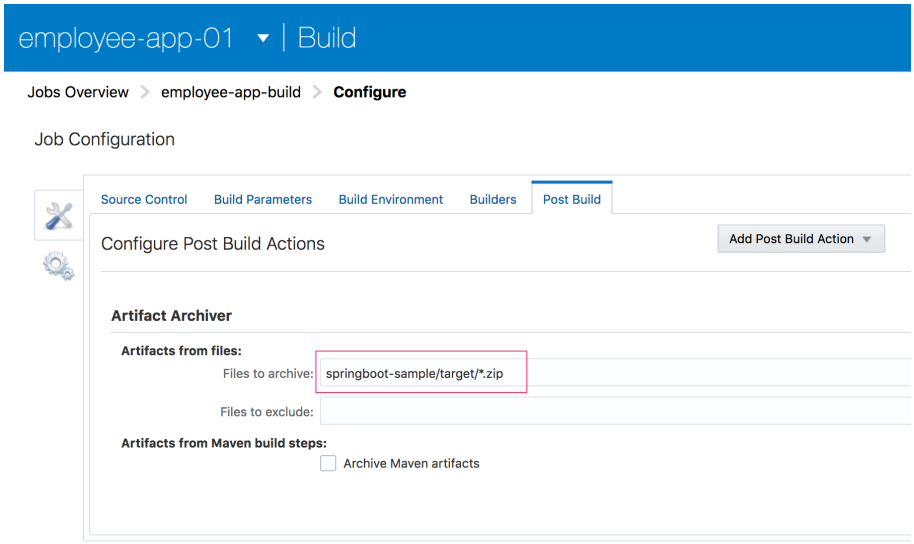
Add **Git** as the Source Control and select the project repository “employee-app-[your number]” as the source of code. Select “Automatically perform build on SCM commit” option. Leave the advanced settings default.



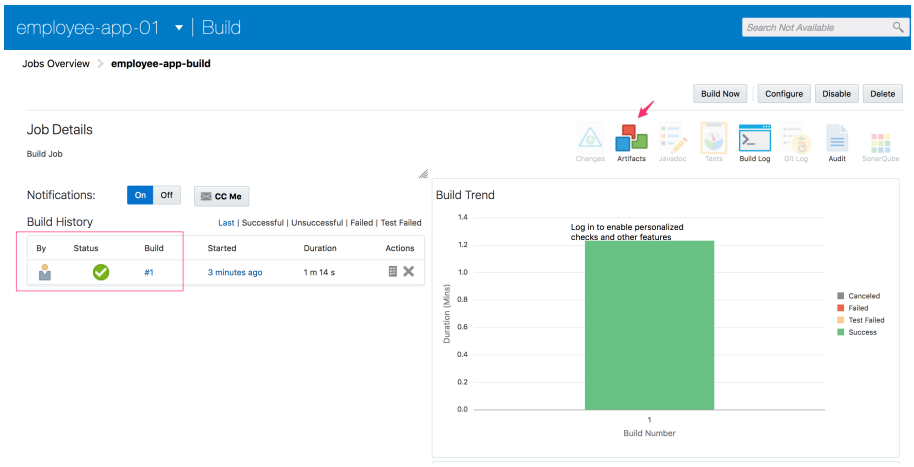
On **Builders** tab, add a **Maven Builder** and select *clean install* as Goals and `springboot-sample/pom.xml` to **POM File**.

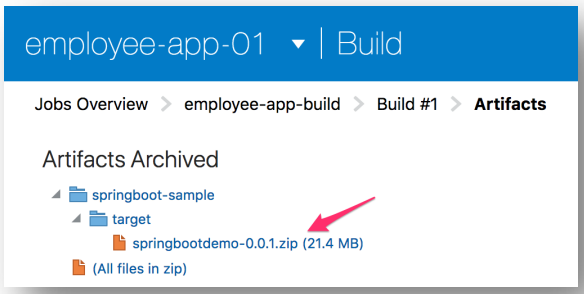


On **Post Build** tab, add an **Artifact Archiver** activity and `springboot-sample/target/*.zip` to **File to archive** field.

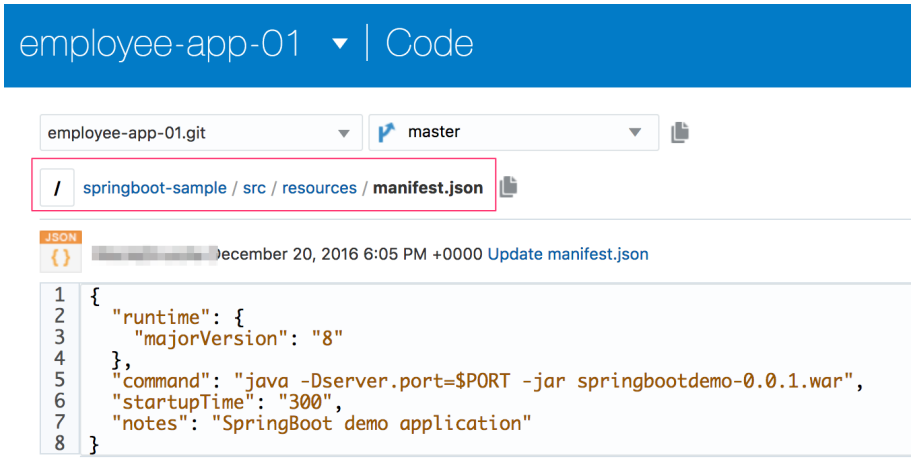


Click on **Save** to update the new job configurations. To check the build job click on **Build Now** on the job's detail page. Once the job is done check the archived artifacts. It should be the following: `springbootdemo-0.0.1.zip`





Please note the build job contains an extra build step which packs the default artifact `springbootdemo-0.0.1.war` and `manifest.json` (ACCS descriptor from the `springboot-sample/src/resources` folder) into a zip archive. This archive is the desired format to deploy a Java application to ACCS.



Practice 3: Configure Application Container Cloud Service Deployment

Overview

Once the build is ready and the package to deployment is available let's configure the deployment of the sample Spring Boot application to the desired Application Container Cloud Services instance.

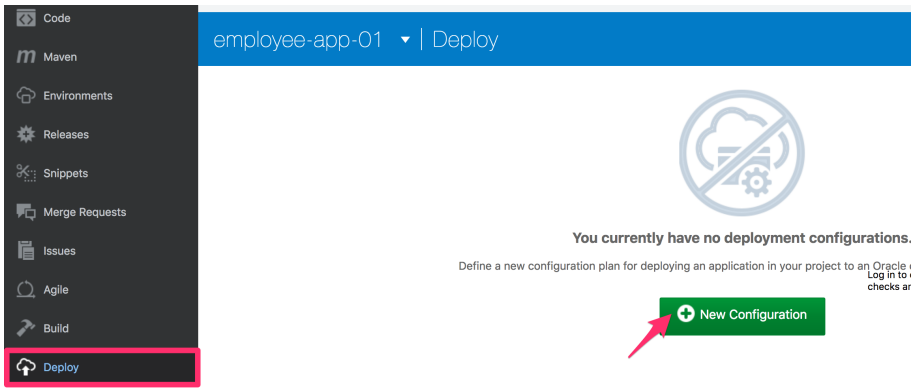
Before You Begin

- You should have completed Practice 2.
- You should have access to an ACCS instance. (provided by the instructor)

Duration: 10 minutes

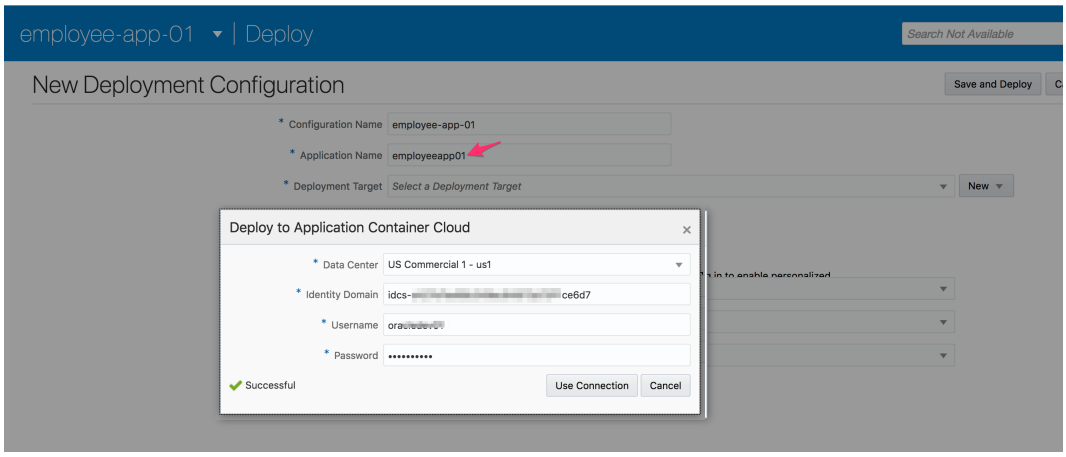
Tasks

Now create deployment configuration which enable direct deployment to Application Container Cloud services after a successful build job. Change to **Deploy** page in DevCS and create **New Configuration**



Set the following properties:

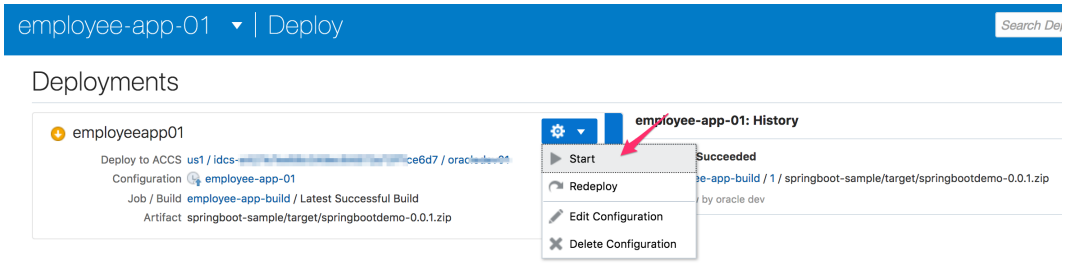
- Configuration Name : employee-app-[your number]
- Application Name : employeeapp[your number] (* only can use characters letters and numbers)
- Data Center (provided by the instructor)
- Identity Domain (provided by the instructor)
- Username and Password (provided by the instructor)
- ACCS Properties: Java and Automatic type
- Job previously configurated
- Artifact previously generated



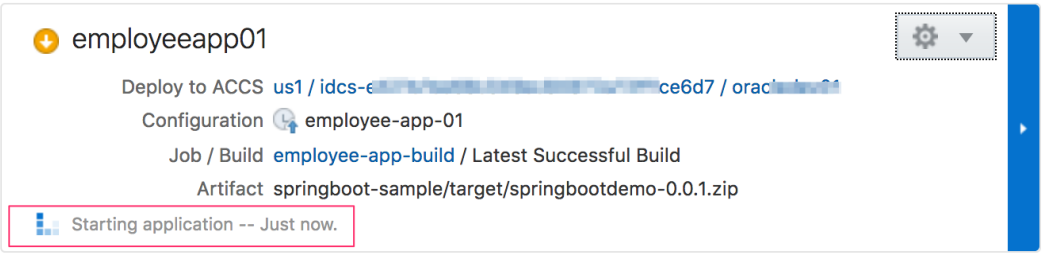
After connection had being tested, you Click Use Connection. Thus Click **Save**.

Build and deploy the sample application

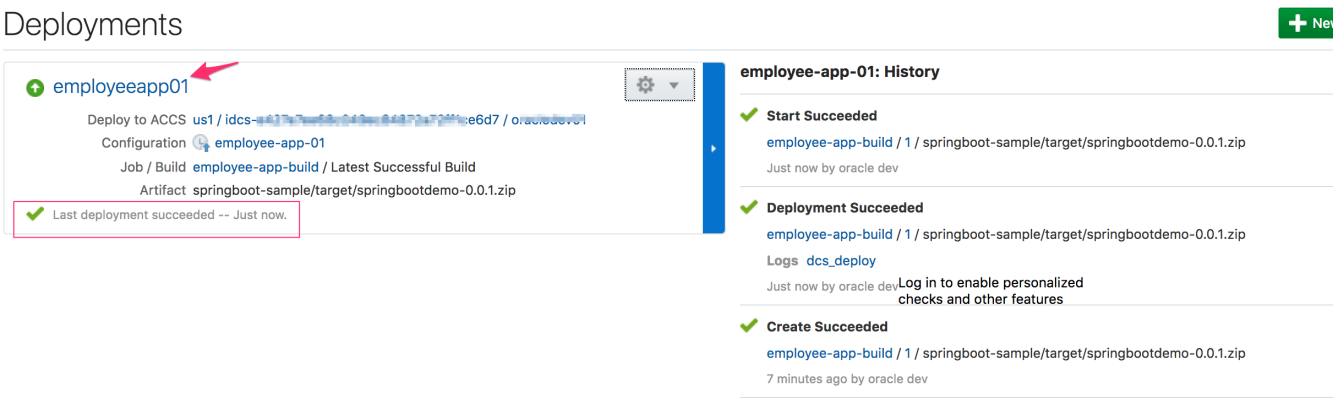
To initiate a deployment to Application Container Cloud Service now there are two options. You can Start deployment process using the newly created Deployment configuration. Click gear icon and select Start.



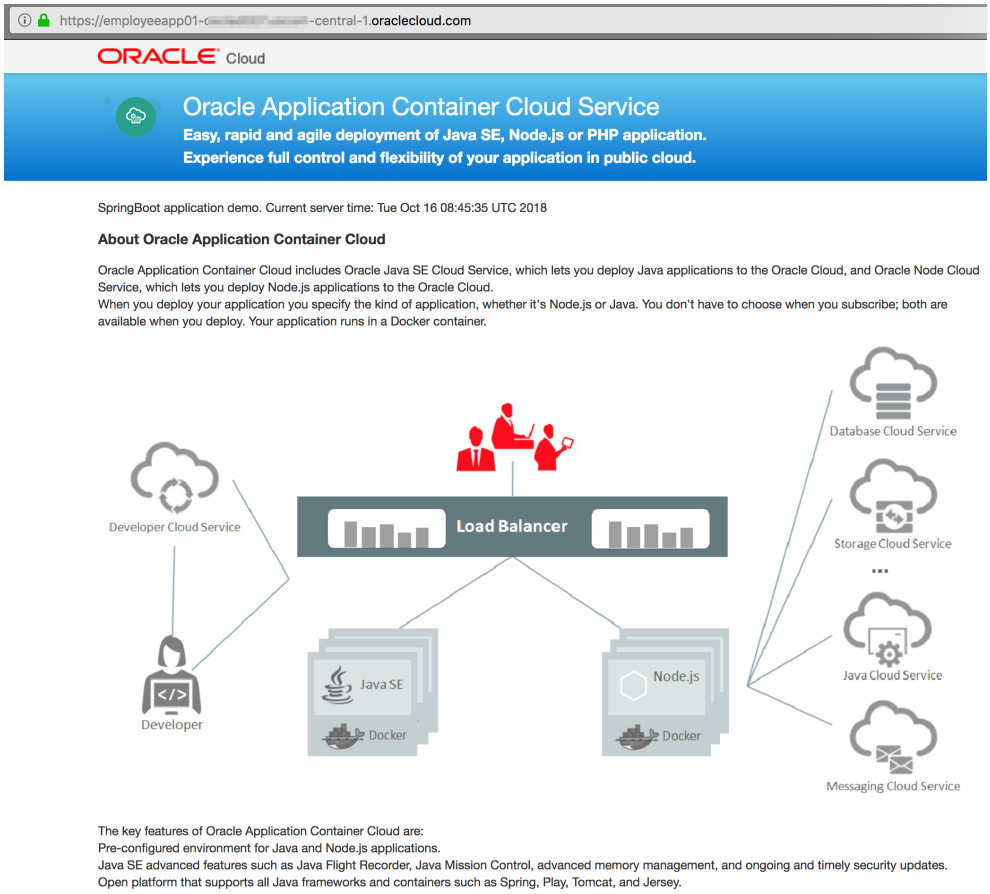
The DevCS after deployment successful will try to Start the Application.



If Spring Boot sample application is deployed and executed correctly, the DevCS presents the history and the link to deployment application “employeeapp01”



And the application is available to be accessed.



Practice 4: Optional step: Make changes in the application

Prerequisites: Git client, Text editor

Clone your newly created Git repository hosted on Developer Cloud Service to your local machine using basic or your favorite Git tool. Make small changes for example in the JSP file. Push changes to DevCS remote repository, execute Build again and check the changes on the redeployed application.

Practice 5: Optional step: Configure IDE to connect with DevCS

Overview

The Eclipse IDE and the Oracle Enterprise Pack for Eclipse (OEPE) includes integration for Oracle Developer Cloud Service, which conveniently exposes the most common Cloud development tasks from within the IDE.

You can download the Eclipse IDE from http://www.eclipse.org/ and OEPE from http://www.oracle.com/technetwork/developer-tools/eclipse/downloads/index.html.

If you are using the Eclipse IDE, download and install the Oracle Cloud Tools plugin from the Eclipse IDE marketplace. In OEPE, the plugin is installed by default.

Oracle Developer Cloud Service integration with the Eclipse IDE includes the following:

- A dedicated Oracle Cloud view that displays Oracle Developer Cloud Service projects of which you are a member
- Integration with Mylyn and the Oracle Developer Cloud Service Issues system
- Source control system integration with the Oracle Developer Cloud Service Git repository

Before You Begin

- You must have OEPE with Oracle Cloud Tools Plugin installed

Duration: 5 minutes

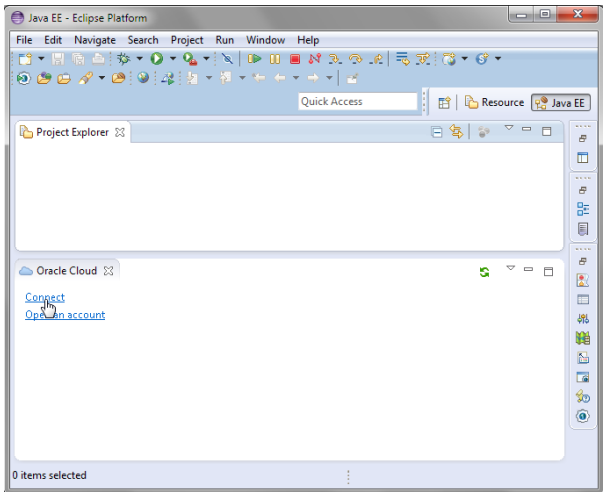
Tasks

You can log in to Oracle Developer Cloud Service from the Oracle Cloud view.
To open the Oracle Cloud view:

1. In the Eclipse IDE, from the Window menu, click Show View and then Oracle Cloud.

   If the Oracle Cloud option does not appear in the Show View menu, click Other. In the Show View dialog, expand Oracle Cloud and select Oracle Cloud.

2. If you are connecting to Oracle Developer Cloud Service for the first time, click the Connect link. If the Connect link is not available, click the New Cloud Connection icon in the Oracle Cloud view.



3. In the Oracle Cloud Connection dialog box, select your account type.
   a. Select Traditional Cloud Account if your account is a traditional account. Select Developer Cloud Service if you are using an IDCS account.

4. If you selected Traditional Cloud Account, enter your identity domain.
   If you selected Developer Cloud Service, enter the Oracle Developer Cloud Service URL in the https://<hostname>.oraclecloud.com/<org-name>/ format.

5. In Username and Password, enter your Oracle Cloud user name and password.

6. Click Finish.

After the connection is successful, expand the identity domain node in the Oracle Cloud view, and then expand the Developer node to view projects that are assigned to you.