Part E: Create CI/CD Pipeline

Estimated time needed: 30 minutes

Lab Overview

IBM provides a Continuous Delivery service along with an integrated set of tools to build, deploy and manage your applications. You can build, test, and deploy in a repeatable way with minimal human intervention. You can create a toolchain from a template or build one from scratch by enabling an application for continuous delivery. The toolchain will use the Continuous Delivery service under the covers. By default, Continuous Delivery automatically runs the build and deploy tasks when you commit changes to the Git repository (repo). The pipeline also features a "run" icon that runs a stage of the pipeline but only runs on committed code or builds, depending on the stage.

Objectives

After completing this lab, you will be able to:

- 1. Create a Continuous Delivery service on IBM Cloud
- 2. Add automated pipeline to your application
- 3. Be able to commit new code to github repo to automatically start the deployment process

Lab Instructions

This lab is broken up into the following tasks:

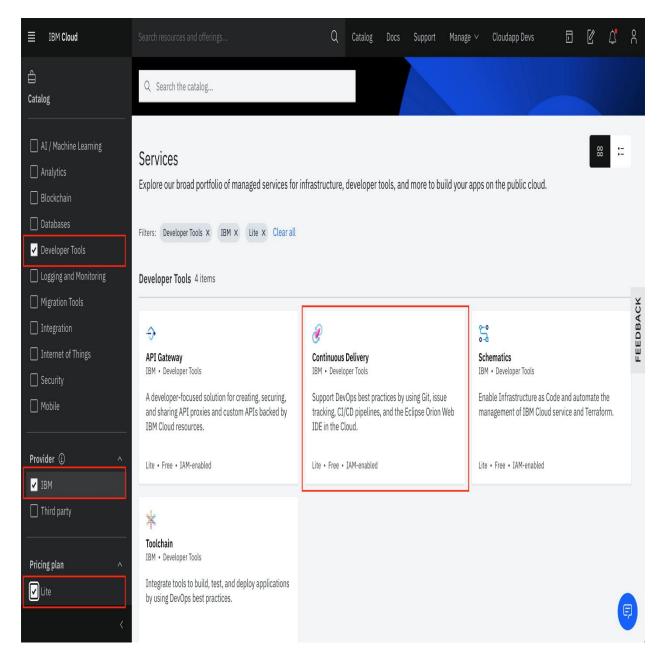
- Part E: Create CI/CD Pipeline
 - o <u>Lab Overview</u>
 - Objectives
 - Lab Instructions
 - 1. Create a Continuous Delivery Service from the Catalog
 - 2. Add Continuous Delivery to your Cloud Foundry Application
 - Author(s)
 - Changelog

Note: If you already have an IBM Cloud account, you can skip Tasks 1 and 2 and proceed with Task 3: Login to your IBM Cloud account.

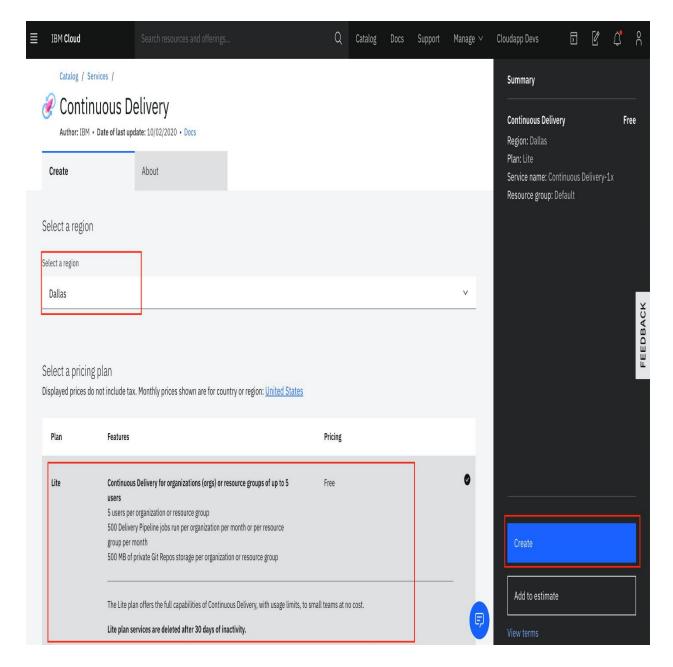
1. Create a Continuous Delivery Service from the Catalog

Navigate to https://cloud.ibm.com/catalog to launch the IBM Cloud Catalog.

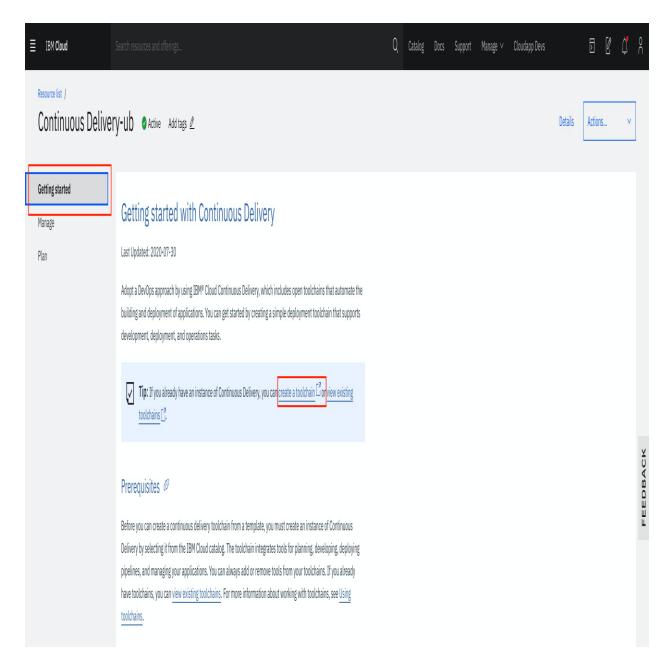
From the catalog, choose the **Services** menu on the left, and filter by **Developer Tools** and **Lite**. Then click on the **Continuous Delivery** tile.



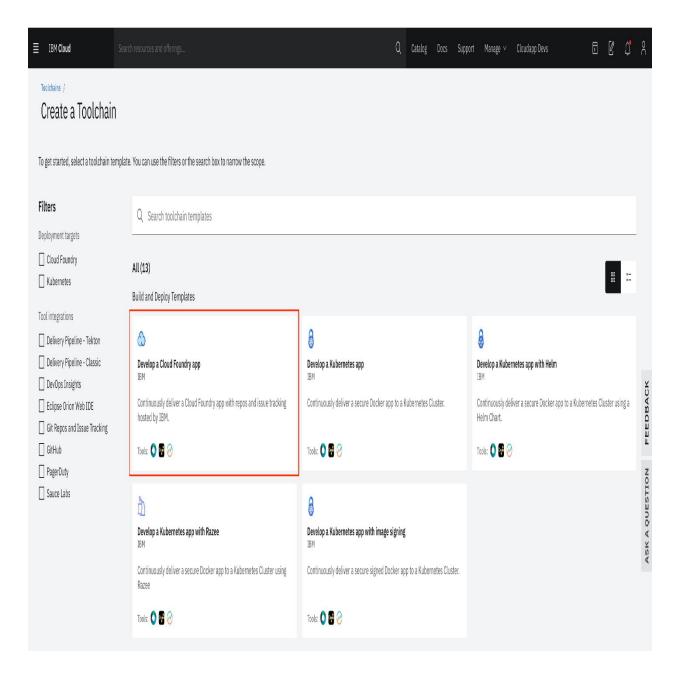
On the next screen, choose the Lite tier. You can optionally give your service a name. Click the **Create** button to continue.



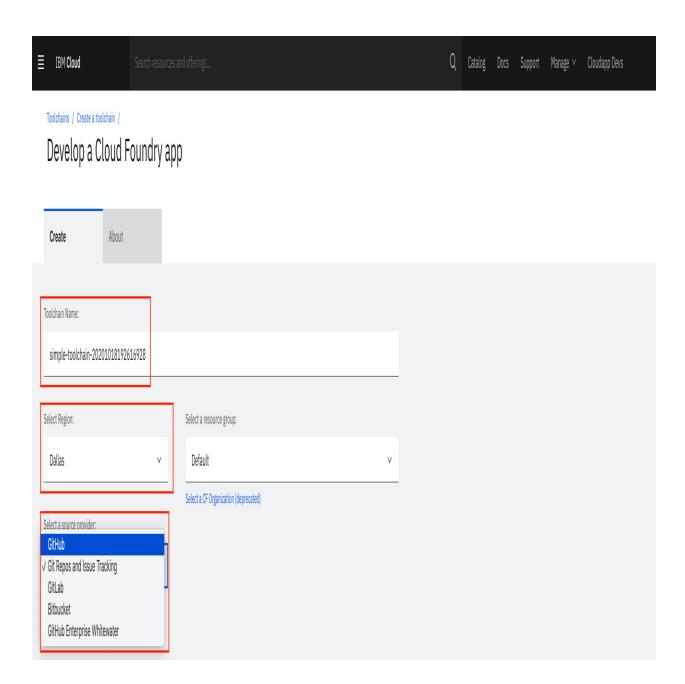
You will be taken to the Continuous Delivery home page. Click on the **Create new toolchain** link



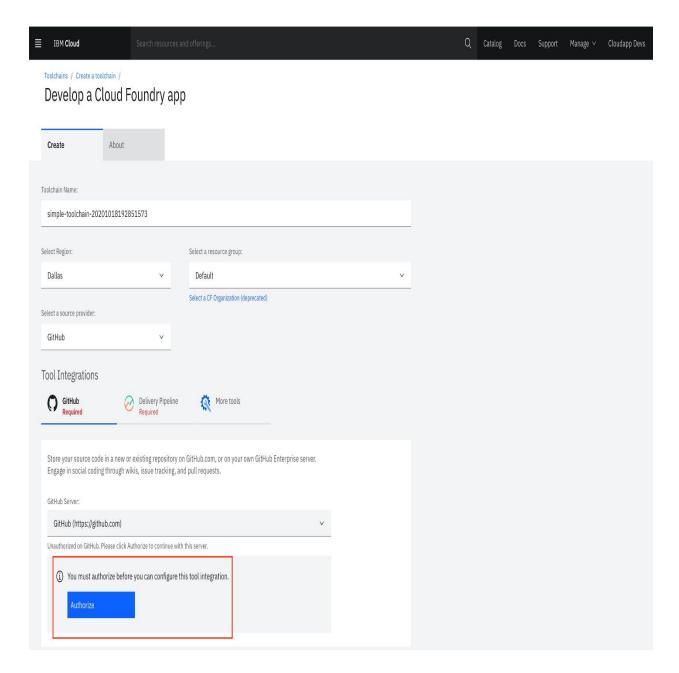
2. Add Continuous Delivery to your Cloud Foundry Application Pick **Develop a Cloud Foundry app** from the templates provided on this page.



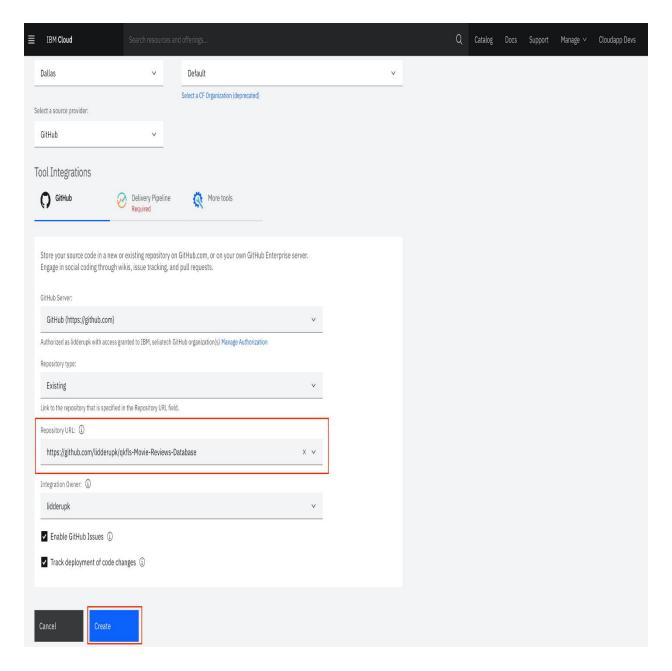
Give your toolchain a meaningful name, pick the region that your application is running in and then pick **github** from the list of source providers.



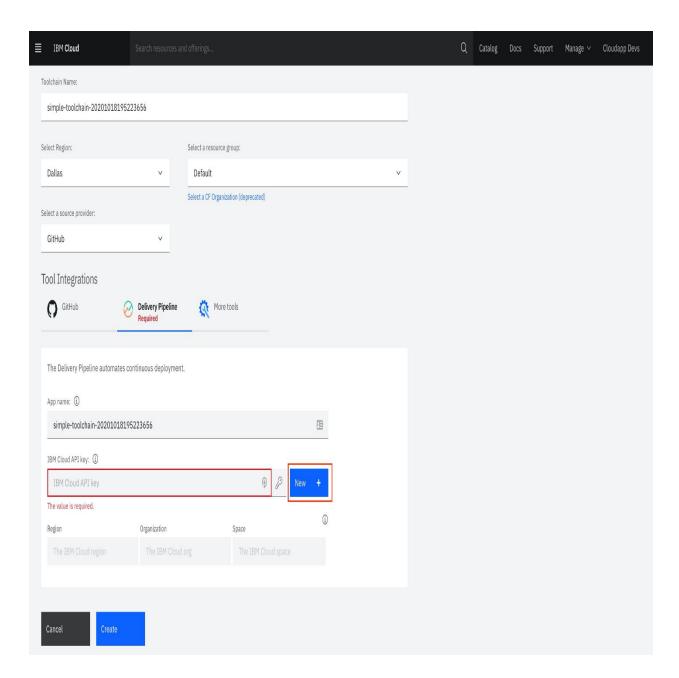
The bottom of the page should change and you can configure your github account. Click **Authorize** to integrate your github account with this toolchain.



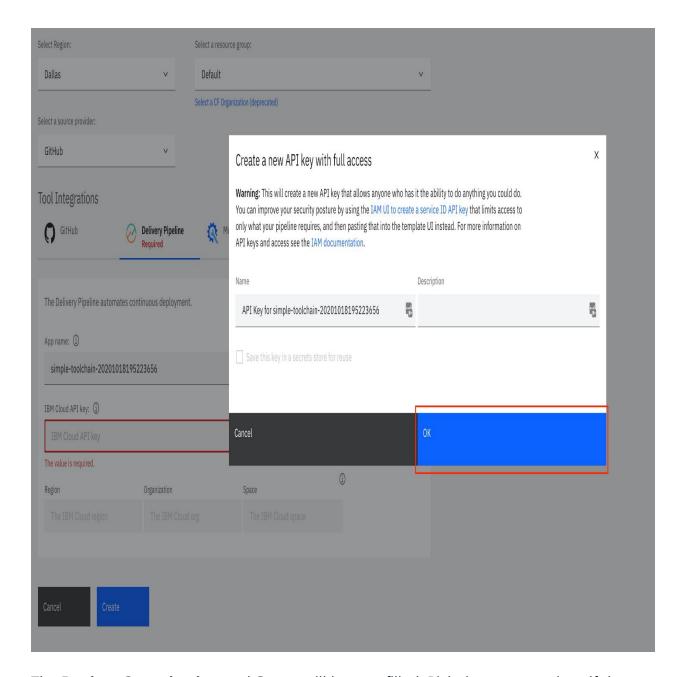
This opens a new tab and you are asked to sign into your github account. Once you do this, the tab closes and you are taken back to finish configuring the toolchain. Pick **Existing** as **Repository Type** and then pick the fork you created in the previous step. If the repo is not listed, you can enter the URL of the repository manually and click on **Create**.



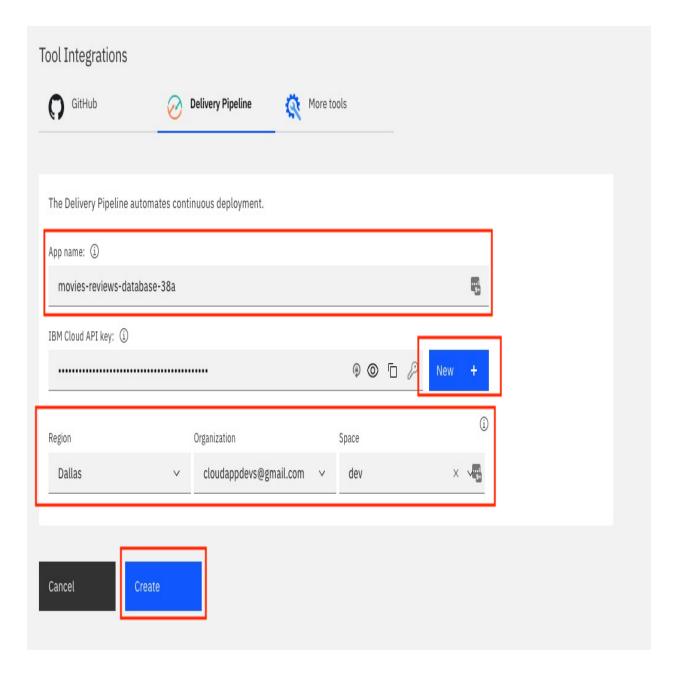
You will be taken to the API screen . Click New to create a new key.



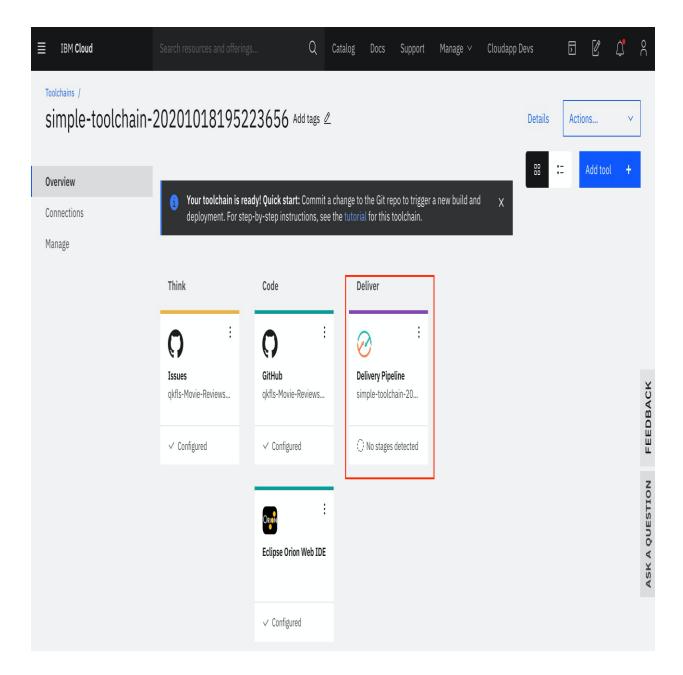
Accept the default in this screen.



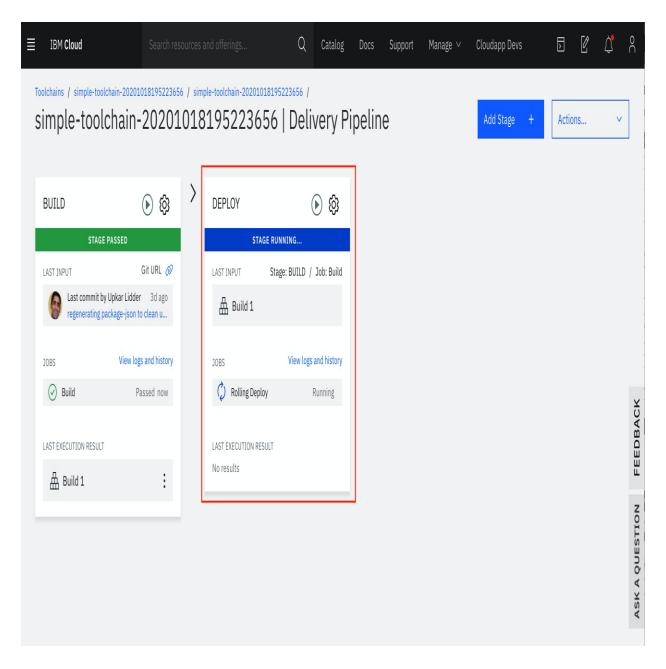
The **Region**, **Organization** and **Space** will be autofilled. Pick the correct values if the default ones are incorrect. Ensure the **App Name** is the same as your application name in the manifest file. If the application name is not the same, the toolchain will create a brand new application for you instead of adding continuous delivery to the application you deployed earlier. Finally, click on **Create** to create the toolchain.



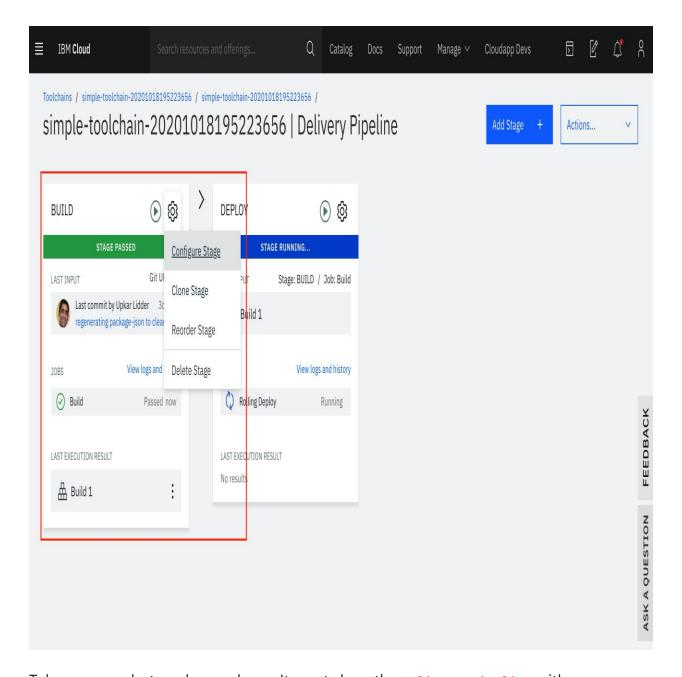
You are now taken to the toolchain. Click on **Delivery** pipeline.



You may see the **BUILD** or the **DEPLOY** stages running. The screen here shows the **BUILD** stage as passed and the **DEPLOY** stage as currently running.

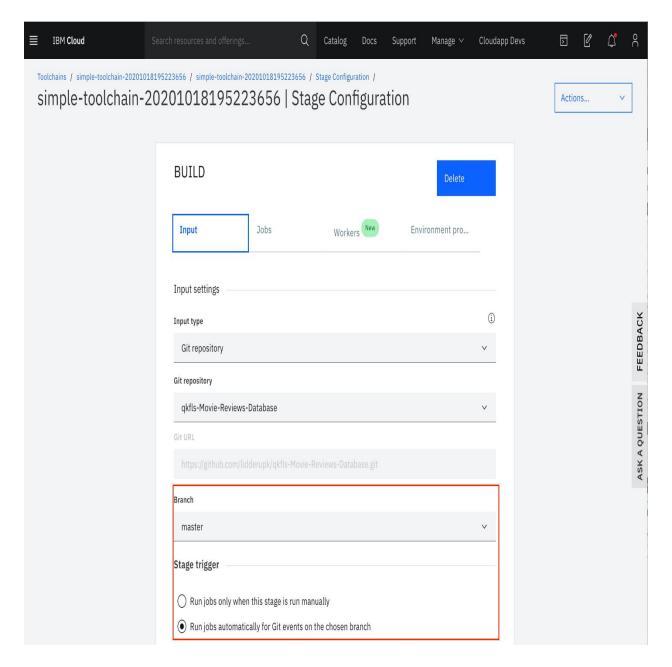


Click on the gear setting on the **BUILD** stage and then select **Configure Stage**.



Take a screenshot as shown above. It must show the Delivery Pipeline with the Build and Deploy stages. Save the screenshot as cicdtoolchain.jpg. You will be asked to submit this file at the end of the final project.

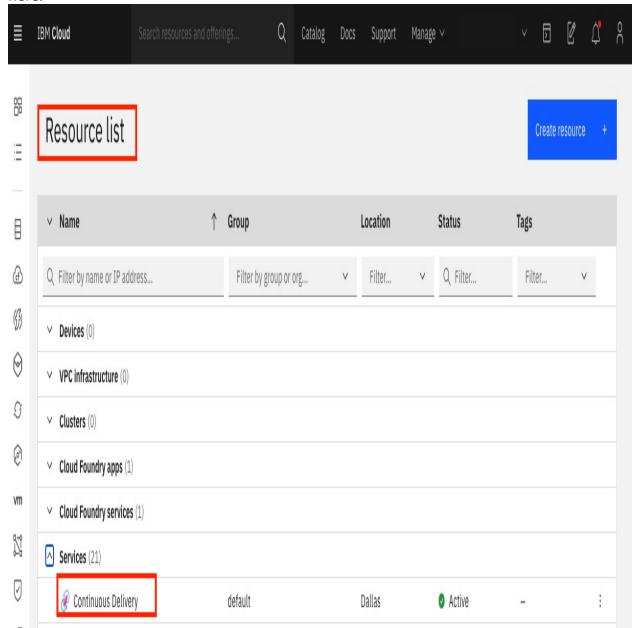
You can see the job is setup to build every time a change is pushed to the master branch.



Take a screenshot showing that "Git Repository" matches your fork of the project repository. Save the screenshot as gitrepository.jpg. You will be asked to submit this file at the end of the final project.

You have to take one last screenshot before finishing this lab. Click on the menu on the top left to go back to the resources page. Expand the Services section. You should see your Continuous Delivery service listed as shown

here.



Take a screenshot of this page showing the service and save it as resourcepage-cicd.jpg. You will be asked to submit this file at the end of the final project.

Congratulations! You've now set up Continuous Delivery on your project. Next lab will ask you to push a new change to github that should automatically kick the toolchain using the Continuous Delivery service you just set up!