Lab-1: Setup Environment

Introduction

This lab will set up the Cloud Pak for Data environment for subsequent labs and introduce you to the Project and Gallery features of Cloud Pak for Data. Cloud Pak for Data is an integrated platform of tools, services, data, and meta-data to help companies and agencies accelerate their shift to be data driven organizations. The platform enables data professionals such as data scientists, data engineers, business analysts, and application developers collaboratively work with data to build, train, deploy machine learning and deep learning models at scale to infuse AI into business to drive innovation. Cloud Pak for Data is designed to support the development and deployment of data and analytics assets for the enterprise.

End-to-End Data Science

The general flow of the End to End Data Science PoT will be guided by the activities shown in Figure 1- End to End Flow. This lab will focus on the Create Project and Research Topics activities.

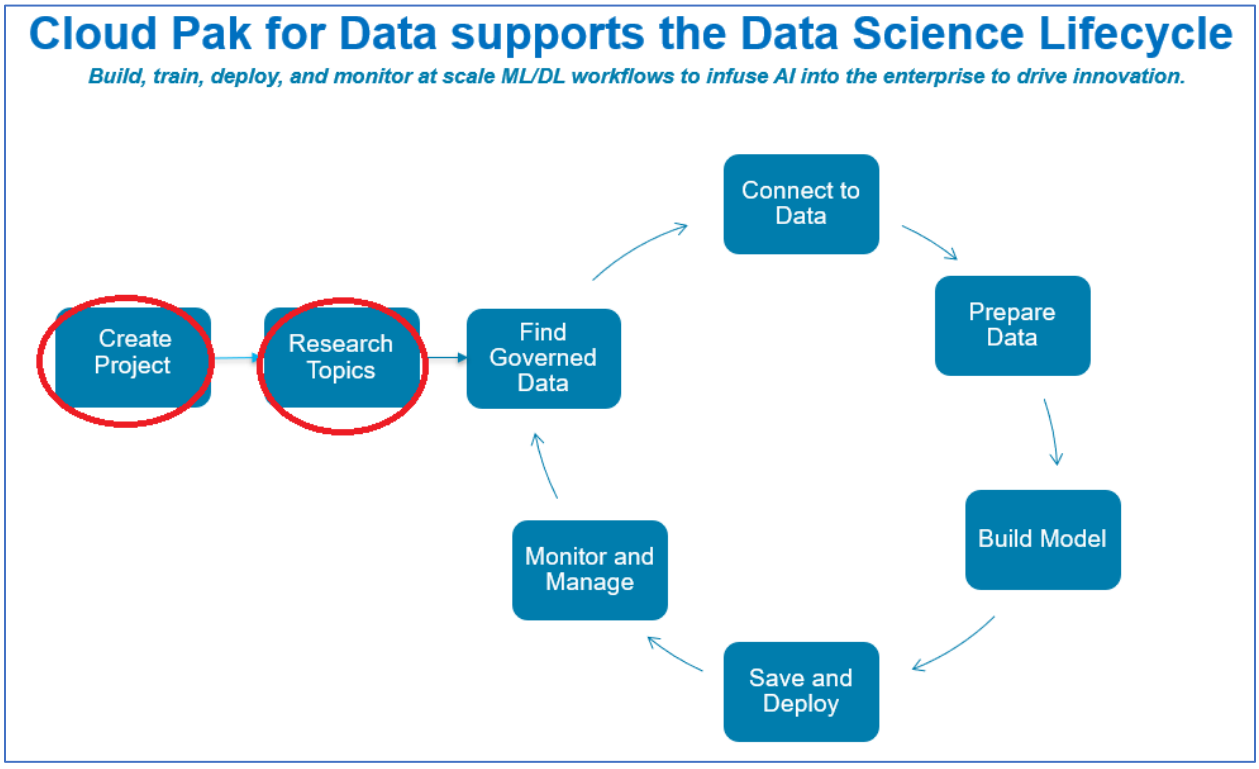


Figure 1- End to End Flow

Objectives

The goal of this lab is to familiarize the user with the Project and Gallery features of Cloud Pak for Data, and to set up the environment for subsequent labs. Projects are a core component of Cloud Pak for Data. Projects enable you to organize your analytic and data assets in one place.

Projects are also the home base for collaboration. Colleagues can be added as collaborators on a project with administrator, editor, or viewer access.

The Watson Gallery contains samples that you can use in your project:

- Run sample notebooks to learn new techniques or to use as templates for your own notebooks.
- Add sample data sets to your project

The Watson Community contains resources to help you learn about data science:

- Read articles from many sources to keep current with data science trends.
- Read tutorials for multiple skill levels to learn how to do specific data science tasks.

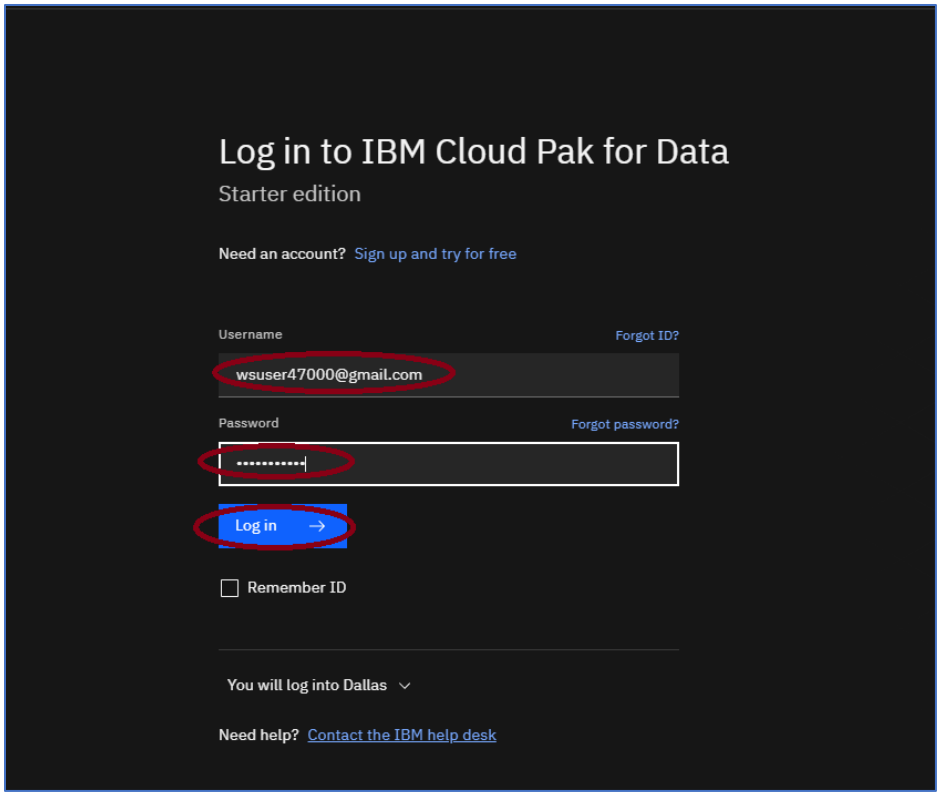
The Watson Gallery and Watson Community features support the “Research Topics” activity in the end-to-end process shown above.

After completing this lab, you will be familiar with these features of Watson Studio.

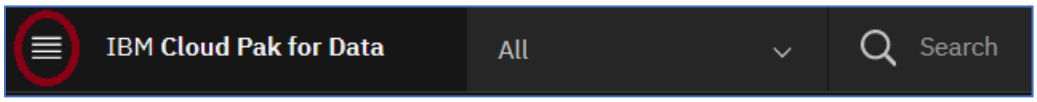
1. Create a project
2. Create an object storage instance and associate it with the project
3. Associate an existing Watson Machine Learning service instance with the project
4. Add a collaborator to the project
5. Research topics by searching for a notebook in the Gallery
6. Set up the Watson OpenScale environment for a later lab.

Create a Project

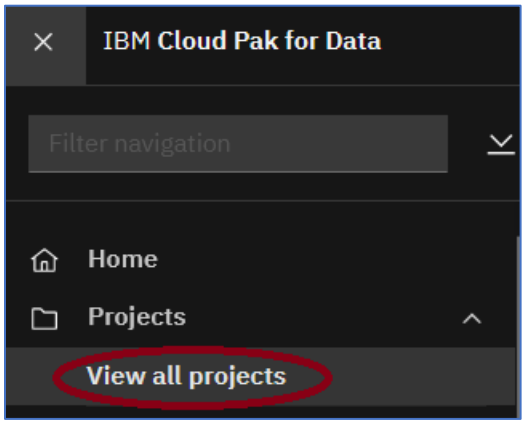
1. Log into your Cloud Pak for Dataaccount by typing in the url **dataplatform.ibm.com** in your Firefox or Chrome browser.
2. Enter the **Username, Password** and click **Log in.**



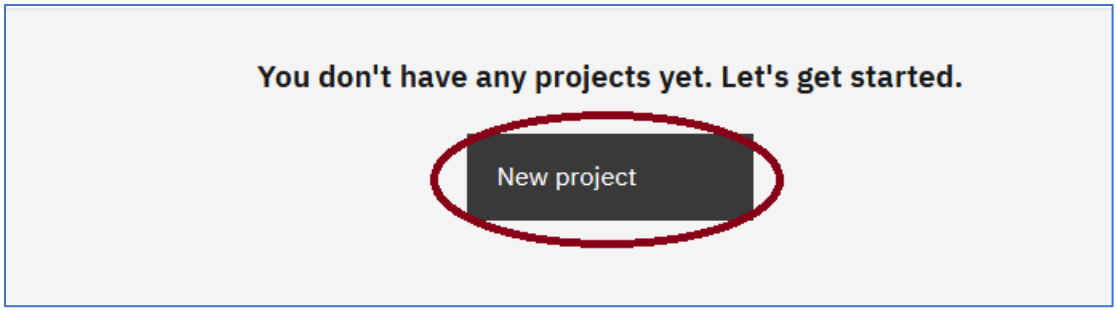
3. Click on the hamburger icon ☰.



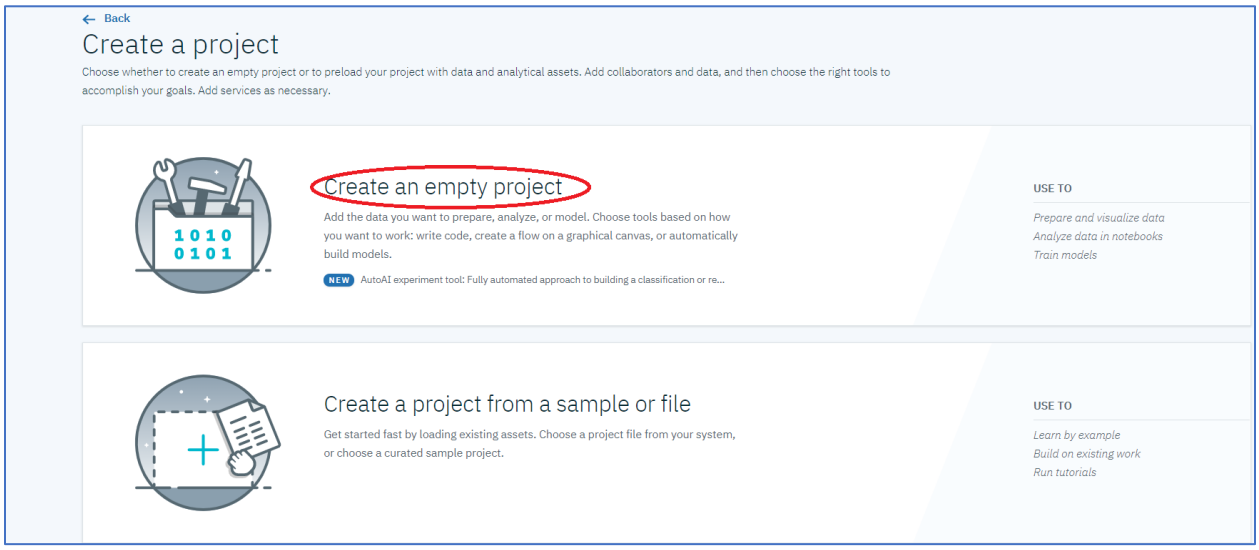
4. Click on **View All Projects**



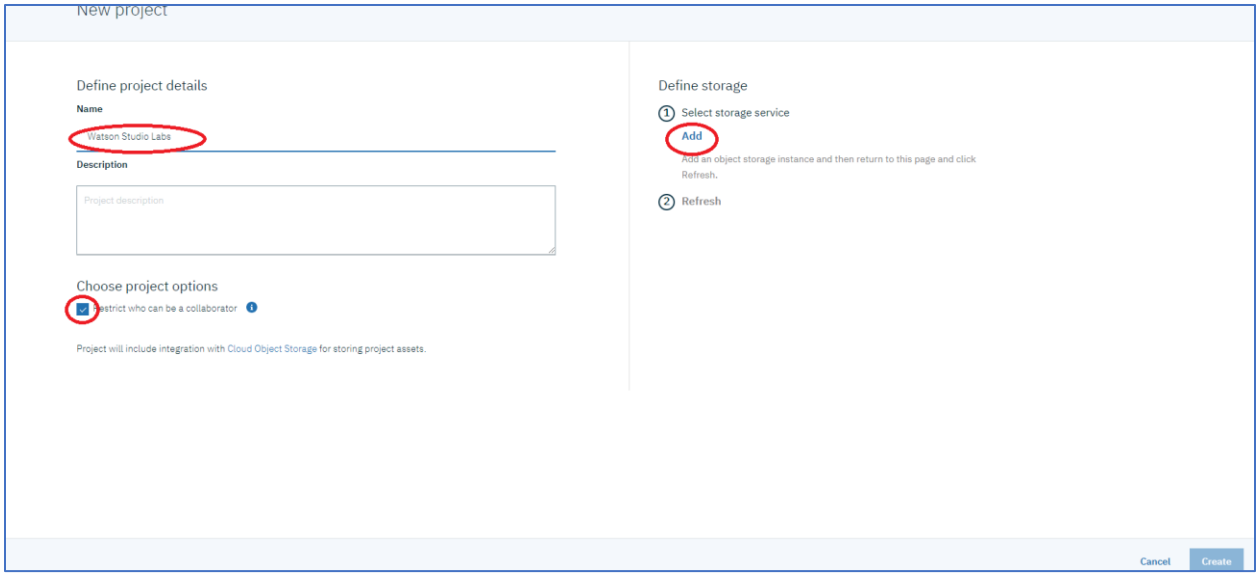
5. Click on **New Project**.



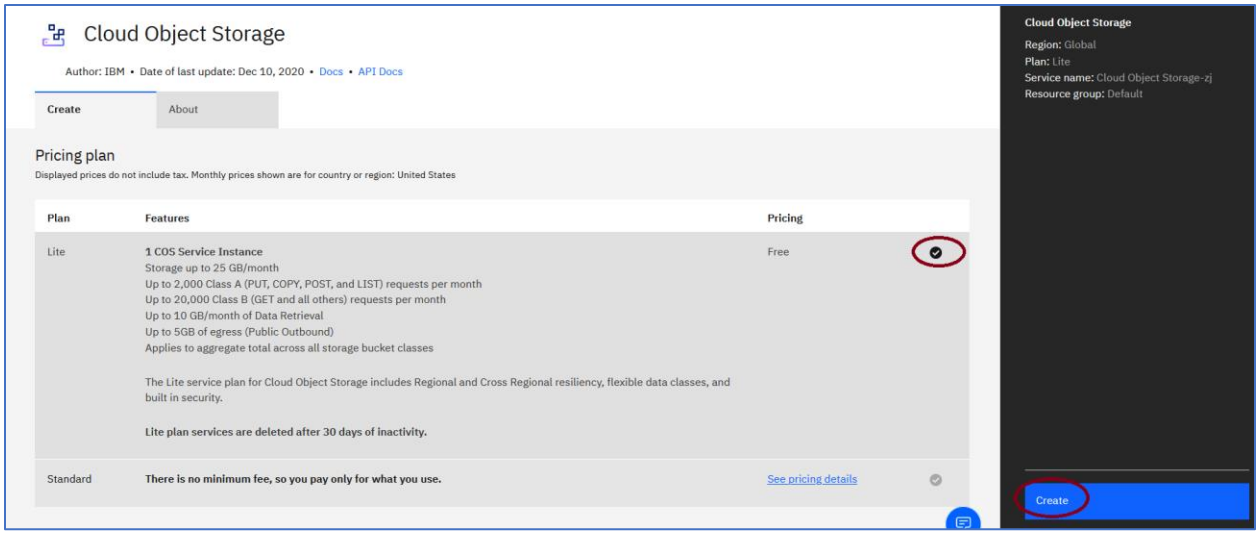
6. Click on Create an empty project.



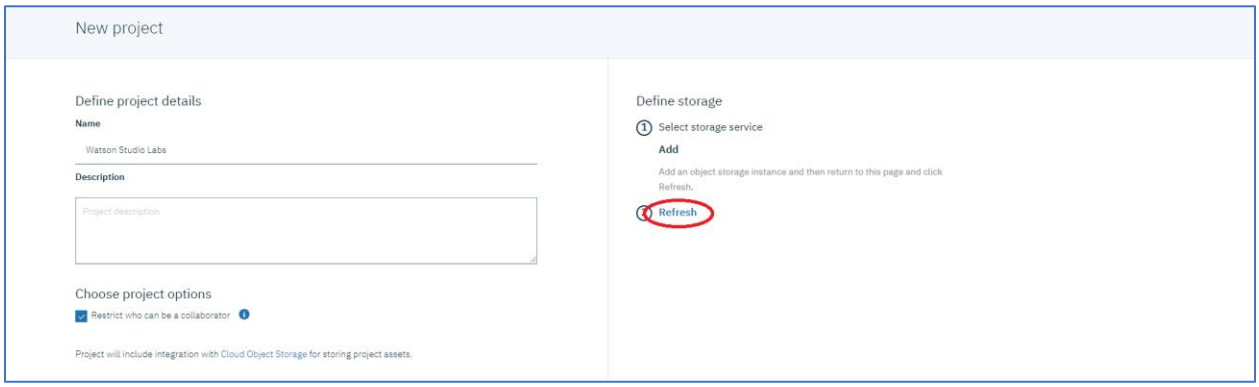
7. Enter “Watson Studio Labs” for the **Name,** optionally enter a **Description,** check **Restrict who can be a collaborator** (if it’s unchecked), and in **Define Storage** click on **Add** to add an object storage instance. If you already have an object storage instance, from prior use of Watson Studio or IBM Cloud (you shouldn’t see the Add link), skip to step 13.



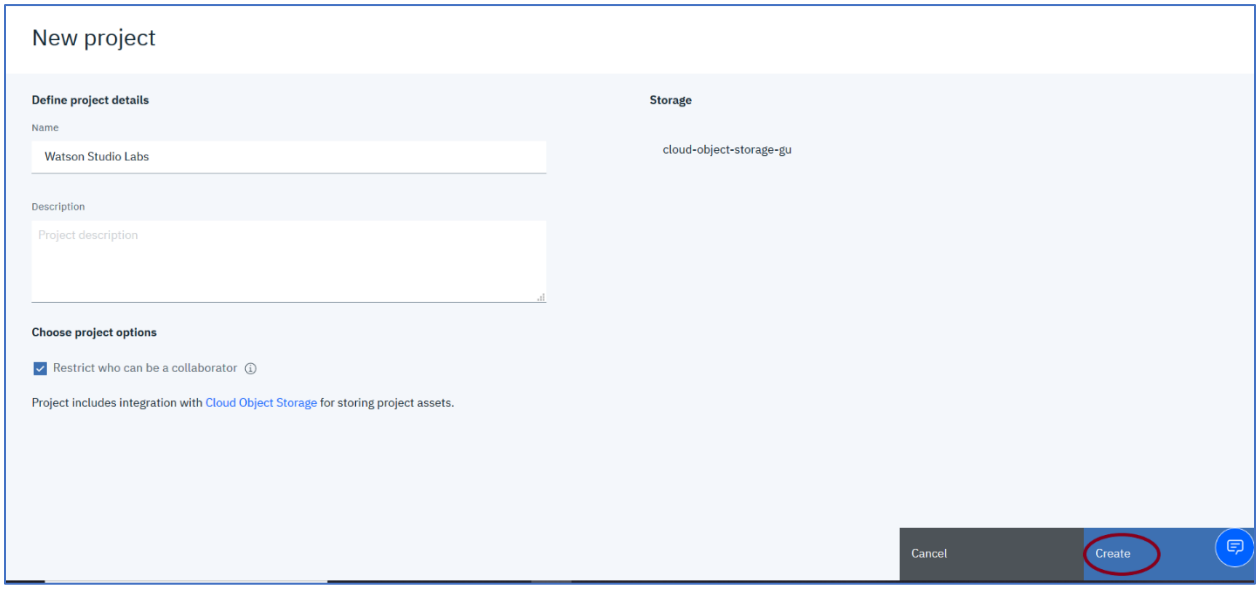
8. The Lite plan should already be selected. If not, click on the Lite plan. Then click **Create**.



9. Click **Refresh**.



10. Click **Create**.



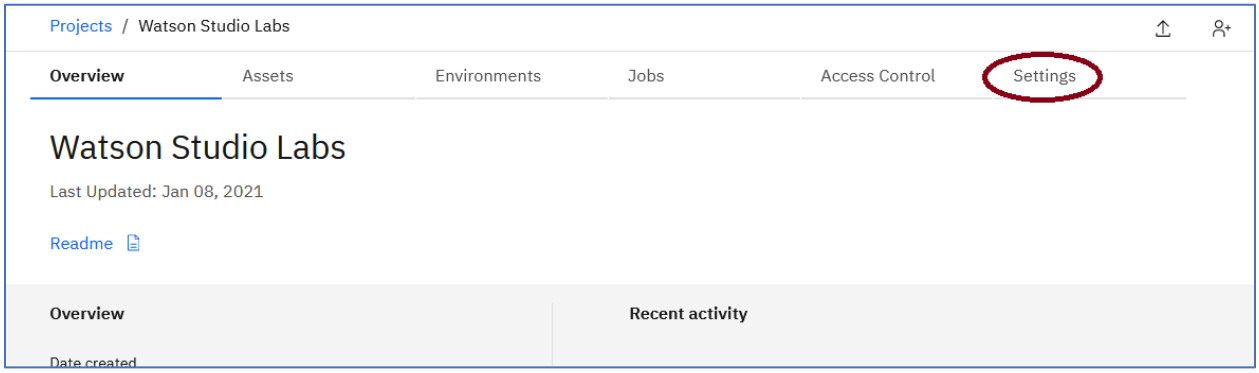
11. The Project **Overview** page is shown. This page provides summarized information about the project. In addition to the Overview page, are six other pages described below.

- **a. Assets Page –** Analytics and Data assets can be added to the project from this page.
- **b. Environments Page -** Provides information on the current notebook environments that are defined, lists the active notebook environments currently running, and enables users to create custom notebook environments.
- **c. Jobs Page –** Provides the interface to the job subsystem.
- **d. Access Control –** Lists the project collaborators and enables users to add/remove collaborators.
- **e. Settings –** Enables users to view and set project attributes.

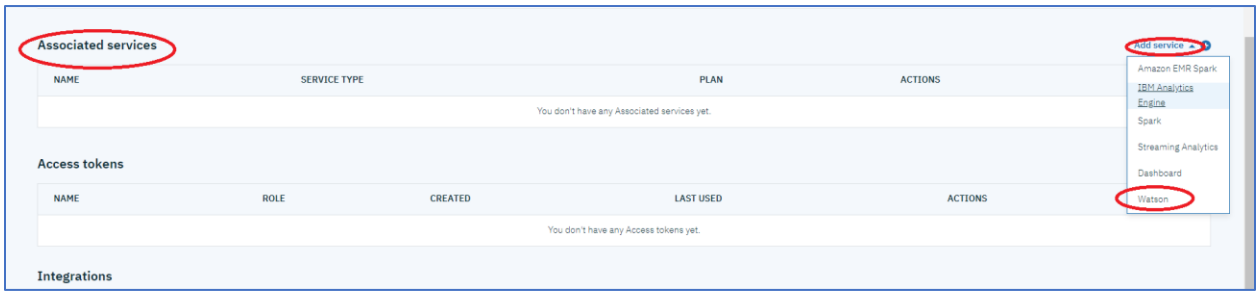
Associate a Watson Machine Learning Service to the Project

To save and deploy machine learning models, a Watson Machine Learning service must be created (if one doesn't exist) and added to our project.

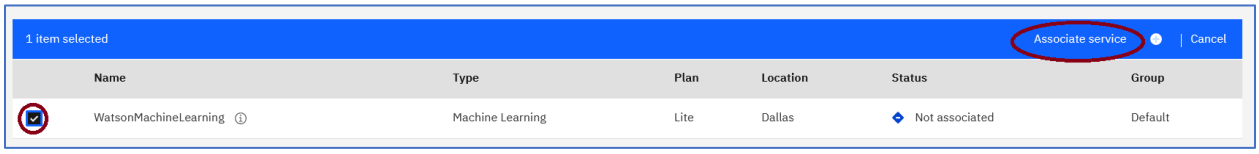
1. Click on **Settings** to navigate to the Project **Settings** page.



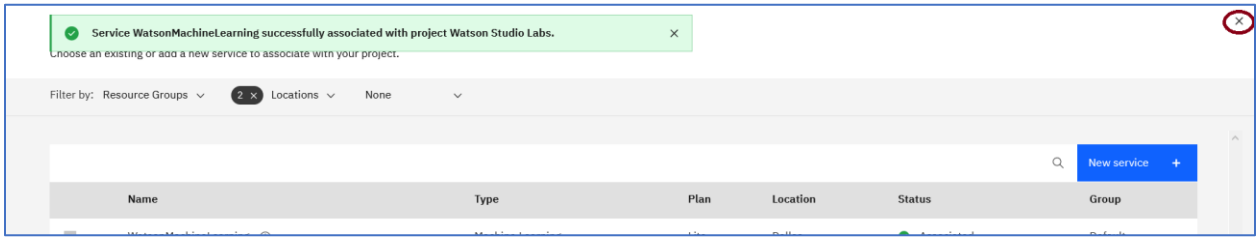
2. Scroll down to **Associated Services,** click on **Add service,** click on **Watson**.



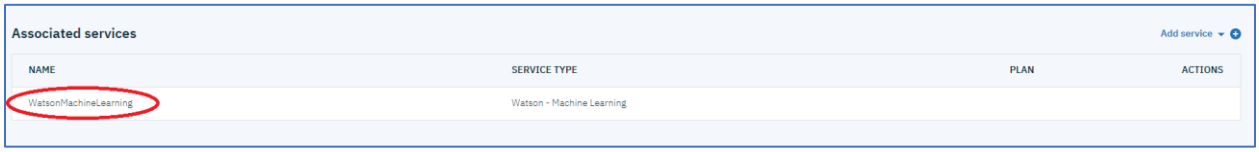
3. Newer Watson Studio accounts come with the WatsonMachineLearning instance already created. Click on the checkbox adjacent to the WatsonMachineLearning (Type-Machine Learning) service and click **Associate service**. Note, if a service of Type **Machine Learning** does not exist, go to step 6.



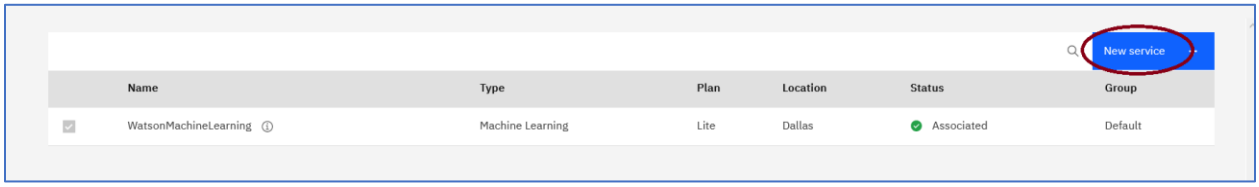
4. Click on **x** to close the window.



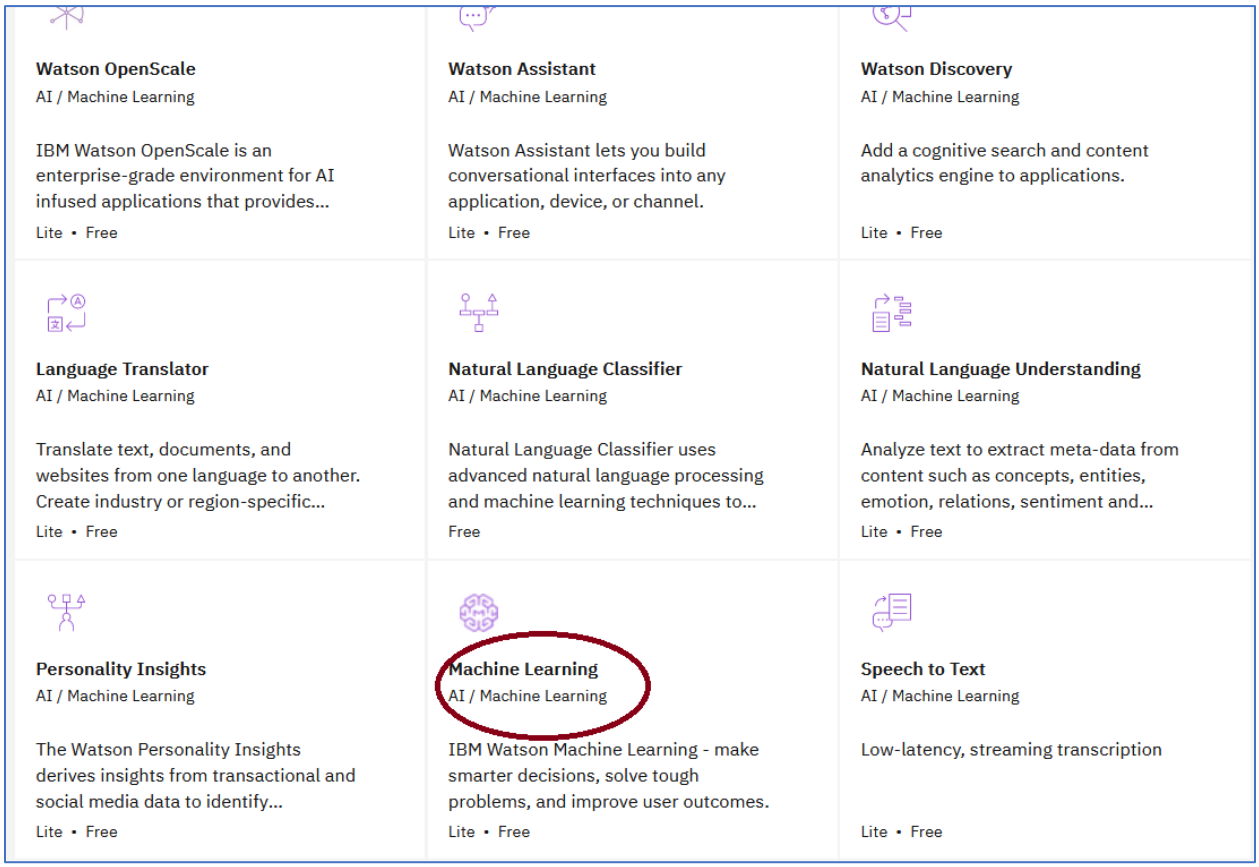
5. The **WatsonMachineLearning** service is associated with the project. Skip to the next section.



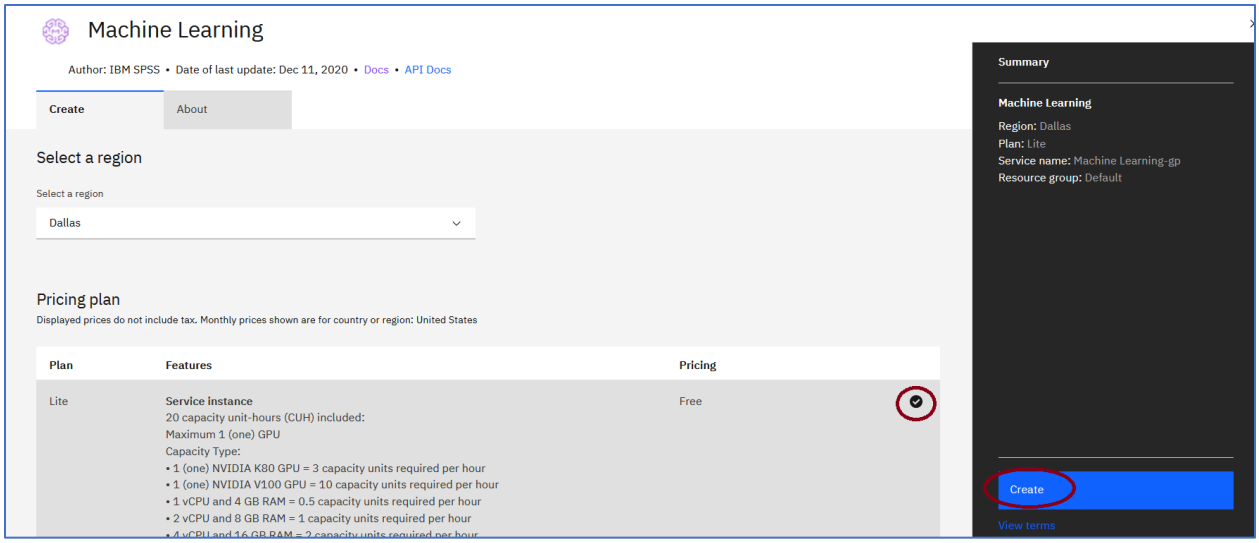
6. If a service of type Machine Learning does not exist, you will need to create the service. Click on **New service**.



7. Click on **Machine Learning**.



8. Make sure the Lite service is selected, and click **Create**.



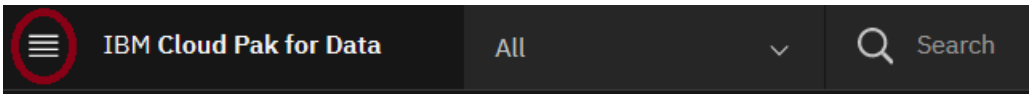
Add a Project Collaborator

Colleagues can gain access to a project's data and analytic assets by being made a collaborator. Permissions are based on the assigned role. The roles are administrator, editor, and viewer.

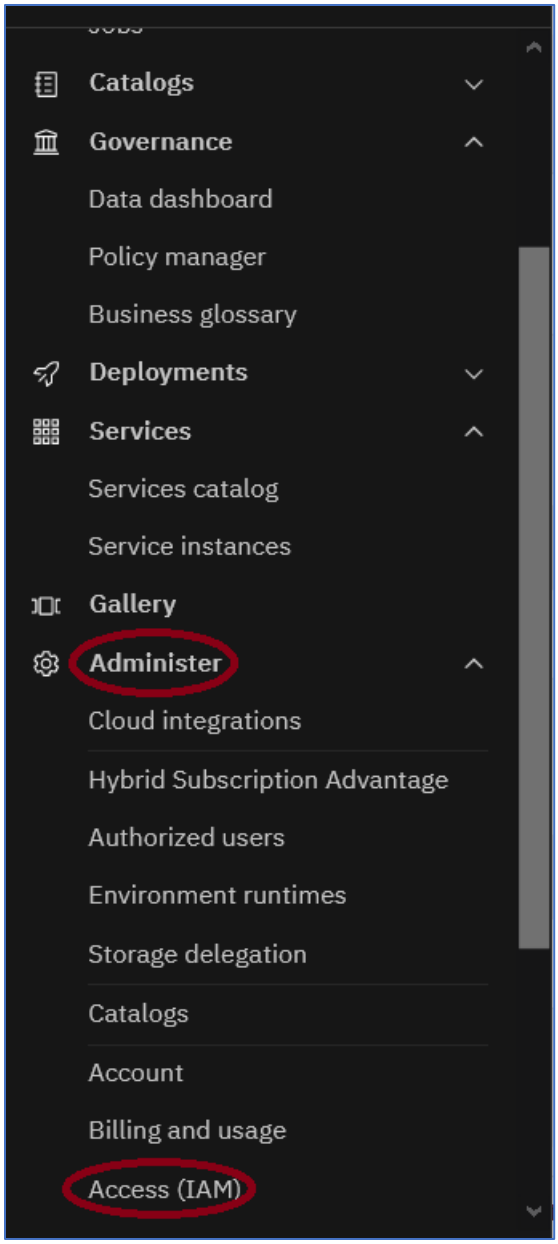
Recall, the project that was created in this lab restricts who can collaborate. This option was required to demonstrate the Watson Knowledge catalog features in lab-2. The restriction limits the collaborators to be members of your company (if your company has federated SAML with IBM Cloud), or a member of the project creator's IBM Cloud account. Given the restriction, to demonstrate adding collaborators to the project, we will need to first add the collaborator to your IBM Cloud account.

Step 1 – Add Collaborator to the IBM Account

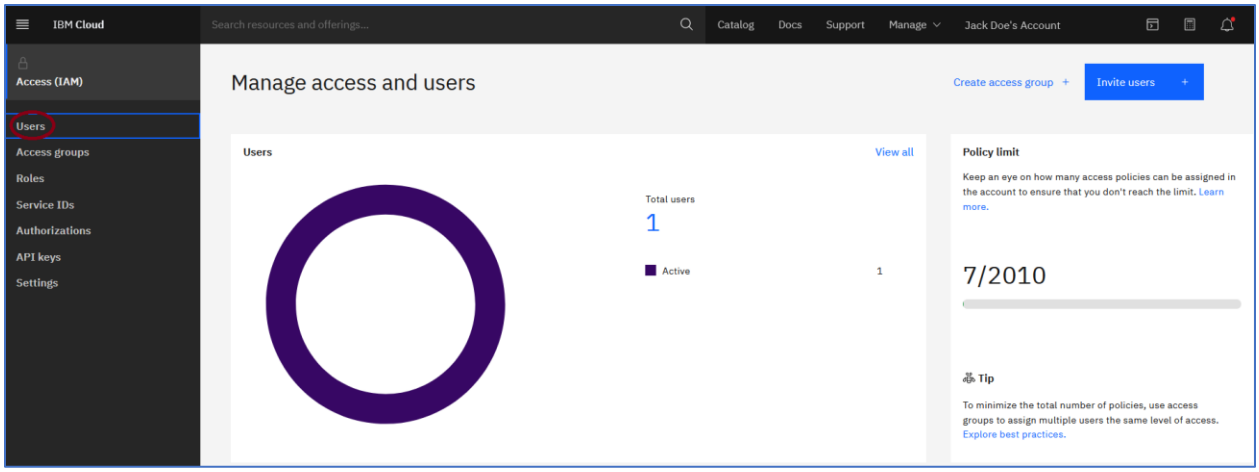
1. Click on the hamburger icon



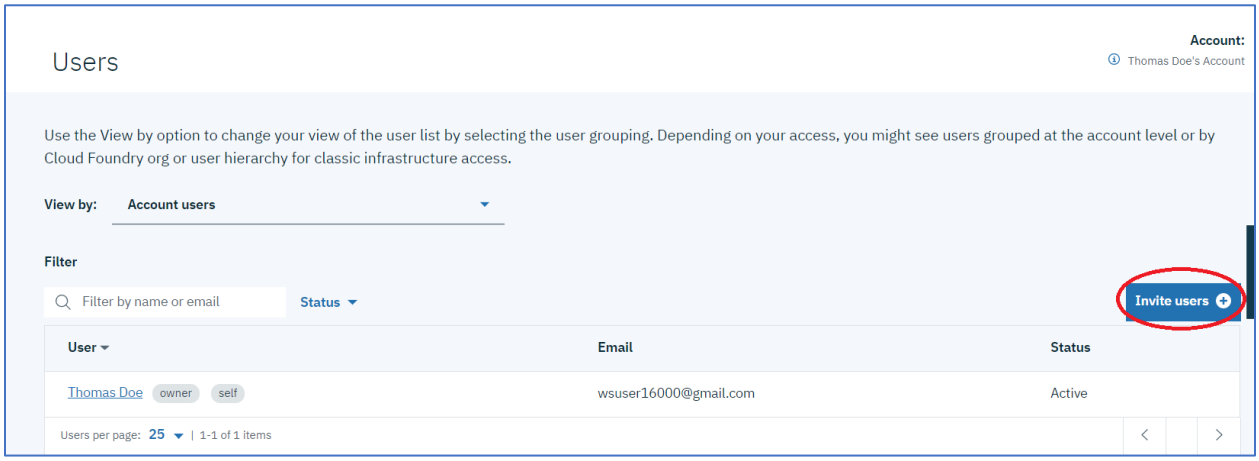
2. Click on **Administer** and then click on **Access (IAM).** Scroll down if necessary.



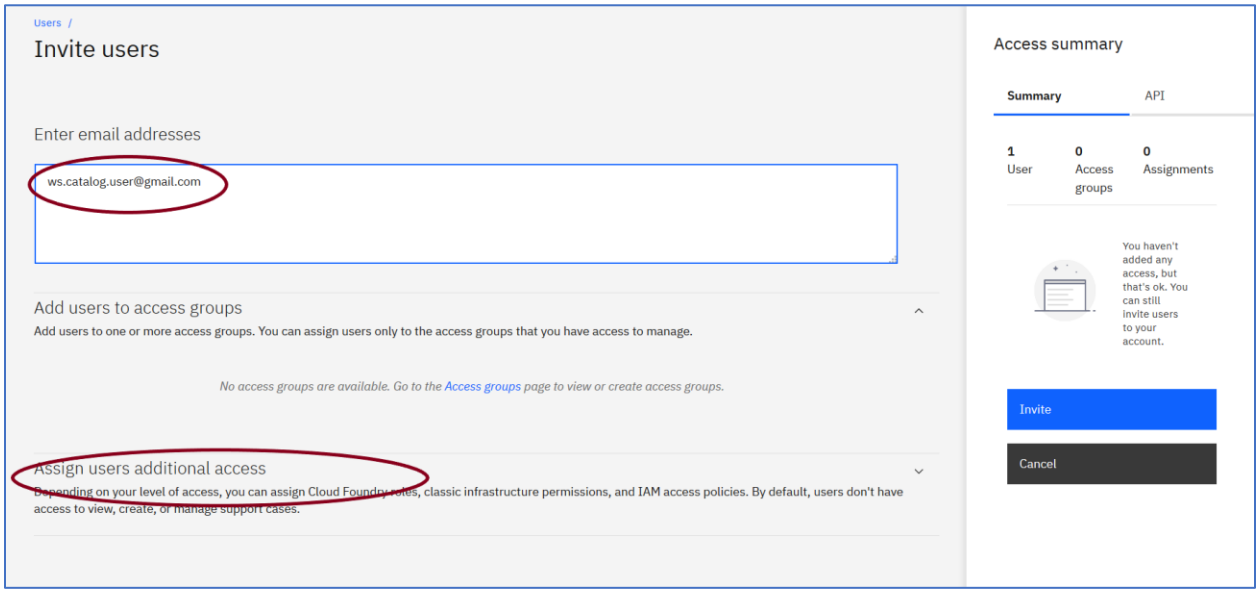
3. An **Identity and Access Management (IAM)** browser tab is created providing the IBM Cloud user interface to the IAM subsystem. Click on **Users**.



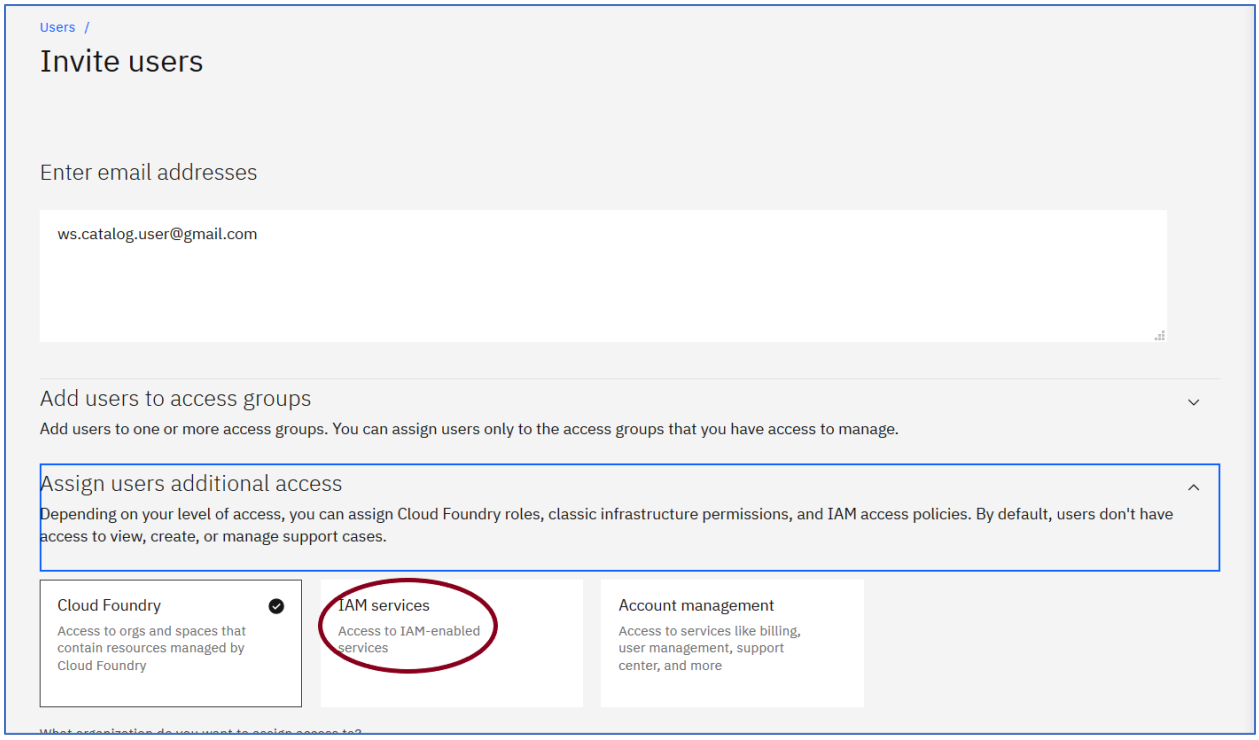
4. Click on **Invite Users**.



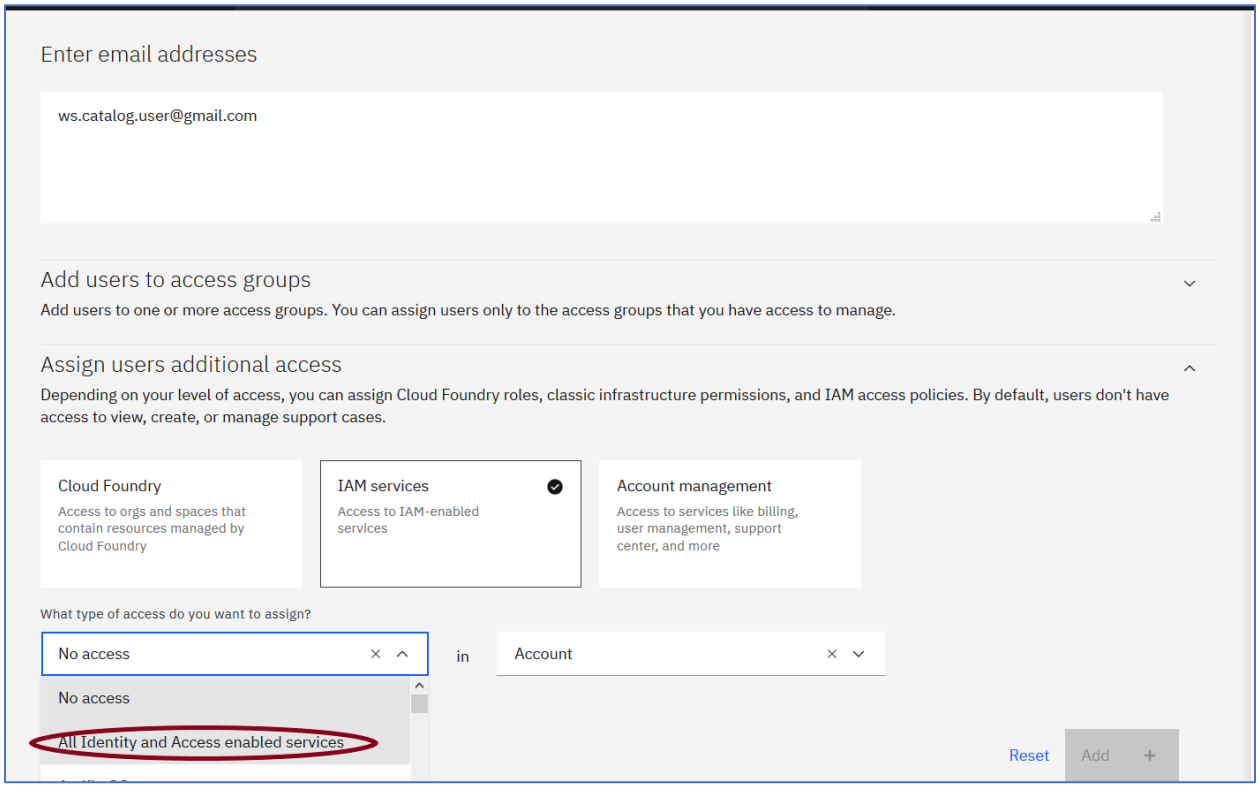
5. For **E-mail address**, enter **ws.catalog.user@gmail.com**, and click on **Assign users additional access**.



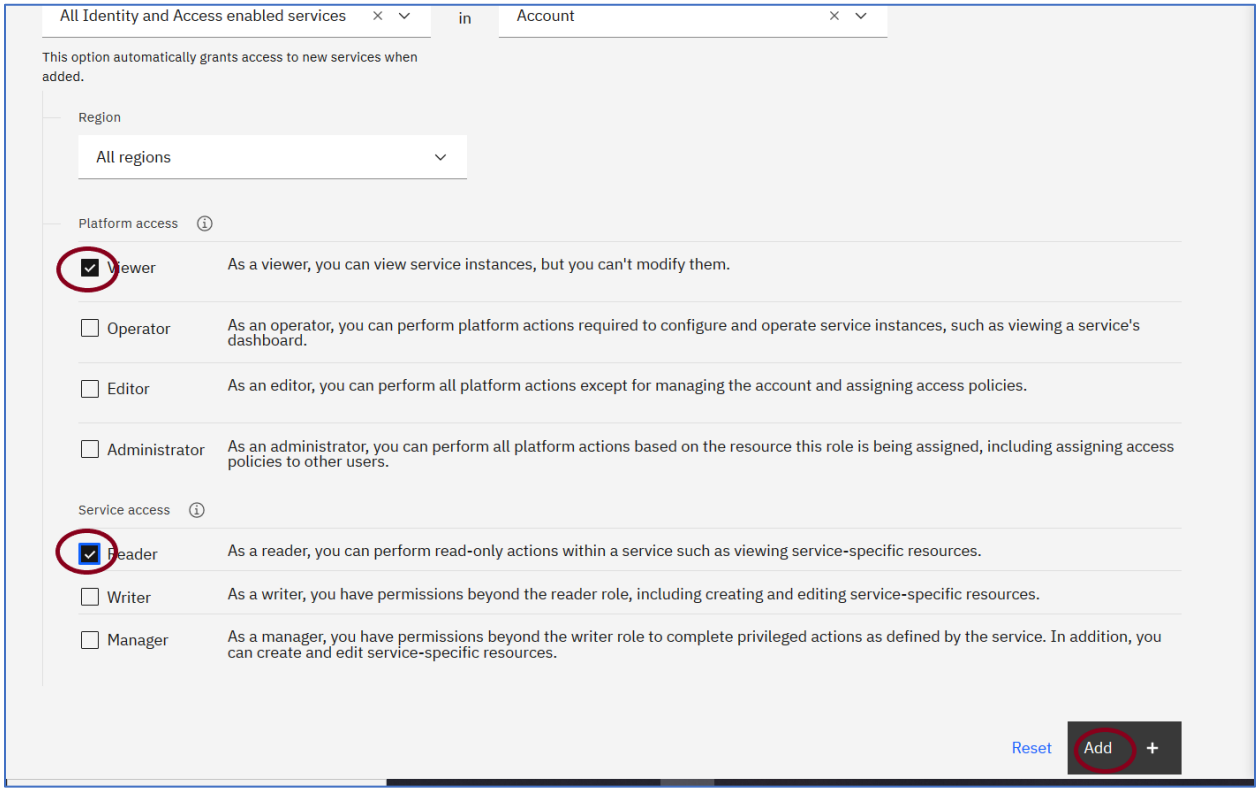
6. Click on **IAM services**.



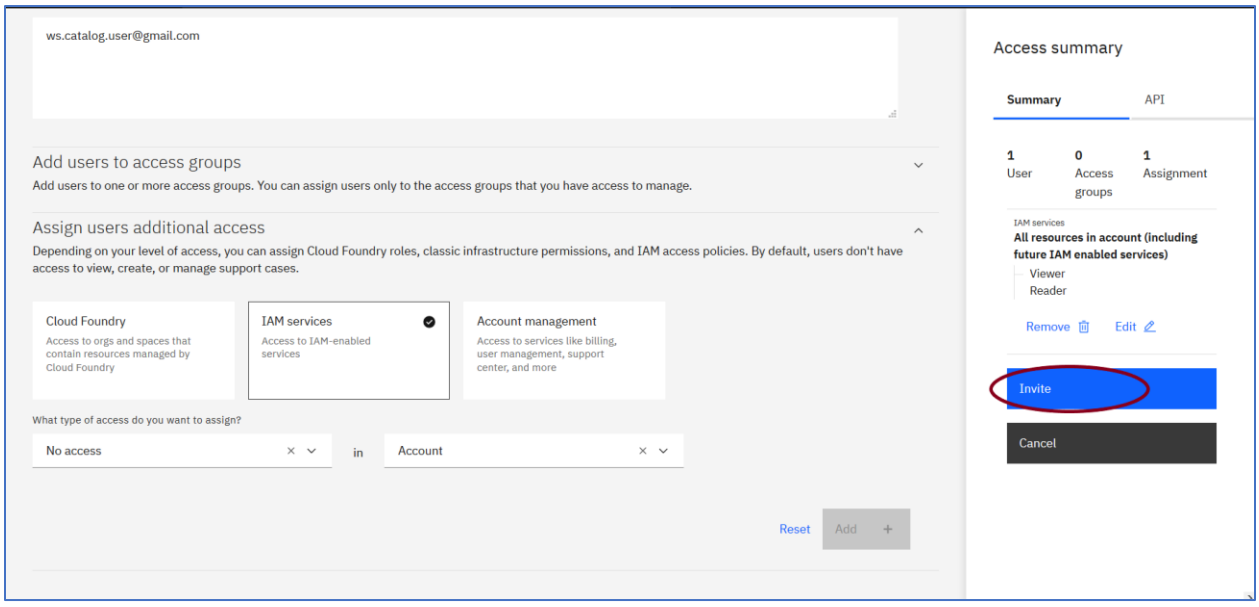
7. Click on **All Identity and Access enabled services**.



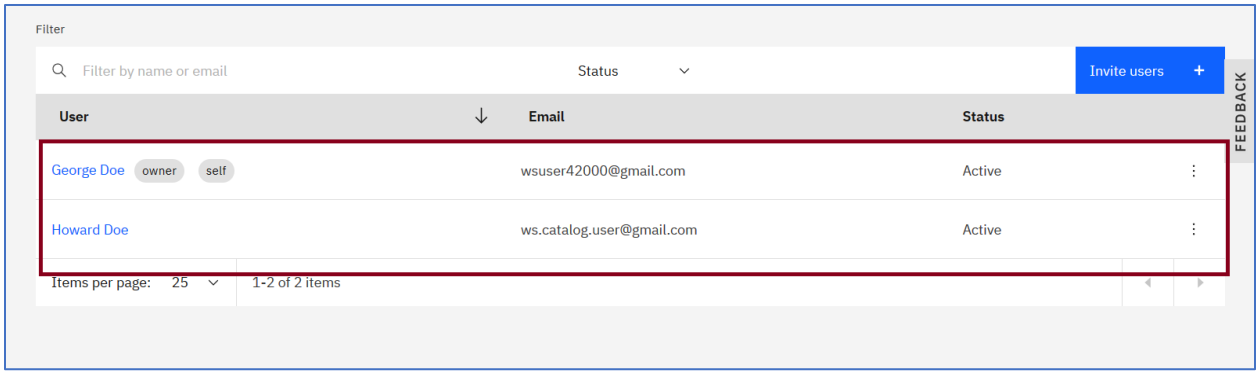
8. Scroll down click on **Viewer** under **Platform access** and **Reader** under **Service access**, and click on **Add**.



9. Click on **Invite**.



10. You should have two users in the account. The second user should be “Howard Doe”.

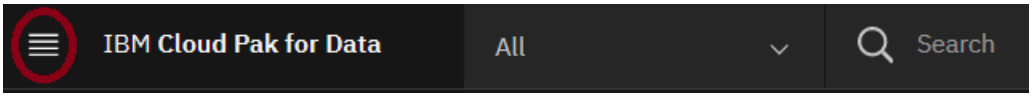


Step 2 – Add Collaborator to the Project

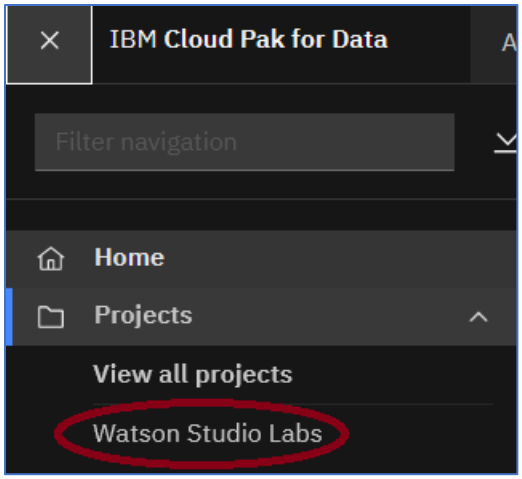
Now that the collaborator has been added to your IBM Cloud Account, you can add the collaborator to the project.

1. Close the Identity and Access Management tab.

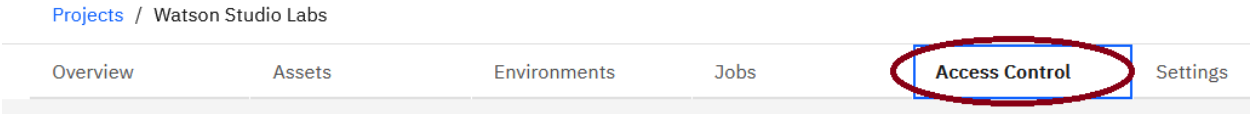
2. Click on the **IBM Cloud Pak for Data** tab. Click on the ☰ icon.



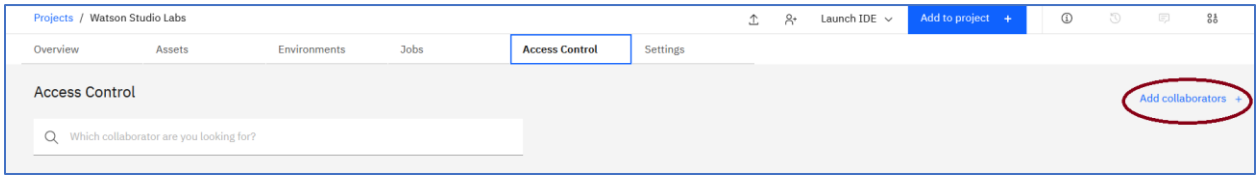
3. Click on Watson Studio Labs.



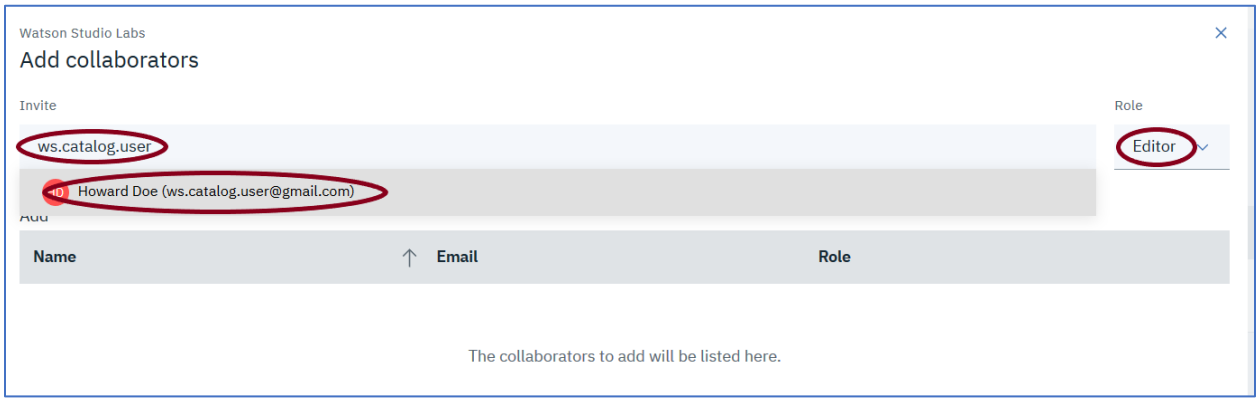
4. Click on the **Access Control** tab.



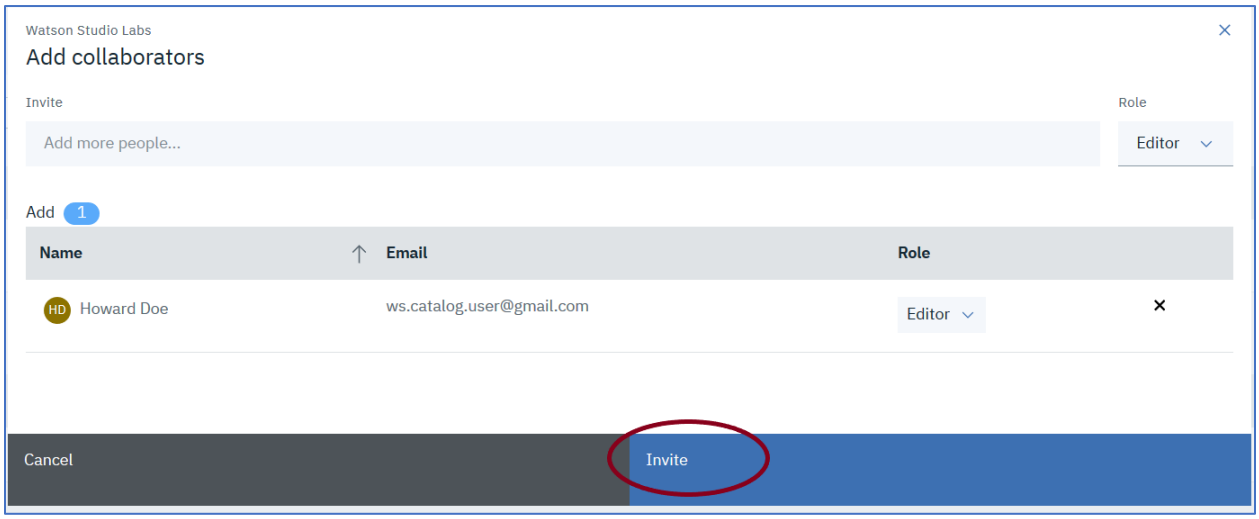
5. Click on **Add collaborators**.



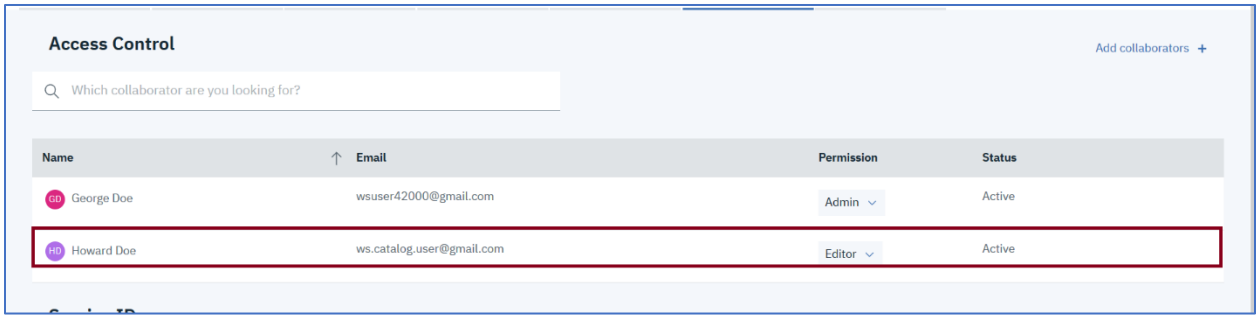
6. For **Invite**, start entering **ws.catalog.user@gmail.com** and once a match has been made, make sure to select the Editor role (if not already set to Editor), and click on the name in the list.



7. Click **Invite**.



8. The collaborator is added.

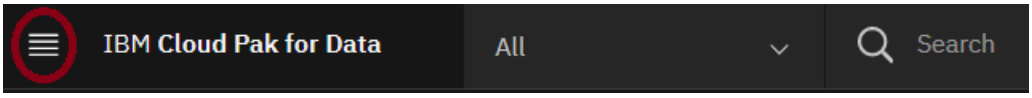


Research Topics

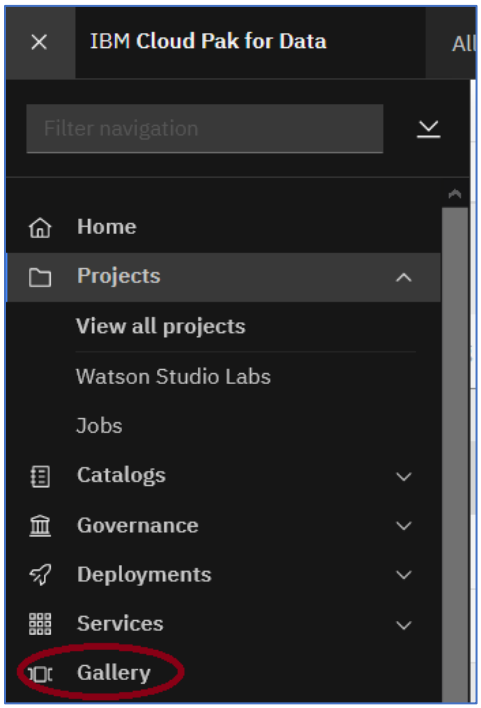
As you work on a data analysis project, you may need to do some research to help find a solution. Cloud Pak for Data provides a built-in capability, accessed via the **Gallery** option, that contains sample notebooks, sample datasets, and sample projects. These are curated on a regular basis to provide up-to-date materials.

For the lab exercise, assume that you are interested in learning how to develop a Spark model. We will look for a sample notebook that demonstrates this capability and add this notebook to our project. **Note, we are doing this exercise for illustrative purposes on using the Gallery, and not for use in any subsequent lab.**

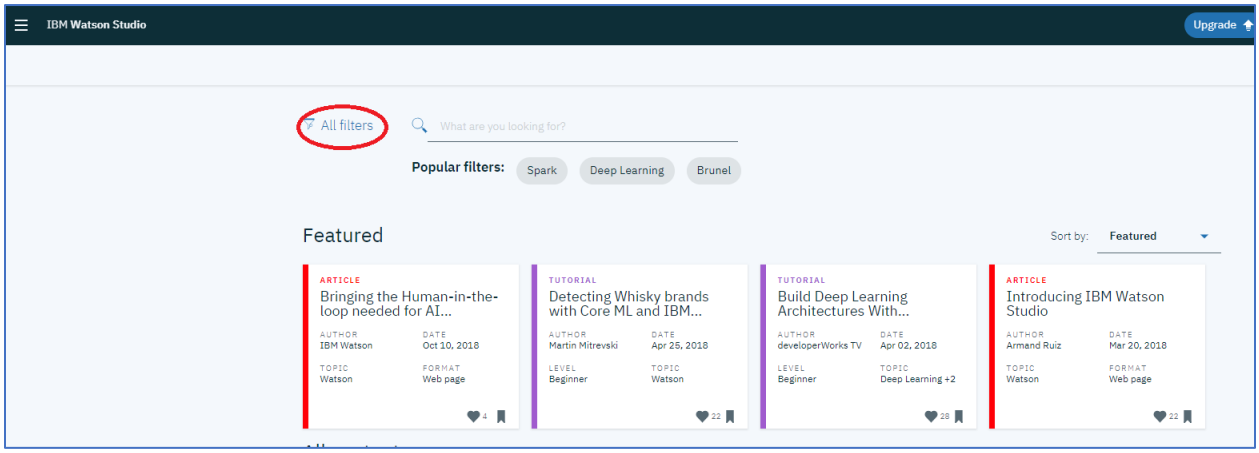
1. Click on the ☰ icon.



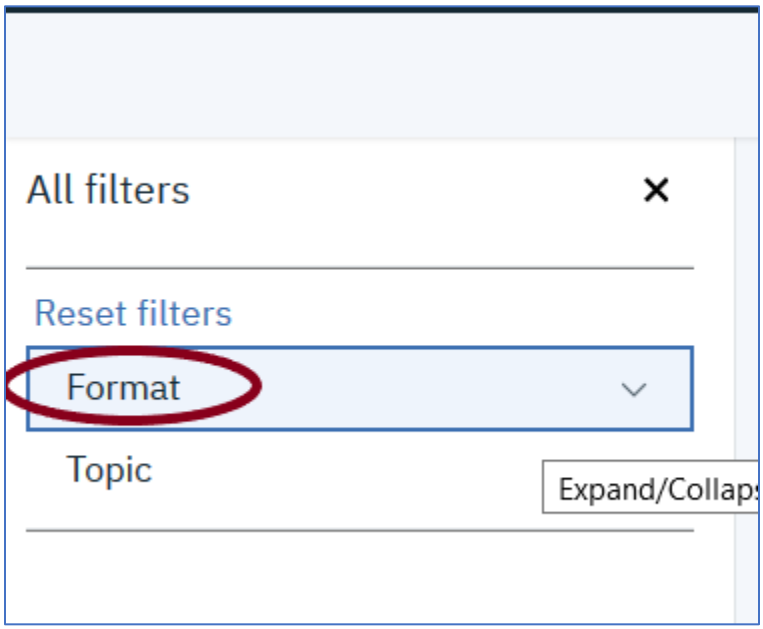
2. Click on **Gallery**.



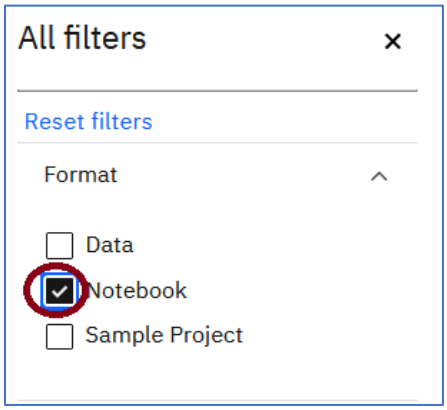
3. The Gallery is displayed. Click on **All filters**.



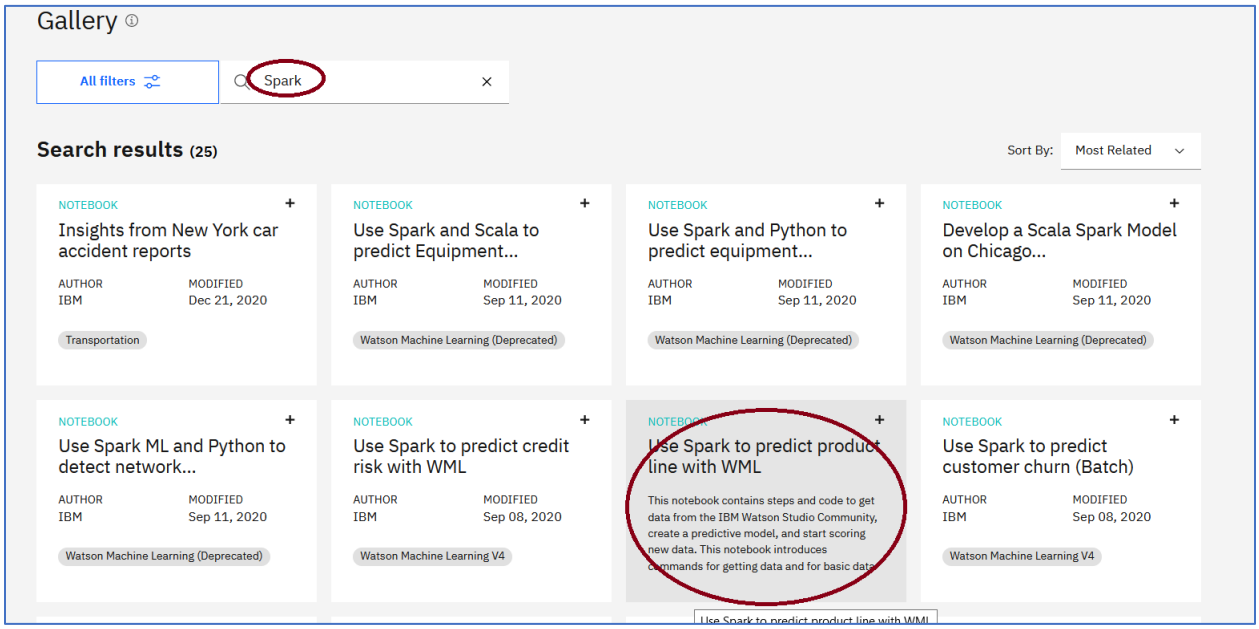
4. Click on **Format**.



5. Click on **Notebook**.



6. Enter **Spark** in the **Search** area. The Gallery view is updated. Locate the Gallery Card "Use Spark to predict product line with WML". Hover the mouse over the card. The descriptive text provides a notebook summary. This notebook appears to be a good candidate for having code demonstrating the use of the Spark. Click on the **Gallery Card.**

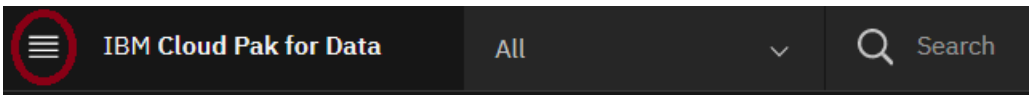


7. Here you can review the notebook documentation and then add it to the project if this notebook was a good starting point. We are not using this notebook for our labs so don't add it to the project. Our purpose was just to demonstrate the **Gallery** feature.

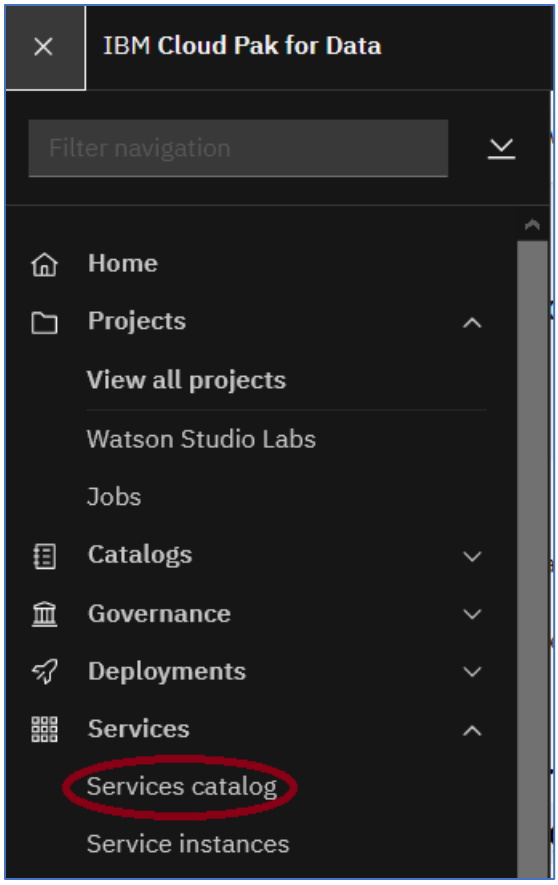
Provision Watson OpenScale

In this section, we will provision a Watson OpenScale service and run the AutoSetup as preparation for the Watson OpenScale lab. The AutoSetup takes about 10 minutes and it can run in the background so that it is completed by the time we start the OpenScale lab.

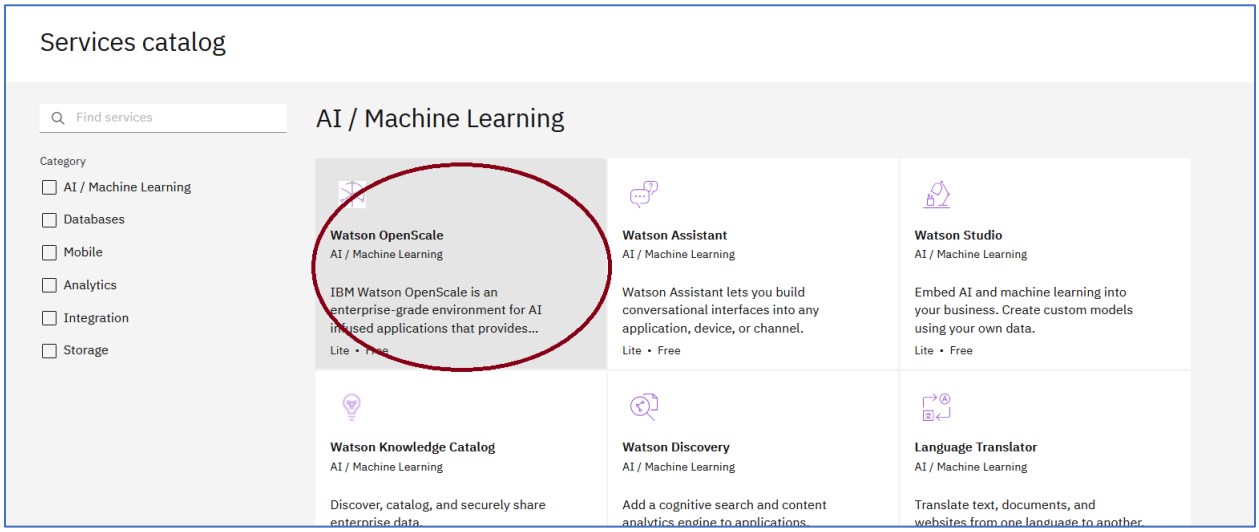
1. Click on the ☰ icon.



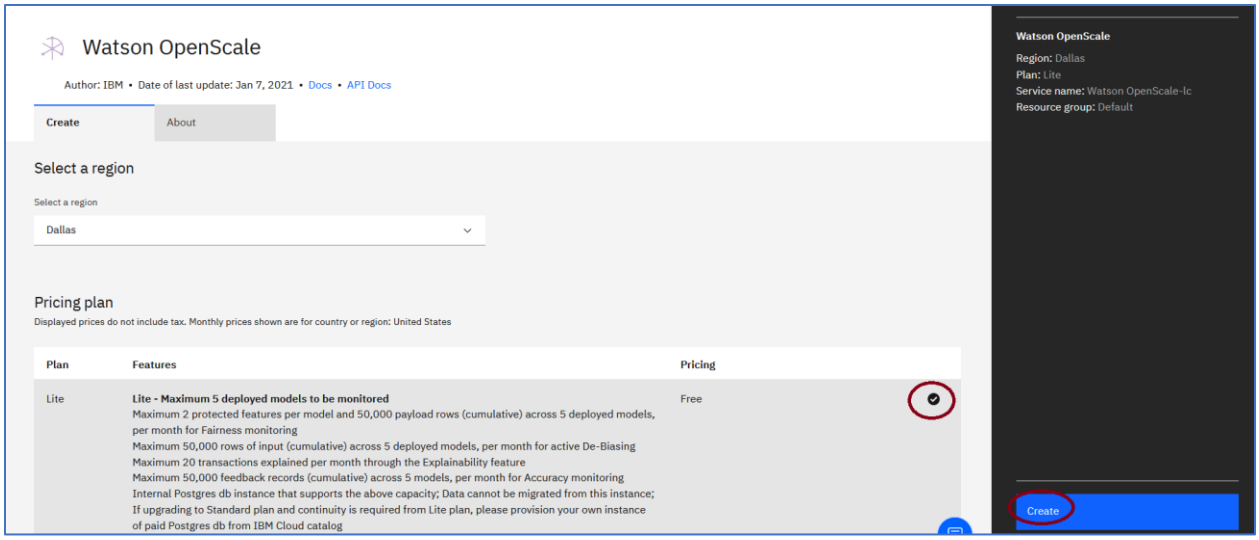
2. Click on **Services** and then **Service Catalog**.



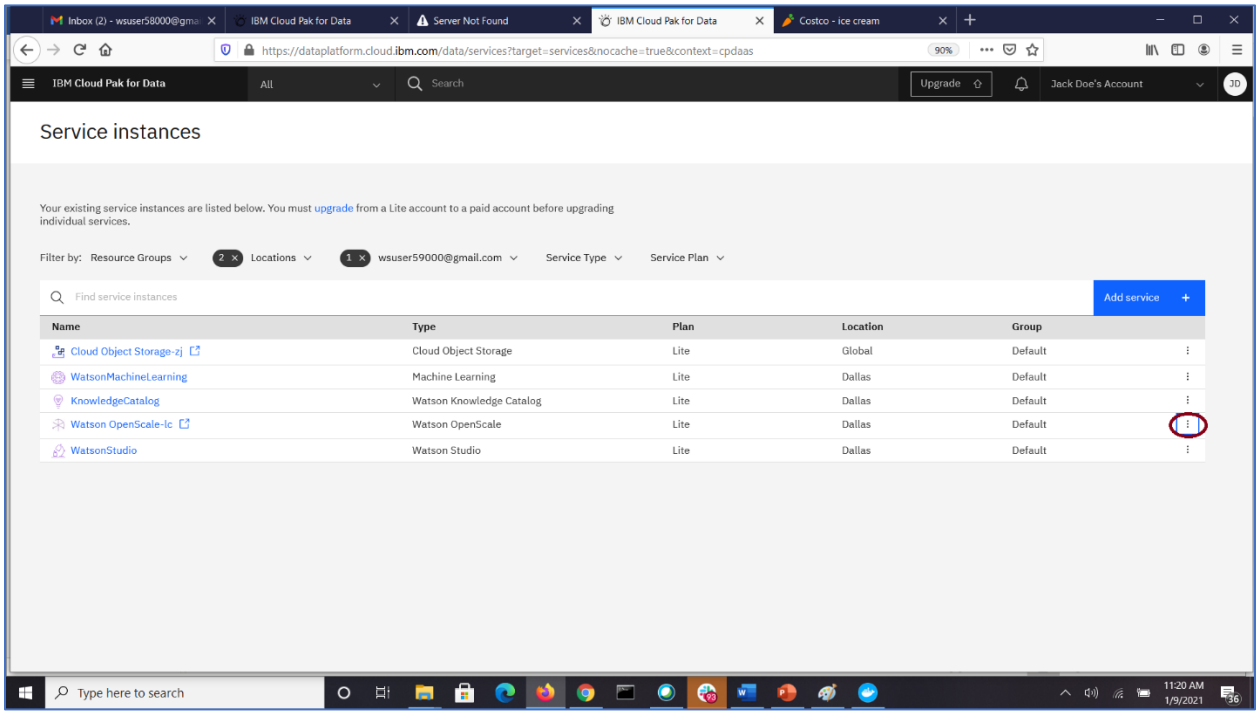
3. Click on **Watson OpenScale**



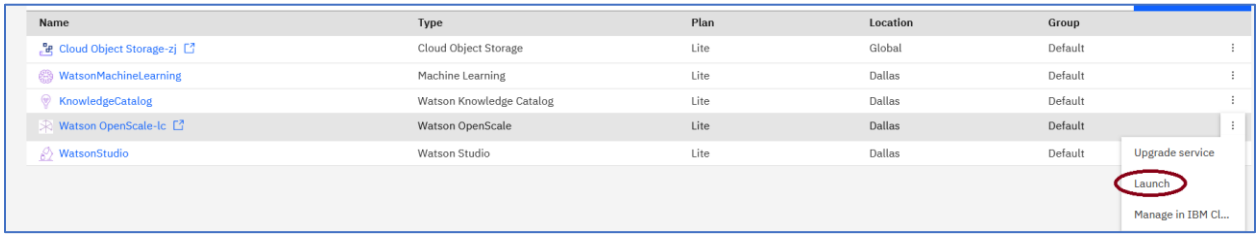
4. Make sure the Lite plan is selected and click **Create**.



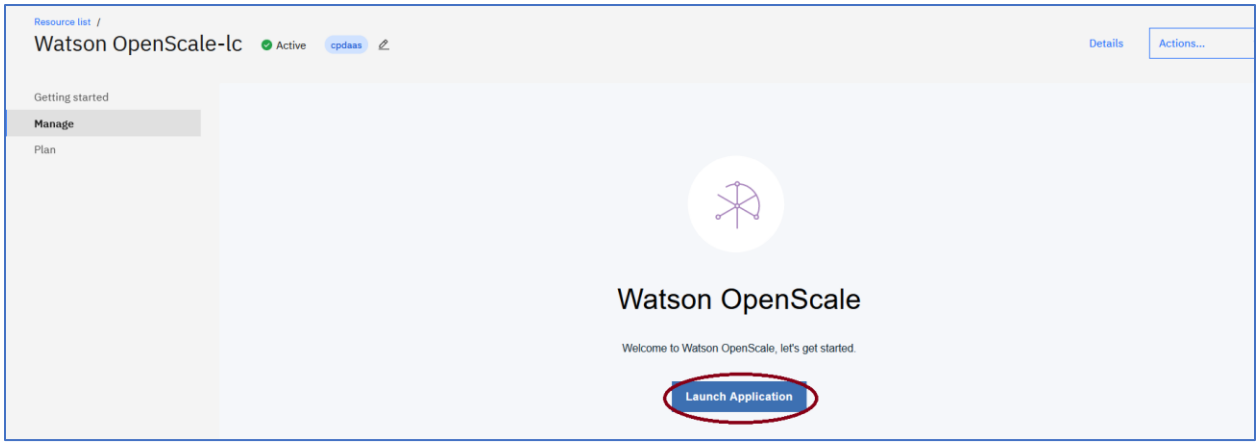
5. Click on the ⋮ icon on the right side of the Watson OpenScale entry.



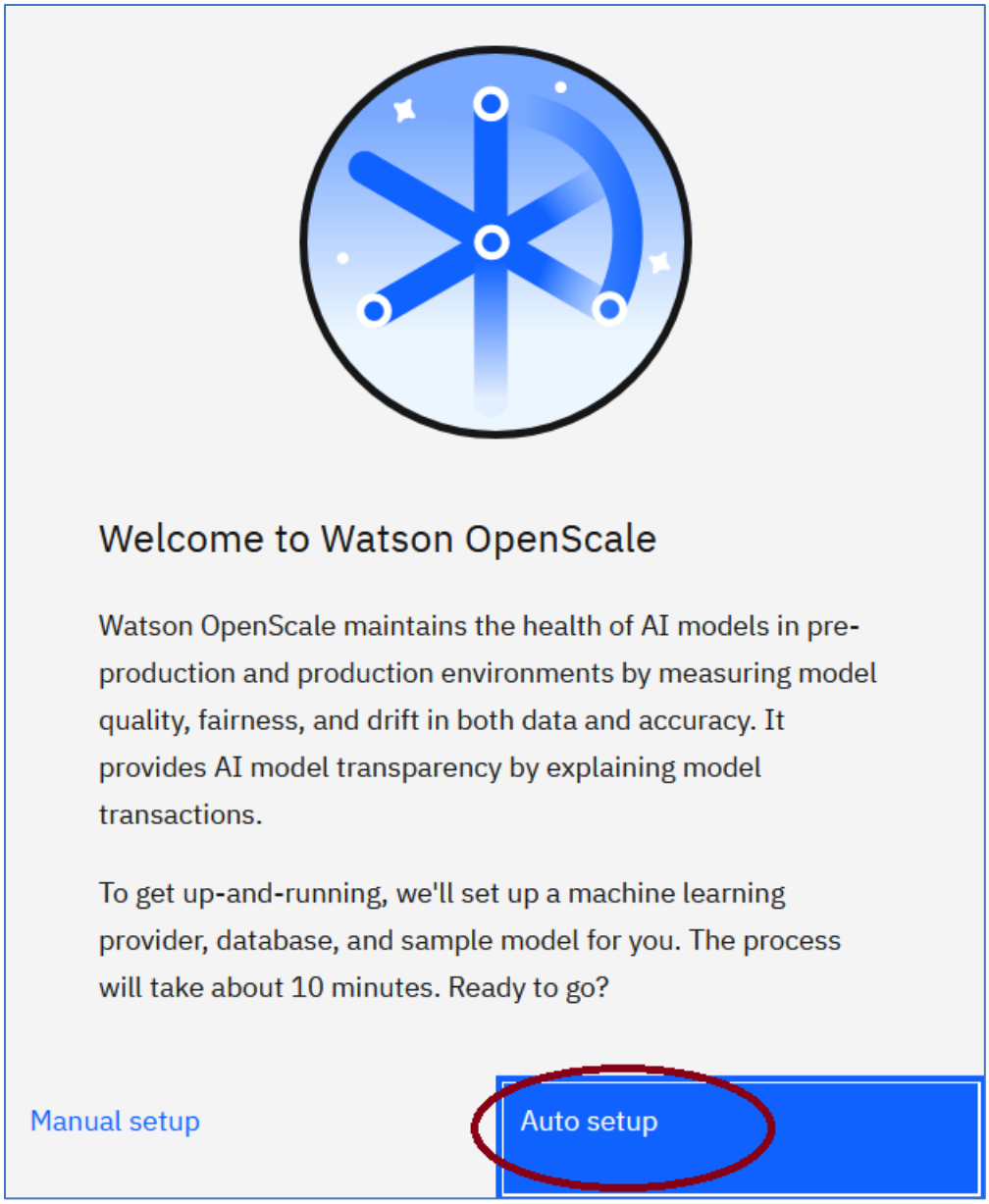
6. Click **Launch**



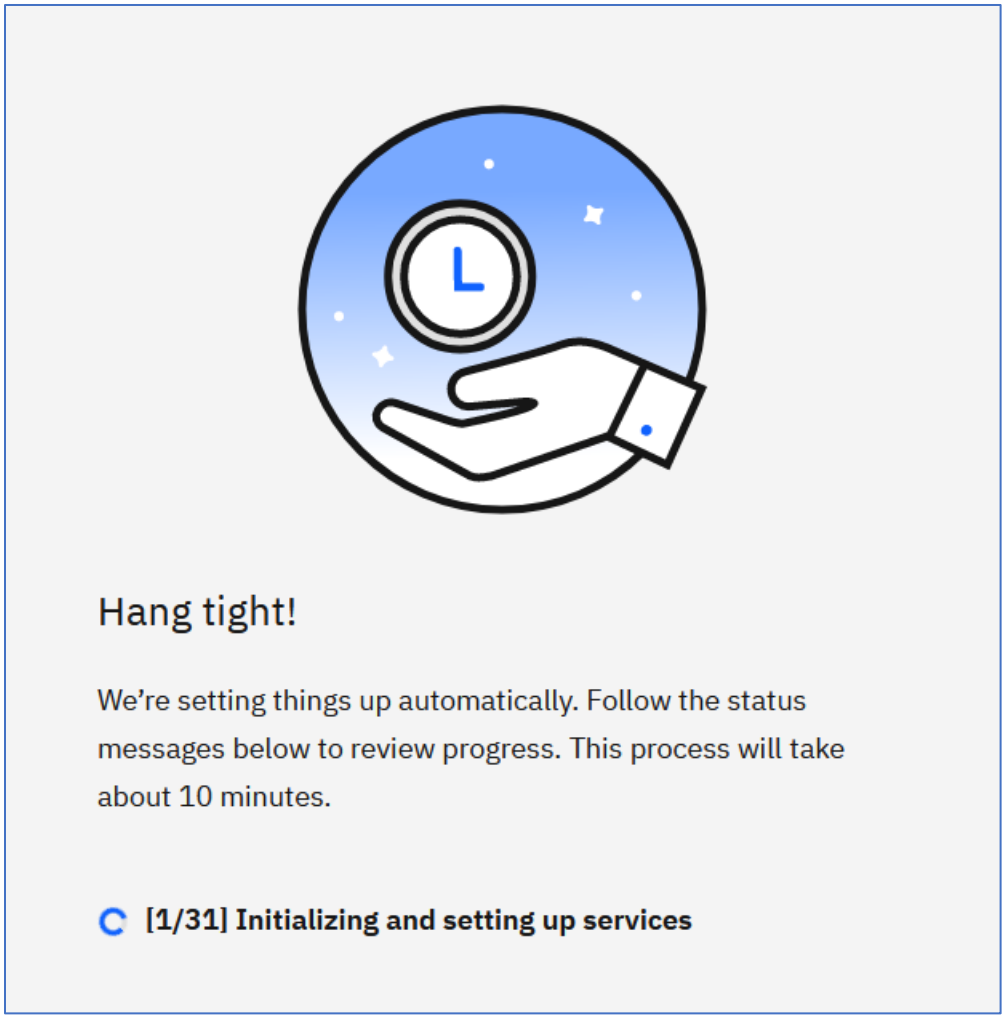
7. Click **Launch Application**



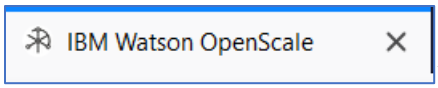
8. Click **Auto setup**.



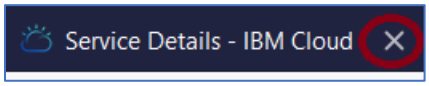
9. The panel below will be displayed.



10. The Auto setup will run for approximately 10 minutes. Please make sure you **DON'T CLOSE**the **IBM Watson OpenScale** browser tab where the Auto setup is running.



You can close the Service Details – IBM Cloud



You have completed Lab-1!

- ✓ Created a project
- ✓ Created an object storage instance and associate it with the project
- ✓ Associated an existing Watson Machine Learning service instance with the project
- ✓ Added a collaborator to the project
- ✓ Demonstrated researching topics by searching the Gallery.
- ✓ Provisioned Watson OpenScale service
- ✓ Ran Auto setup