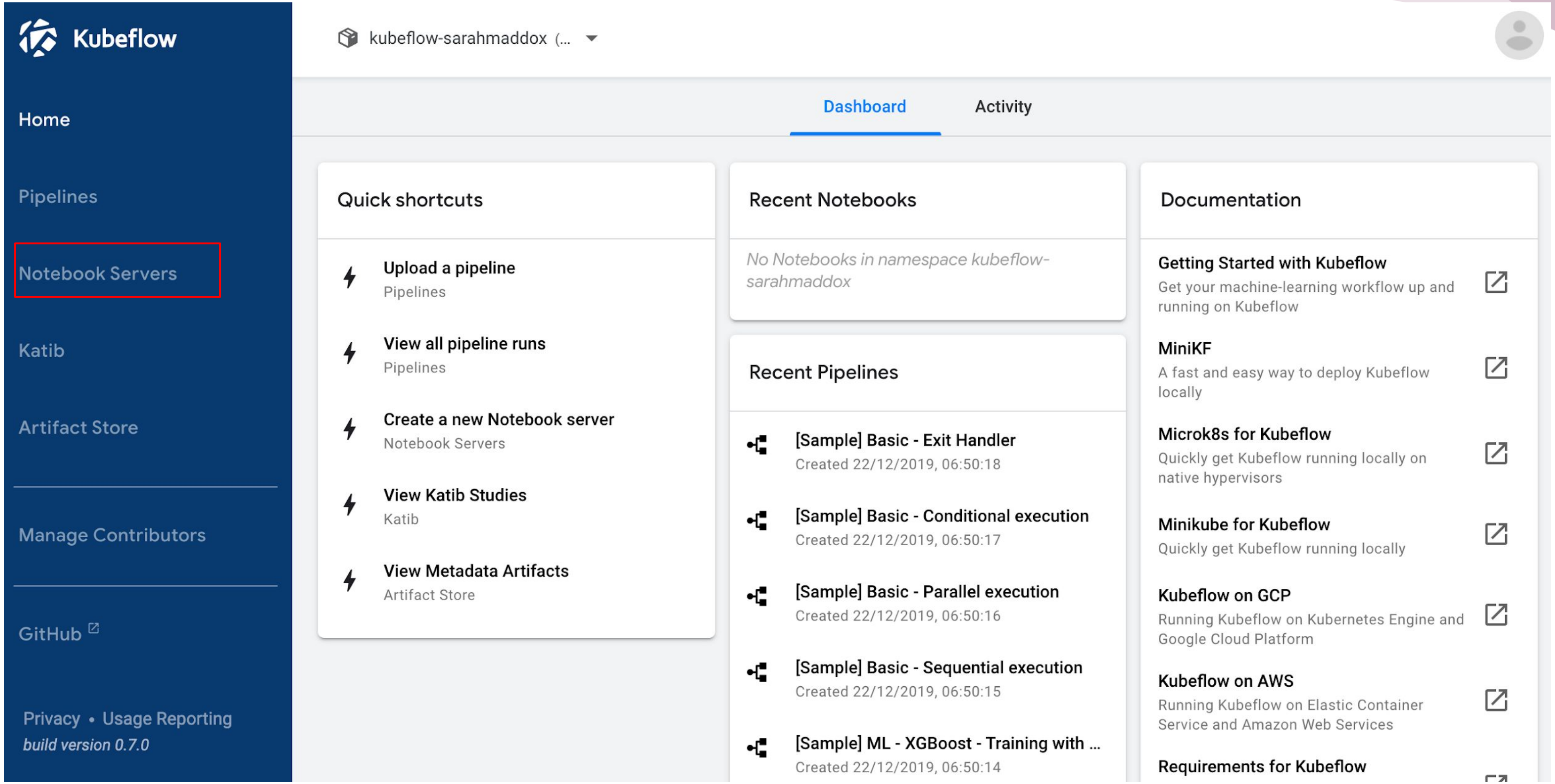
Jupyter Notebook

Jupyter Notebooks

- Appropriate open-source environment for code building, visualizations.
- Integrated into Kubeflow by connecting to the Notebook Server.
- Allows standard/custom notebook images , role-based access control (RBAC), secrets and credentials to manage for teams.
- Kubeflow provides multiple notebook servers per kubeflow deployments, each having a single namespace that corresponds to a team or project name.

Jupyter Notebooks



Kubeflow

kubeflow-sarahmaddox (...

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build version 0.7.0

Dashboard

Activity

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Pipelines

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Notebook Servers

View Katib Studies
Katib

View Metadata Artifacts
Artifact Store

Recent Notebooks

No Notebooks in namespace kubeflow-sarahmaddox

Recent Pipelines

[Sample] Basic - Exit Handler
Created 22/12/2019, 06:50:18

[Sample] Basic - Conditional execution
Created 22/12/2019, 06:50:17

[Sample] Basic - Parallel execution
Created 22/12/2019, 06:50:16

[Sample] Basic - Sequential execution
Created 22/12/2019, 06:50:15

[Sample] ML - XGBoost - Training with ...
Created 22/12/2019, 06:50:14

Documentation

Getting Started with Kubeflow
Get your machine-learning workflow up and running on Kubeflow

MiniKF
A fast and easy way to deploy Kubeflow locally

Microk8s for Kubeflow
Quickly get Kubeflow running locally on native hypervisors

Minikube for Kubeflow
Quickly get Kubeflow running locally

Kubeflow on GCP
Running Kubeflow on Kubernetes Engine and Google Cloud Platform

Kubeflow on AWS
Running Kubeflow on Elastic Container Service and Amazon Web Services

Requirements for Kubeflow

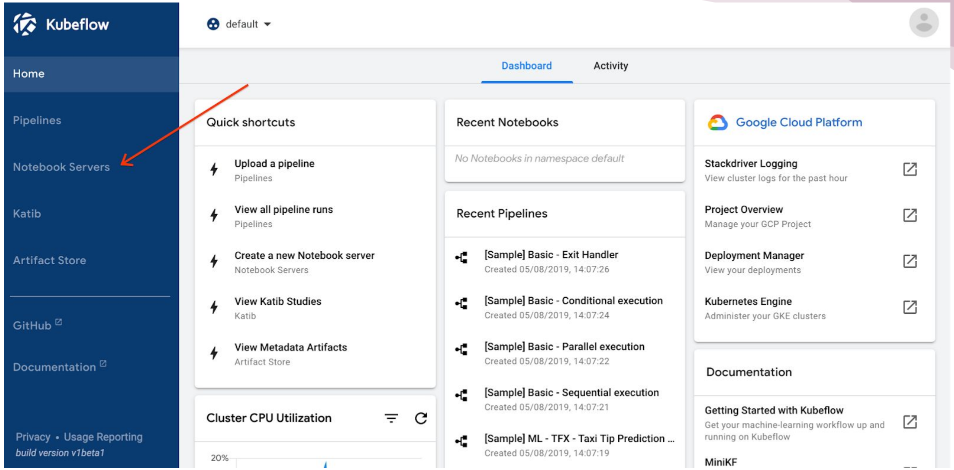
Set up your Notebook

Start by setting up a jupyter notebook through the Notebook Servers tab following the steps below:

1. Click **Notebook Servers** in the left-hand panel of the Kubeflow UI.

2. Click the **namespace** dropdown and choose the a that corresponds to your Kubeflow profile.

3. Click **new server** at the top right corner of the Notebook Servers page to create a notebook server.



Kubeflow

default ▾

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build version v1beta1

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Cluster CPU Utilization

20%

Recent Notebooks

No Notebooks in namespace default

Recent Pipelines

[Sample] Basic - Exit Handler
Created 05/08/2019, 14:07:26

[Sample] Basic - Conditional execution
Created 05/08/2019, 14:07:24

[Sample] Basic - Parallel execution
Created 05/08/2019, 14:07:22

[Sample] Basic - Sequential execution
Created 05/08/2019, 14:07:21

[Sample] ML - TFX - Taxi Tip Prediction ...
Created 05/08/2019, 14:07:19

Google Cloud Platform

Stackdriver Logging
View cluster logs for the past hour

Project Overview
Manage your GCP Project

Deployment Manager
View your deployments

Kubernetes Engine
Administer your GKE clusters

Documentation

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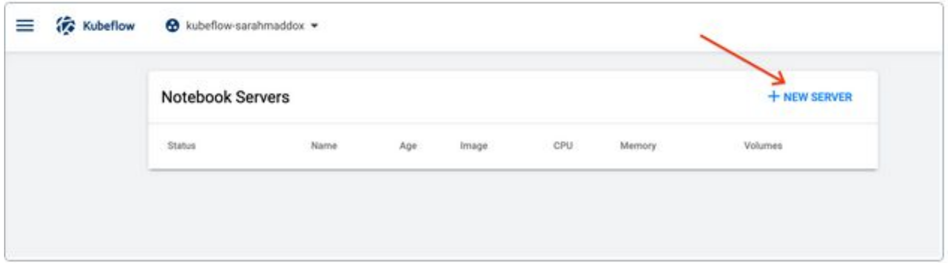
Get your machine-learning workflow up and running on Kubeflow

MiniKF



Kubeflow

kubeflow-sarahmaddox ▾

Notebook Servers

+ NEW SERVER

Status	Name	Age	Image	CPU	Memory	Volumes

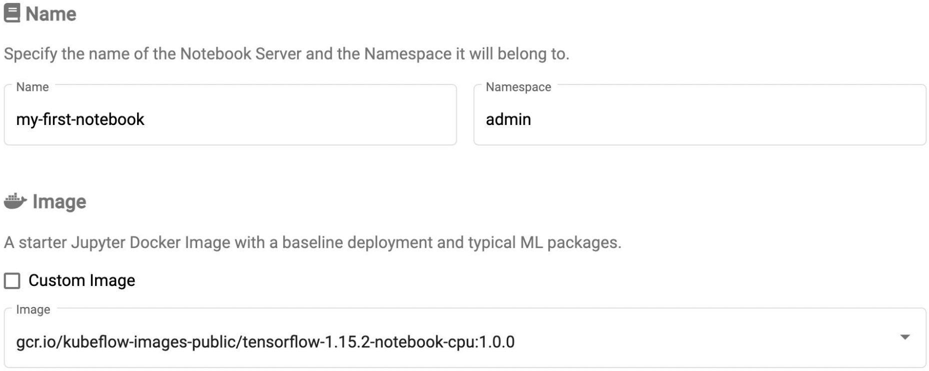
Set up your Notebook

4. Enter the details of your new server on the next page:

   a. Give a **name** of your choice to the notebook server, which must be in ***lowercase***

   b. The **namespace** is automatically updated by Kubeflow.

   c. Select a Docker image. Use the gcr.io/kubeflow-images-public/tensorflow-1.15.2-notebook-cpu:1.0.0 image for our example.



Name

Specify the name of the Notebook Server and the Namespace it will belong to.

Name: my-first-notebook

Namespace: admin

Image

A starter Jupyter Docker Image with a baseline deployment and typical ML packages.

□ Custom Image

Image: gcr.io/kubeflow-images-public/tensorflow-1.15.2-notebook-cpu:1.0.0

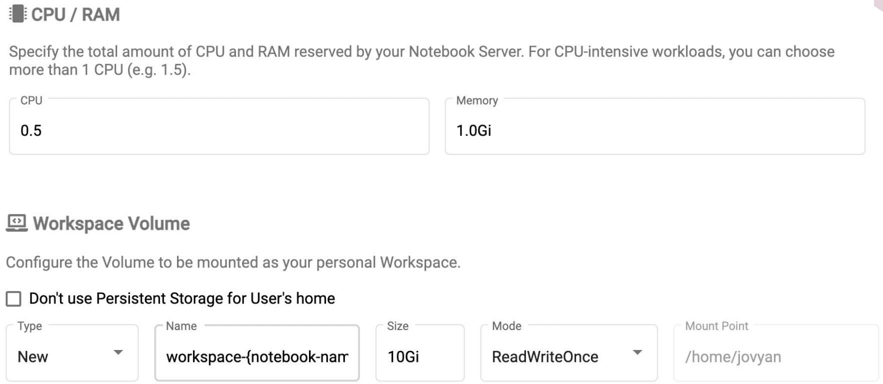
Set up your Notebook

6. Specify the total amount of **CPU** that your notebook server should reserve. **For this labs use 0.5**

7. Specify the total amount of memory your notebook server should reserve.**For this labs use 1.0GI**

8. Specify a **workspace volume** to hold your personal workspace for this notebook server. The name is automatically updated by kubeflow, leave the size as 10Gi and the mode at ReadWriteOnce.

9. Click **LAUNCH** and you should see a new Notebook server entry like below.



CPU / RAM

Specify the total amount of CPU and RAM reserved by your Notebook Server. For CPU-intensive workloads, you can choose more than 1 CPU (e.g. 1.5).

CPU: 0.5

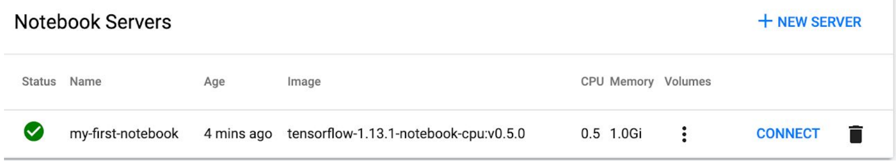
Memory: 1.0Gi

Workspace Volume

Configure the Volume to be mounted as your personal Workspace.

□ Don't use Persistent Storage for User's home

Type	Name	Size	Mode	Mount Point
New	workspace-{notebook-nam	10Gi	ReadWriteOnce	/home/jovyan



Notebook Servers

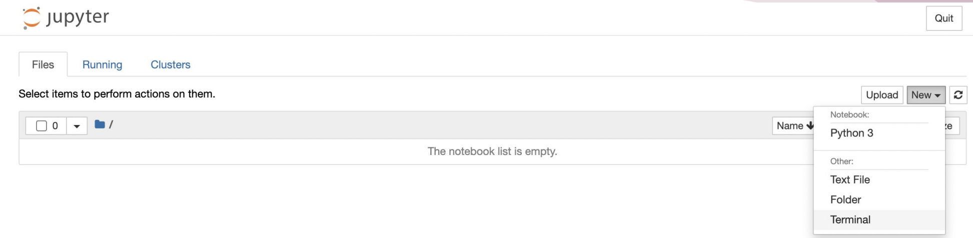
Status	Name	Age	Image	CPU	Memory	Volumes		
✓	my-first-notebook	4 mins ago	tensorflow-1.13.1-notebook-cpu:v0.5.0	0.5	1.0Gi	⋮	CONNECT	🗑

Clone the Repository

10. Connect to your notebook and open up the terminal.

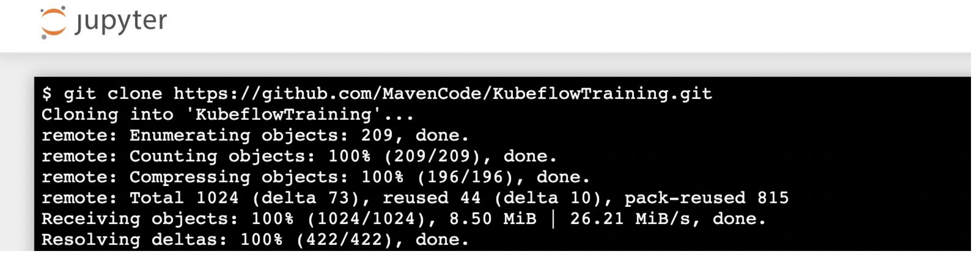
11. In the terminal run this code to clone the repository we would be working with.

```
git clone https://github.com/MavenCode/KubeflowTraining.git
```

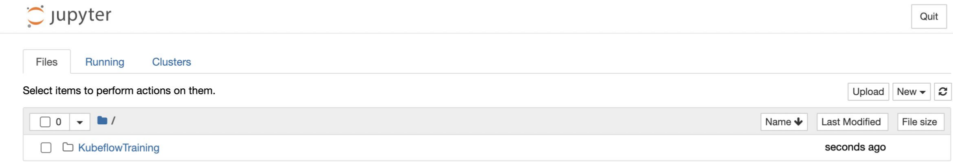


Select items to perform actions on them.

The notebook list is empty.



```
$ git clone https://github.com/MavenCode/KubeflowTraining.git
Cloning into 'KubeflowTraining'...
remote: Enumerating objects: 209, done.
remote: Counting objects: 100% (209/209), done.
remote: Compressing objects: 100% (196/196), done.
remote: Total 1024 (delta 73), reused 44 (delta 10), pack-reused 815
Receiving objects: 100% (1024/1024), 8.50 MiB | 26.21 MiB/s, done.
Resolving deltas: 100% (422/422), done.
```



Select items to perform actions on them.

Name	Last Modified
KubeflowTraining	seconds ago