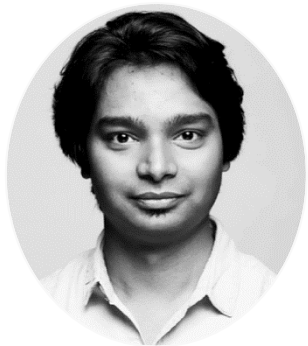# Setting up Kubeflow Environment

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DATA SCIENTIST | AUTHOR | SPEAKER

@meabhishekkumar

Overview

Kubeflow deployment options

- Cloud
- On-premise
- Local

Demo: Setting up Kubeflow on Google Cloud Platform (GCP)

Demo: Clean up Kubeflow

Kubeflow Deployment Options

Kubeflow   **Machine learning toolkit for Kubernetes**

....

Kubernetes   **Open source system that runs everywhere (on-premise, public cloud, hybrid)**

Kubeflow Deployment Options

Public cloud

Google Cloud
Platform (GCP)

Amazon Web Services
(AWS)

Microsoft Azure

On-premise

On-premise
Kubernetes
cluster

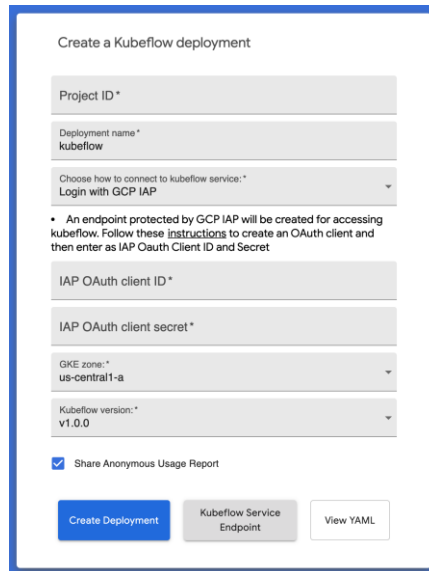**Private cloud**

IBM private cloud

Local

MiniKF

Minikube

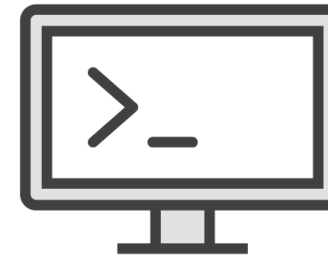MicroK8s

Deploy Kubeflow on GCP

UI approach

Create a Kubeflow deployment

Project ID *

Deployment name *
kubeflow

Choose how to connect to kubeflow service: *
Login with GCP IAP

- An endpoint protected by GCP IAP will be created for accessing kubeflow. Follow these instructions to create an OAuth client and then enter as IAP Oauth Client ID and Secret

IAP OAuth client ID *

IAP OAuth client secret *

GKE zone: *
us-central1-a

Kubeflow version: *
v1.0.0

☑ Share Anonymous Usage Report

Create Deployment   Kubeflow Service Endpoint   View YAML

https://deploy.kubeflow.cloud/

CLI approach

More control

Install latest version

Automation

https://www.kubeflow.org/docs/gke/deploy

Deploy Kubeflow on GCP

Prerequisites

- Active GCP project
  - https://cloud.google.com/free/

- gcloud
  - Google cloud SDK
  - https://cloud.google.com/sdk/docs/quickstarts

- Kubectl
  - https://kubernetes.io/docs/tasks/tools/install-kubectl/

  - With gcloud SDK
    - $ gcloud components install kubectl

Deploy Kubeflow on GCP

**macOS
or Linux**

Google cloud shell
- **Temporary machine**
- **Pre-installed gcloud
  and kubectl**

Demo

Setup Kubeflow prerequisites

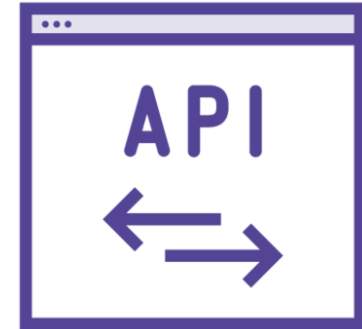- Active GCP project

- gcloud

- Kubectl

Setup GCP Project

Owner role

Enable GCP billing

Enable APIs

- Compute engine API
- Kubernetes engine API
- Identity and access management (IAM) API
- Deployment manager API

Authentication

Basic authentication
Not recommended

Cloud Identity Aware Proxy (IAP)
Recommended

Use OAuth

Demo

Setup OAuth for GCP Cloud IAP

Demo

Setup Kubeflow on Google Cloud Platform(GCP)

Summary

Kubeflow deployment options

Deploy Kubeflow on GCP

Clean Kubeflow

Next up:
Exploring Kubeflow Components