

Prerequisites and Setup for Deployment to GCP Using Ansible Playbooks

APIs to Enable in GCP

Search for each of these in the GCP search bar and click enable to activate these APIs:

Vertex AI API

Compute Engine API

Service Usage API

Cloud Resource Manager API

Google Container Registry API

Kubernetes Engine API

Setup GCP Service Account

To setup a service account, go to GCP Console (<https://console.cloud.google.com/home/dashboard>), search for "Service accounts" or navigate to: "IAM & Admins" > "Service accounts". Create a new service account called "deployment".

Assign the following roles to "deployment":

Compute Admin

Compute OS Login

Container Registry Service Agent

Kubernetes Engine Admin

Service Account User

Storage Admin

Vertex AI Administrator

Click done to create the service account.

In the Actions column, click the three dots and select 'Create key'. Choose JSON and click Create. This downloads the key file. Save it in the secrets folder and rename it to deployment.json.

Repeat the process to create a service account called 'gcp-service' and assign these roles:

Storage Object Viewer

Vertex AI Administrator

Click done, download the JSON key, place it in the secrets folder, and rename it to gcp-service.json.

Setup Docker Container (Ansible, Docker, Kubernetes)

Use Docker to build and run a container with all required tools.

Run `deployment` Container

cd into `deployment`

Edit `docker-shell.sh` and set GCP_PROJECT to your project ID

Run `sh docker-shell.sh`

Run `gcloud auth list` to check GCP authentication

SSH Setup

Configuring OS Login

Run this command in the deployment container:

```
gcloud compute project-info add-metadata --project <YOUR GCP_PROJECT> --metadata enable-oslogin=TRUE
```

Create SSH Key for Service Account

```
cd /secrets
```

```
ssh-keygen -f ssh-key-deployment
```

```
cd /app
```

Provide Public SSH Key to Instances

Run:

```
gcloud compute os-login ssh-keys add --key-file=/secrets/ssh-key-deployment.pub
```

Note the username from the command output, e.g., sa_100110341521630214262

Deployment Setup

Add ansible user details in inventory.yml

Add GCP project details in inventory.yml

Add GCP Compute instance details in inventory.yml

Replace project ID in inventory_prod.yml

Replace project ID in docker-shell.sh