Set up Google Cloud

Project Astra

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A few steps are required to prepare your Google Cloud project before you can manage Google Kubernetes Engine clusters with the Astra beta program.

Quick start for Google Cloud set up

Get started quickly by following these steps or scroll down to the remaining sections for full details.

 **Set up a Google Cloud account and project**

You need a Google Cloud account and a project.

 **Create a service account that has the required permissions**

Create a Google Cloud service account that has the following permissions:

- Kubernetes Engine Admin
- NetApp Cloud Volumes Admin
- Storage Admin
- Service Usage Viewer
- Compute Network Viewer

Read step-by-step instructions.

 **Create a service account key**

Create a key for the service account and save the key file in a secure location. Follow step-by-step instructions.

 **Enable APIs in your Google Cloud project**

Enable the following Google Cloud APIs:

- Google Kubernetes Engine
- Cloud Storage
- Cloud Storage JSON API
- Service Usage

- Cloud Resource Manager API
- NetApp Cloud Volumes Service
- Service Consumer Management API
- Service Networking API
- Service Management API
- Service Consumer Management API

Follow step-by-step instructions.

Enable private services access

Set up private services access for Cloud Volumes Service for Google Cloud. Follow step-by-step instructions.

The following image depicts each of these steps that you'll need to complete.

Create a service account

Astra uses a Google Cloud service account to facilitate Kubernetes application data management on your behalf.

Steps

1. Go to Google Cloud and create a service account by using the console, gcloud command, or another preferred method.
2. Grant the service account the following roles:
    - **Kubernetes Engine Admin** - Used to list clusters and create admin access to manage apps.
    - **NetApp Cloud Volumes Admin** - Used to manage persistent storage for apps.
    - **Storage Admin** - Used to manage buckets and objects for backups of apps.
    - **Service Usage Viewer** - Used to check if the required Cloud Volumes Service for Google Cloud APIs are enabled.
    - **Compute Network Viewer** - Used to check if the Kubernetes VPC is allowed to reach Cloud Volumes Service for Google Cloud.

If you'd like to use gcloud, you can follow steps from within the Astra user interface. Click **Account** > **Credentials** > **Add Credentials**, and then click **Instructions**.

If you'd like to use the Google Cloud console, the following video shows how to create the service account from the console.

https://docs.netapp.com/us-en/project-astra/get-started/media/video-create-gcp-service-account.mp4

(video)

Create a service account key

Instead of providing a user name and password to Astra, you'll provide a service account key when you add your first cluster. Astra uses the service account key to establish the identity of the service account that you just set up.

The service account key is plaintext stored in the JavaScript Object Notation (JSON) format. It contains information about the GCP resources that you have permission to access.

You can only view or download the JSON file when you create the key. However, you can create a new key at any time.

Steps

1. Go to Google Cloud and create a service account key by using the console, gcloud command, or another preferred method.
2. When prompted, save the service account key file in a secure location.

The following video shows how to create the service account key from the Google Cloud console.

▶ https://docs.netapp.com/us-en/project-astra/get-started/media/video-create-gcp-service-account-

key.mp4 *(video)*

Enable APIs in your project

Your project needs permissions to access specific Google Cloud APIs. APIs are used to interact with Google Cloud resources, such as Google Kubernetes Engine (GKE) clusters and NetApp Cloud Volumes Service storage.

Step

1. Use the Google Cloud console or gcloud CLI to enable the following APIs:
    - Google Kubernetes Engine
    - Cloud Storage
    - Cloud Storage JSON API
    - Service Usage
    - Cloud Resource Manager API
    - NetApp Cloud Volumes Service
    - Service Consumer Management API
    - Service Networking API
    - Service Management API

      The last two APIs are required for Cloud Volumes Service for Google Cloud.

The following video shows how to enable the APIs from the Google Cloud console.

▶ https://docs.netapp.com/us-en/project-astra/get-started/media/video-enable-gcp-apis.mp4 *(video)*

If you'd rather use the gcloud CLI, you can use these commands after setting your project:

```
gcloud services enable container.googleapis.com
gcloud services enable storage-component.googleapis.com
gcloud services enable storage-api.googleapis.com
gcloud services enable serviceusage.googleapis.com
gcloud services enable cloudresourcemanager.googleapis.com
gcloud services enable cloudvolumesgcp-api.netapp.com
gcloud services enable serviceconsumermanagement.googleapis.com
gcloud services enable servicenetworking.googleapis.com
gcloud services enable servicemanagement.googleapis.com
```

Enable private services access

Astra uses Cloud Volumes Service for Google Cloud as the backend storage for your persistent volumes. Other than the APIs that you enabled in the previous step, the only other requirement is to enable private services access to Cloud Volumes Service.

Step

1. Set up private services access from your project to create a high-throughput and low-latency data-path connection, as described in the Cloud Volumes Service for Google Cloud documentation.