CI/CD for GCP with Github

dukerspace. 22.02.2021

CI/CD

Continuous Integration(CI)

กระบวนการรวม source code ของคนในทีมพัฒนาเข้าด้วยกัน และมีการ test ด้วย test script

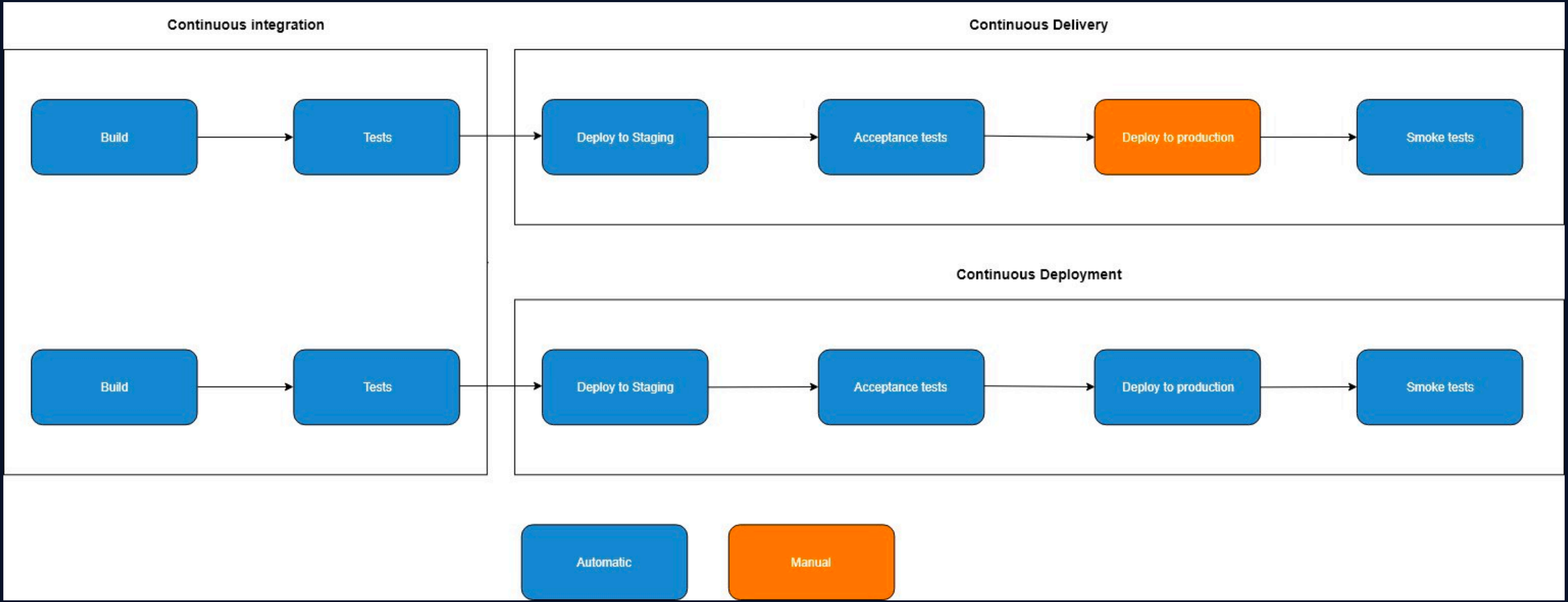
Continuous Delivery และ Continuous Deployment (CD)

Continuous Deployment จะทำทุกขั้นตอน ตั้งแต่ complie build ไปจนถึง deploy ขึ้น production แบบอัตโนมัติทั้งหมด

Continuous Delivery จะทำทุกขั้นตอน ตั้งแต่ complie build ไปจนถึง deploy ขึ้น production แบบอัตโนมัติทั้งหมด

Ref : link

CI/CD



Ref : link

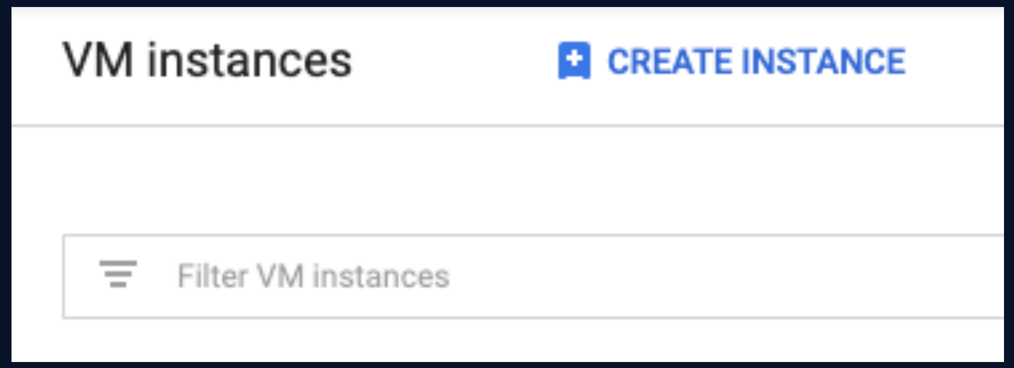
Set Up

- GitHub Action
- GitHub Workflows
- GitHub Secrets

- GCP Compute Engine
- GitHub SQL
- GitHub Container Registry
- GitHub Cloud Build
- GitHub Cloud Run
- VPC network
- IAM & Admin (Service Accounts)

GCP Compute Engine

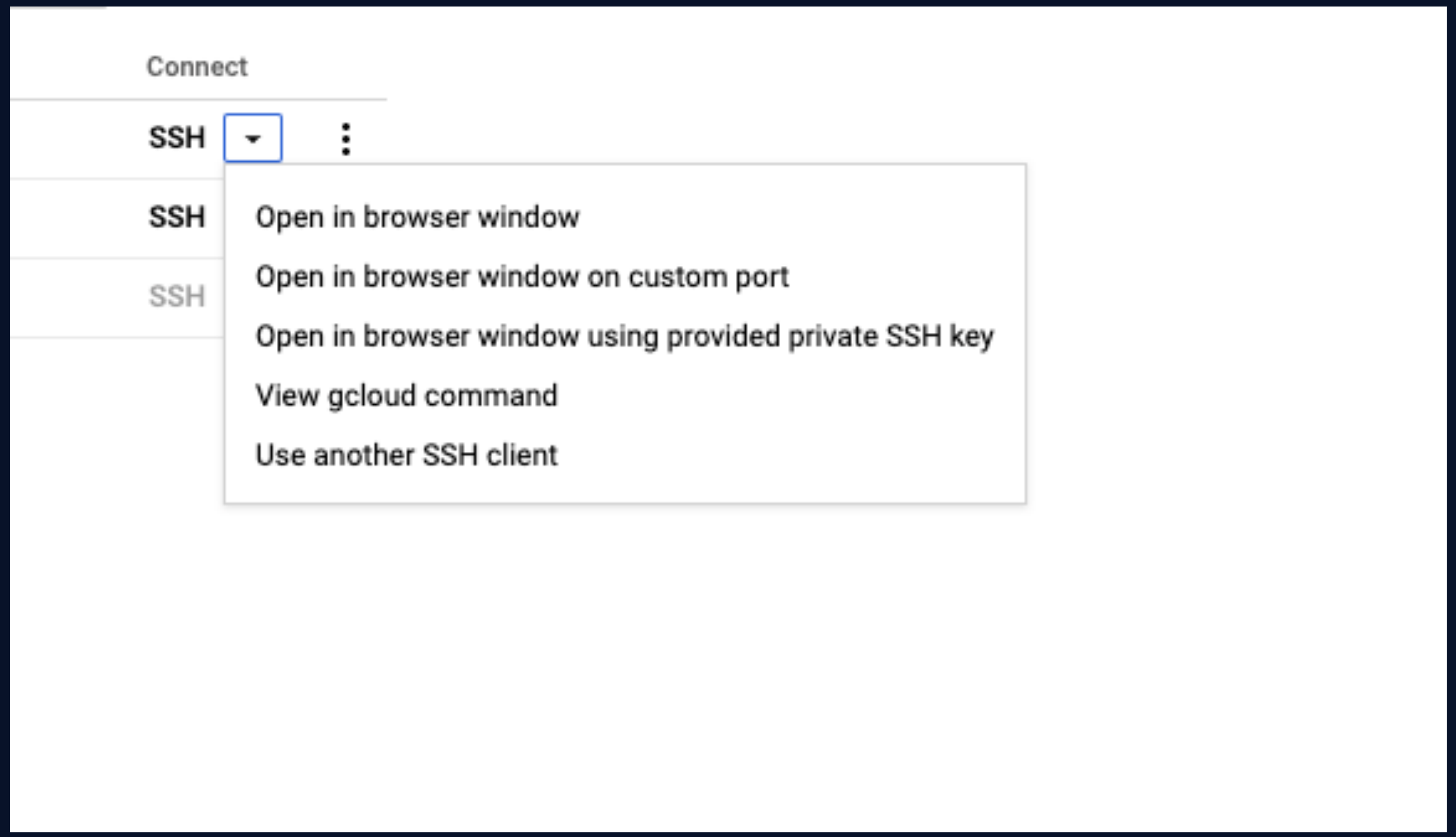
Create VM instances

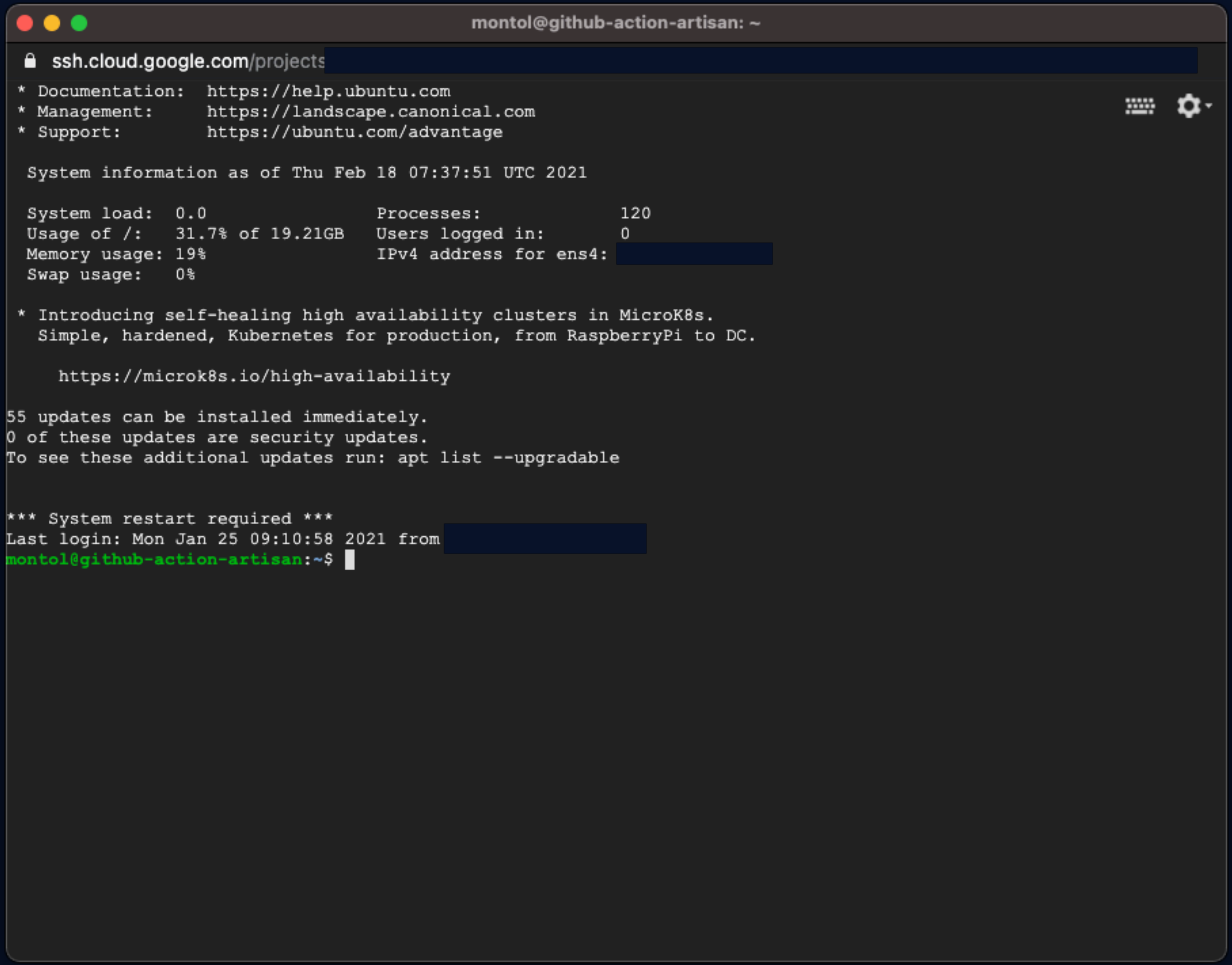


Select specs

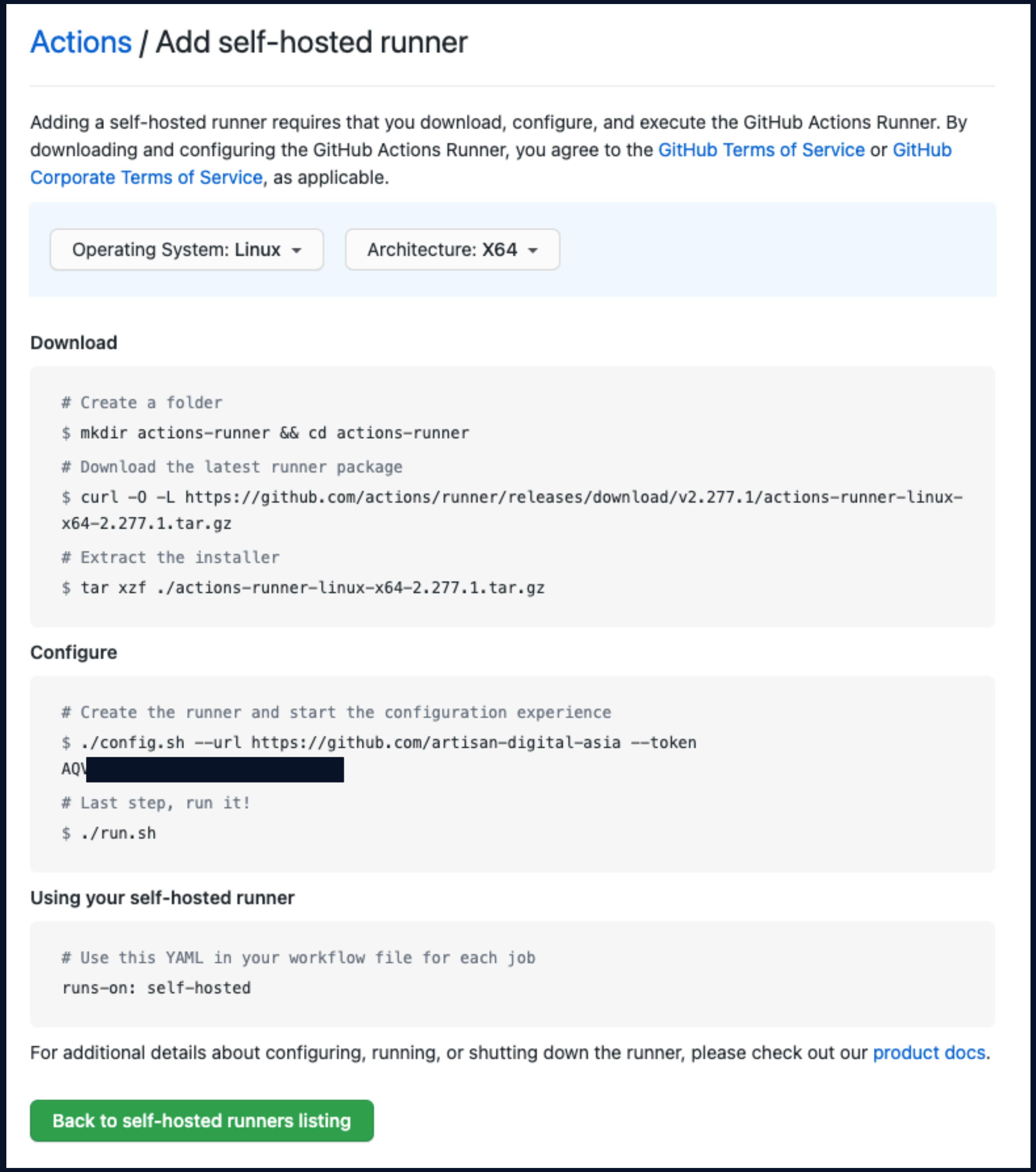
GCP Compute Engine

Login VM instance





GitHub Action



Actions / Add self-hosted runner

Adding a self-hosted runner requires that you download, configure, and execute the GitHub Actions Runner. By downloading and configuring the GitHub Actions Runner, you agree to the GitHub Terms of Service or GitHub Corporate Terms of Service, as applicable.

Operating System: Linux ▾ Architecture: X64 ▾

Download

```
# Create a folder
$ mkdir actions-runner && cd actions-runner
# Download the latest runner package
$ curl -O -L https://github.com/actions/runner/releases/download/v2.277.1/actions-runner-linux-x64-2.277.1.tar.gz
# Extract the installer
$ tar xzf ./actions-runner-linux-x64-2.277.1.tar.gz
```

Configure

```
# Create the runner and start the configuration experience
$ ./config.sh --url https://github.com/artisan-digital-asia --token
AQ[redacted]
# Last step, run it!
$ ./run.sh
```

Using your self-hosted runner

```
# Use this YAML in your workflow file for each job
runs-on: self-hosted
```

For additional details about configuring, running, or shutting down the runner, please check out our product docs.

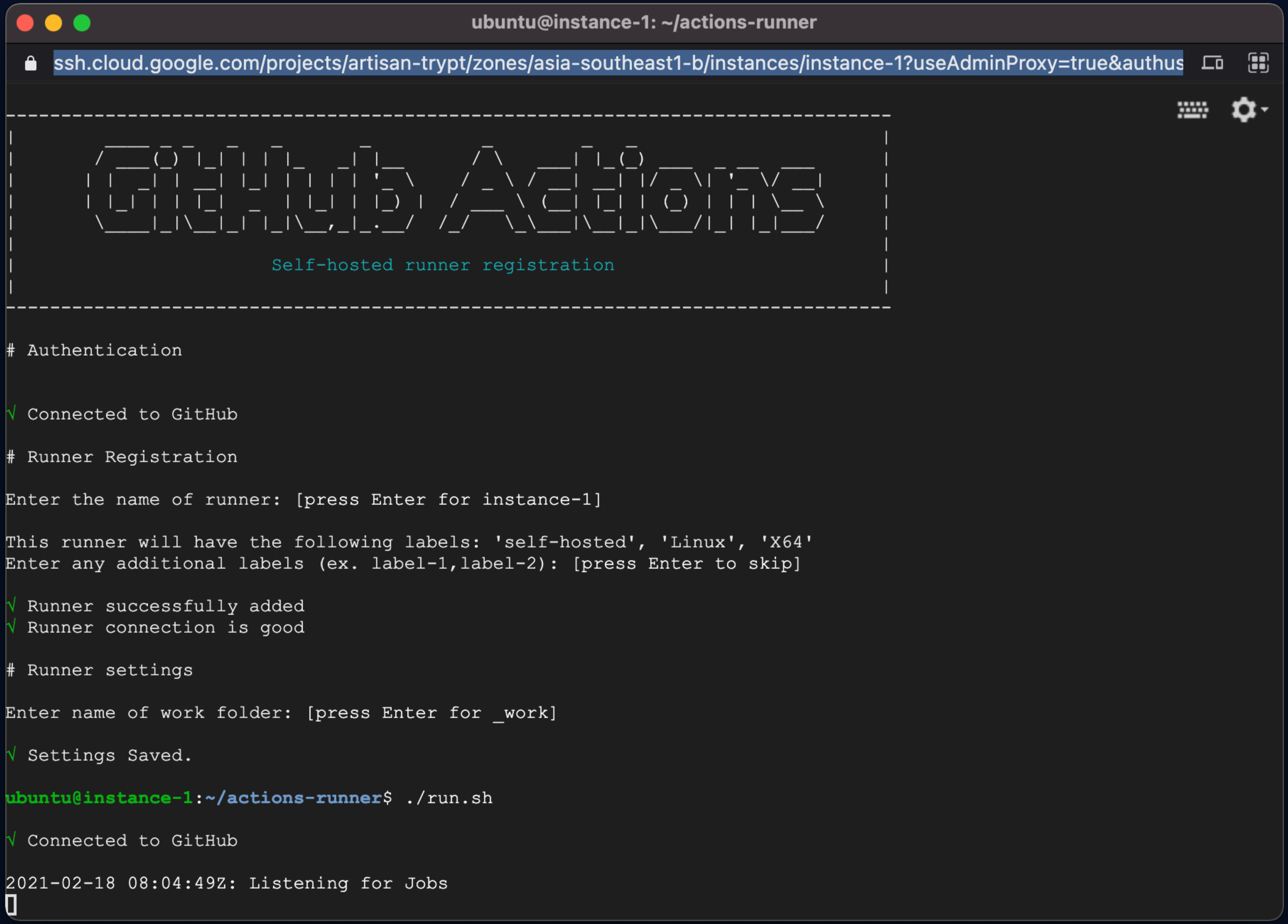
Back to self-hosted runners listing

Login ubuntu

sudo -u ubuntu -s

Copy command add self-hosted runner เพื่อ install action runners

GitHub Action



GitHub Action

GitHub Action

Installing the service

sudo ./svc.sh install

Starting the service

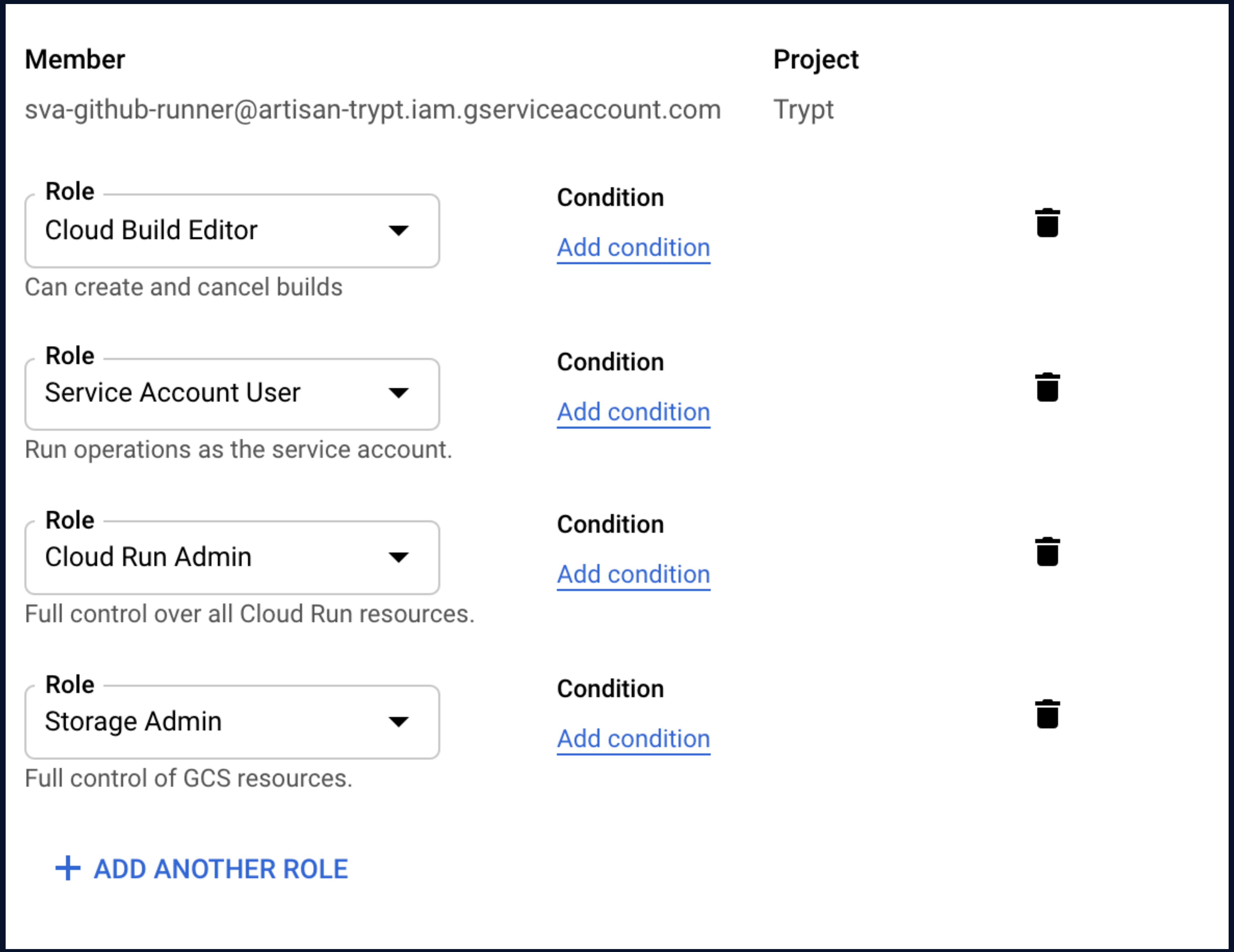
sudo ./svc.sh start

- Checking the status of the service

sudo ./svc.sh status

Ref : Link

GCP Compute Engine



Add the the following Cloud IAM roles to your service account:

- Cloud Run Admin - allows for the creation of new Cloud Run services

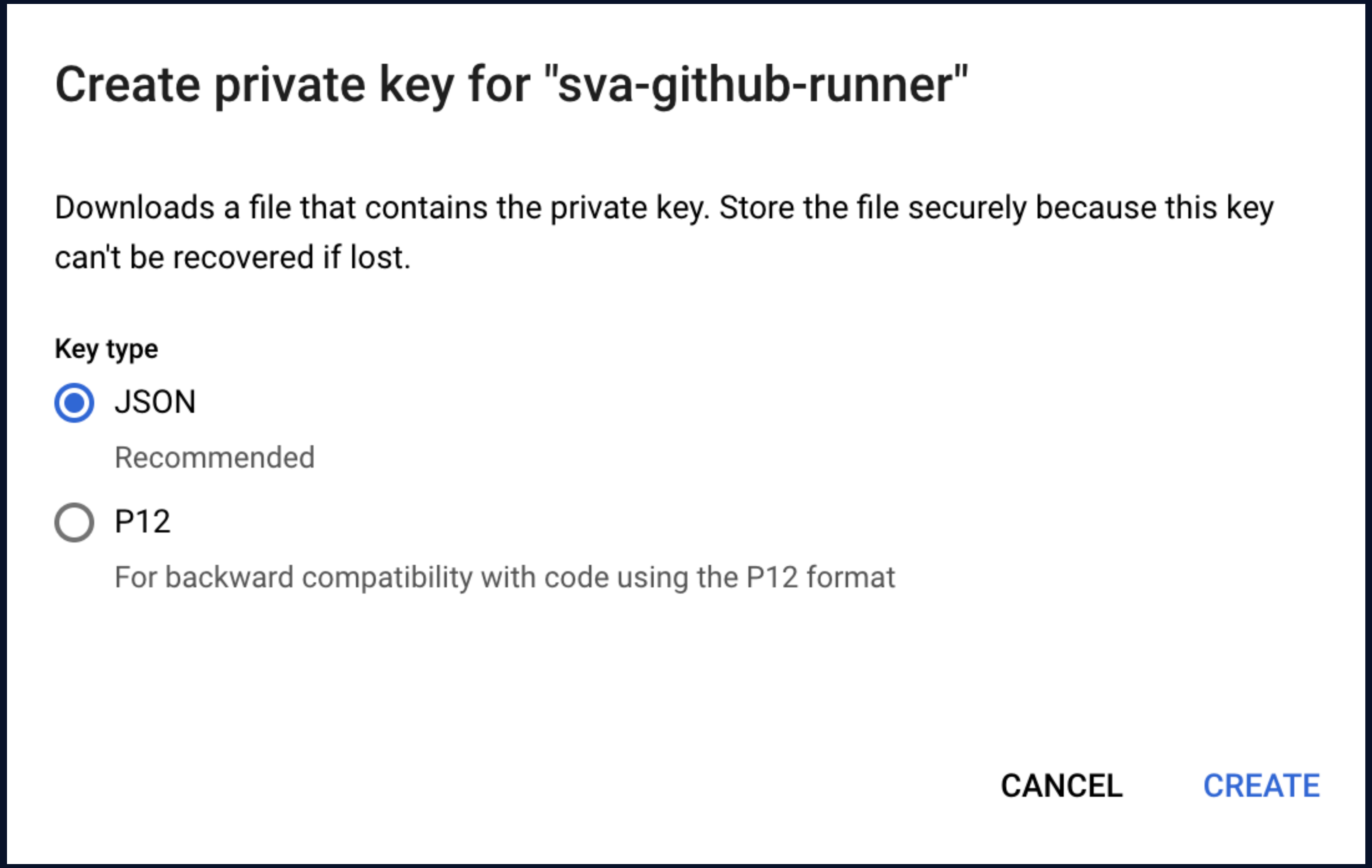
- Service Account User - required to deploy to Cloud Run as service account

- Storage Admin - allow push to Google Container Registry

Cloud Build Editor - allow create build to Google Cloud Build

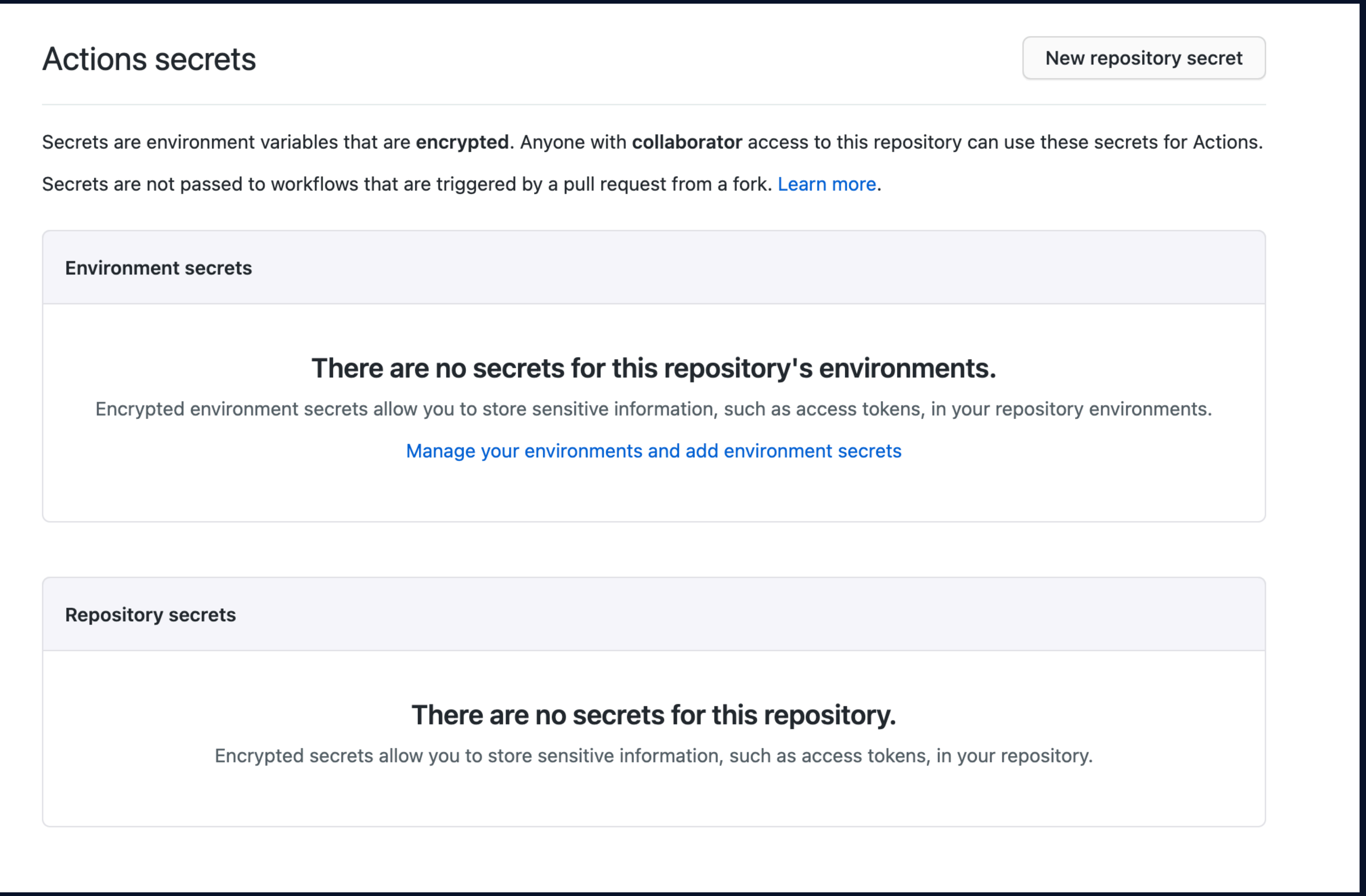
GCP Compute Engine

Download a JSON service account key for the service account.



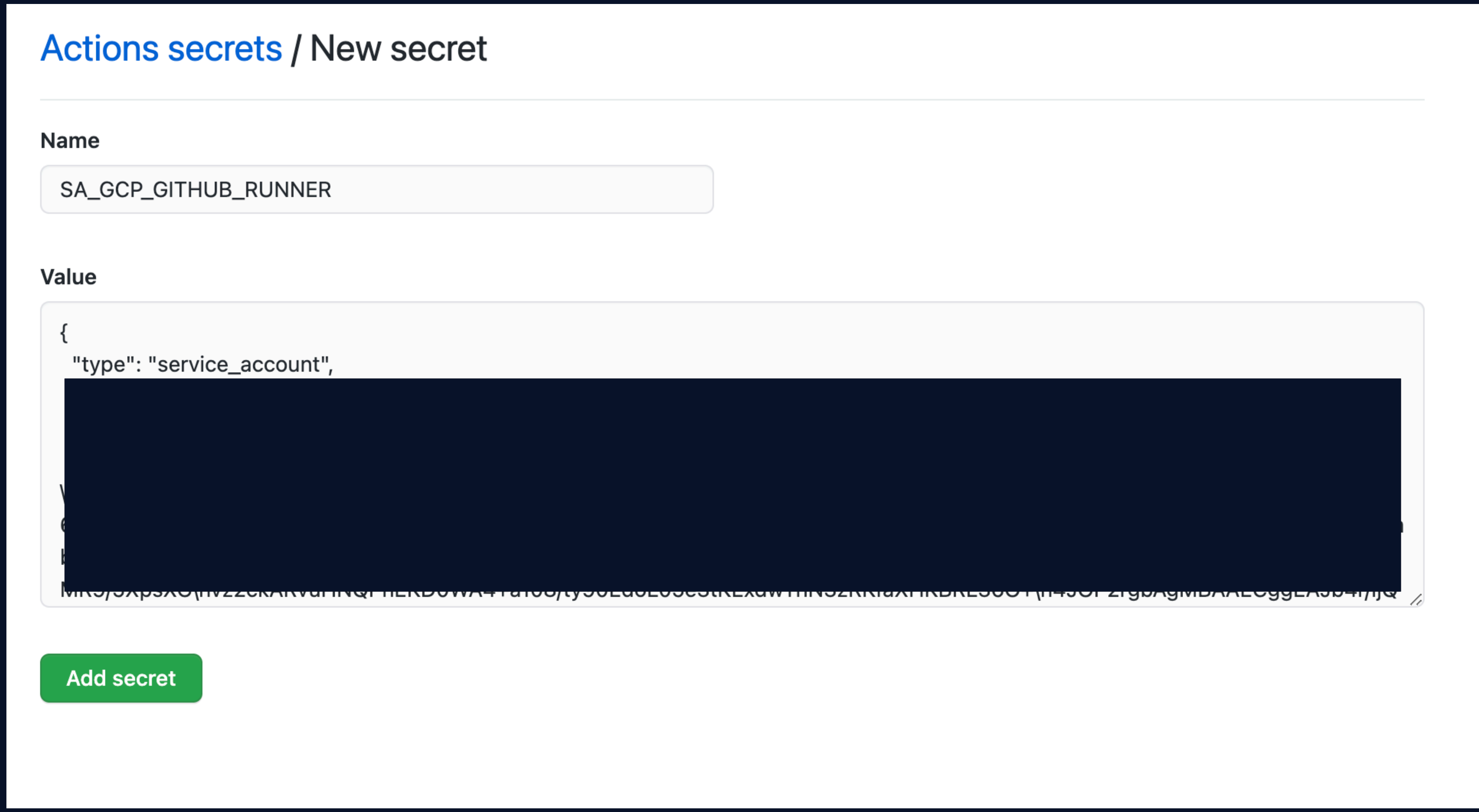
GitHub Action

Create actions secrets



Download & copy secret key

from services account .json



Start Project

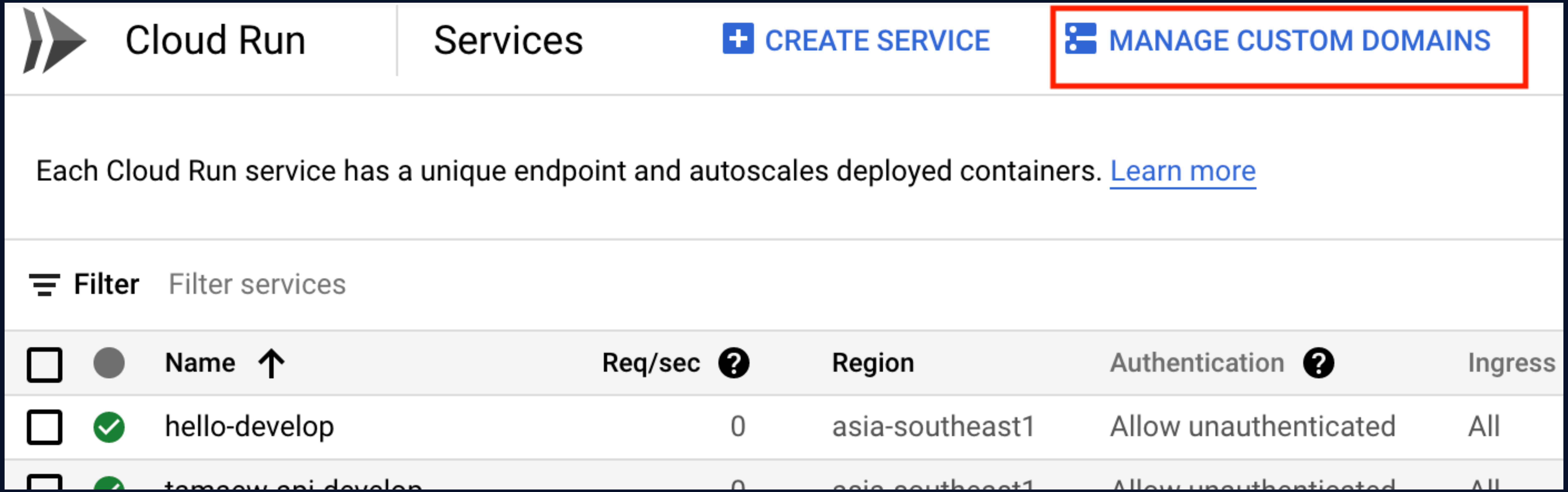
git clone https://github.com/dukerspace/hello-ci-cd

GitHub Workflows

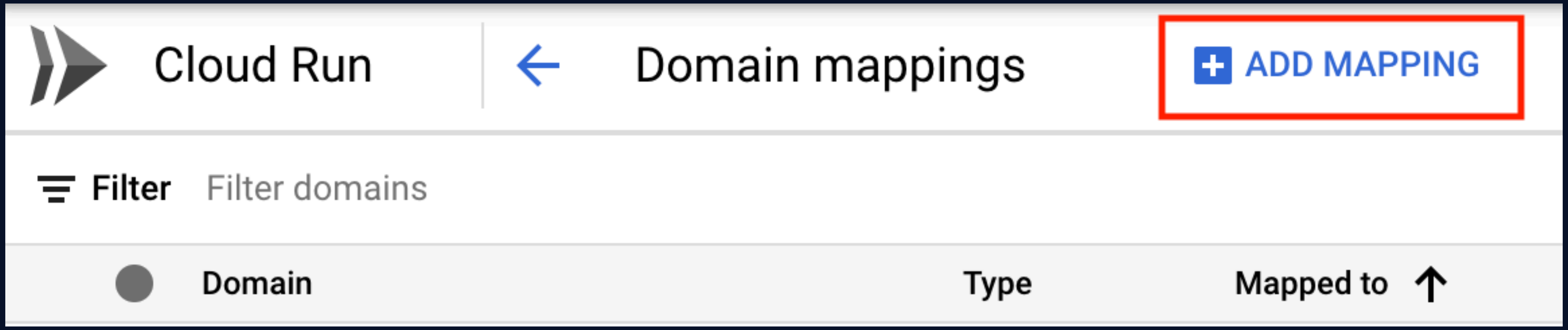
```yaml
name: hello (develop)
on:
  workflow_dispatch:
  push:
    branches:
      - develop

env:
  PROJECT_ID: artisan-trypt
  BRANCH_NAME: develop
  RUN_REGION: asia-southeast1
  SERVICE_NAME: hello

jobs:
  build:
    runs-on: self-hosted
    steps:
      - uses: actions/checkout@v2
      - uses: google-github-actions/setup-gcloud@master
        with:
          project_id: ${{ env.PROJECT_ID }}
          service_account_key: ${{ secrets.SA_GCP_GITHUB_RUNNER }}

      - name: Build
        run: |
          gcloud builds submit \
          --tag gcr.io/$PROJECT_ID/$SERVICE_NAME:$BRANCH_NAME

      - name: Deploy
        run: |
          gcloud run deploy $SERVICE_NAME-$BRANCH_NAME \
          --quiet \
          --region $RUN_REGION \
          --image gcr.io/$PROJECT_ID/$SERVICE_NAME:$BRANCH_NAME \
          --platform managed \
          --allow-unauthenticated
```

GCP Cloud Run

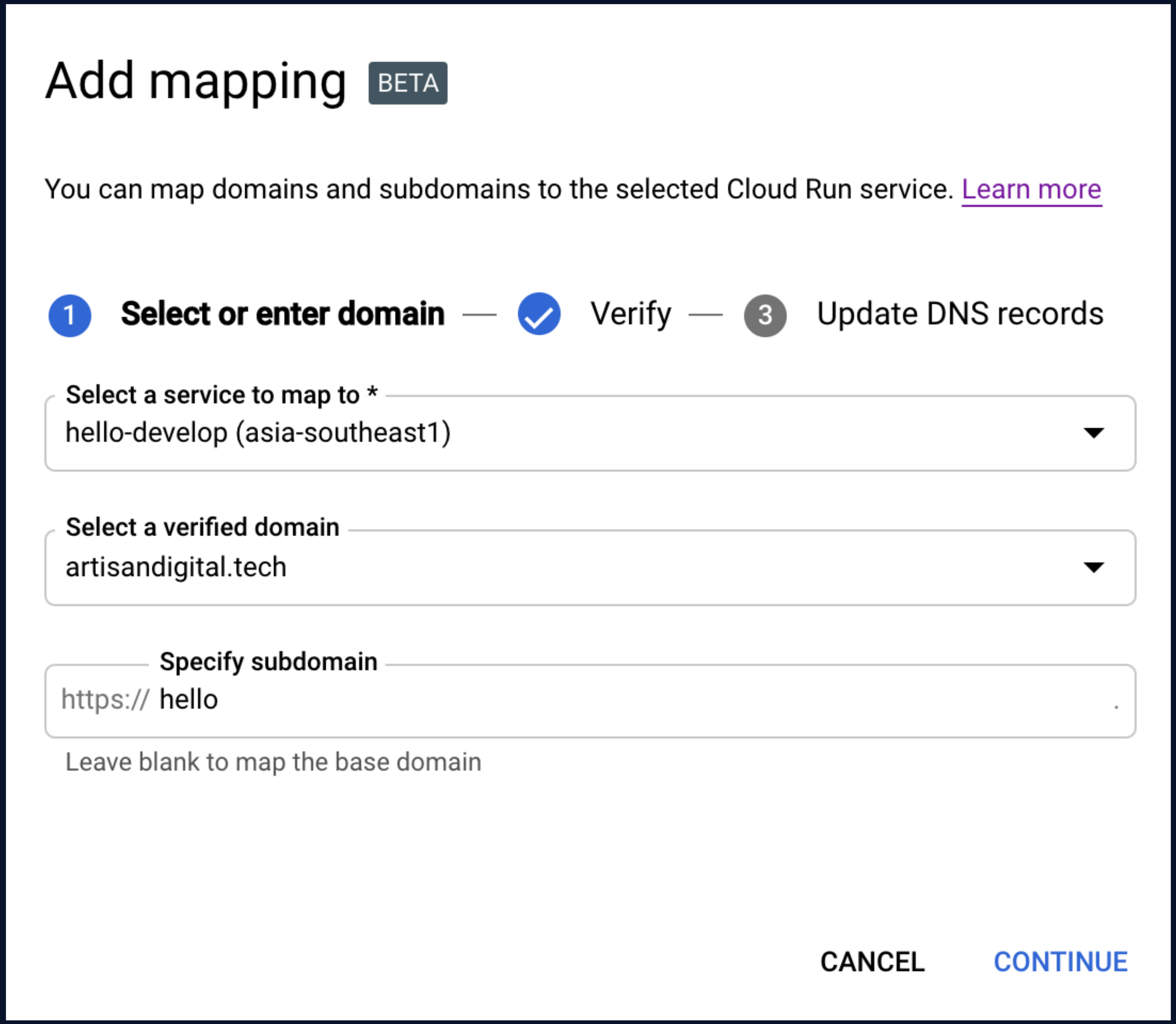
Create custom domain



GCP Cloud Run

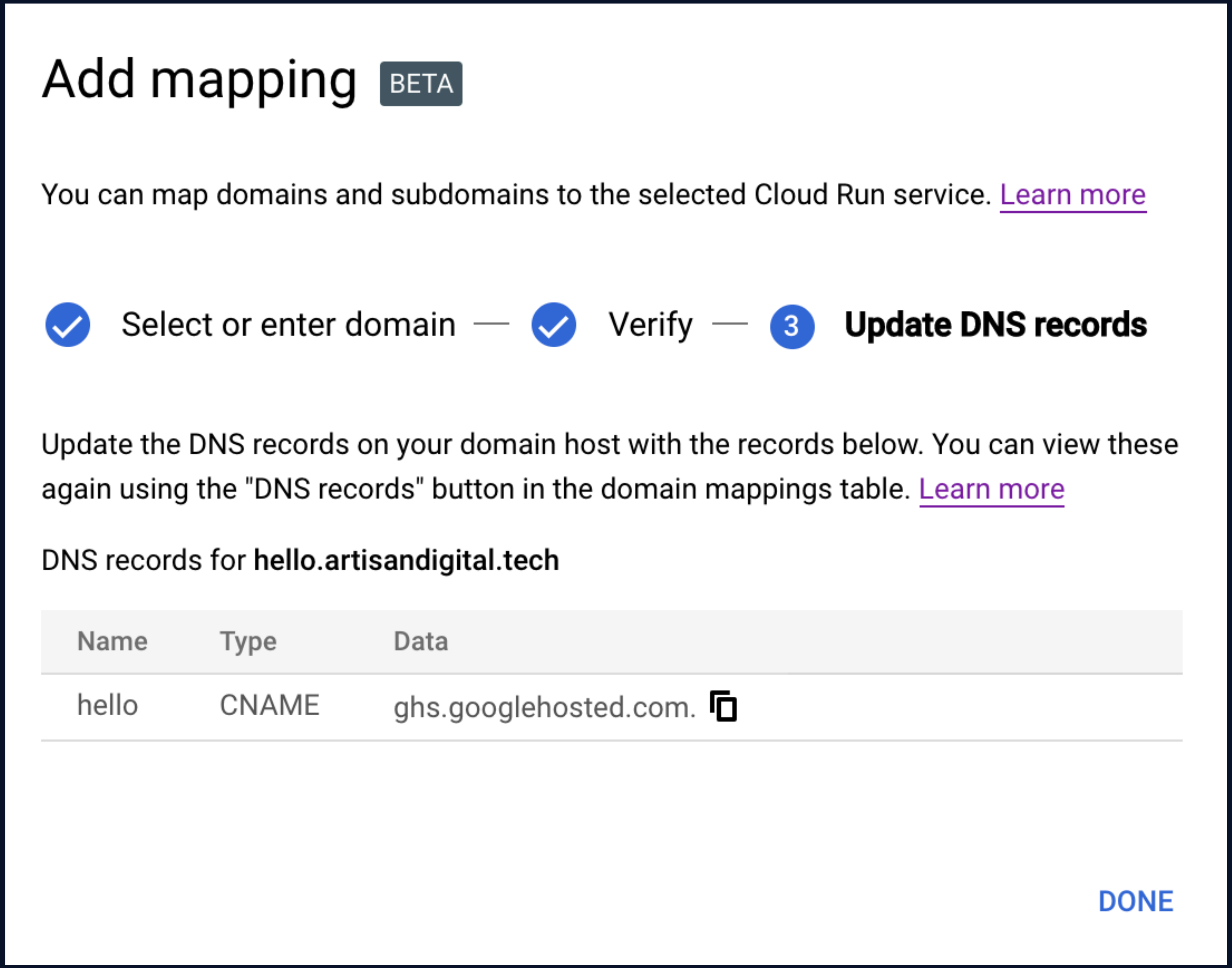


GCP Cloud Run



https://hello.artisandigital.tech

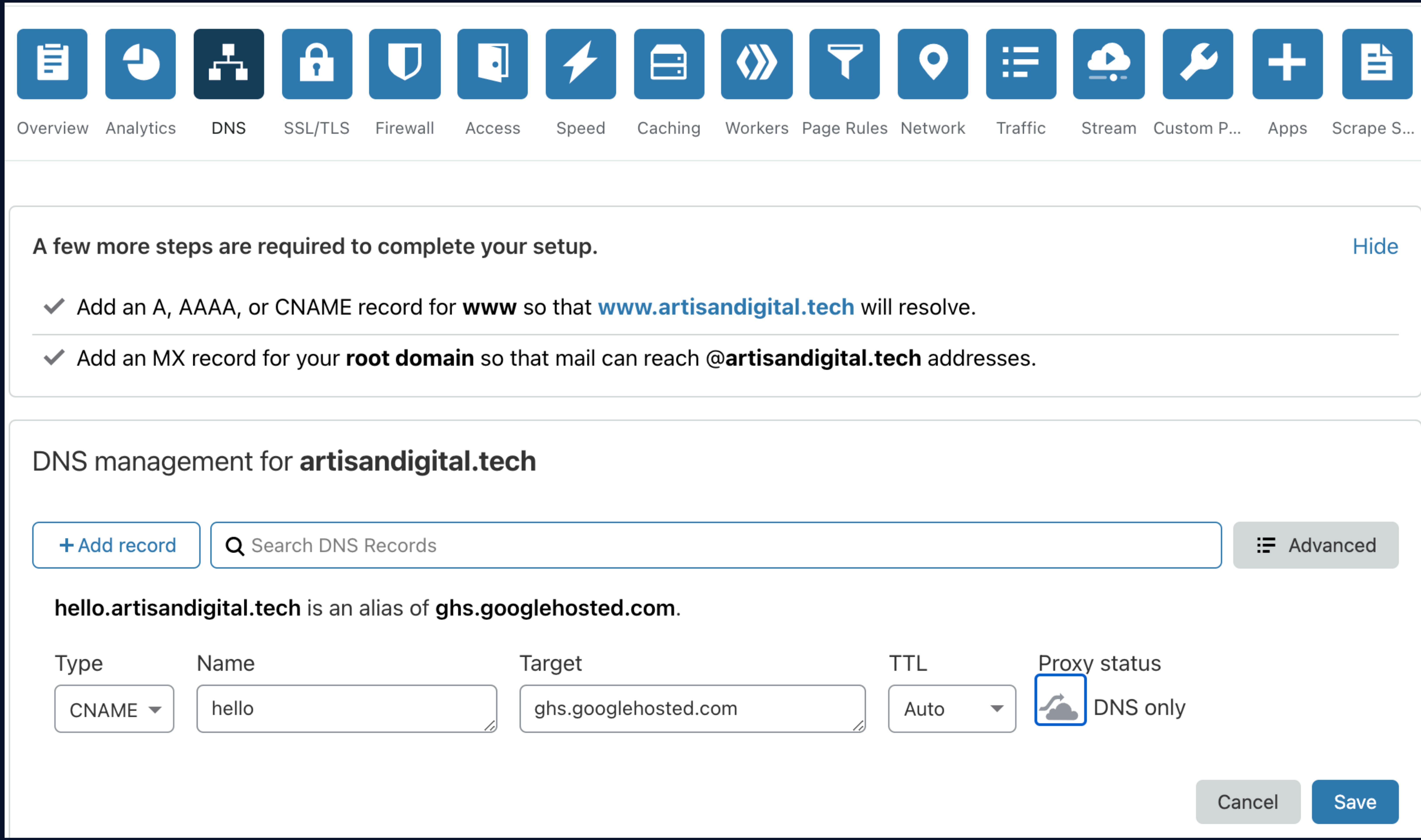
GCP Cloud Run



Copy cname:

ghs.googlehosted.com

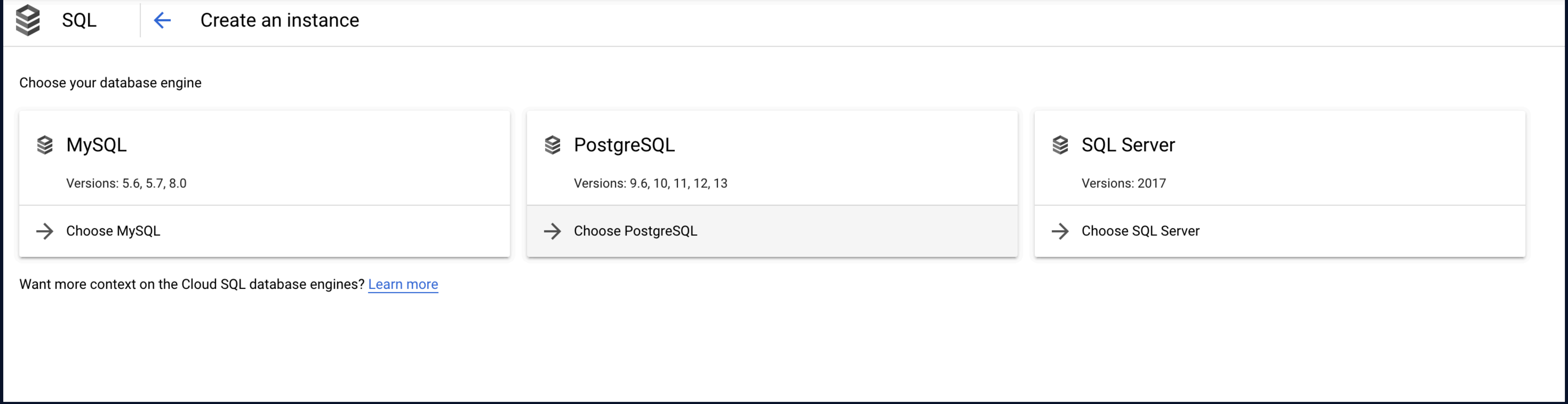
Cloudflare



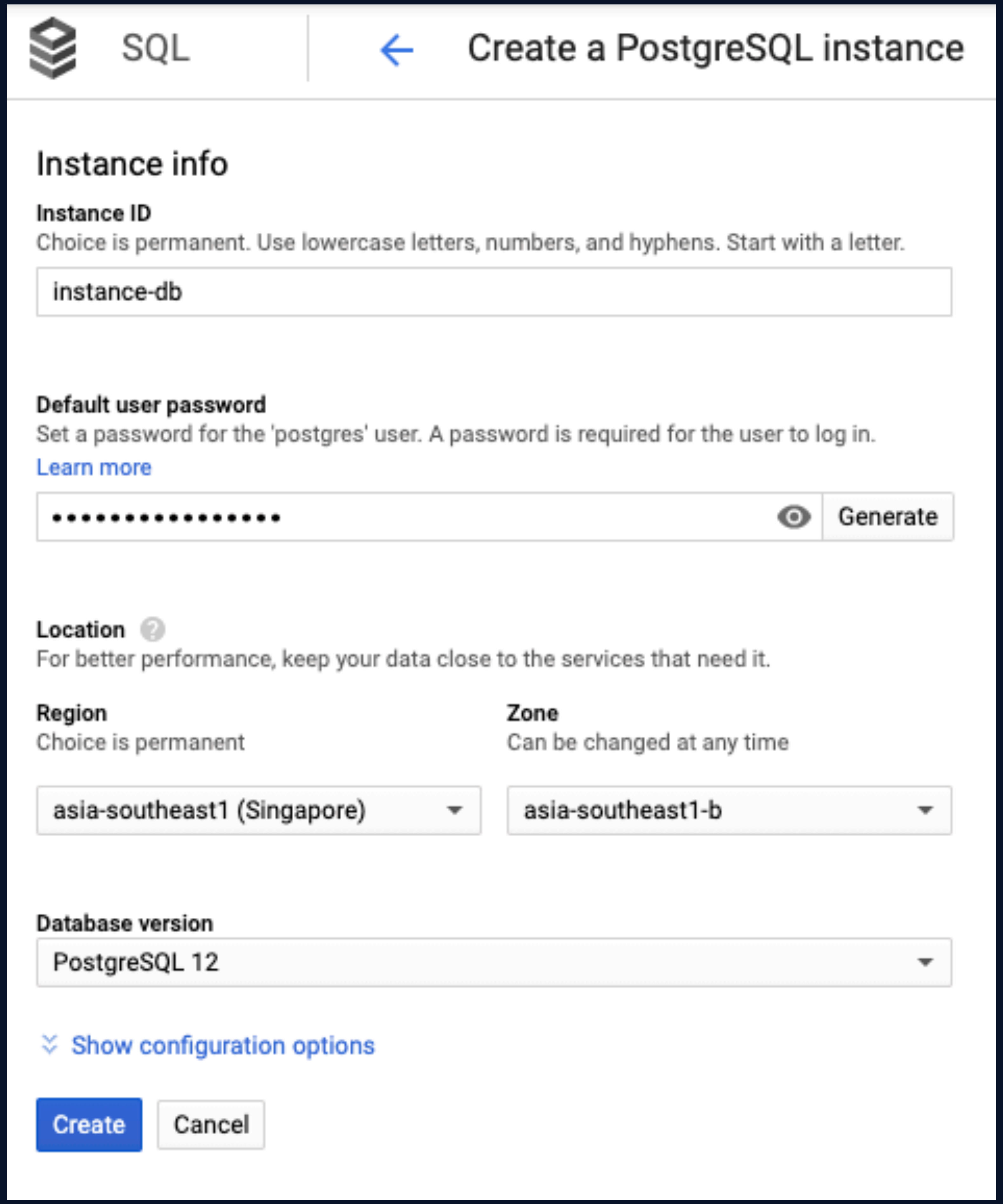
Config cloud flare map domain to gcp

GCP SQL

GCP SQL


SQL
Create an instance
Choose your database engine
MySQL
Versions: 5.6, 5.7, 8.0
Choose MySQL
PostgreSQL
Versions: 9.6, 10, 11, 12, 13
Choose PostgreSQL
SQL Server
Versions: 2017
Choose SQL Server
Want more context on the Cloud SQL database engines? Learn more

GCP SQL


SQL
Create a PostgreSQL instance
Instance info
Instance ID
Choice is permanent. Use lowercase letters, numbers, and hyphens. Start with a letter.
instance-db
Default user password
Set a password for the 'postgres' user. A password is required for the user to log in.
Learn more
Generate
Location
For better performance, keep your data close to the services that need it.
Region
Choice is permanent
Zone
Can be changed at any time
asia-southeast1 (Singapore)
asia-southeast1-b
Database version
PostgreSQL 12
Show configuration options
Create
Cancel

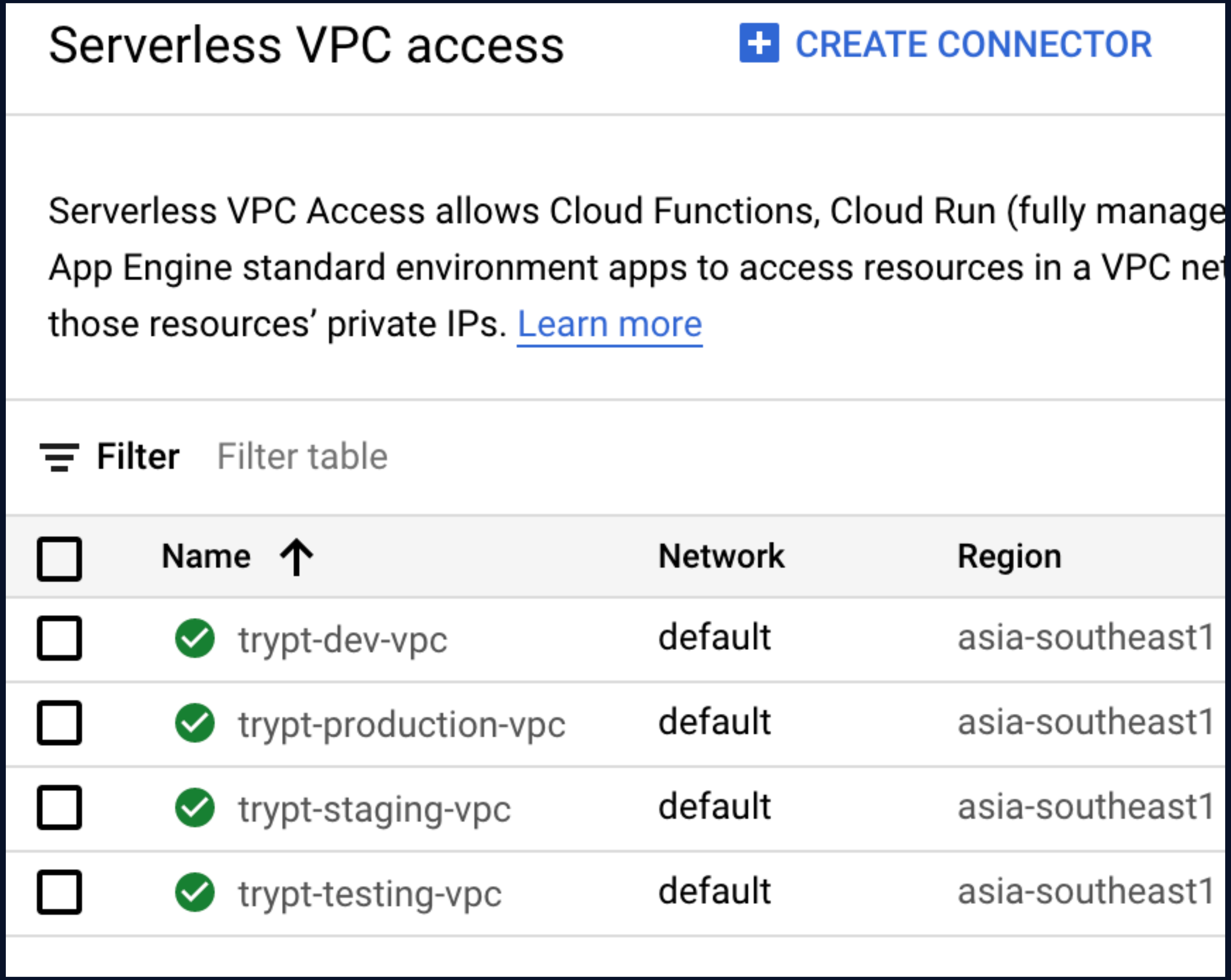
GCP Cloud SQL Proxy

https://cloud.google.com/sql/docs/postgres/sql-proxy

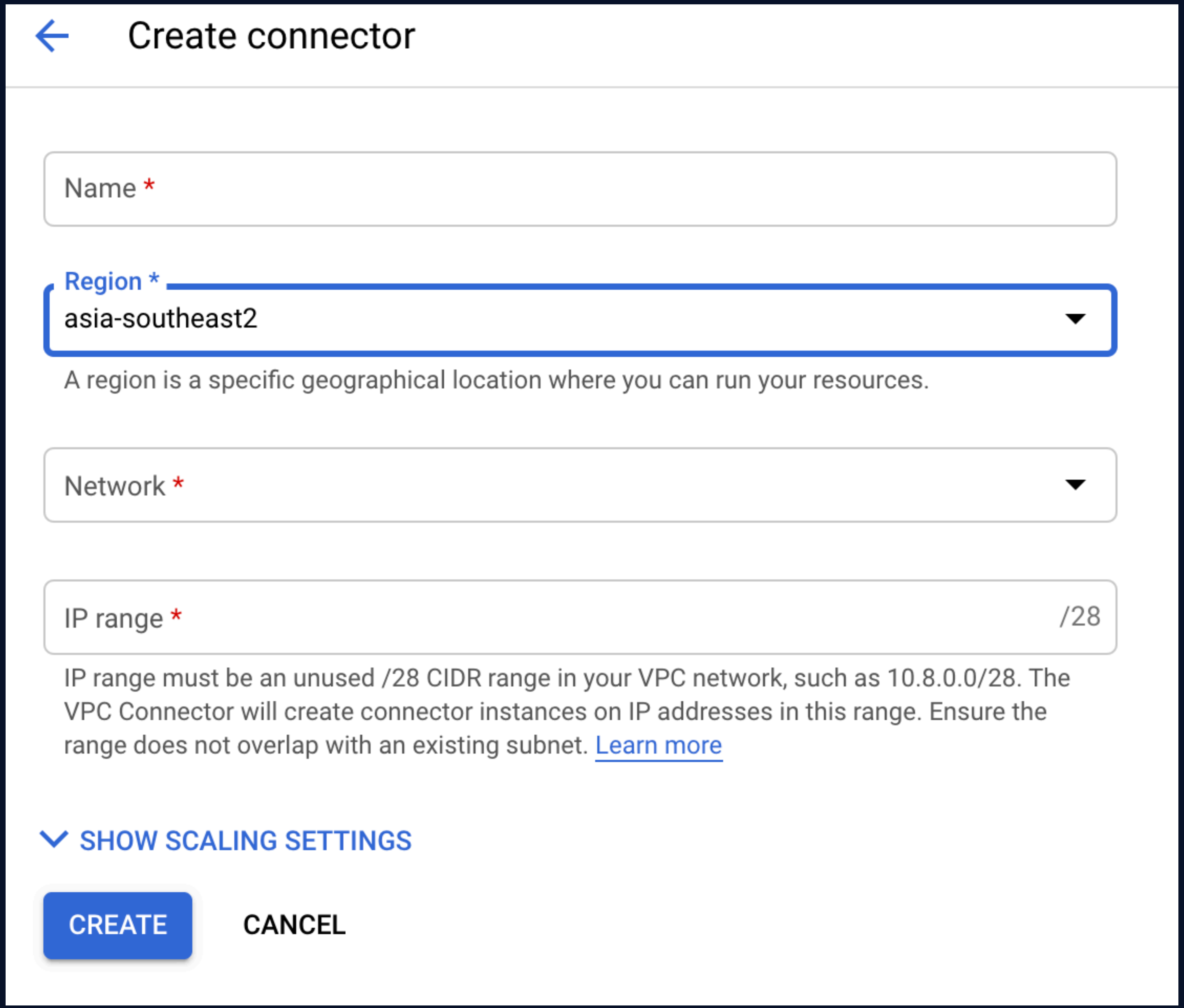
https://cloud.google.com/sql/docs/mysql/connect-admin-proxy

./cloud_sql_proxy -instances=artisan-trypt:asia-southeast1:trypt-staging=tcp:5432

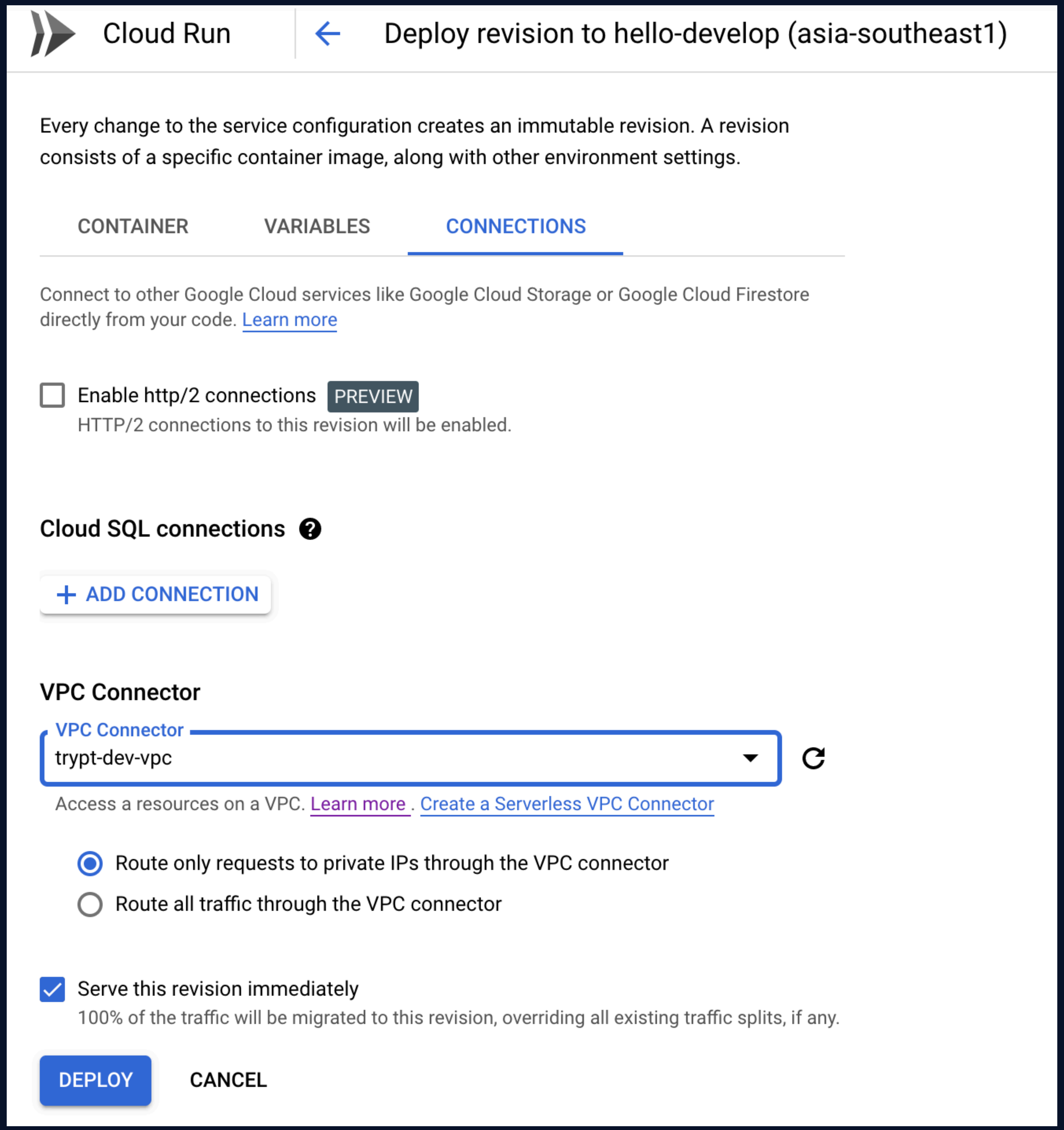
GCP VPC network



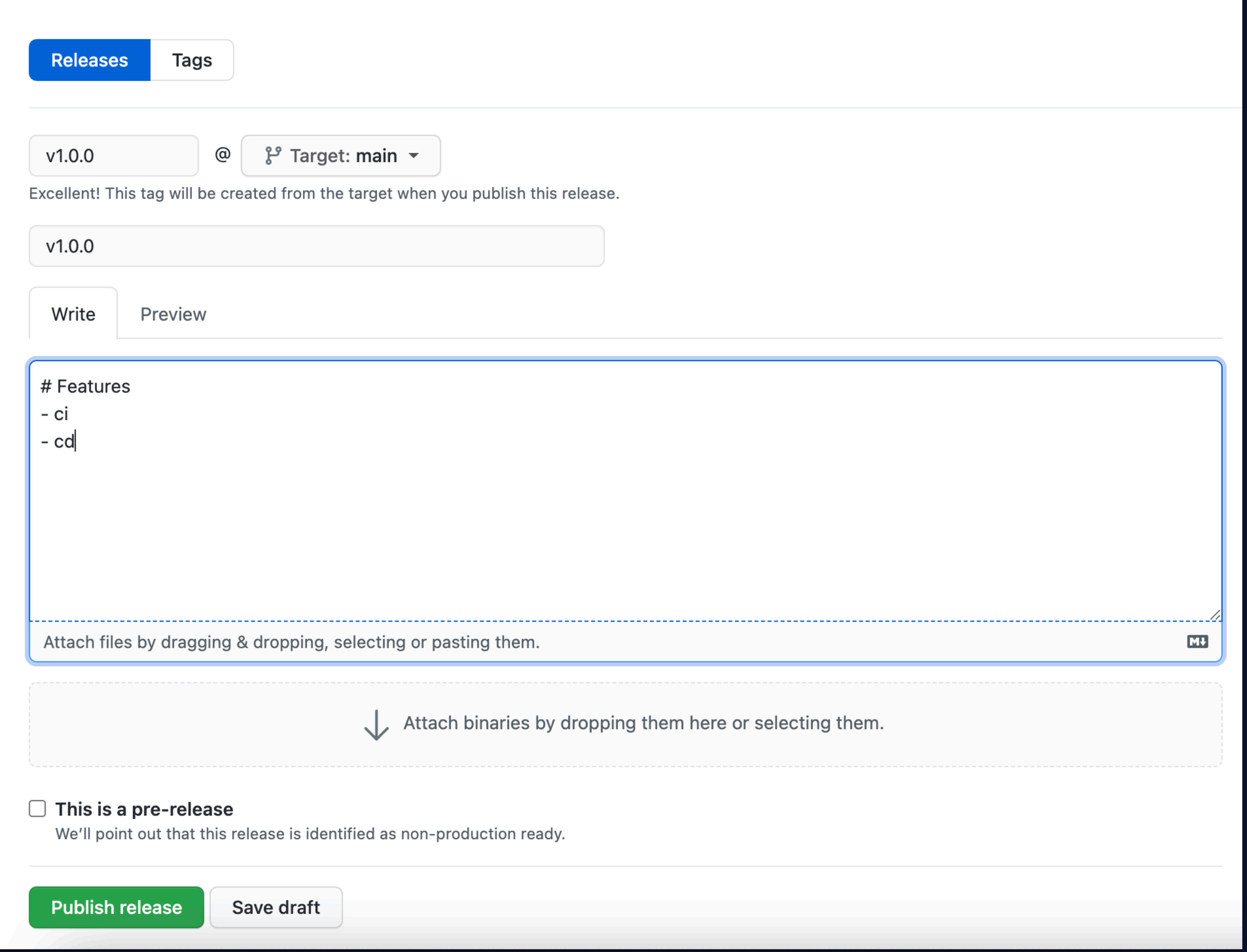
GCP VPC network



GCP VPC network



Release


Releases
Tags
v1.0.0
@
Target: main
Excellent! This tag will be created from the target when you publish this release.
v1.0.0
Write
Preview
Features
- ci
- cd
Attach files by dragging & dropping, selecting or pasting them.
Attach binaries by dropping them here or selecting them.
This is a pre-release
We'll point out that this release is identified as non-production ready.
Publish release
Save draft

End - Jeremy Zucker