Cloud Run Terraform Project

Goal

Deploy a Cloud Run service on Google Cloud Platform using Terraform,

make it publicly accessible, and manage multiple revisions of the same application image without changing application code.

What I Built

Cloud Run Service (google\_cloud\_run\_v2\_service)

Service name: cloudrun-service

Location: us-central1

Ingress: INGRESS\_TRAFFIC\_ALL (accepts traffic from anywhere)

Container image: us-docker.pkg.dev/cloudrun/container/hello

Added a REV\_MARKER environment variable so we can create new revisions without modifying the application code.

IAM Binding (google\_cloud\_run\_v2\_service\_iam\_member)

Granted the roles/run.invoker role to allUsers.

This makes the service public — anyone can access it without authentication.

Multiple Revisions Without Changing Code

By updating the REV\_MARKER value (r1, r2, r3, r4) in Terraform and re-deploying, Cloud Run creates a new revision each time, all pointing to the same container image.

This lets us test traffic splitting and version management without rebuilding or changing the actual app.

Traffic Splitting (Optional Feature)

After creating 4 revisions, we can add traffic {} blocks to direct a percentage of incoming requests to each revision.

Example: 40% / 40% / 10% / 10% split between four revisions.

Outputs

Terraform outputs the service URL and the latest revision name for reference.

How It Works

Terraform → GCP API

Terraform uses the Google provider to call GCP APIs and create resources.

Each terraform apply sends configuration changes to GCP.

Revision System in Cloud Run

Cloud Run automatically versions deployments as revisions.

Each revision can run the same or different code/images.

The REV\_MARKER env var tricks Cloud Run into creating a new revision without app changes.

Public Access

Without the IAM binding, the service would return 403 Forbidden.

Granting allUsers the roles/run.invoker role opens the endpoint to the public internet.

Why Terraform

Everything is repeatable, version-controlled, and can be deployed in seconds.

No manual clicks in the GCP console — all infrastructure is code.