Lab: Hello Cloud Run

Overview

Cloud Run is a managed compute platform for running stateless containers invocable via HTTP requests. It abstracts away infrastructure management, allowing you to focus on building applications. This lab aims to guide you through building a simple containerized application and deploying it to Cloud Run.

Objectives
1. Enable the Cloud Run API.
2. Create a simple Node.js application deployable as a serverless, stateless container.
3. Containerize the application and upload it to Container Registry (now Artifact Registry).
4. Deploy the containerized application on Cloud Run.
5. Clean up unneeded images to avoid extra storage charges.

Task 1: Enable the Cloud Run API and configure your Shell environment
- Enable the Cloud Run API:
  gcloud services enable run.googleapis.com
- Set the compute region:
  gcloud config set compute/region "REGION"
- Create a LOCATION environment variable:
  LOCATION="Region"

Task 2: Write the sample application
1. Create a new directory named "helloworld" in Cloud Shell and navigate into it:
   mkdir helloworld && cd helloworld
2. Create a package.json file:
   nano package.json

{ "name": "helloworld", "description": "Simple hello world sample in Node", "version": "1.0.0", "main": "index.js", "scripts": { "start": "node index.js" }, "author": "Google LLC", "license": "Apache-2.0", "dependencies": { "express": "^4.17.1" } }

3. Create an index.js file:
nano index.js

const express = require('express'); const app = express(); const port = process.env.PORT || 8080; app.get('/', (req, res) => { const name = process.env.NAME || 'World'; res.send(`Hello ${name}!`); }); app.listen(port, () => { console.log(`helloworld: listening on port ${port}`); });

4. Save the file.

Task 3: Containerize your app and upload it to Artifact Registry
1. Create a Dockerfile:

nano Dockerfile
Content:

```
FROM node:12-slim
WORKDIR /usr/src/app
COPY package*.json ./
RUN npm install --only=production
COPY . ./
CMD [ "npm", "start" ]
```

2. Save the file.

Task 4: Deploy to Cloud Run
- Deploy your containerized application:

```
gcloud run deploy --image gcr.io/$GOOGLE_CLOUD_PROJECT/helloworld --allow-unauthenticated --region=$LOCATION
```

Task 5: Clean up
- Delete the built container image:

```
gcloud container images delete gcr.io/$GOOGLE_CLOUD_PROJECT/helloworld
```

- Delete the Cloud Run service:

```
gcloud run services delete helloworld --region="REGION"
```