Cloud Run Lab

Lab Learning Outcomes:

At the end of this lab you should be able to:

- Create a serverless container service on the GCP
- Access that service using a secure HTTP endpoint
- Acknowledge how it works differently from Cloud Functions
- Recognise why you'd use this

Useful Links:

https://www.youtube.com/watch?v=nhwYc4StHIc

Prerequisites:

This lab assumes you've completed the previous labs for Enterprise Application Architecture. Therefore, you have a working valid Google Cloud Platform project. Familiarity with Docker from previous labs as well, so this assumes you have the Container Registry API enabled.

Step 1: Preparing the Container

We are going to be using a simple HTTP microservice to demonstrate the ability of Google Cloud Run.

The microservice is a simple PDF conversion using old Libreoffice Windows binaries, with a layer of Python and HTML on top of it. It is a perfect candidate to show off the capabilities of Google Cloud Run and a bit more exciting than a simple Hello World application, from a technological perspective.

Use the following command to clone the repository of the microservice:

```
1. git clone https://github.com/as-a-service/pdf
```

Then to go into the folder that we just cloned:

```
1. cd pdf
```

Now we need to build the container from the provided Dockerfile:

```
1. docker build .
```

As a reminder, this builds the Docker container image from the contents of the Dockerfile. Remember, the Dockerfile is a schematic of sorts, a template for what must be built. Once you run the command, you'll notice a lot of dependencies being downloaded and put into the image. You'll even notice some of the files ending with .exe… Remember, even though up until this part of the course we have only used typical Unix and Python programs for Docker.. Docker is capable of much, much more.

Once the container is built (this may genuinely take a while!) we need to tag it to push it to our Container Repository. Use the container ID from the end of the output, and the project ID. You can get this from going to the Google Cloud dashboard.

Run the following command:

```
1. docker tag <YOUR_CONTAINER_ID>
   eu.gcr.io/<YOUR_PROJECT_ID>/cloudrunlab:latest
```

Then push the container to the repo:

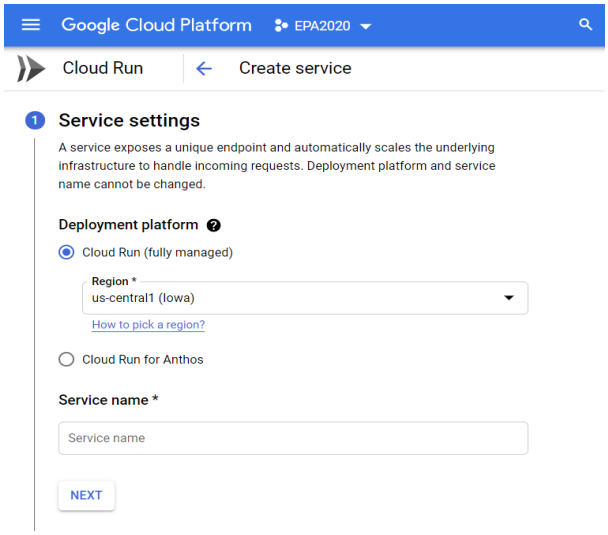
```
1. docker push eu.gcr.io/<YOUR_PROJECT_ID>/cloudrunlab:latest
```

There we go, provided we haven't run into any errors, we are prepared for the rest of the lab! We should be prepared for the rest of the lab.

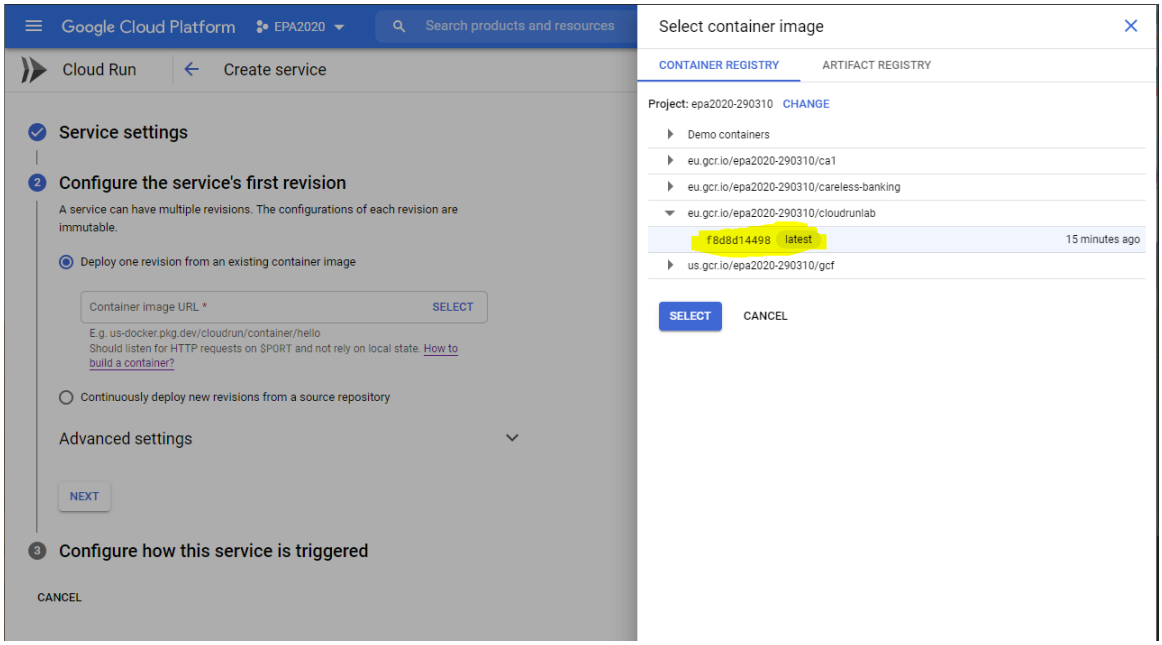
Step 2: Deploying to Cloud Run

Deploying the container image to Cloud Run is a simple enough process. It can be done through the Cloud Shell, but we will use the dashboard.

Open the navigation menu and go to the Compute section. You will find Cloud Run there. Click on it, and create a new service.

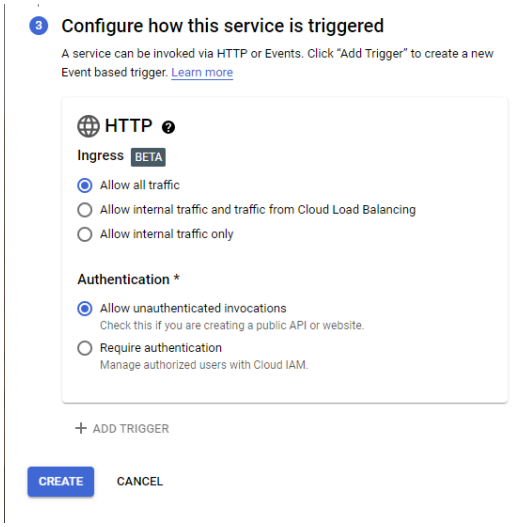


You should see something like this. This is what we will use to configure and deploy our container to Cloud Run. We will pick europe-west2 (London) as it's the closest datacentre to Ireland, and for a lack of latency. Call the service cloudrundeploy.

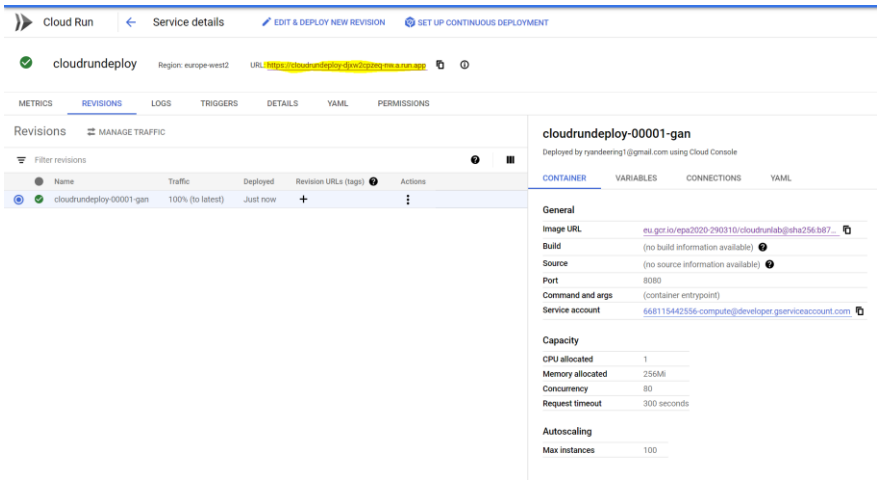


After setting the location and name, you can see you can deploy the container from your Container Registry. Providing you successfully pushed the container to your Container Registry; you should see it when picking the single revision option. Although, you should take notice – Google Cloud Run has the potential for Continuous Deployment of serverless containers with Cloud Build, if a repo is provided. Leave the advanced settings as they are but look at them. You can change the number of vCPUs and memory, as well as the maximum amount of instances

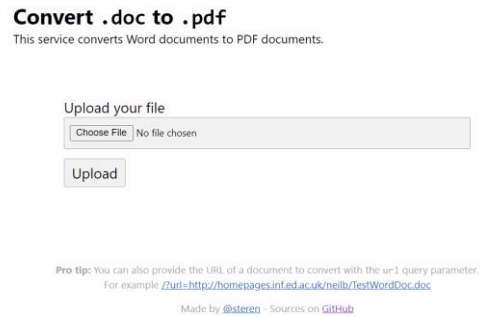
Hit next – You will see HTTP settings.



Make sure your settings match those in the image. Why? Well, we are only using this service as a test case and not deploying this in an internal network. We also need to see the output of the container in an internet browser. Hit create to deploy the container. You should be able to see it created successfully, after a moment.



After successfully creating the image, you should see the URL for the service created. Click on it and you should see this:



If you see it, congratulations, you just deployed a serverless container image to a secure HTTPS endpoint. Try using it by uploading this lab document to it, it will convert to a PDF.

That's as simple as deploying to Google Run gets!

Step 3: Tearing Down

To stop the service from running more, go into the Cloud Run menu, select your service and delete it. This will stop it from running and incurring any more potential costs.