Microservices Demo in Google Kubernetes Cluster

We are going to work on the following

- Create a GKE cluster – API or CLI
- Deploy an application to a cluster
- Access the application from a public IP address

Create a GKE cluster

A cluster consists of at least one cluster control plane machine and multiple worker machines called *nodes*.

1. Click the **Create** button.
2. Click the option to **configure** a Standard cluster.
3. Enter a name for this cluster.
4. Choose a zone for this cluster.
5. Click on the default-pool node pool.
6. Change the size to 4 nodes.
7. Click **Create** to create the cluster.

It will take a few minutes for the cluster to finish provisioning.

Open Cloud Shell

Open Cloud Shell by clicking the **Activate Cloud Shell** button in the navigation bar in the upper-right corner of the console, then click on the Open **Editor** button in Cloud Shell.

Get the sample application

Let's start by getting a sample of an **Online Boutique** application to run on your cluster.

Clone the sample application from this github repository.

Run this command

```
# git clone https://github.com/GoogleCloudPlatform/microservices-demo.git
```

```
cd microservices-demo
```

Then, navigate to the directory containing the sample code:

```
# CD
 microservices-demo
```

Tour the application

Let's take a few minutes to explore the sample application.

- The source of each microservice resides in the src directory. For example, the frontend lives in the **src/frontend** directory.
- Once a release gets created, each microservice is compiled and processed into a Docker image according to rules set in a Dockerfile (such as src/frontend/Dockerfile).
- Finally, the sample application contains a set of Kubernetes resources in the form of YAML files (such as release/kubernetes-manifests.yaml) to define the various Services and Deployments.

Connect to the cluster

Connect to your cluster in the Cloud Code Kubernetes Explorer

- Click on the Cloud Code – Kubernetes icon in the navigation bar.
- If prompted, authorise Cloud Shell to make GCP API calls. - - - - - > (These are Application Programming Interface)
- Open the Google Kubernetes Engine panel.
- Right click on your recently created cluster, select the **'Set as Active Cluster'** option.
- When prompted, authorise adding your cluster to kubeconfig (when you authorize a kubeconfig is created with your cluster details)
- You should now see your cluster available from the Kubernetes Explorer.

Let's now deploy your application to the cluster selected.

Deploy the application

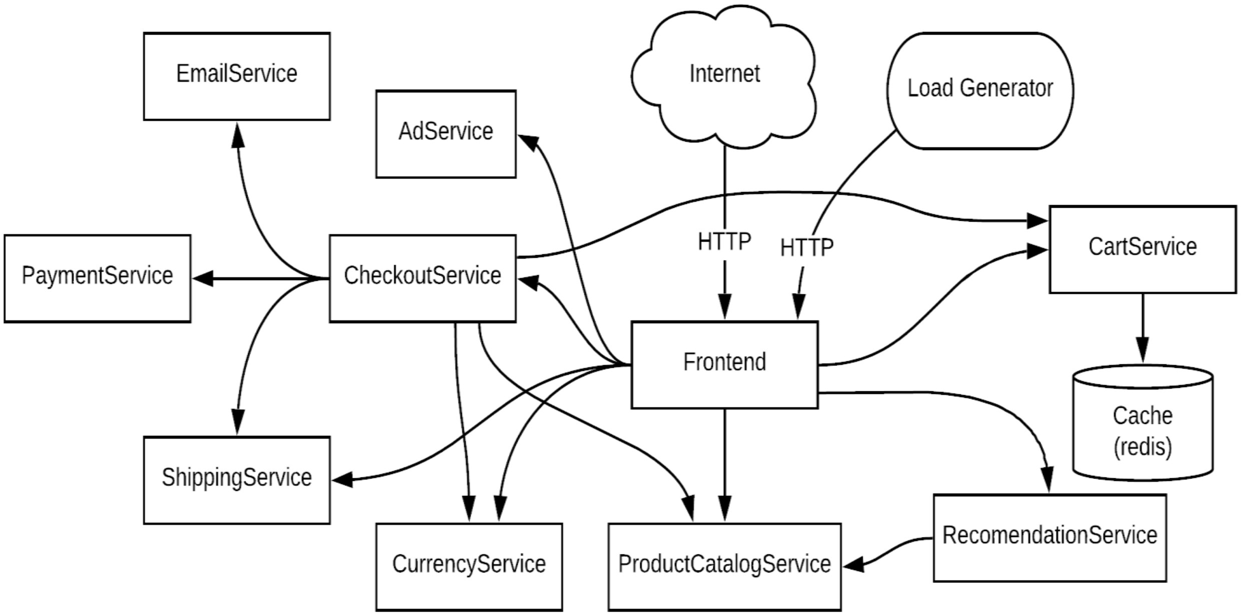
Now that you have the sample code, let's deploy a workload to your new GKE cluster.

- Deploy the application to your cluster:

```
# kubectl apply -f \
   ./release/kubernetes-manifests.yaml
```

This command deploys Kubernetes Deployments and Services corresponding to the different.

- Once all posts are in a running state, the application has been fully deployed.


EmailService
AdService
Internet
Load Generator
PaymentService
CheckoutService
HTTP
HTTP
CartService
Frontend
Cache
(redis)
ShippingService
CurrencyService
ProductCatalogService
RecomendationService