

Module 2: Managing GCP

Assignment Solution - 1

Problem Statement:

Focus Area: Managing resources using the command line "Cloud SDK"

ShopToday-81 is a retailer, e-commerce, and online shopping company.

They have various retail outlets across the country.

As per the previous module project, they want to deploy and use the cloud environment separately, one for the retail department, one for e-commerce, and the other for online shopping.

Requirement:

So, we have three projects, and we need to create a bash script where we can deploy all services at one go as per the below facts:

- Most of the Retail outlets are in England.
- Video sharing Service is popular in the US-east region.
- Online shopping is popular in the Asia subcontinent.

You need to design and code a script to deploy a Virtual machine and Cloud storage bucket.

The same script should be used to deploy resources in all three projects.

Choose an appropriate region and zone for the deployment.

Steps:

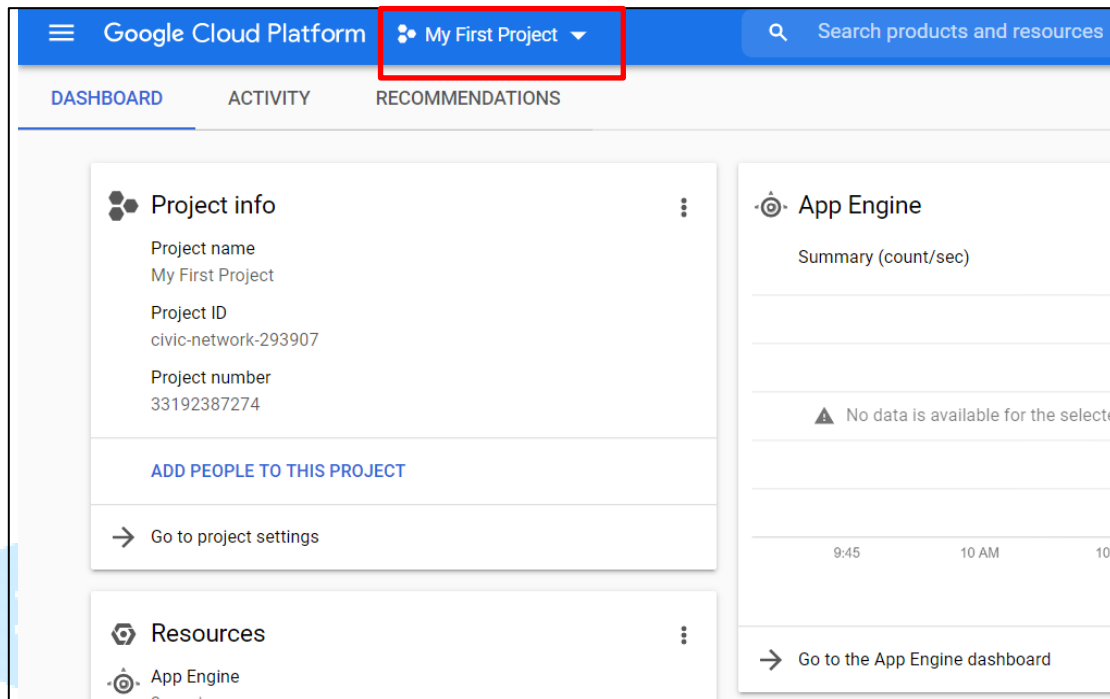
1. Create 3 GCP projects
2. Create a Bash script using Cloud SDK for the given requirements
3. Deploy the bash script using Cloud shell

Solution:

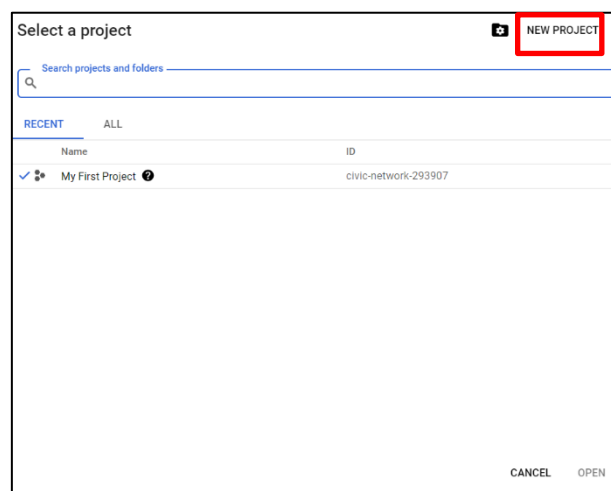
Step-1: Create 3 GCP Projects.

I have share how to create a single project which can be replicated for the other 2 projects.

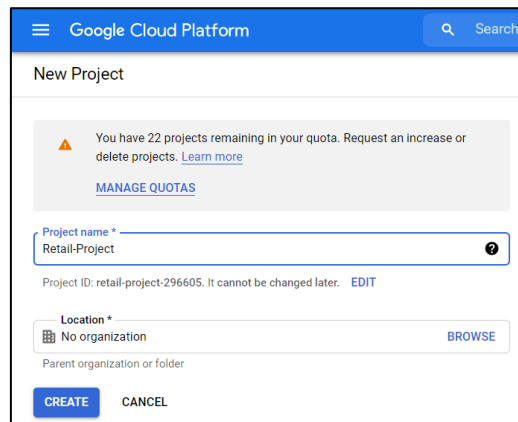
1. Go the Google Cloud Console and Click on the Project ID in the top navigation bar.



2. Click on New Project on the top right corner.

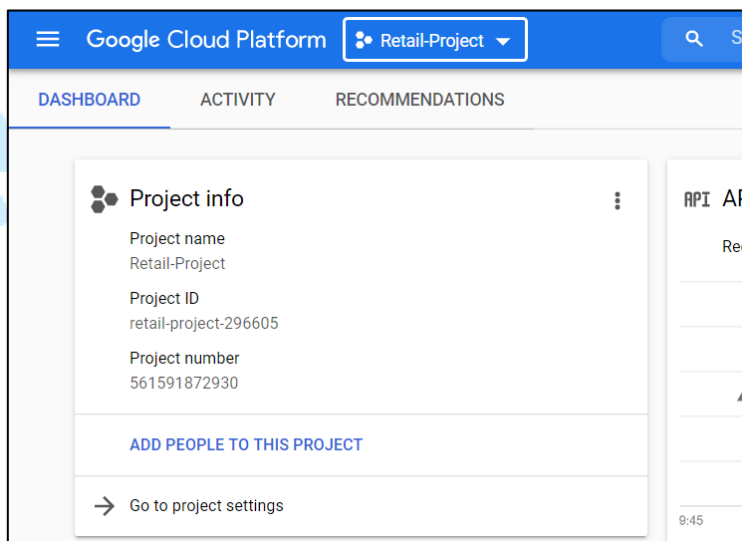


3. Enter the Project Name and Select the Location (This will be applicable if you are under an organization, you have to select a place in the organization hierarchy) and Click on **Create**



The screenshot shows the 'New Project' form in the Google Cloud Platform console. At the top, there's a blue header with the Google Cloud Platform logo and a search bar. Below the header, the title 'New Project' is displayed. A warning message states: 'You have 22 projects remaining in your quota. Request an increase or delete projects. [Learn more](#)'. Below this, there's a link to 'MANAGE QUOTAS'. The 'Project name' field is filled with 'Retail-Project'. Below it, the 'Project ID' is shown as 'retail-project-296605', with a note that it cannot be changed later and an 'EDIT' link. The 'Location' field is set to 'No organization', with a 'BROWSE' button. At the bottom, there are 'CREATE' and 'CANCEL' buttons.

4. It will take a few minutes and project will be setup



We have successfully created a project in GCP, use the same steps to create other projects.

Step-2 Create Bash Script using GCloud SDK

Requirements when create the Bash Script:

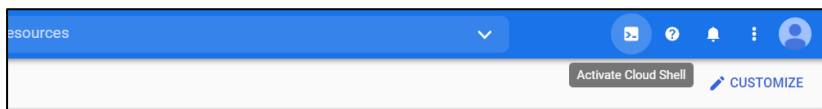
1. To deploy the resources first we need to select the project.
2. To deploy a VM instance we need an instance name and zone we are going to deploy
3. To deploy a cloud storage bucket, we need a globally unique and a bucket region.

1. The following bash script, we take project ID, region and zone as input and deploy the VM instance and Bucket in the project ID given.

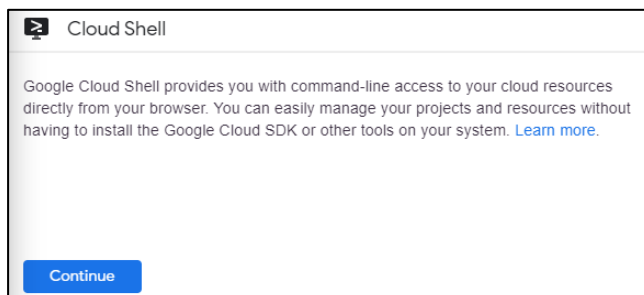
```
#!/bin/bash
read PROJECT_ID
echo "Enter Region name"
read region
echo "Enter Zone name"
read zone
gcloud config set project $PROJECT_ID
instance_name=instance-${PROJECT_ID}
bucket_name=bucket-${PROJECT_ID}
gcloud compute instances create $instance_name --zone=$zone --quiet
gsutil mb -l $region gs://$bucket_name
```

Step-3: Run the Script using Cloud Shell

1. In the Cloud Console, in the top right toolbar, click the Activate Cloud Shell button.



2. Click continue



3. After a few minutes, the Cloud shell will be provisioned.



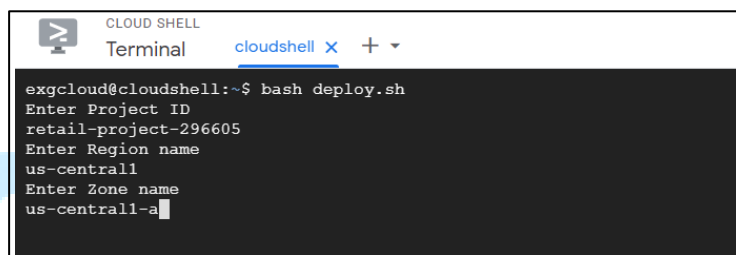
```
Cloud Shell
Terminal (civic-network-293907) x +
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to civic-network-293907.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
exgcloud@cloudshell:~ (civic-network-293907)$
```

4. Create a file called deploy.sh using nano

```
nano deploy.sh
```


5. Copy & paste the script we shown above and exit the nano editor by pressing **Ctrl+X**, and **Y**
6. Run the script using the following command and input the values

```
bash deploy.sh
```



```
Cloud Shell
Terminal cloudshell x +
exgcloud@cloudshell:~$ bash deploy.sh
Enter Project ID
retail-project-296605
Enter Region name
us-central1
Enter Zone name
us-central1-a
```

7. The following image shows the final output of the script



```
Cloud Shell
Terminal (retail-project-296605) x +
exgcloud@cloudshell:~ (retail-project-296605)$ bash deploy.sh
Enter Project ID
retail-project-296605
Enter Region name
us-central1
Enter Zone name
us-central1-a
Updated property [core/project].
instance-retail-project-296605
Created [https://www.googleapis.com/compute/v1/projects/retail-project-296605/zones/us-central1-a/instances/instance-retail-project-296605].
NAME                                ZONE          MACHINE_TYPE  PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP  STATUS
instance-retail-project-296605      us-central1-a  n1-standard-1  false        10.128.0.2   35.188.189.126  RUNNING
Creating gs://bucket-retail-project-296605/...
exgcloud@cloudshell:~ (retail-project-296605)$
```

In this way, deploy the resources with regions given according to the problem

Online Video Sharing -> **us-east1** region and **us-east1-a** zone

Online Shopping -> **ap-south1** region and **ap-south1-a** zone

edureka!

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