**Deployment of a Wordpress & MySQL on the top of Google Cloud Platform ( GCP )**



What is Google Cloud Platform ?

Google Cloud is a suite of Cloud Computing services offered by Google. The platform provides various services like compute, storage, networking, Big Data , and many more that run on the same infrastructure that Google uses internally for its end users like Google Search and YouTube.

What is MySQL ?

MySQL is the most popular Open Source Relational SQL Database Management System. MySQL is one of the best RDBMS being used for developing various web-based software applications. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company.

What is Wordpress ?

WordPress is a free and open-source content management system written in PHP and paired with a MySQL or MariaDB database. Features include a plug-in architecture and a template system, referred to within WordPress as Themes.

What is GKE ?

Google Kubernetes Engine (GKE) provides a managed environment for deploying, managing, and scaling your containerized applications using Google infrastructure. The GKE environment consists of multiple machines (specifically, Compute Engine instances) grouped together to form a cluster.

**Task Details:->**

**1. Create multiple projects namely developer and production.**

**2. Create VPC network for both the projects.**

**3. Create a link between both the VPC networks using VPC Peering.**

**4. Create a Kubernetes Cluster in developer project and launch any web application with the Load balancer.**

**5. Create a SQL server in the production project and create a database.**

**6. Connect the SQL database to the web application launched in the Kubernetes cluster.**

So Lets Start :)

>> First we need to goto GCP console and login with a Gmail Account.

Step 1:

I have created one new project with name "developproject" , next

from the left side bar Networking option was selected wherein I have selected VPC(Virtual Private Network).

In VPC i have created one lab in Singapore Region 1a Datacenter name "lab1" .

Step 2:

I have created one more new project with name "productproject" , next

from the left side bar Networking option was selected and in that selected VPC(Virtual Private Network).

In VPC i have created one lab in US Region 1a Datacenter name "lab2".

>> So far we are created two VPC Networks in different regions, namely "lab1" and "lab2" ie 2 buildings/network have been created.

Step 3:

Now we need to install centOS version-7 operating system for developproject in lab1.

next go to productproject in that alos need to install centOs version-7 operating system in lab2.

>> So far i have created two separate "buildings/network" in different regions and created the individual network.

Step 4:

Now these two operating systems are going to be connected together, ie developproject and productproject, using the option called VPC peering.

>>After peering both the operating systems, created my own firewall setup like 0.0.0.0/0, ie i have ping one operating system to another operating system via private network.

Step 5:

Now in developproject i have created a "Kubernetes Cluster" and after the cluster is created, here i have downloaded one software that is "Kubectl.exe" from google.

>>After complete installation of Kubectl.exe, now need to connect my kubernetes using the URL provided in it to connect my account using the CLI.

The following command is used to launch one operating system, actually in this bootable --image already configured is a webserver.

"kubectl.exe create deployment myweb --image=vimal13/apache-webserver-php"

The following command is used to see how many pods are available/running in my container.

"kubectl.exe get pods"

The following command is used to increase my replica size to 5.

"kubectl.exe scale deployment myweb --replicas=5"

The following command is used again to check my pods, now its 5.

"kubectl.exe get pods"

Now the Wordpress is installed using the following command:

"kubectl.exe create deployment mywp --image=wordpress"

Now i need to create on "Load balancer", because of having 5 pods and if more clients come to my site they may always connect to 1st pod, so in order to balance the load, load balancer is installed on top of a container, which manages the client depending the traffic ingress.

Step 6:

Now selecting the "productproject" need to

create one "sql database" by name "mydb" and

after creating the database, need to create my firewall rule as a "public"

Finally connected the SQL database with an application launched in the kubernetes cluster using wordpres s software and created the web site.