

# Learn about Google Kubernetes Engine (GKE)

By

**Stanley Stephen**

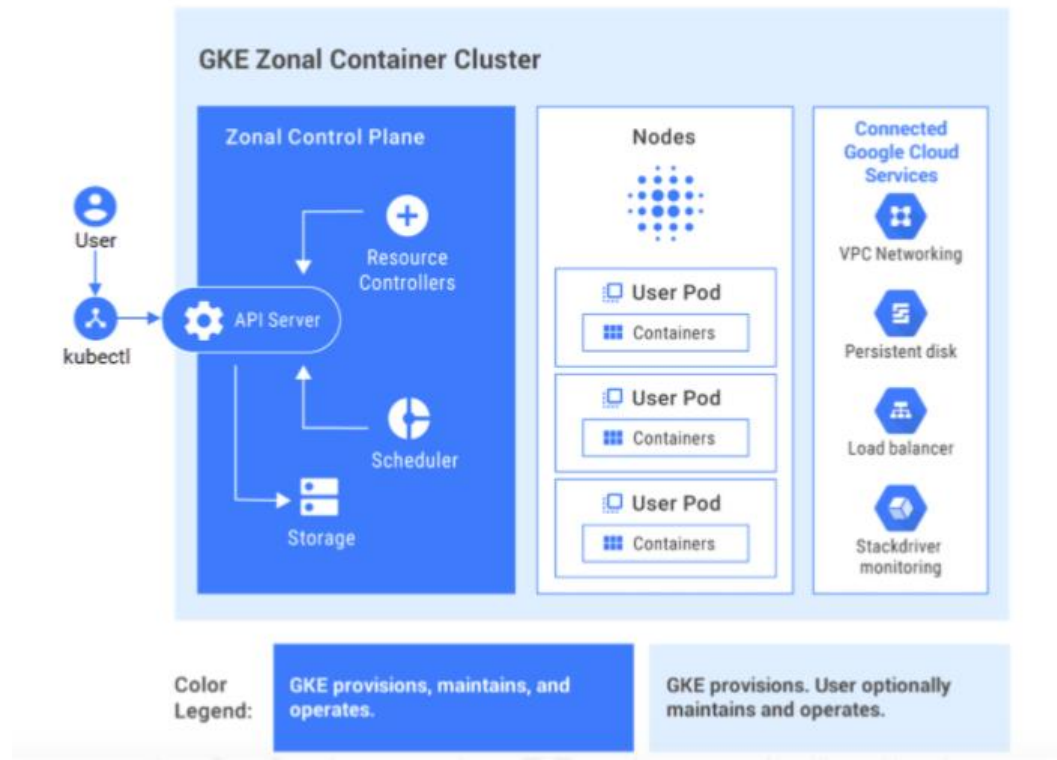
**Linkedin:** <https://www.linkedin.com/in/contactstanley/>

**Github:** [https://github.com/stanleymca/Learn\\_from\\_Stanley/](https://github.com/stanleymca/Learn_from_Stanley/)

**Email:** [s.stanley.mca@gmail.com](mailto:s.stanley.mca@gmail.com)

## Google Kubernetes Engine (GKE)

Google Kubernetes Engine (also known as GKE) is a managed, production-ready environment for running Docker containers in the Google cloud.

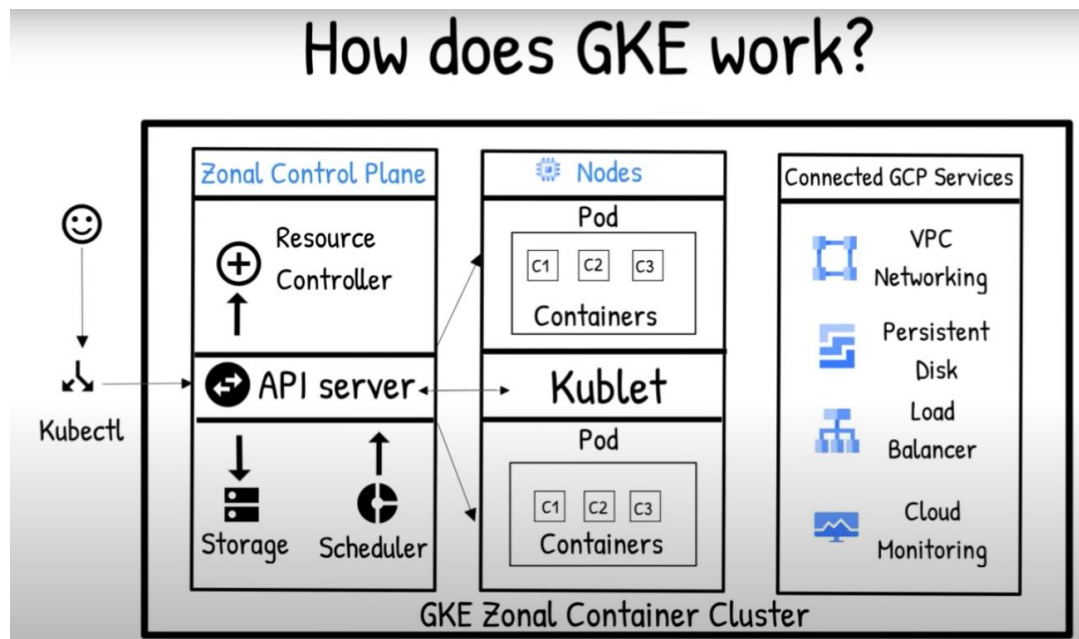


It permits you to form multiple-node clusters whereas conjointly providing access to any or all Kubernetes options.



## How do GKE works?

**GKE** works with docker applications. These applications are dockerized into platform-independent, isolated user-space instances. Before you deploy any workloads on a GKE cluster, you need to always firstly dockerize the deployment.

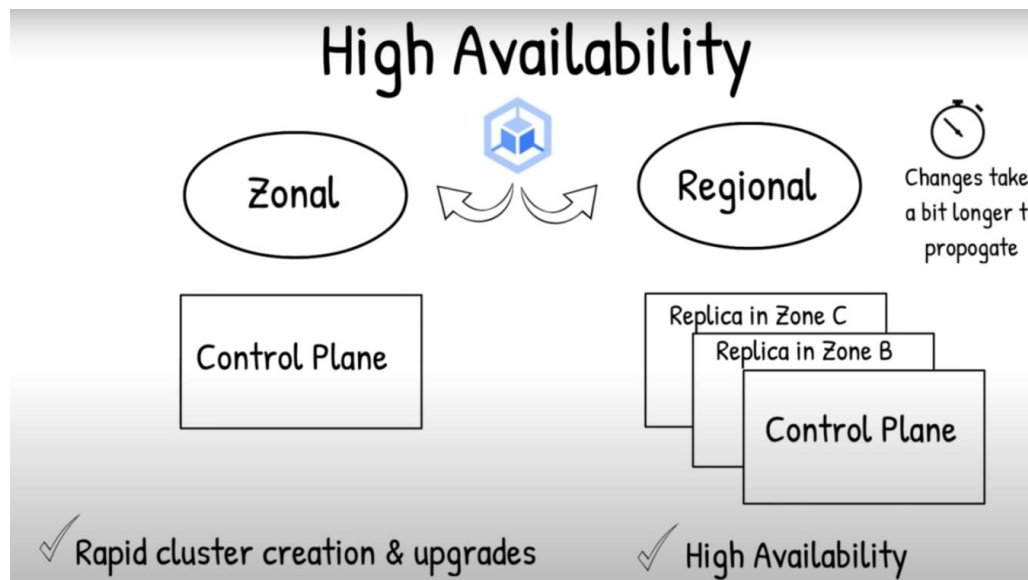


## How to use GKE?



## High Availability in GKE

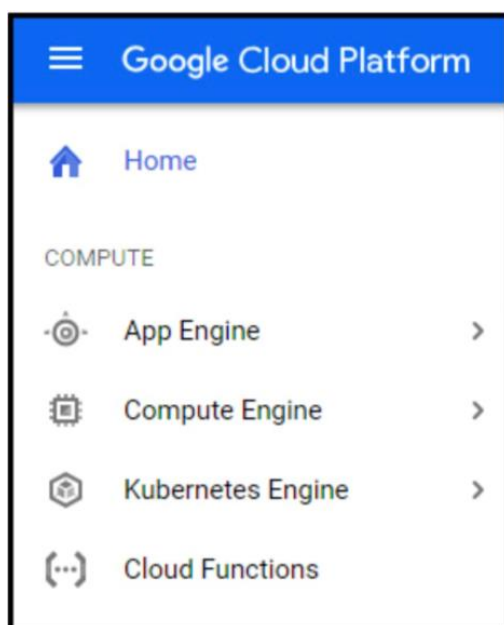
**GKE** offers two types of clusters: regional and zonal. ... Regional clusters consist of a three Kubernetes control planes quorum, offering **higher availability** than a zonal cluster can provide for your cluster's control plane API.



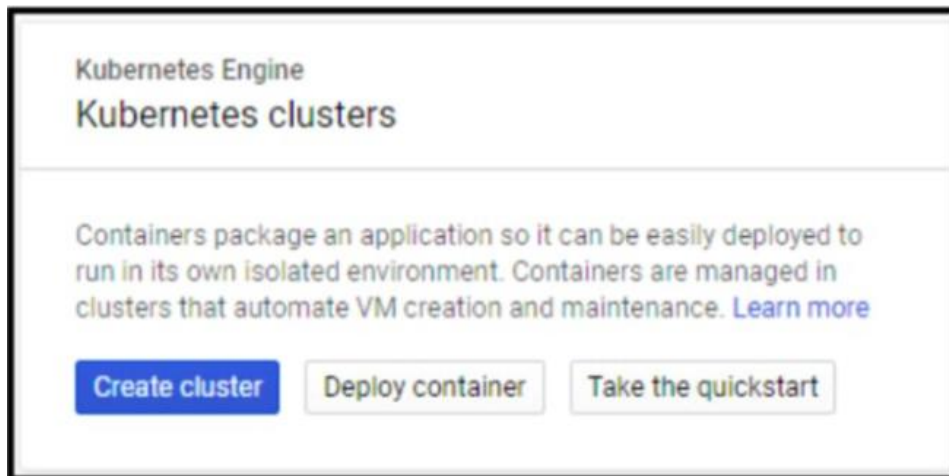
### Create A Kubernetes Cluster using the GCP console

Login into the GCP console with your Gmail account. By default, it will create a project “My Project” for you. It is mandatory to complete the billing verification to use GCP services. Once the Billing account is verified you can use all services at \$300 credit.

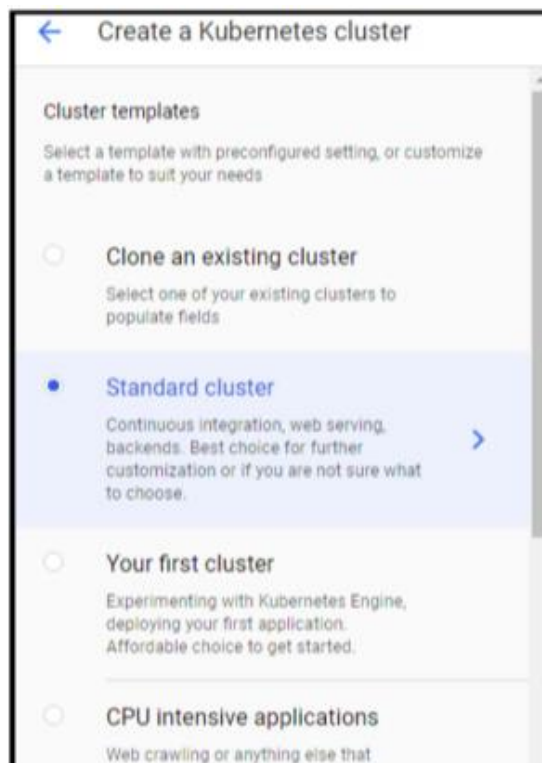
1. Click on the left side menu bar, scroll down, and click on **Kubernetes Engine**.



2. Let's go to the cluster page, you must click “**Create cluster**” to work on it



3. On the next page, choose cluster type and modify the details as per your requirement and you must click on the “**creating button**”. It won't take more than 3 min for you to get a ready cluster



## Learn about Google Kubernetes Engine (GKE)

The screenshot shows the 'Create cluster' form in the Google Cloud console. The 'Name' field is set to 'standard-cluster-1'. The 'Location type' is 'Zonal' (selected) and the 'Zone' is 'us-central1-a'. The 'Master version' is '1.11.6-gke.2 (default)'. Under 'Node pools', there is a section for 'default-pool' with 'Number of nodes' set to 3 and 'Machine type' set to '1 vCPU' (3.75 GB memory). At the bottom, there are 'Create' and 'Cancel' buttons, and a link to 'Equivalent REST or command line'.

Name

standard-cluster-1

Location type

☒ Zonal

☐ Regional

Zone

us-central1-a

Master version

1.11.6-gke.2 (default)

Node pools

Node pools are separate instance groups running Kubernetes in a cluster. You may add node pools in different zones for higher availability, or add node pools of different type machines. To add a node pool, click Edit. [Learn more](#)

default-pool

Number of nodes

3

Machine type

Customize to select cores, memory and GPUs

1 vCPU 3.75 GB memory [Customize](#)

Auto-upgrade: On

[Create](#) [Cancel](#) [Equivalent REST or command line](#)

4. Once the cluster is created, Now you click on the “connect” option. It will give you a command to run on a cloud shell. Copy the command and run in the cloud shell.

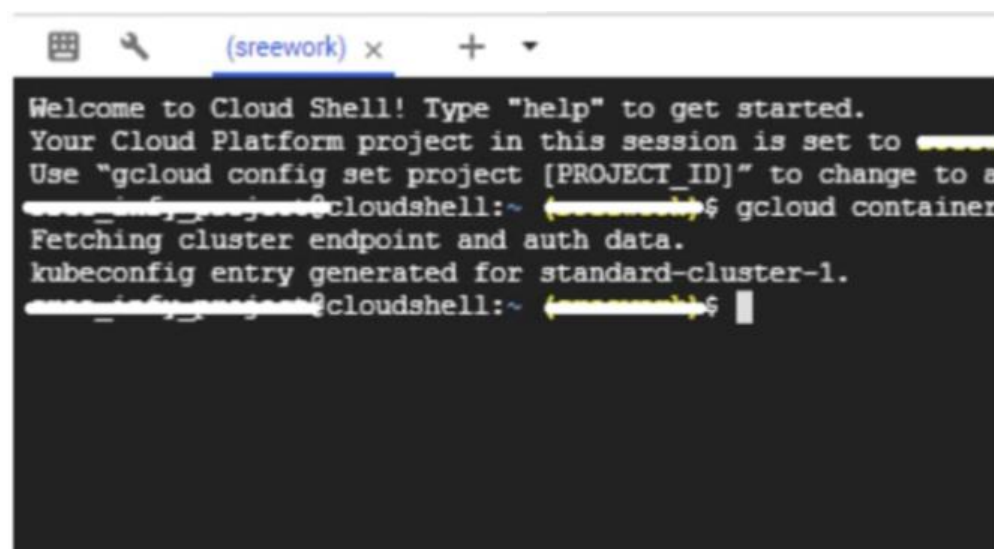
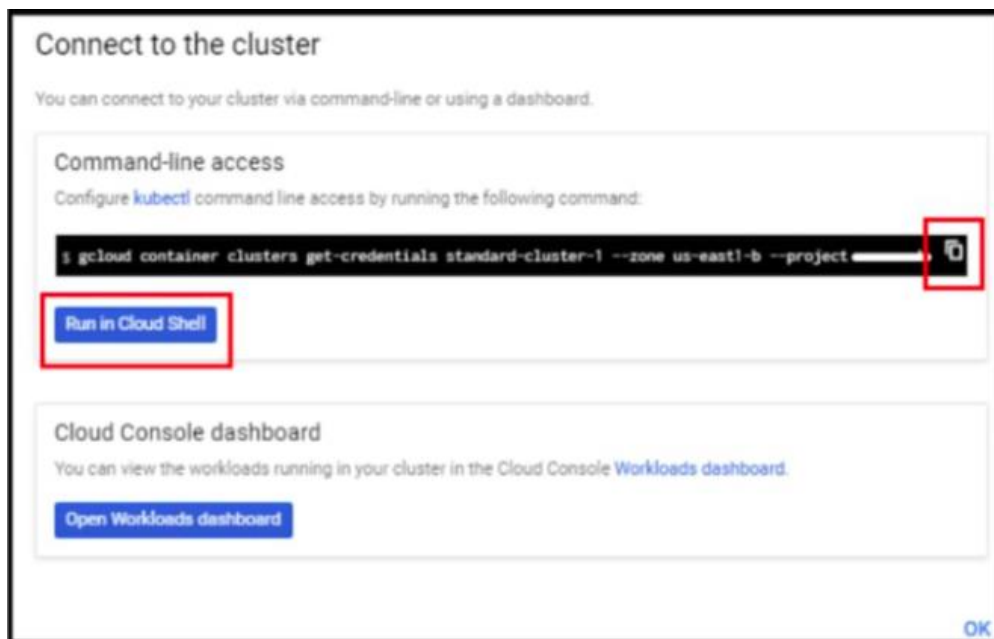
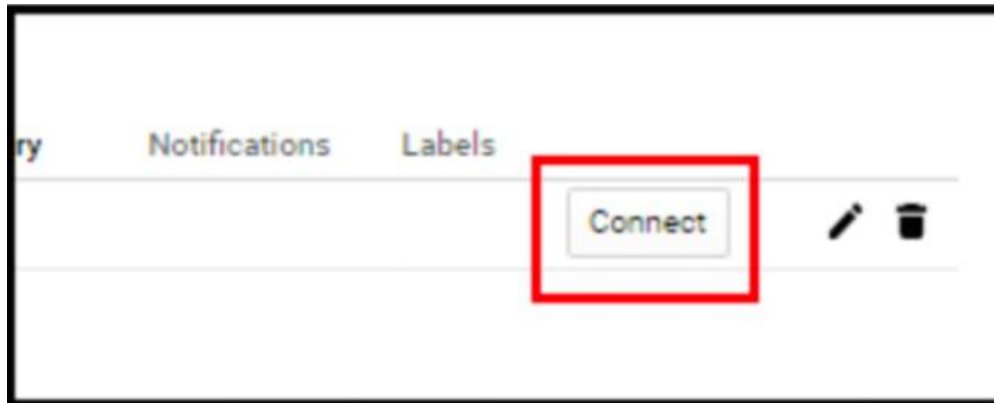
The screenshot shows the 'Kubernetes clusters' page in the Google Cloud console. It has a header with 'Kuberne...usters', a '+ CREATE CLUSTER' button, and a '+ DEPLOY' button. Below the header is a description: 'A Kubernetes cluster is a managed group of VM instances for running containerized applications'. There is a search bar 'Filter by label or name'. Below the search bar is a table with columns: 'Name', 'Location', 'Cluster size', 'Total cores', and 'Total memory'. The table has one row for 'standard-cluster-1' with a green checkmark icon, location 'us-east1-b', cluster size '3', total cores '3 vCPUs', and total memory '11.5 GB'.

Kuberne...usters [+ CREATE CLUSTER](#) [+ DEPLOY](#)

A Kubernetes cluster is a managed group of VM instances for running containerized applications

Filter by label or name

<input type="checkbox"/> Name ^	Location	Cluster size	Total cores	Total memory
<input checked="" type="checkbox"/> standard-cluster-1	us-east1-b	3	3 vCPUs	11.5 GB



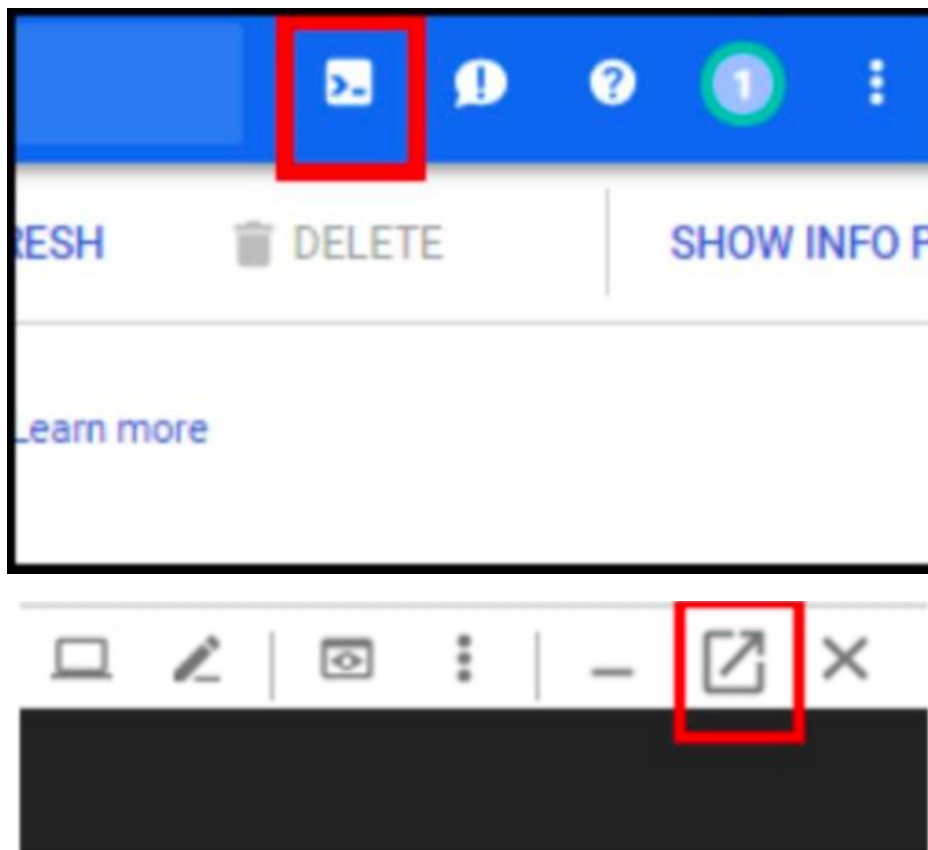
5. Kubectl is available in the cloud shell by default. To check the nodes, run the “**kubectl get nodes**” command in the cloud shell.

```
$ kubectl get nodesNAME STATUS ROLES AGE VERSION
gke-my-cluster-default-pool-2d75839c-flh3 Ready < none > 5m
v1.11.6-gke.2
gke-my-cluster-default-pool-2d75839c-m3j7 Ready < none > 5m
v1.11.6-gke.2
gke-my-cluster-default-pool-2d75839c-vx44 Ready < none > 5m
v1.11.6-gke.2
```

Now, you can deploy your **containerized application** on Google Kubernetes Engine.

### Create a cluster using gcloud CLI commands

Connect to cloud shell using the **cloud shell** button and click on the new window icon to open in the new tab.



Step 1: Set the **region** to launch cluster nodes

```
$ gcloud config set compute/zone us-east1-b
```



Step 2: Create a **network** for your cluster, or you can use the default network.

```
$ gcloud compute networks create my-cluster-network
```

Step 3: Create a cluster with the required configuration

```
$ gcloud container clusters create my-cluster \  
- enable-cloud-logging \  
- enable-cloud-monitoring \  
- num-nodes 3 \  
- disk-size 30G \  
- network my-cluster-network
```

The above command will create a **new cluster** for you.

A Kubernetes cluster is a managed group of VM instances for running containerized applications.

Filter by label or name

<input type="checkbox"/> Name ^	Location	Cluster size	Total cores	Total memory	No
<input checked="" type="checkbox"/> my-cluster	us-east1-b	3	3 vCPUs	11.25 GB	

Step 4: Get credentials for your cluster. GKE will be using these secret credentials to allow you to access the newly provisioned cluster.

```
$ gcloud container clusters get-credentials my-cluster
```

Now check with **kubectl**

```
$ kubectl get nodesNAME STATUS ROLES AGE VERSION  
gke-my-cluster-default-pool-2d75839c-f1h3 Ready < none > 5m  
v1.11.6-gke.2  
gke-my-cluster-default-pool-2d75839c-m3j7 Ready < none > 5m  
v1.11.6-gke.2  
gke-my-cluster-default-pool-2d75839c-vx44 Ready < none > 5m  
v1.11.6-gke.2
```

To **delete** the cluster, run the following command:

```
$ gcloud container clusters delete my-cluster
```

You can also delete the cluster from the console as well.

