Instruction—Load Balancer

Our web application—MediaWiki runs on Google Cloud Platform, and we use a lot of google cloud API to automatic the installation.

There are two parts in instruction,

part 1 – [Installation Guide](#_Installation_Guide);

part 2 – [Test](#_Test);

# Installation Guide

To successfully install our web application, perform the following steps:

1. [Create a Google Cloud account](#_Create_a_Google)
2. [Create a project](#_Create_a_project)
3. [Create the manager instance](#_Create_manager_instance)

gcloud beta compute instances create manager-instance --zone=australia-southeast1-b --machine-type=n1-standard-1 --subnet=default --network-tier=PREMIUM --maintenance-policy=MIGRATE --scopes=https://www.googleapis.com/auth/cloud-platform --image=ubuntu-1604-xenial-v20180912 --image-project=ubuntu-os-cloud --boot-disk-size=10GB --boot-disk-type=pd-standard

1. [Copy zip file](#_Copy_zip_file)

scp /path/your\_zip\_file root@instance\_external\_ip:/root

1. [Connect the manager-instance](#_Connect_the_manager-instance)
2. [Run scripts](#_Run_scripts:)

sudo su

cd ~

apt -y install unzip

unzip ~/2018\_Group\_8\_task1.zip

bash ~/2018\_Group\_8/loadbalancer/install.sh

The admin user: username: admin password: adminadmin

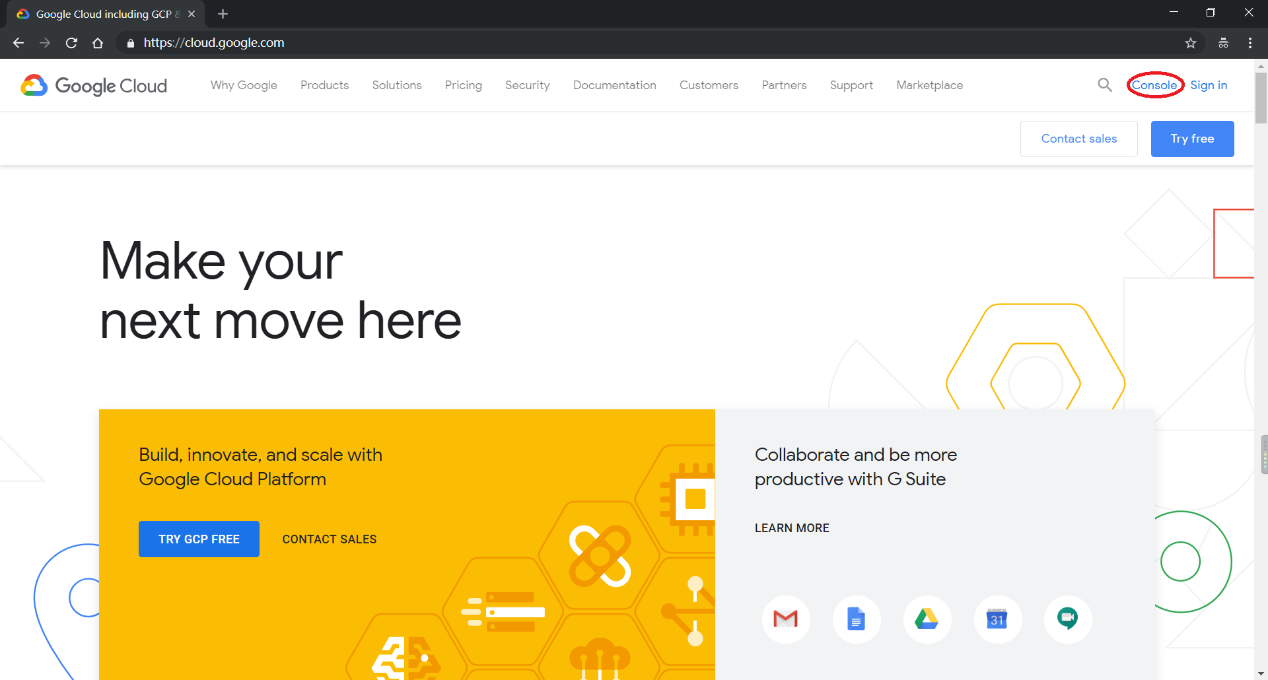
## Create a Google Cloud account

It is as same as your Google Account.

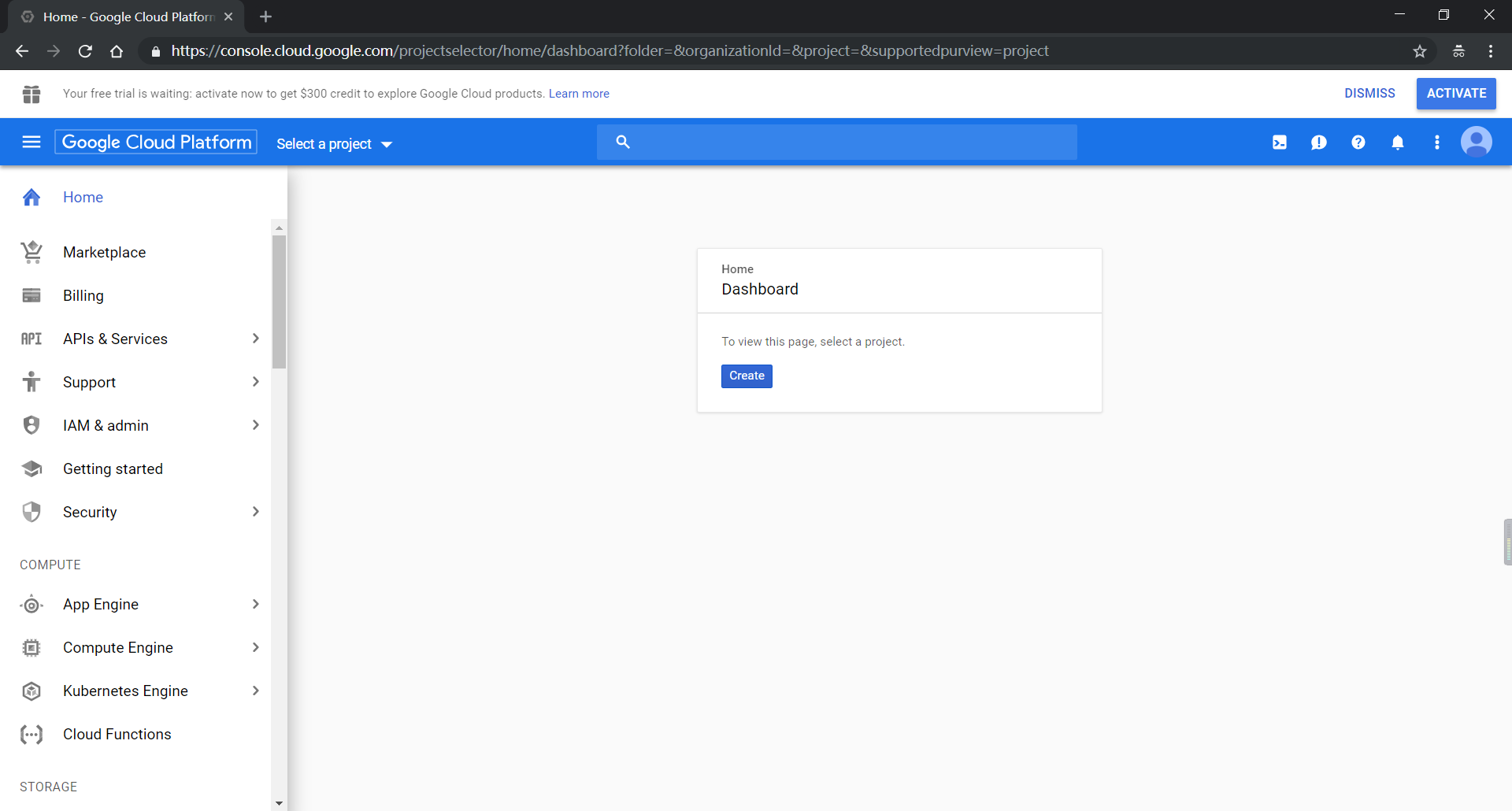
Note: If you do not have a Google Account, you can see the [Help](https://support.google.com/accounts/answer/27441?hl=en) page.

## Create a project

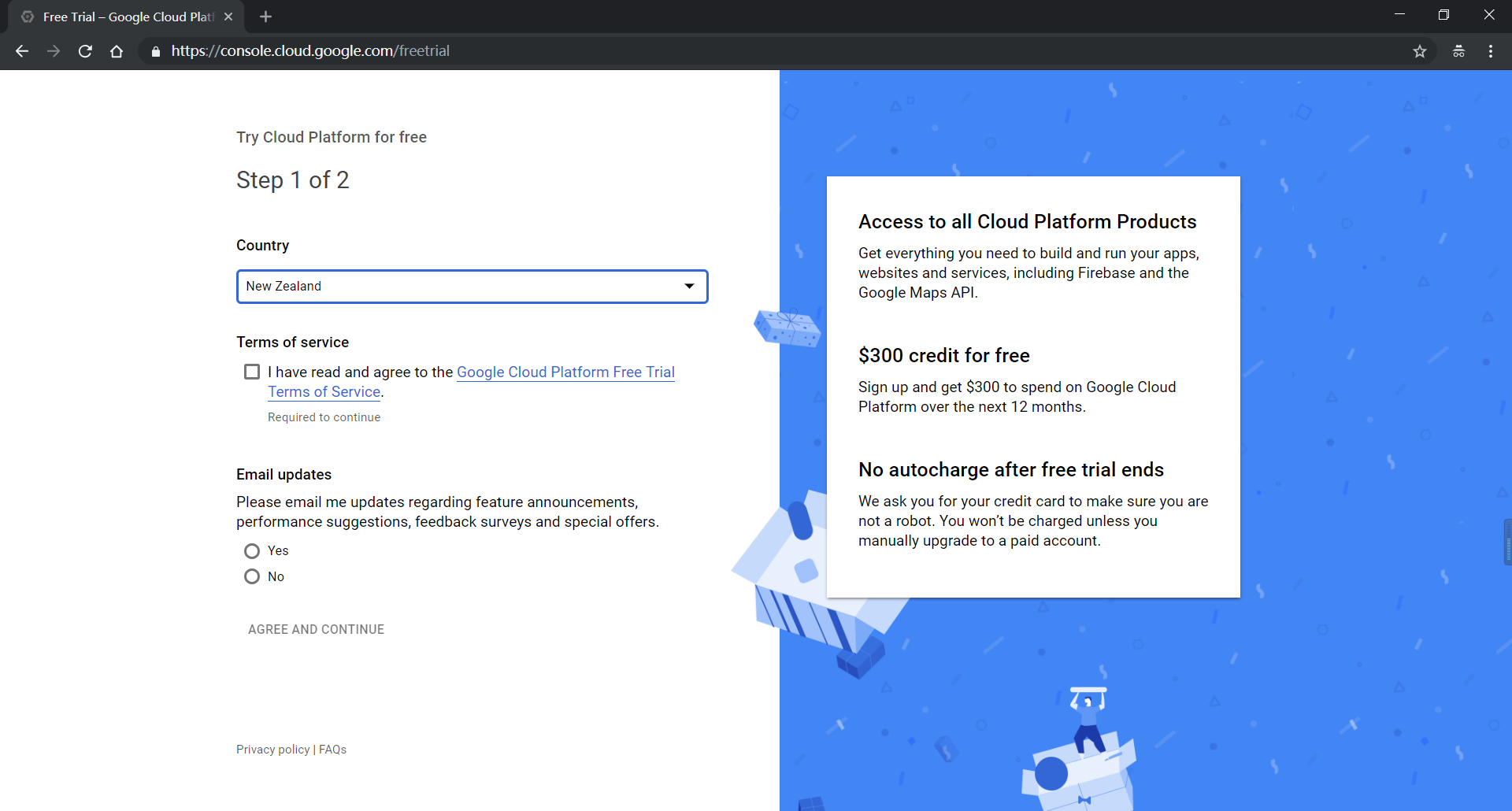
Open the browser, visit Google Cloud <https://cloud.google.com/>, Sign in, and click the “Console”.

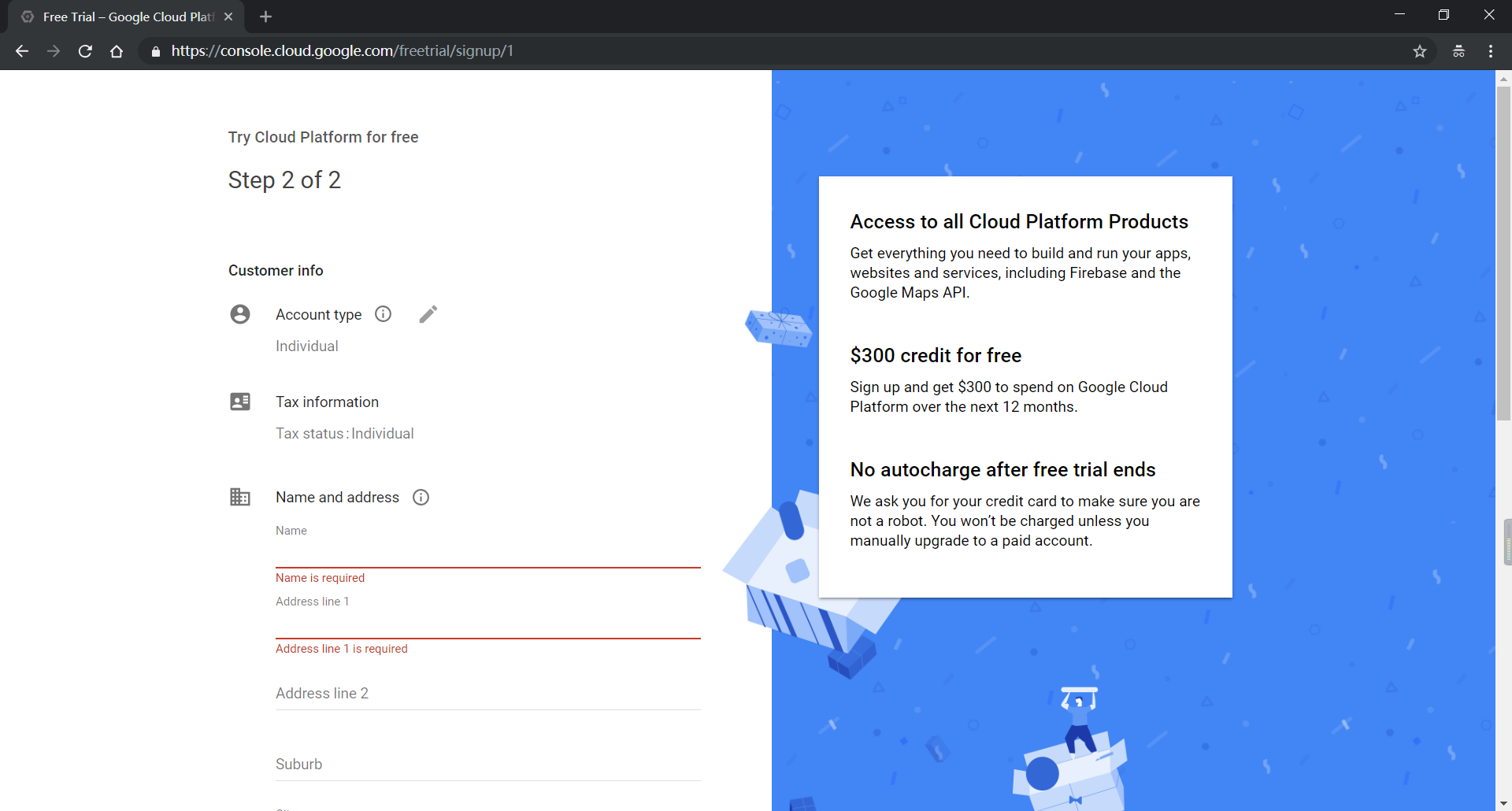


After that, you can see google gives the new user $300 credit to use, click ACTIVATE.

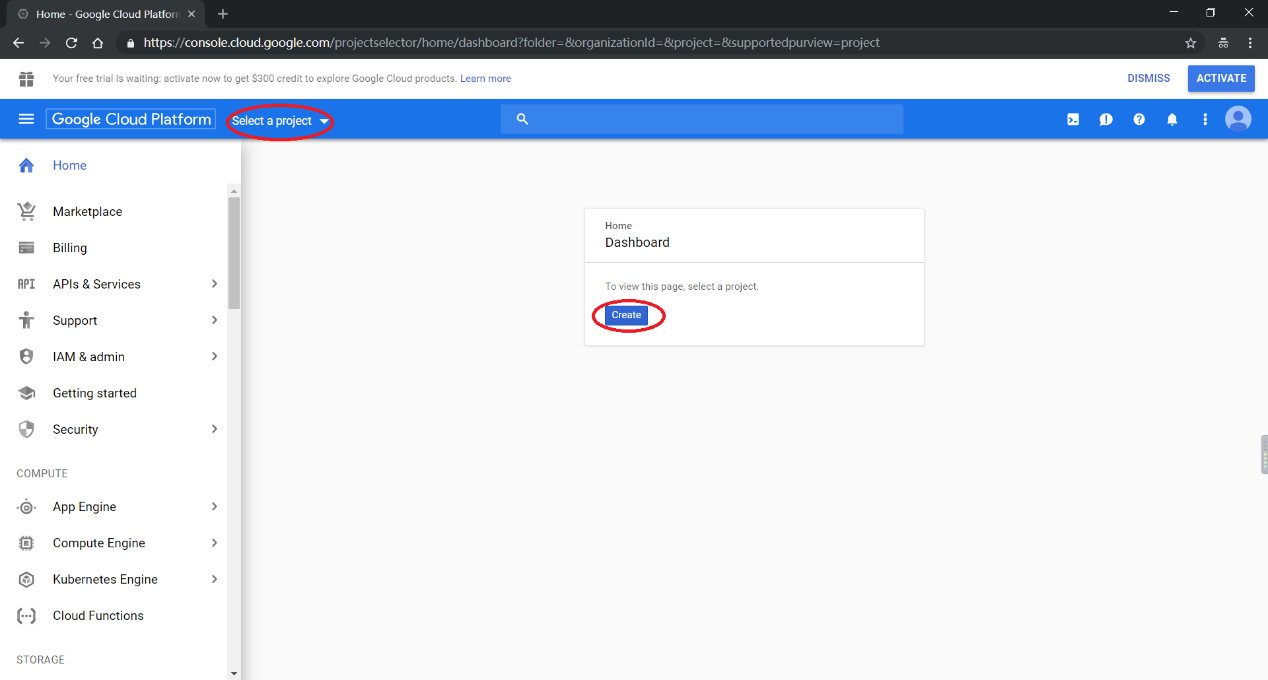


Then, you need to fill in the blanks and get $300 credits.

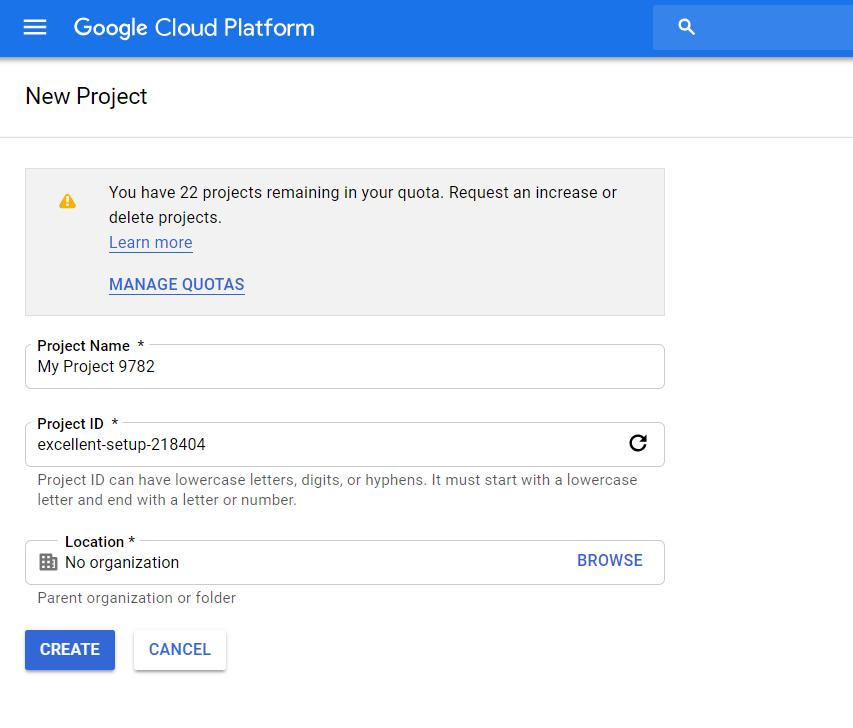




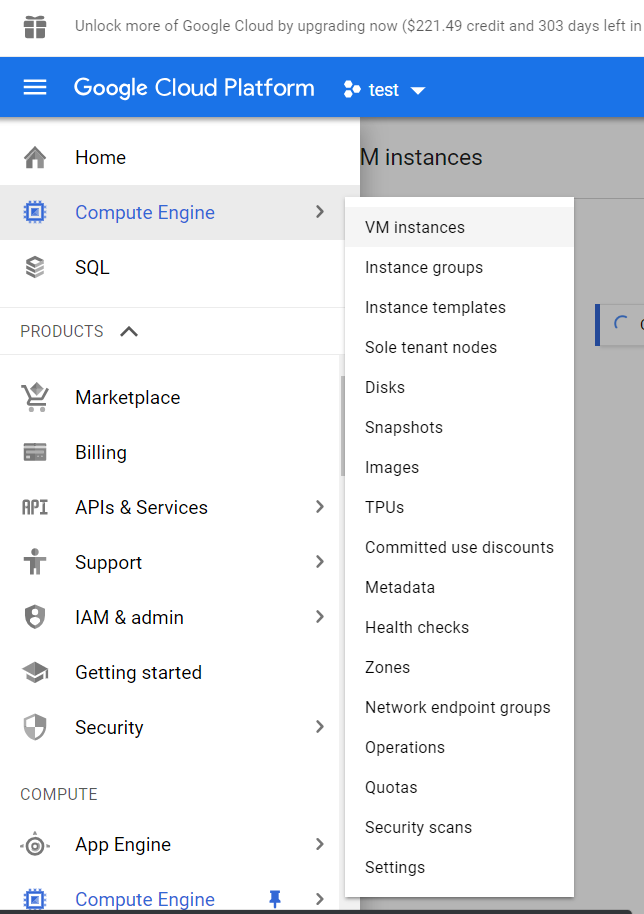
Now create a project;

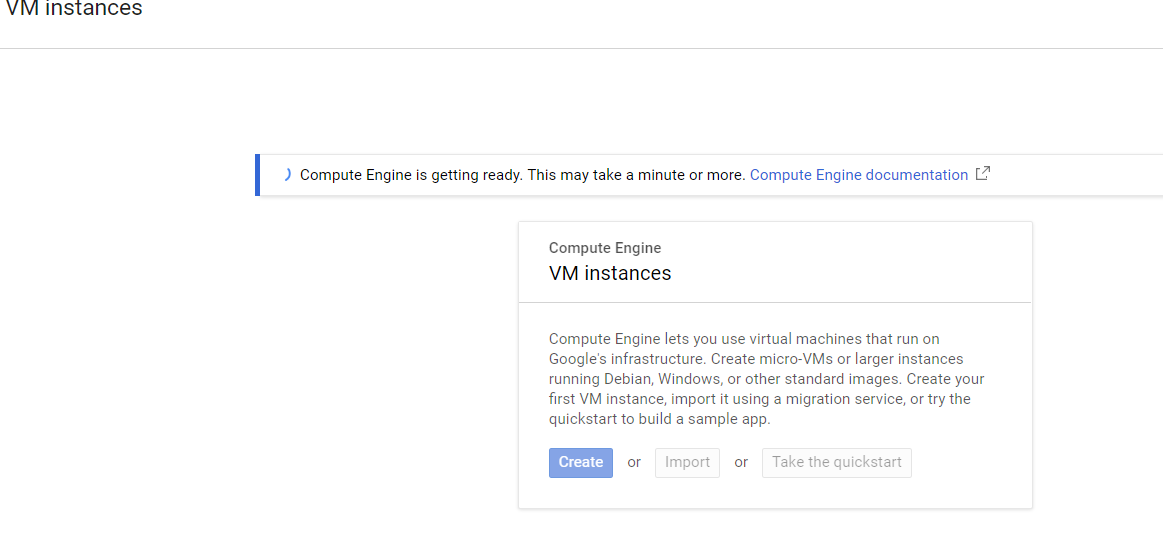


Give the project name and create;



Then, go to Compute Engine item, it takes a minute to initialize the API





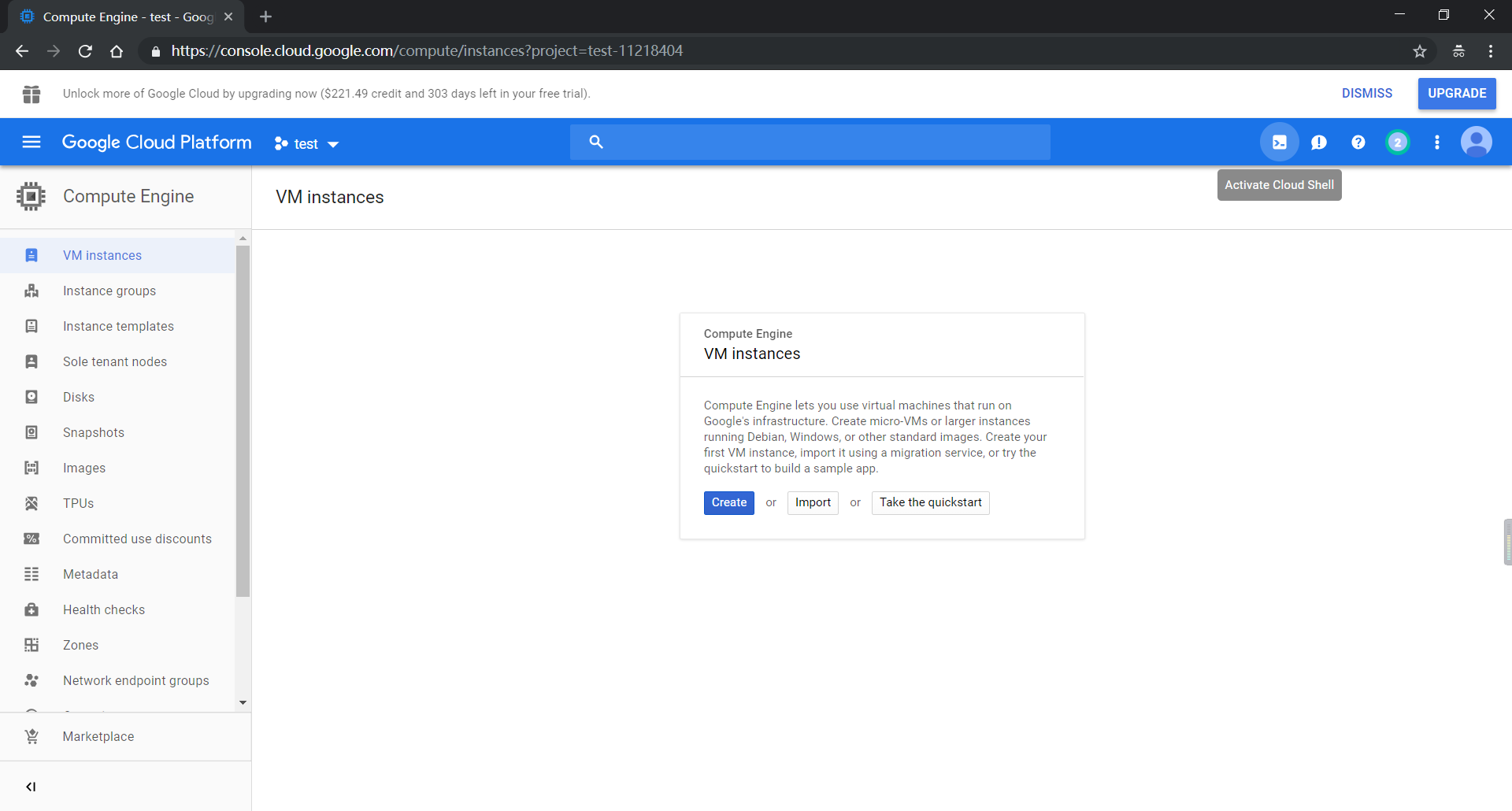
After initialization, you can create a VM instance.

## Create manager instance

Now, you can create an instance by two way,

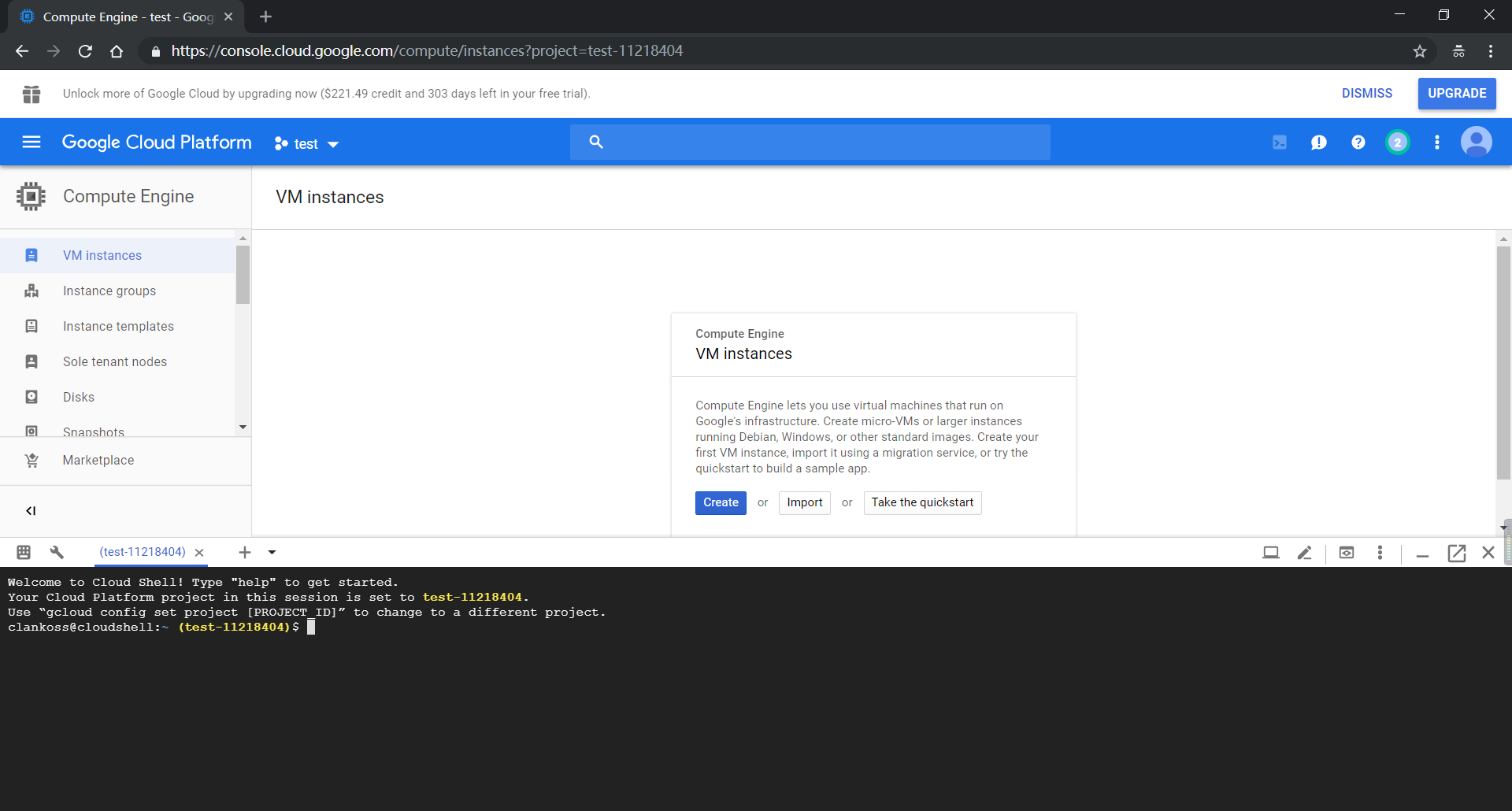
* 1. Using Activate Google Shell

In the picture below, on the top-right corner, click it.



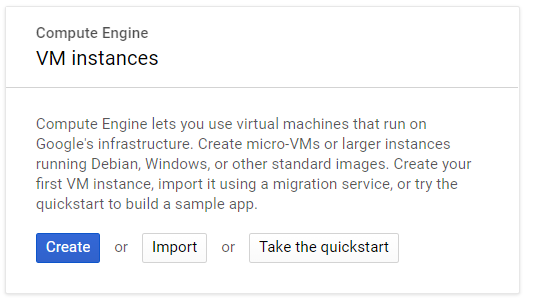
Waiting for connection, then you can copy the command below to create a manager instance.

gcloud beta compute instances create manager-instance --zone=australia-southeast1-b --machine-type=n1-standard-1 --subnet=default --network-tier=PREMIUM --maintenance-policy=MIGRATE --scopes=https://www.googleapis.com/auth/cloud-platform --image=ubuntu-1604-xenial-v20180912 --image-project=ubuntu-os-cloud --boot-disk-size=10GB --boot-disk-type=pd-standard



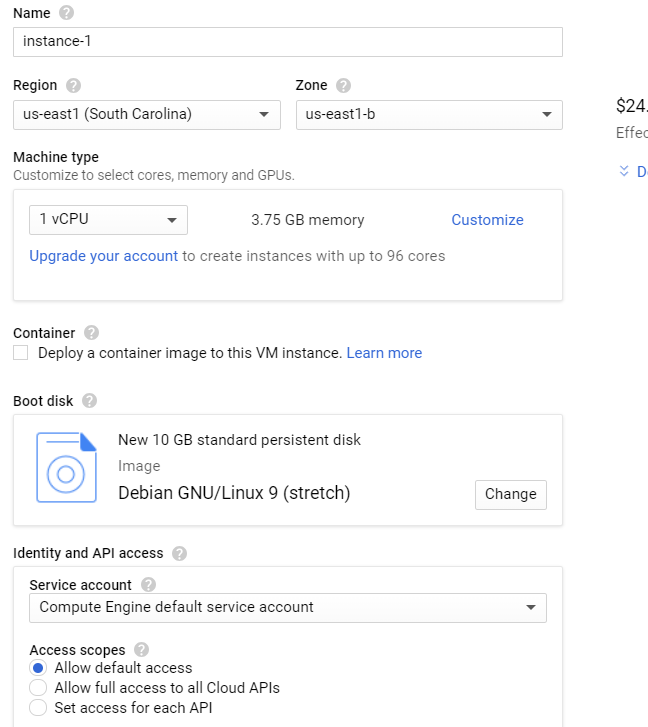
* 1. Step by step creation

Click “Create”;



And set variables as follows:

* Name: manager-instance
* Region: australia-southeast1-b
* Machine Type: 1vCPU (n1-standard-1)
* Boot Disk: Ubuntu 16.04 LTS (ubuntu-1604-xenial-v20180912)
* Identity and API access:
  + Service account: Compute Engine default service account
  + Access scopes: Allow full access to all Cloud APIs **VERY IMPORTANT**

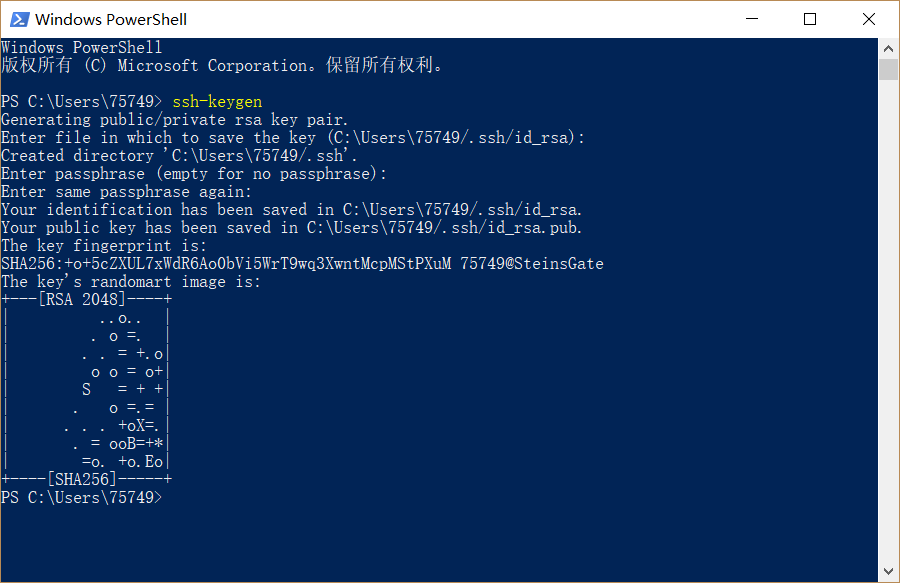


## Copy zip file to instance /root/ directory.

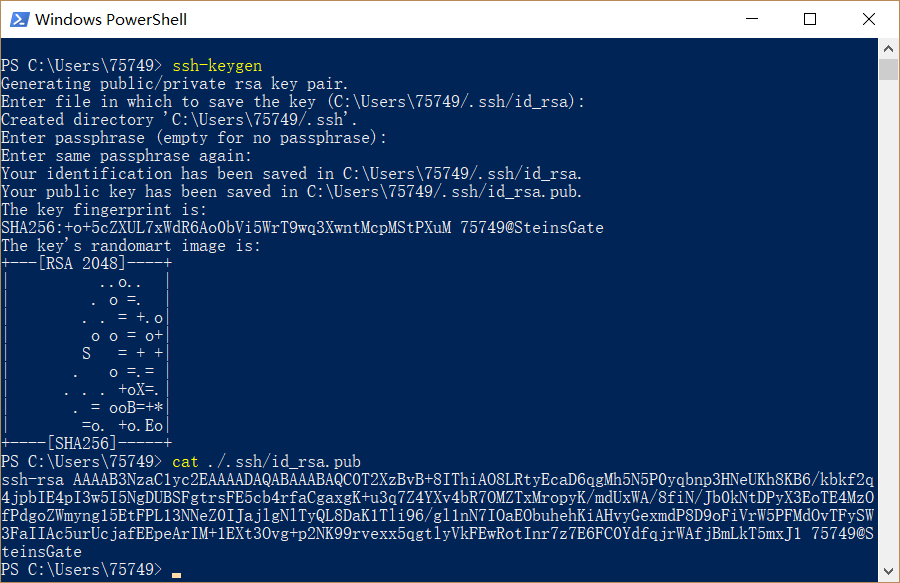
In this step, we will generate your computer’s public key and put it into google cloud metadata for ssh connection.

In windows, open Windows PowerShell or any other linux shell tools.

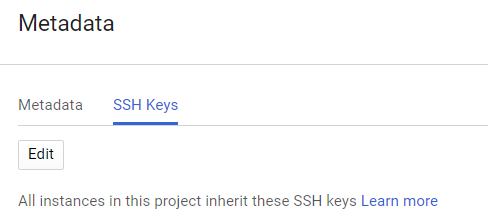
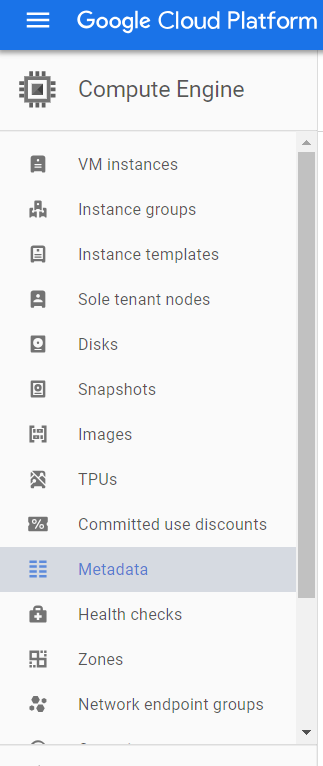
Input ssh-keygen, press Enter for 3 times



Then input cat ./.ssh/id\_rsa.pub, copy the lines below

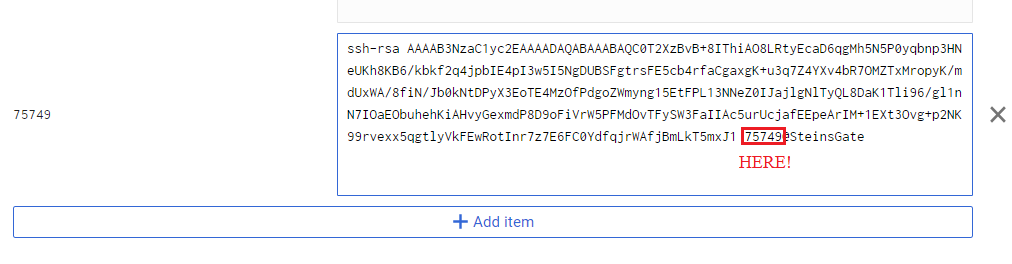


Then back to Google Cloud, go to Metadata, SSH keys folder, click Edit



Click Add item and paste your public key, click Save

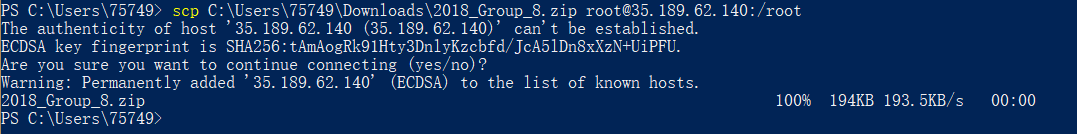
NOTE: Change the username(before the @) to “root”



After saving, it shows like this:

Then back to PowerShell input

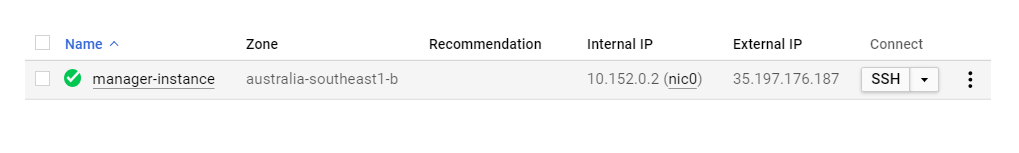
scp /path/your\_zip\_file root@instance\_external\_ip:/root For example, my zip path is C:\Users\75749\Downloads\2018\_Group\_8.zip , my instance\_ip is 35.189.62.140

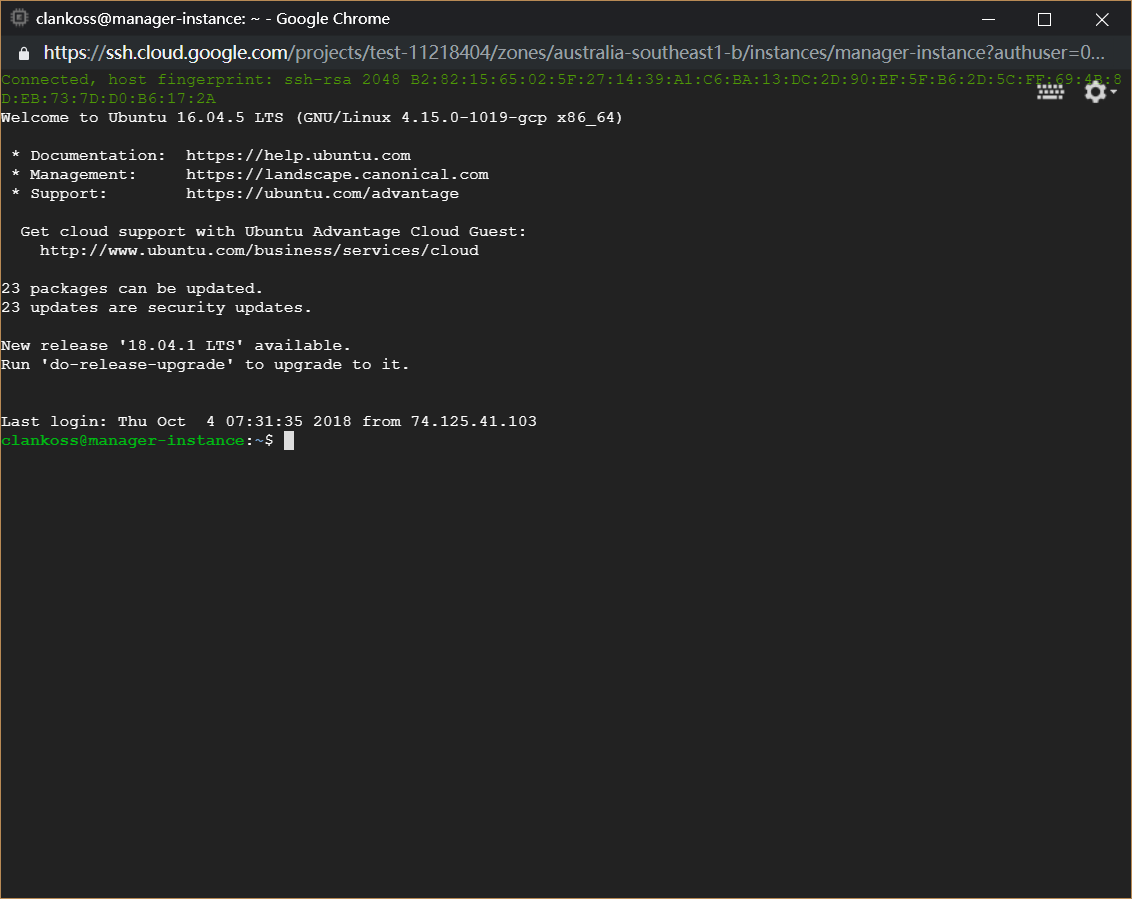


NOTE: If this is your first time ssh to instance, it will ask you for confirm; Enter “yes” for it.

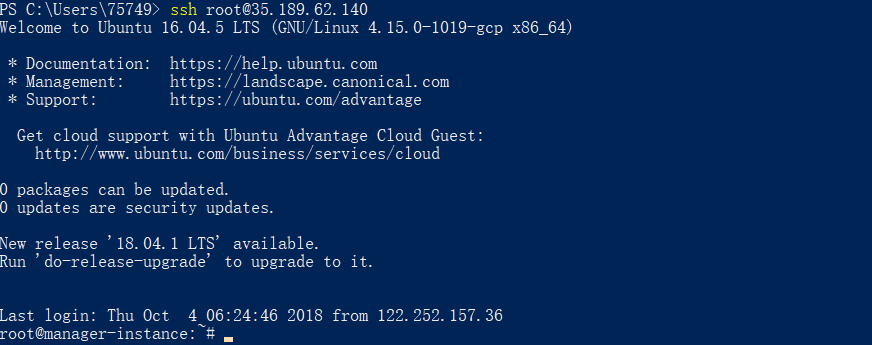
## Connect the manager-instance

SSH to manager-instance, you can use Google provided SSH to the instance.





Or also using PowerShell



## Run scripts

Run the following scripts on manager-instance:

sudo su

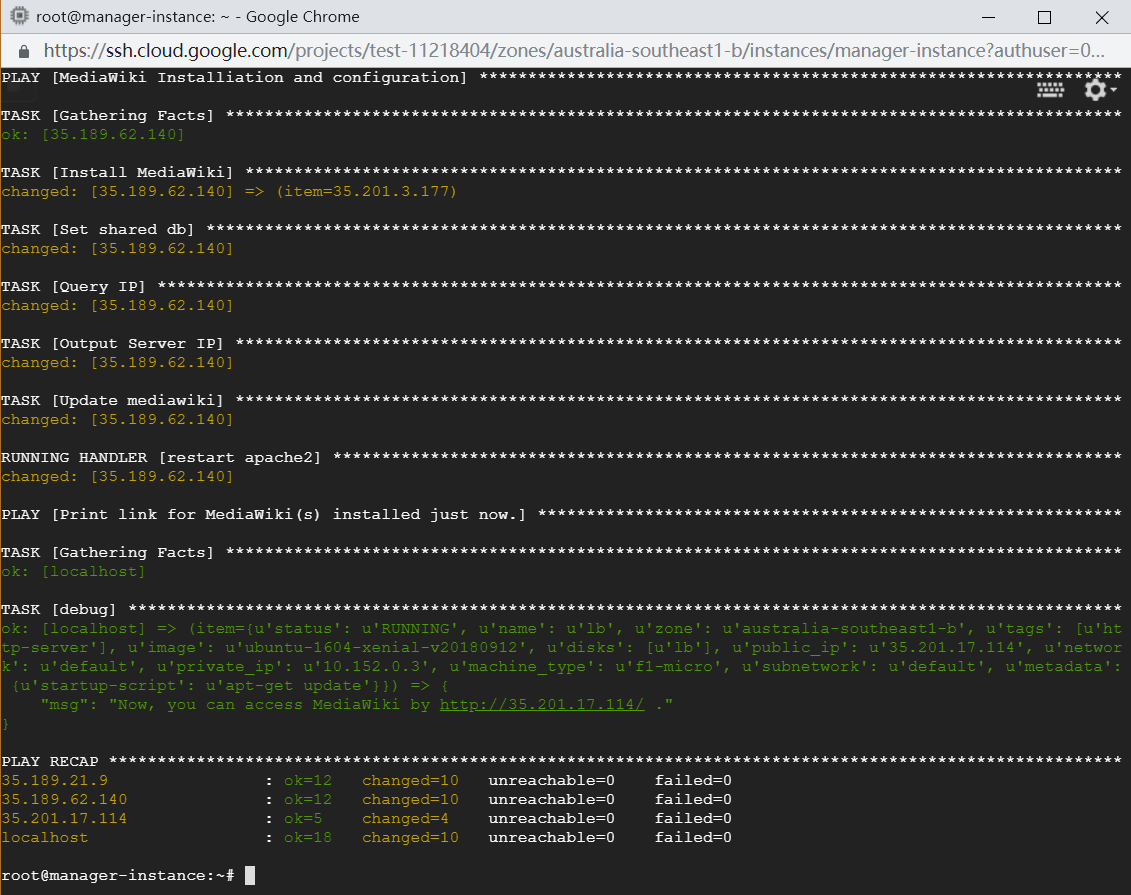
cd ~

apt -y install unzip

unzip ~/2018\_Group\_8\_task1.zip

bash ~/2018\_Group\_8/loadbalancer/install.sh

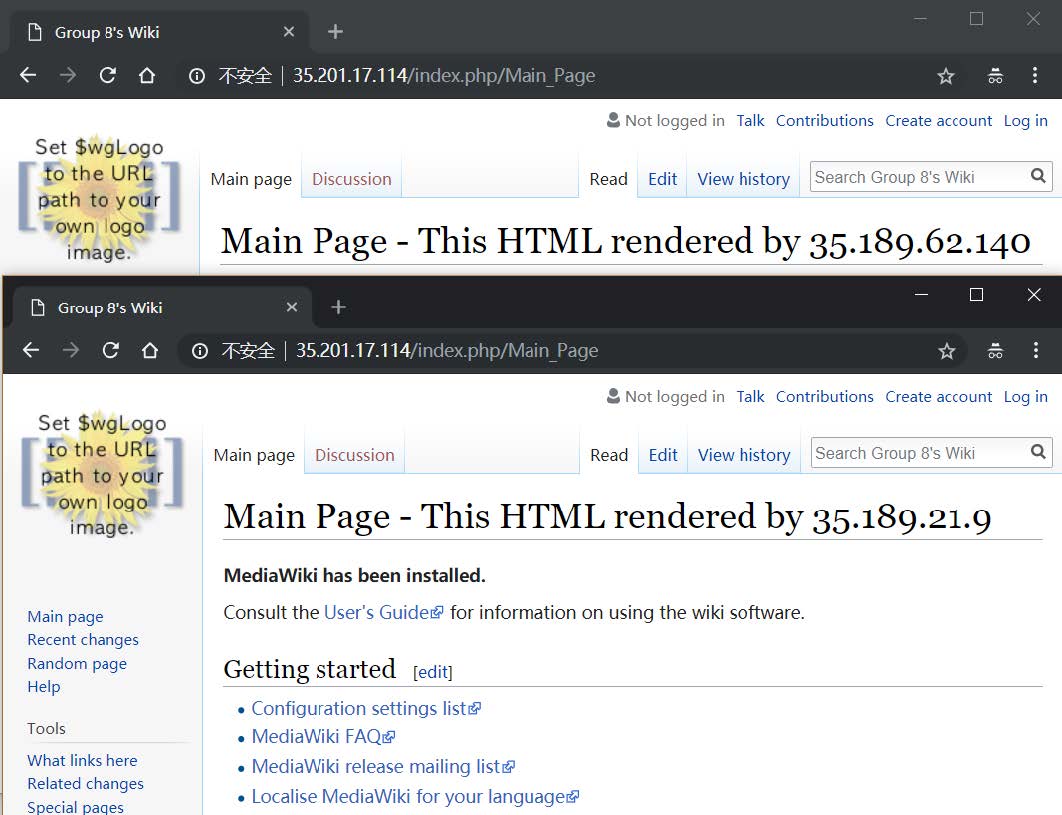
Then, waiting a few minutes, you can click the underline to visit our web application.

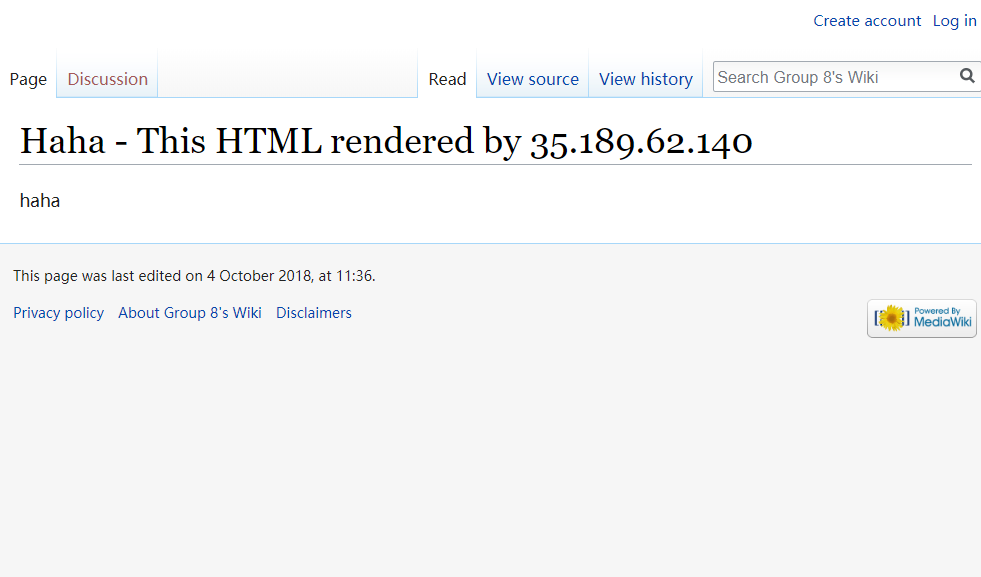
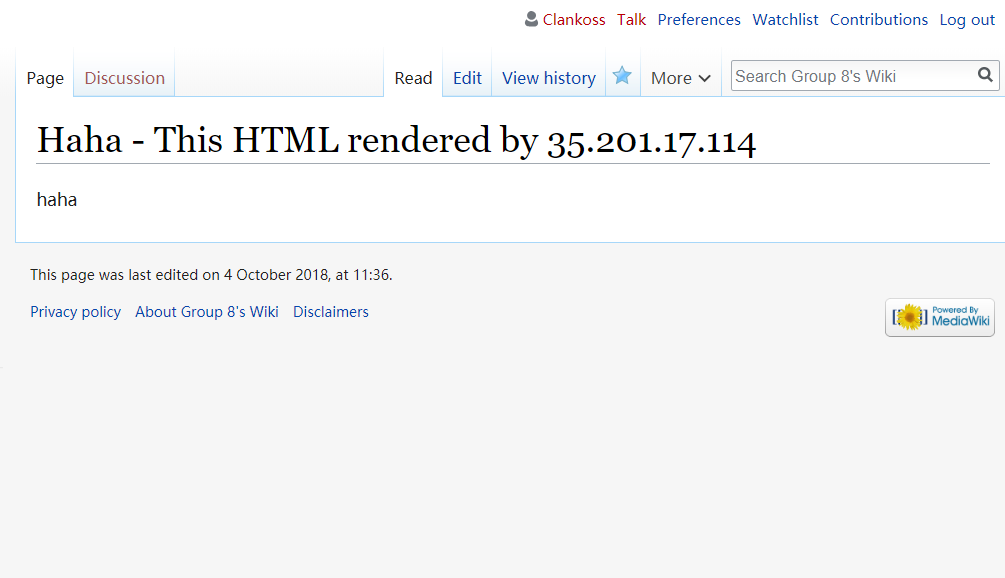


NOTE: The admin user: username: admin password: adminadmin

# Test

Open our web application, if you fresh the main page, you can find that ip addresses are changed, it is the evidence that load balancer is working.



Then if you create a new page, for example called ”haha”, and refresh for several times:

You can see like this, proving that our central database is working.