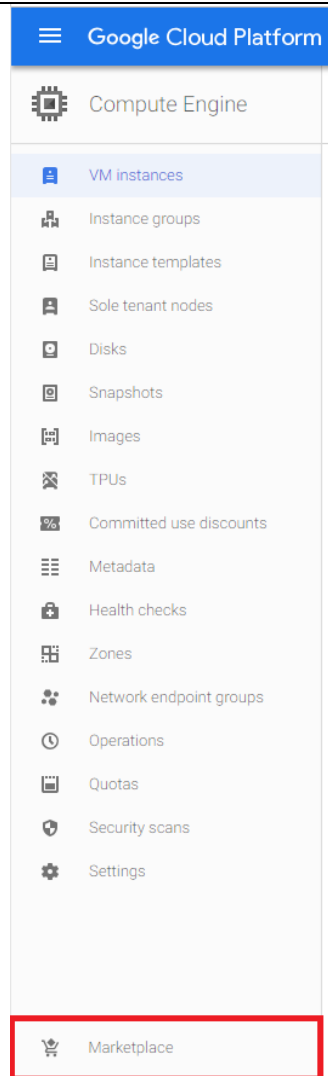


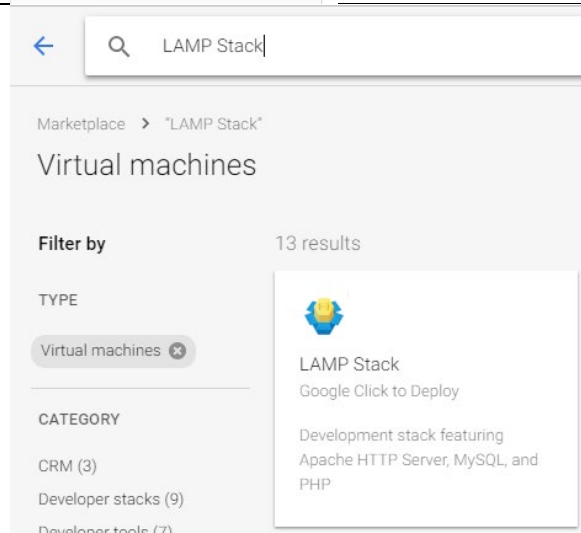
# Google Server Stack Setup

The purpose of this document is to help set up your LAMP stack on your Google Cloud Server. Once you have your credits set up, navigate to <https://console.cloud.google.com>

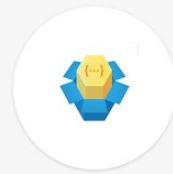
1. From the Google Cloud Platform hamburger menu in the top left, find and select Marketplace



2. Search for LAMP Stack. Click the LAMP Stack result that looks like the following to deploy.



3. Click on LAUNCH ON COMPUTE ENGINE



## LAMP Stack

[LAMP Stack \(Google Click to Deploy\)](#)

Estimated costs: \$24.67/month | 1,000+ recent deployments

Development stack featuring Apache HTTP Server, MySQL, and PHP

[LAUNCH ON COMPUTE ENGINE](#)

4. Provide the following

- Deployment Name – csci441-lamp
- Zone – us-east4-a
- Machine type – click customize – select - 1 vCPU & 1.17 GB memory – this is the cheapest option
- Install phpMyAdmin
- Boot – Standard Persistent Disk
- Boot disk size in GB – 10
- Networking name – default
- Subnetwork name – default
- Firewall – Allow HTTP and HTTPS traffic

5. Click Deploy

### Deployment name

csci441-lamp

### Zone ?

us-east1-b

### Machine type ?

[Basic view](#)

**Cores**

1 vCPU 1 - 96

**Memory**

1.75 GB 1.75 - 6.5

☐ Extend memory ?

[Choosing a machine type](#) ↗

### ☒ Install phpMyAdmin

phpMyAdmin is an open source tool to administer MySQL databases with the use of a web browser.

### Boot Disk

#### Boot disk type ?

Standard Persistent Disk

#### Boot disk size in GB ?

10

### Networking

#### Network name ?

default

#### Subnetwork name ?

default

### Firewall ?

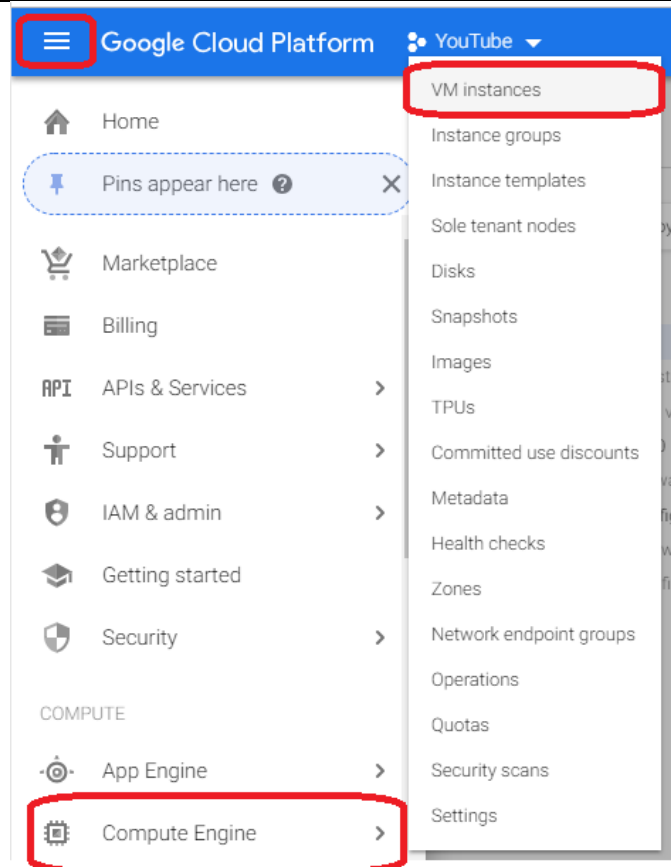
Add tags and firewall rules to allow specific network traffic from the Internet

- ☒ Allow HTTP traffic
- ☒ Allow HTTPS traffic

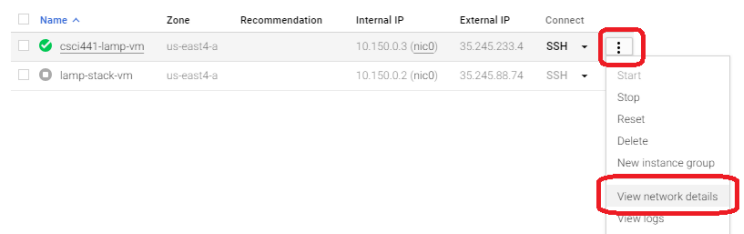
⌵ [More](#)

[Deploy](#)

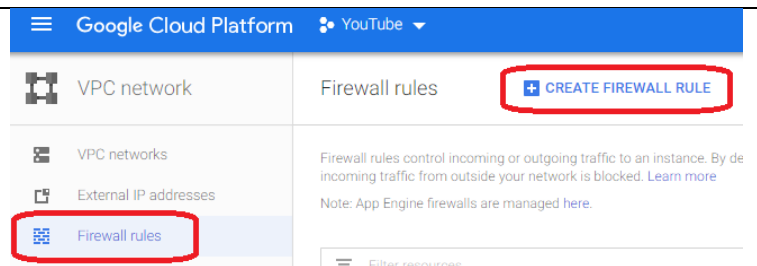
6. From the Google Cloud Platform hamburger menu in the top left, navigate to Compute Engine > VM instances



7. Select the instance you just created (i.e., csci441-lamp) > click the three dotted dropdown > select View network details



8. Select Firewall rules on the left then click CREATE FIREWALL RULE



9. Provide the following

- Name – csci441-tomcat
- Targets – All instances in the network
- Source IP ranges – 0.0.0.0/0
- Protocols and Ports – Specify tcp: 8080 and udp: 8080

10. Once everything matches, click Create

11. Repeat Steps 8-10 with the following changes:

- Name – meteor-3000
- Targets – All instances in the network
- Source IP ranges – 0.0.0.0/0
- Protocols and ports – Specify tcp: 3000 and udp: 3000

12. Once everything is updated/matches, click Create

Name <sup>?</sup>  
csci441-tomcat

Description (Optional)

Logs  
Turning on firewall logs can generate a large number of logs which may impact your Stackdriver. [Learn more](#)  
☐ On  
☒ Off

Network <sup>?</sup>  
default

Priority <sup>?</sup>  
Priority can be 0 - 65535 [Check priority of other firewall rules](#)  
1000

Direction of traffic <sup>?</sup>  
☒ Ingress  
☐ Egress

Action on match <sup>?</sup>  
☒ Allow  
☐ Deny

Targets <sup>?</sup>  
All instances in the network

Source filter <sup>?</sup>  
IP ranges

Source IP ranges <sup>?</sup>  
0.0.0.0/0

Second source filter <sup>?</sup>  
None

Protocols and ports <sup>?</sup>  
☐ Allow all  
☒ Specified protocols and ports  
☒ tcp : 8080  
☒ udp : 8080  
☐ Other protocols  
protocols, comma separated, e.g. ah, sctp

[Disable rule](#)

Create Cancel

13. From the Google Cloud Platform hamburger menu in the top left, navigate to Compute Enging > VM instances

14. Click SSH for your VM instance

<input type="checkbox"/> Name ^	Zone	Recommendation	Internal IP	External IP	Connect
<input type="checkbox"/>  csci441-lamp-vm	us-east4-a		10.150.0.3 (nic0)	35.245.233.4	SSH  

# Time to set up the Innards of your cloud computer

Much of this is a copy and paste in the cmd window you opened in the previous step.

## Set up root password

- `sudo passwd` (don't forget as you will be using it later)

```
witny23@csci441-lamp-vm:/var/www$ sudo passwd
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
```

## Set up Java

```
sudo apt-get update
sudo apt-get install default-jdk
```

## Set up tomcat8

- `sudo apt-get install tomcat8`
- `sudo apt-get install tomcat8-admin`
- `sudo nano /etc/tomcat8/tomcat-users.xml`
- Enter the following between the `<tomcat-users>` tags (change username / pw)  

```
<role rolename="admin-gui"/>
<role rolename="manager-gui"/>
<user username="foo" password="foo" roles="manager-gui,admin-gui"/>
// the above allows you to use a gui for app deployment and monitoring
// replace foo as needed
```
- Ctrl o then press enter to save
- Ctrl x to exit
- `sudo /etc/init.d/tomcat8 restart`
- `ss -tln` check to see if tomcat is up and running on 8080 (:::8080 should be listed)

<input type="checkbox"/> Name ^	Zone	Recommendation	Internal IP	External IP	Connect
<input checked="" type="checkbox"/> csci441-lamp-vm	us-east4-a		10.150.0.3 (nic0)	35.245.233.4	SSH ▾ ⋮

- `http://35.245.233.4:8080`
- `http://35.237.82.165:8080/manager/html`
- Log in with credentials set up earlier

## Deploy a .war file

- Download the `assgn00.war` file from blackboard
- In the Tomcat Web Application Manager that you just logged into find WAR file to deploy > Choose file > navigate to the `assgn00.war` file (or just drag it to the Choose File button) > Click deploy

**WAR file to deploy**

Select WAR file to upload  No file chosen

- In the Applications section you should now see /assgn00 listed as a link. Click the link. You should see the following:

**Glorious Success!!**

Applications
Path
/
/assgn00
/host-manager
/manager

The following are good tools for your apache and tomcat deployment, but you don't need to run them

### Restart

```
sudo service apache2 restart
sudo /etc/init.d/tomcat8 restart
```

### logs

```
sudo su
cd /var/lib/tomcat8/logs
tail -f catalina.out
Ctrl z to stop logs
```

## phpMyAdmin

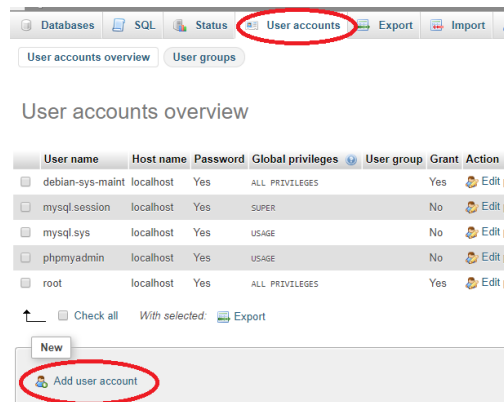
- Navigate to your VM instance (hamburger menu > Compute Engine > VM instances)
- Click on your instance

<input type="checkbox"/>	Name ^	Zone	Recommendation	Internal IP	External IP	Connect
<input checked="" type="checkbox"/>	csci441-lamp-vm	us-east4-a		10.150.0.3 (nic0)	35.245.233.4	SSH ▾ ⋮

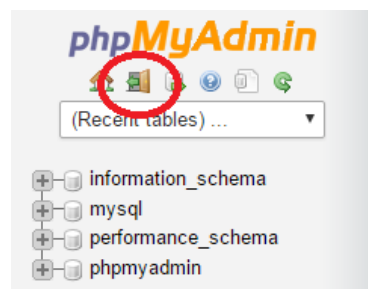
- Scroll down to Custom metadata to find your mysql root password

Custom metadata	
mysql-root-password	MB65VfnHB9T96T
status-config-url	https://runtimeconfig.gooq
status-variable-path	status
status-uptime-deadline	300
installphpmyadmin	True
google-monitoring-enable	0
google-logging-enable	0

- Navigate to IPaddress/**phpmyadmin/**
  - login – root – password found above
  - Click the Users accounts tab then the add user link below the table



- add self as user (e.g., whitneym – newPassword) > Under Global privileges > check All > way down on the bottom right click Go
- Log out the log back in with newly created user



- Go back to the Users tab > click edit privileges for root user > uncheck all global privileges > click Go on the far bottom right.

## Promote ephemeral external IP address to a permanent IP address

- From the hamburger, select VPC network (in NETWORKING section) > Select External IP addresses
- In the **Type** column, change the address type to Static for the IP address you want to promote.

<input type="checkbox"/>	Name	External Address	Region	Type ▾	Version
<input type="checkbox"/>	—	35.245.106.144	us-east4	Ephemeral ▾	IPv4

- Name it csci441 and click RESERVE.
- To release the IP, stop your VM instance, then come back to this page, click the box next to the IP address to release > Click Release IP address (blue button up near top).  
[https://cloud.google.com/compute/docs/ip-addresses/reserve-static-external-ip-address#unassign\\_ip](https://cloud.google.com/compute/docs/ip-addresses/reserve-static-external-ip-address#unassign_ip)