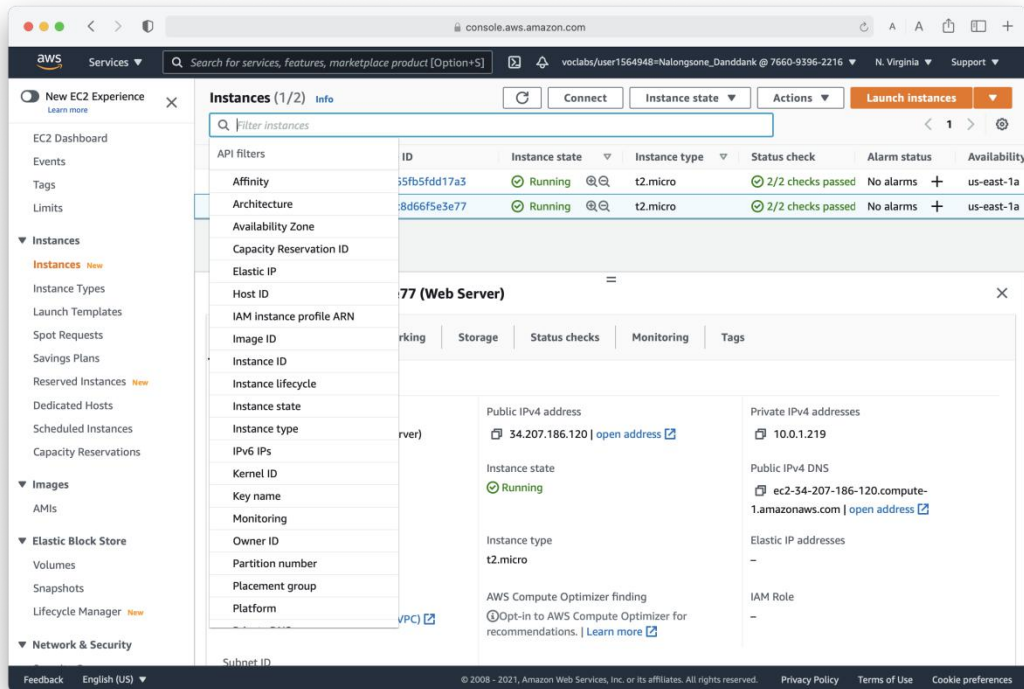


## Lab #2 : Virtual Machines

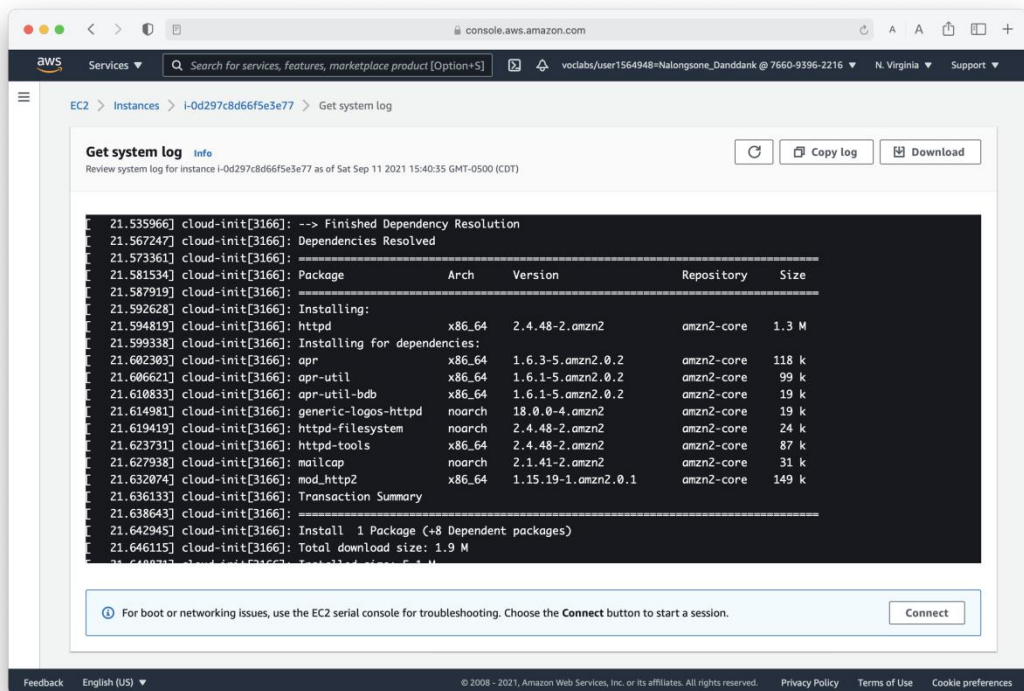
### Part 1: AWS.

#### Exercise 1: Virtual Machines in AWS: EC2.

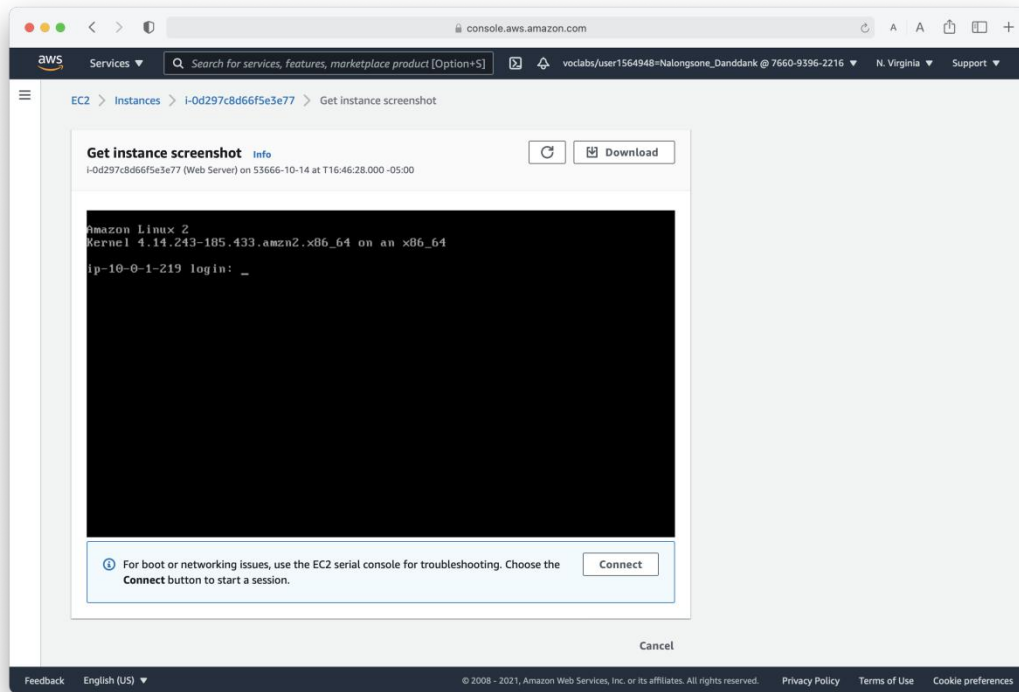
#### Lab report screen-shot #1:



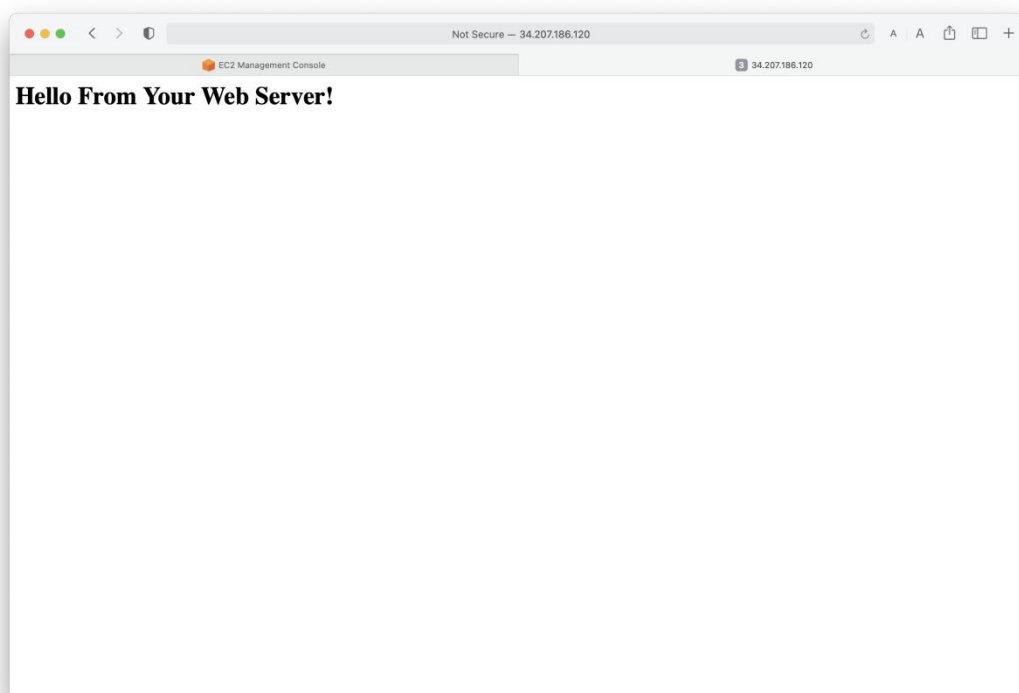
#### Lab report screen-shot #2:



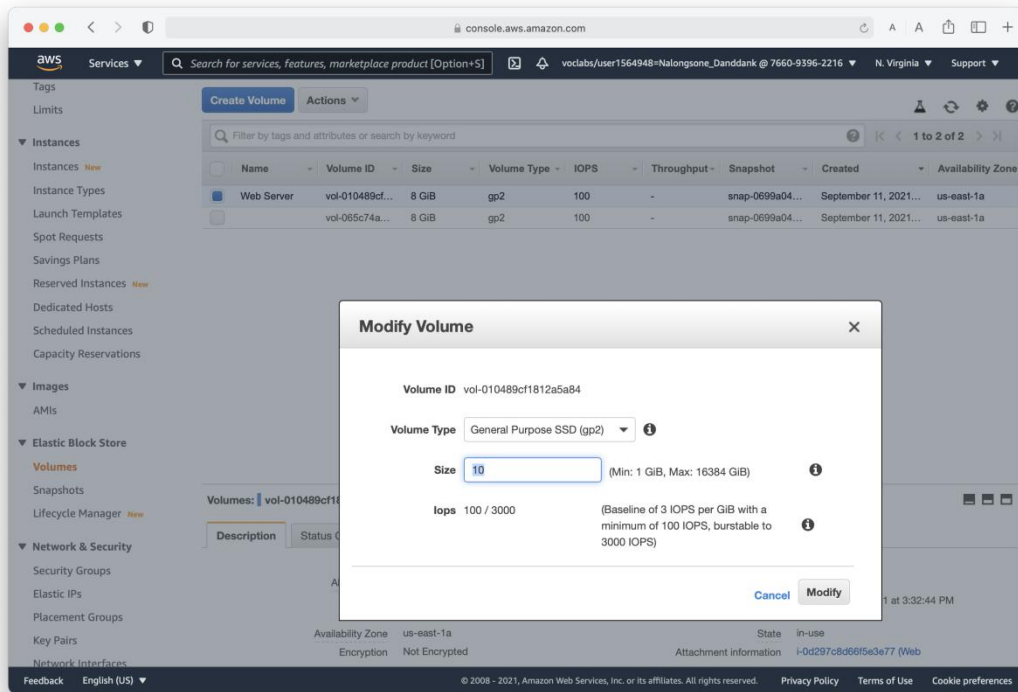
### Lab report screen-shot #3:



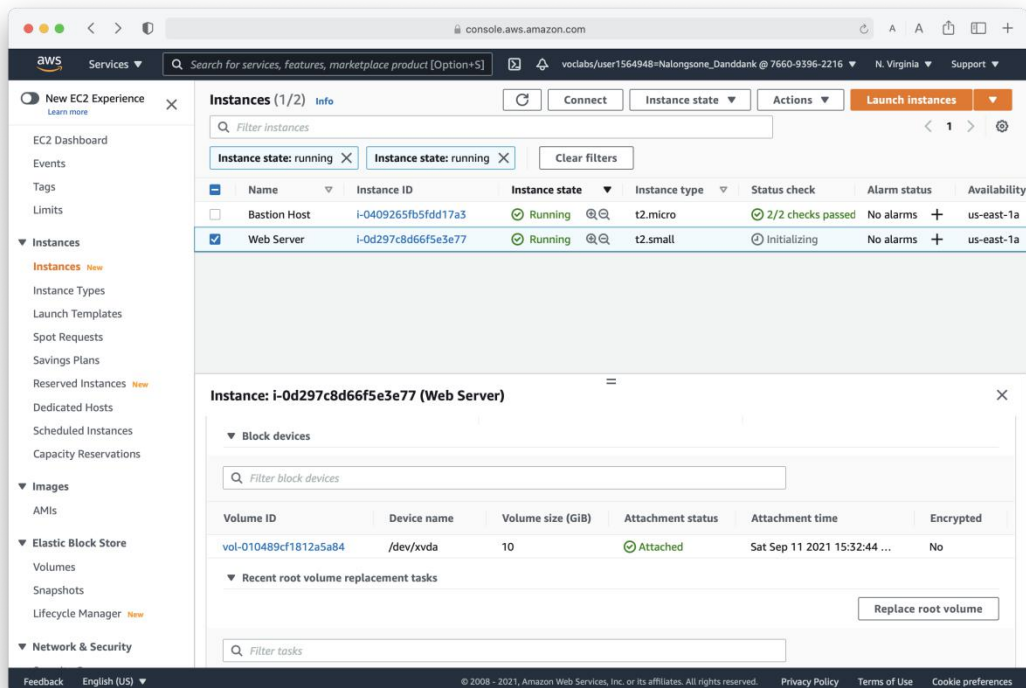
### Lab report screen-shot #4:



## Lab report screen-shot #5:



## Lab report screen-shot #6:



## Lab report screen-shot #7:

The screenshot shows the AWS Management Console interface. The left sidebar contains navigation links for various services. The main content area displays the 'Limits' page. At the top, there are buttons for 'Calculate vCPU limit' and 'Request limit increase'. Below this is a table of limits:

Name	Limit type	Current limit	Description
Security groups per instance	Running instances	8	The number of security groups per instance
Security groups	Running instances	-	The total number of security groups for this Reg...
Reserved Instances	Running instances	20	The total number of instances corresponding to ...
Running On-Demand All ...	Running instances	0 vCPUs	Running On-Demand G instances
Running On-Demand All L...	Running instances	0 vCPUs	Running On-Demand Inf instances
Running On-Demand All ...	Running instances	0 vCPUs	Running On-Demand P instances
Running On-Demand All ...	Running instances	32 vCPUs	Running On-Demand Standard (A, C, D, H, I, M, ...
Running On-Demand All ...	Running instances	0 vCPUs	Running On-Demand High Memory instances
Running On-Demand All ...	Running instances	0 vCPUs	Running On-Demand X instances
Running On-Demand All ...	Running instances	0 vCPUs	Running On-Demand F instances

For more service limits and usage, see [AWS Trusted Advisor](#). To view, manage, and request an increase for your service quotas, see [AWS Service Quotas](#).

## Lab report screen-shot #8:

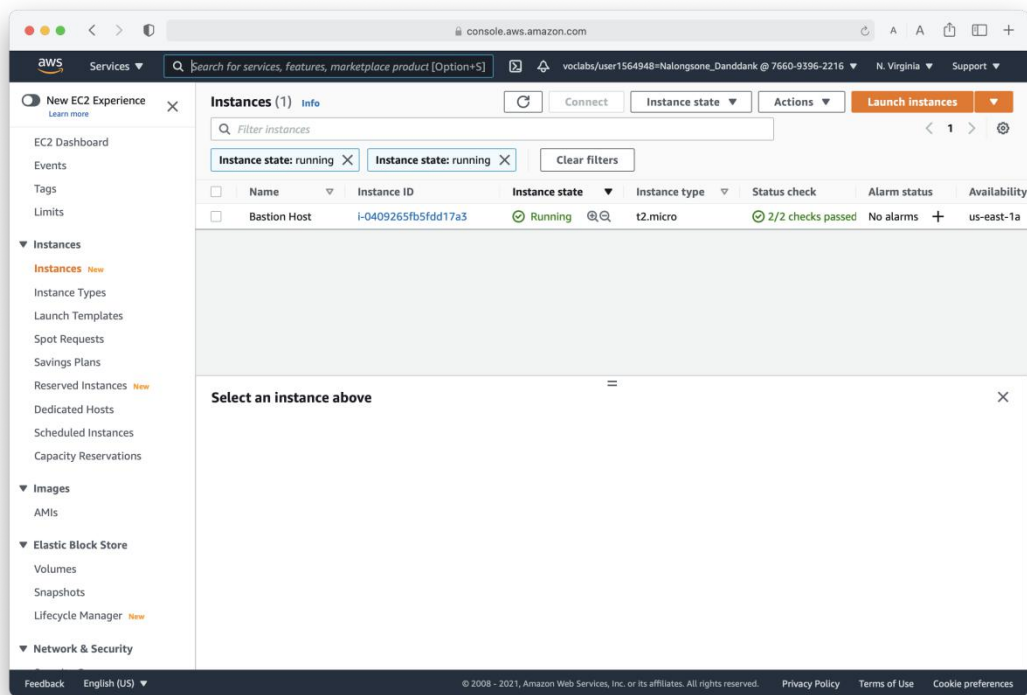
The screenshot shows the AWS Management Console interface. The left sidebar contains navigation links for various services. The main content area displays the 'Instances' page. At the top, there are buttons for 'Connect', 'Instance state', and 'Actions'. Below this is a table of instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
Bastion Host	i-0409265fb5fdd17a3	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a
Web Server	i-0d297c8d66f5e3e77	Running	t2.small	2/2 checks passed	No alarms	us-east-1a

Below the table, there is a section for the selected instance, 'Instance: i-0d297c8d66f5e3e77 (Web Server)'. This section contains details about the instance, including its ID, state, type, and various addresses.

Instance summary		
Instance ID	Public IPv4 address	Private IPv4 addresses
i-0d297c8d66f5e3e77 (Web Server)	18.234.60.120   <a href="#">open address</a>	10.0.1.219
IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-18-234-60-120.compute-1.amazonaws.com   <a href="#">open address</a>
Private IPv4 DNS	Instance type	Elastic IP addresses
in-10-0-1-219.ec2.internal	t2.small	-

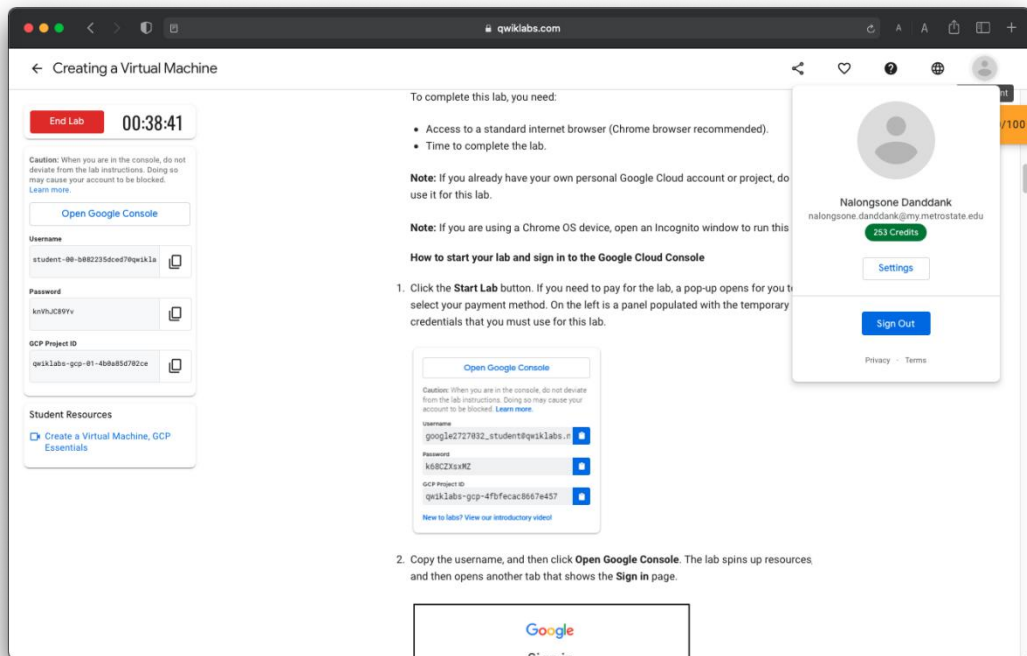
## Lab report screen-shot #9:



## Part 2: GCP.

### Exercise 2: Virtual Machines in GCP: Compute Engine.

## Lab report screen-shot #10:



## Lab report screen-shot #11:

The screenshot shows the Google Cloud Platform console for the project `qwiklabs-gcp-01-4b0a85d702ce`. The top navigation bar includes the Google Cloud Platform logo, the project name, a search bar, and navigation links for DASHBOARD, ACTIVITY, and RECOMMENDATIONS. A banner at the top promotes Google Cloud Next. The main content area is divided into three panels: Project info, API APIS, and Google Cloud Platform status. The Project info panel displays the project name, ID, and number. The API APIS panel shows a graph of requests per second. The Google Cloud Platform status panel indicates that all services are normal. Below these panels is a terminal window titled 'Terminal' for the project. It shows the output of the `gcloud` CLI commands, including `gcloud auth list` and `gcloud config list project`.

**Project info**

- Project name: `qwiklabs-gcp-01-4b0a85d702ce`
- Project ID: `qwiklabs-gcp-01-4b0a85d702ce`
- Project number: `302710526709`

**API APIS**

Requests (requests/sec)

0.007/s

**Google Cloud Platform status**

All services normal

Go to Cloud status dashboard

**Cloud Shell Terminal**

```
Welcome to Cloud Shell! Type "help" to get started.
Your cloud platform project in this session is set to quwiklabs-gcp-01-4b0a85d702ce.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
student_00_b082235dced7@cloudshell:~ (qwiklabs-gcp-01-4b0a85d702ce) $ gcloud auth list
Credentialed Accounts
ACTIVE ACCOUNT
* student-00-b082235dced7@qwiklabs.net
To set the active account, run:
$ gcloud config set account 'ACCOUNT'
student_00_b082235dced7@cloudshell:~ (qwiklabs-gcp-01-4b0a85d702ce) $ gcloud config list project
[core]
project = quwiklabs-gcp-01-4b0a85d702ce
Your active configuration is: [cloudshell-14382]
student_00_b082235dced7@cloudshell:~ (qwiklabs-gcp-01-4b0a85d702ce) $
```

## Lab report screen-shot #12:

The screenshot shows the Google Cloud Platform console for the project `qwiklabs-gcp-01-4b0a85d702ce`, specifically the 'VM instances' page. The left sidebar shows the navigation menu with 'VM instances' selected. The main content area displays a table of VM instances. The table has columns for Status, Name, Zone, Recommendations, In use by, Internal IP, External IP, and Connect. There is one instance listed: `dandanklab` in the `us-central1-f` zone. The right sidebar shows the 'Select an instance' panel with tabs for PERMISSIONS, LABELS, and MONITORING. The PERMISSIONS tab is active, showing a message: 'Please select at least one resource.'

**Compute Engine**

**VM instances**

CREATE INSTANCE IMPORT VM REFRESH START / RESUME STOP OPERATIONS HELP ASSISTANT LEARN HIDE INFO PANEL

Virtual machines

- VM instances
- Instance templates
- Sole-tenant nodes
- Machine images
- TPUs
- Committed use discounts
- Migrate for Compute Engi...

Storage

- Disks
- Snapshots
- Images

Instance groups

- Marketplace
- Release Notes

**INSTANCES** **INSTANCE SCHEDULE**

VM instances are highly configurable virtual machines for running workloads on Google infrastructure. [Learn more](#)

Filter Enter property name or value

Status	Name	Zone	Recommendations	In use by	Internal IP	External IP	Connect
<input type="checkbox"/>	dandanklab	us-central1-f			10.128.0.2 (nic0)	34.133.253.9	SSH

**Select an instance**

PERMISSIONS LABELS MONITORING

Please select at least one resource.

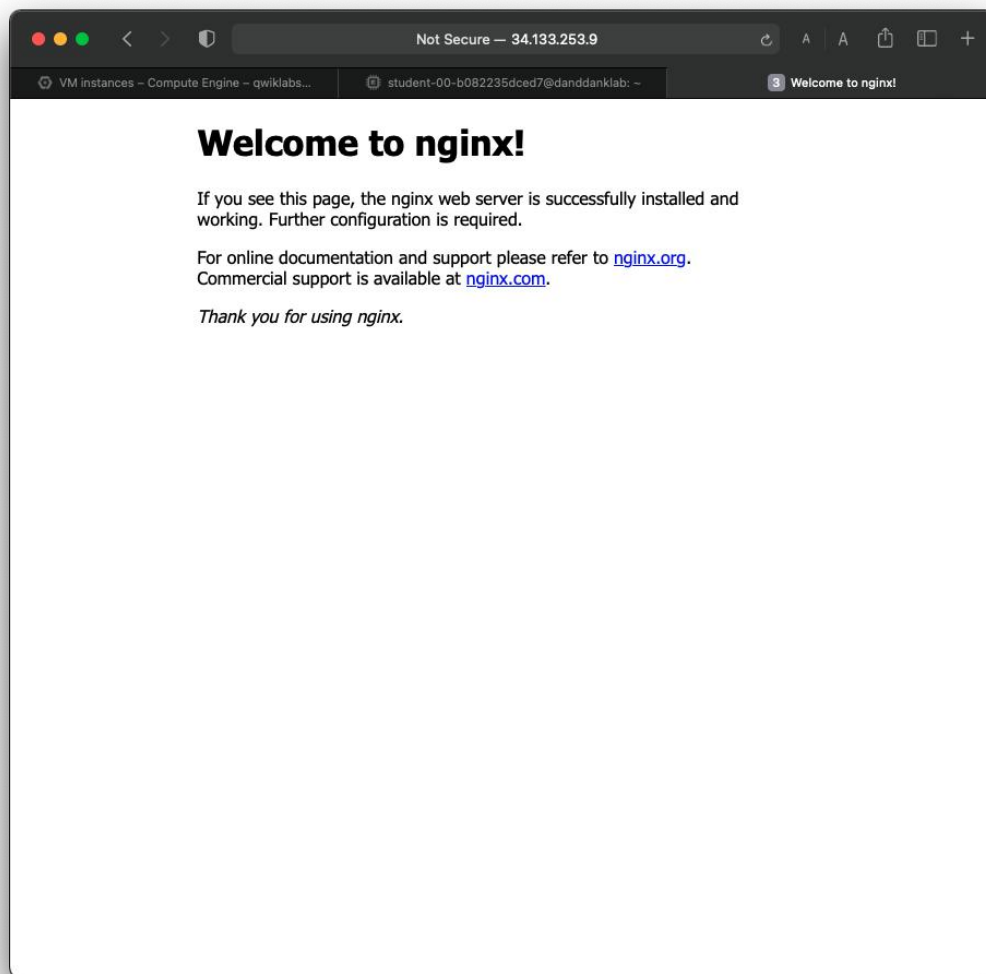


## Lab report screen-shot #13:

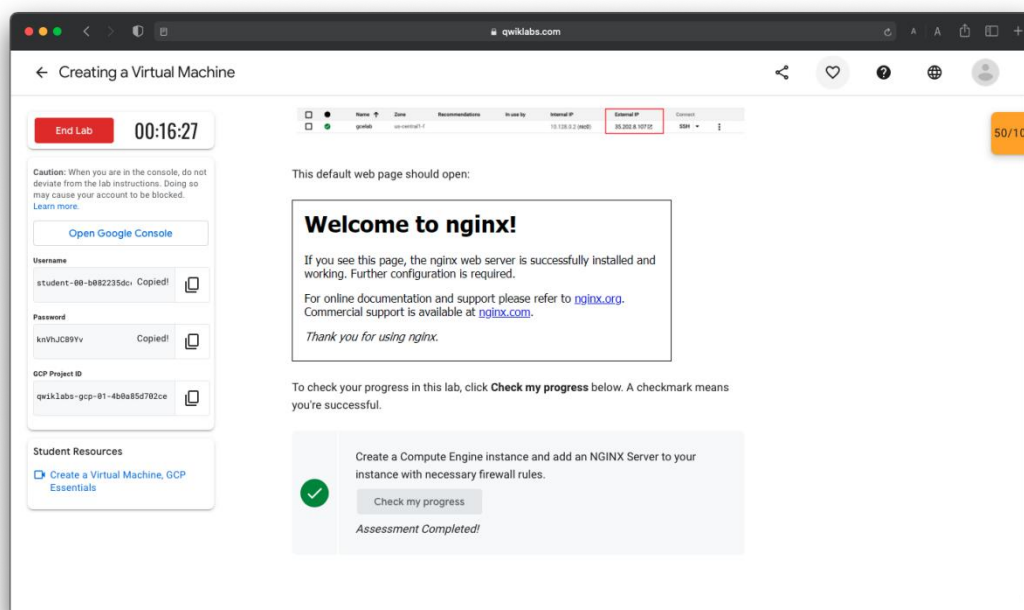
```
ssh.cloud.google.com
VM instances - Compute Engine - qwiklabs-gcp-01-4b0... - Googl...
student-00-b082235dced7@danddanklab: ~

Selecting previously unselected package libnginx-mod-stream.
Preparing to unpack .../29-libnginx-mod-stream_1.14.2-2+deb10u4_amd64.deb ...
Unpacking libnginx-mod-stream (1.14.2-2+deb10u4) ...
Selecting previously unselected package nginx-full.
Preparing to unpack .../30-nginx-full_1.14.2-2+deb10u4_amd64.deb ...
Unpacking nginx-full (1.14.2-2+deb10u4) ...
Selecting previously unselected package nginx.
Preparing to unpack .../31-nginx_1.14.2-2+deb10u4_all.deb ...
Unpacking nginx (1.14.2-2+deb10u4) ...
Setting up libxau6:amd64 (1:1.0.8-1+b2) ...
Setting up libxdmcp6:amd64 (1:1.1.2-3) ...
Setting up libxcb1:amd64 (1.13.1-2) ...
Setting up nginx-common (1.14.2-2+deb10u4) ...
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /lib/systemd/system/nginx.servi
ce.
Setting up libjbig0:amd64 (2.1-3.1+b2) ...
Setting up libicu63:amd64 (63.1-6+deb10u1) ...
Setting up libjpeg62-turbo:amd64 (1:1.5.2-2+deb10u1) ...
Setting up libnginx-mod-http-auth-pam (1.14.2-2+deb10u4) ...
Setting up libx11-data (2:1.6.7-1+deb10u2) ...
Setting up libwebp6:amd64 (0.6.1-2+deb10u1) ...
Setting up fonts-dejavu-core (2.37-1) ...
Setting up libnginx-mod-http-echo (1.14.2-2+deb10u4) ...
Setting up libnginx-mod-http-subfilter (1.14.2-2+deb10u4) ...
Setting up libgeoip1:amd64 (1.6.12-1) ...
Setting up libx11-6:amd64 (2:1.6.7-1+deb10u2) ...
Setting up libtiff5:amd64 (4.1.0+git191117-2~deb10u2) ...
Setting up geoip-database (20181108-1) ...
Setting up libxml2:amd64 (2.9.4+dfsg1-7+deb10u2) ...
Setting up libnginx-mod-mail (1.14.2-2+deb10u4) ...
Setting up libxpm4:amd64 (1:3.5.12-1) ...
Setting up fontconfig-config (2.13.1-2) ...
Setting up libnginx-mod-stream (1.14.2-2+deb10u4) ...
Setting up libnginx-mod-http-upstream-fair (1.14.2-2+deb10u4) ...
Setting up libnginx-mod-http-geoip (1.14.2-2+deb10u4) ...
Setting up libxslt1.1:amd64 (1.1.32-2.2~deb10u1) ...
Setting up libfontconfig1:amd64 (2.13.1-2) ...
Setting up libnginx-mod-http-dav-ext (1.14.2-2+deb10u4) ...
Setting up libnginx-mod-http-xslt-filter (1.14.2-2+deb10u4) ...
Setting up libgd3:amd64 (2.2.5-5.2) ...
Setting up libnginx-mod-http-image-filter (1.14.2-2+deb10u4) ...
Setting up nginx-full (1.14.2-2+deb10u4) ...
Setting up nginx (1.14.2-2+deb10u4) ...
Processing triggers for systemd (241-7~deb10u8) ...
Processing triggers for man-db (2.8.5-2) ...
Processing triggers for libc-bin (2.28-10) ...
root@danddanklab:~# ps aux | grep nginx
root      1940  0.0  0.0  65660  1692 ?        Ss   03:53   0:00 nginx: master process /usr/sbin/nginx -g d
aemon on; master_process on;
www-data  1941  0.0  0.1  80720  11244 ?        S    03:53   0:00 nginx: worker process
www-data  1942  0.0  0.1  80720  11244 ?        S    03:53   0:00 nginx: worker process
root      1980  0.0  0.0   4836   880 pts/0    S+   03:54   0:00 grep nginx
root@danddanklab:~#
```

## Lab report screen-shot #14:



## Lab report screen-shot #15:





## Lab report screen-shot #16:

The screenshot shows the 'Creating a Virtual Machine' lab page on Qwiklabs. On the left, there's a sidebar with an 'End Lab' button, a timer at 00:11:16, a caution note, an 'Open Google Console' button, and fields for Username, Password, and GCP Project ID. The main area displays a 'command line' box with the command: `gcloud compute instances create gcelab02 --machine-type n1-standard-2 --zone us-central1-f`. Below this is an 'Expected output' box showing a table with columns NAME, ZONE, MACHINE\_TYPE, and STATUS, containing the instance gcelab02. Further down, there's a 'Check my progress' button and a green checkmark indicating 'Assessment Completed!'. At the bottom, it lists default values for the new instance: the latest Debian 10 (buster) image and the n1-standard-2 machine type.

## Lab report screen-shot #17:

The screenshot shows the Google Cloud Platform console. The top navigation bar includes the Google Cloud Platform logo, the project ID 'qwiklabs-gcp-01-4b0a85d702ce', and a search bar. The left sidebar shows the 'Compute Engine' section with 'VM instances' selected. The main content area displays a table of VM instances. The table has columns for Status, Name, Zone, Recommendations, In use by, Internal IP, External IP, and Connect. Two instances are listed: 'danddanklab' and 'danddanklab2', both in the 'us-central1-f' zone and running on 'n1-standard-2' machines. The right sidebar shows the 'Select an instance' panel with tabs for PERMISSIONS, LABELS, and MONITORING. The bottom of the screen shows a terminal window with a command prompt and a message indicating the command was killed by a keyboard interrupt.

Status	Name	Zone	Recommendations	In use by	Internal IP	External IP	Connect
✓	danddanklab	us-central1-f			10.128.0.2 (nic0)	34.133.253.9	SSH
✓	danddanklab2	us-central1-f			10.128.0.3 (nic0)	35.188.223.209	SSH

## Lab report screen-shot #18:

← Creating a Virtual Machine

End Lab 00:07:05 100/100

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked. [Learn more.](#)

[Open Google Console](#)

Username  
student-00-b082235dc Copied!

Password  
knVhJC89Yv Copied!

GCP Project ID  
qwiklabs-gcp-01-4b0a85d702ce

Student Resources  
[Create a Virtual Machine, GCP Essentials](#)

### Test your knowledge

Test your knowledge about Google Cloud by taking our quiz. (Please select multiple correct options if necessary.)

Through which of the following ways can you create a VM instance in Compute Engine?

- ✓ The Cloud Console
- ✓ The gcloud command line tool

Submit

### Congratulations!

Compute Engine is the foundation of Google Cloud's infrastructure as a service. You