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CMPSCI 4750
Lab 1

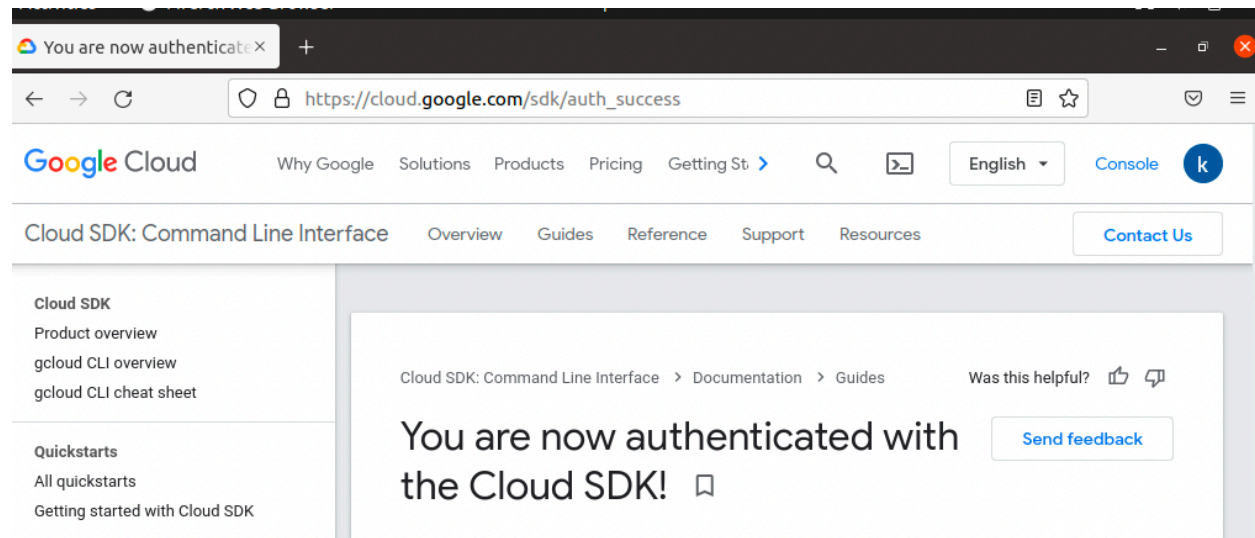
1.5.4

```
getcloud info --can-diagnostics
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$ gcloud auth application-default login
Your browser has been opened to visit:

  https://accounts.google.com/o/oauth2/auth?response_type=code&client_id=764086051850-6qr
  4p6gpi6hn506pt8ejuq83di341hur.apps.googleusercontent.com&redirect_uri=http%3A%2F%2Flocalhos
  t%3A8085%2F&scope=openid+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fuserinfo.email+https%3A%
  2F%2Fwww.googleapis.com%2Fauth%2Fcloud-platform+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fa
  ccounts.reauth&state=aKQjGzlgp5a0bkJukU5l794HTHwV72&access_type=offline&code_challenge=S4r0
  e2cYdRqpn3pAjv0DjjMCsqa_RQ7NBotacfq_TxQ&code_challenge_method=S256

Credentials saved to file: [/home/kishansgooglecloud/.config/gcloud/application_default_cre
dentials.json]

These credentials will be used by any library that requests Application Default Credentials
(ADC).
WARNING:
Cannot find a quota project to add to ADC. You might receive a "quota exceeded" or "API not
enabled" error. Run $ gcloud auth application-default set-quota-project to add a quota pro
ject.
```



1.6.1

VM Instances - Compute Engine

<https://console.cloud.google.com/compute/instances?project=umsl-cs>

Google Cloud Platform

My First Project

Compute Engine

VM instances

Virtual machines

VM instances

Instance templates

Sole-tenant nodes

Machine images

TPUs

Committed use discounts

Migrate for Compute Engine

Storage

Disks

Marketplace

Release Notes

Status

Name

Zone

Recommendations

Connect

VM Instances

Compute Engine lets you use virtual machines that run on Google's infrastructure. Create micro-VMs or larger instances running Debian, Windows, or other standard images. Create your first VM instance, import it using a migration service, or try the quickstart to build a sample app.

[CREATE INSTANCE](#) [TAKE THE QUICKSTART](#)

←

→

↺

🏠

🔒

https://console.cloud.google.com/compute/instances?project=umsl-cs

Fall 2021

UMSL CS

Google Cloud Platform

My First Project

Search products and resources

←

Create an instance

To create a VM instance, select one of the options:

- [New VM instance](#)
Create a single VM instance from scratch
- [New VM instance from template](#)
Create a single VM instance from an existing template
- [New VM instance from machine image](#)
Create a single VM instance from an existing machine image
- [Marketplace](#)
Deploy a ready-to-go solution onto a VM instance

Name

Name is permanent

learning-cloud-demo

Labels

(Optional)

+ Add label

Region

Region is permanent

us-central1 (Iowa)

Zone

Zone is permanent

us-central1-b

Machine configuration

Machine family

General-purpose

Compute-optimized

Memory-optimized

GPU

Machine types for common workloads, optimized for cost and flexibility

Series

N1

Powered by Intel Skylake CPU platform or one of its predecessors

Machine type

n1-standard-1 (1 vCPU, 3.75 GB memory)

vCPU

Memory

GPUs

1

3.75 GB

-

CPU platform and GPU

Confidential VM service

Enable the Confidential Computing service on this VM instance.

Container

Deploy a container image to this VM instance. [Learn more](#)

Boot disk

New 10 GB balanced persistent disk

Image

Debian GNU/Linux 10 (buster)

Change

Identity and API access

Service account

Compute Engine default service account

Access scopes

Allow default access

Allow full access to all Cloud APIs

Set access for each API

Firewall

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

Allow HTTP traffic

Allow HTTPS traffic

Management, security, disks, networking, sole tenancy

You have \$300.00 in free credit

\$25.27 monthly estimate

That's about \$0.035 per hour

Pay for what you use: \$0.035 per hour

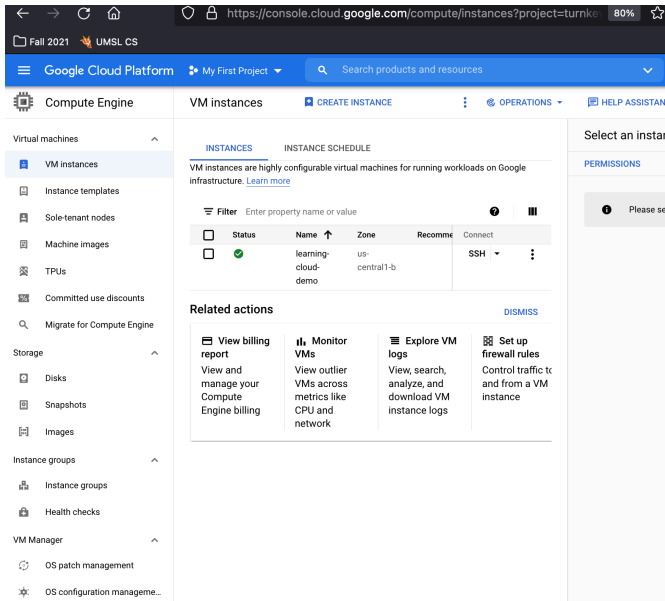
Details

Your free trial credit will be used for this VM instance. [GCP Free Tier](#)

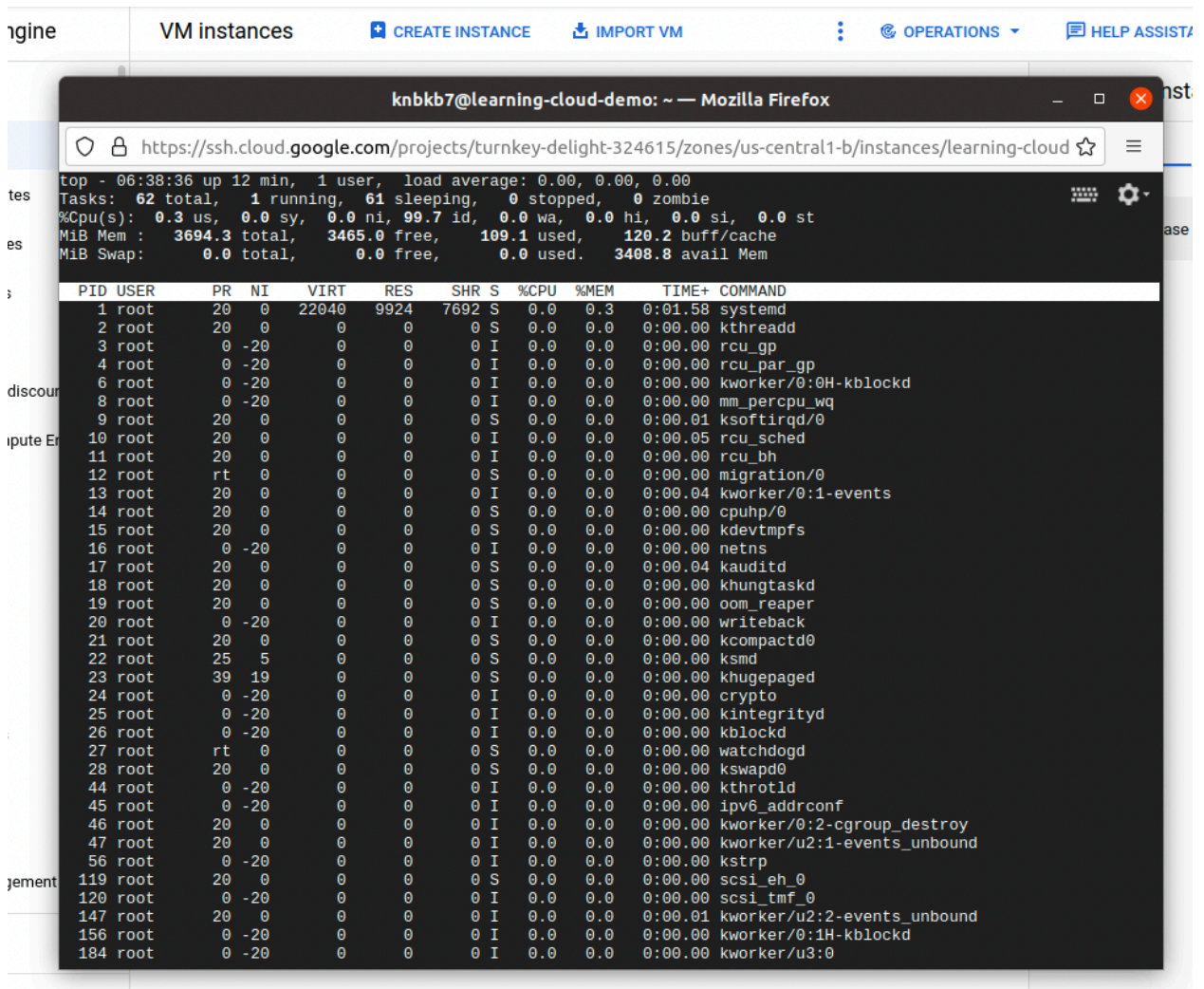
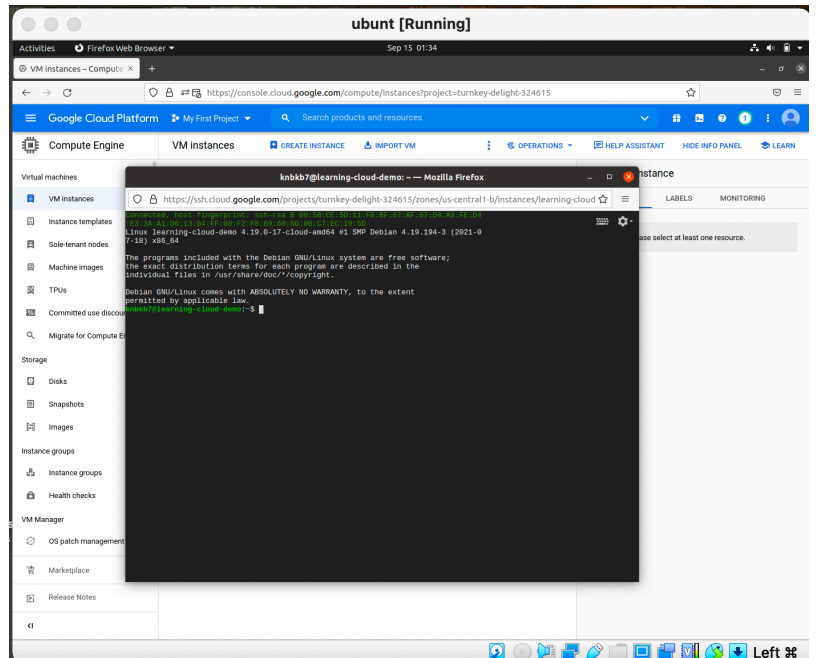
Create

Cancel

Equivalent REST or command line



SSH



1.6.2

```
* Run `gcloud topic --help` to learn about advanced features of the SDK like arg files and output fo
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$ gcloud compute instances list
NAME                                ZONE          MACHINE_TYPE  PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP  STATUS
learning-cloud-demo                us-central1-b  n1-standard-1                10.128.0.2   35.194.27.66  RUNNING
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$

learning-cloud-demo                us-central1-b  n1-standard-1                10.128.0.2   35.194.27.66  RUNNING
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$ gcloud compute ssh learning-cloud-demo
WARNING: The private SSH key file for gcloud does not exist.
WARNING: The public SSH key file for gcloud does not exist.
WARNING: You do not have an SSH key for gcloud.
WARNING: SSH keygen will be executed to generate a key.
Generating public/private rsa key pair.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/kishansgooglecloud/.ssh/google_compute_engine
Your public key has been saved in /home/kishansgooglecloud/.ssh/google_compute_engine.pub
The key fingerprint is:
SHA256:KVeI04HRCPSYzn/8pj/9RT7BI6tNsrYeJd7TT9p0IM4 kishansgooglecloud@kishansgooglecloud-VirtualBox
The key's randomart image is:
+---[RSA 3072]-----+
|      . . . . .      |
|      . . . . .      |
|     o . o . .       |
|    o + o = .        |
|    + = S   . . o . + |
|    . = . o + . + + o |
|    . o  =E= o =     |
|    . . o . * o      |
|    . + = * . o o . + |
+---[SHA256]-----+
No zone specified. Using zone [us-central1-b] for instance: [learning-cloud-demo].
Updating project ssh metadata...Updated [https://www.googleapis.com/compute/v1/projects/turnkey-delight-324615].
Updating project ssh metadata...done.
Waiting for SSH key to propagate.
Warning: Permanently added 'compute.8758044734786383677' (ECDSA) to the list of known hosts.
Linux learning-cloud-demo 4.19.0-17-cloud-amd64 #1 SMP Debian 4.19.194-3 (2021-07-18) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
kishansgooglecloud@learning-cloud-demo:~$
```

1.6.3

```
kishansgooglecloud@learning-cloud-demo: ~
kishansgooglecloud@learning-cloud-demo:~$ sudo apt-get install nodejs
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libatomic1 libbrotli1 libcurl4 libicu63 libnode64 libuv1 nodejs-doc
Suggested packages:
  npm
The following NEW packages will be installed:
  libatomic1 libbrotli1 libcurl4 libicu63 libnode64 libuv1 nodejs nodejs-doc
0 upgraded, 8 newly installed, 0 to remove and 0 not upgraded.
Need to get 15.5 MB of archives.
After this operation, 64.3 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://security.debian.org/debian-security buster/updates/main amd64 libcurl4 amd64 7.64.0-1+deb10u1 [86.1 kB]
Get:2 http://deb.debian.org/debian buster/main amd64 libatomic1 amd64 8.3.0-6 [9032 B]
Get:3 http://deb.debian.org/debian buster/main amd64 libbrotli1 amd64 1.0.7-2+deb10u1 [269 kB]
Get:4 http://security.debian.org/debian-security buster/updates/main amd64 libuv1 amd64 1.24.1-1+deb10u1 [110 kB]
```


1.6.3 continued

```
0 upgraded, 0 newly installed, 0 to remove and 52 not upgraded.  
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$ nodejs -v  
v10.19.0  
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$ npm -v  
6.14.4  
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$
```

```
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$ cat script.js  
const gce = require('@google-cloud/compute') ({  
  projectId: 'learning-clou-demo'  
});  
const zone = gce.zone('us-central1-b');  
  
console.log('Getting yur VMs...');  
  
zone.getVMs().then((data) => {  
  data[0].forEach((vm) => {  
    console.log('Found a VM called', vm.name);  
  });  
  console.log('Done.');
```

```
});  
npm WARN kishansgooglecloud@1.0.0 No repository field.  
  
+ @google-cloud/compute@0.7.2  
updated 1 package and audited 116 packages in 3.344s  
found 2 high severity vulnerabilities  
run `npm audit fix` to fix them, or `npm audit` for details  
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$ node script.js  
Getting your VMs...  
Found a VM called learning-cloud-demo  
Done.  
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$
```

```
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$ cat script.js
const Compute = require('@google-cloud/compute');
const compute = new Compute();
const zone = compute.zone('us-central1-b');

console.log('Getting your VMs...');

zone.getVMs().then((data) => {
  data[0].forEach((vm) => {
    console.log('Found a VM called', vm.name);
    console.log('Stopping', vm.name, '...');
    vm.stop((err, operation) => {
      operation.on('complete', (err) => {
        console.log('Stopped', vm.name);
      });
    });
  });
});

kishansgooglecloud@kishansgooglecloud-VirtualBox:~$ node script.js
Getting your VMs...
Found a VM called learning-cloud-demo
Stopping learning-cloud-demo ...
Stopped learning-cloud-demo
kishansgooglecloud@kishansgooglecloud-VirtualBox:~$
```