

CDS DS 561 – Cloud Computing Assignment- 1

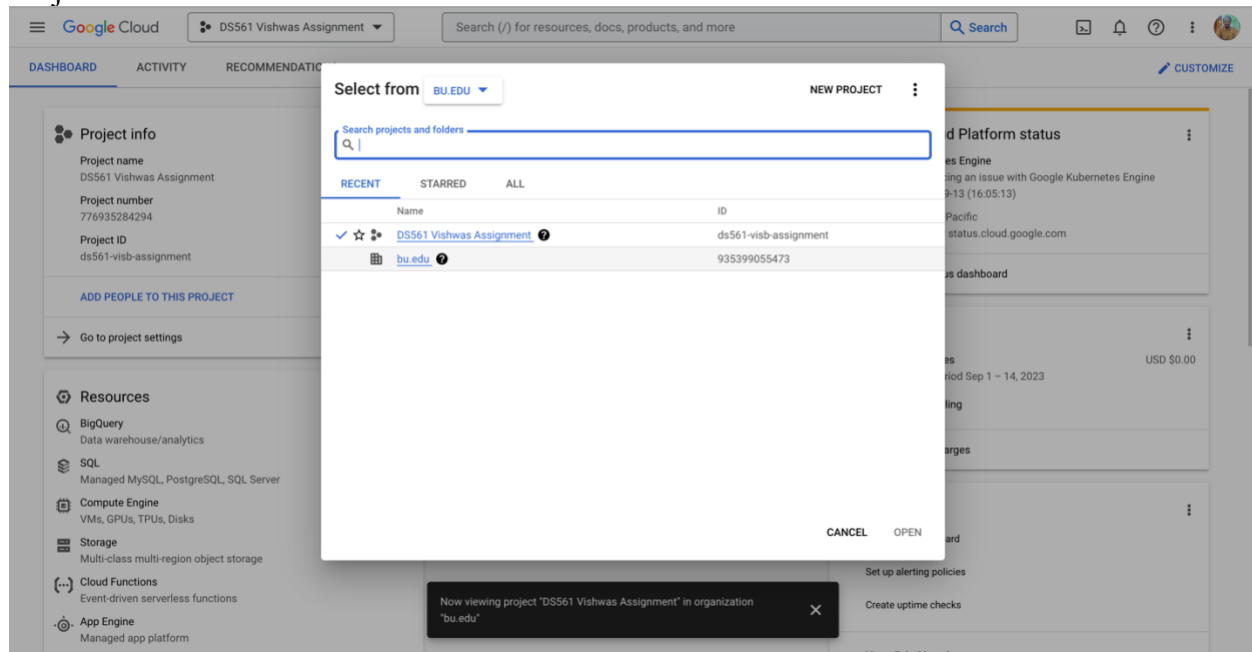
Vishwas Bhaktavatsala

vishwasb@bu.edu




U74206902

Cloud Console

Project Creation



Step 1: Creating a Basic Storage Bucket

Buckets CREATE REFRESH LEARN							
 Filter	Filter buckets ? 						
<input type="checkbox"/>	Name 	Created	Location type	Location	Default storage class ?	Last modified	Public access ?
<input type="checkbox"/>	assignment_1_could_console	Sep 15, 2023, 10:45:06 PM	Multi-region	us	Standard	Sep 15, 2023, 10:45:06 PM	Not public

Google Cloud

DS561 Vishwas Assignment

Storage Bucket

Cloud Storage

Buckets

Monitoring

Settings

Bucket details

assignment_1_could_console

Location

us (multiple regions in United States)

Storage class

Standard

Public access

Not public

Protection

Object versioning

OBJECTS

CONFIGURATION

PERMISSIONS

PROTECTION

LIFECYCLE

OBSERVABILITY

INVENTORY REPORTS

Overview

Created

September 15, 2023 at 10:45:06 PM GMT+5

Updated

September 15, 2023 at 10:45:06 PM GMT+5

Location type

Multi-region

Location

us (multiple regions in United States)

Replication

Default

Default storage class

Standard

Requester Pays

OFF

Tags

None

Labels

None

Cloud Console URL

https://console.cloud.google.com/storage/browser/assignment_1_could_console

gsutil URI

gs://assignment_1_could_console

Permissions

Access control

Uniform

Public access prevention

Enabled via bucket setting

Public access status

Not public

Protection

Object versioning

On

Bucket retention policy

None

Encryption type

Google-managed

Object lifecycle

Task 2: Creating a directory in the bucket

assignment_1_could_console

Location

Storage class

Public access

Protection

us (multiple regions in United States)

Standard

Not public

Object versioning

OBJECTS

CONFIGURATION

PERMISSIONS

PROTECTION

LIFECYCLE

OBSERVABILITY

INVENTORY REPORTS

Buckets > assignment_1_could_console

UPLOAD FILES

UPLOAD FOLDER

CREATE FOLDER

TRANSFER DATA

MANAGE HOLDS

DOWNLOAD

DELETE

Filter by name prefix only

Filter

Filter objects and folders

Show deleted data

<input type="checkbox"/>	Name	Size	Type	Created	Storage class	Last modified	Public access	Version history	Encryption	Retention expiration
<input type="checkbox"/>	CloudConsoleDirectory/	—	Folder	—	—	—	—	—	—	—

Task 3: Copy a file into the created directory

Object details

LEARN

Buckets > assignment_1_could_console > CloudConsoleDirectory > Screenshot 2023-09-14 at 17.27.00.png

LIVE OBJECT

VERSION HISTORY

DOWNLOAD

EDIT METADATA

EDIT ACCESS

DELETE

Overview

Permissions

Protection

Type

Size

Created

Last modified

Storage class

Custom time

Public URL

Authenticated URL

gsutil URI

Public access

Version history

Retention policy

Hold status

Encryption type

image/png

77.6 KB

Sep 15, 2023, 10:51:01 PM

Sep 15, 2023, 10:51:01 PM

Standard

—

Not applicable

https://storage.cloud.google.com/assignment_1_could_console/CloudConsoleDirectory/Screenshot%202023-09-14%20at%2017.27.00.png?authuser=2

gs://assignment_1_could_console/CloudConsoleDirectory/Screenshot 2023-09-14 at 17.27.00.png

Not public

—

None

None

Google-managed

1 file successfully uploaded

Uploads and DS561 Vishwas Assignm... operations

Screenshot 2023-09-14 at 17.27.00.png

Complete

Task 4: Delete directory and the folder inside it in one operation

assignment_1_could_console

Location

Storage class

Public access

Protection

us (multiple regions in United States)

Standard

Not public

Object versioning

OBJECTS

CONFIGURATION

PERMISSIONS

PROTECTION

LIFECYCLE

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INVENTORY REPORTS

Buckets > assignment_1_could_console

UPLOAD FILES

UPLOAD FOLDER

CREATE FOLDER

TRANSFER DATA

MANAGE HOLDS

DOWNLOAD

DELETE

Filter by name prefix only

Filter

Filter objects and folders

Show deleted data

<input checked="" type="checkbox"/>	Name	Size	Type	Created	Storage class	Last modified	Public access	Version history	Encryption	Retention expir
<input checked="" type="checkbox"/>	CloudConsoleDirectory/	—	Folder	—	—	—	—	—	—	—

assignment_1_could_console/CloudConsoleDirectory/ deleted

X

Task 5: Make a VM (Compute Engine)

instance-1

EDIT

RESET

CREATE MACHINE IMAGE

CREATE SIMILAR

START / RESUME

OPERATIONS

LEARN

DETAILS

OBSERVABILITY

OS INFO

SCREENSHOT

SSH

CONNECT TO SERIAL CONSOLE

Connecting to serial ports is disabled

Logs

Logging

Serial port 1 (console)

SHOW MORE

Basic information

Name	instance-1
Instance Id	107905855255030465
Description	None
Type	Instance
Status	Running
Creation time	Sep 15, 2023, 10:58:15 PM UTC+05:30
Zone	us-central1-a
Instance template	None
In use by	None
Reservations	Automatically choose
Labels	None
Tags	—
Deletion protection	Disabled
Confidential VM service	Disabled
Preserved state size	0 GB

Task 6: Pause the VM

[←](#) instance-1 [EDIT](#) [RESET](#) [+ CREATE MACHINE IMAGE](#) [CREATE SIMILAR](#) [▶ START / RESUME](#) [⋮](#) [OPERATIONS](#) [LEARN](#)

[DETAILS](#) [OBSERVABILITY](#) [OS INFO](#) [SCREENSHOT](#)

SSH

CONNECT TO SERIAL CONSOLE

Connecting to serial ports is disabled ⓘ

Logs

[Logging](#)
[Serial port 1 \(console\)](#)
[✓ SHOW MORE](#)

Basic information

Name	instance-1
Instance Id	107905855255030465
Description	None
Type	Instance
Status	ⓘ Suspended
Creation time	Sep 15, 2023, 10:58:15 PM UTC+05:30
Zone	us-central1-a
Instance template	None
In use by	None
Reservations	Automatically choose
Labels	None
Tags ⓘ	—
Deletion protection	Disabled
Confidential VM service ⓘ	Disabled
Preserved state size	0 GB

Instance suspended

Task 7: Delete the VM

Delete VM instance "instance-1"

DS561 Vishwas Assignment

Just now

Task 8: Create a Service Account and provide permissions for the storage bucket.

[←](#) Assignemnt1 Cloud Console SA Storage Bucket

DETAILS

PERMISSIONS

KEYS

METRICS

LOGS

Service account details

Name

Assignemnt1 Cloud Console SA Storage Bucket

SAVE

Description

Task 8 - Making a Service Account which has access to the Storage Bucket

SAVE

Email

assignemnt1-cloud-console-sa-s@ds561-visb-assignment.iam.gserviceaccount.com

Unique ID

106523738397258723251

Service account status

Disabling your account allows you to preserve your policies without having to delete it.

✔ Enabled

DISABLE SERVICE ACCOUNT

Advanced settings

▼

←

Bucket details

REFRESH

LEARN

assignment_1_could_console

Location

Storage class

Public access

Protection

us (multiple regions in United States)

Standard

Not public

Object versioning

OBJECTS

CONFIGURATION

PERMISSIONS

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INVENTORY REPORTS

Public access

Not public

This bucket is not publicly accessible since public access is being prevented. Because of this restriction, objects cannot be publicly shared over the internet. [Learn more](#)

Principals restricted from bucket access:
allUsers, allAuthenticatedUsers

REMOVE PUBLIC ACCESS PREVENTION

Access control

Uniform: No object-level ACLs enabled

90 days left to change this setting

All object access is controlled by bucket permissions and objects cannot have their own access control lists (ACLs). To allow per-object access, you can switch to fine-grained access within 90 days. [Learn more](#)

SWITCH TO FINE-GRAINED

Permissions

VIEW BY PRINCIPALS

VIEW BY ROLES

GRANT ACCESS

REMOVE ACCESS

Filter

Enter property name or value

?

|||

Type	Principal ↑	Name	Role	Inheritance
<input type="checkbox"/>	assignment1-cloud-console-sa-s@ds561-visb-assignment.iam.gserviceaccount.com	Assignment1 Cloud Console SA Storage Bucket	Storage Admin	

Task 9: Delete Service Account

Account Assignemnt1 Cloud Console SA Storage Bucket has been deleted.

X

Task 10: Delete the Storage Bucket

Deletion details

Started: September 15, 2023 at 11:24:55 PM GMT+5


Ended: September 15, 2023 at 11:25:00 PM GMT+5

Deletion progress

1 of 1 buckets

Failures

0 buckets

 Filter Filter errors

Buckets	Status	Objects deleted	Sample error message
assignment_1_could_console	Success	2	

Deleted 1 bucket

Gcloud:

Installation and Initialization of gcloud on Mac

```
[~] ~$ gcloud init
Welcome! This command will take you through the configuration of gcloud.

Settings from your current configuration [default] are:
compute:
  region: us-central1
  zone: us-central1-a
core:
  account: vishwasb@bu.edu
  disable_usage_reporting: 'True'
  project: ds561-visb-assignment

Pick configuration to use:
[1] Re-initialize this configuration [default] with new settings
[2] Create a new configuration
Please enter your numeric choice: 1

Your current configuration has been set to: [default]

You can skip diagnostics next time by using the following flag:
gcloud init --skip-diagnostics

Network diagnostic detects and fixes local network connection issues.
Checking network connection...done.
Reachability Check passed.
Network diagnostic passed (1/1 checks passed).

Choose the account you would like to use to perform operations for this
configuration:
[1] vishwasb@bu.edu
[2] Log in with a new account
Please enter your numeric choice: 1

You are logged in as: [vishwasb@bu.edu].

This account has a lot of projects! Listing them all can take a while.
[1] Enter a project ID
[2] Create a new project
[3] List projects
Please enter your numeric choice: 1

Enter project ID you would like to use: ds561-visb-assignment
Your current project has been set to: [ds561-visb-assignment].

Do you want to configure a default Compute Region and Zone? (Y/n)? n

Your Google Cloud SDK is configured and ready to use!

* Commands that require authentication will use vishwasb@bu.edu by default
* Commands will reference project 'ds561-visb-assignment' by default
Run 'gcloud help config' to learn how to change individual settings

This gcloud configuration is called [default]. You can create additional configurations if you work with multiple accounts and/or projects.
Run 'gcloud topic configurations' to learn more.

Some things to try next:

* Run 'gcloud --help' to see the Cloud Platform services you can interact with. And run 'gcloud help COMMAND' to get help on any gcloud command.
* Run 'gcloud topic --help' to learn about advanced features of the SDK like arg files and output formatting
* Run 'gcloud cheat-sheet' to see a roster of go-to 'gcloud' commands.
[~] ~$
```

Commands Used:

```
./google-cloud-sdk/install.sh
gcloud init
```

Task 1: Create a Storage Bucket

Command:

```
gcloud storage buckets create gs://assignment1-bucket-gcloud --project=ds561-visb-assignment --default-storage-class=NEARLINE --location=US-EAST1 --uniform-bucket-level-access
```

```
➜ gcloud storage buckets create gs://assignment1-bucket-gcloud --project=ds561-visb-assignment --default-storage-class=NEARLINE --location=US-EAST1 --uniform-bucket-level-access
Creating gs://assignment1-bucket-gcloud/...
```

[←](#) Bucket details [REFRESH](#) [LEARN](#)

assignment1-bucket-gcloud

Location	Storage class	Public access	Protection
us-east1 (South Carolina)	Nearline	Not public	None

[OBJECTS](#) [CONFIGURATION](#) [PERMISSIONS](#) [PROTECTION](#) [LIFECYCLE](#) [OBSERVABILITY](#) [INVENTORY REPORTS](#)

Buckets > assignment1-bucket-gcloud

[UPLOAD FILES](#) [UPLOAD FOLDER](#) [CREATE FOLDER](#) [TRANSFER DATA](#) [MANAGE HOLDS](#) [DOWNLOAD](#) [DELETE](#)

[Filter by name prefix only](#) [Filter](#) Filter objects and folders [Show deleted data](#)

<input type="checkbox"/>	Name	Size	Type	Created	Storage class	Last modified	Public access	Version history	Encryption	Retention expiration date	Holds
No rows to display											

Task 2 & 3: Create a Directory under the bucket and copying a file into the folder

Command:

```
gcloud storage cp ./schedule.png gs://assignment1-bucket-gcloud/FolderCreatedByGCloud/
```

```
→ ~ cd Desktop
→ Desktop ls
Screenshot 2023-05-12 at 23.36.26.png Screenshot 2023-05-12 at 23.36.45.png Screenshot 2023-08-08 at 16.31.12.png schedule.png
→ Desktop gcloud storage cp ./schedule.png gs://assignment1-bucket-gcloud/FolderCreatedByGCloud/
Copying file:///./schedule.png to gs://assignment1-bucket-gcloud/FolderCreatedByGCloud/schedule.png
Completed files 1/1 | 77.6kiB/77.6kiB
→ Desktop █
```

assignment1-bucket-gcloud

Location

Storage class

Public access

Protection

us-east1 (South Carolina)

Nearline

Not public

None

OBJECTS

CONFIGURATION

PERMISSIONS

PROTECTION

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Buckets

>

assignment1-bucket-gcloud

UPLOAD FILES

UPLOAD FOLDER

CREATE FOLDER

TRANSFER DATA

MANAGE HOLDS

DOWNLOAD

DELETE

Filter by name prefix only

Filter

Filter objects and folders

Name

Size

Type

Created

Storage class

Last modified

Public access

Version history

FolderCreatedByGCloud/

-

Folder

-

-

-

-

-

LIVE OBJECT

VERSION HISTORY

- Download
- Edit Metadata
- Edit Access
- Delete

Overview	
Type	image/png
Size	77.6 KB
Created	Sep 16, 2023, 12:57:03 AM
Last modified	Sep 16, 2023, 12:57:03 AM
Storage class	Nearline
Custom time	—
Public URL ?	Not applicable
Authenticated URL ?	https://storage.cloud.google.com/assignment1-bucket-gcloud/FolderCreatedByGCloud/schedule.png?authuser=2
gsutil URI ?	gs://assignment1-bucket-gcloud/FolderCreatedByGCloud/schedule.png
Permissions	
Public access	Not public
Protection	
Version history ?	—
Retention policy	None
Hold status	None
Encryption type	Google-managed

Task 4: Deleting the folder and the file inside it in a single operation

Command:


```
gcloud storage rm -r gs://assignment1-bucket-gcloud/FolderCreatedByGCloud
```


```
[→ Desktop] gcloud storage rm -r gs://assignment1-bucket-gcloud/FolderCreatedByGCloud
Removing objects:
:Removing gs://assignment1-bucket-gcloud/FolderCreatedByGCloud/schedule.png#1694806023750586...
Completed 1/1
```



assignment1-bucket-gcloud





Location	Storage class	Public access	Protection
us-east1 (South Carolina)	Nearline	Not public	None

[OBJECTS](#)[CONFIGURATION](#)[PERMISSIONS](#)[PROTECTION](#)[LIFECYCLE](#)[OBSERVABILITY](#)[INVENTORY REPORTS](#)

Buckets > assignment1-bucket-gcloud > FolderCreatedByGCloud 

[UPLOAD FILES](#)[UPLOAD FOLDER](#)[CREATE FOLDER](#)[TRANSFER DATA](#) [MANAGE HOLDS](#)[DOWNLOAD](#)[DELETE](#)

Filter by name prefix only   **Filter** Filter objects and folders

<input type="checkbox"/>	Name	Size	Type	Created 	Storage class	Last modified	Public access 	Version history 	Encryption 	Ret
No rows to display										

Task 5: Create a VM

Command:

```
gcloud compute images list
```

```
gcloud compute images describe debian-11-bullseye-arm64-v20230912 --project=debian-cloud
```

```
gcloud compute instances create assignment-vm-gcloud \
```

```
--image=debian-11-bullseye-arm64-v20230912 \
```

```
--image-project=debian-cloud \
```

```
--machine-type=e2-medium \
```

```
--zone=us-central1-a
```

```
gcloud compute instances describe assignment-vm-gcloud
```

NAME	PROJECT	FAMILY	DEPRECATED	STATUS
centos-7-v20230912	centos-cloud	centos-7		READY
centos-stream-8-v20230912	centos-cloud	centos-stream-8		READY
centos-stream-9-v20230912	centos-cloud	centos-stream-9		READY
cos-101-17162-279-42	cos-cloud	cos-101-lts		READY
cos-105-17412-156-49	cos-cloud	cos-105-lts		READY
cos-93-16623-461-30	cos-cloud	cos-93-lts		READY
cos-97-16919-353-44	cos-cloud	cos-97-lts		READY
cos-arm64-101-17162-279-42	cos-cloud	cos-arm64-101-lts		READY
cos-arm64-105-17412-156-49	cos-cloud	cos-arm64-105-lts		READY
debian-10-buster-v20230912	debian-cloud	debian-10		READY
debian-11-bullseye-arm64-v20230912	debian-cloud	debian-11-arm64		READY
debian-11-bullseye-v20230912	debian-cloud	debian-11		READY
debian-12-bookworm-arm64-v20230912	debian-cloud	debian-12-arm64		READY
debian-12-bookworm-v20230912	debian-cloud	debian-12		READY
fedora-cloud-base-gcp-34-1-2-x86-64	fedora-cloud	fedora-cloud-34		READY
fedora-cloud-base-gcp-37-1-7-x86-64	fedora-cloud	fedora-cloud-37		READY
fedora-cloud-base-gcp-38-1-6-x86-64	fedora-cloud	fedora-cloud-38		READY
opensuse-leap-15-4-v20230907-arm64	opensuse-cloud	opensuse-leap-arm64		READY
opensuse-leap-15-4-v20230907-x86-64	opensuse-cloud	opensuse-leap		READY
opensuse-leap-15-5-v20230908-arm64	opensuse-cloud	opensuse-leap-arm64		READY
opensuse-leap-15-5-v20230908-x86-64	opensuse-cloud	opensuse-leap		READY
rhel-7-v20230912	rhel-cloud	rhel-7		READY
rhel-8-v20230912	rhel-cloud	rhel-8		READY
rhel-9-arm64-v20230912	rhel-cloud	rhel-9-arm64		READY
rhel-9-v20230912	rhel-cloud	rhel-9		READY

```

[→ Desktop gcloud compute images describe debian-11-bullseye-arm64-v20230912 --project=debian-cloud
architecture: ARM64
archiveSizeBytes: '2040246528'
creationTimestamp: '2023-09-12T17:13:05.719-07:00'
description: Debian, Debian GNU/Linux, 11 (bullseye), arm64 built on 20230912
diskSizeGb: '10'
family: debian-11-arm64
guestOsFeatures:
- type: UEFI_COMPATIBLE
- type: GVNIC
id: '3080141722234994815'
kind: compute#image
labelFingerprint: 42WmSp88rSM=
licenseCodes:
- '3853522013536123851'
licenses:
- https://www.googleapis.com/compute/v1/projects/debian-cloud/global/licenses/debian-11-bullseye
name: debian-11-bullseye-arm64-v20230912
rawDisk:
  containerType: TAR
  source: ''
selfLink: https://www.googleapis.com/compute/v1/projects/debian-cloud/global/images/debian-11-bullseye-arm64-v20230912
sourceType: RAW
status: READY
storageLocations:
- asia
- us
- eu

→ Desktop gcloud compute instances create assignment-vm-gcloud \
  --image=debian-11-bullseye-arm64-v20230912 \
  --image-project=debian-cloud \
  --machine-type=e2-medium \
  --zone=us-central1-a
Created [https://www.googleapis.com/compute/v1/projects/ds561-visb-assignment/zones/us-central1-a/instances/assignment-vm-gcloud].
NAME          ZONE          MACHINE_TYPE  PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP  STATUS
assignment-vm-gcloud  us-central1-a  e2-medium    10.128.0.3   34.170.145.213  RUNNING

```

```
➔ Desktop gcloud compute instances describe assignment-vm-gcloud
No zone specified. Using zone [us-central1-a] for instance: [assignment-vm-gcloud].
canIpForward: false
cpuPlatform: Intel Broadwell
creationTimestamp: '2023-09-15T12:57:36.658-07:00'
deletionProtection: false
disks:
- architecture: ARM64
  autoDelete: true
  boot: true
  deviceName: persistent-disk-0
  diskSizeGb: '10'
  guestOsFeatures:
  - type: UEFI_COMPATIBLE
  - type: GVNIC
  index: 0
  interface: SCSI
  kind: compute#attachedDisk
  licenses:
  - https://www.googleapis.com/compute/v1/projects/debian-cloud/global/licenses/debian-11-bullseye
  mode: READ_WRITE
  source: https://www.googleapis.com/compute/v1/projects/ds561-visb-assignment/zones/us-central1-a/disks/assignment-vm-gcloud
  type: PERSISTENT
fingerprint: n7m9jsF7mtk=
id: '8592169202208016832'
kind: compute#instance
labelFingerprint: 42WmSpB8rSM=
lastStartTimeStamp: '2023-09-15T12:58:04.118-07:00'
machineType: https://www.googleapis.com/compute/v1/projects/ds561-visb-assignment/zones/us-central1-a/machineTypes/e2-medium
metadata:
  fingerprint: _442qonZMPg=
  kind: compute#metadata
name: assignment-vm-gcloud
networkInterfaces:
- accessConfigs:
  - kind: compute#accessConfig
    name: external-nat
    natIP: 34.170.145.213
    networkTier: PREMIUM
    type: ONE_TO_ONE_NAT
  fingerprint: J4yff2xrevw=
  kind: compute#networkInterface
  name: nic0
  network: https://www.googleapis.com/compute/v1/projects/ds561-visb-assignment/global/networks/default
  networkIP: 10.128.0.3
  stackType: IPV4_ONLY
  subnetwork: https://www.googleapis.com/compute/v1/projects/ds561-visb-assignment/regions/us-central1/subnetworks/default
scheduling:
  automaticRestart: true
  onHostMaintenance: MIGRATE
  preemptible: false
  provisioningModel: STANDARD
selfLink: https://www.googleapis.com/compute/v1/projects/ds561-visb-assignment/zones/us-central1-a/instances/assignment-vm-gcloud
serviceAccounts:
- email: 776935284294-compute@developer.gserviceaccount.com
  scopes:
  - https://www.googleapis.com/auth/devstorage.read_only
  - https://www.googleapis.com/auth/logging.write
  - https://www.googleapis.com/auth/monitoring.write
  - https://www.googleapis.com/auth/pubsub
  - https://www.googleapis.com/auth/service.management.readonly
  - https://www.googleapis.com/auth/servicecontrol
  - https://www.googleapis.com/auth/trace.append
shieldedInstanceConfig:
  enableIntegrityMonitoring: true
  enableSecureBoot: false
  enableVtpm: true
```


DETAILS

OBSERVABILITY

OS INFO

SCREENSHOT

SSH ▾

CONNECT TO SERIAL CONSOLE ▾

Connecting to serial ports is disabled ⓘ

Logs

[Logging](#)
[Serial port 1 \(console\)](#)

✓ SHOW MORE

Basic information

Name	assignment-vm-gcloud
Instance Id	8592169202208016832
Description	None
Type	Instance
Status	✓ Running
Creation time	Sep 16, 2023, 1:27:36 AM UTC+05:30
Zone	us-central1-a
Instance template	None
In use by	None
Reservations	Automatically choose (default)
Labels	None
Tags ⓘ	— ✎
Deletion protection	Disabled
Confidential VM service ⓘ	Disabled
Preserved state size	0 GB

Task 6: Pause a VM

Command:

```
gcloud compute instances suspend assignment-vm-gcloud --zone=us-central1-a
```

[→ **Desktop** gcloud compute instances suspend assignment-vm-gcloud --zone=us-central1-a

```
Suspending instance(s) assignment-vm-gcloud...:
Suspending instance(s) assignment-vm-gcloud...:
Suspending instance(s) assignment-vm-gcloud...:
Suspending instance(s) assignment-vm-gcloud...:
```

[←](#) assignment-v... [EDIT](#) [RESET](#) [+ CREATE MACHINE IMAGE](#) [+ CREATE SIMILAR](#) [▶ START / RESUME](#)

DETAILS

OBSERVABILITY

OS INFO

SCREENSHOT

SSH

CONNECT TO SERIAL CONSOLE

Connecting to serial ports is disabled ?

Logs

[Logging](#)
[Serial port 1 \(console\)](#)
[▼ SHOW MORE](#)

Basic information

Name	assignment-vm-gcloud
Instance Id	8592169202208016832
Description	None
Type	Instance
Status	. Suspending
Creation time	Sep 16, 2023, 1:27:36 AM UTC+05:30
Zone	us-central1-a
Instance template	None
In use by	None
Reservations	Automatically choose (default)
Labels	None
Tags ?	— +
Deletion protection	Disabled
Confidential VM service ?	Disabled
Preserved state size	0 GB

Task 7: Delete a VM

Command:

gcloud compute instances delete assignment-vm-gcloud --zone=us-central1-a

```
Desktop gcloud compute instances delete assignment-vm-gcloud --zone=us-central1-a

The following instances will be deleted. Any attached disks configured to be auto-deleted will be deleted unless they are attached to any other instances or the '--keep-disks' flag is given and specifies them for keeping. Deleting a disk is irreversible and any data on the disk will be lost.
- [assignment-vm-gcloud] in [us-central1-a]

Do you want to continue (Y/n)? Y

Deleted [https://www.googleapis.com/compute/v1/projects/ds561-visb-assignment/zones/us-central1-a/instances/assignment-vm-gcloud].
```

VM instances

Filter

Enter property name or value

<input type="checkbox"/>	Status	Name ↑	Zone	Recommendations	In use by	Internal IP	External IP	Connect
--------------------------	--------	---------------------	------	-----------------	-----------	-------------	-------------	---------



Task 8: Create a Service Account and give the permissions to the Storage Bucket

Command:

```
gcloud iam service-accounts create assignemnt1-sa-gcloud \
  --description="Service Account created via gcloud for Assignment 1" \
  --display-name="Assignment SA GCloud"
```

```
gcloud projects add-iam-policy-binding ds561-visb-assignment \
  --member="serviceAccount:assignemnt1-sa-gcloud@ds561-visb-
assignment.iam.gserviceaccount.com" \
  --role="roles/storage.admin"
```

```
→ Desktop gcloud iam service-accounts create assignemnt1-sa-gcloud \
  --description="Service Account created via gcloud for Assignment 1" \
  [ --display-name="Assignment SA GCloud"
Created service_account [assignemnt1-sa-gcloud].
```

← Assignment SA GCloud

DETAILS
PERMISSIONS
KEYS
METRICS
LOGS

Service account details

Name
Assignment SA GCloud
SAVE

Description
Service Account created via gcloud for Assignment 1
SAVE

Email
assignemnt1-sa-gcloud@ds561-visb-assignment.iam.gserviceaccount.com

Unique ID
111185561132518036199

Service account status

Disabling your account allows you to preserve your policies without having to delete it.

☒ Enabled

DISABLE SERVICE ACCOUNT

Advanced settings

```

→ Desktop gcloud projects add-iam-policy-binding ds561-visb-assignment \
  --member="serviceAccount:assignemnt1-sa-gcloud@ds561-visb-assignment.iam.gserviceaccount.com" \
  --role="roles/storage.admin"
[
Updated IAM policy for project [ds561-visb-assignment].
bindings:
- members:
  - serviceAccount:service-776935284294@compute-system.iam.gserviceaccount.com
    role: roles/compute.serviceAgent
- members:
  - serviceAccount:776935284294-compute@developer.gserviceaccount.com
  - serviceAccount:776935284294@cloudservices.gserviceaccount.com
    role: roles/editor
- members:
  - user:vishwasb@bu.edu
    role: roles/owner
- members:
  - serviceAccount:assignemnt1-sa-gcloud@ds561-visb-assignment.iam.gserviceaccount.com
    role: roles/storage.admin
etag: BwYFa9bn-hg=
version: 1

```

Task 9: Delete the Service Account which was created

Command:

```
gcloud iam service-accounts delete \
```

```
assignemnt1-sa-gcloud@ds561-visb-assignment.iam.gserviceaccount.com
```





```
→ Desktop gcloud iam service-accounts delete \  
[ assignemnt1-sa-gcloud@ds561-visb-assignment.iam.gserviceaccount.com  
You are about to delete service account [assignemnt1-sa-gcloud@ds561-visb-assignment.iam.gserviceaccount.com]  
  
Do you want to continue (Y/n)? Y  
  
deleted service account [assignemnt1-sa-gcloud@ds561-visb-assignment.iam.gserviceaccount.com]
```

Task 10: Delete the Storage Bucket which was created

Command:

```
gcloud storage rm --recursive gs://assignment1-bucket-gcloud/
```

```
[→ Desktop gcloud storage rm --recursive gs://assignment1-bucket-gcloud/  
Removing objects:  
  Completed 0  
Removing Buckets:  
  Removing gs://assignment1-bucket-gcloud/...  
  Completed 1/1
```

Buckets  CREATE  REFRESH			
 Filter Filter buckets			
<input type="checkbox"/>	Name 	Created	Location type
No rows to display			

GSUtil

Task 1: Create a Storage Bucket

Command:

```
gsutil mb -p ds561-visb-assignment -c NEARLINE -l US-EAST1 -b on  
gs://assignment1-bucket-gsutil
```

```
vishwasb@cloudshell:~ (ds561-visb-assignment)$ gsutil mb -p ds561-visb-assignment -c NEARLINE -l US-EAST1 -b on gs://assignment1-bucket-gsutil  
Creating gs://assignment1-bucket-gsutil/...  
vishwasb@cloudshell:~ (ds561-visb-assignment)$
```

[←](#) Bucket details

assignment1-bucket-gsutil

Location	Storage class	Public access	Protection
us-east1 (South Carolina)	Nearline	Not public	None

[OBJECTS](#) [CONFIGURATION](#) [PERMISSIONS](#) [PROTECTION](#) [LIFECYCLE](#) [OBSERVABILITY](#) [INVENTORY REPORTS](#)

Buckets > assignment1-bucket-gsutil

[UPLOAD FILES](#) [UPLOAD FOLDER](#) [CREATE FOLDER](#) [TRANSFER DATA](#) [MANAGE HOLDS](#) [DOWNLOAD](#) [DELETE](#)

Filter by name prefix only

Filter

Filter objects and folders

<input type="checkbox"/>	Name	Size	Type	Created	Storage class	Last modified	Public access	Version history	Encryption	Re
No rows to display										

Task 2 & 3: Create a Directory under the bucket and copying a file into the folder

Command:

```
gsutil cp ./Desktop/schedule.png gs://assignment1-bucket-gsutil/FolderCreatedByGSUtil/
```

```
[~] ~ gsutil cp ./Desktop/schedule.png gs://assignment1-bucket-gsutil/FolderCreatedByGSUtil/
Copying file:///./Desktop/schedule.png [Content-Type=image/png]...
- [1 files][ 77.6 KiB/ 77.6 KiB]
Operation completed over 1 objects/77.6 KiB.
```

assignment1-bucket-gsutil

Location	Storage class	Public access	Protection
us-east1 (South Carolina)	Nearline	Not public	None

[OBJECTS](#) [CONFIGURATION](#) [PERMISSIONS](#) [PROTECTION](#) [LIFECYCLE](#) [OBSERVABILITY](#) [INVENTORY REPORTS](#)

Buckets > assignment1-bucket-gsutil

[UPLOAD FILES](#) [UPLOAD FOLDER](#) [CREATE FOLDER](#) [TRANSFER DATA](#) [MANAGE HOLDS](#) [DOWNLOAD](#) [DELETE](#)

Filter by name prefix only Filter Filter objects and folders

<input type="checkbox"/>	Name	Size	Type	Created	Storage class	Last modified	Public access	Version hi
<input type="checkbox"/>	FolderCreatedByGSUtil/	—	Folder	—	—	—	—	—

Buckets > assignment1-bucket-gsutil > FolderCreatedByGSUtil > schedule.png 

LIVE OBJECT

VERSION HISTORY




 DOWNLOAD

 EDIT METADATA

 EDIT ACCESS

 DELETE



Overview

Type	image/png
Size	77.6 KB
Created	Sep 16, 2023, 2:13:58 PM
Last modified	Sep 16, 2023, 2:13:58 PM
Storage class	Nearline
Custom time	—
Public URL 	Not applicable
Authenticated URL 	https://storage.cloud.google.com/assignment1-bucket-gsutil/FolderCreatedByGSUtil/schedule.png?authuser=2 
gsutil URI 	gs://assignment1-bucket-gsutil/FolderCreatedByGSUtil/schedule.png 

Permissions

Public access	Not public
---------------	------------

Protection

Version history 	—
Retention policy	None
Hold status	None 
Encryption type	Google-managed

Task 4: Delete the Folder and all the contents in it in one operation

Command:

```
gsutil rm -r gs://assignment1-bucket-gcloud/FolderCreatedByGSUtil
```

```
[➔ ~ gsutil rm -r gs://assignment1-bucket-gsutil/FolderCreatedByGSUtil
Removing gs://assignment1-bucket-gsutil/FolderCreatedByGSUtil/schedule.png#1694853838651478...
/ [1 objects]
Operation completed over 1 objects.
```

assignment1-bucket-gsutil





Location	Storage class	Public access	Protection
us-east1 (South Carolina)	Nearline	Not public	None

[OBJECTS](#) [CONFIGURATION](#) [PERMISSIONS](#) [PROTECTION](#) [LIFECYCLE](#) [OBSERVABILITY](#) [INVENTORY REPORTS](#)

Buckets > assignment1-bucket-gsutil > FolderCreatedByGSUtil 

[UPLOAD FILES](#) [UPLOAD FOLDER](#) [CREATE FOLDER](#) [TRANSFER DATA](#) [MANAGE HOLDS](#) [DOWNLOAD](#) [DELETE](#)

Filter by name prefix only  **Filter** Filter objects and folders

<input type="checkbox"/>	Name	Size	Type	Created 	Storage class	Last modified	Public access 	Version history 	Encryption 
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No rows to display

Task 10: Delete the Storage Bucket

Command:

```
gsutil rm --recursive gs://assignment1-bucket-gsutil/
```

```
[→] ~ gsutil rm -r gs://assignment1-bucket-gsutil/  
Removing gs://assignment1-bucket-gsutil/...
```

Buckets + CREATE REFRESH					
 Filter Filter buckets					
<input type="checkbox"/>	Name 	Created	Location type	Location	Def
No rows to display					

Gsutil is a tool which can be used to work with Storage Bucket only. This tool provides the required functionality to allow us to access cloud storage via command line, like, create, delete, upload, download and many such operations. This tool cannot be used to perform other actions such as creating a VM or deleting a VM.

Therefore all the other tasks which were provided cannot be performed using this tool.