

Homework_Lesson32_Cloud2

1. Создайте экземпляр EC2/CE и прикрепите к нему EBS-том/SSD. На выбор terraform, cli, python boto3, python google.
2. Настройте доступ к экземпляру через SSH. Доступ должен работать с вашего хоста.
3. Создайте бакет Amazon S3 и загрузите в него несколько файлов. На выбор terraform, cli, python boto3, python google.
- 4.* Создайте экземпляр базы данных RDS/CloudSQL и настройте доступ к нему.
- 5.* Создайте резервную копию базы данных и восстановите ее на новый экземпляр RDS.

Выполнение 1-ого задания

- 1) Создаем экземпляр EC2/CE в GCP и прикрепляем к нему EBS-том/SSD с помощью cli.

```
$ gcloud auth login // команда для входа в учетную запись Google Cloud
$ gcloud config set project modified-glyph-450412-k6 // выбираем наш проект
$ gcloud config list
```

```
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ gcloud config list
[core]
account = seriousmkr@gmail.com
disable_usage_reporting = False
project = modified-glyph-450412-k6

Your active configuration is: [default]

Updates are available for some Google Cloud CLI components. To install them,
please run:
$ gcloud components update
```

Вход в наш gcloud выполнен успешно

Создаем экземпляр ec2 micro с названием vm-cli-test, тип машины f1-micro, дистрибутив debian 11 семейства debian-cloud, после выполнения команды, выбираем зону размещения из списка, либо можно добавить в строку такой параметр, как --zone europe-north1-a:

```
$ gcloud compute instances create vm-cli-test --machine-type f1-micro --image-family debian-11
--image-project debian-cloud
```

```
[40] europe-north1-a
[41] europe-north1-b
[42] europe-north1-c
[43] europe-north2-a
[44] europe-north2-b
[45] europe-north2-c
[46] europe-southwest1-a
[47] europe-southwest1-b
[48] europe-southwest1-c
[49] europe-west1-b
[50] europe-west1-c
Did not print [77] options.
Too many options [127]. Enter "list" at prompt to print choices fully.
Please enter your numeric choice: 40

Created [https://www.googleapis.com/compute/v1/projects/modified-glyph-450412-k6/zones/europe-north1-a/instances/vm-cli-test].
NAME        ZONE          MACHINE_TYPE  PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP  STATUS
vm-cli-test europe-north1-a f1-micro      10.166.0.2   34.88.188.169 RUNNING
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$
```

Успешное создание ВМ vm-cli-test в gcloud

Filter Enter property name or value									
<input type="checkbox"/>	Status	Name ↑	Zone	Recommendations	In use by	Internal IP	External IP	Connect	
<input type="checkbox"/>	🔴	jenkins	us-central1-c			10.128.0.2 (nic0)		SSH	⌵ ⋮
<input type="checkbox"/>	🔴	jenkins-main	us-central1-c			10.128.0.4 (nic0)		SSH	⌵ ⋮
<input type="checkbox"/>	🔴	minion	us-central1-c			10.128.0.3 (nic0)		SSH	⌵ ⋮
<input type="checkbox"/>	🟢	vm-cli-test	europe-north1-a			10.166.0.2 (nic0)	34.88.188.169 (nic0)	SSH	⌵ ⋮

2) Добавляем ssd-том:

```
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ gcloud compute disks create disk-cli-test --size 10GB --type pd-ssd --zone europe-north1-a
Created [https://www.googleapis.com/compute/v1/projects/modified-glyph-450412-k6/zones/europe-north1-a/disks/disk-cli-test].
```

NAME	ZONE	SIZE_GB	TYPE	STATUS
disk-cli-test	europe-north1-a	10	pd-ssd	READY

New disks are unformatted. You must format and mount a disk before it can be used. You can find instructions on how to do this at:

<https://cloud.google.com/compute/docs/disks/add-persistent-disk#formatting>

```
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$
```

← → ↺

console.cloud.google.com/compute/disks?referrer=search&invnt=Abt3Gg&project=modified-glyph-450412-k6

☰

Google Cloud

My First Project

disk

×

🔍 Search

🖨️ Compute Engine / Disks

📄 Overview

Virtual machines

🖨️ VM instances

📄 Instance templates

👤 Sole-tenant nodes

🖨️ Machine images

🖨️ TPUs

🖨️ Committed use discount

📅 Reservations

🔄 Migrate to Virtual Machine

Storage

📄 Disks

📄 Storage Pools

📄 Snapshots

📄 Images

🛒 Marketplace

Disks

[Create disk](#) [Refresh](#) [Delete](#)

Filter

Enter property name or value

?

☰

<input type="checkbox"/>	Status	Name ↑	Type	Size	Architecture	Zone(s)	In use by	Actions
<input type="checkbox"/>	✓	disk-cli-test	SSD persistent disk	10 GB	—	europe-north1-a		⋮
<input type="checkbox"/>	✓	jenkins	Balanced persistent disk	10 GB	x86/64	us-central1-c	jenkins	⋮
<input type="checkbox"/>	✓	jenkins-main	Balanced persistent disk	10 GB	x86/64	us-central1-c	jenkins ▼	⋮
<input type="checkbox"/>	✓	minion	Balanced persistent disk	10 GB	x86/64	us-central1-c	minion	⋮
<input type="checkbox"/>	✓	vm-cli-test	Standard persistent disk	10 GB	x86/64	europe-north1-a	vm-cli ▼	⋮

Select

[permissions](#)

📘

```
makorau@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud$ gcloud compute instances attach-disk vm-cli-test --disk disk-cli-test --zone europe-north1-a
Updated [https://www.googleapis.com/compute/v1/projects/modified-glyph-450412-k6/zones/europe-north1-a/instances/vm-cli-test].
makorau@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud$
```

Disks Create disk Refresh Delete								
Filter Enter property name or value ? ⋮								
Status	Name ↑	Type	Size	Architecture	Zone(s)	In use by	Snapshot	Actions
✓	disk-cli-test	SSD persistent disk	10 GB	—	europe-north1-a	vm-cli-test ^	None	⋮
✓	iankine	Balanced	10 GB	x86_64	us-central1	iankine	None	⋮

На картинке видно, что после выполнения команды, диск disk-cli-test привязан к ВМ vm-cli-test

Выполнение 2-ого задания:

Настраиваем доступ к экземпляру через SSH.

Gcloud позволяет автоматически добавлять наш SSH-ключ к экземпляру. Вводим команду:

```
$ gcloud compute ssh vm-cli-test
```

```
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ gcloud compute ssh vm-cli-test
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/makarov/.ssh/google_compute_engine
Your public key has been saved in /home/makarov/.ssh/google_compute_engine.pub
The key fingerprint is:
SHA256:tjw0kQG6+W/ErbC5kpu70LhWTXJV8TqDpxX0yLot14JY makarov@DESKTOP-UG6J7T7
The key's randomart image is:
+---[RSA 3072]-----+
|      .o+      |
|      ... *    |
|     .. O * .   |
|    . oo = O +  |
|   =O S.E.O     |
|    . .O.=O*    |
|    o  .O=..    |
|   o ..O.O.O    |
|  ....=..O.     |
+---[SHA256]-----+
No zone specified. Using zone [europe-north1-a] for instance: [vm-cli-test].
Updating project ssh metadata...Updated [https://www.googleapis.com/compute/v1/projects/modified-glyph-450412-k6].
Updating project ssh metadata...done.
Waiting for SSH key to propagate.
Warning: Permanently added 'compute.8071258169596335202' (ED25519) to the list of known hosts.
Linux vm-cli-test 5.10.0-34-cloud-amd64 #1 SMP Debian 5.10.234-1 (2025-02-24) x86_64
```

Добавление ключа к экземпляру

```
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
makarov@vm-cli-test:~$ sudo -i
root@vm-cli-test:~# uname -a
Linux vm-cli-test 5.10.0-34-cloud-amd64 #1 SMP Debian 5.10.234-1 (2025-02-24) x86_64 GNU/Linux
root@vm-cli-test:~#
```

Успешное подключение к нашей созданной ВМ vm-cli-test по SSH с хоста

```
Windows PowerShell x mc [root@DESKTOP-UG6J7T7 x makarov@DESKTOP-UG6J7T7 x makarov@vm-cli-test: ~ x + v
makarov@DESKTOP-UG6J7T7:~$ gcloud compute ssh vm-cli-test
No zone specified. Using zone [europe-north1-a] for instance: [vm-cli-test].
Linux vm-cli-test 5.10.0-34-cloud-amd64 #1 SMP Debian 5.10.234-1 (2025-02-24) 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.
Last login: Fri Apr 4 15:48:47 2025 from 37.214.66.35
makarov@vm-cli-test:~$ sudo -i
root@vm-cli-test:~# lsb_release
No LSB modules are available.
root@vm-cli-test:~# lsb_release -a
No LSB modules are available.
Distributor ID: Debian
Description: Debian GNU/Linux 11 (bullseye)
Release: 11
Codename: bullseye
root@vm-cli-test:~# uname -a
Linux vm-cli-test 5.10.0-34-cloud-amd64 #1 SMP Debian 5.10.234-1 (2025-02-24) x86_64 GNU/Linux
root@vm-cli-test:~# |
```

Также подключились с WSL до BM vm-cli-test по SSH

Выполнение 3-его задания:

Создаем бакет GCP и загрузите в него несколько файлов с использованием cli. Используем специальный инструмент gsutil который , только для управления хранилищем, такими как создание бакетов, загрузка и скачивание файлов, управление доступом и т.д.

\$ gsutil mb -l US gs://test-bucket-cli-makarov/

```
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ gsutil mb -l US gs://test-bucket-cli/
Creating gs://test-bucket-cli/...
ServiceException: 409 A Cloud Storage bucket named 'test-bucket-cli' already exists. Try another name. Bucket names must be
using those outside of your organization.
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ gsutil mb -l US gs://test-bucket-cli-makarov/
Creating gs://test-bucket-cli-makarov/...
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ |
```

\$ gsutil ls // выводит список всех существующих Bucket

```
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ gs
gs://my-first-bucket-gcp-cli/
gs://my-first-bucket-gcp-gui/
gs://my-first-bucket-gcp-terraform/
gs://test-bucket-cli-makarov/
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ |
```

Загружаем в наш созданный bucket GCP “test-bucket-cli-makarov” два файла, main.tf и Hello_world_DOS24.txt:

\$ gsutil cp /home/makarov/main.tf gs://test-bucket-cli-makarov/

\$ gsutil cp /home/makarov/Hello_world_DOS24.txt gs://test-bucket-cli-makarov/

```
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ gsutil cp /home/makarov/main.tf gs://test-bucket-cli-makarov/
Copying file:///home/makarov/main.tf [Content-Type=application/octet-stream]...
/ [1 files][ 310.0 B/ 310.0 B]
Operation completed over 1 objects/310.0 B.
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ gsutil cp /home/makarov/Hello_world_DOS24.txt gs://test-bucket-cli-makarov/
Copying file:///home/makarov/Hello_world_DOS24.txt [Content-Type=text/plain]...
/ [1 files][ 0.0 B/ 0.0 B]
Operation completed over 1 objects.
makarov@DESKTOP-UG6J7T7:~/Aliaksandr_Makarau_DOS24/Homework_Lesson32_Cloud_2$ |
```

Заходим в консоль GCP для проверки наших загруженных файлов в bucket:

←

Bucket details

Go to path

Refresh

Learn

test-bucket-cli-makarov

Location

us (multiple regions in United States)

Storage class

Standard

Public access

Subject to object ACLs

Protection

Soft Delete

Objects

Configuration

Permissions

Protection

Lifecycle

Observability

New

Inventory Reports

Folder browser

test-bucket-cli-makarov

Buckets

test-bucket-cli-makarov

Create folder

Upload

Transfer data

Other services

Filter by name prefix only

Filter

Filter objects and folders

Show

Live objects only

<input type="checkbox"/>	Name	Size	Type	
<input type="checkbox"/>	Hello_world_DOS24.txt	0 B	text/plain	
<input type="checkbox"/>	main.tf	310 B	application/octet-stream	

Видим на картинке загруженные наши два файла в bucket “test-bucket-cli-makarov”