

CS203
Assignment - 8

Members:

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Docker Hub & Google Drive Links

Docker Hub Image Links:

1. Frontend:

<https://hub.docker.com/layers/sohamshrivastava935/fastapi/1/images/sha256:655600c8402659273900687f5555d04378abf0af991d41fc8b7a3ab6b511acd?uuid=566cb11d-ffa8-4ebc-949e-87a95e204c67>

2. Backend:

<https://hub.docker.com/layers/sohamshrivastava935/fastapi/2/images/sha256:c179032b323d65c47a4154aac77f1015a4834d371119939000625f5cb27bd95a?uuid=566cb11d-ffa8-4ebc-949e-87a95e204c67%0A>

3. ElasticSearch:

<https://hub.docker.com/layers/sohamshrivastava935/elasticsearch/latest/images/sha256:806f22b917ddba7eafaa0d6ca243fc2ca5341c56230bb352be36e1f795f570d?uuid=566cb11d-ffa8-4ebc-949e-87a95e204c67%0A>

Github: <https://github.com/Pranav4860/STT-lab8>

1. Setting up both VM

Machine configuration

Name * backend

Region * asia-south1 (Mumbai) Zone * asia-south1-b

Region is permanent Zone is permanent

General purpose Compute optimized Memory optimized Storage optimized GPUs

Machine types for common workloads, optimized for cost and flexibility

Series	Description	vCPUs	Memory	CPU Platform
<input type="radio"/>	C4	Consistently high performance	2 - 192	4 - 1,488 GB
<input type="radio"/>	C4A	Arm-based consistently high performance	1 - 72	2 - 576 GB
<input type="radio"/>	N4	Flexible & cost-optimized	2 - 80	4 - 640 GB
<input type="radio"/>	C3	Consistently high performance	4 - 192	8 - 1,536 GB
<input type="radio"/>	C3D	Consistently high performance	4 - 360	8 - 2,880 GB
<input checked="" type="radio"/>	E2	Low cost, day-to-day computing	0.25 - 32	1 - 128 GB
<input type="radio"/>	N2	Balanced price & performance	2 - 128	2 - 864 GB
<input type="radio"/>	N2D	Balanced price & performance	2 - 224	2 - 896 GB
<input type="radio"/>	T2A	Scale-out workloads	1 - 48	4 - 192 GB
<input type="radio"/>	T2D	Scale-out workloads	1 - 60	4 - 240 GB
<input type="radio"/>	N1	Balanced price & performance	0.25 - 96	0.6 - 624 GB

Machine type

Choose a machine type with preset amounts of vCPUs and memory that suit most workloads. Or, you can create a custom machine for your workload's particular needs. [Learn more](#)

Preset

Custom

Creating a custom machine incurs additional costs

Cores

2



32

2 vCPU

(1 core)

Shared core

Memory

1



16

1 GB

[▼ Advanced configurations](#)

Boot disk

Select an image or snapshot to create a boot disk; or attach an existing disk. Can't find what you're looking for? Explore hundreds of VM solutions in [Marketplace](#)

Public images

Custom images

Snapshots

Archive Snapshots

Existing Disks

Operating system

Ubuntu



Version *

Ubuntu 20.04 LTS



x86/64, amd64 focal image built on 2025-03-13

Boot disk type *

Standard persistent disk



[Compare disk types](#)

Size (GB) *

30

Provision between 10 and 65536 GB

[▼ Show advanced configuration](#)

Select

Cancel

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Data protection
Protect your data against failures and errors. [Learn more](#)

Back up your data
You can automate recurring backups through a backup plan or snapshot schedule. [Learn more](#)

Backup plan
Back up the full VM. These immutable backups are secured by backup vault against accidental or malicious deletion. Managed by Backup and DR Service, a separate service from Compute Engine with independent certifications and accreditation. [Learn more](#)

Snapshot schedules
Back up disks only. This provides foundational protection at a lower cost. [Learn more](#)

Select or create a snapshot schedule * Every day, starts between 11:00 PM and 12:00 AM, Storage location: asia (Asia Pacific) [More details](#)

No backups
Neither VM nor disks will be backed up. If data is deleted or corrupted for any reason, you won't be able to recover it.

Continuously replicate data for disaster protection

Cross-zone synchronous replication

Regional disks
Switch to a regional disk, which is a single disk with storage replicas in two zones. Enables zero RPO (no data loss) and VM attachment in two zones. [Learn more](#)

Cross-region asynchronous replication

Asynchronous replication
Replicate data from one disk to a secondary disk in another region for cross-region disaster recovery. [Learn more](#)

Monthly estimate
\$42.25
That's about \$0.06 hourly

Pay for what you use: no upfront costs and per second billing

Item	Monthly estimate
2 vCPU + 1 GB memory	\$40.81
30 GB standard persistent disk	\$1.44
Logging	Cost varies
Monitoring	Cost varies
Snapshot schedule	Cost varies
Total	\$42.25

[Compute Engine pricing](#) [Cloud Operations pricing](#)

[Less](#)

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[Create an instance](#) [Create VM from...](#)

- Machine configuration e2-custom-2-1024, asia-south1-b
- OS and storage Ubuntu 20.04 LTS
- Data protection Snapshot schedules
- Networking** 2 firewall rules, 1 network interface
- Observability Install Ops Agent
- Security
- Advanced

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

Allow HTTP traffic
 Allow HTTPS traffic
 Allow Load Balancer Health Checks

Network tags

Hostname Set a custom hostname for this instance or leave it default. Choice is permanent

IP forwarding Enable

Network performance configuration

Network bandwidth Enable per VM Tier_1 networking performance Maximum outbound network bandwidth: 4Gbps VM to Public IP: 4Gbps

Network interfaces Network interface is permanent

default default IPv4 (10.160.0.0/20)

[Add a network interface](#)

[Equivalent code](#)

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Observability

Ops Agent (Recommended) Observe your instance and application through collection of logs and metrics.

Install Ops Agent for Monitoring and Logging

Display device Enable to use screen capturing and recording tools.

Enable display device

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Security

- Machine configuration e2-custom-2-1024, asia-south1-b
- OS and storage Ubuntu 20.04 LTS
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Identity and API access ⓘ

Service accounts ⓘ

Compute Engine default service account

Requires the Service Account User role (roles/iam.serviceAccountUser) to be set for users who want to access VMs with this service account. [Learn more](#)

Access scopes ⓘ

Allow default access

Allow full access to all Cloud APIs

Set access for each API

Confidential VM service ⓘ

Confidential Computing is disabled on this VM instance

[Enable](#)

Shielded VM ⓘ

Turn on all settings for the most secure configuration.

Turn on Secure Boot ⓘ

Turn on vTPM ⓘ

Turn on Integrity Monitoring ⓘ

VM access

Manage how users connect to the VM

[Create](#) [Cancel](#) [Equivalent code](#)

Monthly estimate
\$42.25
That's about \$0.06 hourly
Pay for what you use: no upfront costs and per second billing

Item	Monthly estimate
2 vCPU + 1 GB memory	\$40.81
30 GB standard persistent disk	\$1.44
Logging	Cost varies ⓘ
Monitoring	Cost varies ⓘ
Snapshot schedule	Cost varies ⓘ
Total	\$42.25

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[Create an instance](#) [Create VM from...](#) [Equivalent code](#)

Security

- Machine configuration e2-custom-2-1024, asia-south1-b
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Gracefully shut down the VM ⓘ [Preview](#)

On VM termination Stop

Choose what happens to your VM when it's preempted or reaches its time limit

On host maintenance Terminate VM instance

When Compute Engine performs periodic infrastructure maintenance it can migrate your VM instances to other hardware without downtime

Host error timeout Unspecified (default)

When the VM becomes unresponsive, it will terminate after this amount of time

Automatic restart Off

Compute Engine can automatically restart VM instances if they are terminated for non-user-initiated reasons (maintenance event, hardware failure, software failure and so on)

[VM provisioning model advanced settings](#)

Customer Managed Encryption Key (CMEK) revocation policy
You can configure this VM to shut down when the key associated with any attached disk is revoked. [Learn more](#)

Shut down (recommended)

Do nothing

Sole-tenancy

Selected machine type is not compatible with Sole-tenancy.

[Create](#) [Cancel](#) [Equivalent code](#)

Monthly estimate
\$17.76
That's about \$0.02 hourly
Pay for what you use: no upfront costs and per second billing

Item	Monthly estimate
2 vCPU + 1 GB memory	\$16.32
30 GB standard persistent disk	\$1.44
Logging	Cost varies ⓘ
Monitoring	Cost varies ⓘ
Snapshot schedule	Cost varies ⓘ
Total	\$17.76

[Compute Engine pricing](#) [Cloud Operations pricing](#)

[Less](#)

2. Copying files to VMs using scp command:

```
[ERROR: (gcloud.compute.scp) [/usr/bin/scp] exited with return code [255].]
(base) sohamshrivastava@Sohams-MacBook-Air-3 ~ % gcloud compute scp --recurse ~/Desktop/stt_assignment_8/frontend g23110315@frontend-vm:~
.DS_Store
Dockerfile
index.html
main.py

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

(base) sohamshrivastava@Sohams-MacBook-Air-3 ~ % gcloud compute scp --recurse ~/Desktop/stt_assignment_8/backend g23110315@backend-vm:~
server.py
Dockerfile
(base) sohamshrivastava@Sohams-MacBook-Air-3 ~ % gcloud compute scp --recurse ~/Desktop/stt_assignment_8/docker_compose.wsl g23110315@backend-vm:~
```

3. Docker Setup and Execution:

Dockerfiles:

Frontend:

```
g23110315@frontend-vm:~$ ls
frontend
g23110315@frontend-vm:~$ cd frontend
g23110315@frontend-vm:~/frontend$ docker build -t fastapi:2 .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit:
https://docs.docker.com/go/buildx/

Sending build context to Docker daemon 6.144kB
Step 1/6 : FROM python:3.10
3.10: Pulling from library/python
^C
g23110315@frontend-vm:~/frontend$ docker build -t fastapi:1 .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit:
https://docs.docker.com/go/buildx/

Sending build context to Docker daemon 6.144kB
Step 1/6 : FROM python:3.10
3.10: Pulling from library/python
7cd785773db4: Already exists
091eb8249475: Already exists
255774e0027b: Already exists
353e14e5cc47: Already exists
0c64566c7562: Full complete
57161121b343: Full complete
a90d73ac0e51: Full complete
Digest: sha256:8ad0e578elb733f2a496b41f179175679374191a9c7ab8c63156446094a9cda8
Status: Downloaded newer image for python:3.10
--> bc0fc5e29abb
Step 2/6 : WORKDIR /app
--> Running in a74716a2f61f
--> Removed intermediate container a74716a2f61f
--> 010f6456b1de
Step 3/6 : COPY ..
--> 125e2d1a125d
Step 4/6 : RUN pip install --no-cache-dir fastapi uvicorn jinja2
--> Running in 09deb84c87f5
Collecting fastapi
  Downloading fastapi-0.115.12-py3-none-any.whl (95 kB)
--> 95.2/95.2 kB 2.4 MB/s eta 0:00:00
Collecting uvicorn
  Downloading uvicorn-0.34.0-py3-none-any.whl (62 kB)
--> 62.3/62.3 kB 21.5 MB/s eta 0:00:00

```

Backend:

```
g23110315@backend-vm:~$ ls
backend
g23110315@backend-vm:~$ cd backend
g23110315@backend-vm:~/backend$ docker build -t fastapi:2 .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit:
https://docs.docker.com/go/buildx/

Sending build context to Docker daemon 3.584kB
Step 1/6 : FROM python:3.13-slim
3.13-slim: Pulling from library/python
6e909acdb790: Full complete
a6f2701f375f: Full complete
7a729f9c5873: Full complete
75c77ac11059: Full complete
Digest: sha256:8f3aba46a471c0ab903dbd7cb979ab4bda370b04789d25440cc90372b50e04
Status: Downloaded newer image for python:3.13-slim
--> c29437c856a5
Step 2/6 : WORKDIR /api
--> Running in 5d95c5e74204
--> Removed intermediate container 5d95c5e74204
--> 646fc15228f4
Step 3/6 : RUN pip install --no-cache-dir "fastapi[standard]" uvicorn elasticsearch
--> Running in 9a4329fe8047
Collecting uvicorn
  Downloading uvicorn-0.34.0-py3-none-any.whl.metadata (6.5 kB)
Collecting elasticsearch
  Downloading elasticsearch-8.17.2-py3-none-any.whl.metadata (8.8 kB)
Collecting fastapi[standard]
  Downloading fastapi-0.115.12-py3-none-any.whl.metadata (27 kB)
Collecting starlette<0.47.0,>0.40.0 (from fastapi[standard])
  Downloading starlette-0.46.1-py3-none-any.whl.metadata (6.2 kB)
Collecting pydantic!=1.8,!=1.8.1,!=2.0.0,!=2.0.1,!=2.1.0,<3.0.0,>=1.7.4 (from fastapi[standard])
```

Building Docker Images:

Backend:

```
g23110315@backend-vm:~$ cd backend
g23110315@backend-vm:~/backends$ docker build -t fastapi:2
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit.
https://docs.docker.com/go/buildkit/
Sending build context to Docker daemon 4.096kB
Step 1/6 : FROM python:3.13-slim
--> c29437c856a5
Step 2/6 : RUN pip install /api
--> Using cache
--> 646fc15229f4
Step 3/6 : RUN pip install --no-cache-dir "fastapi[standard]" uvicorn elasticsearch
--> Using cache
--> eb21a780975f
Step 4/6 : COPY .
--> b7791c1c7ecd
Step 5/6 : ENV ELASTICSEARCH_HOST=http://elasticsearch:9200
--> Running in 38cdce2e21b0
--> Removed intermediate container 38cdce2e21b0
--> c0635727d458
Step 6/6 : CMD ["uvicorn", "server:app", "--host", "0.0.0.0", "--port", "9567"]
--> Running in e9e6ce69153b
--> Removed intermediate container e9e6ce69153b
--> e9e6ce69153b
Successfully built 0ed2b2867f6e5
Successfully tagged fastapi:2
g23110315@backend-vm:~/backends$ docker run -d --name backend-container --network= myntwrk -p 9567:9567 fastapi:2
docker: no name set for network.
See 'docker run --help'.
g23110315@backend-vm:~/backends$ docker run -d --name backend-container --network=myntwrk -p 9567:9567 fastapi:2
6c0261fidddfa70c6d6440c3e29d63a9f5b8/bc/1d1fc40bed6e159/bd1
g23110315@backend-vm:~/backends$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
6c01d5856f6a3 fastapi:2 "uvicorn server:app ..." 19 seconds ago Up 3 seconds 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp backend-container
4420leabea70 docker.elastic.co/elasticsearch/elasticsearch:8.17.3 "/bin/tini -- /usr/l..." 45 minutes ago Up 45 minutes 127.0.0.1:9200->9200/tcp, 9300/tcp elasticsearch
g23110315@backend-vm:~/backends$
```

Frontend:

```
See DOCKER_HELP
g23110315@frontend-vm:~$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
d10261fidddfa fastapi:1 "sh -c 'fastapi run ...'" 59 minutes ago Up 59 minutes 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp frontend-container
g23110315@frontend-vm:~$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
fastapi 1 d9a89e18a4b8 About an hour ago 198MB
<none> <none> 6778ace7f568 About an hour ago 198MB
<none> <none> eb7495a8e87c About an hour ago 198MB
<none> <none> 1196fe0c608b About an hour ago 156MB
<none> <none> lbc658689f53 3 hours ago 145MB
<none> <none> bd75ff86f547 23 hours ago 1.02GB
<none> <none> b7883d77aa3c 25 hours ago 1.02GB
frontend-app latest 638666e50dd4 2 days ago 1.03GB
python 3.13-slim c29437c856a5 7 weeks ago 121MB
python 3.12-slim 73bcae9132b 7 weeks ago 124MB
python 3.10 bc0fc5e29abb 3 months ago 1GB
python 3.9 859d4a0f1fd8 3 months ago 999MB
g23110315@frontend-vm:~$
```

Running Containers:

```
g23110315@frontend-vm:~/frontend$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
ae54d53f3416 fastapi:1 "uvicorn main:app --..." 3 minutes ago Up 3 minutes 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp frontend
g23110315@frontend-vm:~/frontend$
```

4. Port Configuration (“netstat -antp | grep LISTEN”):

Frontend:

```
INFO 35.203.210.232:61248 - "GET / HTTP/1.1" 200
g23110315@frontend-vm:~$ netstat -antp | grep LISTEN
(Not all processes could be identified, non-owned process info
will not be shown, you would have to be root to see it all.)
tcp        0      0 0.0.0.0:20202          0.0.0.0:*
                  LISTEN      -
tcp        0      0 127.0.0.53:53          0.0.0.0:*
                  LISTEN      -
tcp        0      0 0.0.0.0:22          0.0.0.0:*
                  LISTEN      -
tcp        0      0 127.0.0.1:37789          0.0.0.0:*
                  LISTEN      -
tcp        0      0 0.0.0.0:9567          0.0.0.0:*
                  LISTEN      -
tcp6       0      0 ::1:20201           :::*
                  LISTEN      -
tcp6       0      0 ::1:22             :::*
                  LISTEN      -
tcp6       0      0 ::1:9567           :::*
                  LISTEN      -
g23110315@frontend-vm:~$
```

Backend:

```
g23110315@backend-vm:~/backend$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
6c01d5856f6a3 fastapi:2 "uvicorn server:app ..." 19 seconds ago Up 3 seconds 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp backend-container
4420leabea70 docker.elastic.co/elasticsearch/elasticsearch:8.17.3 "/bin/tini -- /usr/l..." 45 minutes ago Up 45 minutes 127.0.0.1:9200->9200/tcp, 9300/tcp elasticsearch
g23110315@backend-vm:~/backend$ netstat -antp | grep LISTEN
(Not all processes could be identified, non-owned process info
will not be shown, you would have to be root to see it all.)
tcp        0      0 127.0.0.1:53          0.0.0.0:*
                  LISTEN      -
tcp        0      0 0.0.0.0:9567          0.0.0.0:*
                  LISTEN      -
tcp        0      0 0.0.0.0:22          0.0.0.0:*
                  LISTEN      -
tcp        0      0 127.0.0.1:9200          0.0.0.0:*
                  LISTEN      -
tcp        0      0 0.0.0.0:20202          0.0.0.0:*
                  LISTEN      -
tcp        0      0 127.0.0.1:46643          0.0.0.0:*
                  LISTEN      -
tcp6       0      0 ::1:9567           :::*
                  LISTEN      -
tcp6       0      0 ::1:22             :::*
                  LISTEN      -
tcp6       0      0 ::1:20201          :::*
                  LISTEN      -
g23110315@backend-vm:~/backend$
```

Logs:

```
g23110315@frontend-vm:~$ docker logs frontend-container

FastAPI    Starting production server 🚀

    Searching for package file structure from directories with
    __init__.py files
    Importing from /app

module     🌐 main.py

code       Importing the FastAPI app object from the module with the following
          code:

          from main import app

app        Using import string: main:app

server    Server started at http://0.0.0.0:9567
server    Documentation at http://0.0.0.0:9567/docs

Logs:

INFO     Started server process [8]
INFO     Waiting for application startup.
INFO     Application startup complete.
INFO     Uvicorn running on http://0.0.0.0:9567 (Press CTRL+C to quit)
INFO     14.139.98.80:10400 - "GET / HTTP/1.1" 200
INFO     14.139.98.80:10403 - "GET /?query=hellow HTTP/1.1" 200
INFO     35.203.210.232:61248 - "GET / HTTP/1.1" 200
g23110315@frontend-vm:~$ █
```

5. Docker Images:

Frontend:

```
g23110315@frontend-vm:~$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS               NAMES
d10261fddfa        fastapi:1           "sh -c 'fastapi run ...'"   59 minutes ago    Up 59 minutes   0.0.0.0:9567->9567/tcp, :::9567->9567/tcp   frontend-container
g23110315@frontend-vm:~$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
fastapi              1                  d9a89e18a4b8      About an hour ago   198MB
<none>              <none>            6778acc7f568      About an hour ago   198MB
<none>              <none>            eb7495a8e87c      About an hour ago   198MB
<none>              <none>            1196fe0c608b      About an hour ago   156MB
<none>              <none>            1bc658689f53      3 hours ago        145MB
<none>              <none>            bd75ff86f547      23 hours ago       1.02GB
<none>              <none>            b7883d77aa3c      25 hours ago       1.02GB
<none>              <none>            638666e50dd4      2 days ago         1.03GB
frontend-app        latest              c29437c856a5      7 weeks ago        121MB
python               3.13-slim          c29437c856a5      7 weeks ago        124MB
python               3.12-slim          73bcae9132c      3 months ago       1GB
python               3.10               bc0fc5e29abb      3 months ago       999MB
python               3.9                859d4a0f1fd8      3 months ago       999MB
g23110315@frontend-vm:~$ █
```

Backend and ElasticSearch:

```
Error response from daemon: No such image: 4420leabea/U:latest
g23110315@backend-vm:~$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
fastapi              2                  0ed2b2867fe6      About an hour ago   194MB
sohamshrivastava935/fastapi        2                  0ed2b2867fe6      About an hour ago   194MB
g23110315-backend        latest              8d2ac3fc9798      3 hours ago        194MB
<none>              <none>            900d6f89d7c8      26 hours ago       1.06GB
<none>              <none>            902b17e58750      26 hours ago       194MB
backend-app          latest              d6fcacad5b76      3 days ago         1.04GB
backend-image         latest              0b3df087f7e1      3 days ago         1.04GB
docker.elastic.co/elasticsearch/elasticsearch  8.17.3            869b1daa5a9f      4 weeks ago        1.32GB
python               3.13-slim          c29437c856a5      7 weeks ago        121MB
python               3.9                859d4a0f1fd8      3 months ago       999MB
g23110315@backend-vm:~$ █
```

6. Health Check:

```
g23110315@backend-vm:~$ curl -X GET "http://localhost:9200/_cluster/health?pretty"
{
  "cluster_name" : "docker-cluster",
  "status" : "yellow",
  "timed_out" : false,
  "number_of_nodes" : 1,
  "number_of_data_nodes" : 1,
  "active_primary_shards" : 1,
  "active_shards" : 1,
  "relocating_shards" : 0,
  "initializing_shards" : 0,
  "unassigned_shards" : 1,
  "unassigned_primary_shards" : 0,
  "delayed_unassigned_shards" : 0,
  "number_of_pending_tasks" : 0,
  "number_of_in_flight_fetch" : 0,
  "task_max_waiting_in_queue_millis" : 0,
  "active_shards_percent_as_number" : 50.0
}
g23110315@backend-vm:~$
```

7. Inserting 4 Paragraphs:

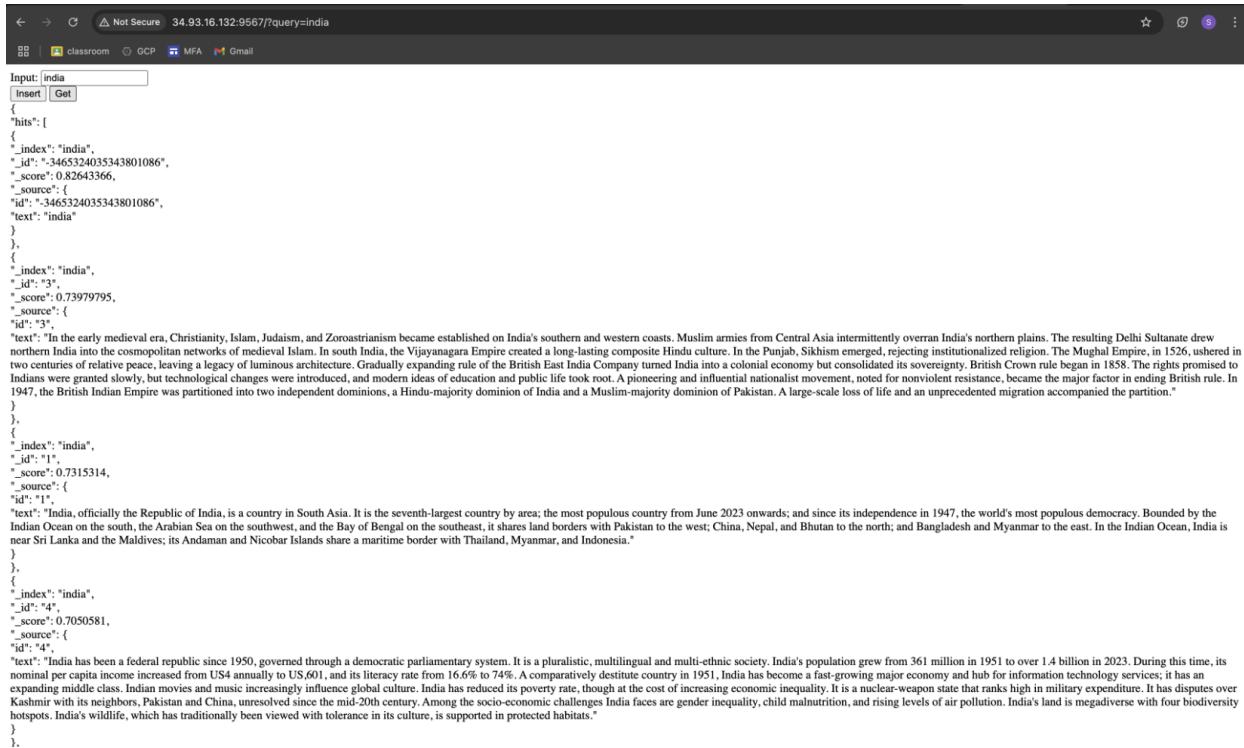
```
g23110315@backend-vm:~$ curl -X POST "http://localhost:9200/india/_bulk" -H "Content-Type: application/json" --data-binary @<EOF
> {"index": {"_id": "1"}, "text": "India, officially the Republic of India, is a country in South Asia. It is the seventh-largest country by area; the most populous country from June 2023 onwards; and since its independence in 1947, the world's most populous democracy. Bounded by the Indian Ocean on the south, the Arabian Sea on the southwest, and the Bay of Bengal on the southeast, it shares land borders with Pakistan to the west; China, Nepal, and Bhutan to the north; and Bangladesh and Myanmar to the east. In the Indian Ocean, India is near Sri Lanka and the Maldives; its Andaman and Nicobar Islands share a maritime border with Thailand, Myanmar, and Indonesia."}
> {"index": {"_id": "2"}, "text": "Modern humans arrived on the Indian subcontinent from Africa no later than 55,000 years ago. Their long occupation, predominantly in isolation as hunter-gatherers, has made the region highly diverse, second only to Africa in human genetic diversity. Settled life emerged on the subcontinent in the western margins of the Indus river basin 9,000 years ago, evolving gradually into the Indus Valley Civilisation of the third millennium BCE. By 1200 BCE, an archaic form of Sanskrit, an Indo-European language, had diffused into India from the northwest. Its hymns recorded the dawning of Hinduism in India. India's pre-existing Dravidian languages were supplanted in the northern regions. By 400 BCE, caste had emerged within Hinduism, and Buddhism and Jainism had arisen, proclaiming social orders unlinked to heredity. Early political consolidations gave rise to the loose-knit Maurya and Gupta Empires. Widespread creativity suffused this era, but the status of women declined, and untouchability became an organized belief. In South India, the Middle kingdoms exported Dravidian language scripts and religious cultures to the kingdoms of Southeast Asia."}
> {"index": {"_id": "3"}, "text": "In the early medieval era, Christianity, Islam, Judaism, and Zoroastrianism became established on India's southern and western coasts. Muslim armies from Central Asia intermittently overran India's northern plains. The resulting Delhi Sultanate drew northern India into the cosmopolitan networks of medieval Islam. In south India, the Vijayanagara Empire created a long-lasting composite Hindu culture. In the 16th century, the Mughal Empire, a centralized state that encompassed most of the Indian subcontinent, replaced the Delhi Sultanate. The Mughals were a Turkic dynasty that had adopted Islam. They consolidated their rule through a policy of religious tolerance, but they also imposed a heavy tax burden on non-Muslims. The British East India Company turned India into a colonial economy but consolidated its sovereignty. British Crown rule began in 1858. The rights promised to Indians were granted slowly, but technological changes were introduced, and modern ideas of education and public life took root. A pioneering and influential nationalist movement, noted for nonviolent resistance, became the major factor in ending British rule. In 1947, the British Indian Empire was partitioned into two independent dominions, a Hindu-majority dominion of India and a Muslim-majority dominion of Pakistan. A large-scale loss of life and an unprecedented migration accompanied the partition."}
> {"index": {"_id": "4"}, "text": "India has been a federal republic since 1950, governed through a democratic parliamentary system. It is a pluralistic, multilingual and multi-ethnic society. India's population grew from 361 million in 1951 to over 1.4 billion in 2023. During this time, its nominal per capita income increased from US$4 annually to US$601, and its literacy rate from 16.6% to 74%. A comparatively destitute country in 1951, India has become a fast-growing economic hub for technology services, pharmaceuticals, and engineering. It is a nuclear-weapons state that ranks high in military expenditure. It has disputes over Kashmir with its neighbors, Pakistan and China, unresolved since the mid-20th century. Among the socio-economic challenges India faces are gender inequality, child malnutrition, and rising levels of air pollution. India's land is megadiverse with four biodiversity hotspots. India's wildlife, which has traditionally been viewed with tolerance in its culture, is supported in protected habitats."}
> EOF
> {"errors":false,"took":0,"items":[{"index":{"_id":"1","version":4,"result":"updated","shards":{"total":2,"successful":1,"failed":0},"seq_no":12,"primary_term":1,"status":200}},{"index":{"_id":"2","version":4,"result":"updated","shards":{"total":2,"successful":1,"failed":0},"seq_no":13,"primary_term":1,"status":200}},{"index":{"_id":"3","version":4,"result":"updated","shards":{"total":2,"successful":1,"failed":0},"seq_no":14,"primary_term":1,"status":200}},{"index":{"_id":"4","version":4,"result":"updated","shards":{"total":2,"successful":1,"failed":0}}}], "primary_term":1,"status":200})g23110315@backend-vm:~$
```

Output:

```
g23110315@backend-vm:~$ curl -X GET "http://localhost:9200/india/_search?pretty"
{
  "took": 1,
  "timed_out": false,
  "hits": {
    "total": 4,
    "max_score": 1.0,
    "hits": [
      {
        "_index": "india",
        "_id": "1",
        "_score": 1.0,
        "_source": {
          "id": "1",
          "text": "India, officially the Republic of India, is a country in South Asia. It is the seventh-largest country by area; the most populous country from June 2023 onwards; and since its independence in 1947, the world's most populous democracy. Bounded by the Indian Ocean on the south, the Arabian Sea on the southwest, and the Bay of Bengal on the southeast, it shares land borders with Pakistan to the west; China, Nepal, and Bhutan to the north; and Bangladesh and Myanmar to the east. In the Indian Ocean, India is near Sri Lanka and the Maldives; its Andaman and Nicobar Islands share a maritime border with Thailand, Myanmar, and Indonesia."}
      },
      {
        "_index": "india",
        "_id": "2",
        "_score": 1.0,
        "_source": {
          "id": "2",
          "text": "Modern humans arrived on the Indian subcontinent from Africa no later than 55,000 years ago. Their long occupation, predominantly in isolation as hunter-gatherers, has made the region highly diverse, second only to Africa in human genetic diversity. Settled life emerged on the subcontinent in the western margins of the Indus river basin 9,000 years ago, evolving gradually into the Indus Valley Civilisation of the third millennium BCE. By 1200 BCE, an archaic form of Sanskrit, an Indo-European language, had diffused into India from the northwest. Its hymns recorded the dawning of Hinduism in India. India's pre-existing Dravidian languages were supplanted in the northern regions. By 400 BCE, caste had emerged within Hinduism, and Buddhism and Jainism had arisen, proclaiming social orders unlinked to heredity. Early political consolidations gave rise to the loose-knit Maurya and Gupta Empires. Widespread creativity suffused this era, but the status of women declined, and untouchability became an organized belief. In South India, the Middle kingdoms exported Dravidian language scripts and religious cultures to the kingdoms of Southeast Asia."}
      },
      {
        "_index": "india",
        "_id": "3",
        "_score": 1.0,
        "_source": {
          "id": "3",
          "text": "In the early medieval era, Christianity, Islam, Judaism, and Zoroastrianism became established on India's southern and western coasts. Muslim armies from Central Asia intermittently overran India's northern plains. The resulting Delhi Sultanate drew northern India into the cosmopolitan networks of medieval Islam. In south India, the Vijayanagara Empire created a long-lasting composite Hindu culture. In the 16th century, the Mughal Empire, a centralized state that encompassed most of the Indian subcontinent, replaced the Delhi Sultanate. The Mughals were a Turkic dynasty that had adopted Islam. They consolidated their rule through a policy of religious tolerance, but they also imposed a heavy tax burden on non-Muslims. The British East India Company turned India into a colonial economy but consolidated its sovereignty. British Crown rule began in 1858. The rights promised to Indians were granted slowly, but technological changes were introduced, and modern ideas of education and public life took root. A pioneering and influential nationalist movement, noted for nonviolent resistance, became the major factor in ending British rule. In 1947, the British Indian Empire was partitioned into two independent dominions, a Hindu-majority dominion of India and a Muslim-majority dominion of Pakistan. A large-scale loss of life and an unprecedented migration accompanied the partition."}
      },
      {
        "_index": "india",
        "_id": "4",
        "_score": 1.0,
        "_source": {
          "id": "4",
          "text": "India has been a federal republic since 1950, governed through a democratic parliamentary system. It is a pluralistic, multilingual and multi-ethnic society. India's population grew from 361 million in 1951 to over 1.4 billion in 2023. During this time, its nominal per capita income increased from US$4 annually to US$601, and its literacy rate from 16.6% to 74%. A comparatively destitute country in 1951, India has become a fast-growing economic hub for technology services, pharmaceuticals, and engineering. It is a nuclear-weapons state that ranks high in military expenditure. It has disputes over Kashmir with its neighbors, Pakistan and China, unresolved since the mid-20th century. Among the socio-economic challenges India faces are gender inequality, child malnutrition, and rising levels of air pollution. India's land is megadiverse with four biodiversity hotspots. India's wildlife, which has traditionally been viewed with tolerance in its culture, is supported in protected habitats."}
      }
    ]
  }
}
g23110315@backend-vm:~$
```

8. Testing

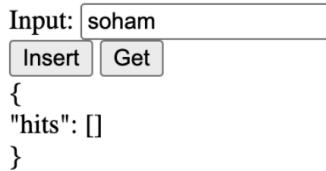
Get:



A screenshot of a web browser window. The address bar shows "Not Secure 34.93.16.132:9567/?query=india". Below the address bar is a search form with an input field containing "india", an "Insert" button, and a "Get" button. The main content area displays a JSON response from a search query. The response starts with a "hits" array containing three items. The first item has an "id" of "3465324035343801086", a score of 0.82643366, and a source of "3465324035343801086". Its text is "india". The second item has an "id" of "3", a score of 0.73979795, and a source of "3". Its text is "In the early medieval era, Christianity, Islam, Judaism, and Zoroastrianism became established on India's southern and western coasts. Muslim armies from Central Asia intermittently overran India's northern plains. The resulting Delhi Sultanate drew northern India into the cosmopolitan networks of medieval Islam. In south India, the Vijayanagara Empire created a long-lasting composite Hindu culture. In the Punjab, Sikhism emerged, rejecting institutionalized religion. The Mughal Empire, in 1526, ushered in two centuries of relative peace, leaving a legacy of luminous architecture. Gradually expanding rule of the British East India Company turned India into a colonial economy but consolidated its sovereignty. British Crown rule began in 1858. The rights promised to Indians were granted slowly, but technological changes were introduced, and modern ideas of education and public life took root. A pioneering and influential nationalist movement, noted for nonviolent resistance, became the major factor in ending British rule. In 1947, the British Indian Empire was partitioned into two independent dominions, a Hindu-majority dominion of India and a Muslim-majority dominion of Pakistan. A large-scale loss of life and an unprecedented migration accompanied the partition." The third item has an "id" of "1", a score of 0.7315314, and a source of "1". Its text is "India, officially the Republic of India, is a country in South Asia. It is the seventh-largest country by area; the most populous country from June 2023 onwards; and since its independence in 1947, the world's most populous democracy. Bounded by the Indian Ocean on the south, the Arabian Sea on the southwest, and the Bay of Bengal on the southeast, it shares land borders with Pakistan to the west; China, Nepal, and Bhutan to the north; and Bangladesh and Myanmar to the east. In the Indian Ocean, India is near Sri Lanka and the Maldives; its Andaman and Nicobar Islands share a maritime border with Thailand, Myanmar, and Indonesia." The fourth item has an "id" of "4", a score of 0.7050581, and a source of "4". Its text is "India has been a federal republic since 1950, governed through a democratic parliamentary system. It is a pluralistic, multilingual and multi-ethnic society. India's population grew from 361 million in 1951 to over 1.4 billion in 2023. During this time, its nominal per capita income increased from US\$4 annually to US\$601, and its literacy rate from 16.6% to 74%. A comparatively destitute country in 1951, India has become a fast-growing major economy and hub for information technology services; it has an expanding middle class. Indian movies and music increasingly influence global culture. India has reduced its poverty rate, though at the cost of increasing economic inequality. It is a nuclear-weapons state that ranks high in military expenditure. It has disputes over Kashmir with its neighbors, Pakistan and China, unresolved since the mid-20th century. Among the socio-economic challenges India faces are gender inequality, child malnutrition, and rising levels of air pollution. India's land is megadiverse with four biodiversity hotspots. India's wildlife, which has traditionally been viewed with tolerance in its culture, is supported in protected habitats."

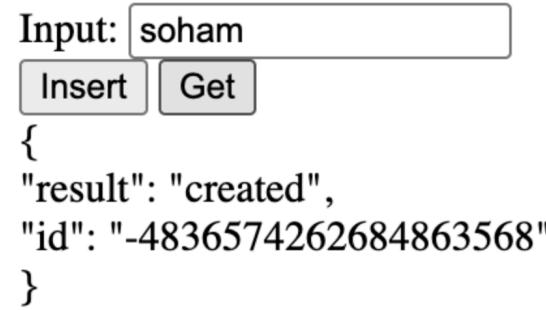
Insert:

Originally “Soham” doesn’t exist:



A screenshot of a web browser window. The address bar shows "Not Secure 34.93.16.132:9567/?query=soham". Below the address bar is a search form with an input field containing "soham", an "Insert" button, and a "Get" button. The main content area displays a JSON response from a search query. The response starts with a "hits" array containing one item. This item has an "id" of "4836574262684863568", a score of 1.0, and a source of "4836574262684863568". Its text is "soham".

Inserting “Soham”:



A screenshot of a web browser window. The address bar shows "Not Secure 34.93.16.132:9567/?query=soham". Below the address bar is a search form with an input field containing "soham", an "Insert" button, and a "Get" button. The main content area displays a JSON response from a search query. The response starts with a "result" field containing "created", followed by an "id" field with the value "-4836574262684863568".

Get after Insert:

```
Input: soham
Insert Get
{
  "hits": [
    {
      "_index": "india",
      "_id": "-4836574262684863568",
      "_score": 3.006784,
      "_source": {
        "id": "-4836574262684863568",
        "text": "soham"
      }
    }
  ]
}
```

9. Stopping and Deleting all the 3 containers:

Before killing:

Inserting “group_22” as it doesn’t exist:

The image contains two side-by-side screenshots of a web browser window. Both screenshots show the URL `34.93.16.132:9567/?query=group_22`.
Left screenshot (Input: group_22):
The search results JSON is:

```
Input: group_22
Insert Get
{
  "hits": []
}
```


Right screenshot (Input: group22):
The search results JSON is:

```
Input: group22
Insert Get
{
  "result": "created",
  "id": "6682252866144667221"
}
```

Now killing:

Backend and fastapi:

```
g23110315@backend-vm:~$ docker stop $(docker ps -a -q)
a278b592d1ae
6c1d5856f6a3
44201eabea70
g23110315@backend-vm:~$ docker rm $(docker ps -a -q)
a278b592d1ae
6c1d5856f6a3
44201eabea70
g23110315@backend-vm:~$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS              NAMES
g23110315@backend-vm:~$
```

Frontend:

```
g23110315@frontend-vm:~$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS              NAMES
d10261fdddfa      fastapi:1          "sh -c 'fastapi run ...'"   3 hours ago       Up 3 hours        0.0.0.0:9567->9567/tcp, :::9567->9567/tcp   frontend-container
d10261fdddfa
5ea47e88b703
59e2ab65f408
79fa5fd2594b
g23110315@frontend-vm:~$ docker stop $(docker ps -a -q)
d10261fdddfa
5ea47e88b703
59e2ab65f408
79fa5fd2594b
g23110315@frontend-vm:~$ docker rm $(docker ps -a -q)
d10261fdddfa
5ea47e88b703
59e2ab65f408
79fa5fd2594b
g23110315@frontend-vm:~$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS              NAMES
```

Get “group_22” after restarting:



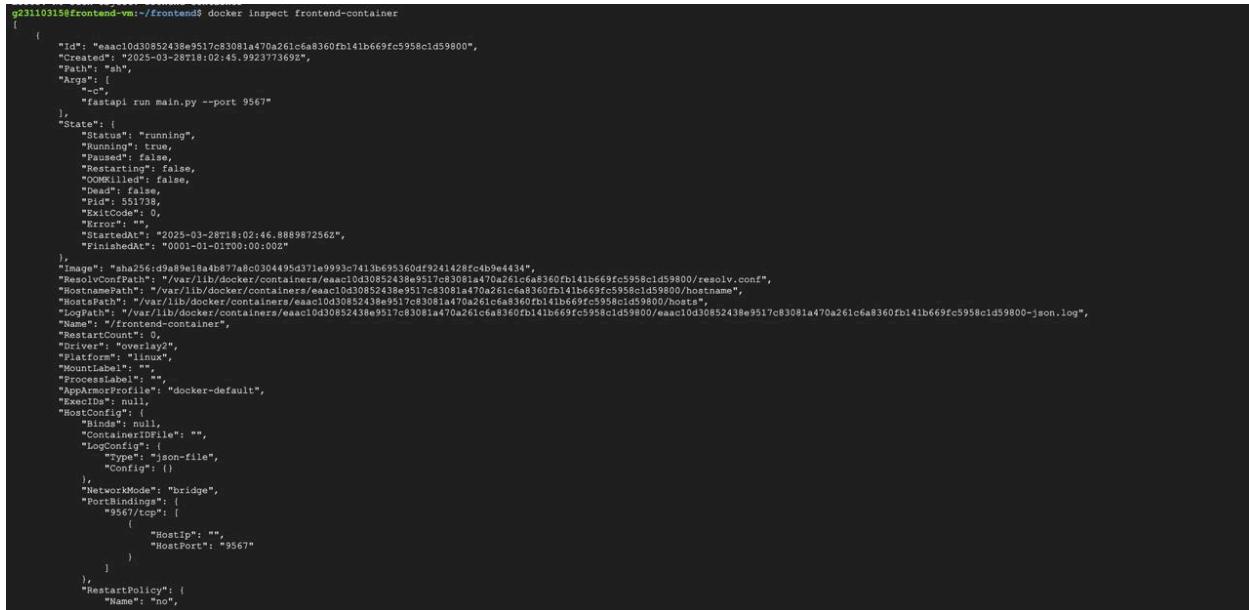
The screenshot shows a browser window with the URL 34.93.16.132:9567. The search bar contains "Input: group_22". Below it are two buttons: "Insert" and "Get". The "Get" button is highlighted. The response is a JSON object:

```
{  
  "hits": [  
    {  
      "_index": "india",  
      "_id": "-2416261728957695305",  
      "_score": 3.4787931,  
      "_source": {  
        "id": "-2416261728957695305",  
        "text": "group_22"  
      }  
    }  
  ]  
}
```

Thus, “group_22” exists even after restarting the containers.

10. Inspecting Docker:

Frontend:



```
g23110315@frontend-vm:~/frontend$ docker inspect frontend-container  
[  
  {  
    "Id": "eaaac10d30852438e9517c83081a470a261c6a8360fb141b669fc5958c1d59800",  
    "Created": "2025-03-28T18:02:45.992377369Z",  
    "Path": "/sh",  
    "Args": [  
      "-c",  
      "fastapi run main.py --port 9567"  
    ],  
    "State": {  
      "Status": "running",  
      "Running": true,  
      "Paused": false,  
      "Restarting": false,  
      "OOMKilled": false,  
      "Dead": false,  
      "Pid": 551738,  
      "ExitCode": 0,  
      "Error": "",  
      "StartedAt": "2025-03-28T18:02:46.888987256Z",  
      "FinishedAt": "0001-01-01T00:00:00Z"  
    },  
    "Image": "sha256:9a89e184b877a8c0304495d371e9993c7413b695360df924128fc4b9e4434",  
    "ImageID": "sha256:9a89e184b877a8c0304495d371e9993c7413b695360df924128fc4b9e4434",  
    "ResolvConfPath": "/var/lib/docker/containers/eaaac10d30852438e9517c83081a470a261c6a8360fb141b669fc5958c1d59800/resolv.conf",  
    "HostnamePath": "/var/lib/docker/containers/eaaac10d30852438e9517c83081a470a261c6a8360fb141b669fc5958c1d59800/hostname",  
    "HostConfig": {  
      "Binds": null,  
      "ContainerName": "eaaac10d30852438e9517c83081a470a261c6a8360fb141b669fc5958c1d59800",  
      "LogPath": "/var/lib/docker/containers/eaaac10d30852438e9517c83081a470a261c6a8360fb141b669fc5958c1d59800/logs",  
      "Name": "/frontend-container",  
      "RestartCount": 0,  
      "AutoRemove": false,  
      "Platform": "linux",  
      "MountLabel": "",  
      "ProcessLabel": "",  
      "AppArmorProfile": "docker-default",  
      "ExecutionDriver": "  
HostConfig": {  
      "Binds": null,  
      "ContainerIDFile": "",  
      "LogConfig": {  
        "Type": "json-file",  
        "Config": {}  
      },  
      "NetworkMode": "bridge",  
      "PortBindings": {  
        "9567/tcp": {  
          "HostIp": "",  
          "HostPort": "9567"  
        }  
      },  
      "RestartPolicy": {  
        "Name": "no",  
        "Minretry": 0  
      }  
    }  
  }  
]
```

```

        },
        "Image": "fastapi:1",
        "Volumes": null,
        "WorkingDir": "/app",
        "Entrypoint": null,
        "OnBuild": null,
        "Labels": {}
    },
    "NetworkSettings": {
        "Bridge": "",
        "ContainerID": "7c7744aa9c999b2b3b60af672bb83d028020e066a0069bdee19378b9622e14e",
        "SandboxKey": "/var/run/docker/netns/7c7744aa9c99",
        "Ports": {
            "9567/tcp": [
                {
                    "HostIp": "0.0.0.0",
                    "HostPort": "9567"
                },
                {
                    "HostIp": "::",
                    "HostPort": "9567"
                }
            ]
        },
        "HairpinMode": false,
        "LinkLocalIPv6Address": "",
        "LinkLocalIPv6PrefixLen": 0,
        "SecondaryIPAddresses": null,
        "SecondaryIPv6Addresses": null,
        "EndpointID": "0736eb873f409ff83de55e956a92f1b9082dca85bb9af1d74464bf93f5d3f0d",
        "Gateway": "172.17.0.1",
        "GlobalIPv6Address": "",
        "GlobalIPv6PrefixLen": 0,
        "IPAddress": "172.17.0.2",
        "IPPrefixLen": 16,
        "IPv6Gateway": "",
        "MacAddress": "02:42:ac:11:00:02",
        "Networks": {
            "bridge": {
                "IPAMConfig": null,
                "Links": null,
                "Aliases": null,
                "MacAddress": "02:42:ac:11:00:02",
                "NetworkID": "a110ea6a9f9dfad5724d464966df31a9cd0ba2e2734ce34594eb1e3dc3fc21",
                "EndpointID": "0736eb873f409ff83de55e956a92f1b9082dca85bb9af1d74464bf93f5d3f0d",
                "Gateway": "172.17.0.1",
                "IPAddrs": "172.17.0.2",
                "IPPrefixLen": 16,
                "IPv6Gateway": "",
                "GlobalIPv6Address": "",
                "GlobalIPv6PrefixLen": 0,
                "DriverOpts": null,
                "DNSName": null
            }
        }
    }
}
g23110315@frontend-vm:~/frontends
```

Elasticsearch:

```

g23110315@backend-vm:~/backend$ docker inspect elasticsearch
[{"Id": "39df83e4913808fled992b2904665eaa22b0871a54849fa845d491lebd568c21",
 "Created": "2025-03-28T17:59:28.812317628Z",
 "Path": "/bin/tini",
 "Args": [
     "--",
     "/usr/local/bin/docker-entrypoint.sh",
     "eswrapper"
 ],
 "State": {
     "Status": "running",
     "Running": true,
     "Paused": false,
     "Restarting": false,
     "OOMKilled": false,
     "Dead": false,
     "Pid": 5021,
     "ExitCode": 0,
     "Error": "",
     "StartedAt": "2025-03-28T17:59:29.919158929Z",
     "FinishedAt": "2001-01-01T00:00:00Z"
 },
 "Image": "sha256:869b1daa5a9f7d3087840d9a8a8601cc87e02679b6d224b107295e2f3504edaf",
 "ResolvConfPath": "/var/lib/docker/containers/39df83e4913808fled992b2904665eaa22b0871a54849fa845d491lebd568c21/resolv.conf",
 "HostnamePath": "/var/lib/docker/containers/39df83e4913808fled992b2904665eaa22b0871a54849fa845d491lebd568c21/hostname",
 "HostsPath": "/var/lib/docker/containers/39df83e4913808fled992b2904665eaa22b0871a54849fa845d491lebd568c21/hosts",
 "LogPath": "/var/lib/docker/containers/39df83e4913808fled992b2904665eaa22b0871a54849fa845d491lebd568c21/json.log",
 "Name": "elasticsearch",
 "RestartCount": 0,
 "Driver": "overlay2",
 "Platform": "linux",
 "MountLabel": "",
 "ProcessLabel": "",
 "AppArmorProfile": "docker-default",
 "ExecIDs": null,
 "HostConfig": {
     "Binds": [
         "elasticsearch-data:/usr/share/elasticsearch/data"
     ],
     "ContainerIDFile": "",
     "LogConfig": {
         "Type": "json-file",
         "Config": {}
     },
     "NetworkMode": "myntwrk",
     "PortBindings": {
         "9200/tcp": [
             {
                 "HostIp": "127.0.0.1",
                 "HostPort": "9200"
             }
         ]
     },
     "RestartPolicy": {
         "Name": "no",
         "MaximumRetryCount": 0
     }
 },
 "RestartPolicy": {
     "Name": "no",
     "MaximumRetryCount": 0
 },
 "Ulimits": []
}
```

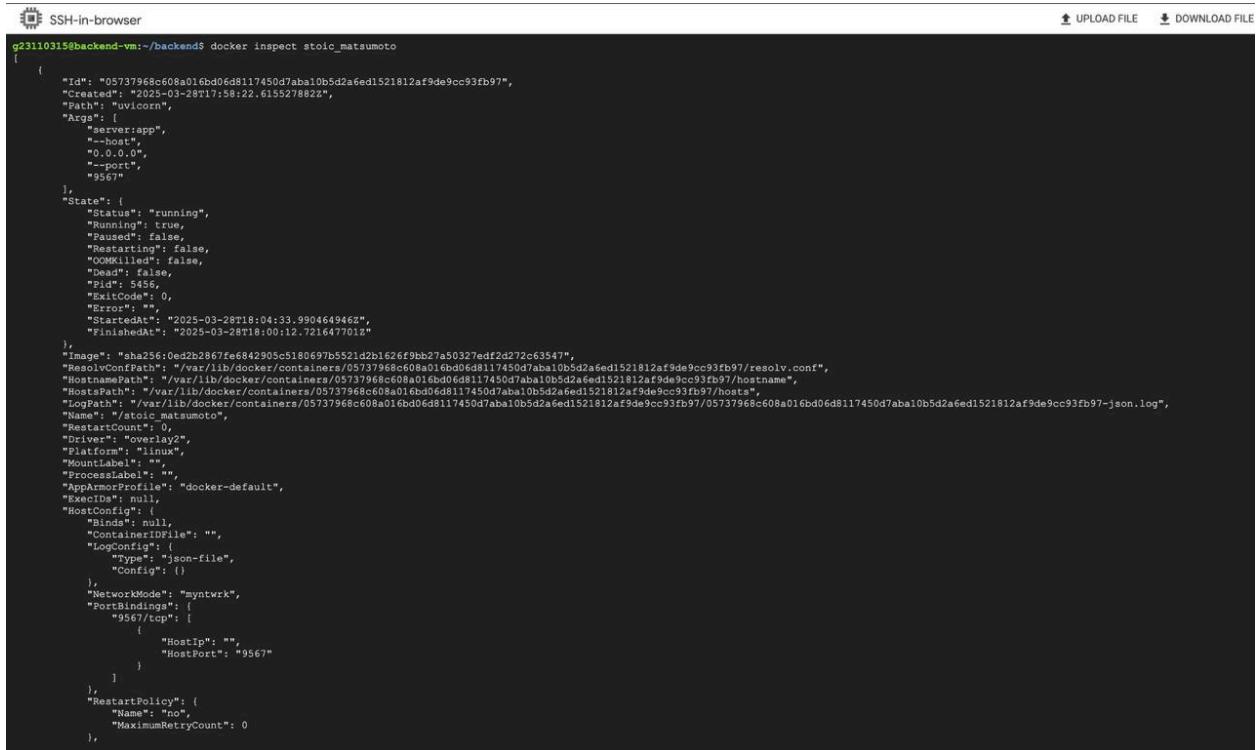
```

        "org.opencontainers.image.url": "https://www.elastic.co/products/elasticsearch",
        "org.opencontainers.image.vendor": "Elastic",
        "org.opencontainers.image.version": "8.17.3"
    },
    "NetworkSettings": {
        "Bridge": "",
        "SandboxID": "13af7ac681e547ad77c9524c3770a161720225789755ac5a1fbc43c0620919f",
        "SandboxKey": "/var/run/docker/netns/13af7ac681e",
        "Ports": {
            "9200/tcp": [
                {
                    "HostIP": "127.0.0.1",
                    "HostPort": "9200"
                }
            ],
            "9300/tcp": null
        },
        "HairpinMode": false,
        "LinkLocalIPv6Address": "",
        "LinkLocalIPv6PrefixLen": 0,
        "SecondaryIPv6Addresses": null,
        "SecondaryIPv6Addresses": null,
        "EndpointID": "",
        "Gateway": "",
        "GlobalIPv6Address": "",
        "GlobalIPv6PrefixLen": 0,
        "IPAddress": "",
        "IPPrefixLen": 0,
        "IPv6Gateway": "",
        "MacAddress": "",
        "Networks": {
            "myntwrk": {
                "IPAMConfig": null,
                "Links": null,
                "Aliases": null,
                "MacAddress": "02:42:ac:13:00:02",
                "EndpointID": "0474ed8322709d51d7ccfe9ff1f2bcc220abb5105c6fa04a9cf141e597af1a24d2",
                "Gateway": "172.19.0.1",
                "IPAddress": "172.19.0.2",
                "IPPrefixLen": 16,
                "IPv6Gateway": "",
                "GlobalIPv6Address": "",
                "GlobalIPv6PrefixLen": 0,
                "DriverOpts": null,
                "DNSNames": [
                    "elasticsearch",
                    "39df83e49138"
                ]
            }
        }
    }
}
g23110315@backend-vm:~/backend$ █

```

Backend:

(the name of Backend has been changed due to restarting it as needed in the previous part and we forgot to tag it to same name)



```

g23110315@backend-vm:~/backend$ docker inspect stoic_matsumoto
[{"Id": "05737968c608a016bd06d8117450d7ab10b5d2a6ed1521812af9de9cc93fb97",
 "Created": "2025-03-28T17:58:22.615527882Z",
 "Path": "uvicorn",
 "Args": [
     "--server=app",
     "--host",
     "0.0.0.0",
     "--port",
     "9567"
 ],
 "State": {
     "Status": "running",
     "Running": true,
     "Paused": false,
     "Restarting": false,
     "OOMKilled": false,
     "Dead": false,
     "Pid": 5456,
     "ExitCode": 0,
     "Error": "",
     "StartedAt": "2025-03-28T18:04:33.990464946Z",
     "FinishedAt": "2025-03-28T18:00:12.721647701Z"
 },
 "Image": "sha256:0edb2867fe6842905c5180697b5521d2b1626f9bb27a50327edf2d272c63547",
 "ResolvConfPath": "/var/lib/docker/containers/05737968c608a016bd06d8117450d7ab10b5d2a6ed1521812af9de9cc93fb97/resolv.conf",
 "HostnamePath": "/var/lib/docker/containers/05737968c608a016bd06d8117450d7ab10b5d2a6ed1521812af9de9cc93fb97/hostname",
 "HostsPath": "/var/lib/docker/containers/05737968c608a016bd06d8117450d7ab10b5d2a6ed1521812af9de9cc93fb97/hosts",
 "LogPath": "/var/lib/docker/containers/05737968c608a016bd06d8117450d7ab10b5d2a6ed1521812af9de9cc93fb97/json.log",
 "Name": "stoic_matsumoto",
 "RestartCount": 0,
 "Driver": "overlay2",
 "Platform": "linux",
 "MountLabel": "",
 "ProcessLabel": "",
 "AppArmorProfile": "docker-default",
 "ExtraHosts": null,
 "HostConfig": {
     "Binds": null,
     "ContainerIDFile": "",
     "LogConfig": {
         "Type": "json-file",
         "Config": {}
     },
     "NetworkMode": "myntwrk",
     "PortBindings": {
         "9567/tcp": [
             {
                 "HostIP": "",
                 "HostPort": "9567"
             }
         ]
     },
     "RestartPolicy": {
         "Name": "no",
         "MaximumRetryCount": 0
     }
 },
 "Labels": {}
}
g23110315@backend-vm:~/backend$ █

```

SSH-in-browser

```
"Volumes": null,
"WorkingDir": "/api",
"Entrypoint": null,
"OnBuild": null,
"Labels": {}
},
"NetworkSettings": {
"Bridge": "",
"SandboxID": "6d36e1a418e6972d73f9b99da5ab972af675387a8c0cc4400fa547602741435a",
"SandboxKey": "/var/run/docker/netns/6d36e1a418e6",
"Ports": {
"9567/tcp": [
{
"HostIP": "0.0.0.0",
"HostPort": "9567"
},
{
"HostIP": "::",
"HostPort": "9567"
}
]
},
"HairpinMode": false,
"LinkLocalIPv6Address": "",
"LinkLocalIPv6PrefixLen": 0,
"SecondaryIPv6Addresses": null,
"SecondaryIPv6Addressess": null,
"EndpointID": "",
"Gateway": "",
"GlobalIPv6Address": "",
"GlobalIPv6PrefixLen": 0,
"IPAddress": "",
"IPPrefixLen": 0,
"IPv6Gateway": "",
"MacAddress": "",
"Networks": [
{"myntwk": {
"IPAMConfig": null,
"Links": null,
"Aliases": null,
"MacAddress": "02:42:ac:13:00:03",
"NetworkID": "047ed83c2709d51d7ccfe9f1f2bcc220abb5105c6fa04a9cf141e597af1a24d2",
"EndpointID": "5a6b11cc4b6d95a6ffecb7db9bda39190aec4c9be3affcb9acaf8052225b8ae0",
"Gateway": "172.19.0.1",
"IPAddress": "172.19.0.3",
"IPPrefixLen": 16,
"IPv6Gateway": "",
"GlobalIPv6Address": "",
"GlobalIPv6PrefixLen": 0,
"DriverOpts": null,
"DNSNames": [
"stoic_matsumoto",
"05737968c608"
]
}
}
]
}
]
```

