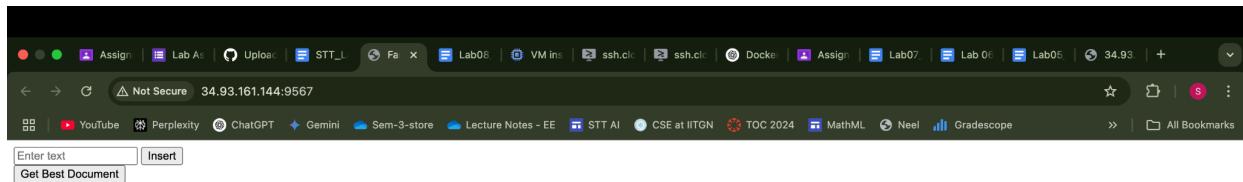
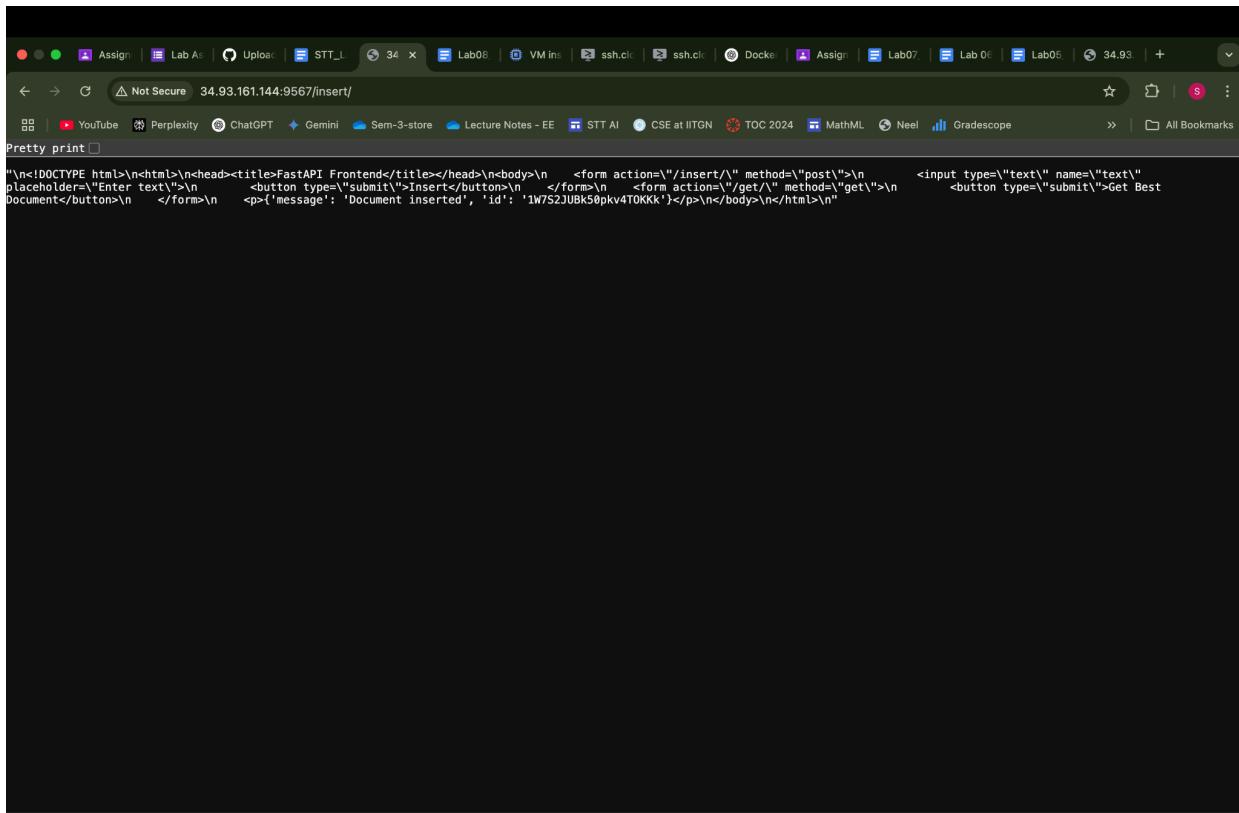


Website: <http://34.93.161.144:9567>

ScreenShots for the website:

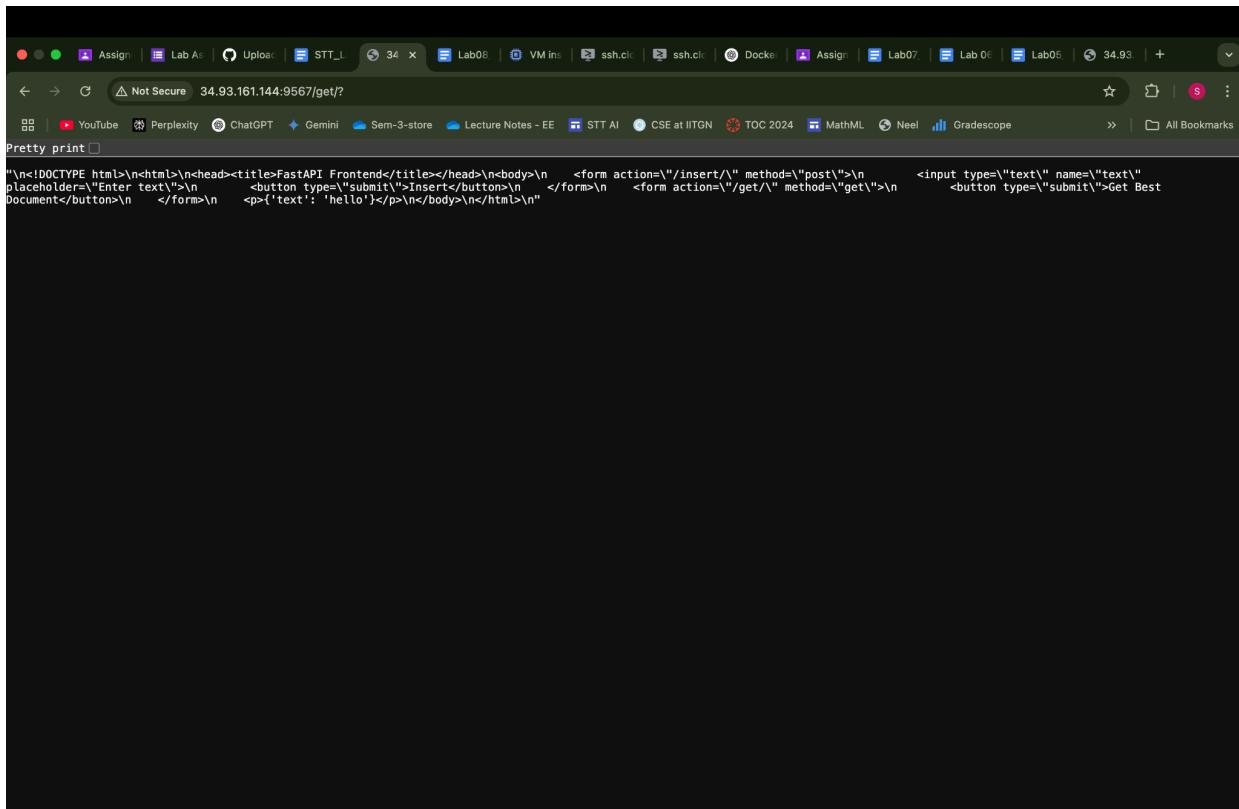


After inserting Hello as the text:



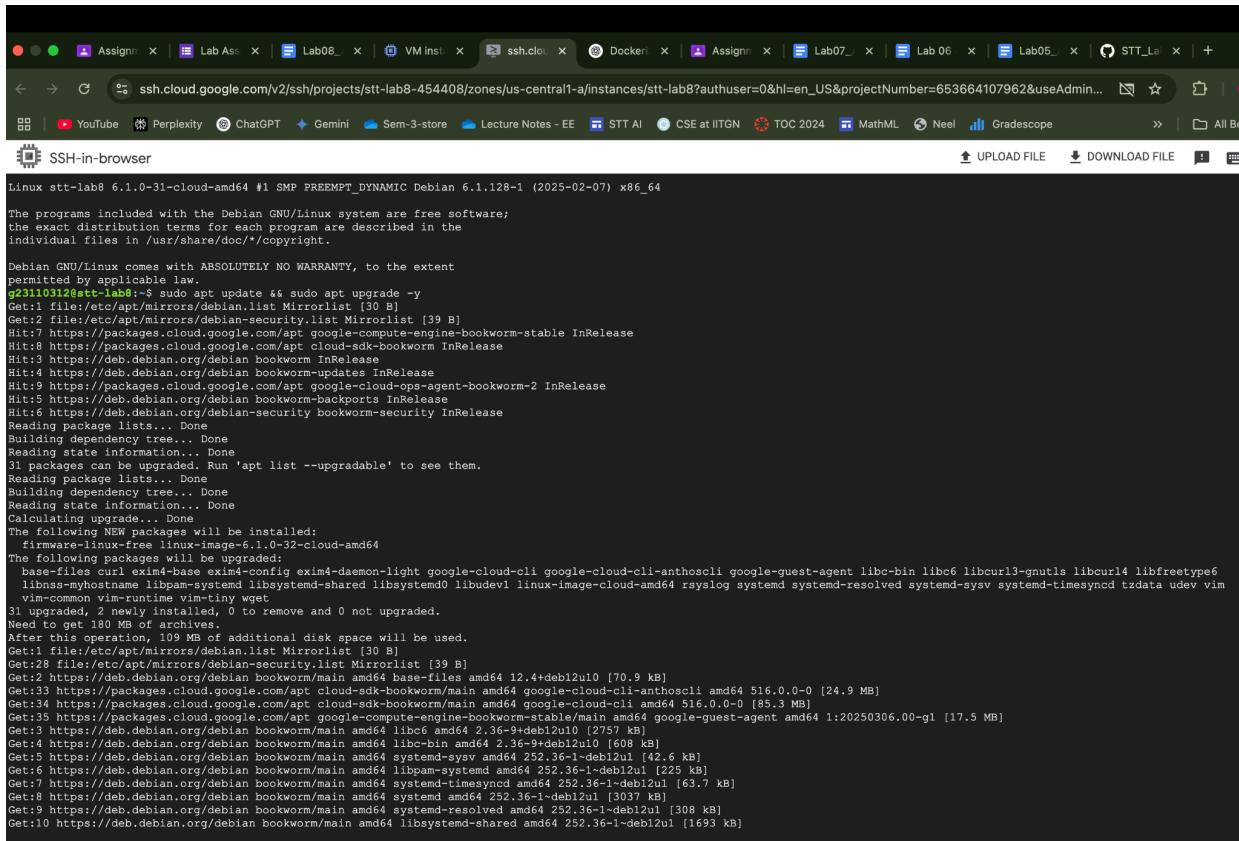
```
"\n<!DOCTYPE html>\n<html>\n<head><title>FastAPI Frontend</title></head>\n<body>\n    <form action="/insert/" method="post">\n        <input type="text" name="text"\nplaceholder="Enter text">\n        <button type="submit">Insert</button>\n    </form>\n    <form action="/get/" method="get">\n        <input type="text" name="text"\nplaceholder="Get Document">\n        <button type="submit">Get Best Document</button>\n    </form>\n    <p>{'message': 'Document inserted', 'id': '1W752JUBk50pkv4TOKKK'}</p>\n</body>\n</html>\n"
```

After running get the document:



```
"\n<!DOCTYPE html>\n<html>\n<head><title>FastAPI Frontend</title></head>\n<body>\n    <form action="/insert/" method="post">\n        <input type="text" name="text"\nplaceholder="Enter text">\n        <button type="submit">Insert</button>\n    </form>\n    <form action="/get/" method="get">\n        <input type="text" name="text"\nplaceholder="Get Document">\n        <button type="submit">Get Best Document</button>\n    </form>\n    <p>{'text': 'hello'}</p>\n</body>\n</html>\n"
```

All the necessary Screenshots:



The screenshot shows a browser window with multiple tabs open. The active tab is titled "SSH-in-browser" and displays a terminal session on an SSH connection to a Google Cloud VM instance. The terminal output shows the results of an "apt upgrade" command, indicating that the system is up-to-date and no packages are available for upgrade. The terminal session is running on a Debian 6.1.128-1 (x86_64) system.

```
Linux stt-lab8 6.1.0-31-cloud-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.128-1 (2025-02-07) 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.

Get:1 file:/etc/apt/sources.list.d/debian.list [Mirrored at 0 B]
Get:2 file:/etc/apt/mirror/debian-security.list Mirrorlist [39 B]
Hit:7 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable InRelease
Hit:8 https://packages.cloud.google.com/apt cloud-sdk-bookworm InRelease
Hit:3 https://deb.debian.org/debian bookworm InRelease
Hit:4 https://deb.debian.org/debian bookworm-updates InRelease
Hit:9 https://packages.cloud.google.com/apt google-cloud-ops-agent-bookworm-2 InRelease
Hit:5 https://deb.debian.org/debian bookworm-backports InRelease
Hit:6 https://deb.debian.org/debian-security bookworm-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
31 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following NEW packages will be installed:
  firmware-linux-free linux-image-6.1.0-32-cloud-amd64
The following packages will be upgraded:
  base-files curl exim4-base exim4-config exim4-daemon-light google-cloud-cli google-cloud-anthoscli google-guest-agent libc-bin libcurl3-gnutls libcurl4 libfreetype6
  libnss-myhostname libpam-systemd libsystemd-shared libsystemd libudev linux-image-cloud-amd64 rsyslog systemd systemd-resolved systemd-sysv systemd-timesyncd tzdata udev vim
  vim-common vim-runtime vim-tiny wget
31 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 180 MB of archives.
After this operation, 109 MB of additional disk space will be used.
Get:1 file:/etc/apt/sources/debian.list Mirrorlist [30 B]
Get:28 file:/etc/apt/mirror/debian-security.list Mirrorlist [39 B]
Get:3 https://deb.debian.org/debian bookworm/main amd64 base-files amd64 12.4+deb12u10 [70.9 kB]
Get:33 https://packages.cloud.google.com/apt cloud-sdk-bookworm/main amd64 google-cloud-cli-anthoscli amd64 516.0.0-0 [24.9 MB]
Get:34 https://packages.cloud.google.com/apt cloud-sdk-bookworm/main amd64 google-cloud-cli amd64 516.0.0-0 [85.3 kB]
Get:35 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable/main amd64 google-guest-agent amd64 1:20250306.00-g1 [17.5 MB]
Get:3 https://deb.debian.org/debian bookworm/main amd64 libc6 amd64 2.36-9+deb12u10 [757 kB]
Get:4 https://deb.debian.org/debian bookworm/main amd64 libgcc1 amd64 2.36-9+deb12u10 [145 kB]
Get:5 https://deb.debian.org/debian bookworm/main amd64 libcurl3-gnutls amd64 252.36-1-deb12u1 [42.6 kB]
Get:6 https://deb.debian.org/debian bookworm/main amd64 libsystemd-systemd amd64 252.36-1-deb12u1 [225 kB]
Get:7 https://deb.debian.org/debian bookworm/main amd64 systemd-timesyncd amd64 252.36-1-deb12u1 [63.7 kB]
Get:8 https://deb.debian.org/debian bookworm/main amd64 systemd amd64 252.36-1-deb12u1 [303 kB]
Get:9 https://deb.debian.org/debian bookworm/main amd64 systemd-resolved amd64 252.36-1-deb12u1 [308 kB]
Get:10 https://deb.debian.org/debian bookworm/main amd64 libsystemd-shared amd64 252.36-1-deb12u1 [1693 kB]
```

```
SSH-in-browser
g23110312@stt-lab8:~$ sudo apt install docker.io -y
Reading package lists... Done
Building dependency tree... Done
Resolving dependencies... Done
The following additional packages will be installed:
binutils binutils-common binutils-x86_64-linux-gnu cgroupfs-mount containerd criu git git-man libbinutils libctf-nobfd0 libctf0 liberror-perl libgdbm-compat4 libgprofng0
liblint1-perl liblnt1-xs-perl libjansson libmodule-find-perl libnet1 libnftables1 libnl3-200 libperl15.36 libproc-processtable-perl libprotobuf32 libsort-naturally-perl
libterm-readkey-perl needrestart patch perl perl-modules-5.36 python3-protobuf runc tini
Suggested packages:
binutils-doc container-networking-plugins docker-doc apts-tools btrfs-progs debootstrap rinse rootlesskit xfsprogs zfs-fuse | zfsutils-linux git-daemon-run | git-daemon-svinit
git-doc git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn needrestart-session | libnotify-bin iucode-tool ed diffutils-doc perl-doc libterm-readline-gnu-perl
libterm-readline-perl-perl make libtapt-harness archive-perl
The following NEW packages will be installed:
binutils binutils-common binutils-x86_64-linux-gnu cgroupfs-mount containerd criu docker.io git git-man libbinutils libctf-nobfd0 libctf0 liberror-perl libgdbm-compat4 libgprofng0
liblnt1-perl liblnt1-xs-perl libjansson libmodule-find-perl libnet1 libnftables1 libnl3-200 libperl15.36 libproc-processtable-perl libprotobuf32 libsort-naturally-perl
libterm-readkey-perl needrestart patch perl perl-modules-5.36 python3-protobuf runc tini
0 upgraded, 30 newly installed, 0 to remove and 0 not upgraded.
Need to get 90.9 MB of archives.
After this operation, 406 MB of additional disk space will be used.
Get:1 file:///etc/apt/mirrors.debian.list Mirrorlist [30 B]
Get:2 https://deb.debian.org/debian bookworm/main amd64 perl-modules-5.36 all 5.36.0-7+deb12u1 [2815 kB]
Get:3 https://deb.debian.org/debian bookworm/main amd64 libgdbm-compat4 amd64 1.23-3 [48.2 kB]
Get:4 https://deb.debian.org/debian bookworm/main amd64 libperl15.36 amd64 5.36.0-7+deb12u1 [4218 kB]
Get:5 https://deb.debian.org/debian bookworm/main amd64 perl amd64 5.36.0-7+deb12u1 [239 kB]
Get:6 https://deb.debian.org/debian bookworm/main amd64 runc amd64 1.1.5+ds1-1+deb12u1 [2710 kB]
Get:7 https://deb.debian.org/debian bookworm/main amd64 containerd amd64 1.6.20-ds1-1+deb12u1 [25.9 MB]
Get:8 https://deb.debian.org/debian bookworm/main amd64 tini amd64 0.19.0-1 [255 kB]
Get:9 https://deb.debian.org/debian bookworm/main amd64 docker.io amd64 20.10.24+dfsg1-1+deb12u1 [36.2 MB]
Get:10 https://deb.debian.org/debian bookworm/main amd64 binutils-common amd64 2.40-2 [2487 kB]
Get:11 https://deb.debian.org/debian bookworm/main amd64 libbinutils amd64 2.40-2 [572 kB]
Get:12 https://deb.debian.org/debian bookworm/main amd64 libctf-nobfd0 amd64 2.40-2 [303 kB]
Get:13 https://deb.debian.org/debian bookworm/main amd64 libctf0 amd64 2.40-2 [185 kB]
Get:14 https://deb.debian.org/debian bookworm/main amd64 liblnt1-xs-perl amd64 2.40-2 [183 kB]
Get:15 https://deb.debian.org/debian bookworm/main amd64 libjansson0 amd64 2.14-2 [40.8 kB]
Get:16 https://deb.debian.org/debian bookworm/main amd64 libutil1-x86_64-linux-gnu amd64 2.40-2 [2246 kB]
Get:17 https://deb.debian.org/debian bookworm/main amd64 binutils amd64 2.40-2 [65.0 kB]
Get:18 https://deb.debian.org/debian bookworm/main amd64 cgroupfs-mount all 1.14 [6276 B]
Get:19 https://deb.debian.org/debian bookworm/main amd64 libprotobuf32 amd64 3.21.12-3 [932 kB]
Get:20 https://deb.debian.org/debian bookworm/main amd64 python3-protobuf amd64 3.21.12-3 [245 kB]
Get:21 https://deb.debian.org/debian bookworm/main amd64 libnet1 amd64 1.1.6+dfsg-3.2 [60.3 kB]
Get:22 https://deb.debian.org/debian bookworm/main amd64 libnftables1 amd64 1.0.6-2+deb12u2 [299 kB]
Get:23 https://deb.debian.org/debian bookworm/main amd64 libnl3-200 amd64 3.7.0-0.2+deb12u1 [63.1 kB]
Get:24 https://deb.debian.org/debian bookworm/main amd64 criu amd64 3.17.1-2+deb12u2 [665 kB]
Get:25 https://deb.debian.org/debian bookworm/main amd64 liberror-perl all 1.07029-2 [29.0 kB]
Get:26 https://deb.debian.org/debian bookworm/main amd64 git-man all 1.12.2-1+deb12u2 [2053 kB]
Get:27 https://deb.debian.org/debian bookworm/main amd64 git-amd64 2.32.0-5+deb12u2 [7660 kB]
Get:28 https://deb.debian.org/debian bookworm/main amd64 liblnt1-xs-perl all 1.33-1 [720 kB]
Get:29 https://deb.debian.org/debian bookworm/main amd64 liblnt1-xs-perl amd64 1.33-1 [15.6 kB]
Get:30 https://deb.debian.org/debian bookworm/main amd64 libmodule-find-perl all 0.16-2 [10.6 kB]
```

```
Created symlink /etc/systemd/system/multi-user.target.wants/containererd.service → /lib/systemd/system/containererd.service.
Setting up libperl5.36:amd64 (5.36.0-7+deb12u1) ...
Setting up libltdl:amd64 (2.40-2) ...
Setting up libltdl-0.1:amd64 (1.0.6-2+deb12u2) ...
Setting up docker.io (20.10.24+dfsg1-1+deb12u1) ...
Adding group 'docker' (gid 119) ...
Done.
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
Setting up perl (5.36.0-7+deb12u1) ...
Setting up libprofiler:amd64 (2.40-2) ...
Setting up libmbedTLS-find-perl (0.16-2) ...
Setting up libproc-processtable-perl:amd64 (0.634-1+b2) ...
Setting up criu (3.17.1-2+deb12u1) ...
Setting up libtiny-perl (1.33-1) ...
Setting up libnet-ssleay-perl (2.38-2+b1) ...
Setting up libsort-naturally-perl (1.03-4) ...
Setting up binutils-x86_64-linux-gnu (2.40-2) ...
Setting up binutils (2.40-2) ...
Setting up libtiny-xs-perl (1.33-1) ...
Setting up liberror-perl (0.17029-2) ...
Setting up gpt (1:i2.39.5-5+deb12u2) ...
Setting up needrestart (3.6-4+deb12u3) ...
Processing triggers for man-db (2.11.2-2) ...
Processing triggers for libc-bin (2.36-9+deb12u10) ...
g23110312@ttt-lab8:~$ sudo systemctl start docker
g23110312@ttt-lab8:~$ sudo systemctl stop docker
g23110312@ttt-lab8:~$ sudo systemctl enable docker
Synchronizing state of docker.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable docker
g23110312@ttt-lab8:~$ docker --version
Docker version 20.10.24+dfsg1, build 297e128
g23110312@ttt-lab8:~$ sudo apt install docker-compose -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  python3-attr3 python3-distro python3-distutils python3-docker python3-dockerty python3-docopt python3-dotenv python3-json-pointer python3-jsonschema python3-lib2to3
  python3-persistent python3-fc3987 python3-texttable python3-uritemplate python3-webcolors python3-websocket
Suggested packages:
  python3-attr-doc python3-jsonschema-doc
The following NEW packages will be installed:
  docker-compose python3-attr3 python3-distro python3-distutils python3-docker python3-dockerty python3-docopt python3-dotenv python3-json-pointer python3-jsonschema python3-lib2to3
  python3-persistent python3-fc3987 python3-texttable python3-uritemplate python3-webcolors python3-websocket
0 upgraded, 17 newly installed, 0 to remove and 0 not upgraded.
Need to get 796 kB of archives.
After this operation, 3909 kB of additional disk space will be used.
Get:1 file:///etc/apt/mirrors/debian.list Mirrorlist [30 B]
```

```
Unpacking python3-rfc3987 (1.3.8-2) ...
Selecting previously unselected package python3-juric.
Preparing to unpack .../15-python3-juric_1.0.0-1_all.deb ...
Unpacking python3-juric (1.0.0-1) ...
Selecting previously unselected package python3-uritemplate.
Preparing to unpack .../16-python3-uritemplate_4.1.1-2_all.deb ...
Unpacking python3-uritemplate (4.1.1-2) ...
Selecting previously unselected package python3-webcolors.
Preparing to unpack .../18-python3-webcolors_1.11.1-1_all.deb ...
Unpacking python3-webcolors (1.11.1-1) ...
Setting up python3-distrov (0.21.0-1) ...
Setting up python3-attrx (22.2.0-1) ...
Setting up python3-texttable (1.6.7-1) ...
Setting up python3-docopt (0.6.2-4.1) ...
Setting up python3-distlib (1.8.0-1) ...
Setting up python3-uritemplate (4.1.1-2) ...
Setting up python3-webcolors (1.11.1-1) ...
Setting up python3-rfc3987 (1.3.8-2) ...
Setting up python3-pysistent-amd64 (0.18.1-1+b3) ...
Setting up python3-json-pointer (2.3-2) ...
Setting up python3-lib2to3 (3.9.2-2-3) ...
Setting up python3-setuptools (1.58.0-1) ...
Setting up python3-dockerpty (0.4.1-4) ...
Setting up python3-distutils (3.11.2-3) ...
Setting up python3-docker (5.0.3-1) ...
Setting up python3-jsonschema (4.10.3-1) ...
Setting up docker-compose (1.29.2-3) ...
Processing triggers for man-db (2.11.2-2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Restarting services...
systemctl restart google-cloud-ops-agent-diagnostics.service google-cloud-ops-agent-fluent-bit.service google-cloud-ops-agent-opentelemetry-collector.service haveged.service polkit.service
/var/svc/service
Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart getty@tty1.service
systemctl restart networkd-dispatcher.service
systemctl restart serial-getty@ttyS0.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
g23110312 @ session #1: sshd[2466,2490]
g23110312 @ user manager service: systemd[2469]

No VM guests are running outdated hypervisor (gemu) binaries on this host.

g23110312@stt-lab8:~$ docker-compose --version
docker-compose version 1.29.2, build unknown
g23110312@stt-lab8:~$
```

```

SSH-in-browser
UPLOAD FILE DOWNLOAD FILE ⚙️ 🌐 🛡️ 🏷️

Setting up python3-virtualenv (4.1.1-2) ...
Setting up python3-webcolors (1.11.1-1) ...
Setting up python3-rfc3987 (1.3.8-2) ...
Setting up python3-persistentam64 (0.18.1-1+b3) ...
Setting up python3-json-pointer (2.3-2) ...
Setting up python3-lib2to3 (3.11.2-3) ...
Setting up python3-websocket (1.2.3-1) ...
Setting up python3-dockererty (0.4.1-4) ...
Setting up python3-distutils (3.11.2-3) ...
Setting up python3-docker (5.0.3-1) ...
Setting up python3-jsonschema (4.10.3-1) ...
Setting up docker-compose (1.29.2-3) ...
Processing triggers for man-db (2.11.2-2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Starting services...
systemctl restart google-cloud-ops-agent-diagnostics.service google-cloud-ops-agent-fluent-bit.service google-cloud-ops-agent-opentelemetry-collector.service haveged.service polkit.ser
ice ssh.service
Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart getty@tty1.service
systemctl restart networkd-dispatcher.service
systemctl restart serial-getty@ttyS0.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
g23110312 0 session #1: sshd[2466,2490]
g23110312 0 user manager service: systemd[2469]

No VM guests are running outdated hypervisor (qemu) binaries on this host.

g23110312@stt-lab8:~$ docker-compose --version
docker-compose version 1.29.2, build unknown
g23110312@stt-lab8:~$ sudo docker network create mynetwork
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://$Fvar$2Frun$2Fdocker.sock/v1.24/networks/create": dial unix /var/run/
docker.sock: connect: permission denied
g23110312@stt-lab8:~$ sudo docker network create mynetwork
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://$Fvar$2Frun$2Fdocker.sock/v1.24/networks/create": dial unix /var/run/
docker.sock: connect: permission denied
3aeeca8acabada01dd20fb17b12ea83fcfd2ae2c04507d678df182c78d34ca
-bash: permission: command not found
g23110312@stt-lab8:~$ sudo docker network create mynetwork
permission response from daemon: network with name mynetwork already exists
g23110312@stt-lab8:~$ sudo docker network create sttnetwork
clf975cd845904cd3c5e9cd37ae6aae153ee022c641e23cecb5444bdc9114cf
g23110312@stt-lab8:~$ 

```

```

Setting up python3-webcolors (1.11.1-1) ...
Setting up python3-rfc3987 (1.3.8-2) ...
Setting up python3-persistentam64 (0.18.1-1+b3) ...
Setting up python3-json-pointer (2.3-2) ...
Setting up python3-lib2to3 (3.11.2-3) ...
Setting up python3-websocket (1.2.3-1) ...
Setting up python3-dockererty (0.4.1-4) ...
Setting up python3-distutils (3.11.2-3) ...
Setting up python3-docker (5.0.3-1) ...
Setting up python3-jsonschema (4.10.3-1) ...
Setting up docker-compose (1.29.2-3) ...
Processing triggers for man-db (2.11.2-2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Restarting services...
systemctl restart google-cloud-ops-agent-diagnostics.service google-cloud-ops-agent-fluent-bit.service google-cloud-ops-agent-opentelemetry-collector.service haveged.service polkit.ser
ice ssh.service
Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart getty@tty1.service
systemctl restart networkd-dispatcher.service
systemctl restart serial-getty@ttyS0.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
g23110312 0 session #1: sshd[2466,2490]
g23110312 0 user manager service: systemd[2469]

No VM guests are running outdated hypervisor (qemu) binaries on this host.

g23110312@stt-lab8:~$ docker-compose --version
docker-compose version 1.29.2, build unknown
g23110312@stt-lab8:~$ sudo docker network create mynetwork
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://$Fvar$2Frun$2Fdocker.sock/v1.24/networks/create": dial unix /var/run/
docker.sock: connect: permission denied
g23110312@stt-lab8:~$ sudo docker network create mynetwork
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://$Fvar$2Frun$2Fdocker.sock/v1.24/networks/create": dial unix /var/run/
docker.sock: connect: permission denied
3aeeca8acabada01dd20fb17b12ea83fcfd2ae2c04507d678df182c78d34ca
-bash: permission: command not found
g23110312@stt-lab8:~$ sudo docker network create mynetwork
Error response from daemon: network with name mynetwork already exists
g23110312@stt-lab8:~$ sudo docker network create sttnetwork
clf975cd845904cd3c5e9cd37ae6aae153ee022c641e23cecb5444bdc9114cf
g23110312@stt-lab8:~$ mkdir -p ~/fastapi-frontend && cd ~/fastapi-frontend
g23110312@stt-lab8:~/fastapi-frontend$ 

```

```

ssh.cloud.google.com/v2/ssh/projects/stt-lab8-454408/zones/us-central1-a/instances/stt-lab8?authuser=0&hl=en_US&projectNumber=653664107962&useAdmin...
YouTube Perplexity ChatGPT Gemini Sem-3-store Lecture Notes - EE STT AI CSE at IITGN TOC 2024 MathML Neel Gradescope All Bookmarks

SSH-in-browser
UPLOAD FILE DOWNLOAD FILE ⚙️ 🌐 🛡️ 🏷️

GNU nano 7.2
FROM python:3.10
WORKDIR /app
COPY main.py /app
RUN pip install fastapi uvicorn requests
CMD ["uvicorn", "main:app", "--host", "0.0.0.0", "--port", "9567"]
dockercfile *


```

```
GNU nano 7.2
from fastapi import FastAPI, Form
from fastapi.responses import HTMLResponse
import requests

app = FastAPI()

#Replace with the actual public IP of VM 2 where backend is running
BACKEND_VM_IP = "34.123.79.18"
backend_url = f"http://({BACKEND_VM_IP}):9567"

html_content = """
!DOCTYPE html>


    <title>FastAPI Frontend</title>


    <h2>Search & Insert into Elasticsearch</h2>
    <form method="post" actions="insert">
        <textarea name="text" rows="5" cols="50"></textarea><br>
        <button type="submit">Insert</button>
    </form>
    <form method="get" actions="get">
        <button type="submit">Get Best Match</button>
    </form>
    <div>
        <h3>Response:</h3>
        <p id="output"></p>
    </div>

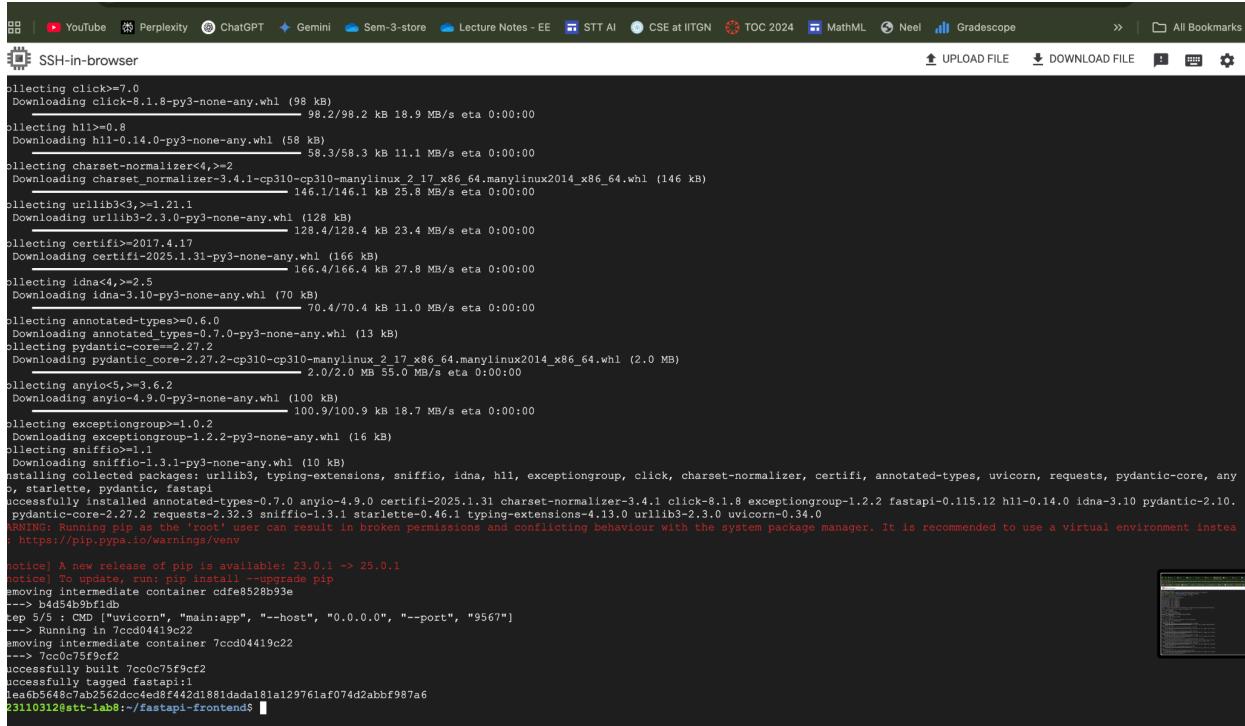

"""

app.get("/", response_class=HTMLResponse)
async def homepage():
    return html_content

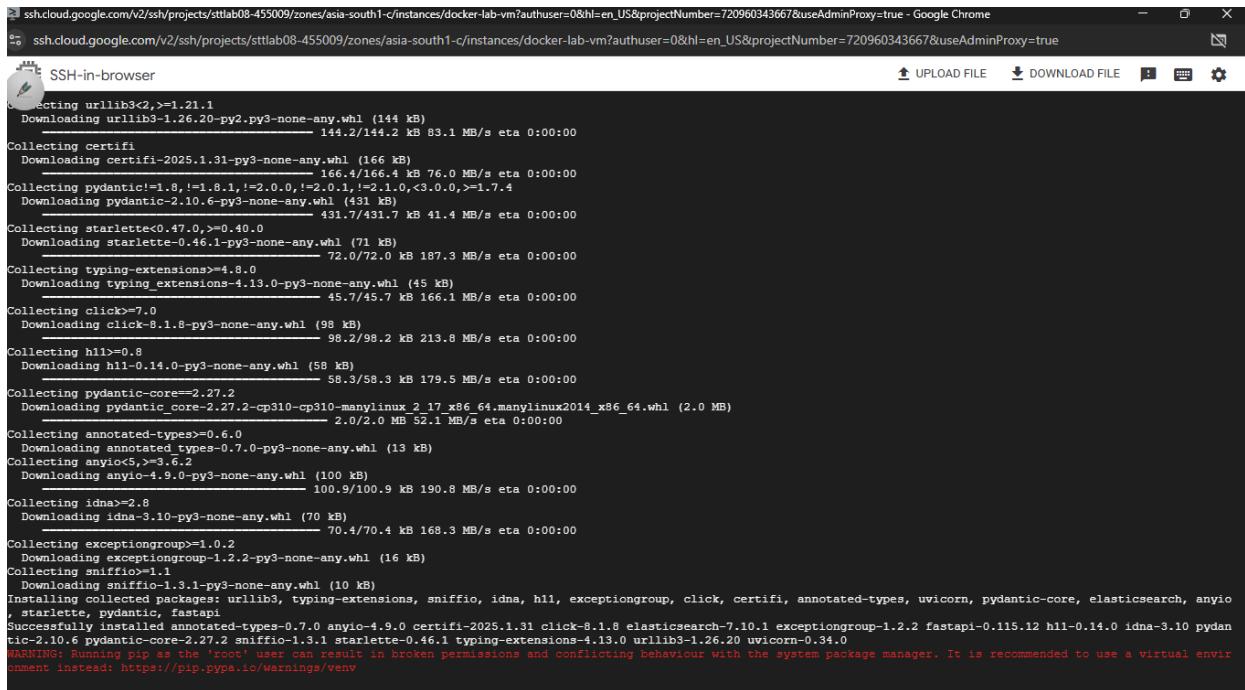
app.post("/insert")
async def insert(text: str = Form(...)):
    response = requests.post(f"{backend_url}/insert", json={"text": text})
    return response.json()

app.get("/get")
async def get_best():
    response = requests.get(f"{backend_url}/get")
    [ Read 46 lines ]
    ^C Help      ^C Write Out     ^W Where Is     ^K Cut          ^A Execute      ^G Location     M-U Undo      M-A Set Mark   M-[ To Bracket M-Q Previous   ^B Back
    ^X Exit      ^R Read File     ^L Replace      ^U Paste         ^J Justify      ^C Go To Line   M-B Redo      M-C Where Was  M-W Next     ^F Forward
```

```
Dockerfile main.py
g23110312@stt-lab8:~/fastapi-frontends$ sudo docker build -t fastapi:1 .
sudo docker run -d --name frontend -p 9567:9567 fastapi:1
Send build context to docker daemon 4.096kB
Step 1/5 : FROM python:3.10
3.10: Pulling from library/python
7cd785773d84: Pull complete
091e82749475: Pull complete
2557746e0027: Pull complete
353e14e5c477: Pull complete
0c64366c5f62: Pull complete
57161121b343: Pull complete
a90d73ac0e1: Pull complete
Digest: sha256:8ad0e578eb1b733f2a496b41f1f79175679374191a9c7ab8c63156446094a9cda8
Status: Downloaded newer image for python:3.10
--> bdcfc5e29abb
Step 2/5 : COPY requirements.txt /app
--> Running in d8a72c9d59c1
Removing intermediate container d8a72c9d59c1
--> 7cb72776d706
Step 3/5 : COPY main.py /app
--> 3fe44ab85760
Step 4/5 : RUN pip install fastapi uvicorn requests
--> Running in cdfef8528b93e
Collecting fastapi
  Downloading fastapi-0.115.12-py3-none-any.whl (95 kB)
    95.2/95.2 kB 3.2 MB/s eta 0:00:00
Collecting uvicorn
  Downloading uvicorn-0.34.0-py3-none-any.whl (62 kB)
    62.3/62.3 kB 11.6 MB/s eta 0:00:00
Collecting requests
  Downloading requests-2.32.3-py3-none-any.whl (64 kB)
    64.9/64.9 kB 13.1 MB/s eta 0:00:00
Collecting starlette[0.47.0,>0.40.0]
  Downloading starlette-0.46.1-py3-none-any.whl (71 kB)
    72.0/72.0 kB 12.3 MB/s eta 0:00:00
Collecting typing-extensions>4.8.0
  Downloading typing_extensions-4.13.0-py3-none-any.whl (45 kB)
    45.7/45.7 kB 7.8 MB/s eta 0:00:00
Collecting pydantic!=1.8.*,!1.8.1,!2.0.0,!2.0.1,!2.1.0,<3.0.0,>1.7.4
  Downloading pydantic-2.10.6-py3-none-any.whl (431 kB)
    431.7/431.7 kB 20.0 MB/s eta 0:00:00
Collecting click>7.0
  Downloading click-1.1.8-py3-none-any.whl (98 kB)
    98.2/98.2 kB 18.9 MB/s eta 0:00:00
Collecting h11>0.8
  Downloading h11-0.14.0-py3-none-any.whl (58 kB)
    58.3/58.3 kB 11.1 MB/s eta 0:00:00
Collecting charset-normalizer<4,>=2
```

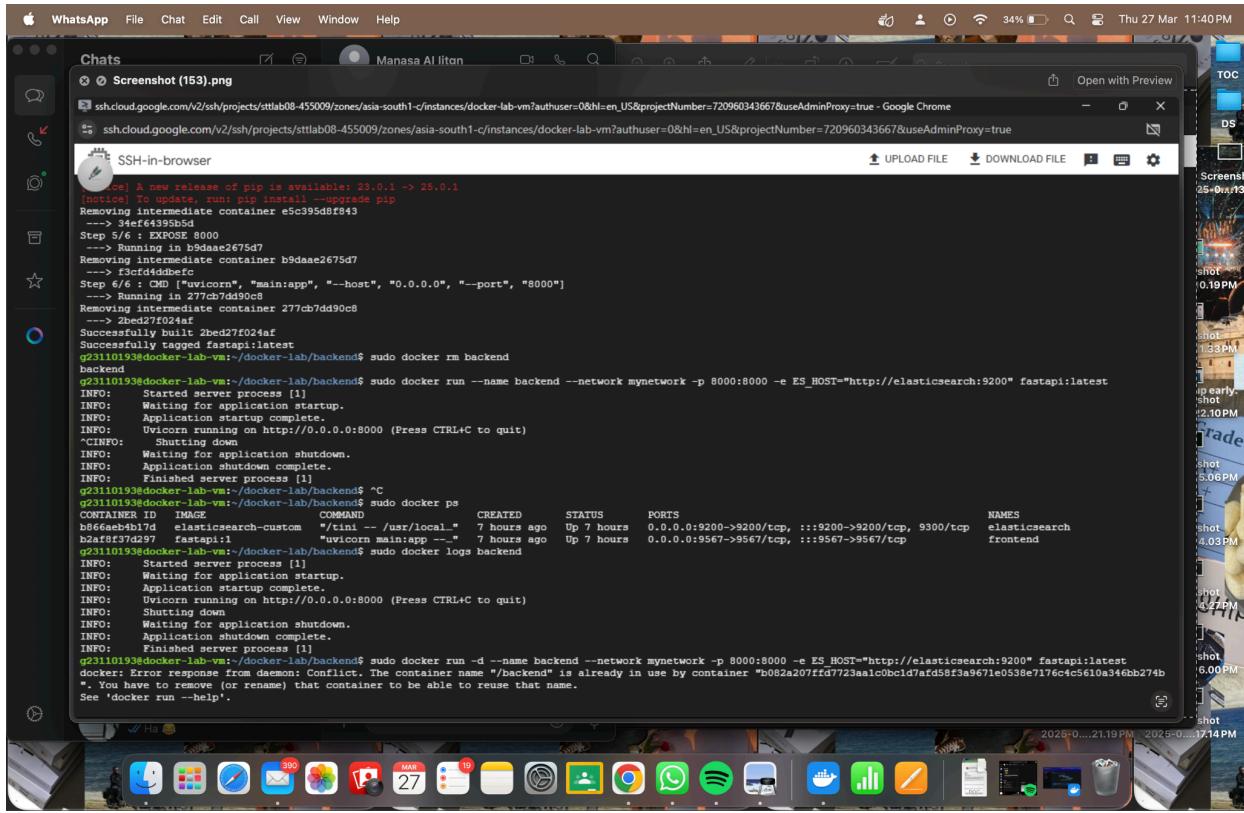


```
SSH-in-browser
collecting click>=7.0
  Downloading click-8.1.8-py3-none-any.whl (98 kB)
    98.2/98.2 kB 18.9 MB/s eta 0:00:00
collecting h11>=0.8
  Downloading h11-0.14.0-py3-none-any.whl (58 kB)
    58.3/58.3 kB 11.1 MB/s eta 0:00:00
collecting charset-normalizer<4,>=2
  Downloading charset_normalizer-3.4.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (146 kB)
    146.1/146.1 kB 25.8 MB/s eta 0:00:00
collecting urllib3<3,>=1.21.1
  Downloading urllib3-2.3.0-py3-none-any.whl (128 kB)
    128.4/128.4 kB 23.4 MB/s eta 0:00:00
collecting certifi>=2017.4.17
  Downloading certifi-2025.1.31-py3-none-any.whl (166 kB)
    166.4/166.4 kB 27.8 MB/s eta 0:00:00
collecting idna>4,>=2.5
  Downloading idna-3.10-py3-none-any.whl (70 kB)
    70.4/70.4 kB 11.0 MB/s eta 0:00:00
collecting annotated-types>=0.6.0
  Downloading annotated_types-0.7.0-py3-none-any.whl (13 kB)
collecting pydantic-core>=2.27.2
  Downloading pydantic_core-2.27.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.0 MB)
    2.0/2.0 kB 55.0 MB/s eta 0:00:00
collecting aiohttp<5,>=3.6.2
  Downloading aiohttp-4.9.0-py3-none-any.whl (100 kB)
    100.9/100.9 kB 18.7 MB/s eta 0:00:00
collecting exceptiongroup>=1.0.2
  Downloading exceptiongroup-1.2.2-py3-none-any.whl (16 kB)
collecting sniffio>=1.1
  Downloading sniffio-1.3.1-py3-none-any.whl (10 kB)
installing collected packages: urllib3, typing-extensions, sniffio, idna, h11, exceptiongroup, click, charset-normalizer, certifi, annotated-types, uvicorn, requests, pydantic-core, anyio, starlette, pydantic, fastapi
successfully installed annotated-types-0.7.0 aiohttp-4.9.0 certifi-2025.1.31 charset-normalizer-3.4.1 click-8.1.8 exceptiongroup-1.2.2 fastapi-0.115.12 h11-0.14.0 idna-3.10 pydantic-core-2.10.6 pydantic-core-2.27.2 requests-2.32.3 sniffio-1.3.1 starlette-0.46.1 typing-extensions-4.13.0 urllib3-2.3.0 uvicorn-0.34.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv
notice: A new release of pip is available: 23.0.1 -> 25.0.1
notice: To update, run: pip install --upgrade pip
removing intermediate container cdfef8528b93e
--> b4d54b9bf1db
step 5/5 : CMD ["uvicorn", "main:app", "-host", "0.0.0.0", "--port", "9567"]
--> Running in 7cc0d4419c22
removing intermediate container 7cc0d4419c22
--> 7cc0c75f9cf2
successfully built 7cc0c75f9cf2
successfully tagged fastapi:latest
tag: 7cc0c75f9cf2@sha256:dcbe8df442di881adel81a29761af074d2abbff987a6
131103128@ct-1408:/fastapi-frontend$
```



```
ssh.cloud.google.com/v2/ssh/projects/sttlab08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true - Google Chrome
ssh.cloud.google.com/v2/ssh/projects/sttlab08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true
```

```
SSH-in-browser
Collecting urllib3<2,>=1.21.1
  Downloading urllib3-1.26.20-py3-none-any.whl (144 kB)
    144.2/144.2 kB 83.1 MB/s eta 0:00:00
Collecting certifi
  Downloading certifi-2025.1.31-py3-none-any.whl (166 kB)
    166.4/166.4 kB 76.0 MB/s eta 0:00:00
Collecting pydantic!=1.8,!=1.8.1,!=2.0.0,!=2.0.1,!=2.1.0,<3.0.0,>=1.7.4
  Downloading pydantic-2.10.6-py3-none-any.whl (431 kB)
    431.7/431.7 kB 41.4 MB/s eta 0:00:00
Collecting starlette<0.47.0,>=0.40.0
  Downloading starlette-0.46.1-py3-none-any.whl (71 kB)
    72.0/72.0 kB 187.3 MB/s eta 0:00:00
Collecting typing_extensions>=4.8.0
  Downloading typing_extensions-4.13.0-py3-none-any.whl (45 kB)
    45.7/45.7 kB 166.1 MB/s eta 0:00:00
Collecting click>=7.0
  Downloading click-8.1.8-py3-none-any.whl (98 kB)
    98.2/98.2 kB 213.8 MB/s eta 0:00:00
Collecting h11>=0.8
  Downloading h11-0.14.0-py3-none-any.whl (58 kB)
    58.3/58.3 kB 179.5 MB/s eta 0:00:00
Collecting pydantic-core==2.27.2
  Downloading pydantic_core-2.27.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.0 MB)
    2.0/2.0 kB 52.1 MB/s eta 0:00:00
Collecting annotated-types>=0.6.0
  Downloading annotated_types-0.7.0-py3-none-any.whl (13 kB)
Collecting anyio<5,>=3.6.2
  Downloading anyio-4.9.0-py3-none-any.whl (100 kB)
    100.9/100.9 kB 190.8 MB/s eta 0:00:00
Collecting idna>=2.8
  Downloading idna-3.10-py3-none-any.whl (70 kB)
    70.4/70.4 kB 168.3 MB/s eta 0:00:00
Collecting exceptiongroup>=1.0.2
  Downloading exceptiongroup-1.2.2-py3-none-any.whl (16 kB)
Collecting sniffio>=1.1
  Downloading sniffio-1.3.1-py3-none-any.whl (10 kB)
Installing collected packages: urllib3, typing-extensions, sniffio, idna, h11, exceptiongroup, click, certifi, annotated-types, uvicorn, pydantic-core, elasticsearch, anyio, starlette, pydantic, fastapi
Successfully installed annotated-types-0.7.0 aiohttp-4.9.0 certifi-2025.1.31 click-8.1.8 elasticsearch-7.10.1 exceptiongroup-1.2.2 fastapi-0.115.12 h11-0.14.0 idna-3.10 pydantic-core-2.10.6 pydantic-core-2.27.2 sniffio-1.3.1 starlette-0.46.1 typing-extensions-4.13.0 urllib3-1.26.20 uvicorn-0.34.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv
```



```
ssh.cloud.google.com/v2/ssh/projects/sttlab08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true - Google Chrome
ssh.cloud.google.com/v2/ssh/projects/sttlab08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true

SSH-in-browser
 UPLOAD FILE DOWNLOAD FILE
Collecting click>=7.0
  Downloading click-8.1.8-py3-none-any.whl (98 kB)
Collecting annotated-types>=0.6.0
  Downloading annotated_types-0.7.0-py3-none-any.whl (13 kB)
Collecting pydantic-core==2.27.2
  Downloading pydantic_core-2.27.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.0 MB)
Collecting anyio<5,>=3.6.2
  Downloading anyio-4.9.0-py3-none-any.whl (100 kB)
Collecting idna>=2.8
  Downloading idna-3.10-py3-none-any.whl (70 kB)
Collecting exceptiongroup>=1.0.2
  Downloading exceptiongroup-1.2.2-py3-none-any.whl (16 kB)
Collecting sniffio>=1.1
  Downloading sniffio-1.3.1-py3-none-any.whl (10 kB)
Installing collected packages: urllib3, typing-extensions, sniffio, idna, h11, exceptiongroup, click, certifi, annotated-types, unicorn, pydantic-core, elasticsearch, anyio, starlette, pydantic, fastapi
Successfully installed annotated-types-0.7.0 anyio-4.9.0 certifi-2025.1.31 click-8.1.8 elasticsearch-7.10.1 exceptiongroup-1.2.2 fastapi-0.115.12 h11-0.14.0 idna-3.10 pydantic-2.10.6 pydantic-core-2.27.2 sniffio-1.3.1 starlette-0.46.1 typing-extensions-4.13.0 urllib3-1.26.20 unicorn-0.34.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv

[notice] A new release of pip is available: 23.0.1 => 25.0.1
[notice] To update, run: pip install --upgrade pip
Removing intermediate container 546bd8f4d2e
--> 50785737caf9
Step 5/6 : EXPOSE 8000
--> Running in e48a9820c7d6
Removing intermediate container e48a9820c7d6
--> a8bb239247d1
Step 6/6 : CMD ["unicorn", "main:app", "--host", "0.0.0.0", "--port", "8000"]
--> Running in 3d86dbb3d3bd
Removing intermediate container 3d86dbb3d3bd
--> feacbd596daa
Successfully built feacbd596daa
Successfully tagged fastapi:latest
g23110193# docker-lab-vm:~/docker-lab/backend$ sudo docker rm backend
error response from daemon: You cannot remove a running container 0e4c76ef662058232f5ac84cf3a44a235c9615b138f8bda8e9fffd5f9d82349aa. Stop the container before attempting removal or force remove
```

```
ssh.cloud.google.com/v2/ssh/projects/sttla08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true - Google Chrome
ssh.cloud.google.com/v2/ssh/projects/sttla08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true
SSH-in-browser
You have to remove (or rename) that container to be able to reuse that name.
See 'docker run --help'.
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
0866eab4b17d elasticsearch-custom "/tini -- /usr/local..." 7 hours ago Up 7 hours 0.0.0.0:9200->9200/tcp, :::9200->9200/tcp, 9300/tcp elasticsearch
02af9f37d297 fastapi:1 "uvicorn main:app --..." 7 hours ago Up 7 hours 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp frontend
z311010193@docker-lab-vm:~/docker-lab/backend$ ^C
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker rm -f backend
backend
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker run -d --name backend --network mynetwork -p 8000:8000 -e ES_HOST="http://elasticsearch:9200" fastapi:latest
0c4c76ef662058232f5ac84cf3a44a235c9615b138f8bda8e9fffd5f9d82349aa
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
0c4c76ef6620 fastapi:latest "uvicorn main:app --..." 17 seconds ago Up 16 seconds 0.0.0.0:8000->8000/tcp, :::8000->8000/tcp backend
1f7523d5e06a dfdf50f979c2a "/bin/sh -c 'pip ins..." 6 hours ago Exited (1) 6 hours ago
musing_nighti
0866eab4b17d elasticsearch-custom "/tini -- /usr/local..." 7 hours ago Up 7 hours 0.0.0.0:9200->9200/tcp, :::9200->9200/tcp, 9300/tcp elasticsearch
02af9f37d297 fastapi:1 "uvicorn main:app --..." 7 hours ago Up 7 hours 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp frontend
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
0c4c76ef6620 fastapi:latest "uvicorn main:app --..." 3 minutes ago Up 3 minutes 0.0.0.0:8000->8000/tcp, :::8000->8000/tcp backend
0866eab4b17d elasticsearch-custom "/tini -- /usr/local..." 7 hours ago Up 7 hours 0.0.0.0:9200->9200/tcp, :::9200->9200/tcp, 9300/tcp elasticsearch
02af9f37d297 fastapi:1 "uvicorn main:app --..." 7 hours ago Up 7 hours 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp frontend
z311010193@docker-lab-vm:~/docker-lab/backend$ ^C
z311010193@docker-lab-vm:~/docker-lab/backend$ nano main.py
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker build -t fastapi:latest .
Sending build context to Docker daemon 4.096kB
Step 1/6 : FROM python:3.10
--> bc0fc5e29abb
Step 2/6 : WORKDIR /app
--> Using cache
--> 7cf88b15c223
Step 3/6 : COPY . .
--> 2db3bf2d090b
Step 4/6 : RUN pip install --no-cache-dir fastapi uvicorn elasticsearch==7.10.1
--> Running in 546bd88f4d2e
Collecting fastapi
  Downloading fastapi-0.115.12-py3-none-any.whl (95 kB)
         95.2/95.2 kB 2.5 MB/s eta 0:00:00
Collecting uvicorn
  Downloading uvicorn-0.34.0-py3-none-any.whl (62 kB)
         62.3/62.3 kB 20.3 MB/s eta 0:00:00
Collecting elasticsearch==7.10.1

```

```
ssh.cloud.google.com/v2/ssh/projects/sttla08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true
SSH-in-browser
6/6 : CMD ["uvicorn", "main:app", "--host", "0.0.0.0", "--port", "8000"]
--> Running in 3d86dbb3d3bd
removing intermediate container 3d86dbb3d3bd
--> feacbd596dae
Successfully built feacbd596dae
Successfully tagged fastapi:latest
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker rm backend
Error response from daemon: You cannot remove a running container 0c4c76ef662058232f5ac84cf3a44a235c9615b138f8bda8e9fffd5f9d82349aa. Stop the container before attempting removal or force remove
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker rm backend
Error response from daemon: You cannot remove a running container 0c4c76ef662058232f5ac84cf3a44a235c9615b138f8bda8e9fffd5f9d82349aa. Stop the container before attempting removal or force remove
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker stop backend
backend
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker rm backend
backend
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker run -d --name backend --network mynetwork -p 8000:8000 -e ES_HOST="http://elasticsearch:9200" fastapi:latest
39c2b7713dbcd7ff06f018fd11057fe8bd02059a9ee25dce1b299246e66c5
z311010193@docker-lab-vm:~/docker-lab/backend$ cd ..
z311010193@docker-lab-vm:~/docker-lab/backend$ cd frontend
z311010193@docker-lab-vm:~/docker-lab/frontend$ nano main.py
z311010193@docker-lab-vm:~/docker-lab/frontend$ cd ..
z311010193@docker-lab-vm:~/docker-lab$ cd backend
z311010193@docker-lab-vm:~/docker-lab/backend$ nano main.py
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker stop backend
backend
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker rm backend
backend
z311010193@docker-lab-vm:~/docker-lab/backend$ sudo docker build -t fastapi:latest .
Sending build context to Docker daemon 4.096kB
Step 1/6 : FROM python:3.10
--> bc0fc5e29abb
Step 2/6 : WORKDIR /app
--> Using cache
--> 7cf88b15c223
Step 3/6 : COPY . .
--> f20ef6616ed8
Step 4/6 : RUN pip install --no-cache-dir fastapi uvicorn elasticsearch==7.10.1
--> Running in 4772d4b30b8e
Collecting fastapi
  Downloading fastapi-0.115.12-py3-none-any.whl (95 kB)
         95.2/95.2 kB 2.2 MB/s eta 0:00:00
Collecting uvicorn

```

```

ssh.cloud.google.com/v2/ssh/projects/sttlab08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true - Google Chrome
ssh.cloud.google.com/v2/ssh/projects/sttlab08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true
SSH-in-browser
0193@docker-lab-vm:~/docker-lab/backend$ sudo docker build -t fastapi:latest .
Sending build context to Docker daemon 4.096kB
Step 1/6 : FROM python:3.10
--> bcf0fc5e29eb
Step 2/6 : WORKDIR /app
--> Using cache
--> 7cf88b15c223
Step 3/6 : COPY . .
--> f20ef6616ed8
Step 4/6 : RUN pip install --no-cache-dir fastapi uvicorn elasticsearch==7.10.1
--> Running in 4772d4b30b8e
Collecting fastapi
  Downloading fastapi-0.115.12-py3-none-any.whl (95 kB)
    95.2/95.2 kB 2.2 MB/s eta 0:00:00
Collecting uvicorn
  Downloading uvicorn-0.34.0-py3-none-any.whl (62 kB)
    62.3/62.3 kB 12.1 MB/s eta 0:00:00
Collecting elasticsearch==7.10.1
  Downloading elasticsearch-7.10.1-py2.py3-none-any.whl (322 kB)
    322.1/322.1 kB 9.2 MB/s eta 0:00:00
Collecting certifi
  Downloading certifi-2025.1.31-py3-none-any.whl (166 kB)
    166.4/166.4 kB 223.1 MB/s eta 0:00:00
Collecting urllib3<2,>=1.21.1
  Downloading urllib3-1.26.20-py3-none-any.whl (144 kB)
    144.2/144.2 kB 129.9 MB/s eta 0:00:00
Collecting starlette<0.47.0,>=0.40.0
  Downloading starlette-0.46.1-py3-none-any.whl (71 kB)
    72.0/72.0 kB 178.7 MB/s eta 0:00:00
Collecting pydantic!=1.8,!~1.8.1,!~2.0.0,!~2.0.1,!~2.1.0,<3.0.0,>=1.7.4
  Downloading pydantic-2.10.6-py3-none-any.whl (431 kB)
    431.7/431.7 kB 46.6 MB/s eta 0:00:00
Collecting typing_extensions>=4.8.0
  Downloading typing_extensions-4.13.0-py3-none-any.whl (45 kB)
    45.7/45.7 kB 62.6 MB/s eta 0:00:00
Collecting Click=>7.0
  Downloading click-8.1.8-py3-none-any.whl (98 kB)
    98.2/98.2 kB 212.2 MB/s eta 0:00:00
Collecting h11>=0.8
  Downloading h11-0.14.0-py3-none-any.whl (58 kB)
    58.3/58.3 kB 174.5 MB/s eta 0:00:00
Collecting annotated_types>=0.6.0
  Downloading annotated_types-0.7.0-py3-none-any.whl (13 kB)

```

```

ssh.cloud.google.com/v2/ssh/projects/sttlab08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true - Google Chrome
ssh.cloud.google.com/v2/ssh/projects/sttlab08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true
SSH-in-browser
Collecting aiohttp<3,>=3.6.2
  Downloading aiohttp-4.9.0-py3-none-any.whl (100 kB)
    100.9/100.9 kB 149.2 MB/s eta 0:00:00
Collecting idna=>2.8
  Downloading idna-3.10-py3-none-any.whl (70 kB)
    70.4/70.4 kB 205.8 MB/s eta 0:00:00
Collecting exceptiongroup>=1.0.2
  Downloading exceptiongroup-1.2.2-py3-none-any.whl (16 kB)
Collecting sniffio>=1.1
  Downloading sniffio-1.3.1-py3-none-any.whl (10 kB)
Installing collected packages: urllib3, typing_extensions, sniffio, idna, h11, exceptiongroup, click, certifi, annotated-types, uvicorn, pydantic-core, elasticsearch, aiohttp, starlette, pydantic, fastapi
Successfully installed annotated-types-0.7.0 aiohttp-4.9.0 certifi-2025.1.31 click-8.1.8 elasticsearch-7.10.1 exceptiongroup-1.2.2 fastapi-0.115.12 h11-0.14.0 idna-3.10 pydantic-2.10.6 pydantic-core-2.27.2 sniffio-1.3.1 starlette-0.46.1 typing_extensions-4.13.0 urllib3-1.26.20 uvicorn-0.34.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv

[notice] A new release of pip is available: 23.0.1 > 25.0.1
[notice] To update, run: pip install --upgrade pip
Removing intermediate container 4772d4b30b8e
--> 0ab73cc62323
Step 5/6 : EXPOSE 8000
--> Running in 4ee6e0ace717
Removing intermediate container 4ee6e0ace717
--> 72f18ec5ebc3
Step 6/6 : CMD ["uvicorn", "main:app", "--host", "0.0.0.0", "--port", "8000"]
--> Running in 4518d343a3e4
Removing intermediate container 4518d343a3e4
--> ea9a8908841c
Successfully built ea9a8908841c
Successfully tagged fastapi:latest
p23110193@docker-lab-vm:~/docker-lab/backend$ sudo docker run -d --name backend --network mynetwork -p 8000:8000 -e ES_HOST="http://elasticsearch:9200" fastapi:latest
b8327ebad75861283710c971secclced857hb0cf57fd7d76ad6dd0d8bf8f43
p23110193@docker-lab-vm:~/docker-lab/backend$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
b8327ebad75 fastapi:latest "uvicorn main:app ..." 8 seconds ago Up 7 seconds 0.0.0.0:8000->8000/tcp, :::8000->8000/tcp backend
b866ae4bb17d elasticsearch-custom "/tini -- /usr/local..." 7 hours ago Up 7 hours 0.0.0.0:9200->9200/tcp, :::9200->9200/tcp, 9300/tcp elasticsearch
b2af8f37d297 fastapi:1 "uvicorn main:app ..." 7 hours ago Up 7 hours 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp frontend
p23110193@docker-lab-vm:~/docker-lab/backend$ curl -X POST "http://localhost:8000/insert/" -H "Content-Type: application/json" -d "{\"text": \"Hello, Elasticsearch!\"}"
{"message": "Document inserted", "id": "aFn32JUBa5-pMFrdP2Ht"}
p23110193@docker-lab-vm:~/docker-lab/backend$ curl -X GET "http://localhost:8000/get/"
{"text": "Hello, Elasticsearch!"}
p23110193@docker-lab-vm:~/docker-lab/backend$ sudo docker logs backend
INFO: Started server process [1]

```

```
ssh.cloud.google.com/v2/ssh/projects/sttla08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true - Google Chrome
ssh.cloud.google.com/v2/ssh/projects/sttla08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true

SSH-in-browser
Application startup complete.
INFO: Uvicorn running on http://0.0.0.0:8000 (Press CTRL+C to quit)
INFO: 172.18.0.1:55008 - "POST /insert/ HTTP/1.1" 200 OK
INFO: 172.18.0.1:57354 - "GET /get/ HTTP/1.1" 200 OK
INFO: 217.27.33.213:49846 - "GET / HTTP/1.0" 404 Not Found
g23110193@docker-lab-vm:~/docker-lab/backend$ ```
g23110193@docker-lab-vm:~/docker-lab/backend$ nano main.py
g23110193@docker-lab-vm:~/docker-lab/backend$ sudo docker restart backend
backend
g23110193@docker-lab-vm:~/docker-lab/backend$ cd ..
g23110193@docker-lab-vm:~/docker-lab$ cd frontend
g23110193@docker-lab-vm:~/docker-lab/frontend$ nano main.py
g23110193@docker-lab-vm:~/docker-lab/frontend$ sudo docker stop $(sudo docker ps -aq)
e8c527ebad75
7f7523d5e06a
b566aeab1b17d
b2af037d297
g23110193@docker-lab-vm:~/docker-lab/frontend$ sudo docker rm $(sudo docker ps -aq)
e8c527ebad75
7f7523d5e06a
b566aeab1b17d
b2af037d297
g23110193@docker-lab-vm:~/docker-lab/frontend$ sudo docker rmi fastapi-frontend fastapi-backend
Error: No such image: fastapi-frontend
Error: No such image: fastapi-backend
g23110193@docker-lab-vm:~/docker-lab/frontend$ sudo docker-compose up --build -d
ERROR:
Can't find a suitable configuration file in this directory or any parent. Are you in the right directory?

Supported filenames: docker-compose.yml, docker-compose.yaml, compose.yml, compose.yaml
g23110193@docker-lab-vm:~/docker-lab/frontend$ cd ..
g23110193@docker-lab-vm:~/docker-lab$ sudo docker-compose up --build -d
ERROR:
Can't find a suitable configuration file in this directory or any parent. Are you in the right directory?

Supported filenames: docker-compose.yml, docker-compose.yaml, compose.yml, compose.yaml
g23110193@docker-lab-vm:~/docker-lab$ cd ~/docker-lab/backend
g23110193@docker-lab-vm:~/docker-lab/backend$ sudo docker build -t fastapi-backend .
Sending build context to Docker daemon 4.608kB
```

```
ssh.cloud.google.com/v2/ssh/projects/sttla08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true - Google Chrome
ssh.cloud.google.com/v2/ssh/projects/sttla08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true

SSH-in-browser
E: No such image: fastapi-frontend
Error: No such image: fastapi-backend
g23110193@docker-lab-vm:~/docker-lab/frontend$ sudo docker-compose up --build -d
ERROR:
Can't find a suitable configuration file in this directory or any parent. Are you in the right directory?

Supported filenames: docker-compose.yml, docker-compose.yaml, compose.yml, compose.yaml
g23110193@docker-lab-vm:~/docker-lab/frontend$ cd ..
g23110193@docker-lab-vm:~/docker-lab$ sudo docker-compose up --build -d
ERROR:
Can't find a suitable configuration file in this directory or any parent. Are you in the right directory?

Supported filenames: docker-compose.yml, docker-compose.yaml, compose.yml, compose.yaml
g23110193@docker-lab-vm:~/docker-lab$ cd ~/docker-lab/backend
g23110193@docker-lab-vm:~/docker-lab/backend$ sudo docker build -t fastapi-backend .
Sending build context to Docker daemon 4.608kB
Step 1/6 : FROM python:3.10
--> hc0fc5e29ahb
Step 2/6 : WORKDIR /app
--> Using cache
--> 7cf88b15c223
Step 3/6 : COPY . .
--> bf2ba46192d8
Step 4/6 : RUN pip install --no-cache-dir fastapi uvicorn elasticsearch==7.10.1
--> Running in b2deb056be75
Collecting fastapi
  Downloading fastapi-0.115.12-py3-none-any.whl (95 kB)
  ━━━━━━━━━━ 95.2/95.2 kB 2.2 MB/s eta 0:00:00
Collecting uvicorn
  Downloading uvicorn-0.34.0-py3-none-any.whl (62 kB)
  ━━━━━━━━ 62.3/62.3 kB 26.5 MB/s eta 0:00:00
Collecting elasticsearch==7.10.1
  Downloading elasticsearch-7.10.1-py2.py3-none-any.whl (322 kB)
  ━━━━━━━━ 322.1/322.1 kB 9.0 MB/s eta 0:00:00
Collecting urllib3<2,>=1.21.1
  Downloading urllib3-1.26.20-py3-none-any.whl (144 kB)
  ━━━━━━━━ 144.2/144.2 kB 180.7 MB/s eta 0:00:00
Collecting certifi
  Downloading certifi-2025.1.31-py3-none-any.whl (166 kB)
```

```

SSH-in-browser
Collecting exceptiongroup>=1.0.2
  Downloading exceptiongroup-1.2.2-py3-none-any.whl (16 kB)
Collecting idna>=2.8
  Downloading idna-3.10-py3-none-any.whl (70 kB)
    70.4/70.4 kB 99.5 MB/s eta 0:00:00
Installing collected packages: urllib3, typing-extensions, sniffio, idna, h11, exceptiongroup, click, certifi, annotated-types, unicorn, pydantic-core, elasticsearch, anyio, starlette, pydantic, fastapi
Successfully installed annotated-types-0.7.0 aiohttp-4.9.0 certifi-2025.1.31 click-8.1.8 elasticsearch-7.10.1 exceptiongroup-1.2.2 fastapi-0.115.12 h11-0.14.0 idna-3.10 pydantic-2.10.6 pydantic-core-2.27.2 sniffio-1.3.1 starlette-0.46.1 typing-extensions-4.13.0 urllib3-1.26.20 unicorn-0.34.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv

[notice] A new release of pip is available: 23.0.1 -> 25.0.1
[notice] To update, run: pip install --upgrade pip
Removing intermediate container b2deb056be75
--> 7b1b09b8897a
Step 5/6 : EXPOSE 8000
--> Running in 07998d8422b7
Removing intermediate container 07998d8422b7
--> 2d6ce5819635
Step 6/6 : CMD ["uvicorn", "main:app", "--host", "0.0.0.0", "--port", "8000"]
--> Running in 06bf9bc6cc27
Removing intermediate container 06bf9bc6cc27
--> 37fe174690c9
Successfully built 37fe174690c9
Successfully tagged fastapi-backend:latest
g23110193@docker-lab-vm:~/docker-lab/backend$ cd ~/docker-lab/frontend
g23110193@docker-lab-vm:~/docker-lab/frontend$ sudo docker build -t fastapi-frontend .
Sending build context to Docker daemon 3.584kB
Step 1/5 : FROM python:3.10-slim
--> 643092d2b296
Step 2/5 : WORKDIR /app
--> Using cache
--> 1f1d49bc8352
Step 3/5 : COPY main.py .
--> 48e0b98eccf4
Step 4/5 : RUN pip install --no-cache-dir fastapi unicorn requests python-multipart
--> Running in 42ee919c17e5
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 unicorn
  Downloading unicorn-0.34.0-py3-none-any.whl (62 kB)

```

WhatsApp message from Teju:

11 unread messages

Type a reply

```

SSH-in-browser
Collecting exceptiongroup>=1.0.2
  Downloading exceptiongroup-1.2.2-py3-none-any.whl (16 kB)
Collecting idna>=2.8
  Downloading idna-3.10-py3-none-any.whl (70 kB)
    70.4/70.4 kB 99.5 MB/s eta 0:00:00
Installing collected packages: urllib3, typing-extensions, sniffio, idna, h11, exceptiongroup, click, certifi, annotated-types, unicorn, pydantic-core, elasticsearch, anyio, starlette, pydantic, fastapi
Successfully installed annotated-types-0.7.0 aiohttp-4.9.0 certifi-2025.1.31 click-8.1.8 elasticsearch-7.10.1 exceptiongroup-1.2.2 fastapi-0.115.12 h11-0.14.0 idna-3.10 pydantic-2.10.6 pydantic-core-2.27.2 sniffio-1.3.1 starlette-0.46.1 typing-extensions-4.13.0 urllib3-1.26.20 unicorn-0.34.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv

[notice] A new release of pip is available: 23.0.1 -> 25.0.1
[notice] To update, run: pip install --upgrade pip
Removing intermediate container b2deb056be75
--> 7b1b09b8897a
Step 5/6 : EXPOSE 8000
--> Running in 07998d8422b7
Removing intermediate container 07998d8422b7
--> 2d6ce5819635
Step 6/6 : CMD ["uvicorn", "main:app", "--host", "0.0.0.0", "--port", "8000"]
--> Running in 06bf9bc6cc27
Removing intermediate container 06bf9bc6cc27
--> 37fe174690c9
Successfully built 37fe174690c9
Successfully tagged fastapi-backend:latest
g23110193@docker-lab-vm:~/docker-lab/backend$ cd ~/docker-lab/frontend
g23110193@docker-lab-vm:~/docker-lab/frontend$ sudo docker build -t fastapi-frontend .
Sending build context to Docker daemon 3.584kB
Step 1/5 : FROM python:3.10-slim
--> 643092d2b296
Step 2/5 : WORKDIR /app
--> Using cache
--> 1f1d49bc8352
Step 3/5 : COPY main.py .
--> 48e0b98eccf4
Step 4/5 : RUN pip install --no-cache-dir fastapi unicorn requests python-multipart
--> Running in 42ee919c17e5
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 unicorn
  Downloading unicorn-0.34.0-py3-none-any.whl (62 kB)

```

```
ssh.cloud.google.com/v2/ssh/projects/sttlib08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true - Google Chrome
ssh.cloud.google.com/v2/ssh/projects/sttlib08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true

SSH-in-browser
UPLOAD FILE DOWNLOAD FILE
Collecting typing_extensions==4.8.0
  Downloading typing_extensions-4.13.0-py3-none-any.whl (45 kB)
Collecting h11==0.8
  Downloading h11-0.14.0-py3-none-any.whl (58 kB)
Collecting click==7.0
  Downloading click-8.1.8-py3-none-any.whl (98 kB)
Collecting certifi==2017.4.17
  Downloading certifi-2025.1.31-py3-none-any.whl (166 kB)
Collecting idna<4,>=2.5
  Downloading idna-3.10-py3-none-any.whl (70 kB)
Collecting urllib3<3,>~1.21.1
  Downloading urllib3-2.35.0-py3-none-any.whl (126 kB)
Collecting charset_normalizer==4,>=2
  Downloading charset_normalizer-3.4.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (146 kB)
Collecting annotated-types==0.6.0
  Downloading annotated-types-0.7.0-py3-none-any.whl (13 kB)
Collecting pydantic-core==2.27.2
  Downloading pydantic_core-2.27.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.0 MB)
Collecting anyio<5,>~3.6.2
  Downloading anyio-4.9.0-py3-none-any.whl (100 kB)
Collecting exceptiongroup>=1.0.2
  Downloading exceptiongroup-1.2.2-py3-none-any.whl (16 kB)
Collecting sniffio>=1.1
  Downloading sniffio-1.3.1-py3-none-any.whl (10 kB)
Installing collected packages: urllib3, typing-extensions, sniffio, python-multipart, idna, h11, exceptiongroup, click, charset-normalizer, certifi, annotated-types, uvicorn, requests, pydantic-core, anyio, starlette, pydantic, fastapi
Successfully installed annotated-types==0.7.0 anyio==4.9.0 certifi==2025.1.31 charset-normalizer==3.4.1 click==8.1.8 exceptiongroup==1.2.2 fastapi==0.115.12 h11==0.14.0 idna==3.10 pydantic==2.10.6 pydantic-core==2.27.2 python-multipart==0.20.20 requests==2.32.3 sniffio==1.3.1 starlette==0.46.1 typing-extensions==4.13.0 urllib3==2.3.0 uvicorn==0.34.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv

[notice] A new release of pip is available: 23.0.1 >--> 25.0.1
[notice] To update, run: pip install --upgrade pip
```

A screenshot of a macOS desktop environment. At the top, there's a dark-themed menu bar with the Apple icon, followed by the application names: WhatsApp, File, Chat, Edit, Call, View, Window, Help. To the right of the menu bar are several system status icons. The main window is titled "Chats" and contains a message from "Manasa Al Iltan" with a link to a screenshot. Below this is a terminal window with the following content:

```
ssh.cloud.google.com/v2/ssh/projects/sttlib08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true - Google Chrome
ssh.cloud.google.com/v2/ssh/projects/sttlib08-455009/zones/asia-south1-c/instances/docker-lab-vm?authuser=0&hl=en_US&projectNumber=720960343667&useAdminProxy=true

SSH-in-browser
Uploading sniffio-1.3.1-py3-none-any.whl (10 kB)
Installing selected docker-lab-vm libhttpx typing-extensions, sniffio, python-multipart, idna, h11, exceptiongroup, click, charset-normalizer, certifi, annotated-types, uvicorn, requests, pyantic-core, aiohttp, starlette, pydantic, fastapi
Successfully installed annotated-types-0.7.0 httpcore-4.0.0 certifi-2025-1.31 charset-normalizer-3.4.1 click-8.1.8 exceptiongroup-1.2.2 fastapi-0.115.12 h11-0.14.0 idna-3.10 pycodestyle-2.10.6 pydantic-core-2.27.2 python-multipart-0.0.20 requests-2.32.3 sniffio-1.3.1 starlette-0.46.1 typing-extensions-4.13.0 urllib3-2.3.0 uvicorn-0.34.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warningsenv

[notice] A new release of pip is available: 23.0.1 -> 25.0.1
[notice] To update, run: pip install --upgrade pip
Resuming intermediate container 42ee919c17e5
--> fc4f72f211ec
Step 5/5 : CMD ["uvicorn", "main:app", "--host", "0.0.0.0", "--port", "9567"]
--> Running in c778e0658af
Removing intermediate container c778e0658af
--> d5a753e76fc2
Successfully built d5a753e76fc2
Successfully tagged fastapi-frontend:latest
g23110193#docker-lab-vm:/# docker-lab/ lab-frontends$ sudo docker run -d --name elasticsearch --network mynetwork -p 9200:9200 -e "discovery.type=single-node" elasticsearch-custom
a602991e565d2421688226f5ce6314a6e68ab8b141884a496fb5d364c62dc
g23110193#docker-lab-vm:/# docker-lab/ lab-frontends$ sudo docker run -d --name backend --network mynetwork -p 8000:8000 -e ES_HOST="http://elasticsearch:9200" fastapi-backend
173da7f101fecc0b53f91102a07fcfd839f41753cf6ada5a244deelccca9395
g23110193#docker-lab-vm:/# docker-lab/ lab-frontends$ sudo docker run -d --name frontend --network mynetwork -p 9567:9567 fastapi-frontend
95a937263d2c05ee65d949a829a70cb864d9b47ad8a6956c98f22606c
g23110193#docker-lab-vm:/# docker-lab/ lab-frontends$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
95a937263d2c fastapi-frontend "uvicorn main:app --" 8 seconds ago Up 7 seconds 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp frontend
a602991e565d elasticsearch-search-custom "tiny -- /use/local" 34 seconds ago Up 33 seconds 0.0.0.0:9200->9200/tcp, :::9200->9200/tcp, 9300/tcp elasticsearch
g23110193#docker-lab-vm:/# docker-lab/ lab-frontends$ sudo docker run -d --name backend --network mynetwork -p 8000:8000 -e ES_HOST="http://elasticsearch:9200" fastapi-backend
docker: Error response from daemon: Conflict. The container name "backend" is already in use by container "173da7f101fecc0b53f91102a07fcfd839f41753cf6ada5a244deelccca9395". You have to remove (or rename) that container to be able to reuse that name.
See 'docker run --help'.
g23110193#docker-lab-vm:/# docker-lab/ frontends$ ^C
g23110193#docker-lab-vm:/# docker-lab/ frontends$ sudo docker rm backend
backend
g23110193#docker-lab-vm:/# docker-lab/ frontends$ sudo docker run -d --name backend --network mynetwork -p 8000:8000 -e ES_HOST="http://elasticsearch:9200" fastapi-backend
d7c716d53fd80e16955669f3a07338469043907d7cd0cd6cf1bb76
g23110193#docker-lab-vm:/# docker-lab/ frontends$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
d7c716d53fd8 fastapi-backend "uvicorn main:app --" 12 seconds ago Up 11 seconds 0.0.0.0:8000->8000/tcp, :::8000->8000/tcp backend
95a937263d2c fastapi-frontend "uvicorn main:app --" About a minute ago Up About a minute 0.0.0.0:9567->9567/tcp, :::9567->9567/tcp frontend
a602991e565d elasticsearch-search-custom "tiny -- /use/local" 2 minutes ago Up 2 minutes 0.0.0.0:9200->9200/tcp, :::9200->9200/tcp, 9300/tcp elasticsearch
g23110193#docker-lab-vm:/# docker-lab/ frontends$ [
```

The bottom of the screen shows the Dock with various application icons like Finder, Safari, Mail, and others. The status bar at the bottom right shows the date and time: Thu 27 Mar 11:45PM.

For Backend:

```
SSH-in-browser

Linux stt-vm-2 6.1.0-31-cloud-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.128-1 (2025-02-07) 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.

g23110312@stt-vm-2:~$ curl ifconfig.me
34.123.79.18g23110312$ curl apt update
sudo apt-get install -y docker.io docker-compose
Get:1 file:///etc/apt/sources.list.d/docker.list Mirrorlist [30 B]
Get:2 5 file:///etc/apt/sources.list.d/docker.list Mirrorlist [39 B]
Get:3 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable InRelease [1321 B]
Get:4 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable InRelease [1654 B]
Get:5 https://deb.debian.org/debian bookworm InRelease [151 kB]
Get:6 https://deb.debian.org/debian bookworm-updates InRelease [55.4 kB]
Get:7 https://deb.debian.org/debian bookworm-backports InRelease [59.4 kB]
Get:8 https://deb.debian.org/debian security bookworm-security InRelease [48.0 kB]
Get:9 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable/main amd64 Packages [3128 B]
Get:10 https://packages.cloud.google.com/apt google-compute-engine-bookworm/main all Packages [1694 kB]
Get:11 https://packages.cloud.google.com/apt google-compute-engine-bookworm/main amd64 Packages [3750 kB]
Get:12 https://deb.debian.org/debian bookworm/main amd64 Packages [9495 kB]
Get:13 https://deb.debian.org/debian bookworm/main amd64 Packages [8792 kB]
Get:14 https://deb.debian.org/debian bookworm/main Translation-en [6109 kB]
Get:15 https://deb.debian.org/debian bookworm-updates/main Sources.diff/Index [16.2 kB]
Get:16 https://deb.debian.org/debian bookworm-updates/main amd64 Packages.diff/Index [16.2 kB]
Get:17 https://deb.debian.org/debian bookworm-updates/main Translation-en.diff/Index [16.2 kB]
Get:18 https://deb.debian.org/debian bookworm-updates/main Sources T-2025-03-27-1414.15-F-2025-03-27-1414.15.pdiff [291 B]
Get:19 https://deb.debian.org/debian bookworm-updates/main amd64 Packages T-2025-03-27-1414.15-F-2025-03-27-1414.15.pdiff [187 B]
Get:20 https://deb.debian.org/debian bookworm-updates/main Sources T-2025-03-27-1414.15-F-2025-03-27-1414.15.pdiff [291 B]
Get:21 https://deb.debian.org/debian bookworm-updates/main amd64 Packages T-2025-03-27-1414.15-F-2025-03-27-1414.15.pdiff [187 B]
Get:22 https://deb.debian.org/debian bookworm-updates/main Sources.diff/Index [63.3 kB]
Get:23 https://deb.debian.org/debian bookworm-updates/main amd64 Packages T-2025-03-27-1414.15-F-2025-03-27-1414.15.pdiff [63.3 kB]
Get:24 https://deb.debian.org/debian bookworm-updates/main Translation-en.diff/Index [63.3 kB]
Get:25 https://deb.debian.org/debian bookworm-updates/main Sources T-2025-03-27-0204.20-F-2025-03-11-2007.23.pdiff [27.8 kB]
Get:26 https://deb.debian.org/debian bookworm-updates/main amd64 Packages T-2025-03-27-0204.20-F-2025-03-11-2007.23.pdiff [52.4 kB]
Get:27 https://deb.debian.org/debian bookworm-updates/main Sources T-2025-03-27-0204.20-F-2025-03-11-2007.23.pdiff [27.8 kB]
Get:28 https://deb.debian.org/debian bookworm-updates/main amd64 Packages T-2025-03-27-0204.20-F-2025-03-11-2007.23.pdiff [52.4 kB]
Get:29 https://deb.debian.org/debian bookworm-updates/main Translation-en T-2025-03-26-0205.47-F-2025-03-12-0207.37.pdiff [7148 B]
Get:30 https://deb.debian.org/debian bookworm-updates/main Translation-en T-2025-03-26-0205.47-F-2025-03-12-0207.37.pdiff [7148 B]
Get:31 https://deb.debian.org/debian bookworm-updates/main Sources [147 kB]
Get:32 https://deb.debian.org/debian bookworm-updates/main amd64 Packages [250 kB]
Get:33 https://deb.debian.org/debian bookworm-updates/main Translation-en [150 kB]
Fetched 31.0 MB in 6 s (6662 kB/s)
Reading package lists... Done
Building dependency tree... Done
```

```
Setting up libgprofng:amd64 (2.40-2) ...
Setting up python3-jsonschema (4.10.3-1) ...
Setting up libmodule-find-perl (0.16-2) ...
Setting up libproc-processtable-perl:amd64 (0.634-1+b2) ...
Setting up libio-socket-ssl-perl:amd64 (0.33-1) ...
Setting up liblint-l-perl (1.33-1) ...
Setting up libltern-readkey-perl (2.38-2+b1) ...
Setting up liblsort-naturally-perl (1.03-4) ...
Setting up binutils-x86_64-linux-gnu (2.40-2) ...
Setting up docker-compose (1.29.2-3) ...
Setting up binutils (2.40-2) ...
Setting up liblnt-xs-perl (1.33-1) ...
Setting up liberror-perl (0.17029-2) ...
Setting up git (1:2.39.5.0+deb12u2) ...
Setting up needrestart (0.6-4+deb12u2) ...
Processing triggers for man-db (2.11.2-2) ...
Processing triggers for libbo-bin (2.36-9+deb12u9) ...
g23110312@att-wm-2:~$ docker network create my_network
docker run -d --name elasticsearch \
--net my_network \
-p 9200:9200 \
-e "discovery.type=single-node" \
-e "ES_JAVA_OPTS=-Xms12m -Xmx512m" \
-docker.elastic.co/elasticsearch/elasticsearch:7.17.9
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://<2Fvar%2Frun%2Fdocker.sock>/v1.24/networks/create": dial unix /var/run/docker.sock: connect: permission denied
docker command denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://<2Fvar%2Frun%2Fdocker.sock>/v1.24/containers/create?name=elasti...
See 'docker run --help'.
g23110312@att-wm-2:~$ sudo docker network create my_network
sudo docker run -d --name elasticsearch \
--net my_network \
-p 9200:9200 \
-e "discovery.type=single-node" \
-e "ES_JAVA_OPTS=-Xms12m -Xmx512m" \
-docker.elastic.co/elasticsearch/elasticsearch:7.17.9
d460e12a767644db3de2bf78af3d9e9840897233ab9a70b14bfef7d9c
lsbuntu:~/Desktop$ docker pull docker.elastic.co/elasticsearch/elasticsearch:7.17.9
7.17.9: Pulling from docker.elastic.co/elasticsearch/elasticsearch
36a9c60c46d0: Pull complete
e702cbf68995: Pull complete
e42ba0f6aa39: Pull complete
13c59ec0cc: Extracting [=====
12d112623fed: Download complete
3e95ee02a15: Download complete
e8819c48f163: Download complete
ea0623c40fc9: Download complete
a621ebe3e6959: Download complete
```

```
Processing triggers for libc-bin (2.36-9+deb12u9) ...
g23110312@stt-vm-2:~$ docker network create my_network
docker run -d --name elasticsearch \
--net my_network \
-p 9200:9200 \
-e "discovery.type=single-node" \
-e "ES_JAVA_OPTS=-Xmx512m -Xms512m" \
-docker.elastic.co/elasticsearch/elasticsearch:7.17.9
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://$Fvar%2Frun%2Fdocker.sock/v1.24/networks/create": dial unix /var/run/docker.sock: connect: permission denied
docker: permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://$Fvar%2Frun%2Fdocker.sock/v1.24/containers/create?name=elasticsearch": dial unix /var/run/docker.sock: connect: permission denied.
See 'docker run --help'.
g23110312@stt-vm-2:~$ sudo docker network create my_network
sudo docker run -d --name elasticsearch \
--net my_network \
-p 9200:9200 \
-e "discovery.type=single-node" \
-e "ES_JAVA_OPTS=-Xmx512m -Xms512m" \
-docker.elastic.co/elasticsearch/elasticsearch:7.17.9
Unable to find image 'docker.elastic.co/elasticsearch/elasticsearch:7.17.9' locally
7.17.9: Pulling from elasticsearch/elasticsearch
36a9ec60c46d: Pull complete
e702a0fca39: Pull complete
d42ba0fca39: Pull complete
13c59ecc70cc: Pull complete
12d112623fed: Pull complete
3e95ee0e2a15: Pull complete
e8819c48f163: Pull complete
ea0523c40fc9: Pull complete
a621be0e6959: Pull complete
Digest: sha256:59b37e77bd8015d5b60f75beb22d06028f7f15036f9d3559d2b7c16ece74db
Status: Downloaded newer image for docker.elastic.co/elasticsearch/elasticsearch:7.17.9
c98f0958102ff9a644dc539bbae61129c96d87134a0c5d2047ba7eece93e535d
g23110312@stt-vm-2:~$ curl -X PUT "http://localhost:9200/my_index" -H "Content-Type: application/json" -d '
{
  "settings": {
    "number_of_shards": 1,
    "number_of_replicas": 1
  },
  "mappings": {
    "properties": {
      "id": { "type": "keyword" },
      "text": { "type": "text" }
    }
  }
}'
{"acknowledged":true,"shards_acknowledged":true,"index":"my_index"}g23110312@stt-vm-2:~$
```

```
Processing triggers for libc-bin (2.36-9+deb12u9) ...
g23110312@stt-vm-2:~$ docker network create my_network
docker run -d --name elasticsearch \
--net my_network \
-p 9200:9200 \
-e "discovery.type=single-node" \
-e "ES_JAVA_OPTS=-Xmx512m -Xms512m" \
-docker.elastic.co/elasticsearch/elasticsearch:7.17.9
Unable to find image 'docker.elastic.co/elasticsearch/elasticsearch:7.17.9' locally
7.17.9: Pulling from elasticsearch/elasticsearch
36a9ec60c46d: Pull complete
e702a0fca39: Pull complete
d42ba0fca39: Pull complete
13c59ecc70cc: Pull complete
12d112623fed: Pull complete
3e95ee0e2a15: Pull complete
e8819c48f163: Pull complete
ea0523c40fc9: Pull complete
a621be0e6959: Pull complete
Digest: sha256:59b37e77bd8015d5b60f75beb22d06028f7f15036f9d3559d2b7c16ece74db
Status: Downloaded newer image for docker.elastic.co/elasticsearch/elasticsearch:7.17.9
c98f0958102ff9a644dc539bbae61129c96d87134a0c5d2047ba7eece93e535d
g23110312@stt-vm-2:~$ curl -X PUT "http://localhost:9200/my_index" -H "Content-Type: application/json" -d '
{
  "settings": {
    "number_of_shards": 1,
    "number_of_replicas": 1
  },
  "mappings": {
    "properties": {
      "id": { "type": "keyword" },
      "text": { "type": "text" }
    }
  }
}'
{"acknowledged":true,"curl -X POST "http://localhost:9200/my_index/_doc/1" -H "Content-Type: application/json" -d 'host:9200/my_index/_doc/1'" -H "Content-Type: application/json" -d '{
  "id": "1",
  "text": "India is a country in South Asia. It is the seventh-largest country by land area."
}'":true,"index":"my_index"}g23110312@stt-vm-2:~$ curl -X POST "http://localhost:9200/my_index/_doc/1" -H "Content-Type: application/json" -d 'host:9200/my_index/_doc/1'" -H "Content-Type: application/json" -d '{
  "id": "1",
  "text": "India is a country in South Asia. It is the seventh-largest country by land area."
}'

curl -X POST "http://localhost:9200/my_index/_doc/2" -H "Content-Type: application/json" -d '{
  "id": "2",
  "text": "The capital of India is New Delhi. It has a rich cultural history."
}'

curl -X POST "http://localhost:9200/my_index/_doc/3" -H "Content-Type: application/json" -d '{
  "id": "3",
  "text": "India has a diverse geography, with the Himalayas in the north and the Indian Ocean in the south."
}'

curl -X POST "http://localhost:9200/my_index/_doc/4" -H "Content-Type: application/json" -d '{
  "id": "4",
  "text": "India is known for its spices, diverse cuisine, and rich traditions."
}'

{
  "index": "my_index",
  "type": "doc",
  "id": "1",
  "version": 1,
  "result": "created",
  "shards": {
    "total": 2,
    "successful": 1,
    "failed": 0
  },
  "seq_no": 0,
  "primary_term": 1
}

{
  "index": "my_index",
  "type": "doc",
  "id": "2",
  "version": 1,
  "result": "created",
  "shards": {
    "total": 2,
    "successful": 1,
    "failed": 0
  },
  "seq_no": 1,
  "primary_term": 1
}

{
  "index": "my_index",
  "type": "doc",
  "id": "3",
  "version": 1,
  "result": "created",
  "shards": {
    "total": 2,
    "successful": 1,
    "failed": 0
  },
  "seq_no": 2,
  "primary_term": 1
}

{
  "index": "my_index",
  "type": "doc",
  "id": "4",
  "version": 1,
  "result": "created",
  "shards": {
    "total": 2,
    "successful": 1,
    "failed": 0
  },
  "seq_no": 3,
  "primary_term": 1
}
g23110312@stt-vm-2:~$
```

A screenshot of a terminal window titled "SSH-in-browser" running on a web browser. The terminal shows a Python script named "backend.py". The script imports FastAPI and requests, initializes an app, sets the Elasticsearch host to "http://elasticsearch:9200", and defines two routes: "/insert" (POST) and "/get" (GET). The "/insert" route inserts a document into the "my_index" index. The "/get" route performs a search with a size of 1 and returns the source of the best match. The terminal interface includes a status bar at the bottom with various keyboard shortcuts.

```
GNU nano 7.2
from fastapi import FastAPI
import requests

app = FastAPI()
ES_HOST = "http://elasticsearch:9200"
INDEX_NAME = "my_index"

@app.post("/insert")
async def insert(text: str):
    response = requests.post(f"{ES_HOST}/{INDEX_NAME}/_doc", json={"text": text})
    return response.json()

@app.get("/get")
async def get_best_match():
    query = {
        "query": {
            "match_all": {}
        },
        "size": 1
    }
    response = requests.get(f"{ES_HOST}/{INDEX_NAME}/_search", json=query)
    return response.json()["hits"][0]["_source"]
```

A screenshot of a terminal window titled "SSH-in-browser" running on a web browser. The terminal shows a Dockerfile. The file starts with a FROM instruction for Python 3.10, sets the WORKDIR to /app, copies "backend.py" into the app directory, runs pip to install fastapi, uvicorn, and requests, and finally runs "uvicorn" with "backend:app" as the entry point, specifying host "0.0.0.0" and port "9567". The terminal interface includes a status bar at the bottom with various keyboard shortcuts.

```
FROM python:3.10
WORKDIR /app
COPY backend.py /app
RUN pip install fastapi uvicorn requests
CMD ["uvicorn", "backend:app", "--host", "0.0.0.0", "--port", "9567"]
```

```
e702c2bf6895: Pull complete
d42ba0f6aa39: Pull complete
13c59ecc70cc: Pull complete
12d112623fed: Pull complete
3e9595202a15: Pull complete
e8815e402011: Pull complete
e05523d401c9: Pull complete
a621be036959: Pull complete
Digest: sha256:59b3777bd8b015d5b60f75beb72d028f7f15036fd9d3559d2b7c16ece74db
Status: Downloaded newer image for docker.elastic.co/elasticsearch/elasticsearch:7.17.9
c98f0958102f2ff9a644dc39bb4e61129c96d87134a0c5d2047baeece93e53d
g23110312@stt-vm-2:~$ curl -X PUT "http://localhost:9200/my_index" -H "Content-Type: application/json" -d '
{
  "settings": {
    "number_of_shards": 1,
    "number_of_replicas": 1
  },
  "mappings": {
    "properties": {
      "id": { "type": "keyword" },
      "text": { "type": "text" }
    }
  }
}
{"acknowledged":true,"curl -X POST "http://localhost:9200/my_index/_doc/1" -H "Content-Type: application/json" -d 'host:9200/my_index/doc/1' -H "Content-Type: application/json" -d '{
  "id": "1",
  "text": "India is a country in South Asia. It is the seventh-largest country by land area."
}'"
curl -X POST "http://localhost:9200/my_index/_doc/2" -H "Content-Type: application/json" -d '{
  "id": "2",
  "text": "The capital of India is New Delhi. It has a rich cultural history."
}'"
curl -X POST "http://localhost:9200/my_index/_doc/3" -H "Content-Type: application/json" -d '{
  "id": "3",
  "text": "India has a diverse geography, with the Himalayas in the north and the Indian Ocean in the south."
}'"
curl -X POST "http://localhost:9200/my_index/_doc/4" -H "Content-Type: application/json" -d '{
  "index": "my_index",
  "id": "4",
  "text": "India is known for its spices, diverse cuisine, and rich traditions."
}'
{"index": "my_index", "id": "4", "text": "India is known for its spices, diverse cuisine, and rich traditions."}
{"_index": "my_index", "id": "1", "result": "created", "shards": {"total": 2, "successful": 1, "failed": 0}, "seq_no": 1, "primary_term": 1}, {"_index": "my_index", "id": "2", "result": "created", "shards": {"total": 2, "successful": 1, "failed": 0}, "seq_no": 2, "primary_term": 1}, {"_index": "my_index", "id": "3", "result": "created", "shards": {"total": 2, "successful": 1, "failed": 0}, "seq_no": 3, "primary_term": 1}, {"_index": "my_index", "id": "4", "result": "created", "shards": {"total": 2, "successful": 1, "failed": 0}, "seq_no": 4, "primary_term": 1}
g23110312@stt-vm-2:~$ nano dockerfile
g23110312@stt-vm-2:~$ docker build -t fastapi:2 .
docker run -d --name backend --net my_network -p 9567:9567 fastapi:2
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/build?buildargs=%7B%7D&cachefrom=%5B%5D&cgroupparent=%cpuperiod=0&cpusetcpu=%cpusetmems=%cpushares=0&dockerfile=dockerfile&labels=%7B%7D&memory=0&memswap=0&networkmode=default&rm=1&shmsize=0&t=fastapi%3A2&targte=t=&ulimits=null&version=1": dial unix /var/run/docker.sock: connect: permission denied
docker: Error response from daemon: denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/create?name=backen
d": dial unix /var/run/docker.sock: connect: permission denied.
See 'docker run --help'.
g23110312@stt-vm-2:~$
```

```
{
  "settings": {
    "number_of_shards": 1,
    "number_of_replicas": 1
  },
  "mappings": {
    "properties": {
      "id": { "type": "keyword" },
      "text": { "type": "text" }
    }
  }
}
{"acknowledged":true,"curl -X POST "http://localhost:9200/my_index/_doc/1" -H "Content-Type: application/json" -d 'host:9200/my_index/doc/1' -H "Content-Type: application/json" -d '{
  "id": "1",
  "text": "India is a country in South Asia. It is the seventh-largest country by land area."
}'"
curl -X POST "http://localhost:9200/my_index/_doc/2" -H "Content-Type: application/json" -d '{
  "id": "2",
  "text": "The capital of India is New Delhi. It has a rich cultural history."
}'"
curl -X POST "http://localhost:9200/my_index/_doc/3" -H "Content-Type: application/json" -d '{
  "id": "3",
  "text": "India has a diverse geography, with the Himalayas in the north and the Indian Ocean in the south."
}'"
curl -X POST "http://localhost:9200/my_index/_doc/4" -H "Content-Type: application/json" -d '{
  "index": "my_index",
  "id": "4",
  "text": "India is known for its spices, diverse cuisine, and rich traditions."
}'
{"index": "my_index", "id": "4", "text": "India is known for its spices, diverse cuisine, and rich traditions."}
{"_index": "my_index", "id": "1", "result": "created", "shards": {"total": 2, "successful": 1, "failed": 0}, "seq_no": 1, "primary_term": 1}, {"_index": "my_index", "id": "2", "result": "created", "shards": {"total": 2, "successful": 1, "failed": 0}, "seq_no": 2, "primary_term": 1}, {"_index": "my_index", "id": "3", "result": "created", "shards": {"total": 2, "successful": 1, "failed": 0}, "seq_no": 3, "primary_term": 1}, {"_index": "my_index", "id": "4", "result": "created", "shards": {"total": 2, "successful": 1, "failed": 0}, "seq_no": 4, "primary_term": 1}
g23110312@stt-vm-2:~$ nano dockerfile
g23110312@stt-vm-2:~$ docker build -t fastapi:2 .
docker run -d --name backend --net my_network -p 9567:9567 fastapi:2
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/build?buildargs=%7B%7D&cachefrom=%5B%5D&cgroupparent=%cpuperiod=0&cpusetcpu=%cpusetmems=%cpushares=0&dockerfile=dockerfile&labels=%7B%7D&memory=0&memswap=0&networkmode=default&rm=1&shmsize=0&t=fastapi%3A2&targte=t=&ulimits=null&version=1": dial unix /var/run/docker.sock: connect: permission denied
docker: Error response from daemon: denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/create?name=backen
d": dial unix /var/run/docker.sock: connect: permission denied.
See 'docker run --help'.
g23110312@stt-vm-2:~$ sudo docker build -t fastapi:2 .
sudo: docker run -d --name backend --net my_network -p 9567:9567 fastapi:2
Sending build context to Docker daemon 12.92kB
Step 1/7 : FROM python:3.10
3.10: Pulling from library/python
7cd785773db4: Extracting [=====] 45.71MB/48.47MB
091eb8249475: Download complete
25577ae0027b: Download complete
353e14e5cc47: Download complete
0e64566c7562: Download complete
57161121b343: Download complete
a90d73ac0e51: Download complete
g23110312@stt-vm-2:~$
```

```
Collecting click>=7.0
  Downloading click-8.1.8-py3-none-any.whl (98 kB)
    98.2/98.2 kB 17.1 MB/s eta 0:00:00
Collecting h11>=0.8
  Downloading h11-0.14.0-py3-none-any.whl (58 kB)
    58.3/58.3 kB 9.7 MB/s eta 0:00:00
Collecting charset-normalizer<4,>=2
  Downloading charset_normalizer-3.4.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (146 kB)
    146.1/146.1 kB 22.9 MB/s eta 0:00:00
Collecting idna<4,>=2.5
  Downloading idna-3.10-py3-none-any.whl (70 kB)
    70.4/70.4 kB 10.3 MB/s eta 0:00:00
Collecting certifi>=2017.4.17
  Downloading certifi-2025.1.31-py3-none-any.whl (166 kB)
    166.4/166.4 kB 25.9 MB/s eta 0:00:00
Collecting urllib3<3,>=1.21.1
  Downloading urllib3-2.3.0-py3-none-any.whl (128 kB)
    128.4/128.4 kB 20.1 MB/s eta 0:00:00
Collecting annotated-types>=0.6.0
  Downloading annotated_types-0.7.0-py3-none-any.whl (13 kB)
Collecting pydantic-core>=2.27.2
  Downloading pydantic_core-2.27.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.0 MB)
    2.0/2.0 kB 50.6 MB/s eta 0:00:00
Collecting anyio<5,>=3.6.2
  Downloading anyio-4.9.0-py3-none-any.whl (100 kB)
    100.9/100.9 kB 18.2 MB/s eta 0:00:00
Collecting sniffio>=1.1
  Downloading sniffio-1.3.1-py3-none-any.whl (10 kB)
Collecting exceptiongroup>=1.0.2
  Downloading exceptiongroup-1.2.2-py3-none-any.whl (16 kB)
Installing collected packages: urllib3, typing-extensions, sniffio, idna, h11, exceptiongroup, click, charset-normalizer, certifi, annotated-types, uvicorn, requests, pydantic-core, anyio, starlette, pydantic, fastapi
Successfully installed annotated-types-0.7.0 anyio-4.9.0 certifi-2025.1.31 charset-normalizer-3.4.1 click-8.1.8 exceptiongroup-1.2.2 fastapi-0.115.12 h11-0.14.0 idna-3.10 pydantic-2.10.6 pydantic-core-2.27.2 requests-2.32.3 sniffio-1.3.1 starlette-0.46.1 typing-extensions-4.13.0 urllib3-2.3.0 uvicorn-0.34.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv
[notice] A new release of pip is available: 23.0.1 -> 25.0.1
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Removing intermediate container 4e513de592da
--> 974cf439f723
Step 5/5 : CMD ["uvicorn", "backend:app", "--host", "0.0.0.0", "--port", "9567"]
--> Running in 3750ed985c8a
Removing intermediate container 3750ed985c8a
--> 6c250088b5bc
Successfully built 6c250088b5bc
Successfully tagged fastapi:2
fa7c84b72c8ee879f15ed89e1be81f44ecbd1210cld41cc5dec82a84a8661
g23110312@stt-vm-2:~$
```

```
Collecting h11>=0.8
  Downloading h11-0.14.0-py3-none-any.whl (58 kB)
    58.3/58.3 kB 9.7 MB/s eta 0:00:00
Collecting charset-normalizer<4,>=2
  Downloading charset_normalizer-3.4.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (146 kB)
    146.1/146.1 kB 22.9 MB/s eta 0:00:00
Collecting idna<4,>=2.5
  Downloading idna-3.10-py3-none-any.whl (70 kB)
    70.4/70.4 kB 10.3 MB/s eta 0:00:00
Collecting certifi>=2017.4.17
  Downloading certifi-2025.1.31-py3-none-any.whl (166 kB)
    166.4/166.4 kB 25.9 MB/s eta 0:00:00
Collecting urllib3<3,>=1.21.1
  Downloading urllib3-2.3.0-py3-none-any.whl (128 kB)
    128.4/128.4 kB 20.1 MB/s eta 0:00:00
Collecting annotated-types>=0.6.0
  Downloading annotated_types-0.7.0-py3-none-any.whl (13 kB)
Collecting pydantic-core>=2.27.2
  Downloading pydantic_core-2.27.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.0 MB)
    2.0/2.0 kB 50.6 MB/s eta 0:00:00
Collecting anyio<5,>=3.6.2
  Downloading anyio-4.9.0-py3-none-any.whl (100 kB)
    100.9/100.9 kB 18.2 MB/s eta 0:00:00
Collecting sniffio>=1.1
  Downloading sniffio-1.3.1-py3-none-any.whl (10 kB)
Collecting exceptiongroup>=1.0.2
  Downloading exceptiongroup-1.2.2-py3-none-any.whl (16 kB)
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Successfully tagged fastapi:2
fa7c84b72c8ee879f15ed89e1be81f44ecbd1210cld41cc5dec82a84a8661
g23110312@stt-vm-2:~$ sudo docker ps | grep elasticsearch
c98f0958102f  docker.elastic.co/elasticsearch/elasticsearch:7.17.9  "/bin/tini -- /usr/l..."  13 minutes ago   Up 13 minutes  0.0.0.0:9200->9200/tcp, 9300/tcp  elasticsearch
g23110312@stt-vm-2:~$
```

```
Collecting charset-normalizer<4,>=2
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Collecting aiohttp<5,>=3.6.2
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Collecting sniffio<=1.1
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Step 5/5 <--> "uvicorn", "backend:app", "--host", "0.0.0.0", "--port", "9567"]
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Successfully tagged fastapi:2
fa7c8f4b72c8ee79f15ed89e1be8f14ec4ebdf2120cid41cc5dec82a84a8661
g23110312@ett-vm-2:~$ sudo docker ps | grep elasticsearch
c98e0958102f  docker.elastic.co/elasticsearch/elasticsearch:7.17.9  "/bin/tini -- /usr/l..." 13 minutes ago Up 13 minutes 0.0.0.0:9200->9200/tcp, :::9200->9200/tcp, 9300/tcp elasticsearch
g23110312@ett-vm-2:~$ sudo ss ufd | grep 9200
tcp  LISTEN  0        4096          0.0.0.0:9200      0.0.0.0:*      users:(("docker-proxy",pid=2920,fd=4))
tcp  LISTEN  0        4096          [::]:9200      [::]:*      users:(("docker-proxy",pid=2927,fd=4))
g23110312@ett-vm-2:~$
```

```
g23110312@stt-vm-2:~$ sudo apt update
sudo apt install ufw -y
Get:1 file:/etc/apt/mirrors.debian.list Mirrorlist [30 B]
Get:5 file:/etc/apt/mirrors.debian-security.list Mirrorlist [39 B]
Hit:1 https://deb.debian.org/debian bookworm InRelease
Hit:2 https://deb.debian.org/debian-security bookworm-updates InRelease
Hit:4 https://deb.debian.org/debian bookworm-backports InRelease
Hit:6 https://deb.debian.org/debian-security bookworm-security InRelease
Hit:7 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable InRelease
Hit:8 https://packages.cloud.google.com/apt cloud-sdk-bookworm InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
31 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  ufw
0 upgraded, 1 newly installed, 0 to remove and 31 not upgraded.
Need to get 168 kB of archives.
After this operation, 878 kB of additional disk space will be used.
Get:1 file:/etc/apt/mirrors.debian.list Mirrorlist [30 B]
Get:2 https://deb.debian.org/debian bookworm/main amd64 ufw all 0.36.2-1 [168 kB]
Fetched 168 kB in 0s (1209 kB/s)
Preconfiguring packages ...
Selecting previously unselected package ufw.
(Reading database ... 75203 files and directories currently installed.)
Preparing to unpack .../archives/ufw_0.36.2-1_all.deb ...
Unpacking ufw (0.36.2-1) ...
Setting up ufw (0.36.2-1) ...

Creating config file /etc/ufw/before.rules with new version
Creating config file /etc/ufw/before6.rules with new version
Creating config file /etc/ufw/after.rules with new version

Creating config file /etc/ufw/after6.rules with new version
Created symlink /etc/systemd/system/multi-user.target.wants/ufw.service → /lib/systemd/system/ufw.service.
Processing triggers for rsyslog (8.2302.0-1) ...
Processing triggers for man-db (2.11.2-2) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.
```

```
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  ufw
0 upgraded, 1 newly installed, 0 to remove and 31 not upgraded.
Need to get 168 kB of archives.
After this operation, 878 kB of additional disk space will be used.
Get:1 file:///etc/apt/mirrors.debian.list Mirrorlist [30 B]
Get:2 https://deb.debian.org/debian bookworm/main amd64 ufw all 0.36.2-1 [168 kB]
Fetched 168 kB in 0s (1209 kB/s)
Preconfiguring packages ...
Selecting previously unselected package ufw.
(Reading database ... 75203 files and directories currently installed.)
Preparing to unpack .../archives/ufw_0.36.2-1_all.deb ...
Unpacking ufw (0.36.2-1) ...
Setting up ufw (0.36.2-1) ...

Creating config file /etc/ufw/before.rules with new version
Creating config file /etc/ufw/before6.rules with new version
Creating config file /etc/ufw/after.rules with new version
Creating config file /etc/ufw/after6.rules with new version
Created symlink /etc/systemd/system/multi-user.target.wants/ufw.service → /lib/systemd/system/ufw.service.
Processing triggers for syslog (8.7302.0-1) ...
Processing triggers for man-db (2.11.2-2) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
g23110312@stt-vm-2:~$ sudo ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y/n)? Y
Firewall is active and enabled on system startup
g23110312@stt-vm-2:~$ sudo ufw allow 9200/tcp
sudo ufw reload
Rule added
Rule added (v6)
Firewall reloaded
g23110312@stt-vm-2:~$
```

```
g23110312@stt-vm-2:~$ sudo ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y/n)? Y
Firewall is active and enabled on system startup
g23110312@stt-vm-2:~$ sudo ufw allow 9200/tcp
sudo ufw reload
Rule added
Rule added (v6)
Firewall reloaded
g23110312@stt-vm-2:~$ sudo docker ps | grep elasticsearch
c98f09592f2f docker.elastic.co/elasticsearch/elasticsearch:7.17.9    "/bin/tini -- /usr/l..."   22 minutes ago   Up 3 minutes   0.0.0.0:9200->9200/tcp, :::9200->9200/tcp, 9300/tcp   elasticsearch
g23110312@stt-vm-2:~$ curl -v http://34.123.79.18:9200...
* Trying 34.123.79.18:9200...
^[[A
g23110312@stt-vm-2:~$ g23110312@stt-vm-2:~$ curl -v http://127.0.0.1:9200
* Trying 127.0.0.1:9200...
* Connected to 127.0.0.1 (127.0.0.1) port 9200 (#0)
> GET / HTTP/1.1
> Host: 127.0.0.1:9200
> User-Agent: curl/7.88.1
> Accept: /*
>
< HTTP/1.1 200 OK
< X-Elastic-Product: Elasticsearch
< Warning: 299 Elasticsearch-7.17.9-ef4822227ee6b9e70e502f0f0daa52435ee634d "Elasticsearch built-in security features are not enabled. Without authentication, your cluster could be accessible to anyone. See https://www.elastic.co/guide/en/elasticsearch/reference/7.17/security-minimal-setup.html to enable security."
< content-type: application/json; charset=UTF-8
< content-length: 546
<
{
  "name" : "c98f0959102f",
  "cluster_name" : "docker-cluster",
  "cluster_uuid" : "J743SjZtsB2lrrKYI5bUDQ",
  "version" : {
    "number" : "7.17.9",
    "build_flavor" : "default",
    "build_type" : "docker",
    "build_hash" : "ef4822227ee6b9e70e502f0f0daa52435ee634d",
    "build_date" : "2023-05-31T05:34:43.305517834Z",
    "build_snapshot" : false,
    "lucene_version" : "8.11.1",
    "minimum_wire_compatibility_version" : "6.8.0",
    "minimum_index_compatibility_version" : "6.0.0-beta1"
  },
  "tagline" : "You Know, for Search"
}
* Connection #0 to host 127.0.0.1 left intact
g23110312@stt-vm-2:~$
```

```
tcp6      0      0  ::::9200          ::::*           0C
g23110193@docker-lab-vm:~/docker-lab/frontend$ sudo netstat -antp | grep LISTEN
tcp      0      0  0.0.0.0:5355        0.0.0.0:*        LISTEN      366/systemd-resolve
tcp      0      0  0.0.0.0:9567        0.0.0.0:*        LISTEN      49320/docker-proxy
tcp      0      0  127.0.0.53:53       0.0.0.0:*        LISTEN      366/systemd-resolve
tcp      0      0  0.0.0.0:9200        0.0.0.0:*        LISTEN      48824/docker-proxy
tcp      0      0  0.0.0.0:22          0.0.0.0:*        LISTEN      827/sshd: /usr/sbin
tcp      0      0  0.0.0.0:20202       0.0.0.0:*        LISTEN      1686/fluent-bit
tcp      0      0  0.0.0.0:8000        0.0.0.0:*        LISTEN      49473/docker-proxy
tcp      0      0  127.0.0.1:25         0.0.0.0:*        LISTEN      795/exim4
tcp      0      0  127.0.0.54:53       0.0.0.0:*        LISTEN      366/systemd-resolve
tcp      0      0  127.0.0.1:41317       0.0.0.0:*        LISTEN      3218/containerd
tcp6     0      0  ::::5355          ::::*           LISTEN      366/systemd-resolve
tcp6     0      0  ::::9567          ::::*           LISTEN      49326/docker-proxy
tcp6     0      0  ::::9200          ::::*           LISTEN      48830/docker-proxy
tcp6     0      0  ::::22            ::::*           LISTEN      827/sshd: /usr/sbin
tcp6     0      0  ::::20201         ::::*           LISTEN      1650/otelopscol
tcp6     0      0  ::::8000          ::::*           LISTEN      49480/docker-proxy
tcp6     0      0  ::::1:25           ::::*           LISTEN      795/exim4
```



0193@docker-lab-vm:~/docker-lab/frontend\$