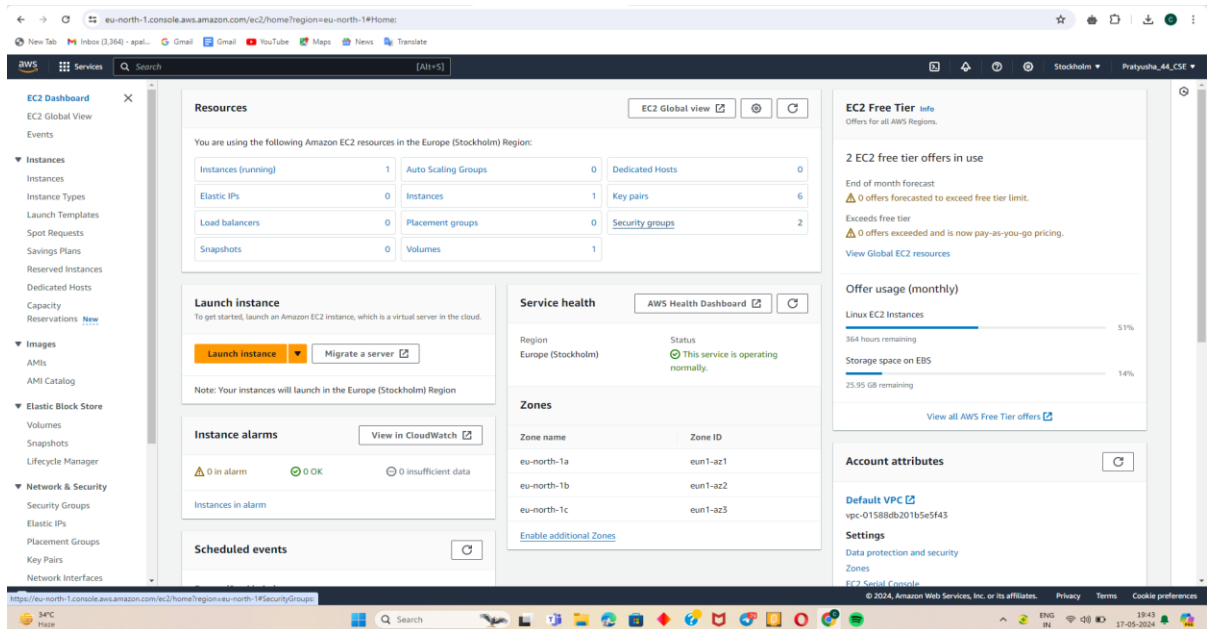


## Assignment 12 :-

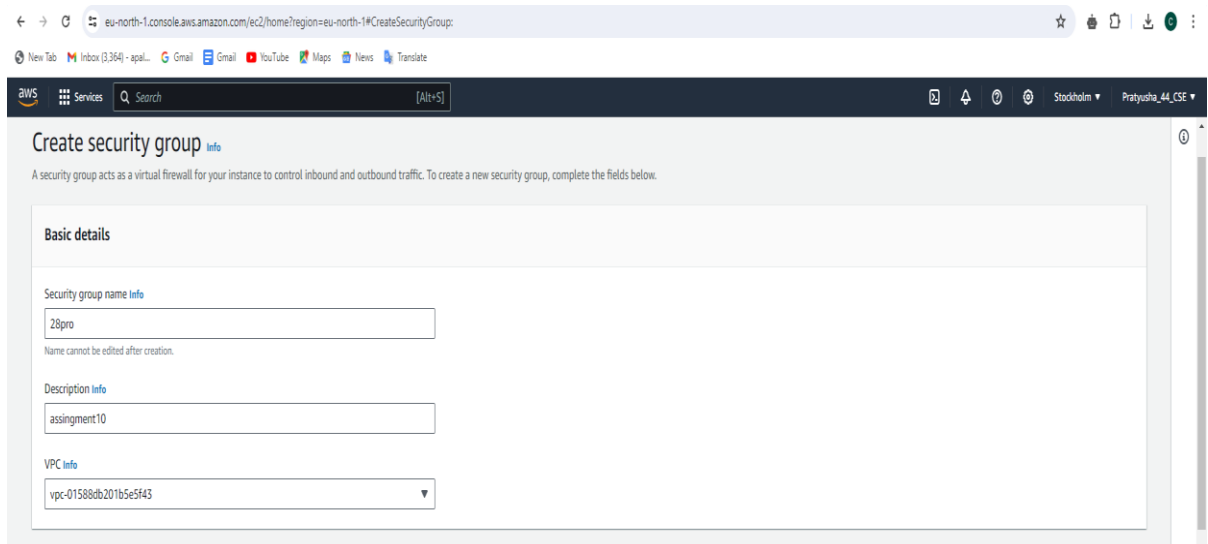
Problem Statement: Deploy and run the project in AWS without using port.

### Steps:

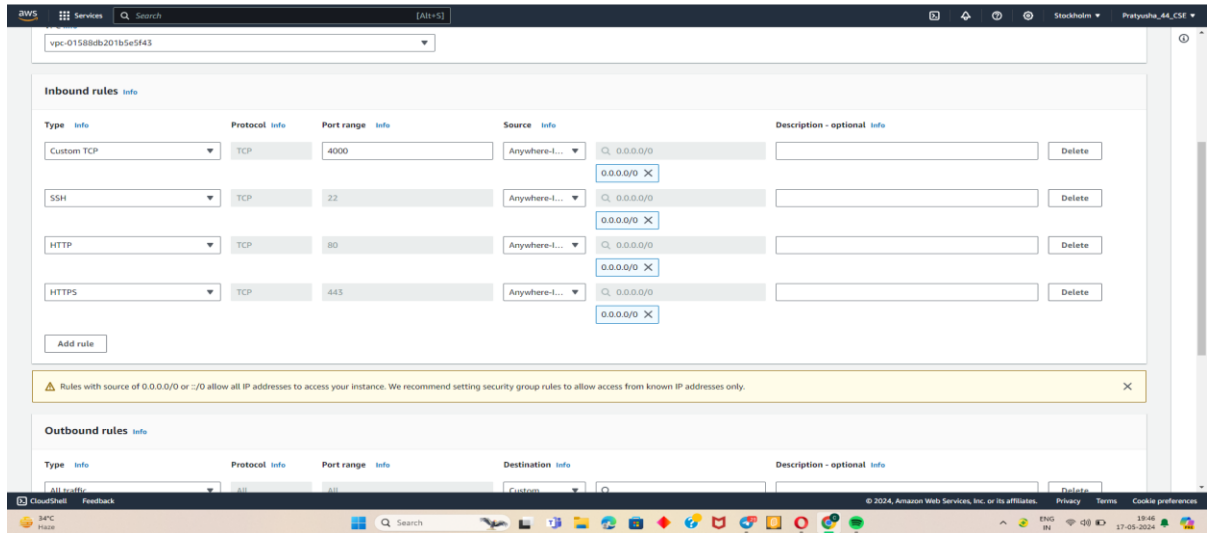
1. At first go to EC2 dashboard and then remove all security group except default, and then click on Create security group.



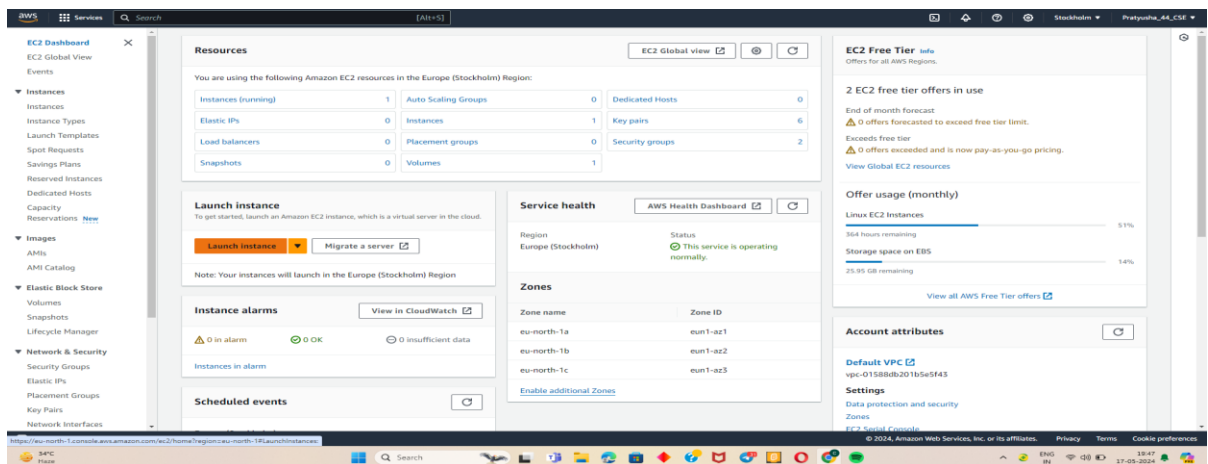
2. Now give its proper name and description(Same as Name).



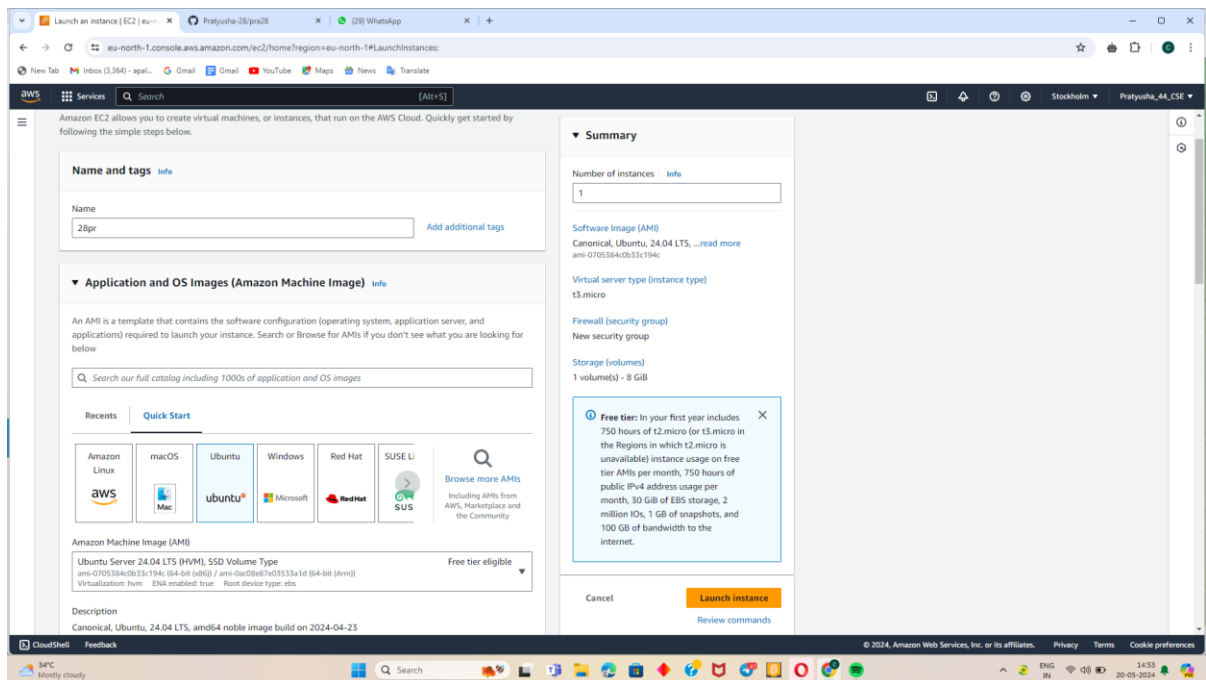
- Now in inbound click on “Add rule” and in this way add 4 security rules (Custom TCP, SSH, HTTP, HTTPS). Then click on “Create Security Group”.



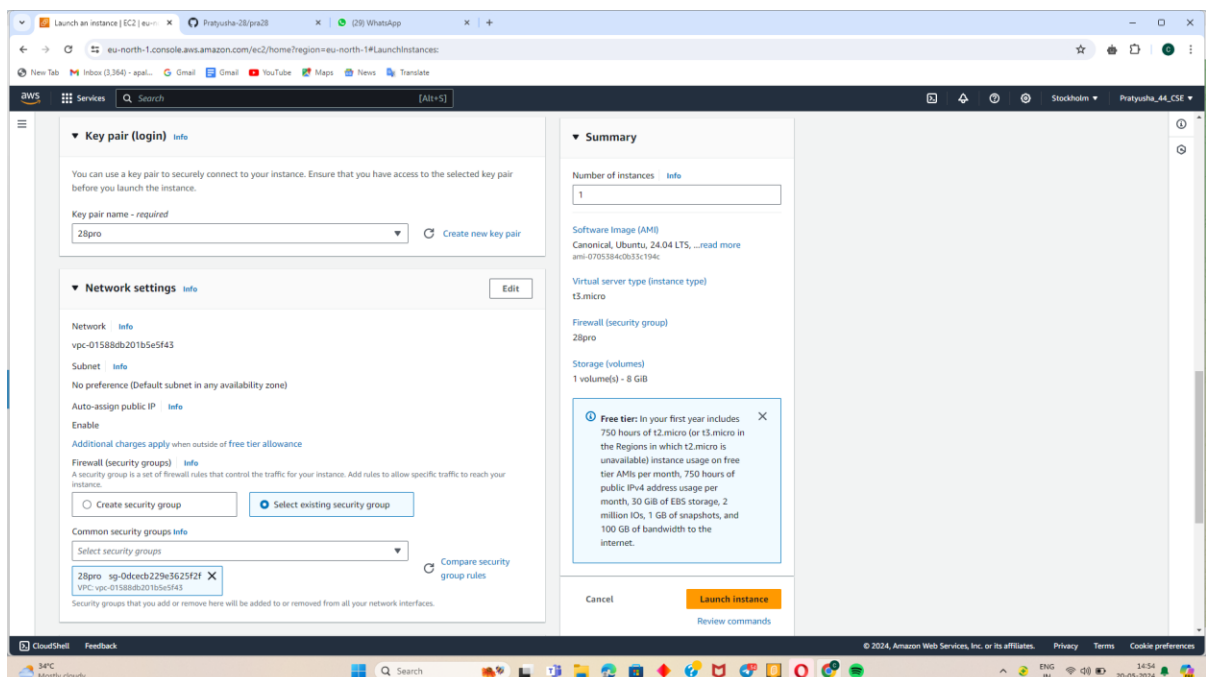
- Go to EC2 dashboard and click on Launch Instance.



5. After it give a unique name and then click on Ubuntu.

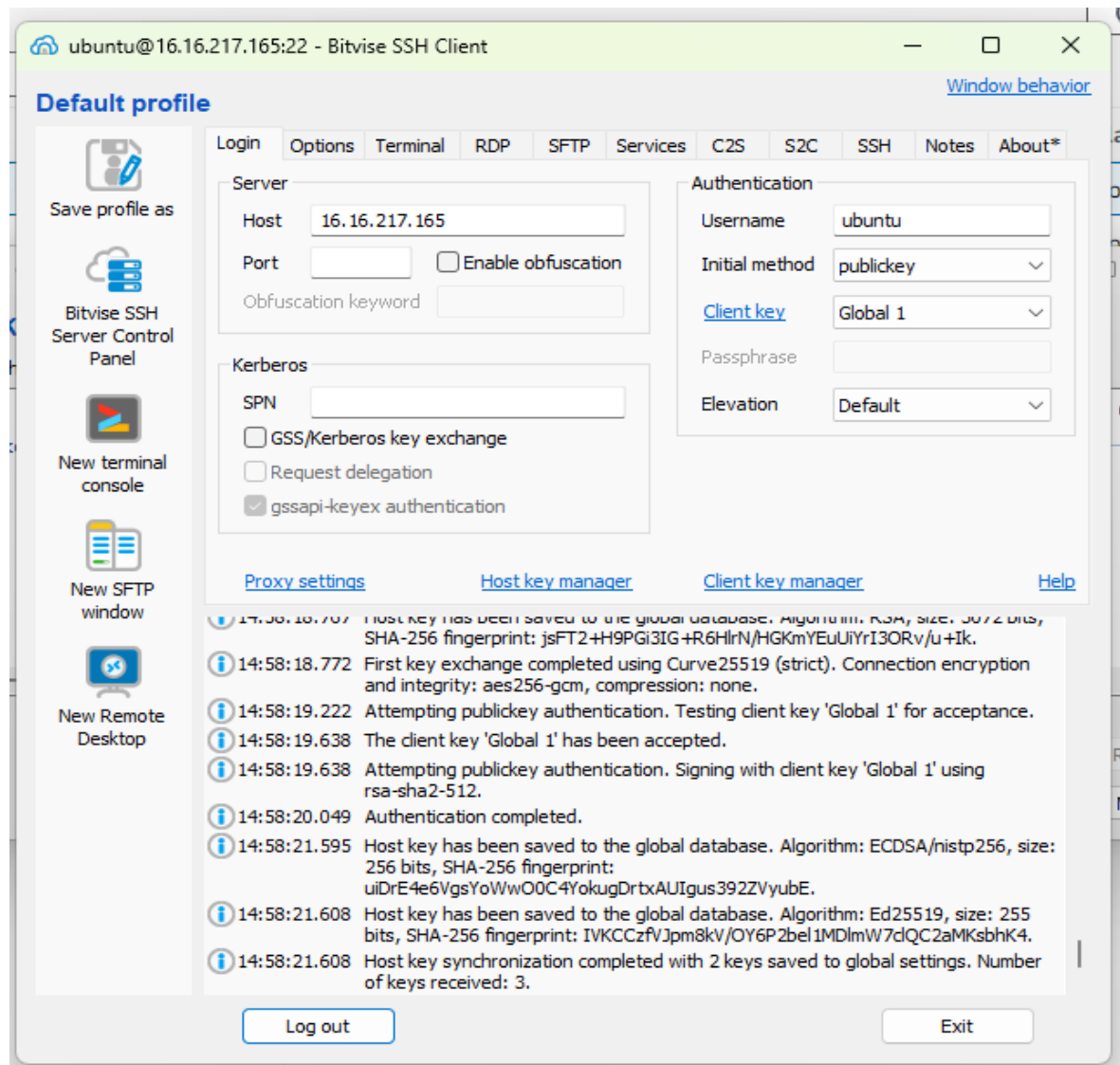


6. Now select key pair and in network settings also click on “Select existing security group” then select the security group which was created and click on Launch Instance.



7. Click on instance and copy public IPv4 address and paste the IPv4 address in host of BitVise SSH client and import key pair in Client key pair manager. After that click

on Log In.



8. Now open terminal in BitVise SSH and then write all commands :

- `sudo apt-get update`

```
ubuntu@16.16.217.165:22 - Bitvise xterm - ubuntu@ip-172-31-24-84: ~
The list of available updates is more than a week old.
To check for new updates run: sudo apt update

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

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-24-84:~$ sudo apt-get update
Get:1 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble InRelease [256 kB]
Get:2 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [89.7 kB]
Get:3 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [89.7 kB]
Get:4 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 Packages [1401 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [89.7 kB]
Get:6 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/main Translation-en [513 kB]
Get:7 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:8 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [29.7 kB]
Get:10 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [9156 B]
Get:12 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [16.3 kB]
Get:13 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:14 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [5844 B]
Get:15 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/restricted amd64 Packages [93.9 kB]
Get:16 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/restricted Translation-en [18.7 kB]
Get:17 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [112 B]
Get:19 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [116 B]
Get:20 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
```

- `sudo apt-get upgrade`

```
Get:14 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [5844 B]
Get:15 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/restricted amd64 Packages [93.9 kB]
Get:16 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/restricted Translation-en [18.7 kB]
Get:17 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [112 B]
Get:19 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [116 B]
Get:20 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:21 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:22 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
]
Get:23 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [31.7 kB]
Get:24 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [10.1 kB]
Get:25 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [18.8 k
B]
Get:26 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [6504 B
]
Get:27 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [
112 B]
Get:28 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata
[116 B]
Get:29 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [11
2 B]
Get:30 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [5812
B]
Get:31 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [2152
B]
Get:32 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata
[116 B]
Get:33 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metada
ta [116 B]
Get:34 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metada
ta [116 B]
Fetched 28.3 MB in 5s (5640 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-24-84:~$ sudo apt-get upgrade
```

- `sudo apt-get install nginx`

```
ubuntu@16.16.217.165:22 - Bitvise xterm - ubuntu@ip-172-31-24-84: ~
Processing triggers for libc-bin (2.39-0ubuntu8.1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Running kernel seems to be up-to-date.

Restarting services...
systemctl restart acpid.service chrony.service cron.service irqbalance.service multipathd.service p
ackagekit.service polkit.service rsyslog.service snapd.service ssh.service systemd-journald.service
systemd-networkd.service systemd-resolved.service systemd-udev.service udisks2.service

Service restarts being deferred:
systemctl restart ModemManager.service
/etc/needrestart/restart.d/dbus.service
systemctl restart getty@tty1.service
systemctl restart networkd-dispatcher.service
systemctl restart serial-getty@ttyS0.service
systemctl restart systemd-logind.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
ubuntu @ session #1: sshd[1018,1128]
ubuntu @ user manager service: systemd[1023]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-24-84:~$ sudo apt-get install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package nginx
ubuntu@ip-172-31-24-84:~$ sudo apt-get install nginx
```

- `curl -SL https://deb.nodesource.com/setup_16.x|sudo -E bash -`

```
ubuntu@16.16.217.165:22 - Bitvise xterm - ubuntu@ip-172-31-24-84: ~
Suggested packages:
  nginx-doc ssl-cert
The following NEW packages will be installed:
  nginx nginx-common
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 552 kB of archives.
After this operation, 1596 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 nginx-common all 1.24.0-2ubun
tu7 [312 kB]
Get:2 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 nginx amd64 1.24.0-2ubuntu7 [
521 kB]
Fetched 552 kB in 0s (22.2 MB/s)
Preconfiguring packages ...
Selecting previously unselected package nginx-common.
(Reading database ... 71841 files and directories currently installed.)
Preparing to unpack .../nginx-common_1.24.0-2ubuntu7_all.deb ...
Unpacking nginx-common (1.24.0-2ubuntu7) ...
Selecting previously unselected package nginx.
Preparing to unpack .../nginx_1.24.0-2ubuntu7_amd64.deb ...
Unpacking nginx (1.24.0-2ubuntu7) ...
Setting up nginx (1.24.0-2ubuntu7) ...
Setting up nginx-common (1.24.0-2ubuntu7) ...
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /usr/lib/systemd/system/
nginx.service.
Processing triggers for ufw (0.36.2-6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Running kernel seems to be up-to-date.

Restarting services...

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 systemd-logind.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
ubuntu @ session #1: sshd[1018,1128]
ubuntu @ user manager service: systemd[1023]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-24-84:~$ nginx -v
nginx version: nginx/1.24.0 (Ubuntu)
ubuntu@ip-172-31-24-84:~$ curl -SL https://deb.nodesource.com/setup_16.x|sudo -E bash -
```

- sudo apt install nodejs

```

ubuntu@16.16.217.183:~$ sudo apt install nodejs
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20240203).
ca-certificates set to manually installed.
curl is already the newest version (8.5.0-2ubuntu10.1).
curl set to manually installed.
gnupg is already the newest version (2.4.4-2ubuntu17).
gnupg set to manually installed.
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 3974 B of archives.
After this operation, 35.8 kB of additional disk space will be used.
Get:1 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 apt-transport-https all 2.7.14build2 [3974 B]
Fetched 3974 B in 0s (325 kB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 71889 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.7.14build2_all.deb ...
Unpacking apt-transport-https (2.7.14build2) ...
Setting up apt-transport-https (2.7.14build2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Running kernel seems to be up-to-date.
Restarting services...

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 systemd-logind.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
ubuntu @ session #1: sshd[1018,1128]
ubuntu @ user manager service: systemd[1023]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
Hit:1 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
Get:4 https://deb.nodesource.com/node_18.x nodistro InRelease [12.1 kB]
Hit:5 http://security.ubuntu.com/ubuntu noble-security InRelease
Get:6 https://deb.nodesource.com/node_18.x nodistro/main amd64 Packages [8669 B]
Fetched 20.8 kB in 1s (37.6 kB/s)
Reading package lists... Done
2024-05-20 09:15:03 - Repository configured successfully. To install Node.js, run: apt-get install nodejs -y
ubuntu@ip-172-31-24-84:~$ sudo apt install nodejs

```

- git clone https://github.com/Pratyusha-28/pr28.git
- cd pra28
- npm install
- node index.js

```

systemctl restart systemd-logind.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
ubuntu @ session #1: sshd[1018,1128]
ubuntu @ user manager service: systemd[1023]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-24-84:~$ nodejs -v
v18.20.2
ubuntu@ip-172-31-24-84:~$ cd /
ubuntu@ip-172-31-24-84:/~$ pwd
/
ubuntu@ip-172-31-24-84:/~$ sudo git clone https://github.com/Pratyusha-28/pr28.git
Cloning into 'pra28'...
remote: Enumerating objects: 13, done.
remote: Counting objects: 100% (13/13), done.
remote: Compressing objects: 100% (12/12), done.
remote: Total 11 (delta 1), reused 5 (delta 0), pack-reused 0
Receiving objects: 100% (13/13), 49.52 KiB | 1.15 MiB/s, done.
Resolving deltas: 100% (1/1), done.
ubuntu@ip-172-31-24-84:/~$ ls
bin  bin usr-is-merged  boot  dev  etc  home  lib  lib usr-is-merged  lib64  lost-found  media  mnt  opt  pra28  proc  root  run /sbin  sbin  sbin usr-is-merged  snap  srv  sys  usr  var
ubuntu@ip-172-31-24-84:/~$ cd pra28/
ubuntu@ip-172-31-24-84:/pra28$ ls
'New Text Document.txt'  heading.html  index.html  index.js  package-lock.json  package.json  para.html  pro.txt
ubuntu@ip-172-31-24-84:/pra28$ sudo npm i
npm WARN deprecated uid@3.4.0: Please upgrade to version 7 or higher. Older versions may use Math.random() in certain circumstances, which is known to be problematic. See https://v8.dev/blog/math-random for details.
added 258 packages, and audited 259 packages in 7s
18 packages are looking for funding
  run npm fund for details
12 vulnerabilities (10 moderate, 2 critical)
To address all issues, run:
  npm audit fix
Run 'npm audit' for details.
npm notice
npm notice New minor version of npm available! 10.5.0 -> 10.8.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v10.8.0
npm notice Run npm install -g npm@10.8.0 to update!
npm notice
ubuntu@ip-172-31-24-84:/pra28$ npm -v
10.5.0
ubuntu@ip-172-31-24-84:/pra28$ node index.js
Started server

```

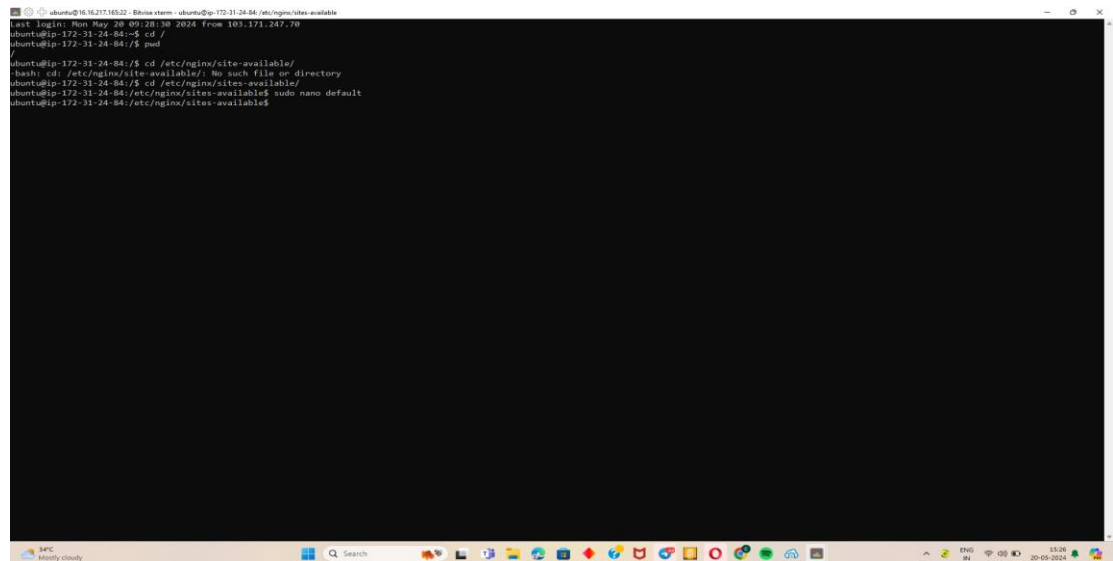


9. Now server has started. If we paste it in url section then we can see nginx has started. To stop server click (ctrl+c).



10. Now write these all commands:

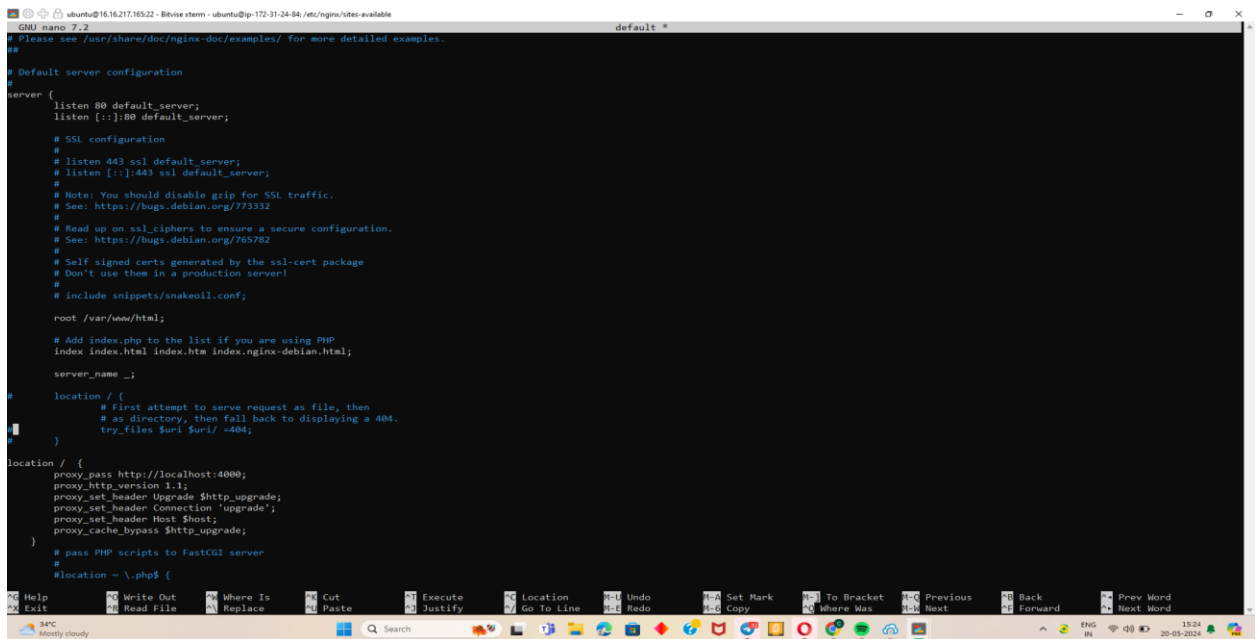
- cd /
- pwd
- cd etc/nginx/sites-available/
- sudo nano default



11. A new window will be opened. There at first go to location area and comment all codes and the write:

- location/{  
    proxy\_pass http://localhost:4000;  
    proxy\_http\_version 1.1;  
    proxy\_set\_header Upgrade \$http\_upgrade;  
    proxy\_set\_header Connection 'upgrade';  
    proxy\_set\_header Host \$host;  
    proxy\_cache\_bypass \$http\_upgrade;  
}





```
ubuntu@16.16217.16522 - Bkise stem - ubuntu@ip-172-31-24-84: /etc/nginx/sites-available
nano 7.2.1
# Please see /usr/share/doc/nginx-doc/examples/ for more detailed examples.
##

# Default server configuration
#
server {
    listen 80 default_server;
    listen [::]:80 default_server;

    # SSL configuration
    #
    # listen 443 ssl default_server;
    # listen [::]:443 ssl default_server;
    #
    # Note: You should disable gzip for SSL traffic.
    # See: https://bugs.debian.org/773332
    #
    # Read up on ssl_ciphers to ensure a secure configuration.
    # See: https://bugs.debian.org/765782
    #
    # Self signed certs generated by the ssl-cert package
    # Don't use them in a production server!
    #
    # include snippets/snakeoil.conf;

    root /var/www/html;

    # Add index.php to the list if you are using PHP
    index index.html index.htm index.nginx-debian.html;

    server_name _;

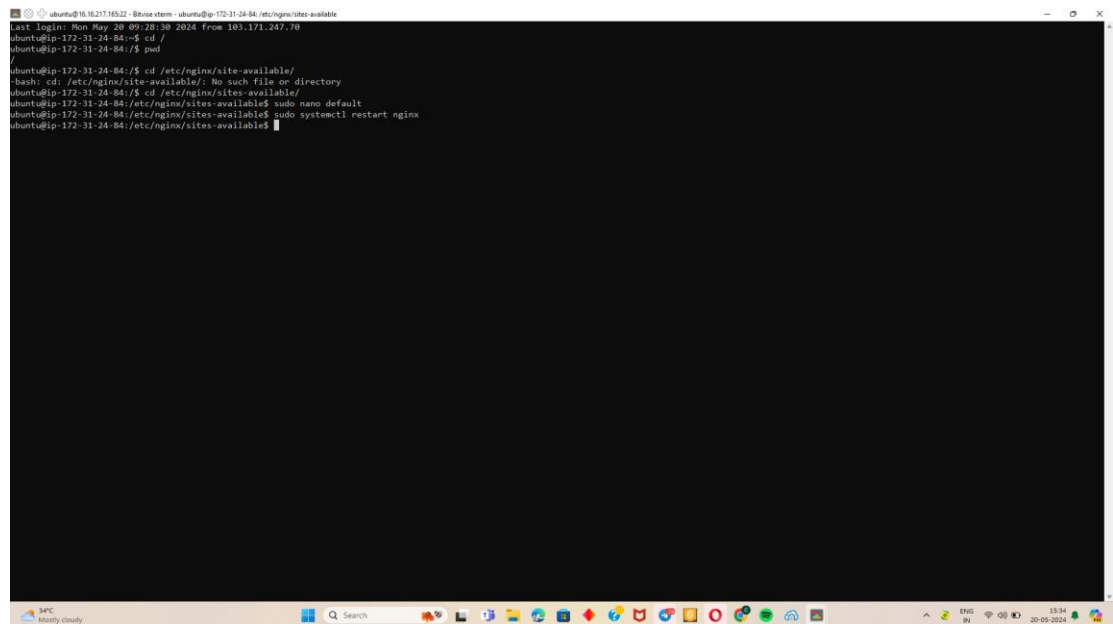
    location / {
        # First attempt to serve request as file, then
        # as directory, then fall back to displaying a 404.
        try_files $uri / =404;
    }

    location / {
        proxy_pass http://localhost:4000;
        proxy_http_version 1.1;
        proxy_set_header Upgrade $http_upgrade;
        proxy_set_header Connection 'upgrade';
        proxy_set_header Host $host;
        proxy_cache_bypass $http_upgrade;
    }
    # pass PHP scripts to FastCGI server
    #
    #location ~ \.php$ {

```

12. Now open new server terminal and write the commands:

- sudo systemctl restart nginx.



```
ubuntu@16.16217.16522 - Bkise stem - ubuntu@ip-172-31-24-84: /etc/nginx/sites-available
Last login: Mon May 20 09:28:30 2024 from 103.171.247.78
ubuntu@ip-172-31-24-84:~$ cd /
ubuntu@ip-172-31-24-84:/$ pwd
/
ubuntu@ip-172-31-24-84:/$ cd /etc/nginx/sites-available/
-bash: cd: /etc/nginx/sites-available/: No such file or directory
ubuntu@ip-172-31-24-84:/$ cd /etc/nginx/sites-available/
ubuntu@ip-172-31-24-84:/etc/nginx/sites-available$ sudo nano default
ubuntu@ip-172-31-24-84:/etc/nginx/sites-available$ sudo systemctl restart nginx
ubuntu@ip-172-31-24-84:/etc/nginx/sites-available$
```

13. Now copy that public IPv4 address again and paste it in url and there we can see that without giving port(:4000) with url we have hosted the website.

