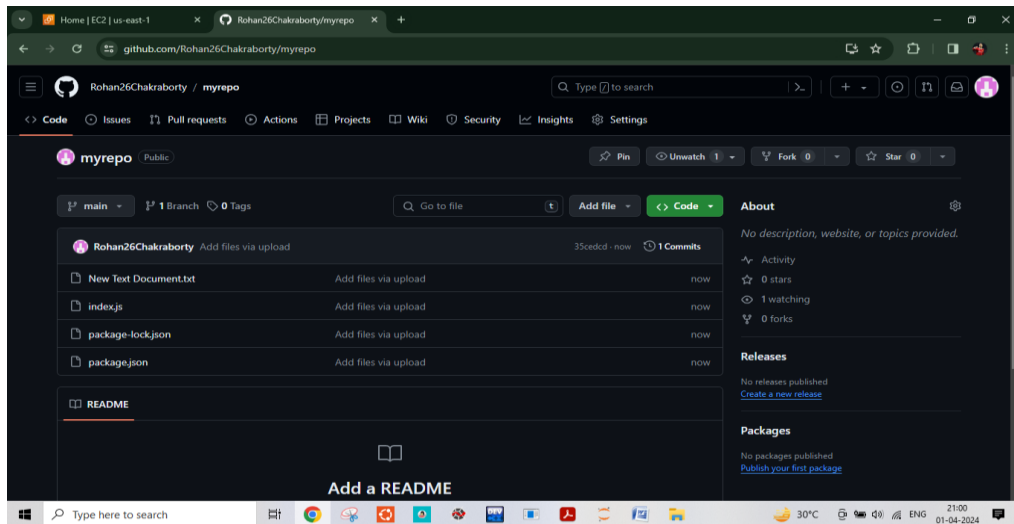


## Assignment 9:

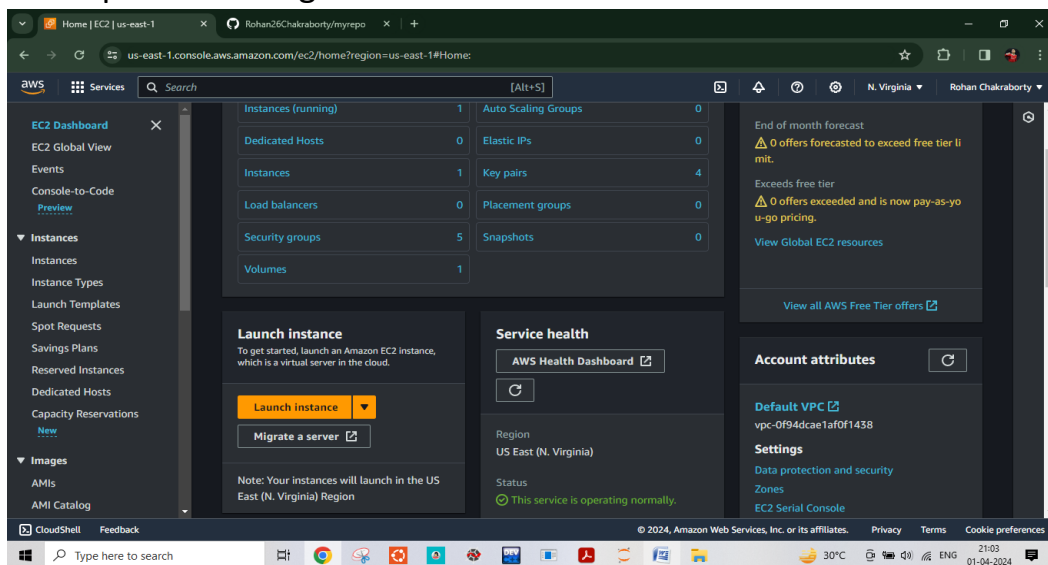
### Deploy a project from GitHub on EC2.

#### Steps:

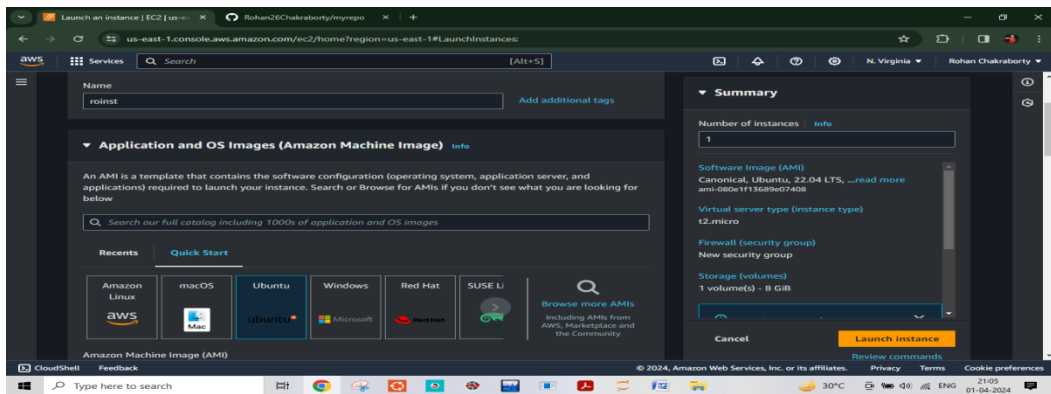
1) At first upload file(repo) to github.



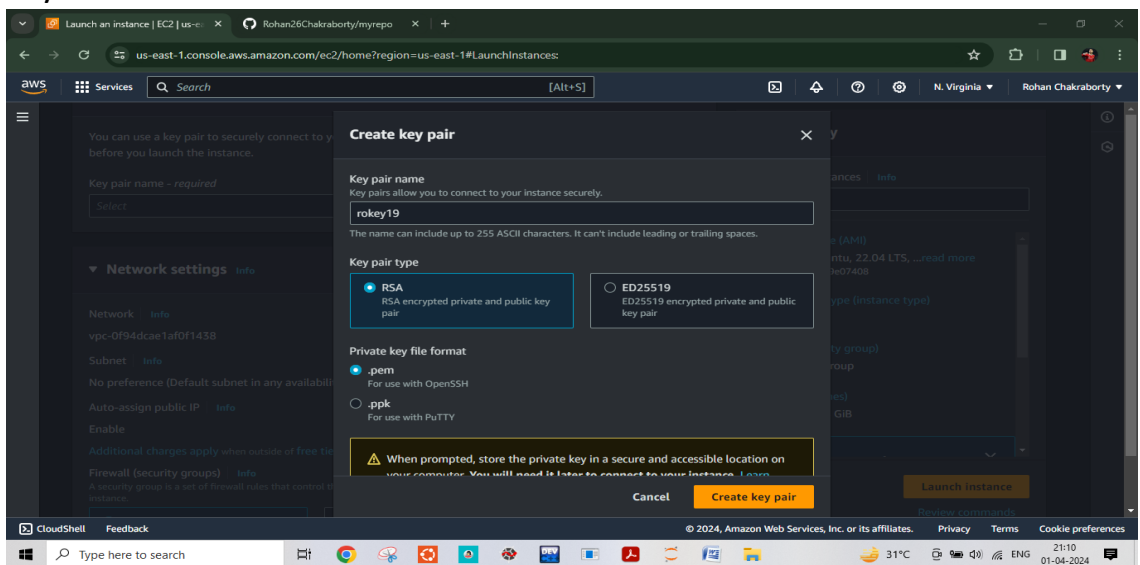
2) Now open EC2 and goto Launch Instance.



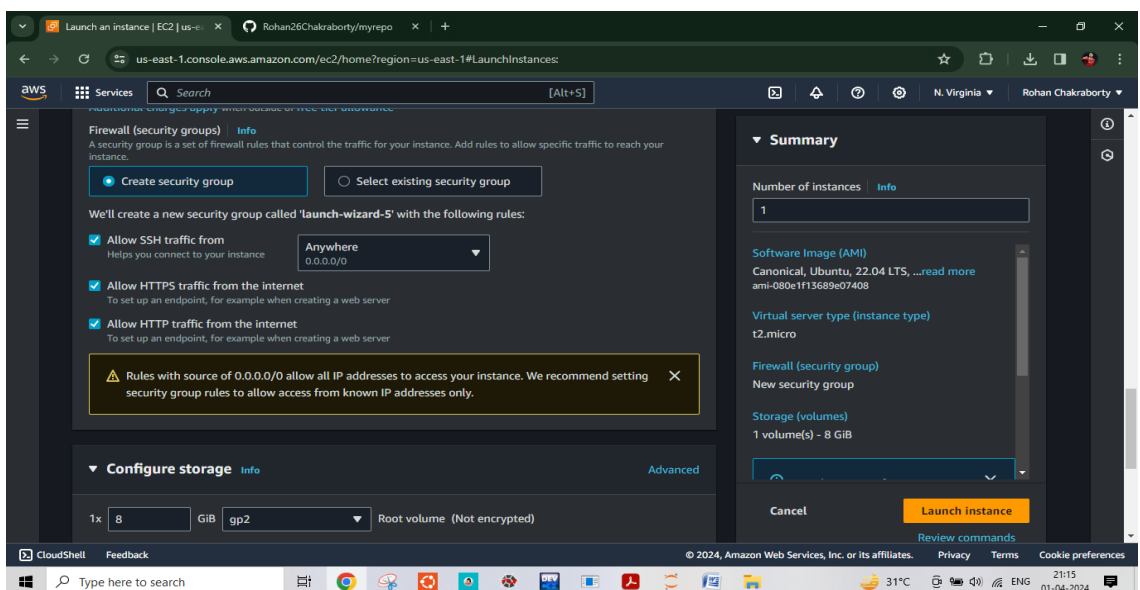
3) Now give name of server which should be unique and select Ubuntu application and os image inside quick start.



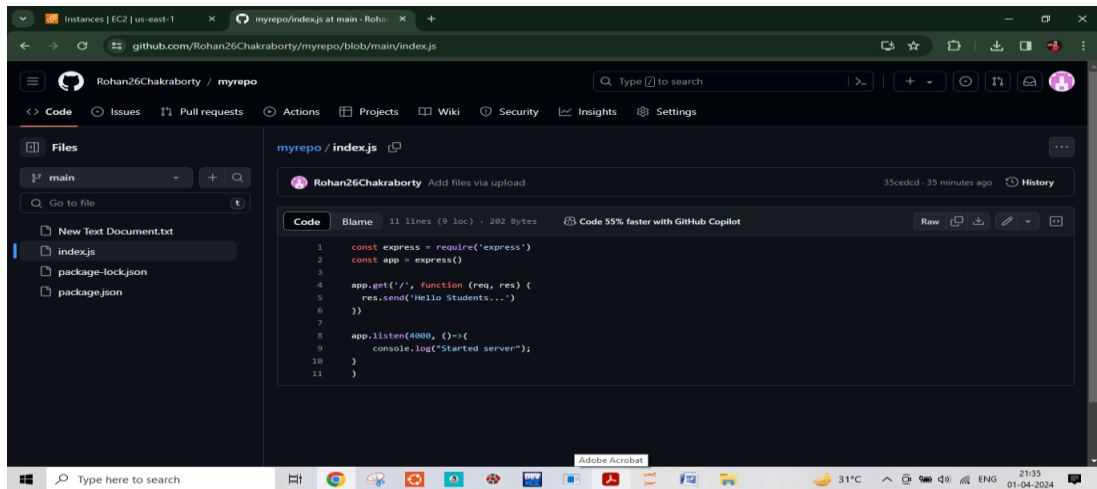
4) Now generate new key pair , give name (unique) and now click Create Key Pair and also download the document.



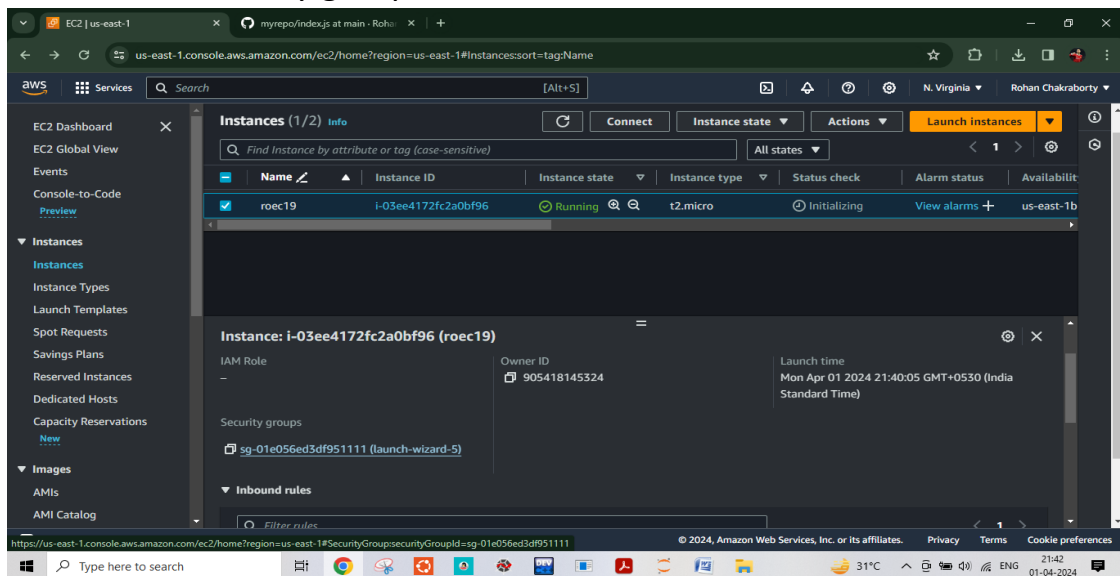
5) After that select Create security group and click all checkboxes bellow it. After it click on Launch Instance.



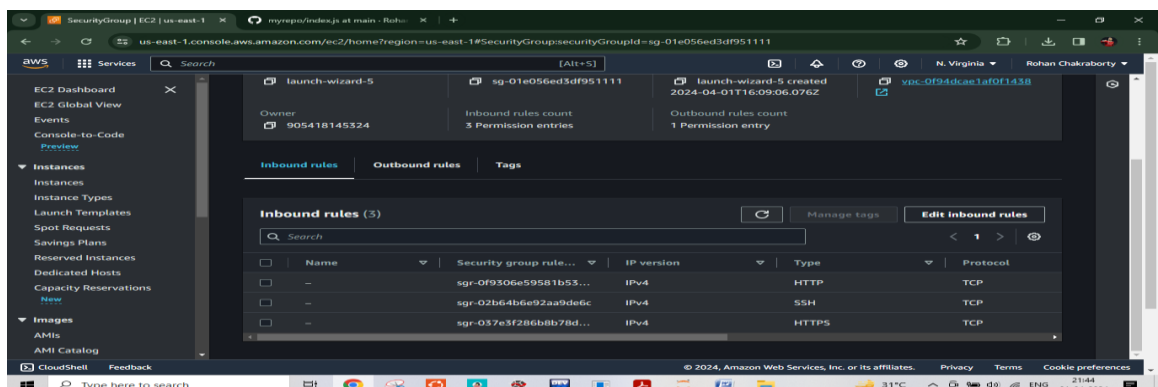
- 6) Now go to Github that project and then to index.html ,there you can see 4000 in app.listen which is port no that will be added to custom TCP.



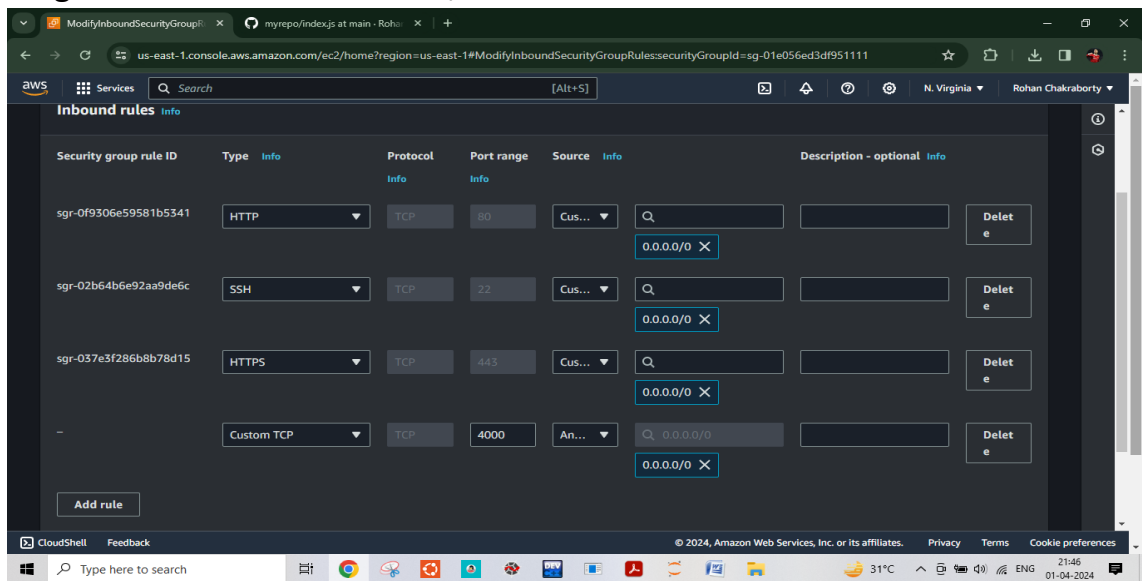
- 7) After it go back to EC2 instances then select that instance newly made and click on Security groups.



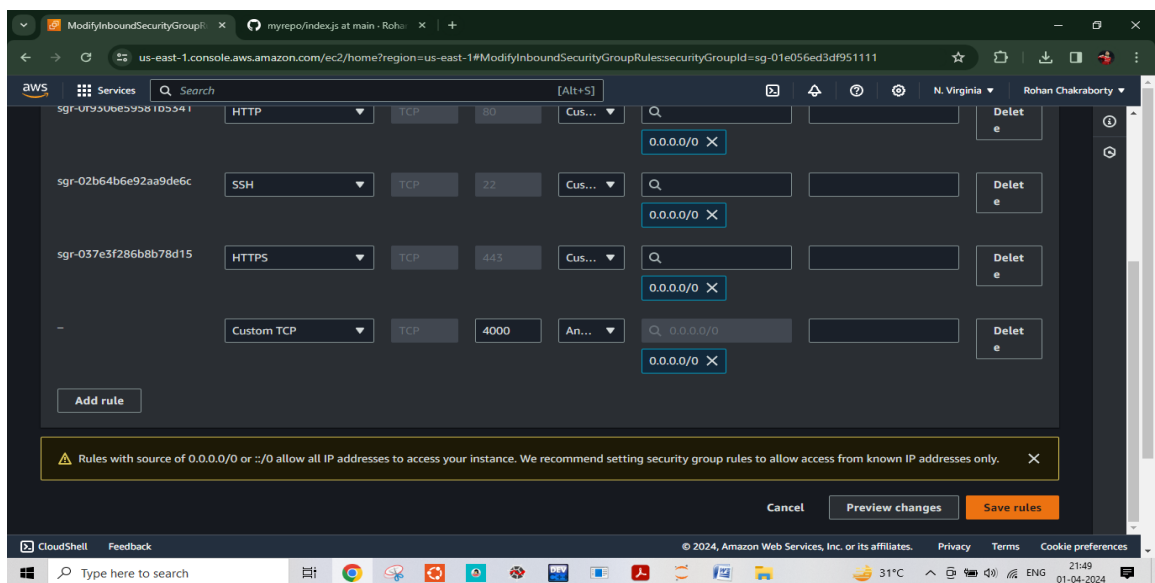
- 8) After in Inbound rules section click on Edit inbound rules.



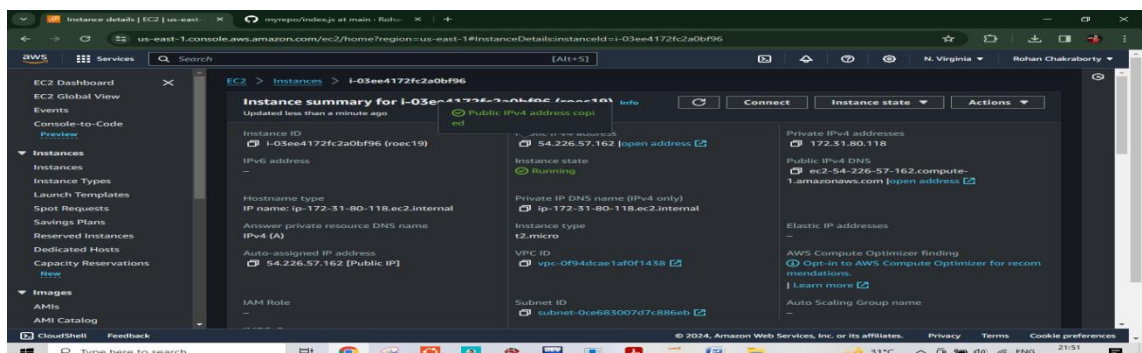
- 9) Then in inbound rules, click on Add rule select Custom TCP ,give port range 4000 and select 0.0.0.0/0.



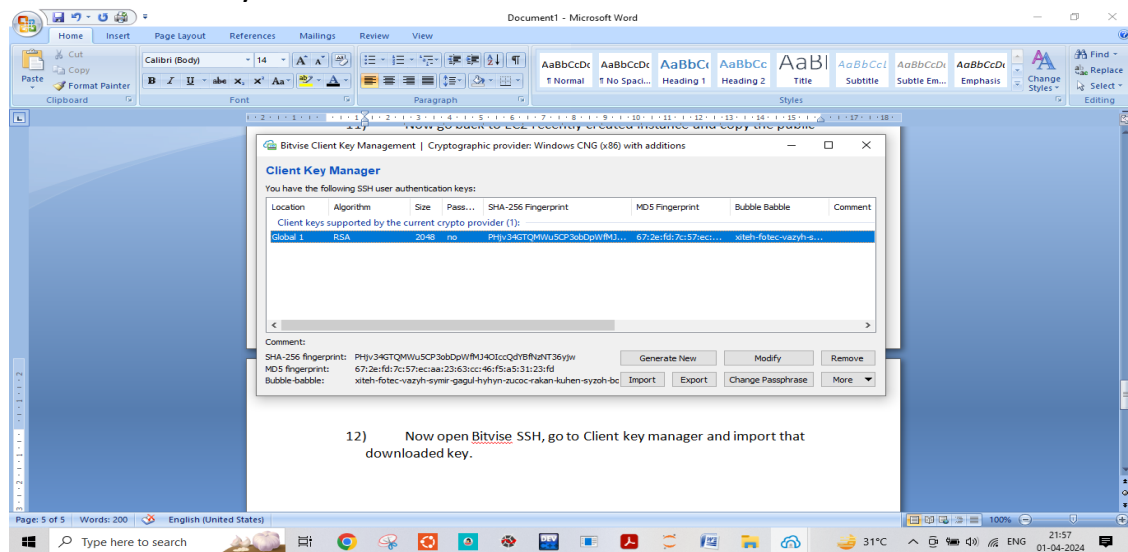
- 10) After it click on Save rules.



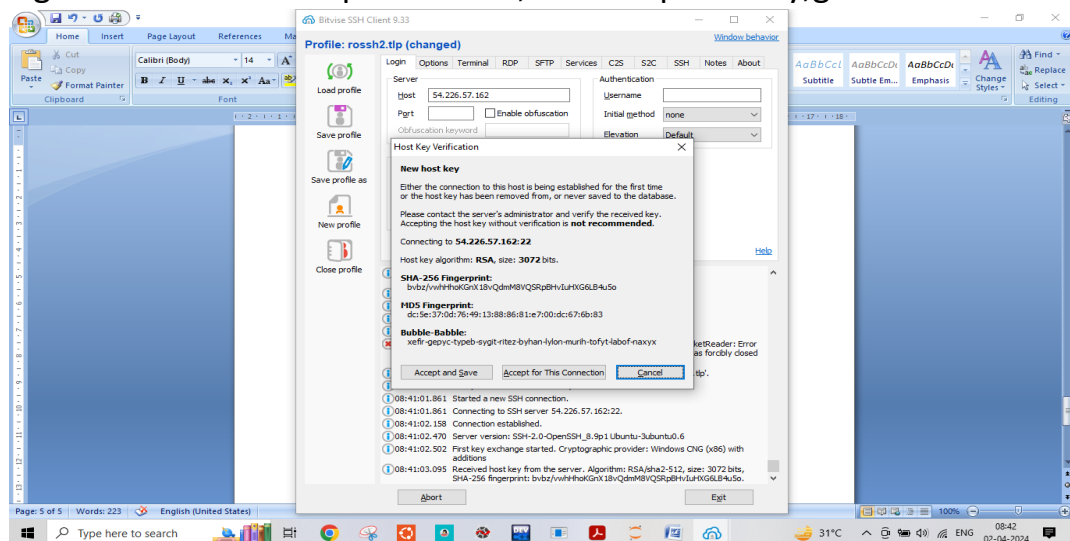
- 11) Now go back to EC2 recently created instance and copy the public IPv4 address.



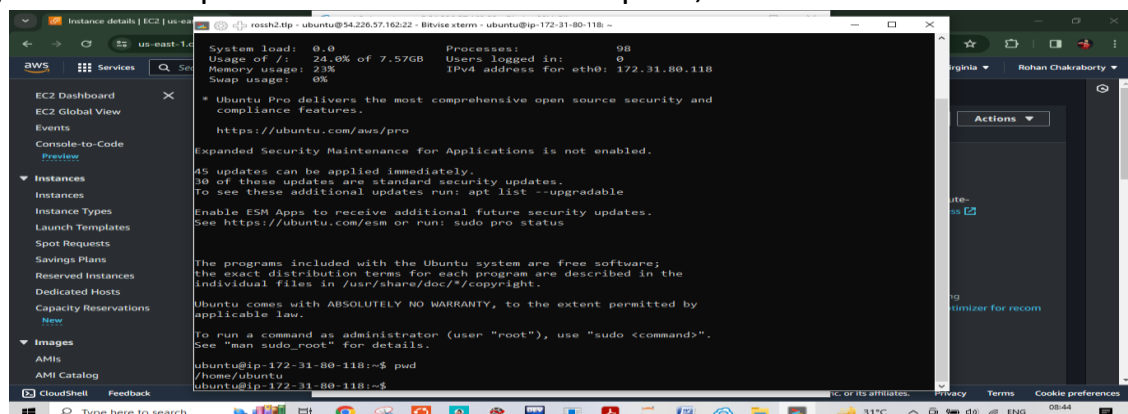
- 12) Now open Bitvise SSH, go to Client key manager and import that downloaded key.



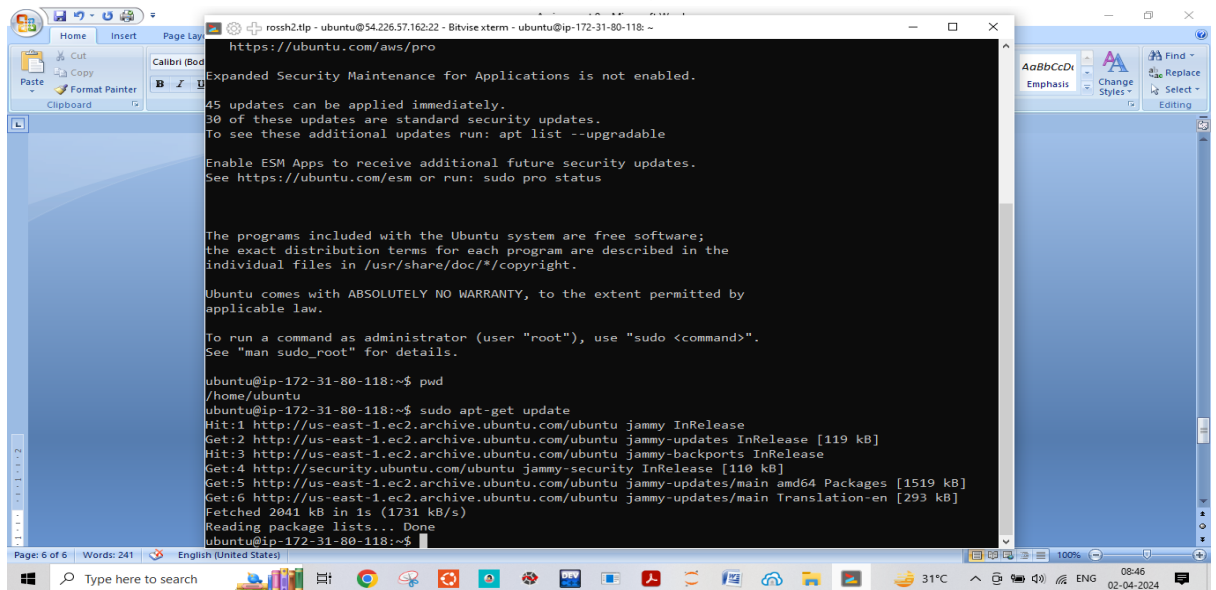
- 13) After it paste that copied IPv4 public address in host and then login and also do Accept and Save, also set publickey,global1.



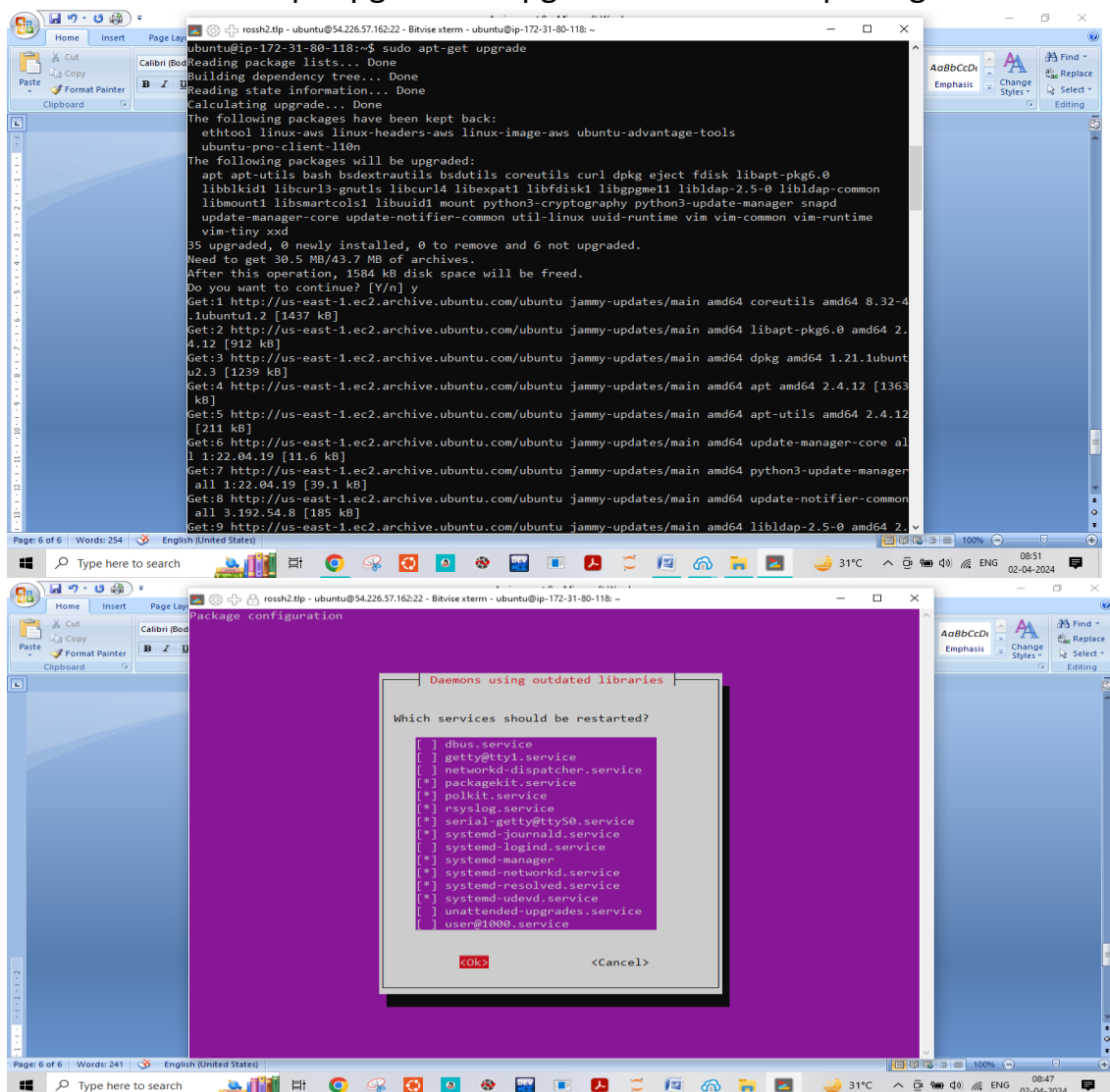
- 14) Now open newterminal and write pwd ,we are in ubuntu.



15) Now write command `sudo apt-get update` to fetch all packages.

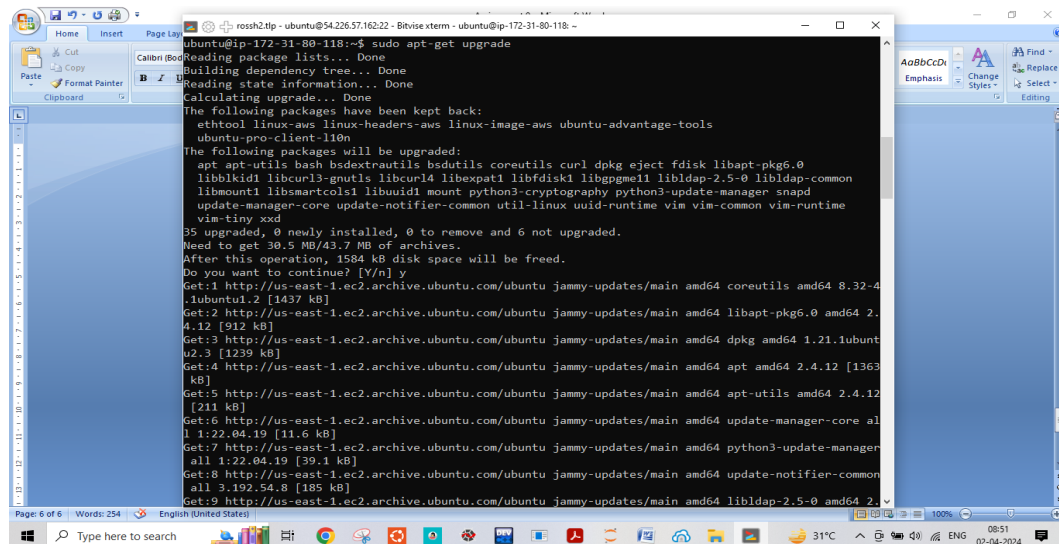


16) Write sudo-apt upgrade to upgrade all outdated packages.





- 17) Now write command `sudo apt-get install nginx` to install webserver.

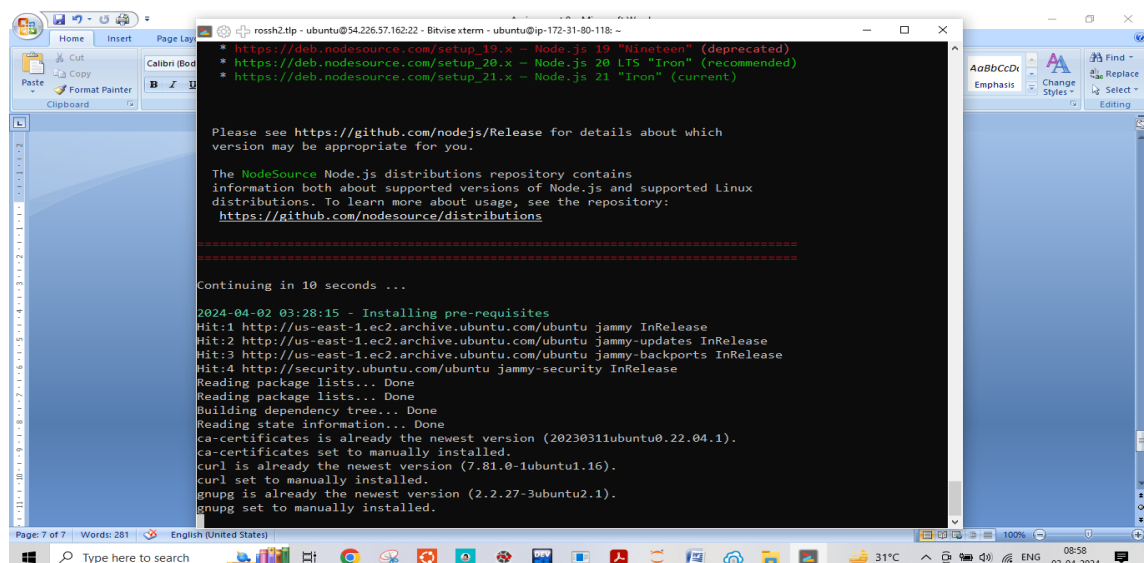


```
ubuntu@ip-172-31-80-118:~$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done

The following packages have been kept back:
  ethtool linux-aws linux-headers-aws linux-image-aws ubuntu-advantage-tools
  ubuntu-pro-client-l10n

The following packages will be upgraded:
  apt apt-utils bash bsdextrautils bsdutils coreutils curl dpkg eject fdisk libapt-pkg6.0
  libblkid1 libcurl3-gnutls libcurl4 libexpat1 libfdisk1 libgpgme11 libldap-2.5-0 libldap-common
  libmount1 libsmartcols1 libuuid1 mount python3-cryptography python3-update-manager snapd
  update-manager-core update-notifier-common util-linux uuid-runtime vim vim-common vim-runtime
  vim-tiny xxd
35 upgraded, 0 newly installed, 0 to remove and 6 not upgraded.
Need to get 30.5 MB/43.7 MB of archives.
After this operation, 1584 kB disk space will be freed.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 coreutils amd64 8.32-4
  .1ubuntu1.2 [1437 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapt-pkg6.0 amd64 2.
  4.12 [212 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dpkg amd64 1.21.1ubunt
  u2.3 [1239 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apt amd64 2.4.12 [1363
  kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apt-utils amd64 2.4.12
  [211 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 update-manager-core al
  l 1:22.04.19 [11.6 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-update-manager
  all 1:22.04.19 [39.1 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 update-notifier-common
  all 3.402.54.8 [185 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libldap-2.5-0 amd64 2.4
```

- 18) Now to execute javascript, we need to install nodejs. Write command `curl -SL https://deb.nodesource.com/setup\_16.x | sudo -E bash -`.



```
* https://deb.nodesource.com/setup_19.x - Node.js 19 "Nineteen" (deprecated)
* https://deb.nodesource.com/setup_20.x - Node.js 20 LTS "Iron" (recommended)
* https://deb.nodesource.com/setup_21.x - Node.js 21 "Iron" (current)

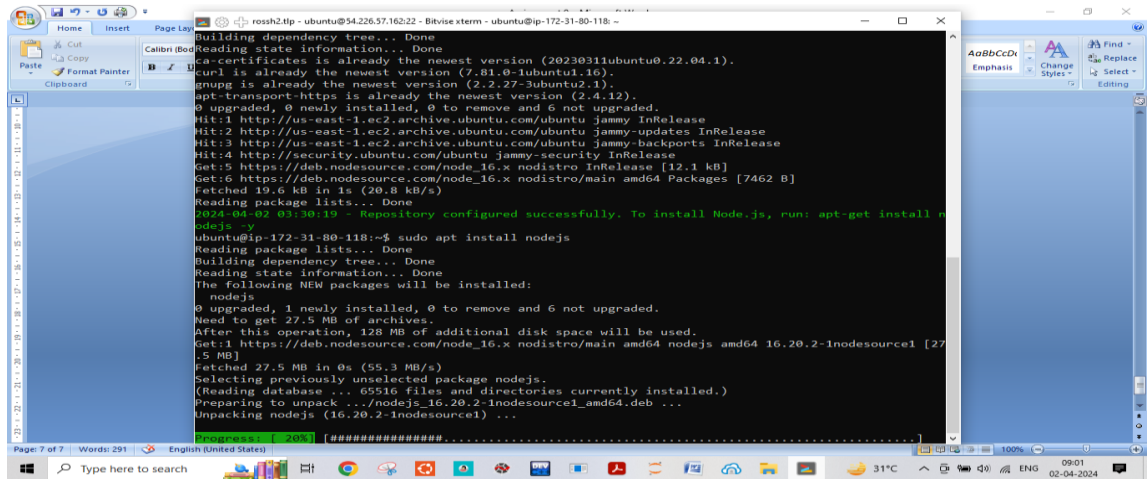
Please see https://github.com/nodejs/Release for details about which
version may be appropriate for you.

The NodeSource Node.js distributions repository contains
information both about supported versions of Node.js and supported Linux
distributions. To learn more about usage, see the repository:
https://github.com/nodesource/distributions

Continuing in 10 seconds ...

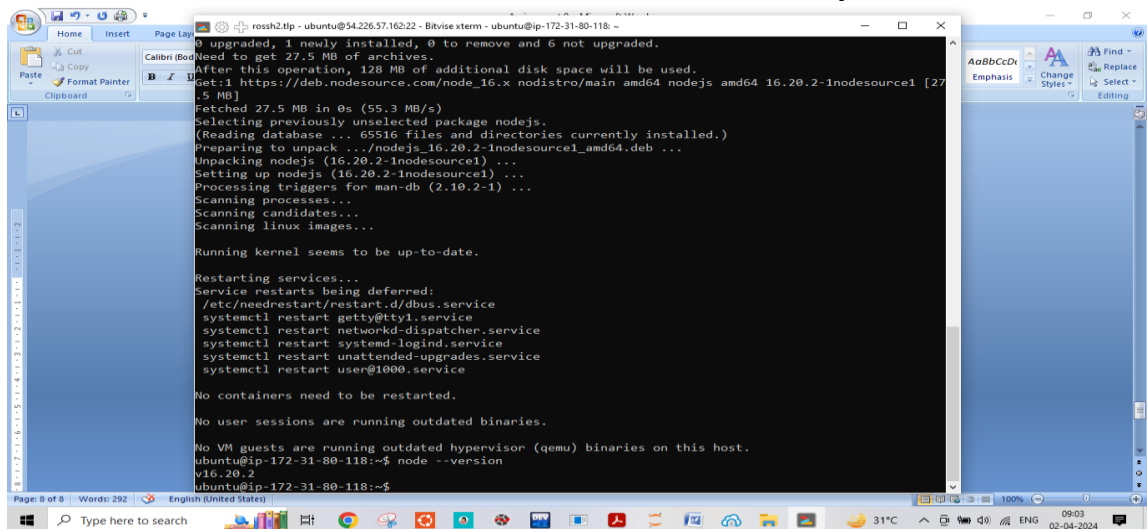
2024-04-02 03:28:15 - Installing pre-requisites
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20230311ubuntu0.22.04.1).
ca-certificates set to manually installed.
curl is already the newest version (7.81.0-1ubuntu1.16).
curl set to manually installed.
gnupg is already the newest version (2.2.27-3ubuntu2.1).
gnupg set to manually installed.
```

- 19) Now to install write `sudo apt install nodejs`.



```
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20230311ubuntu0.22.04.1).
curl is already the newest version (7.81.0-1ubuntu1.16).
gnupg is already the newest version (2.2.27-3ubuntu2.1).
apt-transport-https is already the newest version (2.4.12).
0 upgraded, 0 newly installed, 0 to remove and 6 not upgraded.
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Get:5 https://deb.nodesource.com/node_16.x nodistro InRelease [12.1 kB]
Get:6 https://deb.nodesource.com/node_16.x nodistro/main amd64 Packages [7462 B]
Fetched 19.6 kB in 1s (20.8 kB/s)
Reading package lists... Done
02-04-2024 03:30:19 ~ Repository configured successfully. To install Node.js, run: apt-get install nodejs
ubuntu@ip-172-31-80-118:~$ sudo apt install nodejs
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
nodejs
0 upgraded, 1 newly installed, 0 to remove and 6 not upgraded.
Need to get 27.5 MB of archives.
After this operation, 128 MB of additional disk space will be used.
Get:1 https://deb.nodesource.com/node_16.x nodistro/main amd64 nodejs amd64 16.20.2-1nodesource1 [27.5 MB]
Fetched 27.5 MB in 0s (55.3 MB/s)
Selecting previously unselected package nodejs.
(Reading database ... 65516 files and directories currently installed.)
Preparing to unpack .../nodejs_16.20.2-1nodesource1_amd64.deb ...
Unpacking nodejs (16.20.2-1nodesource1) ...
Setting up nodejs (16.20.2-1nodesource1) ...
```

20) Write node --version to see what version of nodejs installed.



```
0 upgraded, 1 newly installed, 0 to remove and 6 not upgraded.
Need to get 27.5 MB of archives.
After this operation, 128 MB of additional disk space will be used.
Get:1 https://deb.nodesource.com/node_16.x nodistro/main amd64 nodejs amd64 16.20.2-1nodesource1 [27.5 MB]
Fetched 27.5 MB in 0s (55.3 MB/s)
Selecting previously unselected package nodejs.
(Reading database ... 65516 files and directories currently installed.)
Preparing to unpack .../nodejs_16.20.2-1nodesource1_amd64.deb ...
Unpacking nodejs (16.20.2-1nodesource1) ...
Setting up nodejs (16.20.2-1nodesource1) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Running kernel seems to be up-to-date.

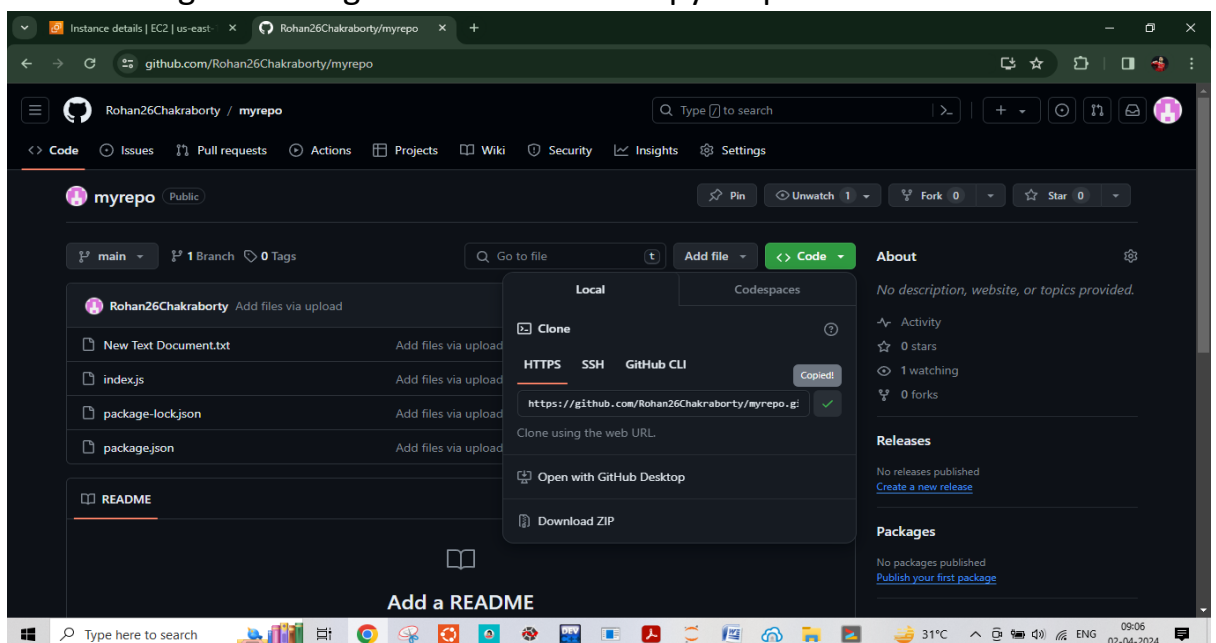
Restarting services...
Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart getty@tty1.service
systemctl restart networkd-dispatcher.service
systemctl restart systemd-logind.service
systemctl restart unattended-upgrades.service
systemctl restart user@1000.service

No containers need to be restarted.

No user sessions are running outdated binaries.

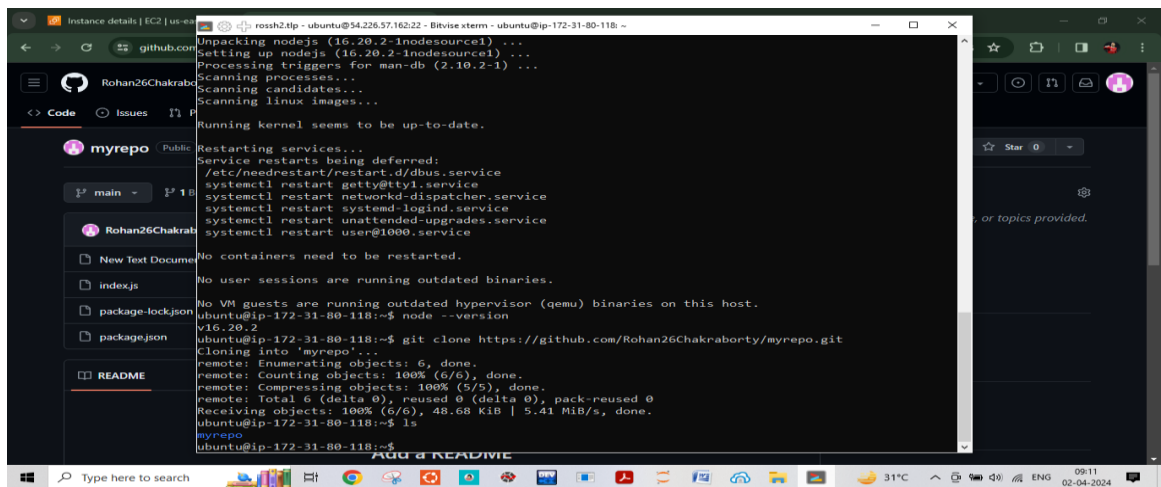
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-80-118:~$ node --version
v16.20.2
ubuntu@ip-172-31-80-118:~$
```

21) Now go back to github and in code copy Https url.



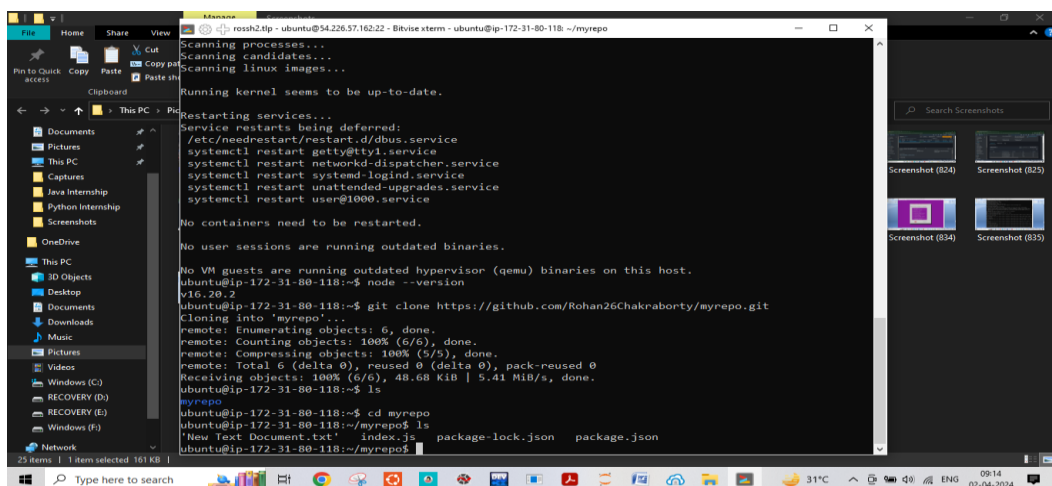


- 22) Now write git clone and paste that url and write ls to see if project has been cloned or not.



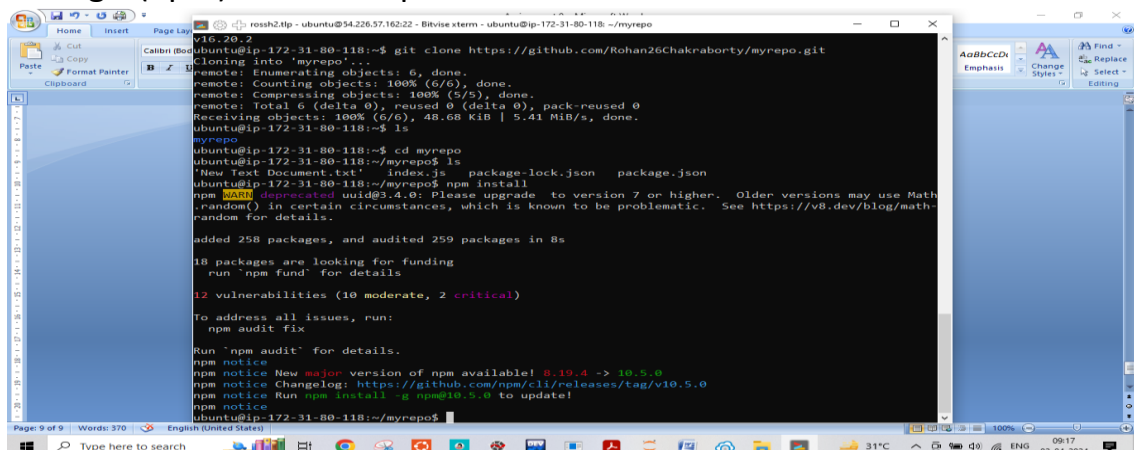
```
Unpacking nodejs (16.20.2-1nodesource1) ...
Setting up nodejs (16.20.2-1nodesource1) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning candidates...
Scanning linux images...
Running kernel seems to be up-to-date.
Restarting services...
Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart getty@tty1.service
systemctl restart networkd-dispatcher.service
systemctl restart systemd-logind.service
systemctl restart unattended-upgrades.service
systemctl restart user@1000.service
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.
ubuntu@ip-172-31-80-118:~$ node --version
v16.20.2
ubuntu@ip-172-31-80-118:~$ git clone https://github.com/Rohan26Chakraborty/myrepo.git
Cloning into 'myrepo'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (6/6), 48.68 KiB | 5.41 MiB/s, done.
ubuntu@ip-172-31-80-118:~$ ls
myrepo
ubuntu@ip-172-31-80-118:~$
```

- 23) After it write command cd (project name) to enter into project and then ls to see what files have been uploaded.



```
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 systemd-logind.service
systemctl restart unattended-upgrades.service
systemctl restart user@1000.service
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.
ubuntu@ip-172-31-80-118:~$ node --version
v16.20.2
ubuntu@ip-172-31-80-118:~$ git clone https://github.com/Rohan26Chakraborty/myrepo.git
Cloning into 'myrepo'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (6/6), 48.68 KiB | 5.41 MiB/s, done.
ubuntu@ip-172-31-80-118:~$ ls
myrepo
ubuntu@ip-172-31-80-118:~$ cd myrepo
ubuntu@ip-172-31-80-118:~/myrepo$ ls
New Text Document.txt  index.js  package-lock.json  package.json
ubuntu@ip-172-31-80-118:~/myrepo$
```

- 24) Now to execute node command we have to install node packet manager(npm). So write npm install.

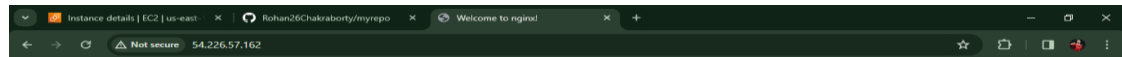


```
v16.20.2
ubuntu@ip-172-31-80-118:~$ git clone https://github.com/Rohan26Chakraborty/myrepo.git
Cloning into 'myrepo'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (6/6), 48.68 KiB | 5.41 MiB/s, done.
ubuntu@ip-172-31-80-118:~$ ls
myrepo
ubuntu@ip-172-31-80-118:~$ cd myrepo
ubuntu@ip-172-31-80-118:~/myrepo$ ls
New Text Document.txt  index.js  package-lock.json  package.json
ubuntu@ip-172-31-80-118:~/myrepo$ npm install
npm WARN deprecated uuid@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 8s
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 major version of npm available! 8.19.4 -> 10.5.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v10.5.0
npm notice Run npm install -g npm@10.5.0 to update!
npm notice
ubuntu@ip-172-31-80-118:~/myrepo$
```

25) Now write node index.js

```
ubuntu@ip-172-31-80-118:~/myrepo$ node index.js  
Started server
```

26) After it again copy public IPv4 address in EC2 instance and then paste it in another tab url section.



27) At last in url at end write :4000 to get your website.



28) Now to close server in newterminal do (ctrl+c) to stop server and at last logout.

```
Started server  
^C  
ubuntu@ip-172-31-80-118:~/myrepo$
```

■ In this way we have deployed a project from GitHub to EC2.