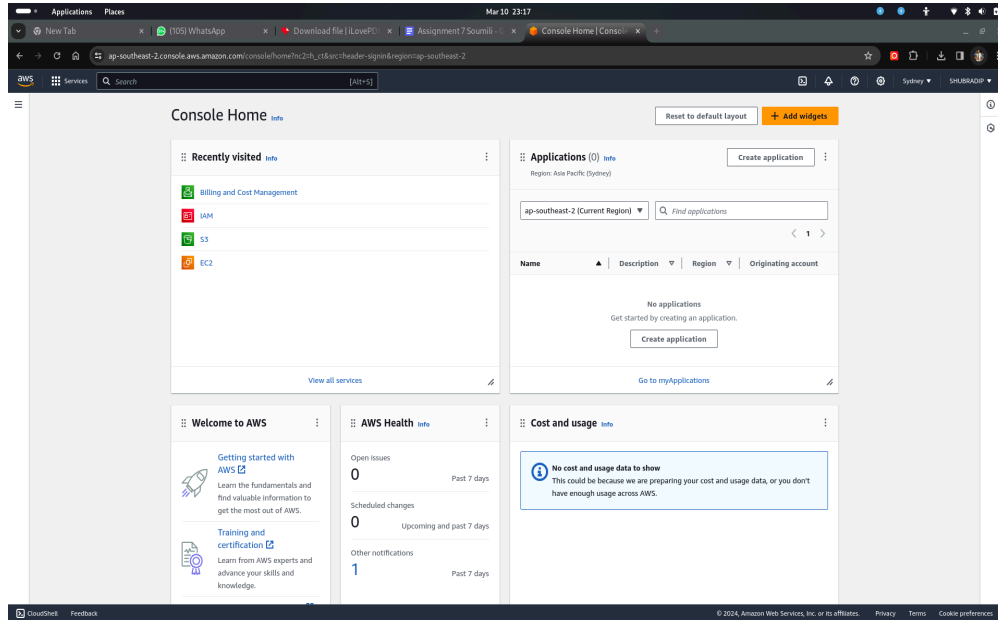


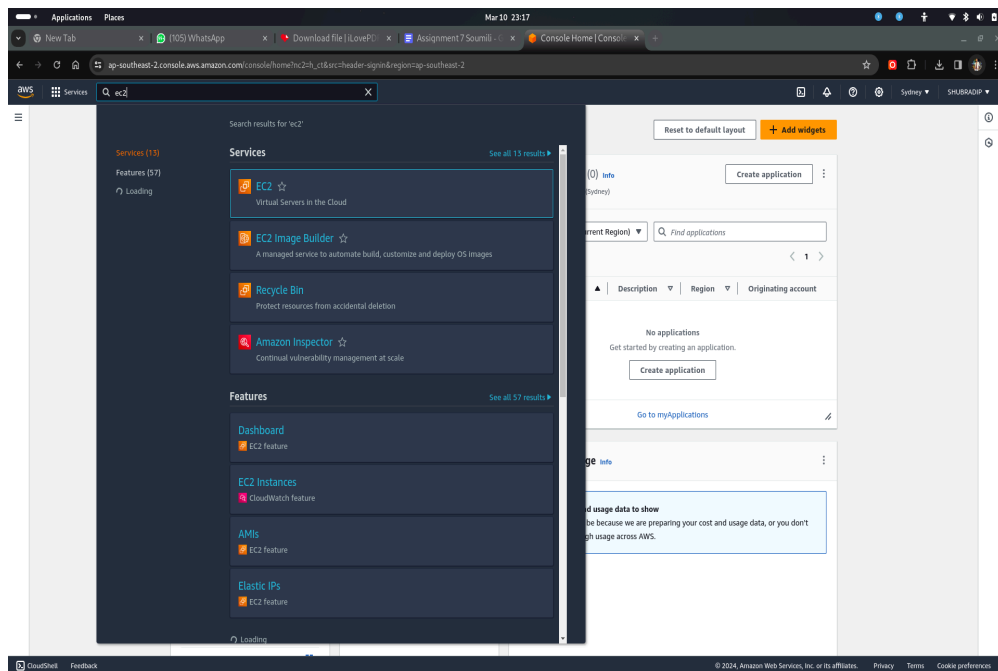
## Assignment-7: Hosting a website on EC2

Procedure:

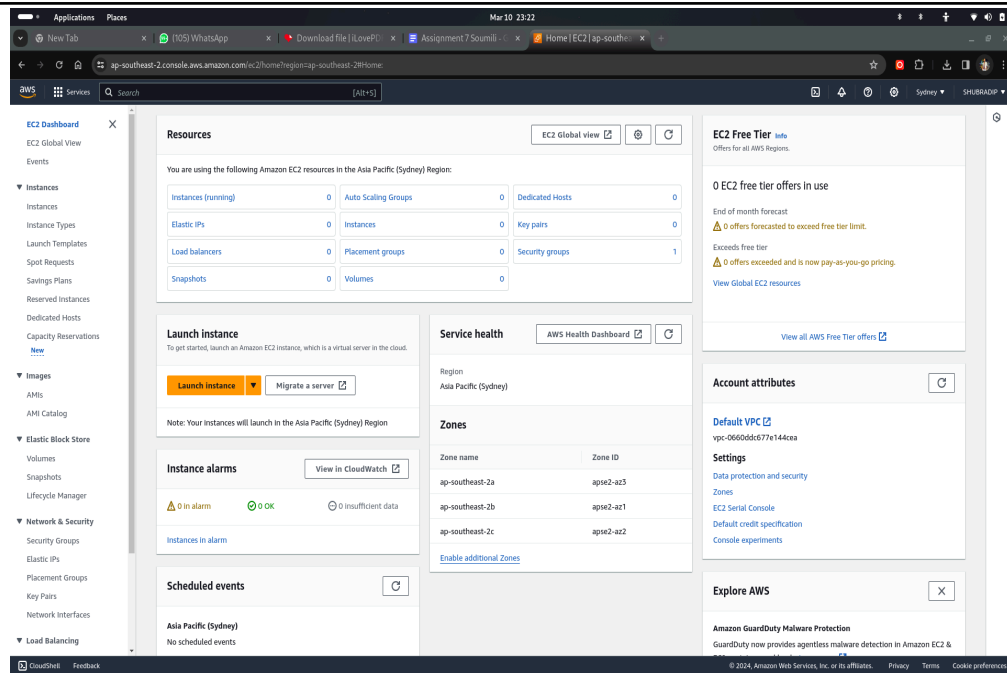
- First switch on your AWS console



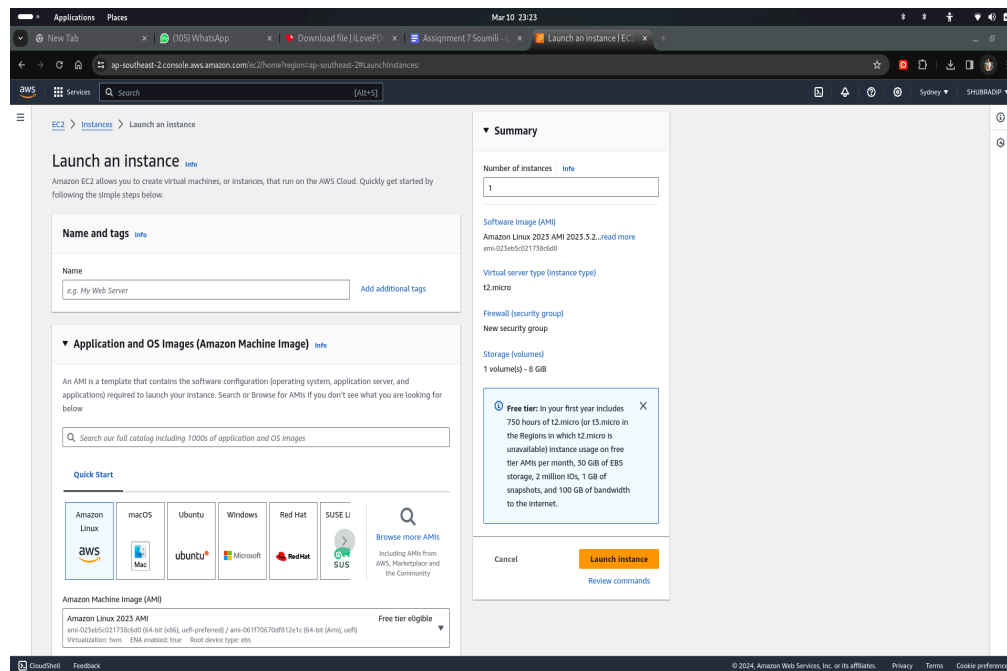
- Now in the search bar search for “EC2”.



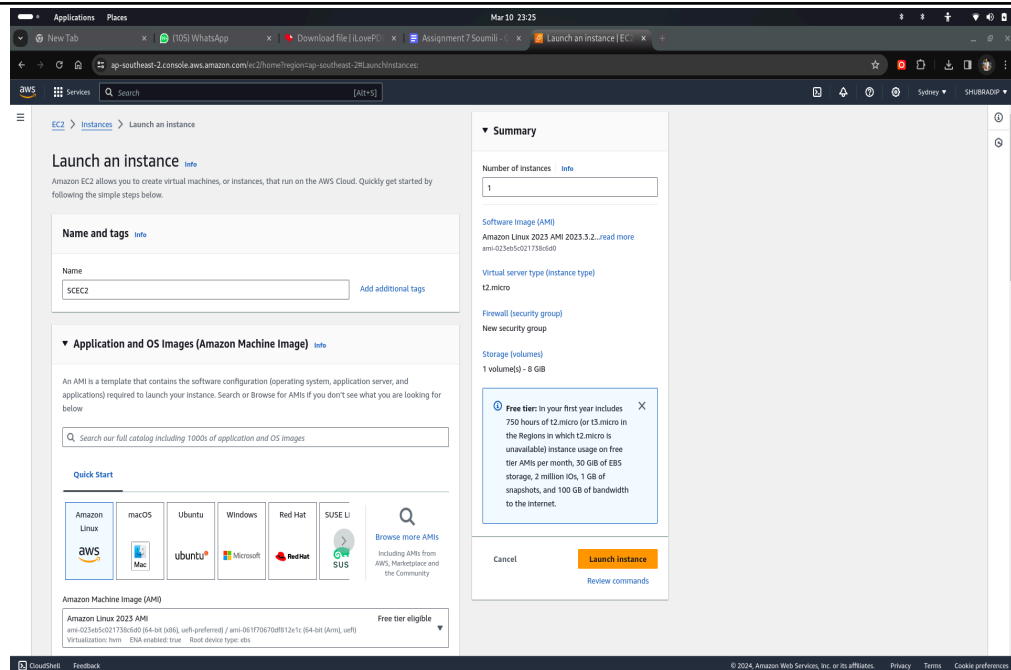
- Now click on the first search result “EC2”. Then you will see the following page appears.



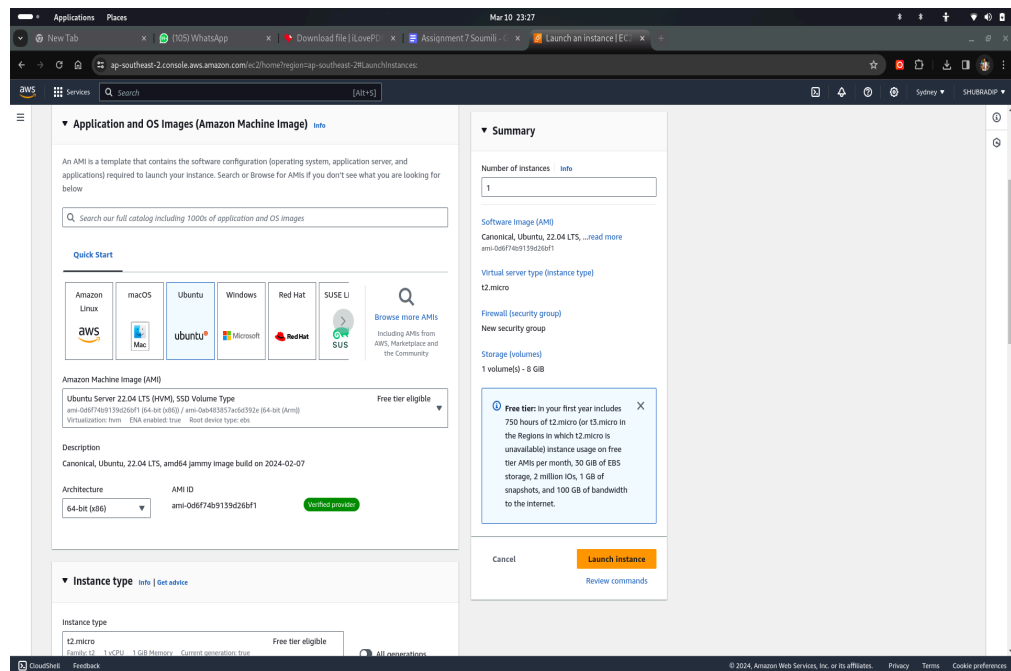
- Now click on “Launch Instance”. Then you will see the following page appears.



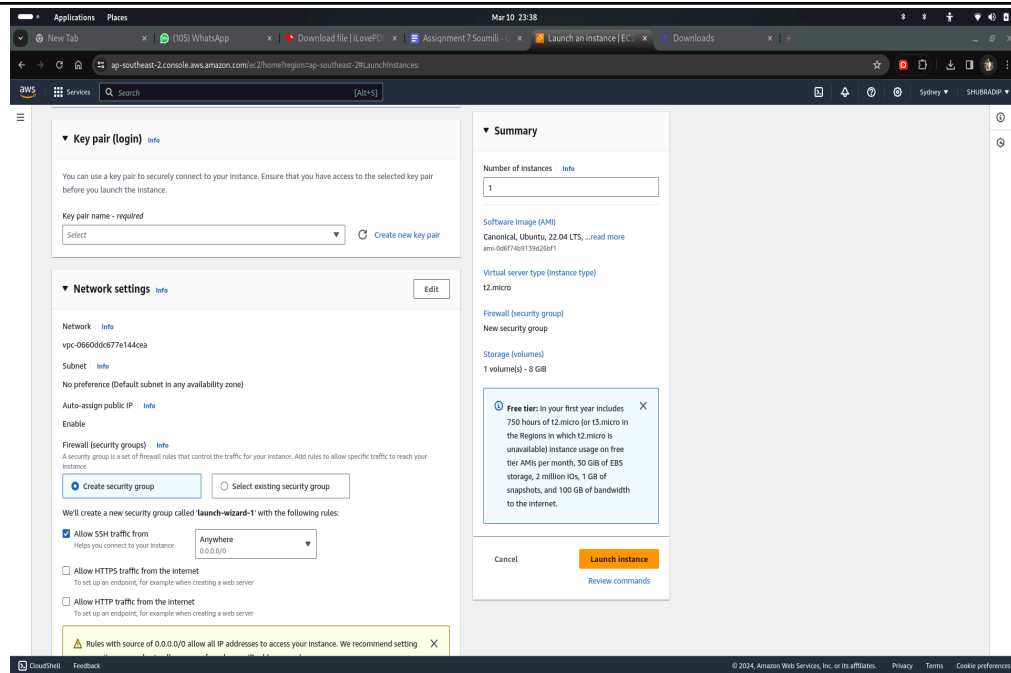
- Now enter a name of the server. Here we are using “SCEC2” as the name.



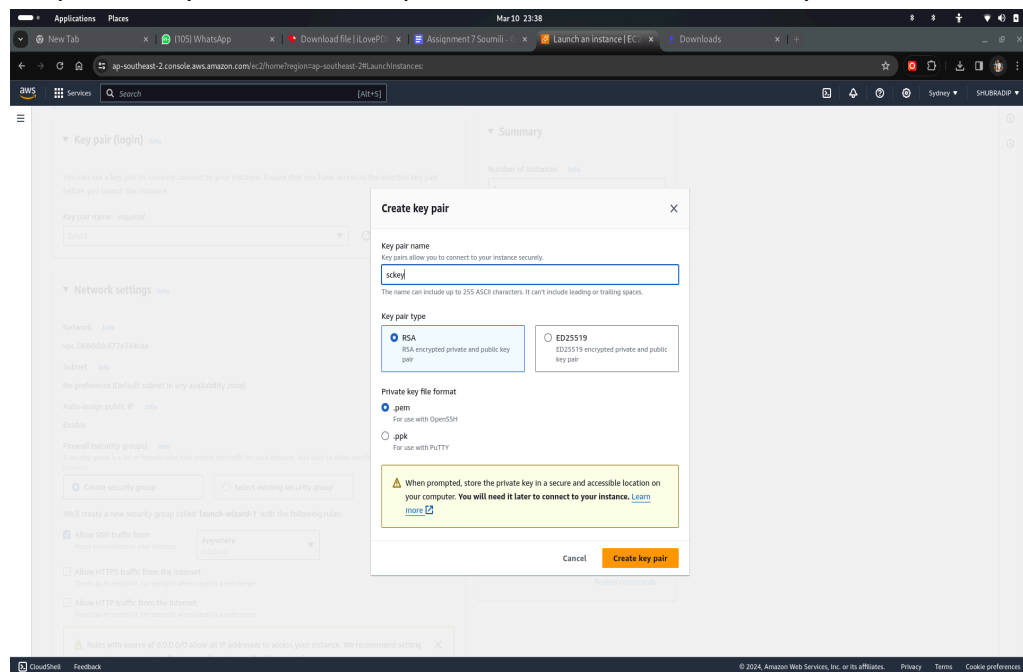
- Now scroll down and select “ubuntu”.



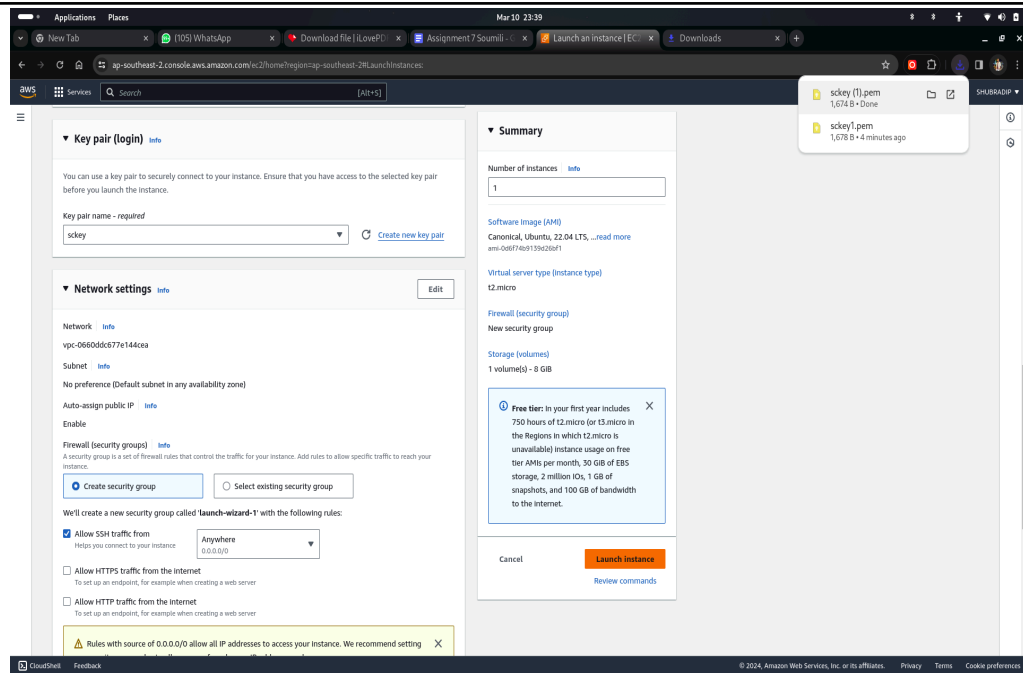
- Now scroll down in place of Key Pair select “Create new Key pair”.



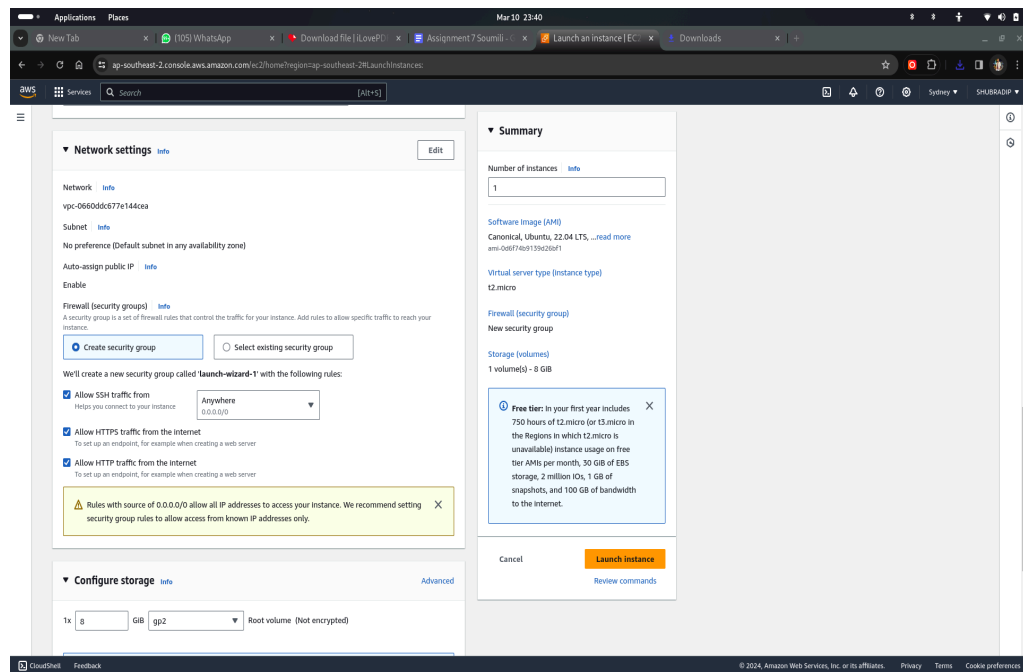
- Now enter a key pair name [Here: “sckey”]. Select key pair type as RSA. Then select the private key file format as “.pem”. Then click on “Create Key Pair”.



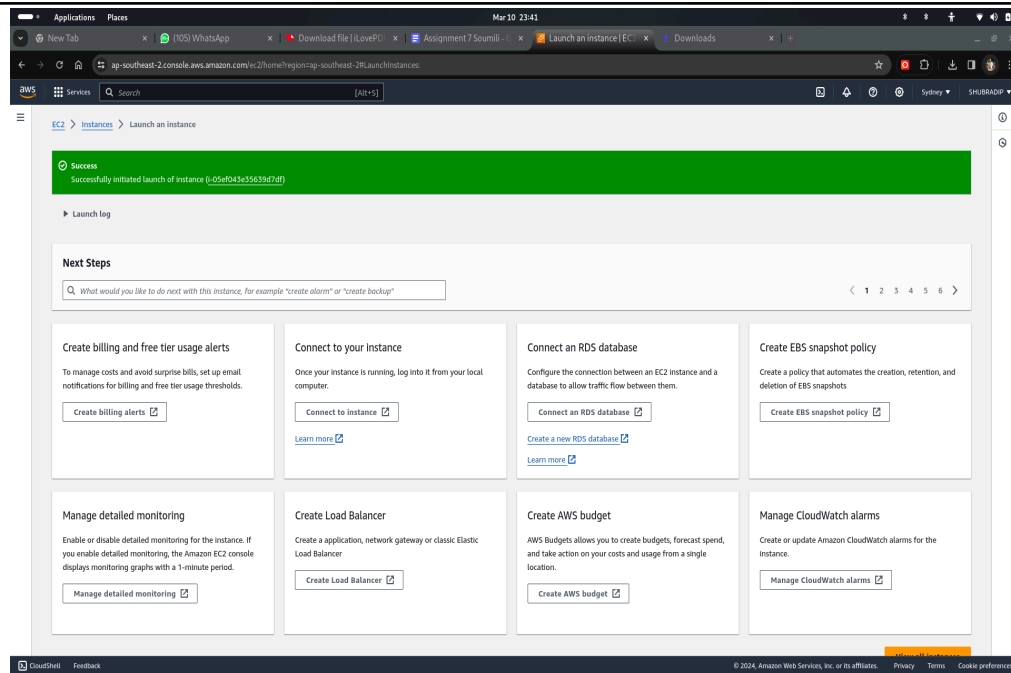
- Then you will see the key pair got downloaded.



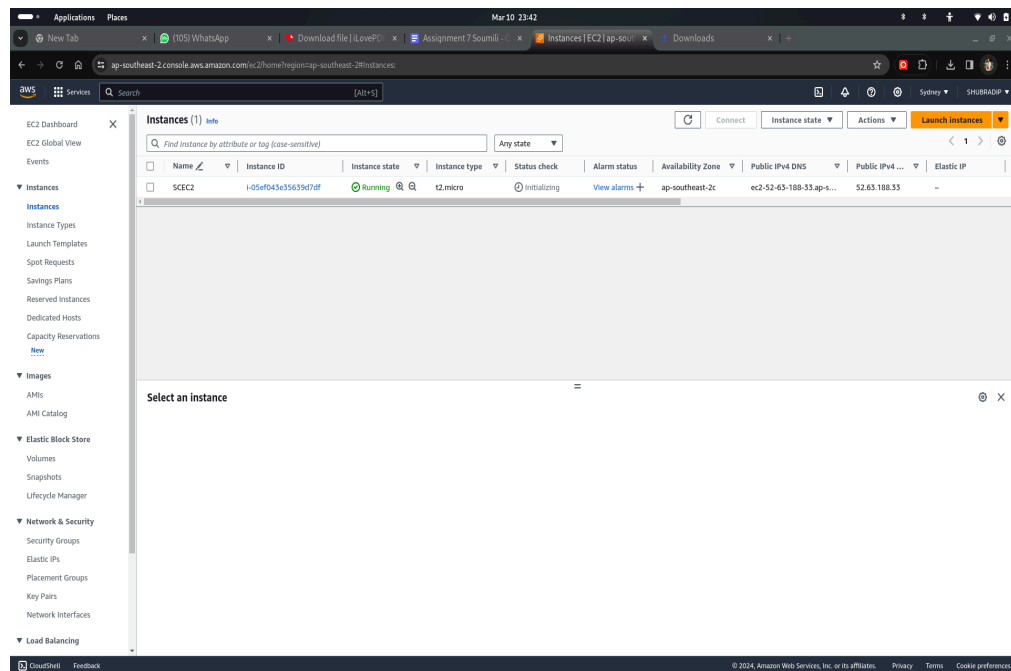
- Now in “Network Settings” select create security group checkbox and select all the check box below it as shown in the screenshot. Then click on “Launch Instance”



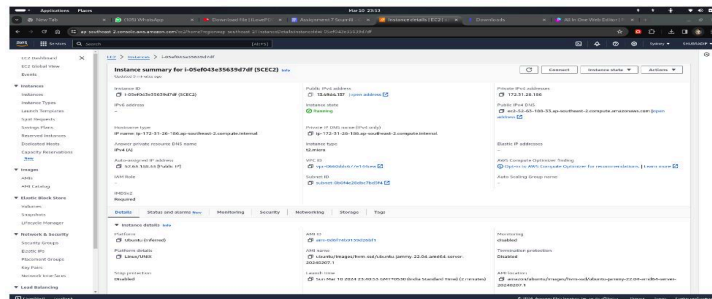
- Then you will see a message appear showing the instance has been launched.



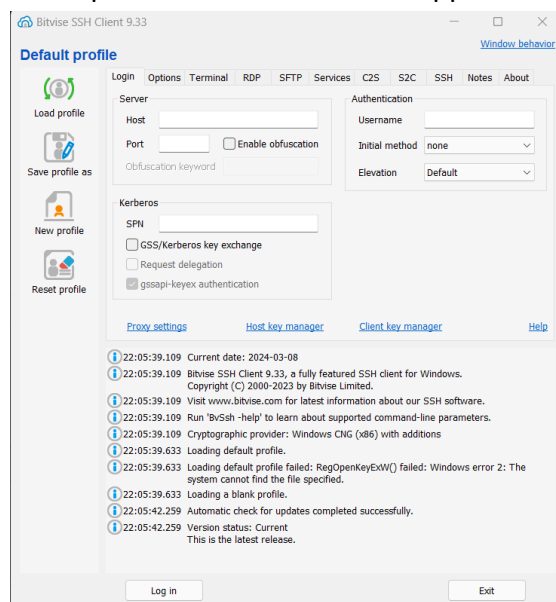
- Now go back to the instance page



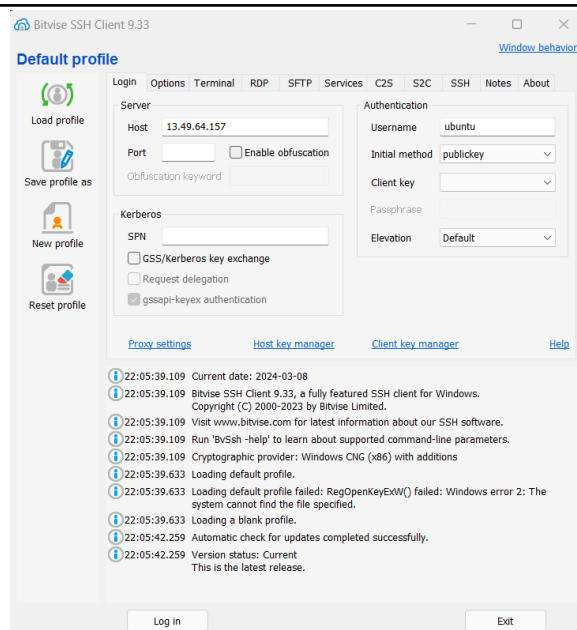
- Now click on the instance then you will see the following page appears.



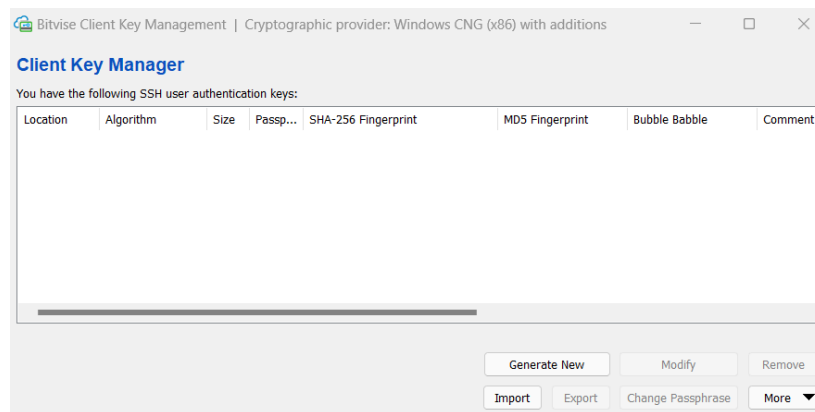
- Now open the bitwise ssl client application



- Now in the host enter the IP address, then in the username use “ubuntu”, then in the initial method select public-key.



- Click on “Client Key Manager”. Then the following window appears.



- Then click on Import and import the key that was generated.
- A pop up appears click on “Import”



Import Client Key

Location: Global Algorithm: 1 RSA Size: 2048

[Change passphrase](#)  
Client key is **not** passphrase protected.

SHA-256 fingerprint  
hzn0sQ+qpkSk28SWHjjn4849/+9y8cdq64BV/5znVHU

MD5 fingerprint  
f8:69:b9:3d:15:61:9f:ce:38:24:e9:07:45:2d:8a:d2

Bubble-babble  
xugeb-hozem-hebid-cegar-hyllil-vakym-cyhur-dedat-soluk-pumiz-gexex

Comment

Import Cancel Cancel All

- Then you will see the key got imported.

Bitvise Client Key Management | Cryptographic provider: Windows CNG (x86) with additions

Client Key Manager

You have the following SSH user authentication keys:

Location	Algorithm	Size	Passp...	SHA-256 Fingerprint	MD5 Fingerprint	Bubble Babble	Comment
Client keys supported by the current crypto provider (1):							
Global 1	RSA	2048	no	hzn0sQ+qpkSk28SWHjjn4849/+...	f8:69:b9:3d:15:61:...	xugeb-hozem-hebid...	

Generate New Modify Remove

Import Export Change Passphrase More

- Now click on "Log In"

22:14:40.219 Started a new SSH connection.

22:14:40.219 Connecting to SSH server 13.49.64.157:22.

22:14:40.398 Connection established.

22:14:40.586 Server version: SSH-2.0-OpenSSH\_8.9p1 Ubuntu-3ubuntu0.6

22:14:40.586 First key exchange started. Cryptographic provider: Windows CNG (x86) with additions

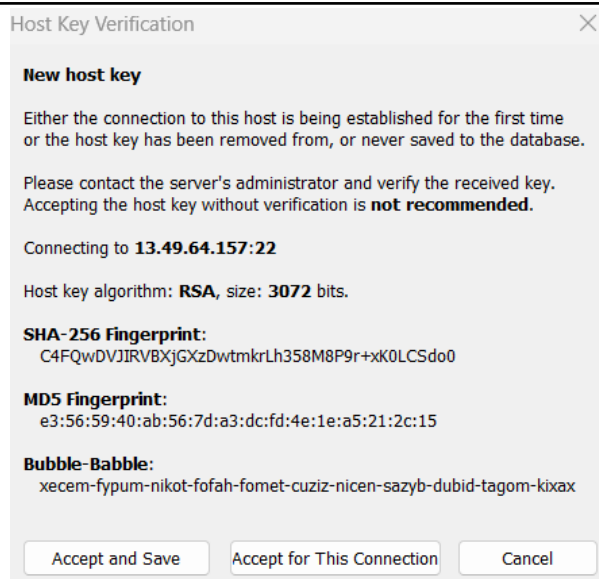
22:14:40.960 Received host key from the server. Algorithm: RSA/sha2-512, size: 3072 bits, SHA-256 fingerprint: C4FQwDVJIRVBXjGXzDwtmkrLh358M8P9r+xK0LCSdo0.

22:14:59.166 The received host key has been rejected on user's request.

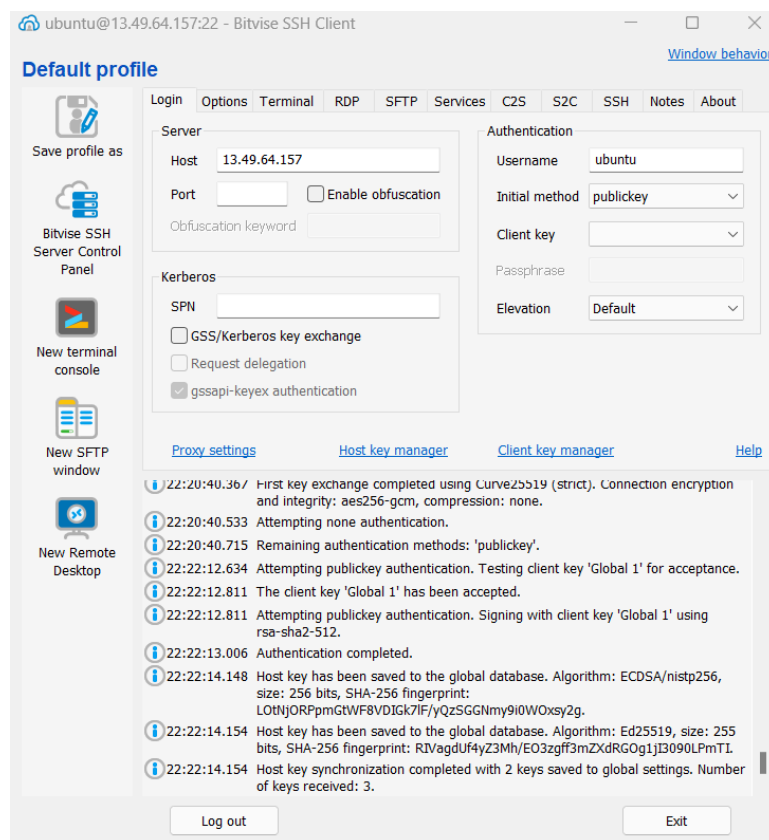
22:14:59.348 The SSH connection has been terminated.

Log in Exit

- Then a pop-up appears click on "Accept and Save"



- Again, a pop-up appears: select the client-key as “Global 1” and click on “OK”.
- Now click on “New terminal console”



- Then the following window will appear.

```

ubuntu@13.49.64.157:22 - Bitvise xterm - ubuntu@ip-172-31-29-247: ~
* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:        https://ubuntu.com/pro

System information as of Fri Mar  8 16:52:15 UTC 2024

System load:  0.0          Processes:           99
Usage of /:   20.3% of 7.57GB Users logged in:       0
Memory usage: 21%         IPv4 address for ens5: 172.31.29.247
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

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-172-31-29-247:~$

```

- Now use command: “sudo apt-get update” to update the files present.

```

ubuntu@ip-172-31-29-247:~$ sudo apt-get update
Hit:1 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1458 kB]
Get:12 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [283 kB]
Get:13 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1557 kB]
Get:14 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [259 kB]
Get:15 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1054 kB]
Get:16 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [238 kB]
Get:17 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [22.1 kB]
Get:18 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [42.1 kB]
Get:19 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [10.1 kB]
Get:20 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [472 B]
Get:21 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [41.7 kB]
Get:22 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [10.5 kB]
Get:23 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:24 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:25 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [24.3 kB]
Get:26 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Get:27 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [644 B]

```

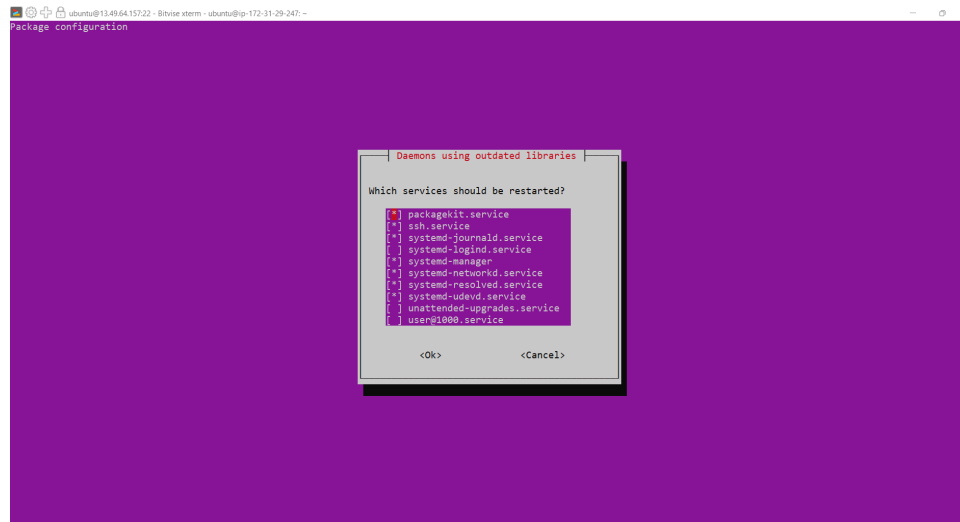
- Then use command: “sudo apt-get upgrade” to upgrade the files.

```

ubuntu@ip-172-31-29-247:~$ 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:
  linux-aws linux-headers-aws linux-image-aws
The following packages will be upgraded:
  base-files bind9-dnswriter bind9-host bind9-libs binutils binutils-common binutils-x86-64-linux-gnu cloud-init coreutils dpkg iptables less libbinutils libctf-nobfd0
  libctf0 libgcc1 libipset2 libipset3 libl10n libl10n-2 libl10n-3 libl10n-4 libl10n-5 libl10n-6 libl10n-7 libl10n-8 libl10n-9 libl10n-10 libl10n-11 libl10n-12 login motd-news-config open-vm-tools openssl passwd python-apt-common python3-apt
  python3-cryptography python3-distupgrade tcpdump tzdata ubuntu-release-upgrader-core
34 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
Need to get 16.0 MB of archives.
After this operation, 86.0 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 jammy-updates/main amd64 motd-news-config all 12ubuntu4.6 [4352 B]
Get:2 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 base-files amd64 12ubuntu4.6 [62.5 kB]
Get:3 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 coreutils amd64 8.32-4.1ubuntu1.1 [1436 kB]
Get:4 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dpkg amd64 1.21.1ubuntu2.3 [1239 kB]
Get:5 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 login amd64 1:4.8.1-2ubuntu2.2 [188 kB]
Get:6 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libl10n amd64 2.0.2-0ubuntu1.15 [1905 kB]
Get:7 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libl10n amd64 2.9.13+dfsg-1ubuntu0.4 [763 kB]
Get:8 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 open-vm-tools amd64 2:12.3.5-3~ubuntu0.22.04.1 [746 kB]
Get:9 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 passwd amd64 1:4.8.1-2ubuntu2.2 [768 kB]
Get:10 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 less amd64 598-1ubuntu0.22.04.2 [143 kB]
Get:11 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 iptables amd64 1.8.7-1ubuntu5.2 [455 kB]
Get:12 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libxtables12 amd64 1.8.7-1ubuntu5.2 [31.3 kB]
Get:13 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libipset2 amd64 1.8.7-1ubuntu5.2 [20.3 kB]
Get:14 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libipset2 amd64 1.8.7-1ubuntu5.2 [19.9 kB]
Get:15 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 openssl amd64 3.0.2-0ubuntu1.15 [1186 kB]
Get:16 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python-apt-common all 2.4.0ubuntu3 [14.6 kB]
Get:17 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-apt amd64 2.4.0ubuntu3 [164 kB]
Get:18 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 tzdata all 2024a-0ubuntu0.22.04 [348 kB]
Get:19 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libuv1 amd64 1.43.0-1ubuntu0.1 [92.7 kB]
Get:20 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-dnswriter amd64 1:9.18.18-0ubuntu0.22.04.2 [157 kB]
Get:21 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-host amd64 1:9.18.18-0ubuntu0.22.04.2 [52.5 kB]
Get:22 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-libs amd64 1:9.18.18-0ubuntu0.22.04.2 [1245 kB]
Get:23 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 ubuntu-release-upgrader-core all 1:22.04.19 [26.2 kB]
Get:24 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-distupgrade all 1:22.04.19 [106 kB]
Get:25 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 tcpdump amd64 4.99.1-3ubuntu0.2 [501 kB]
Get:26 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libctf0 amd64 2.38-4ubuntu2.6 [103 kB]

```

- Then you will see a pop-up appears then click on “OK” and hit enter.



- Then you will see the following gets completed.

```

Restarting services...
/etc/needrestart/restart.d/systemd-manager
systemctl restart packagekit.service ssh.service systemd-journald.service sy
Service restarts being deferred:
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-172-31-29-247:~$

```

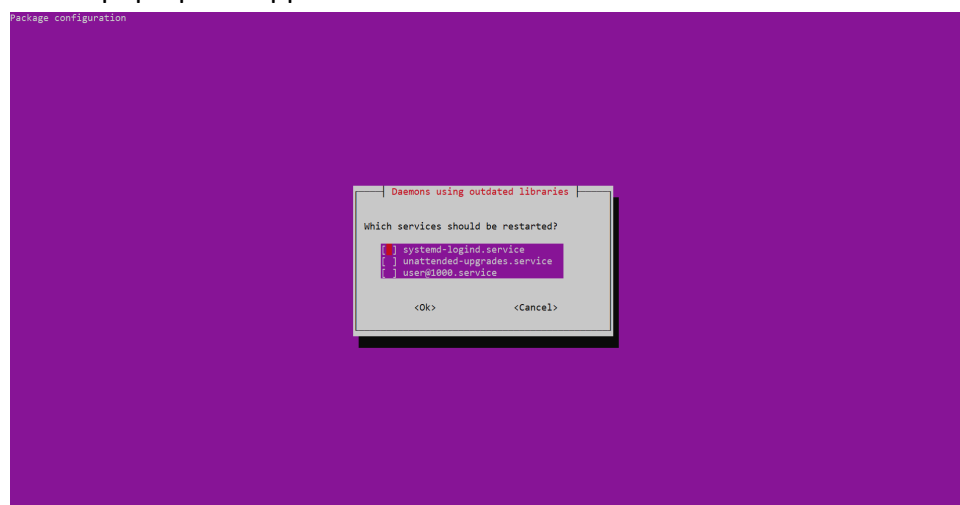
- Now use command: “sudo apt-get install nginx” to install nginx server.

```

ubuntu@ip-172-31-29-247:~$ sudo apt-get install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  fontconfig-config fonts-dejavu-core libdeflate0 libfontconfig1 libgd3 libjpeg8 libjpeg-turbo8 libjpeg8 libnginx-mod-http-geoip2 libnginx-mod-http-image-filter
  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream libnginx-mod-stream-geoip2 libtiff5 libwebp7 libxpm4 nginx-common nginx-core
Suggested packages:
  libgd-tools fcgiwrap nginx-doc ssl-cert
The following NEW packages will be installed:
  fontconfig-config fonts-dejavu-core libdeflate0 libfontconfig1 libgd3 libjpeg8 libjpeg-turbo8 libjpeg8 libnginx-mod-http-geoip2 libnginx-mod-http-image-filter
  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream libnginx-mod-stream-geoip2 libtiff5 libwebp7 libxpm4 nginx nginx-common nginx-core
0 upgraded, 20 newly installed, 0 to remove and 3 not upgraded.
Need to get 2693 kB of archives.
After this operation, 8350 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 jammy/main amd64 fonts-dejavu-core all 2.37-2build1 [1041 kB]
Get:2 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 fontconfig-config all 2.13.1-4.2ubuntu5 [29.1 kB]
Get:3 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libdeflate0 amd64 1.10-2 [70.9 kB]
Get:4 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libfontconfig1 amd64 2.13.1-4.2ubuntu5 [131 kB]
Get:5 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libjpeg-turbo8 amd64 2.1.2-0ubuntu1 [134 kB]
Get:6 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libjpeg8 amd64 8c-2ubuntu0 [2264 B]
Get:7 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libjpeg8 amd64 2.1-3.1ubuntu0.22.04.1 [29.2 kB]
Get:8 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libwebp7 amd64 1.2.2-2ubuntu0.22.04.2 [206 kB]
Get:9 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libtiff5 amd64 4.3.0-6ubuntu0.8 [185 kB]
Get:10 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libxpm4 amd64 1:3.5.12-1ubuntu0.22.04.2 [36.7 kB]
Get:11 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libgd3 amd64 2.3.0-2ubuntu2 [129 kB]
Get:12 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 nginx-common all 1.18.0-6ubuntu14.4 [40.0 kB]
Get:13 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libnginx-mod-http-geoip2 amd64 1.18.0-6ubuntu14.4 [11.9 kB]
Get:14 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libnginx-mod-http-image-filter amd64 1.18.0-6ubuntu14.4 [15.4 kB]
Get:15 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libnginx-mod-http-xslt-filter amd64 1.18.0-6ubuntu14.4 [13.7 kB]
Get:16 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libnginx-mod-mail amd64 1.18.0-6ubuntu14.4 [45.7 kB]
Get:17 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libnginx-mod-stream amd64 1.18.0-6ubuntu14.4 [72.9 kB]
Get:18 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libnginx-mod-stream-geoip2 amd64 1.18.0-6ubuntu14.4 [10.1 kB]
Get:19 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 nginx-core amd64 1.18.0-6ubuntu14.4 [484 kB]
Get:20 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 nginx amd64 1.18.0-6ubuntu14.4 [3872 B]
Fetched 2693 kB in 8s (29.2 MB/s)
Preconfiguring packages ...
Selecting previously unselected package fonts-dejavu-core.
(Reading database ... 64808 files and directories currently installed.)

```

- Then a pop-up will appear then click on OK.



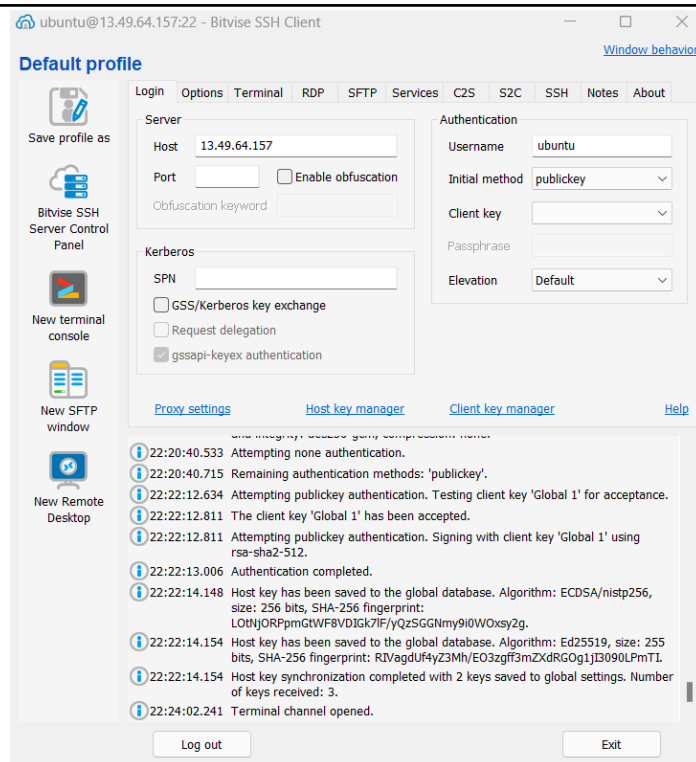
- Then use command: “nginx -v” to check the version of the nginx server.

```

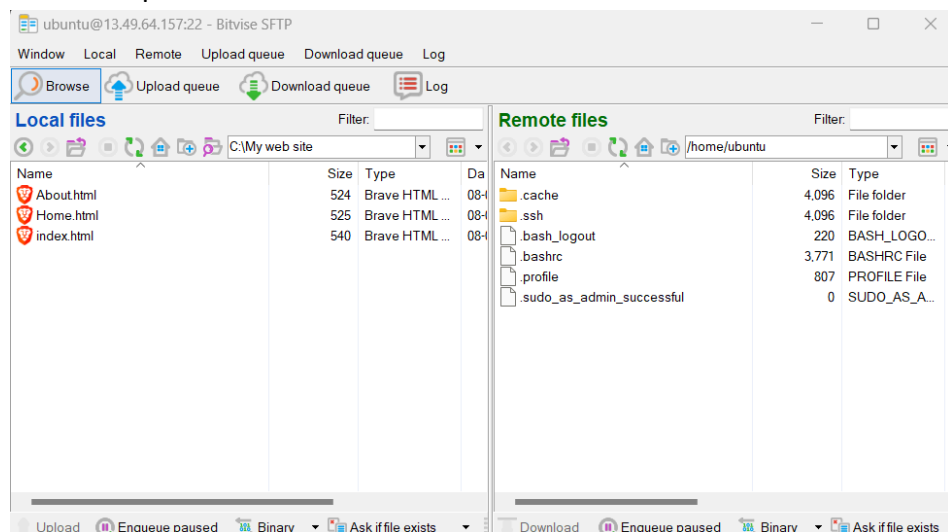
ubuntu@ip-172-31-29-247:~$ nginx -v
nginx version: nginx/1.18.0 (Ubuntu)
ubuntu@ip-172-31-29-247:~$

```

- Now click on “New SFTP Window”



- Then you will see a window opens. In that search and open the folder where your website is present as shown in the screenshot.



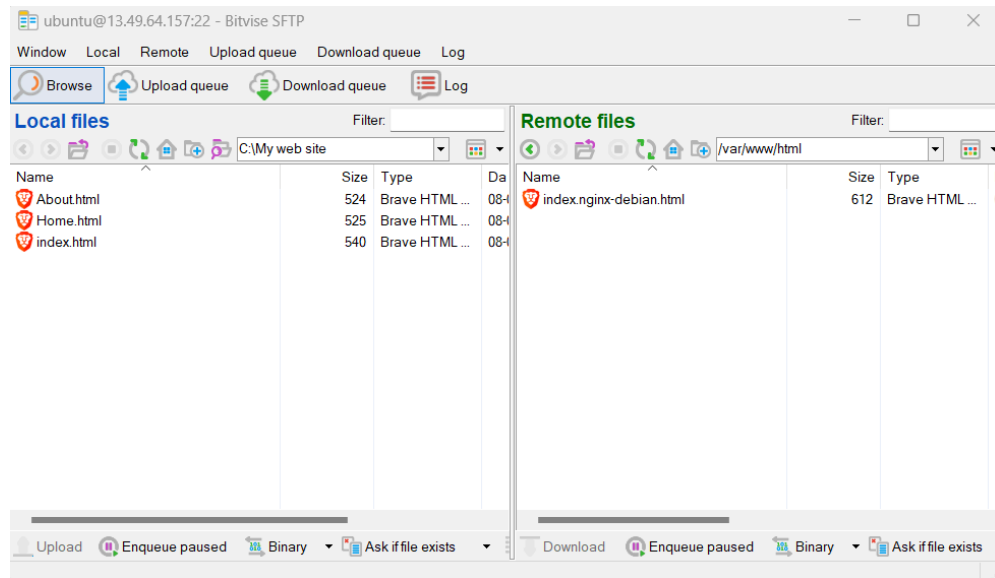
- Now open the terminal and use command: “cd /” to move to the root directory.  

```
ubuntu@ip-172-31-29-247:~$ cd /
```
- Now use command: “cd /var/www/”. Then use command “ls -l” to view the files along with their permissions.  

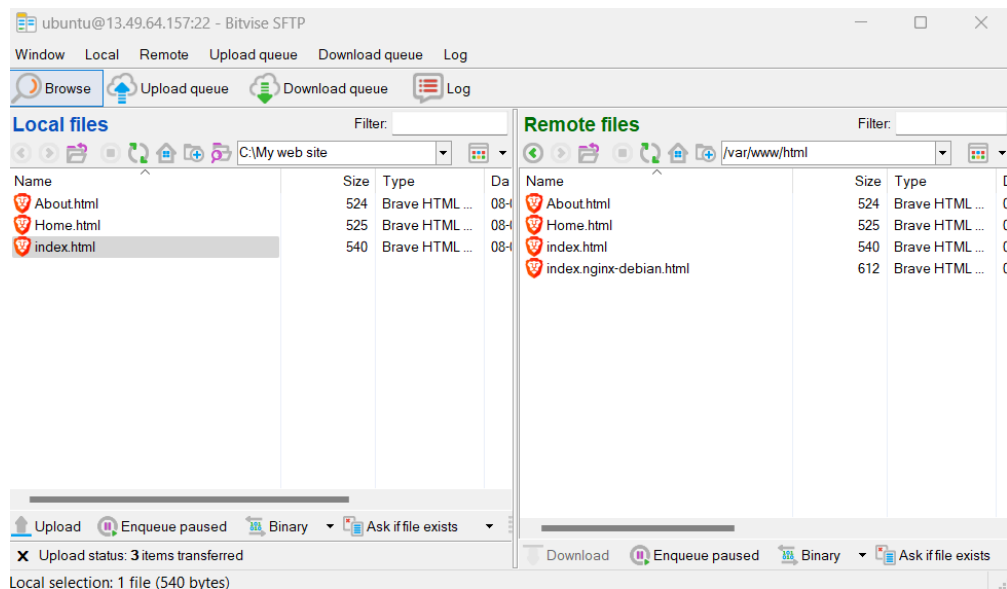
```
ubuntu@ip-172-31-29-247:/$ cd /var/www/
ubuntu@ip-172-31-29-247:/var/www$ ls -l
total 4
drwxr-xr-x 2 root root 4096 Mar  8 17:02 html
```
- Now use command: “sudo chmod 777 html” to give all permissions to the directory. Then use “ls -l” command to check it.

```
ubuntu@ip-172-31-29-247:/var/www$ sudo chmod 777 html
ubuntu@ip-172-31-29-247:/var/www$ ls -l
total 4
drwxrwxrwx 2 root root 4096 Mar  8 17:02 html
ubuntu@ip-172-31-29-247:/var/www$
```

- Now again open the sftp window and open the directory “/var/www/html” in ubuntu.



- Now move all the html files into the ubuntu directory.



- Now open the public IP address on your browser you will see the webpage appearing.

