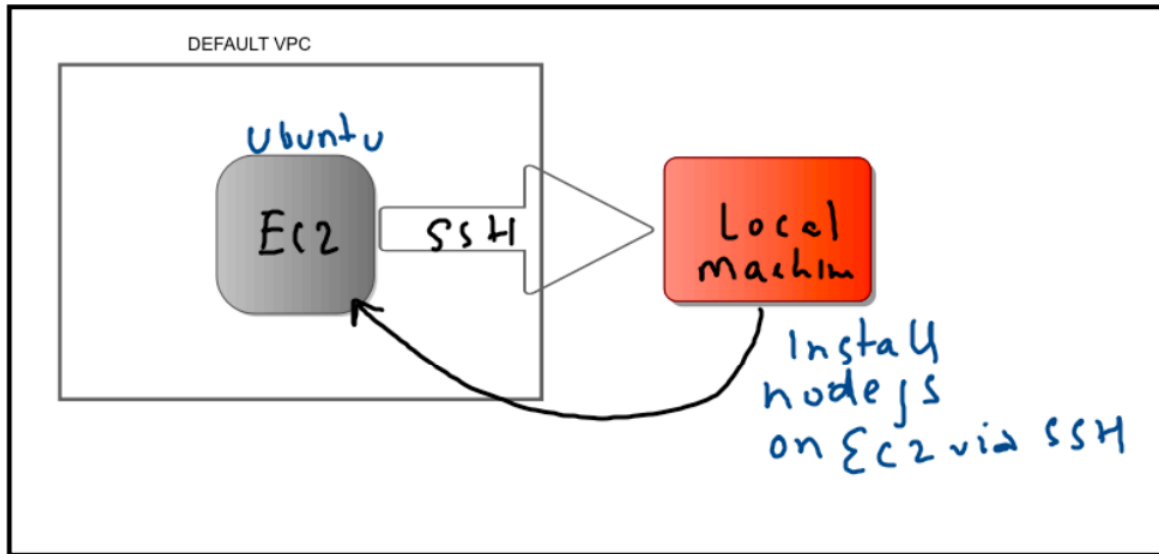
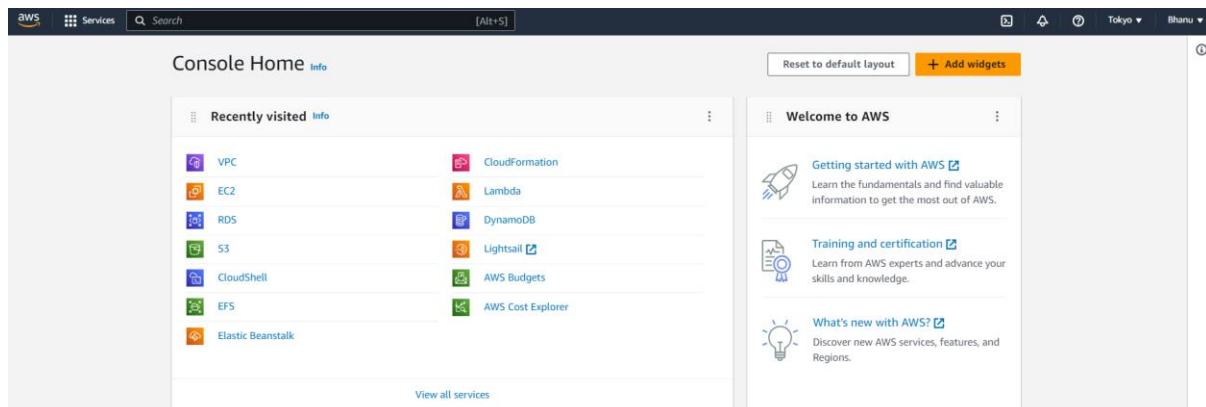


DevOps Advance - EC2 instance

Architecture



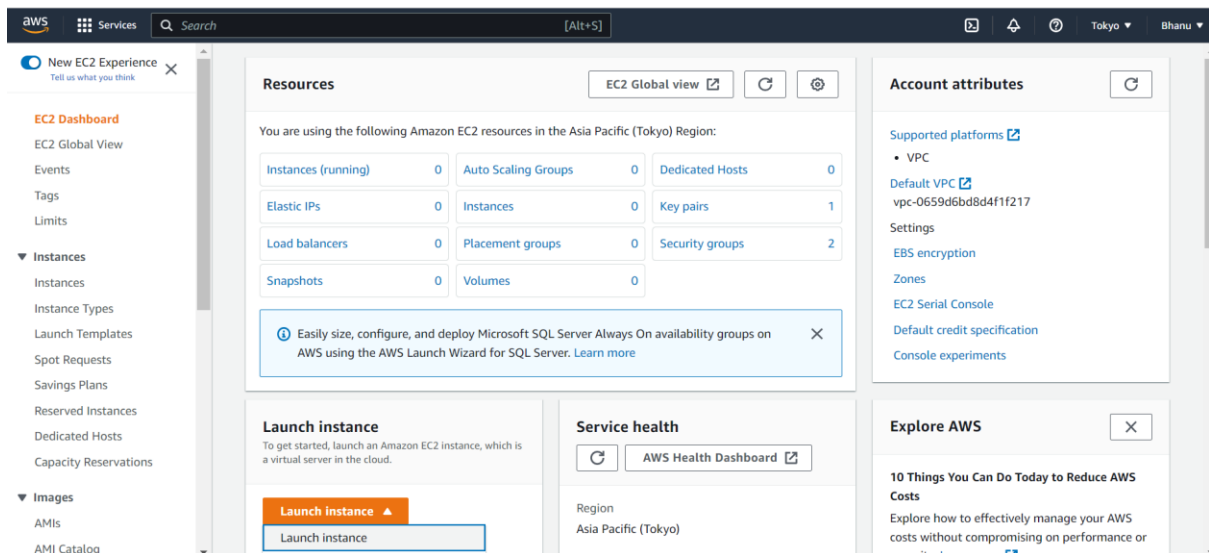
****Login to the AWS management console**



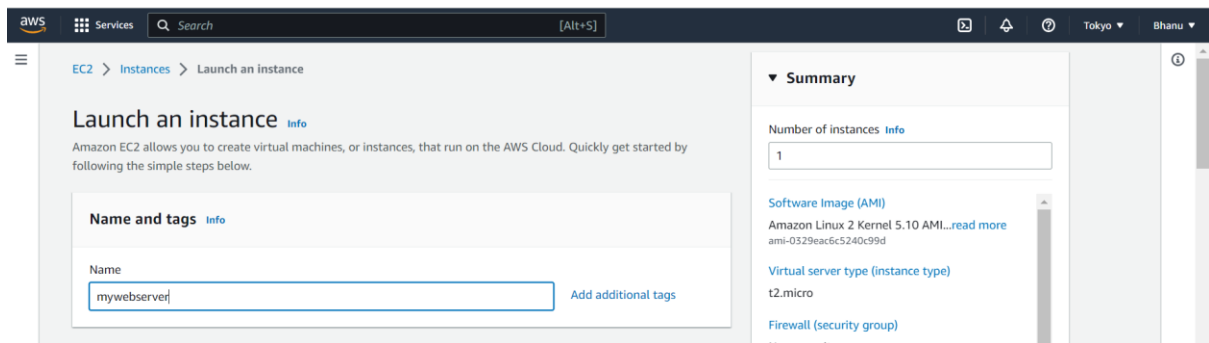
Step1:

Choose EC2 and click on launch instance.

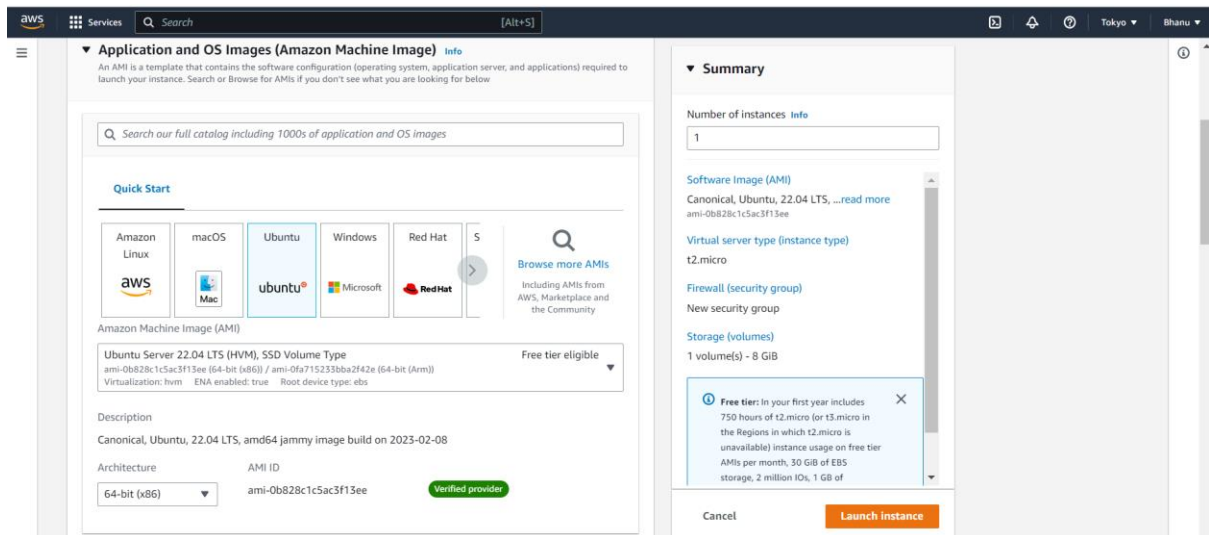
Create EC2 Instance with Ubuntu AMI.

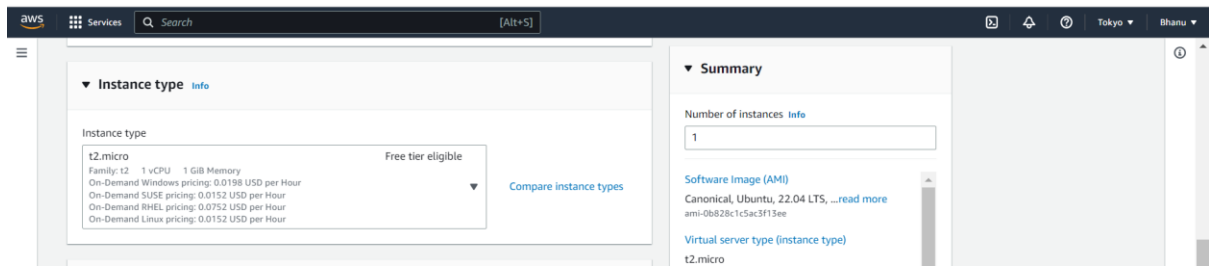


****Give name for the instance as “mywebserver”.**



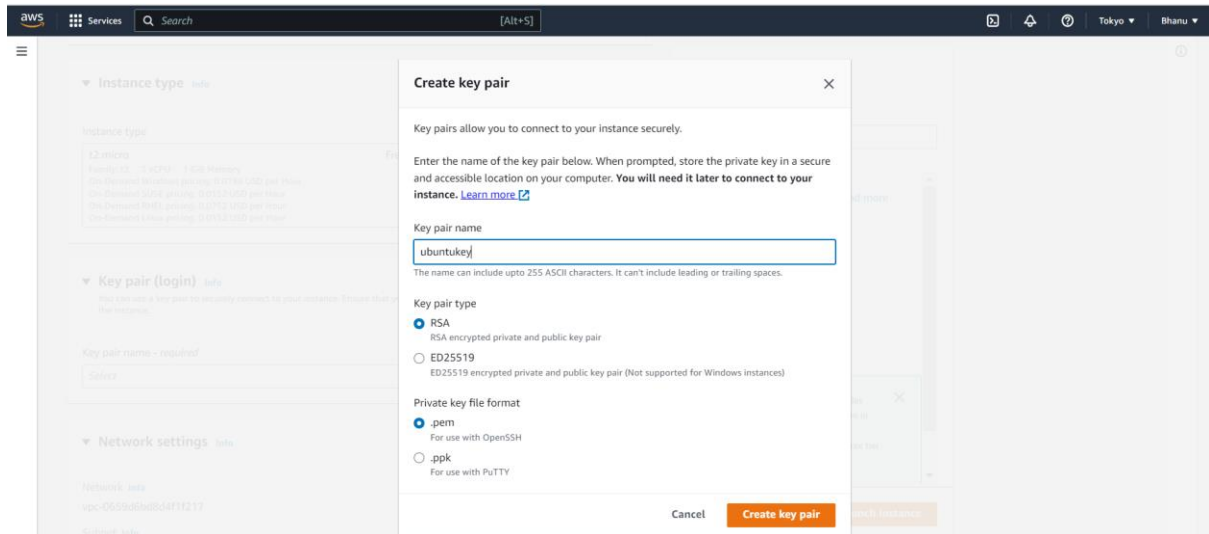
****Select the Ubuntu AMI. And the type of instance is t2.micro.**



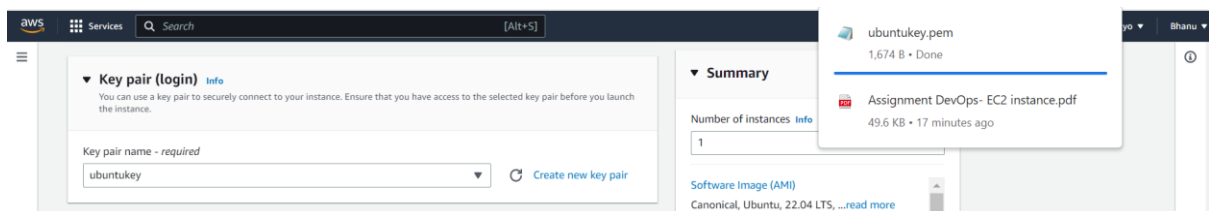


Step2:

Create key pair for SSH access.



****Keypair is downloaded to the local machine.**



****Select the default VPC**

Step3: Creating Security Group with SSH and HTTP/HTTPS Ports Enabled

Network settings Info

VPC - required Info
vpc-0659d6bd8d4f1f217 (default) [Info](#)

Subnet Info
No preference [Create new subnet](#)

Auto-assign public IP Info
Enable

Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
[Create security group](#) ☐ [Select existing security group](#)

Security group name - required
ubuntusecuritygroup
This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-./[!@#%&*~`^']{1,255}

Description - required Info
launch-wizard-1 created 2023-03-01T14:00:56.342Z

Inbound security groups rules
Security group rule 1 (TCP, 22, 0.0.0.0/0) [Remove](#)

Summary

Number of instances Info
1

Software image (AMI)
Canonical, Ubuntu, 22.04 LTS, ...[read more](#)
ami-0b828c1c5ac3f13ee

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GiB of

[Cancel](#) [Launch instance](#)

****Enable SSH port,HTTPS port and HTTP port.**

Inbound security groups rules

Security group rule 1 (TCP, 22, 0.0.0.0/0) [Remove](#)

Type Info: ssh
Protocol Info: TCP
Port range Info: 22
Source type Info: Anywhere
Source Info: [Add CIDR, prefix list or security](#)
0.0.0.0/0 [X](#)
Description - optional Info: e.g. SSH for admin desktop

Security group rule 2 (TCP, 443, 0.0.0.0/0) [Remove](#)

Type Info: HTTPS
Protocol Info: TCP
Port range Info: 443
Source type Info: Anywhere
Source Info: [Add CIDR, prefix list or security](#)
0.0.0.0/0 [X](#)
Description - optional Info: e.g. SSH for admin desktop

Security group rule 3 (TCP, 80, 0.0.0.0/0) [Remove](#)

Type Info: HTTP
Protocol Info: TCP
Port range Info: 80
Source type Info: Anywhere
Source Info: [Add CIDR, prefix list or security](#)
0.0.0.0/0 [X](#)
Description - optional Info: e.g. SSH for admin desktop

Summary

Number of instances Info
1

Software image (AMI)
Canonical, Ubuntu, 22.04 LTS, ...[read more](#)
ami-0b828c1c5ac3f13ee

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GiB of

[Cancel](#) [Launch instance](#)

Type Info: HTTP
Protocol Info: TCP
Port range Info: 80
Source type Info: Anywhere
Source Info: [Add CIDR, prefix list or security](#)
0.0.0.0/0 [X](#)
Description - optional Info: e.g. SSH for admin desktop

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. [X](#)

[Add security group rule](#)

Summary

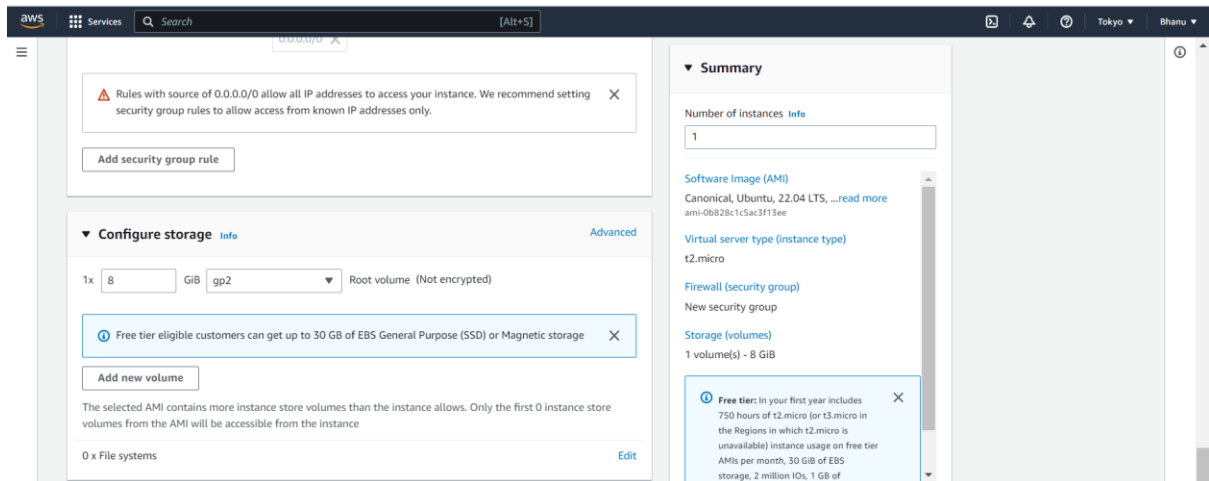
Number of instances Info
1

Software image (AMI)
Canonical, Ubuntu, 22.04 LTS, ...[read more](#)
ami-0b828c1c5ac3f13ee

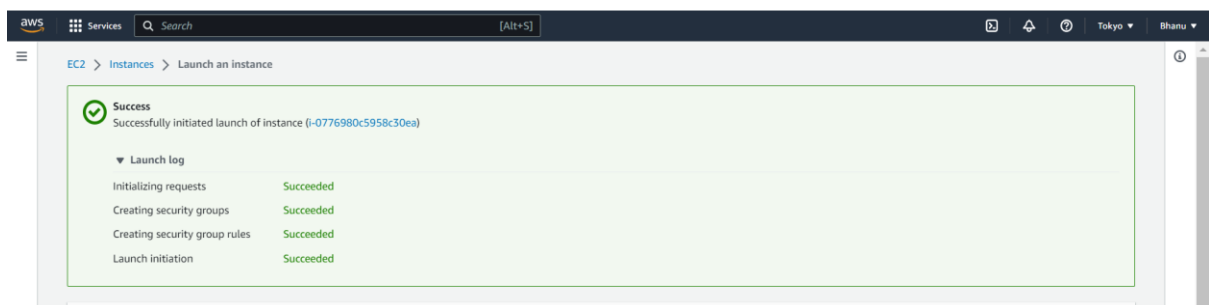
Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

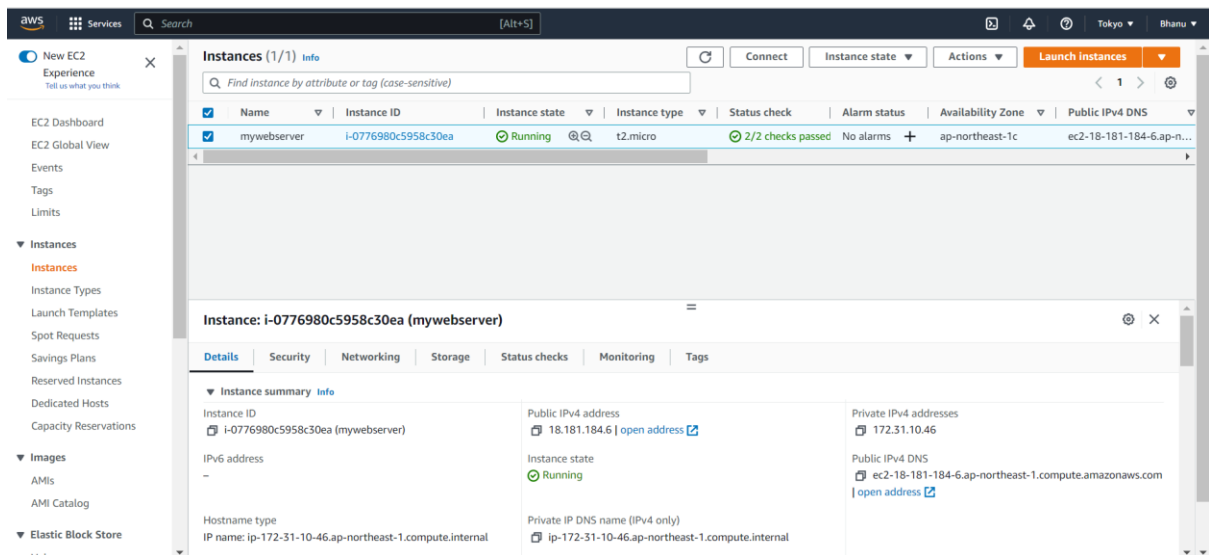
****Keep the storage settings default.**



****Click on the Launch instance.**

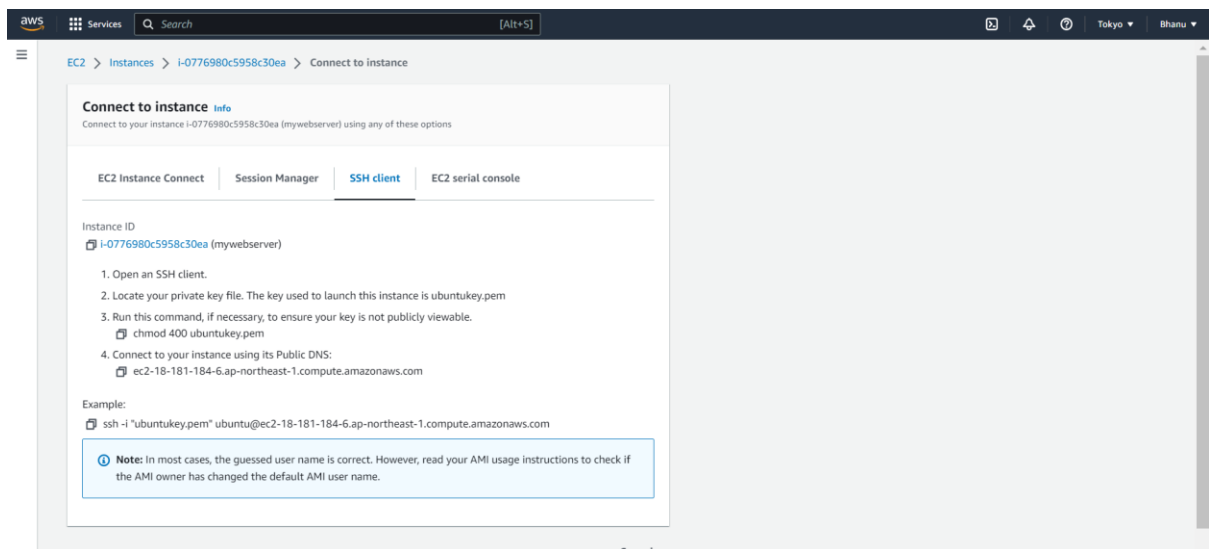


****The instance is now running.**



Step 4:

SSH Created EC2 Instance to local Machine.



****Connect to the EC2 instance using the key pair through ssh.**

```
Select ubuntu@ip-172-31-10-46: ~
Microsoft Windows [Version 10.0.19044.2604]
(c) Microsoft Corporation. All rights reserved.

C:\Users\DELL>cd Downloads

C:\Users\DELL\Downloads>ssh -i "ubuntukey.pem" ubuntu@ec2-18-181-184-6.ap-northeast-1.compute.amazonaws.com
The authenticity of host 'ec2-18-181-184-6.ap-northeast-1.compute.amazonaws.com (18.181.184.6)' can't be established.
ECDSA key fingerprint is SHA256:rFqh9UDmqg5J7n+0eV2DiFu+3wx4DpEoSkyFFAkFs0I.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-18-181-184-6.ap-northeast-1.compute.amazonaws.com,18.181.184.6' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1028-aws x86_64)
```

```
Select ubuntu@ip-172-31-10-46: ~
Microsoft Windows [Version 10.0.19044.2604]
(c) Microsoft Corporation. All rights reserved.

C:\Users\DELL>cd Downloads

C:\Users\DELL\Downloads>ssh -i "ubuntukey.pem" ubuntu@ec2-18-181-184-6.ap-northeast-1.compute.amazonaws.com
The authenticity of host 'ec2-18-181-184-6.ap-northeast-1.compute.amazonaws.com (18.181.184.6)' can't be established.
ECDSA key fingerprint is SHA256:rFqh9UDmqg5J7n+0eV2DiFu+3wx4DpEoSkyFFAkFs0I.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-18-181-184-6.ap-northeast-1.compute.amazonaws.com,18.181.184.6' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1028-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

System information as of Wed Mar 1 14:13:03 UTC 2023

System load:  0.09423828125   Processes:            100
Usage of /:   19.8% of 7.57GB   Users logged in:      0
Memory usage: 19%            IPv4 address for eth0: 172.31.10.46
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.
```

****Now we are connected to the EC2 instance.**

```
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-172-31-10-46:~$
```

****To install the updates,the command is**

sudo apt update

```
ubuntu@ip-172-31-10-46:~$ sudo apt update  
Hit:1 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease  
Get:2 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]  
Get:3 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [107 kB]  
Get:4 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]  
Get:5 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]  
Get:6 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]  
Get:7 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]  
Get:8 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]  
Get:9 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]  
Get:10 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]  
Get:11 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [905 kB]  
Get:12 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [199 kB]  
Get:13 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [13.6 kB]  
Get:14 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [624 kB]  
Get:15 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [96.3 kB]  
Get:16 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [580 B]  
Get:17 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [874 kB]  
Get:18 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [171 kB]  
Get:19 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [17.8 kB]  
Get:20 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [9672 B]  
Get:21 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [3260 B]  
Get:22 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [456 B]  
Get:23 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [40.7 kB]  
Get:24 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [9800 B]  
Get:25 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [392 B]  
Get:26 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]  
Get:27 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [19.5 kB]  
Get:28 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [14.0 kB]  
Get:29 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [392 B]  
Get:30 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]  
Get:31 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [646 kB]  
Get:32 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [135 kB]  
Get:33 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [8524 B]  
Get:34 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [582 kB]  
Get:35 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [90.4 kB]  
Get:36 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [694 kB]  
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [110 kB]  
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [13.4 kB]  
Get:39 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [4960 B]  
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [996 B]  
Get:41 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [240 B]  
Fetched 26.0 MB in 5s (5579 kB/s)  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
36 packages can be upgraded. Run 'apt list --upgradable' to see them.
```

Step 5:

To install the node js give the below command.

sudo apt install nodejs


```
ubuntu@ip-172-31-10-46: ~  
ubuntu@ip-172-31-10-46:~$ sudo apt install nodejs  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following additional packages will be installed:  
  javascript-common libc-ares2 libjs-highlight.js libnode72 nodejs-doc  
Suggested packages:  
  apache2 | lighttpd | httpd npm  
The following NEW packages will be installed:  
  javascript-common libc-ares2 libjs-highlight.js libnode72 nodejs nodejs-doc  
0 upgraded, 6 newly installed, 0 to remove and 36 not upgraded.  
Need to get 13.7 MB of archives.  
After this operation, 53.9 MB of additional disk space will be used.  
Do you want to continue? [Y/n] Y
```

```
ubuntu@ip-172-31-10-46: ~  
Do you want to continue? [Y/n] Y  
Get:1 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 javascript-common all 11+nmu1 [5936 B]  
Get:2 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-highlight.js all 9.18.5+dfsg1-1 [367 kB]  
Get:3 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libc-ares2 amd64 1.18.1-1build1 [44.9 kB]  
Get:4 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libnode72 amd64 12.22.9~dfsg-1ubuntu3 [10.8 MB]  
Get:5 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 nodejs-doc all 12.22.9~dfsg-1ubuntu3 [2489 kB]  
Get:6 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 nodejs amd64 12.22.9~dfsg-1ubuntu3 [122 kB]  
Fetched 13.7 MB in 0s (60.7 MB/s)  
Selecting previously unselected package javascript-common.  
(Reading database ... 63605 files and directories currently installed.)  
Preparing to unpack .../0-javascript-common_11+nmu1_all.deb ...  
Unpacking javascript-common (11+nmu1) ...  
Selecting previously unselected package libjs-highlight.js.  
Preparing to unpack .../1-libjs-highlight.js_9.18.5+dfsg1-1_all.deb ...  
Unpacking libjs-highlight.js (9.18.5+dfsg1-1) ...  
Selecting previously unselected package libc-ares2:amd64.  
Preparing to unpack .../2-libc-ares2_1.18.1-1build1_amd64.deb ...  
Unpacking libc-ares2:amd64 (1.18.1-1build1) ...  
Selecting previously unselected package libnode72:amd64.  
Preparing to unpack .../3-libnode72_12.22.9~dfsg-1ubuntu3_amd64.deb ...  
Unpacking libnode72:amd64 (12.22.9~dfsg-1ubuntu3) ...  
Selecting previously unselected package nodejs-doc.  
Preparing to unpack .../4-nodejs-doc_12.22.9~dfsg-1ubuntu3_all.deb ...  
Unpacking nodejs-doc (12.22.9~dfsg-1ubuntu3) ...  
Selecting previously unselected package nodejs.  
Preparing to unpack .../5-nodejs_12.22.9~dfsg-1ubuntu3_amd64.deb ...
```

```
ubuntu@ip-172-31-10-46: ~  
Setting up libc-ares2:amd64 (1.18.1-1build1) ...  
Setting up libnode72:amd64 (12.22.9~dfsg-1ubuntu3) ...  
Setting up libjs-highlight.js (9.18.5+dfsg1-1) ...  
Setting up nodejs (12.22.9~dfsg-1ubuntu3) ...  
update-alternatives: using /usr/bin/nodejs to provide /usr/bin/js (js) in auto mode  
Setting up nodejs-doc (12.22.9~dfsg-1ubuntu3) ...  
Processing triggers for man-db (2.10.2-1) ...  
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...  
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.
```

Step 6:

To check the status of nodejs ,whether it is installed or not,give the command

node -v

A terminal window with a title bar showing 'ubuntu@ip-172-31-10-46: ~'. The terminal content shows the command 'node -v' being executed, resulting in the output 'v12.22.9'. The prompt is 'ubuntu@ip-172-31-10-46:~\$' and the output is 'v12.22.9'.

```
ubuntu@ip-172-31-10-46: ~  
ubuntu@ip-172-31-10-46:~$ node -v  
v12.22.9
```

This command gives the output as v12.22.9 ,that indicates node js is successfully installed and it is the version of it.