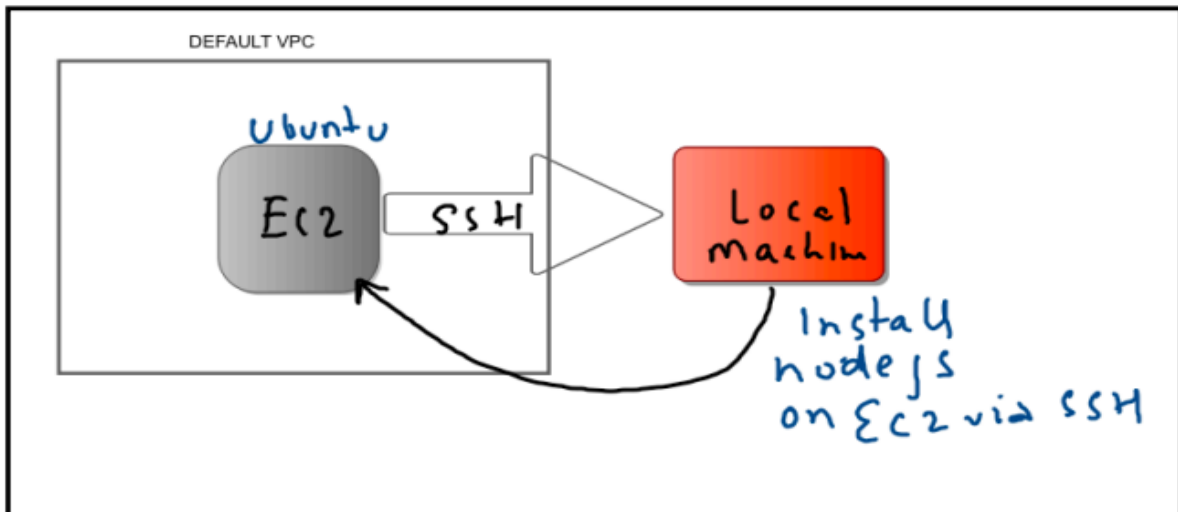


ASSIGNMENT:

Q)

Architecture

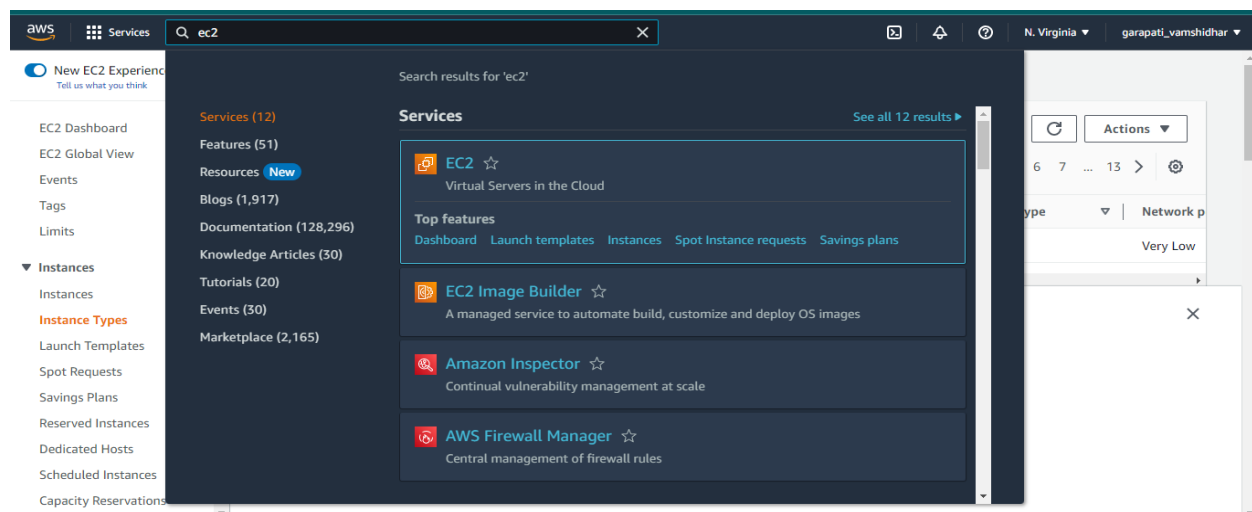


Goals:

1. Create EC2 Instance with Ubuntu AML.
2. Create Key pair for SSH Access .
3. Create Security Group with SSH and HTTP/HTTPs Ports Enabled.
4. SSH Created EC2 Instance to local Machine.
5. Install Nodejs in th Ubuntu machine.
6. Check the status of nodejs.

Ans:

1.Initially go to AWS console and select the EC2 service.



2.click on launch instance and select launch instance.

The screenshot shows the AWS Management Console interface. On the left is a navigation menu with options like 'EC2 Dashboard', 'Instances', 'Instance Types', and 'Launch Templates'. The main content area is titled 'Launch instance' and includes a 'Launch instance' button, a 'Launch instance from template' link, and a note about the region. Below this is a 'Scheduled events' section showing 'US East (N. Virginia)' with 'No scheduled events'. To the right, there's a 'Service health' section indicating 'This service is operating normally' and a 'Zones' table. The table lists four zones: us-east-1a, us-east-1b, us-east-1c, and us-east-1d, each with a corresponding Zone ID. Further right, there are promotional banners for 'Amazon GuardDuty Malware Protection', '10 Things You Can Do Today to Reduce AWS Costs', and 'Save up to 90% on EC2 with Spot Instances'. At the bottom right, there's an 'Additional information' section with links to 'Getting started guide' and 'Documentation'.

Zone name	Zone ID
us-east-1a	use1-az1
us-east-1b	use1-az2
us-east-1c	use1-az4
us-east-1d	use1-az6

3.Give the name of the instance.

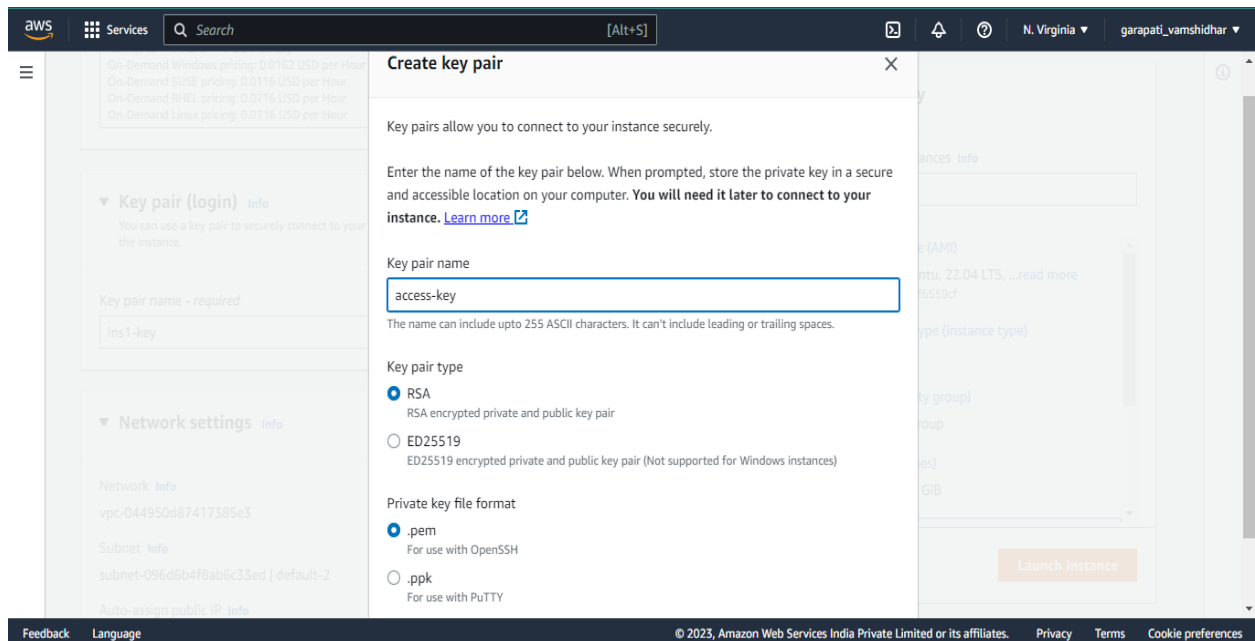
The screenshot shows the 'Launch an instance' page in the AWS Management Console. The page is titled 'Launch an instance' and includes a brief description of Amazon EC2. Below the title is a 'Name and tags' section with a text input field containing 'instance1' and a link to 'Add additional tags'. Below this is an 'Application and OS Images (Amazon Machine Image)' section with a search bar. On the right side, there's a 'Summary' section with a 'Number of instances' input field set to '1'. Below this, there are sections for 'Software Image (AMI)' (Canonical, Ubuntu, 22.04 LTS), 'Virtual server type (instance type)' (t2.micro), 'Firewall (security group)' (New security group), and 'Storage (volumes)' (1 volume(s) - 8 GiB). At the bottom right, there are 'Cancel' and 'Launch instance' buttons.

4. Now select the AMI image as ubuntu.

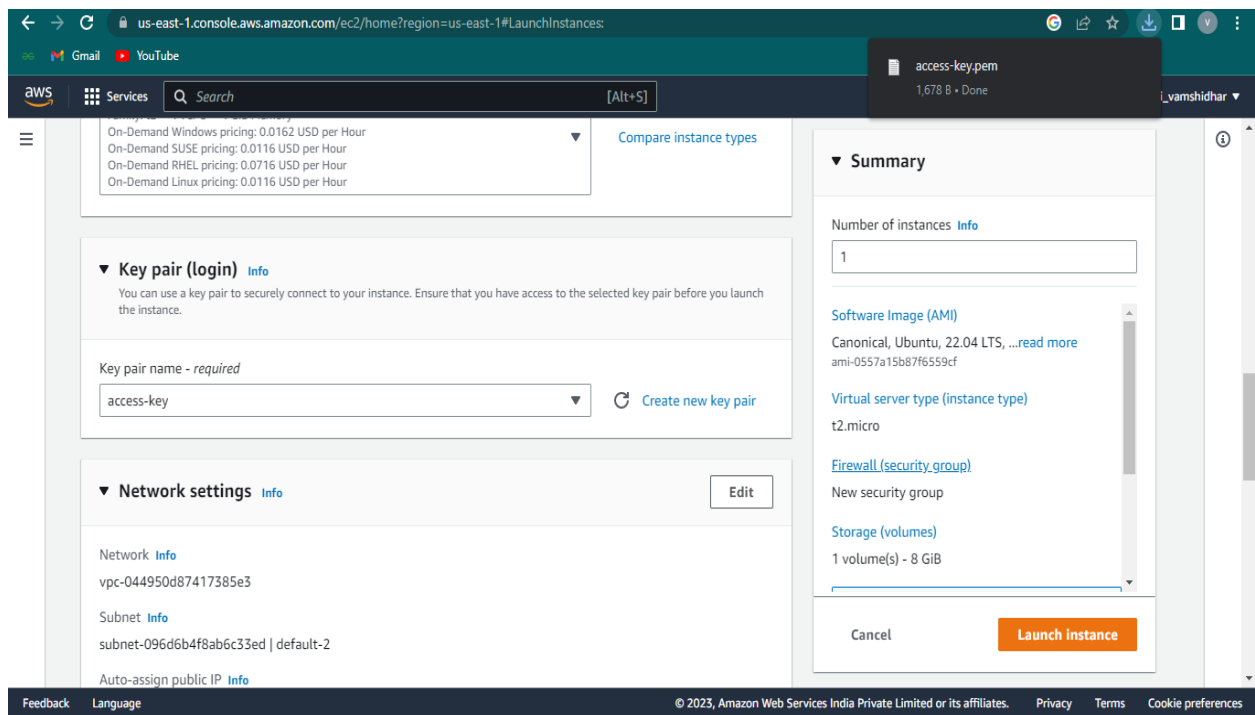
The screenshot shows the AWS Management Console interface for creating a new EC2 instance. The 'Select AMI' step is active, displaying a grid of operating system options: Amazon Linux, macOS, Ubuntu (selected), Windows, and Red Hat. Below the grid, the details for the selected 'Ubuntu Server 22.04 LTS (HVM), SSD Volume Type' AMI are shown, including its ID (ami-0557a15b87f6559cf) and architecture (64-bit (x86)). The right-hand 'Summary' panel provides a high-level overview of the configuration: 1 instance, Canonical Ubuntu 22.04 LTS AMI, t2.micro instance type, and 1 volume of 8 GiB. A 'Launch instance' button is visible at the bottom right of the summary panel.

This screenshot shows the 'Configure Instance Details' step of the EC2 instance creation process. The 'Instance type' is set to 't2.micro'. The details section on the left shows the AMI ID (ami-0557a15b87f6559cf) and architecture (64-bit (x86)). The right-hand 'Summary' panel is identical to the previous screenshot, showing 1 instance, Canonical Ubuntu 22.04 LTS AMI, t2.micro instance type, and 1 volume of 8 GiB. A 'Launch instance' button is visible at the bottom right of the summary panel.

5.click on create a key pair and give the name of the key. After clicking on create key pair then the file gets downloaded.



6.Now create security groups and allow SSH,HTTP and HTTPS traffic.



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Network settings

Network [Info](#)
vpc-044950d87417385e3

Subnet [Info](#)
subnet-096d6b4f8ab6c33ed | default-2

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

We'll create a new security group called 'launch-wizard-29' with the following rules:

- ☒ Allow SSH traffic from Anywhere 0.0.0.0/0
Helps you connect to your instance
- ☒ Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server
- ☒ Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server

Summary

Number of instances [Info](#)
1

Software Image (AMI)
Canonical, Ubuntu, 22.04 LTS, ...[read more](#)
ami-0557a15b87f6559cf

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

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

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

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7.select the required storage and click on launch instance. Now the instance will be launched.

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Configure storage

[Advanced](#)

1x 8 GiB gp2 Root volume (Not encrypted)

[Free tier eligible customers can get up to 30 GB of EBS General Purpose \(SSD\) or Magnetic storage](#) X

[Add new volume](#)

The selected AMI contains more instance store volumes than the instance allows. Only the first 0 instance store volumes from the AMI will be accessible from the instance

0 x File systems [Edit](#)

[Advanced details](#) [Info](#)

Summary

Number of instances [Info](#)
1

Software Image (AMI)
Canonical, Ubuntu, 22.04 LTS, ...[read more](#)
ami-0557a15b87f6559cf

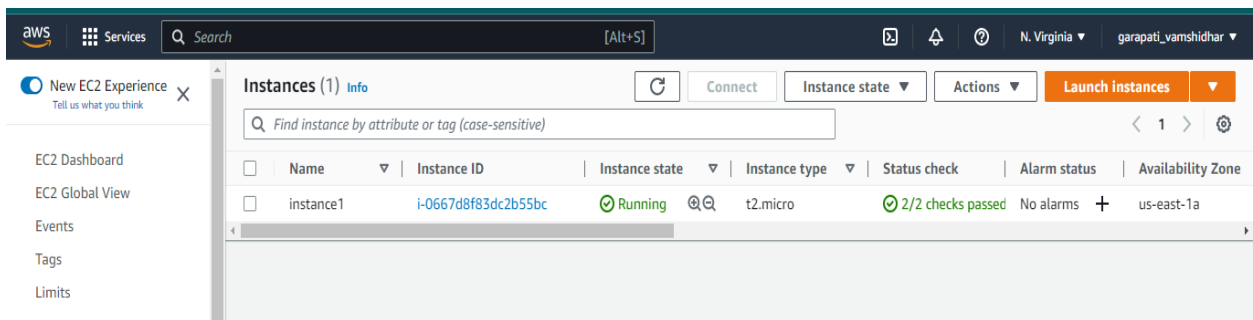
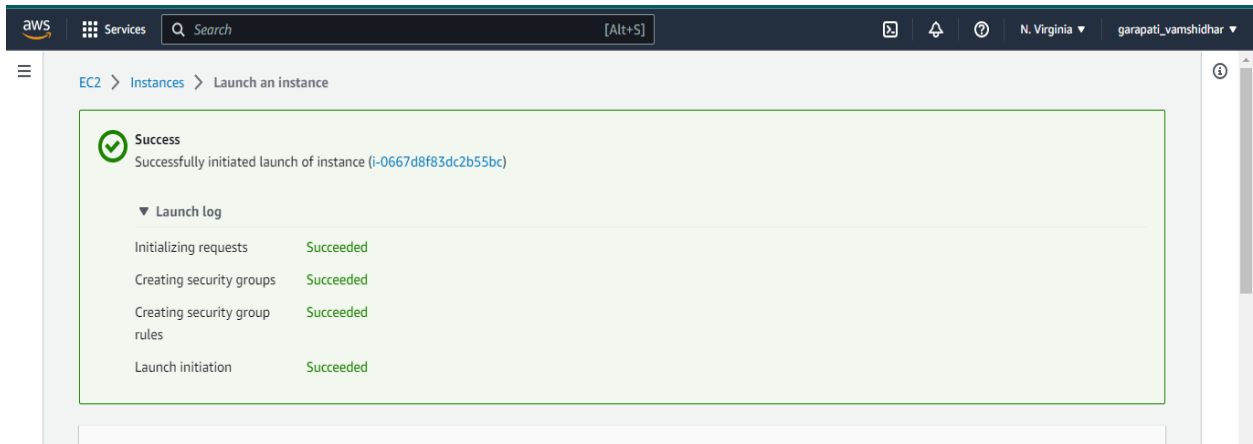
Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

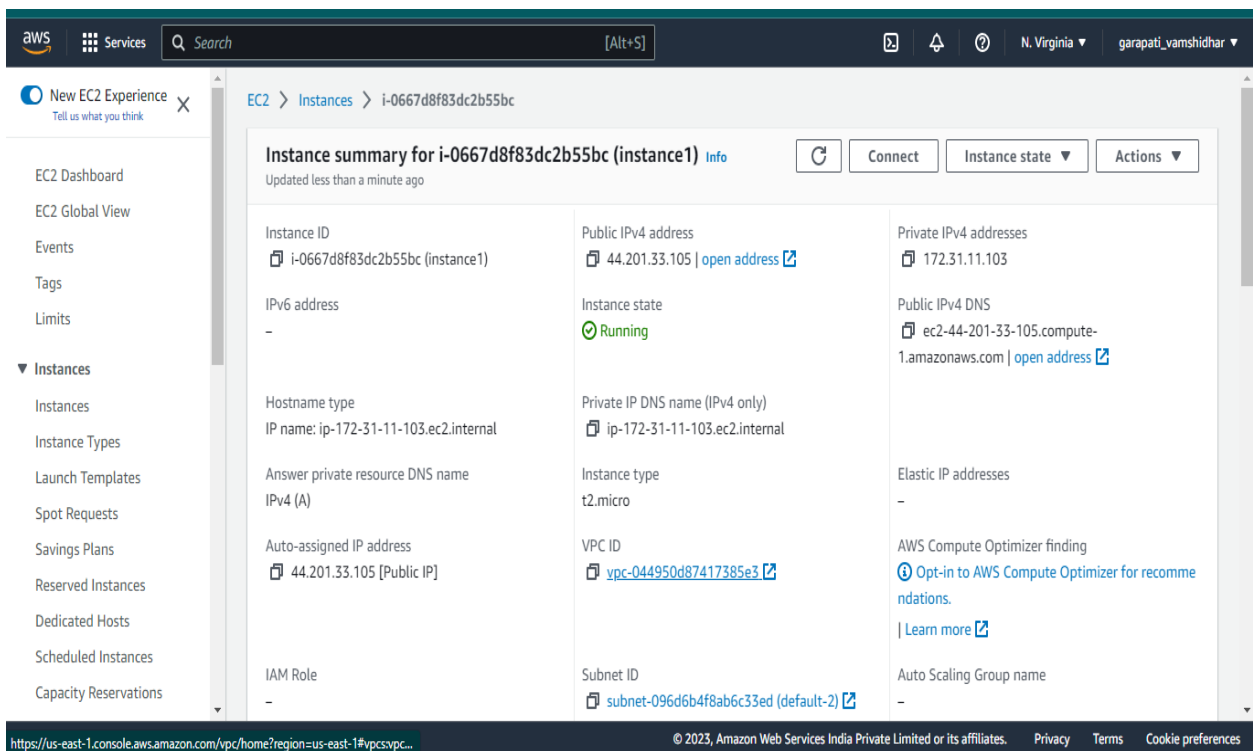
Storage (volumes)
1 volume(s) - 8 GiB

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

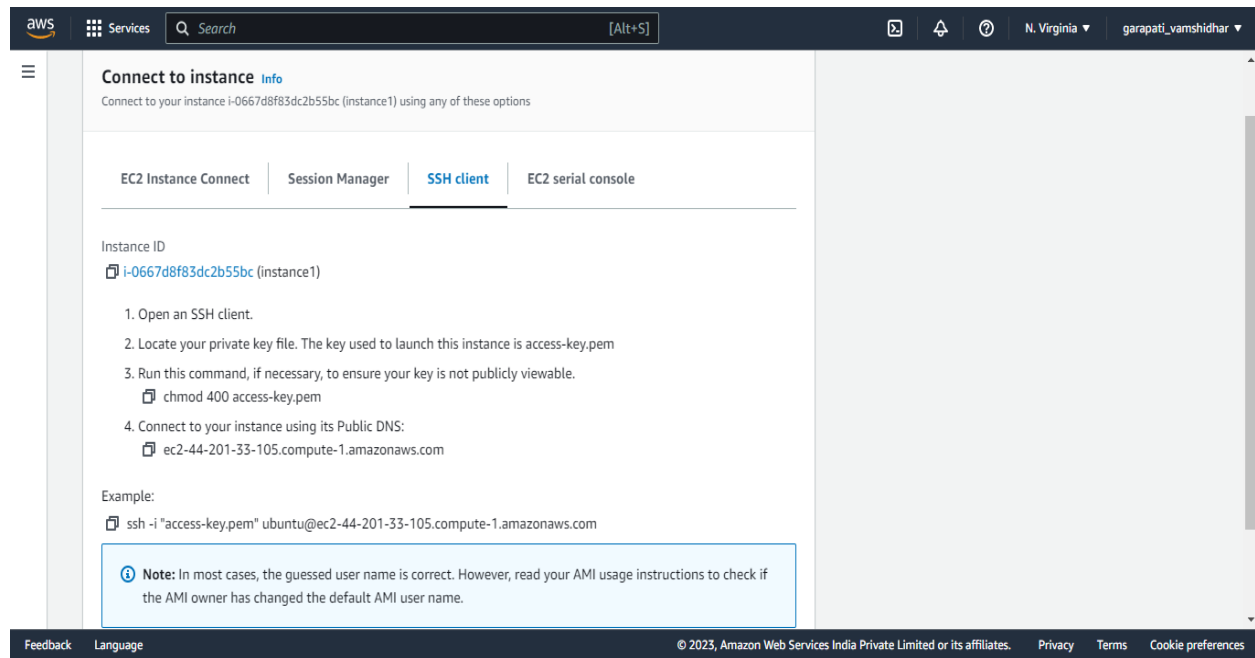
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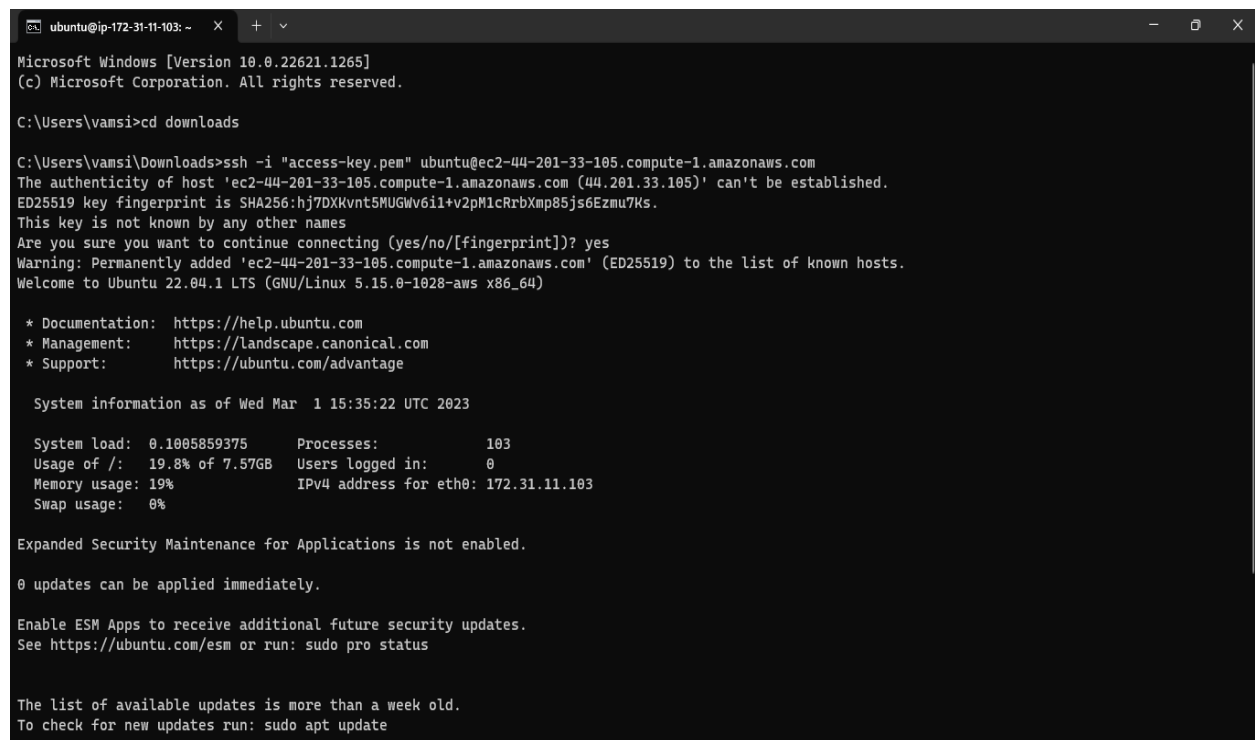
**The below screenshot will show the summary of the instance.



8. Now connect and open the SSH client and also copy the command which is shown in the example.



9. Now open the command prompt and paste the copied command. The instance gets connected.



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-172-31-11-103:~$ |
```

10. Use the following command to update.

\$sudo apt update

```
ubuntu@ip-172-31-11-103:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [107 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [646 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [135 kB]
Get:9 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [8524 B]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [582 kB]
Get:11 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [90.4 kB]
Get:12 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [694 kB]
Get:13 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [110 kB]
Get:14 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [13.4 kB]
Get:15 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [4960 B]
Get:16 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [996 B]
Get:17 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [240 B]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [905 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [199 kB]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [13.6 kB]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [624 kB]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [96.3 kB]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [580 B]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [874 kB]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [171 kB]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [17.8 kB]
Get:31 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [9672 B]
Get:32 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [3260 B]
Get:33 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [456 B]
Get:34 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [40.7 kB]
Get:35 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [9800 B]
Get:36 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [392 B]
Get:37 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:38 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [19.5 kB]
Get:39 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [14.0 kB]
Get:40 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [392 B]
Get:41 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Fetched 26.0 MB in 5s (5723 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.
ubuntu@ip-172-31-11-103:~$
```


11.To install nodejs use **\$sudo apt install nodejs**

```
ubuntu@ip-172-31-11-103:~$ sudo apt install nodejs
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

```
ubuntu@ip-172-31-11-103:~$ sudo apt install nodejs
Selecting previously unselected package javascript-common.
(Reading database ... 63605 files and directories currently installed.)
Preparing to unpack .../0-javascript-common_11+nmul_all.deb ...
Unpacking javascript-common (11+nmul) ...
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 ...
Unpacking nodejs (12.22.9~dfsg-1ubuntu3) ...
Setting up javascript-common (11+nmul) ...
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...

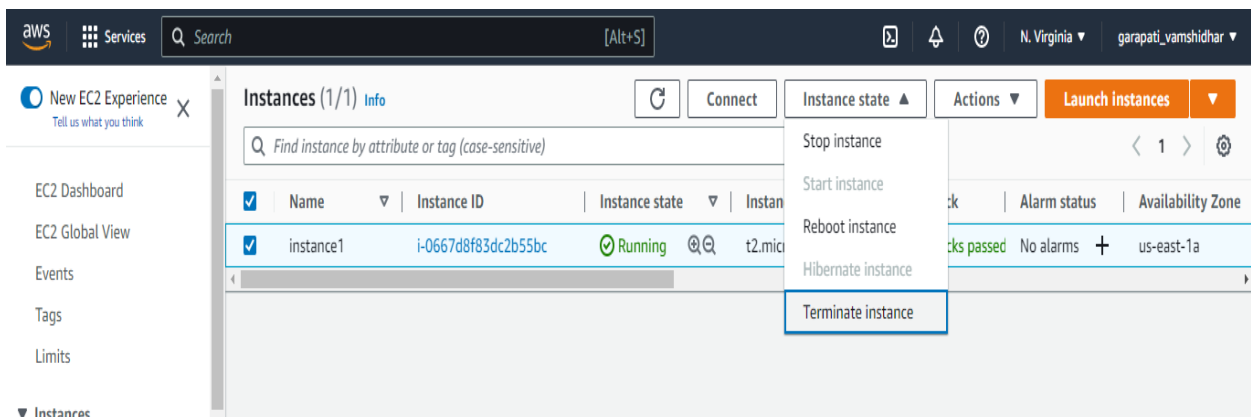
Running kernel seems to be up-to-date.

No services need to be restarted.
```

12.To check the status of nodejs use **\$node -v (or) \$node --version**

```
ubuntu@ip-172-31-11-103:~$ node -v
v12.22.9
```

13.Finally select and terminate the instance.



The screenshot shows the AWS Management Console interface. On the left, there's a sidebar with navigation links like 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Tags', and 'Limits'. The main area is titled 'Instances (1/1) Info'. It contains a table with one instance, 'instance1', which is in a 'Running' state. The instance's ID is 'i-0667d8f83dc2b55bc' and it's running on 't2.micro' instances. To the right of the table, there's an 'Actions' dropdown menu that is open, showing options: 'Stop instance', 'Start instance', 'Reboot instance', 'Hibernate instance', and 'Terminate instance'. The 'Terminate instance' option is highlighted. Above the table, there are buttons for 'Connect', 'Instance state', and 'Actions'. At the top right, there's a search bar and a 'Launch instances' button.

aws

Services

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New EC2 Experience

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

Instances (1/1) info

Refresh

Connect

Instance state

Actions

Launch instances

Find instance by attribute or tag (case-sensitive)

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input checked="" type="checkbox"/>	instance1	i-0667d8f83dc2b55bc				No alarms +	us-east-1a

Terminate instance?

On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost.

Are you sure you want to terminate these instances?

☒ i-0667d8f83dc2b55bc (instance1)

To confirm that you want to terminate the instances, choose the terminate button below. Terminating the instance cannot be undone.

Cancel

Terminate

Instance: i-0667d8f83dc2b55bc (instance1)

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New EC2 Experience

EC2 Dashboard

EC2 Global View

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Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

Instances (1) Info

Refresh

Connect

Instance state

Actions

Launch instances

Find instance by attribute or tag (case-sensitive)

Successfully terminated i-0667d8f83dc2b55bc

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	instance1	i-0667d8f83dc2b55bc	Terminated	t2.micro	-	No alarms +	us-east-1a

Select an instance

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