

ASSIGNMENT -5

Q : Create an ec2 instance with the ubuntu operating system, set all the required parameters such as security groups and key pair, and also do SSH with git bash to the running instance.

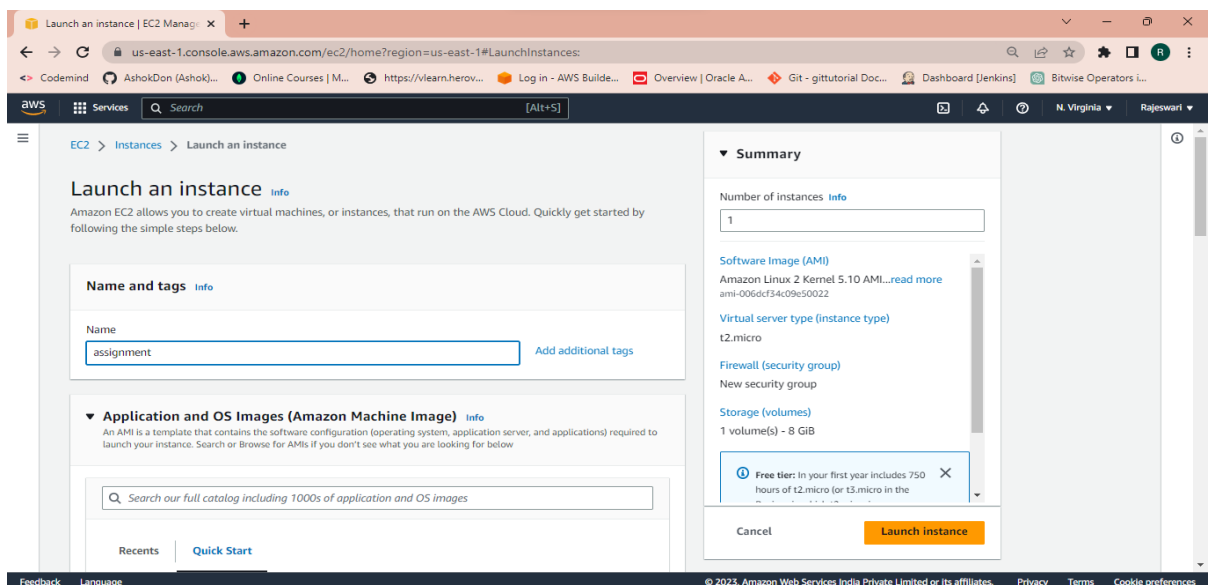
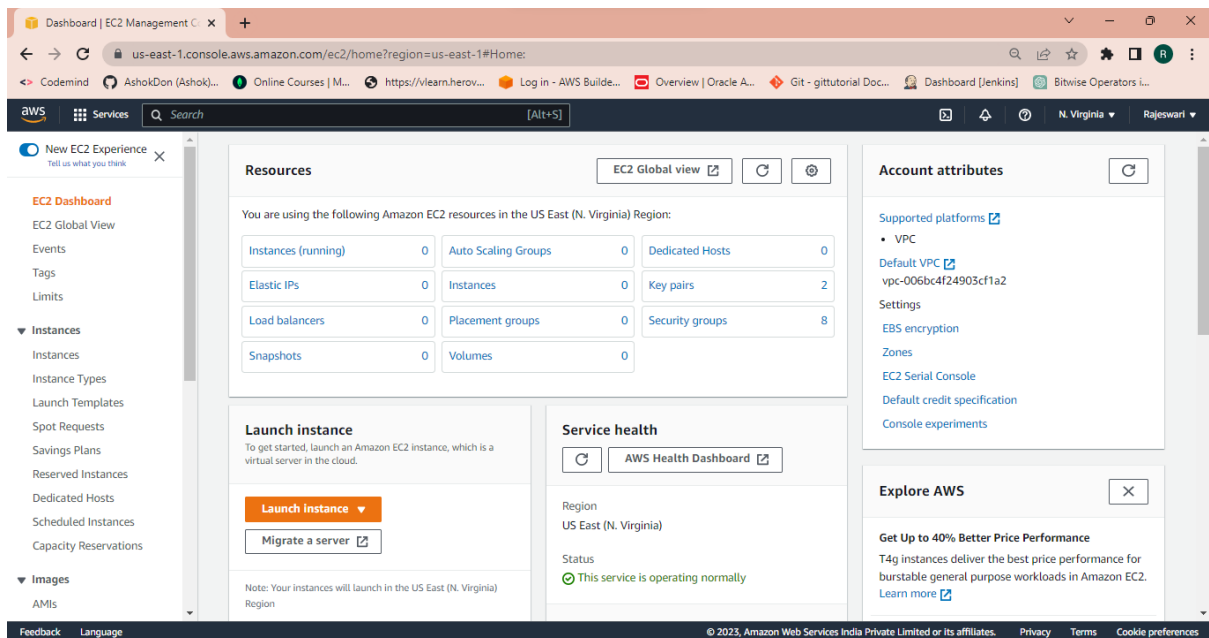
Also, install NodeJS on top of the instance and check for the version of node to cross-check if NodeJS is installed successfully.

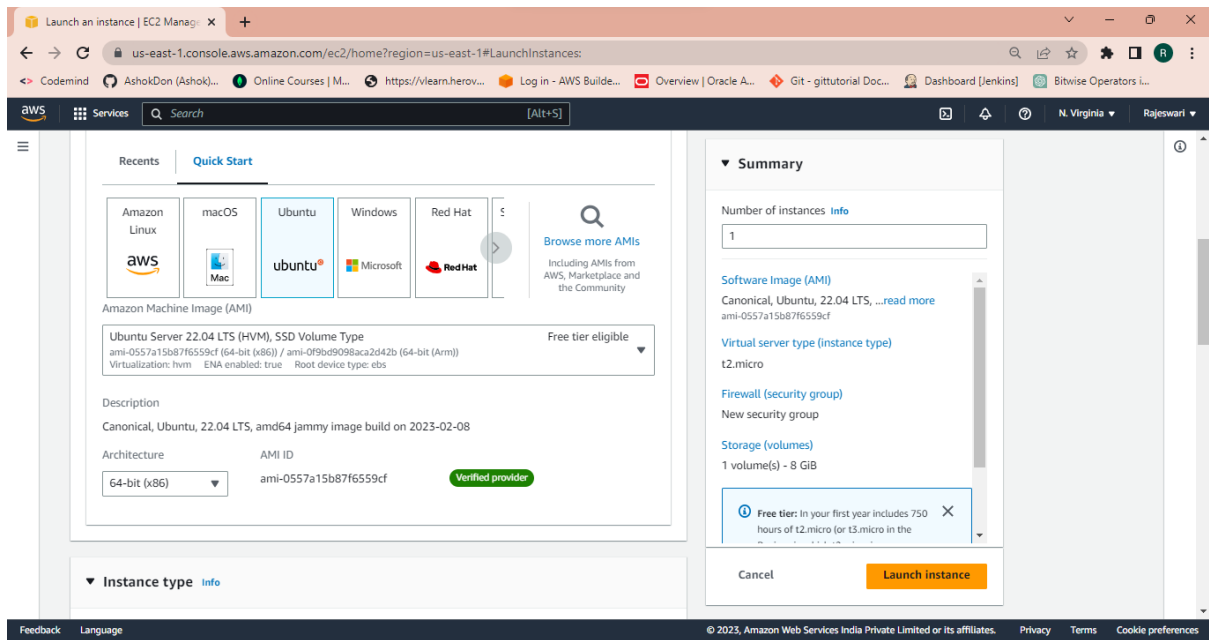
Also, configure the instance with an elastic ip to show the static public ip address.

Also, create an S3 bucket and upload an object to it and show the object URL for reference.

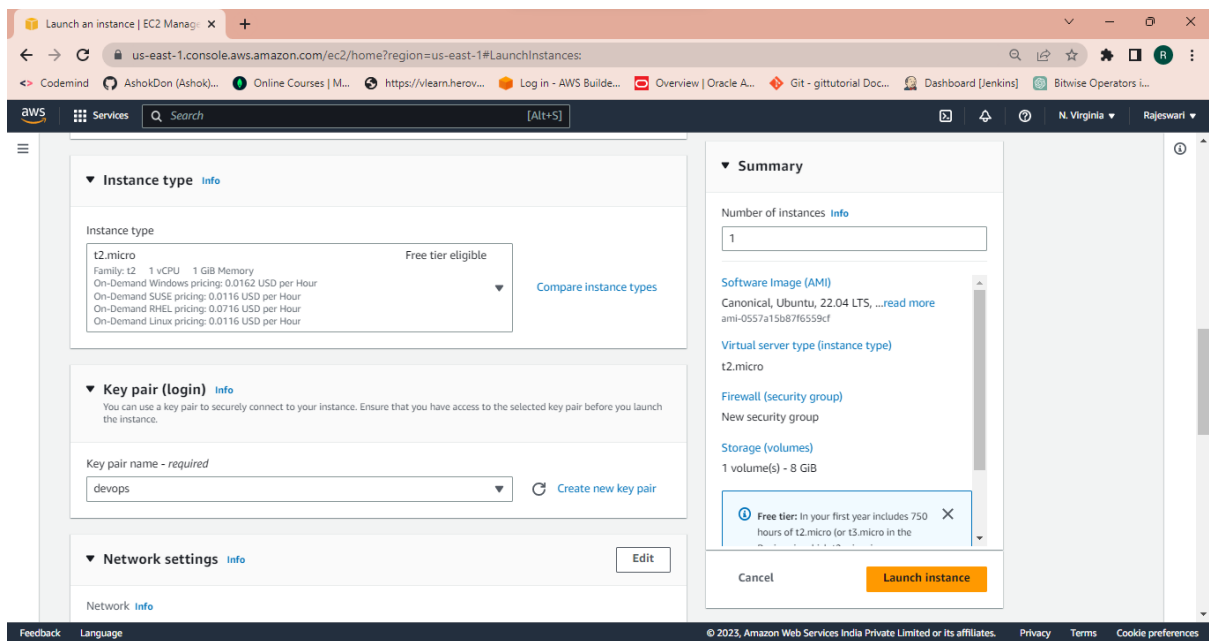
Process:

Step 1: Create an EC2 instance using ubuntu AMI

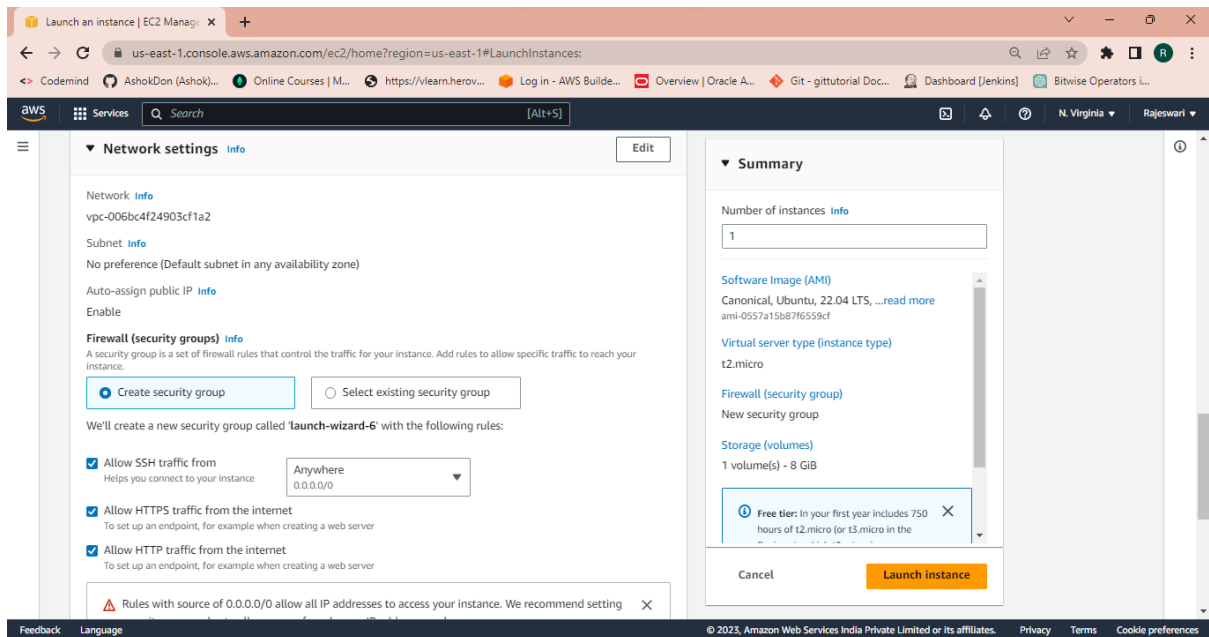




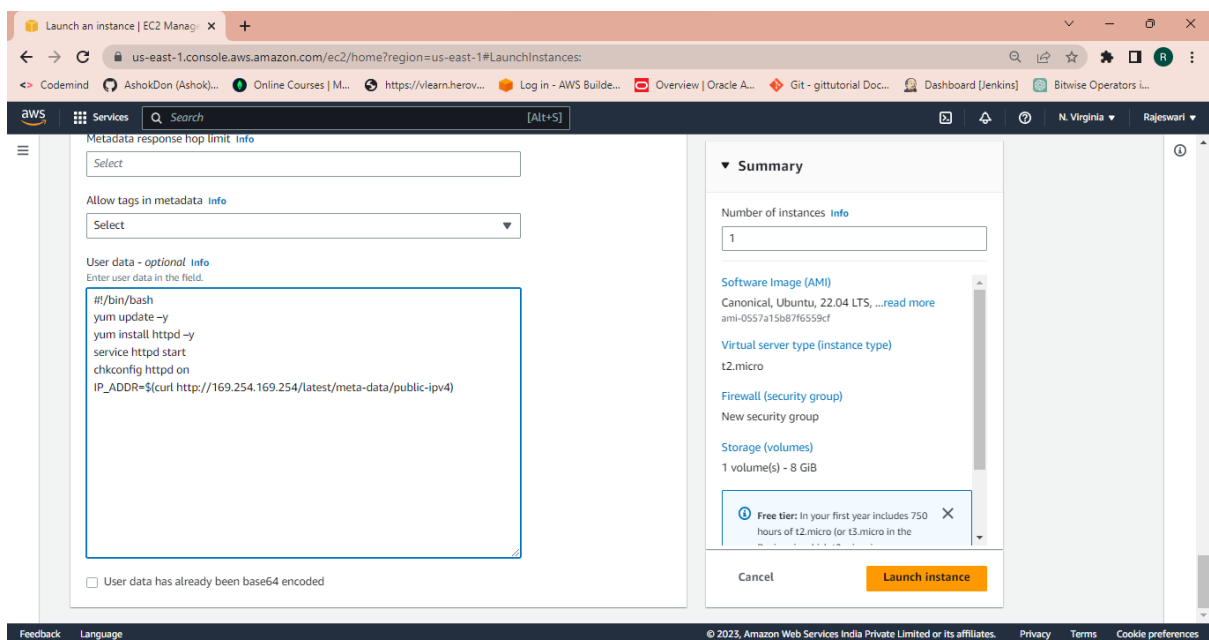
Step 2: Choose instance type and key pair

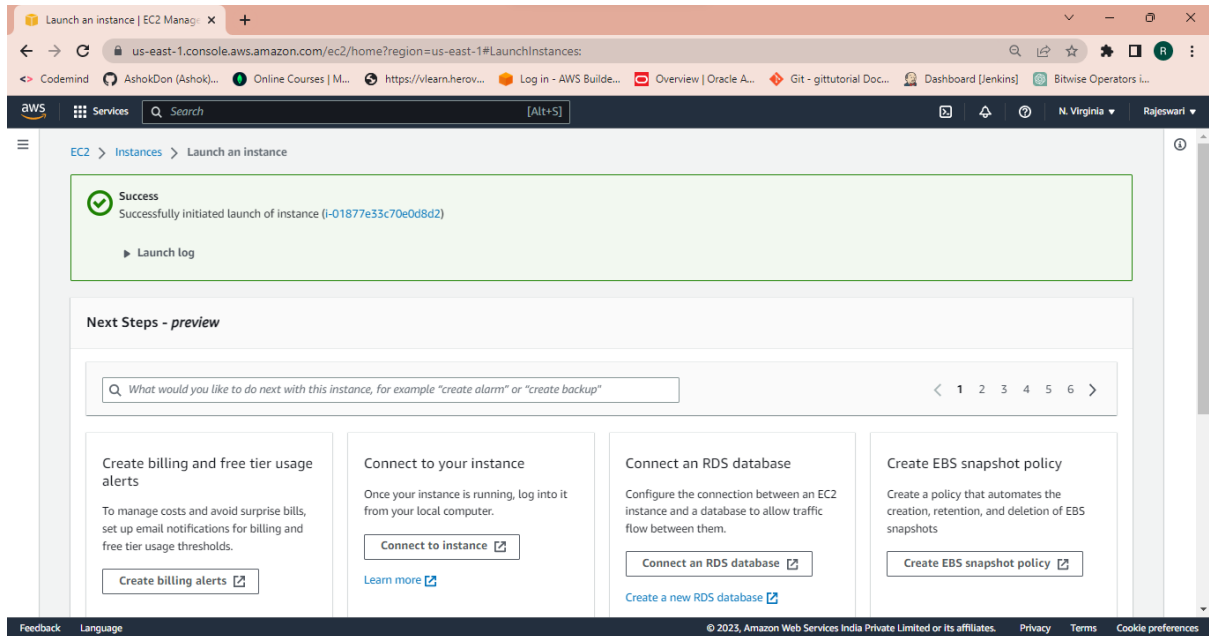


Step 3: Creating a security group

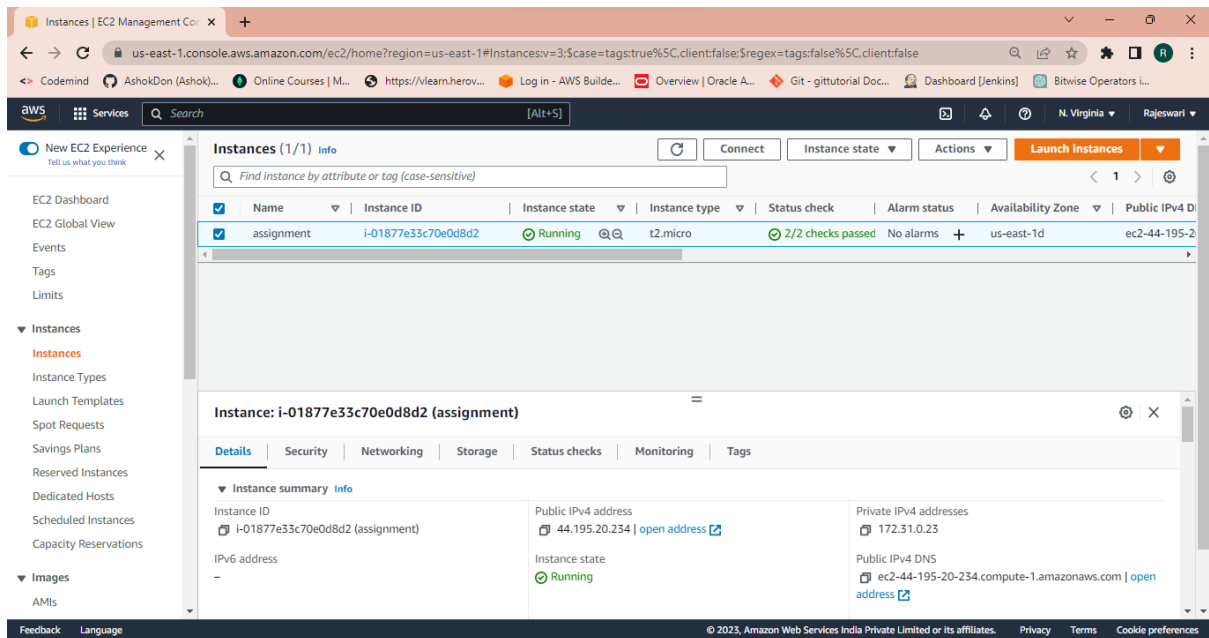


Step 4: Adding the User data in additional settings and launch instance.

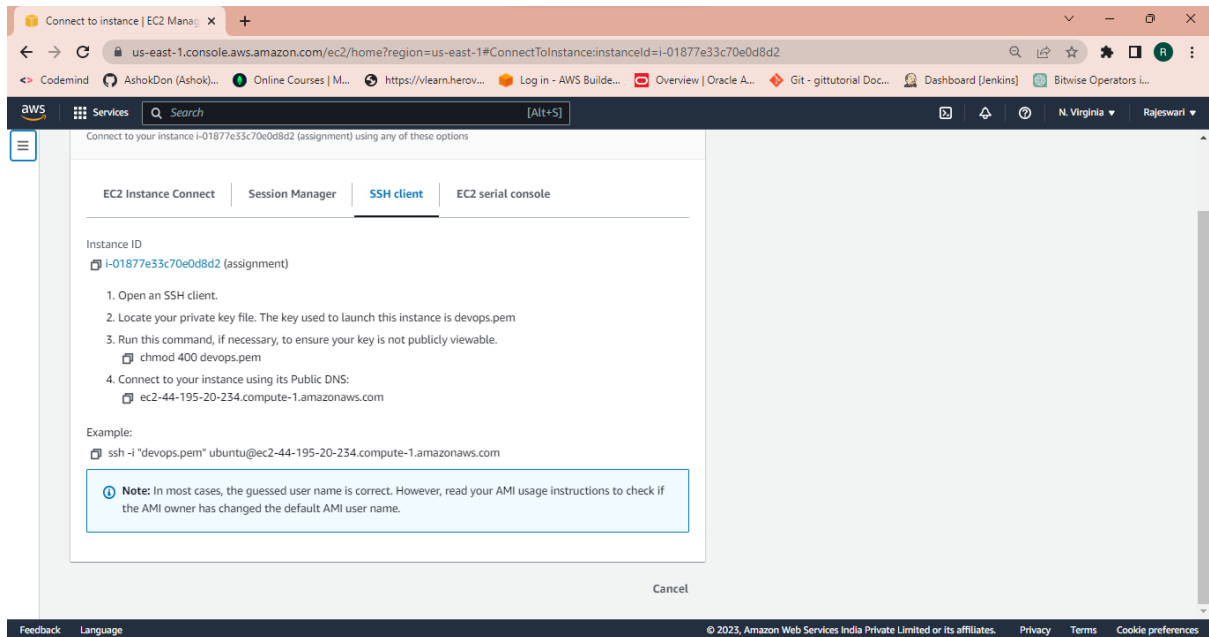




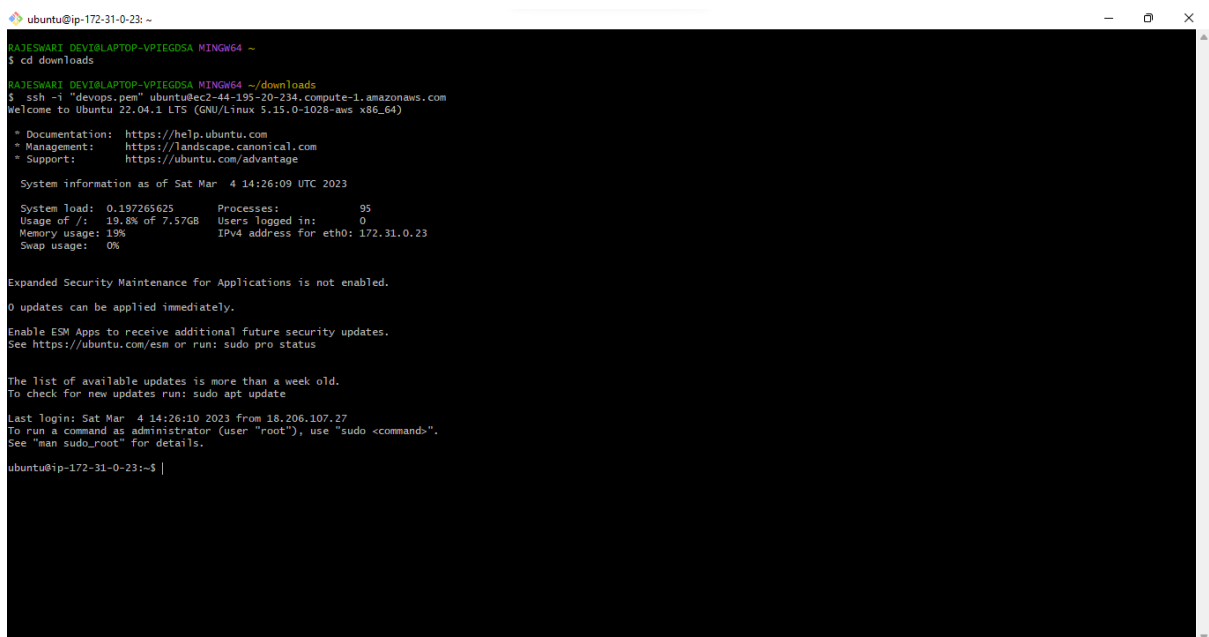
Step 5: Now check the status of the instance.



Step 6: Now connect EC2 instance using SSH client and copy the ssh link.



Step 7: Go to the git bash and open git bash cli and paste the command copied in the ssh client command. Here we see that EC2 instance is connected with git bash successfully.



Step 8: To install nodejs we to update apt package manager using the command **sudo apt update**.

```
ubuntu@ip-172-31-0-23: ~
Last login: Sat Mar 4 14:26:10 2023 from 18.206.107.27
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-0-23:~$ 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://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [680 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [139 kB]
Get:9 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [8528 B]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [637 kB]
Get:11 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [99.7 kB]
Get:12 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [696 kB]
Get:13 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [111 kB]
Get:14 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [13.5 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 [939 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [203 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 [680 kB]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [106 kB]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [584 B]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [877 kB]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [172 kB]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [17.9 kB]
Get:31 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [9696 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 [444 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 26.2 MB in 5s (5675 kB/s)
```

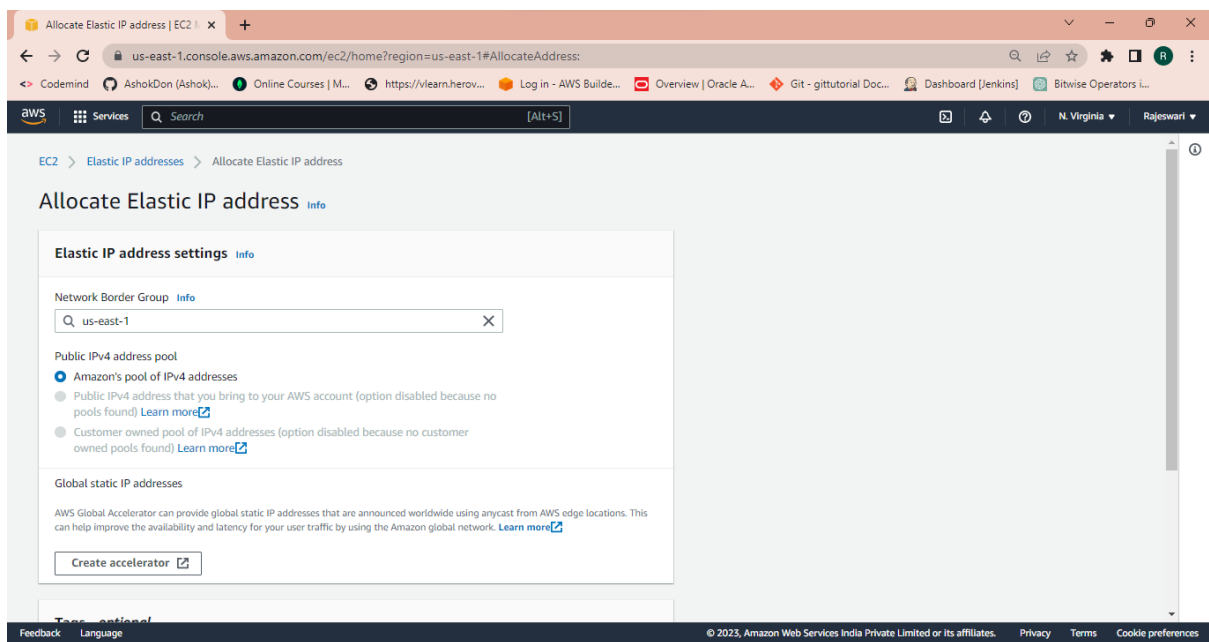
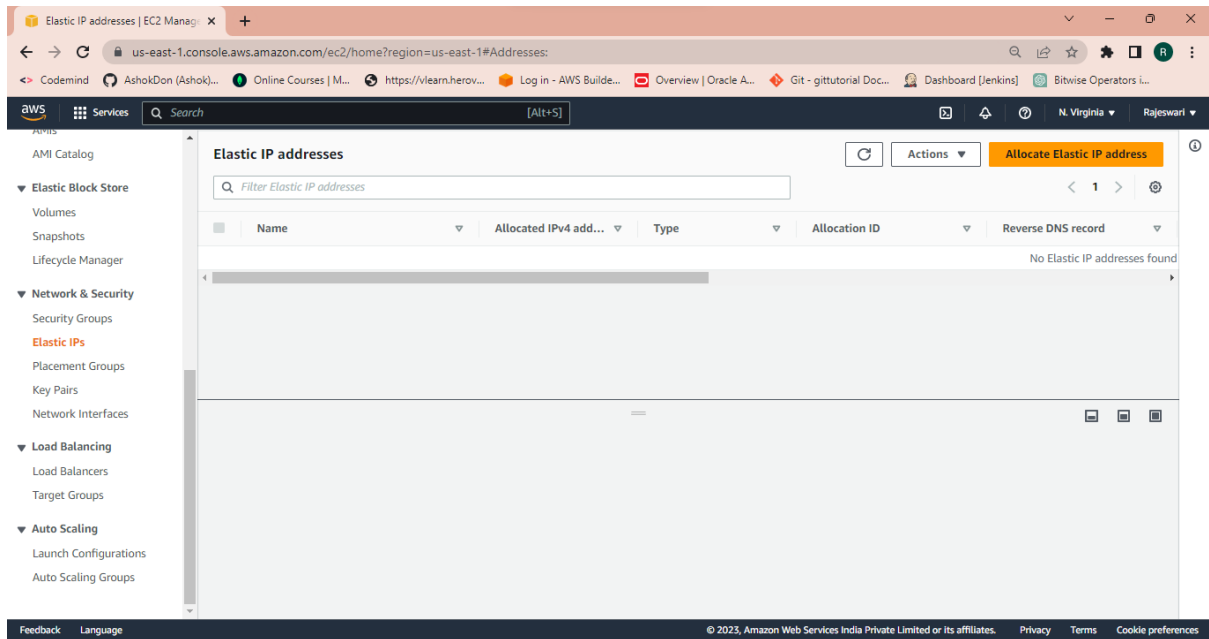
Step 9: Now install the Nodejs using the command **sudo apt install nodejs**.

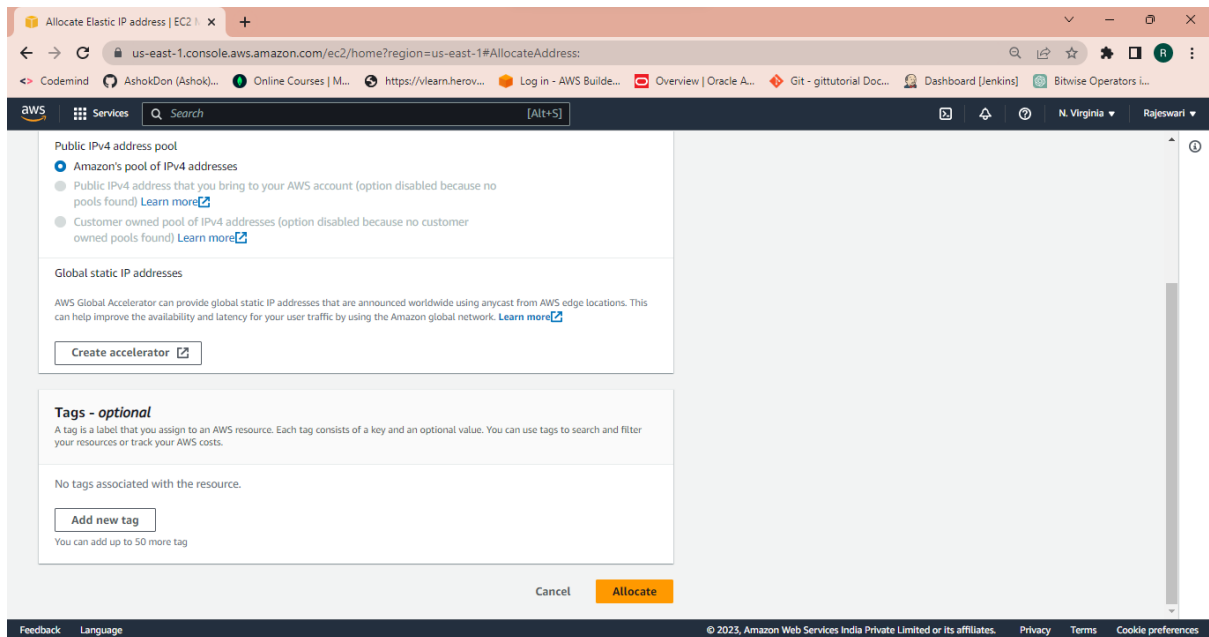
```
ubuntu@ip-172-31-0-23: ~
Get:40 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [392 B]
Get:41 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Fetched 26.2 MB in 5s (5675 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
38 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-0-23:~$ 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 38 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
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 javascript-common all 11+nmul [5936 B]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-highlight.js all 9.18.5+dfsg1-1 [367 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libc-ares2 amd64 1.18.1-1ubuntu0.22.04.1 [45.1 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libnode72 amd64 12.22.9-dfsg-1ubuntu3 [10.8 MB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 nodejs-doc all 12.22.9-dfsg-1ubuntu3 [2409 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 nodejs amd64 12.22.9-dfsg-1ubuntu3 [122 kB]
Fetched 13.7 MB in 0s (52.7 MB/s)
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_1.18.1-1ubuntu0.22.04.1_amd64.deb ...
Unpacking libc-ares2:amd64 (1.18.1-1ubuntu0.22.04.1) ...
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 (1.18.1-1ubuntu0.22.04.1) ...
```

Step 11: After installing to check the version of the nodejs using the command **node -v**.

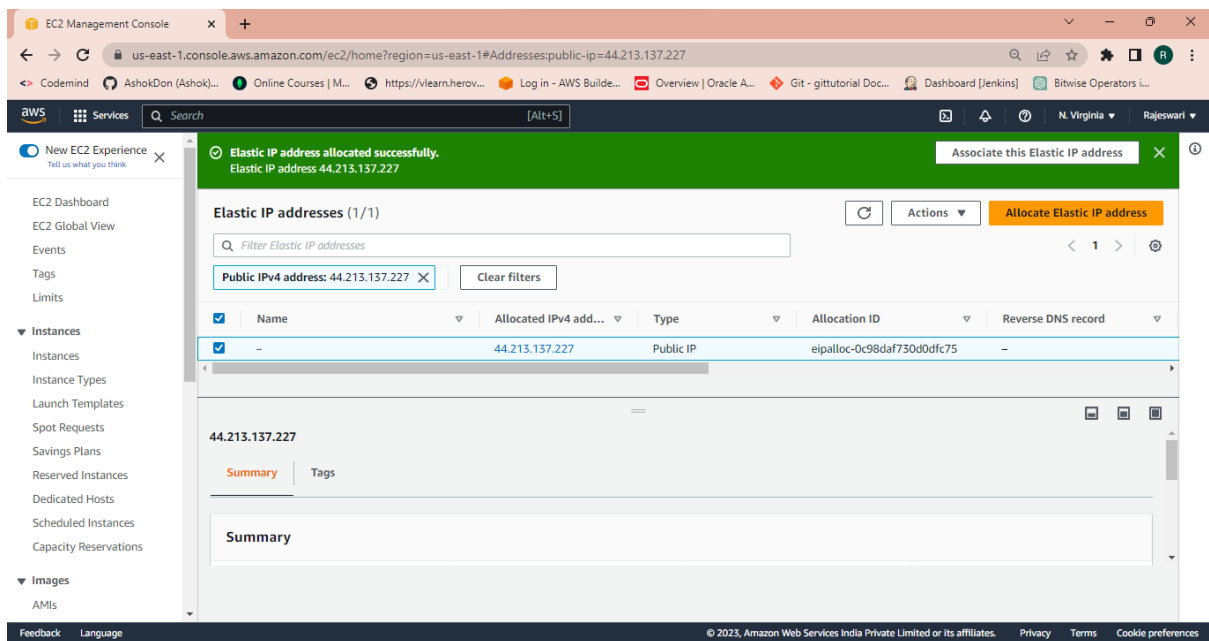
```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-0-23:~$ node -v
v12.22.9
ubuntu@ip-172-31-0-23:~$ |
```

Step12: Now allocate Elastic IP address for instance





Step 13: Now associate with the created instance.



Associate Elastic IP address | EC2

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AssociateAddress:PublicIp=44.213.137.227

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Associate Elastic IP address Info

Choose the instance or network interface to associate to this Elastic IP address (44.213.137.227)

Elastic IP address: 44.213.137.227

Resource type
Choose the type of resource with which to associate the Elastic IP address.

☒ Instance

☐ Network interface

⚠ If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

Instance

Private IP address
The private IP address with which to associate the Elastic IP address.

Reassociation
Specify whether the Elastic IP address can be reassociated with a different resource if it already associated with a resource.

☐ Allow this Elastic IP address to be reassociated

FeedbackLanguage

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EC2 Management Console

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Addresses:public-ip=44.213.137.227

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New EC2 Experience
Tell us what you think

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

Images
AMIs
AMI Catalog

Elastic Block Store
Volumes
Snapshots

🟢 Elastic IP address associated successfully.
Elastic IP address 44.213.137.227 has been associated with instance i-01877e33c70e0d8d2.

Elastic IP addresses (1/1)

☒ Public IPv4 address: 44.213.137.227

<input checked="" type="checkbox"/>	Name	Allocated IPv4 add...	Type	Allocation ID	Reverse DNS record	Associated instance ID	Private IP
<input checked="" type="checkbox"/>	-	44.213.137.227	Public IP	eipalloc-0c98daf730d0dfc75	-	i-01877e33c70e0d8d2	172.31.0.23

44.213.137.227

SummaryTags

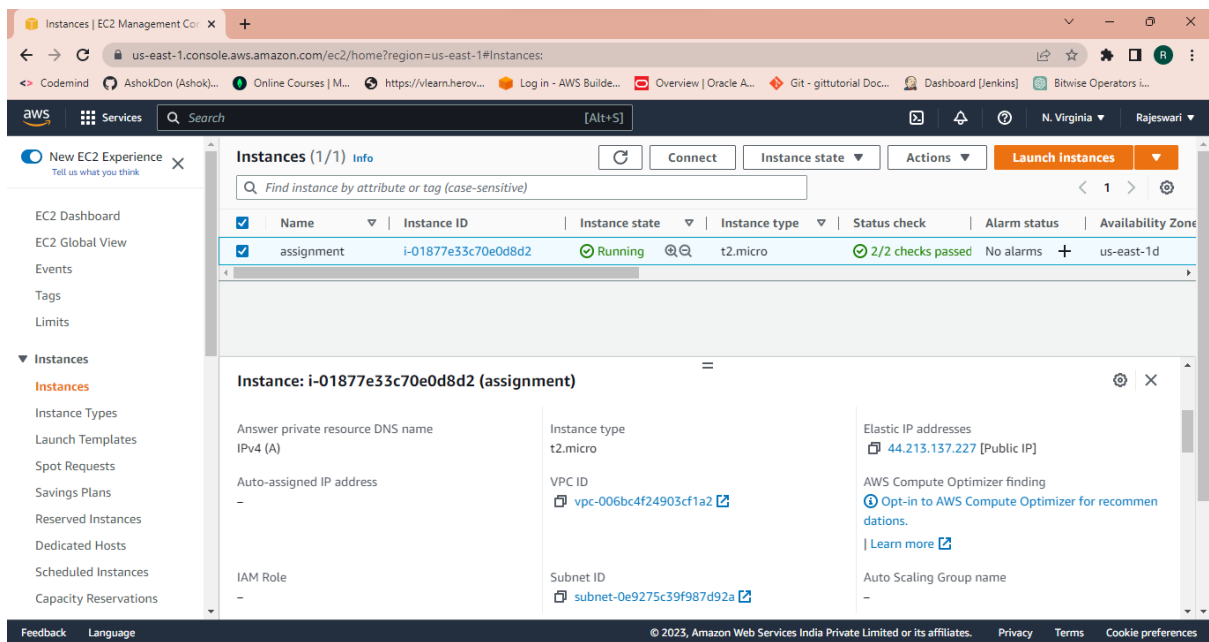
Summary

Allocated IPv4 address 44.213.137.227	Type Public IP	Allocation ID eipalloc-0c98daf730d0dfc75	Reverse DNS record -
Association ID eipassoc-0abea1545d941ae57	Scope VPC	Associated instance ID i-01877e33c70e0d8d2	Private IP address 172.31.0.23

FeedbackLanguage

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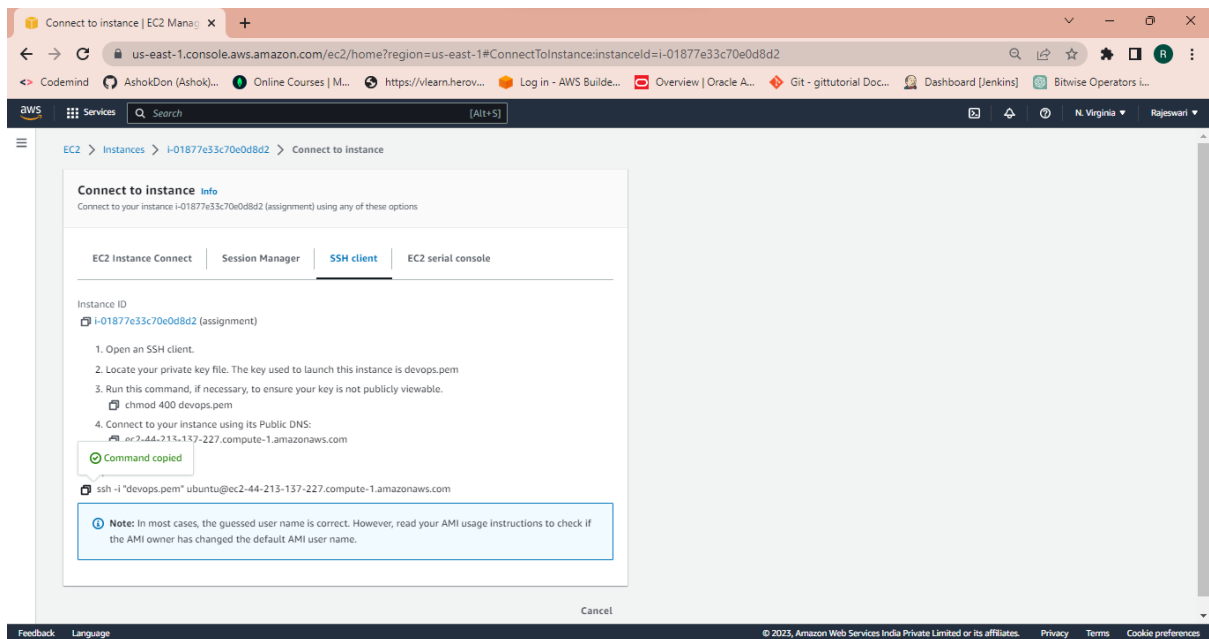
Step 14: Here we check that Elastic IP is created.



The screenshot shows the AWS Management Console interface for the 'Instances' page. The instance 'assignment' with ID 'i-01877e33c70e0d8d2' is shown in a 'Running' state. The instance details panel on the right displays the following information:

Property	Value
Answer private resource DNS name IPv4 (A)	
Auto-assigned IP address	-
IAM Role	-
Instance type	t2.micro
VPC ID	vpc-006bc4f24903cf1a2
Subnet ID	subnet-0e9275c39f987d92a
Elastic IP addresses	44.213.137.227 [Public IP]
AWS Compute Optimizer finding	Opt-in to AWS Compute Optimizer for recommendations. Learn more
Auto Scaling Group name	-

Step 15: Now connect an instance with the Git Bash.



The screenshot shows the 'Connect to instance' page in the AWS Management Console. The page provides instructions for connecting to the instance 'i-01877e33c70e0d8d2' using an SSH client. The instructions are as follows:

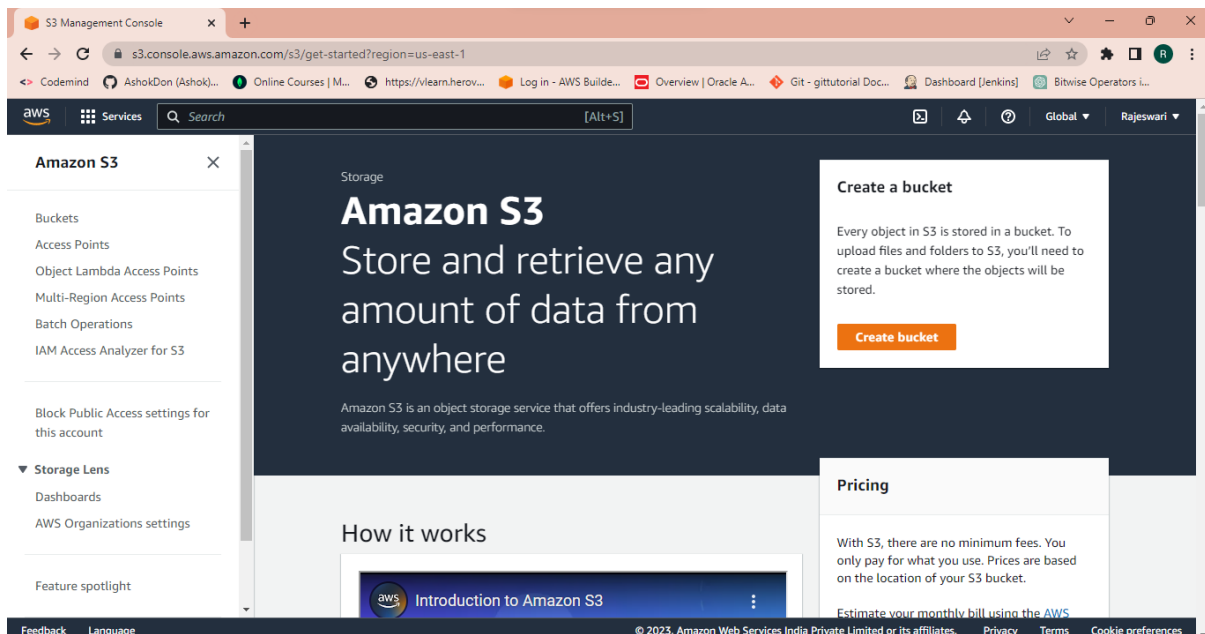
1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is devops.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
`chmod 400 devops.pem`
4. Connect to your instance using its Public DNS:
`ssh -i "devops.pem" ubuntu@ec2-44-213-137-227.compute-1.amazonaws.com`

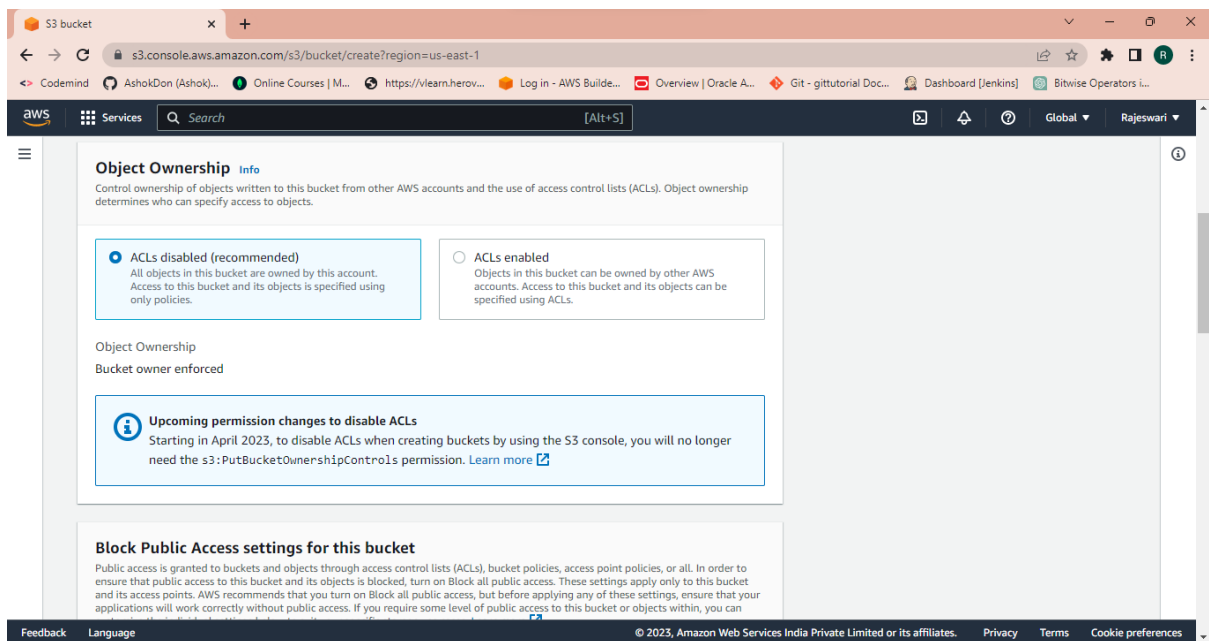
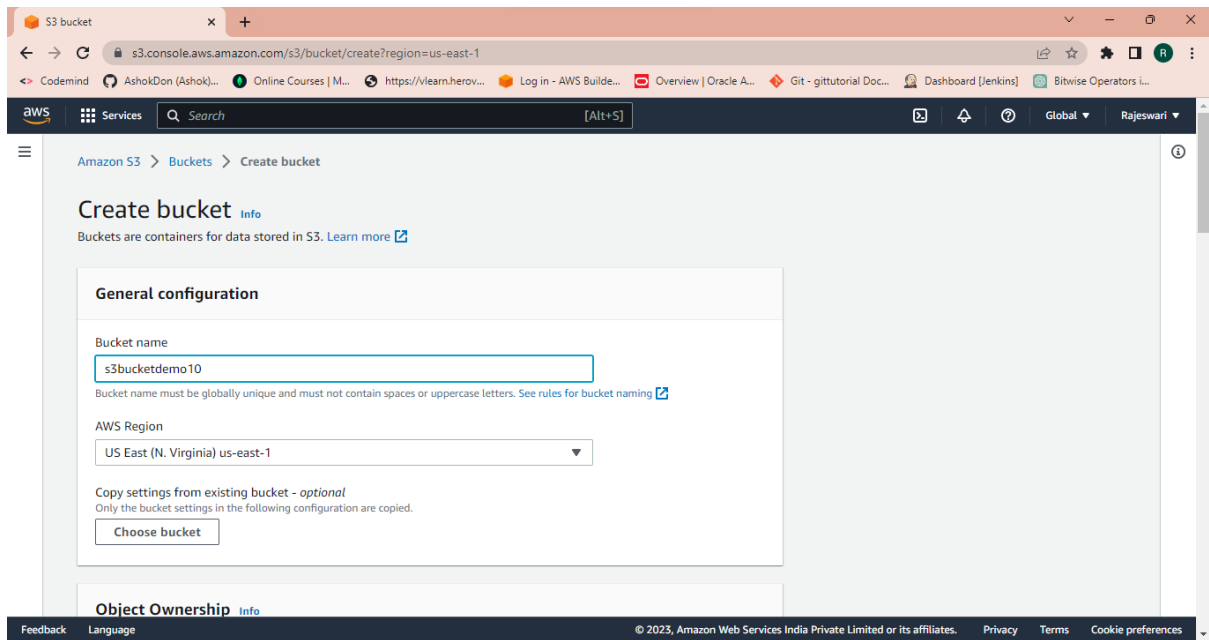
A green checkmark indicates that the command has been copied. A note at the bottom states: "Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name."

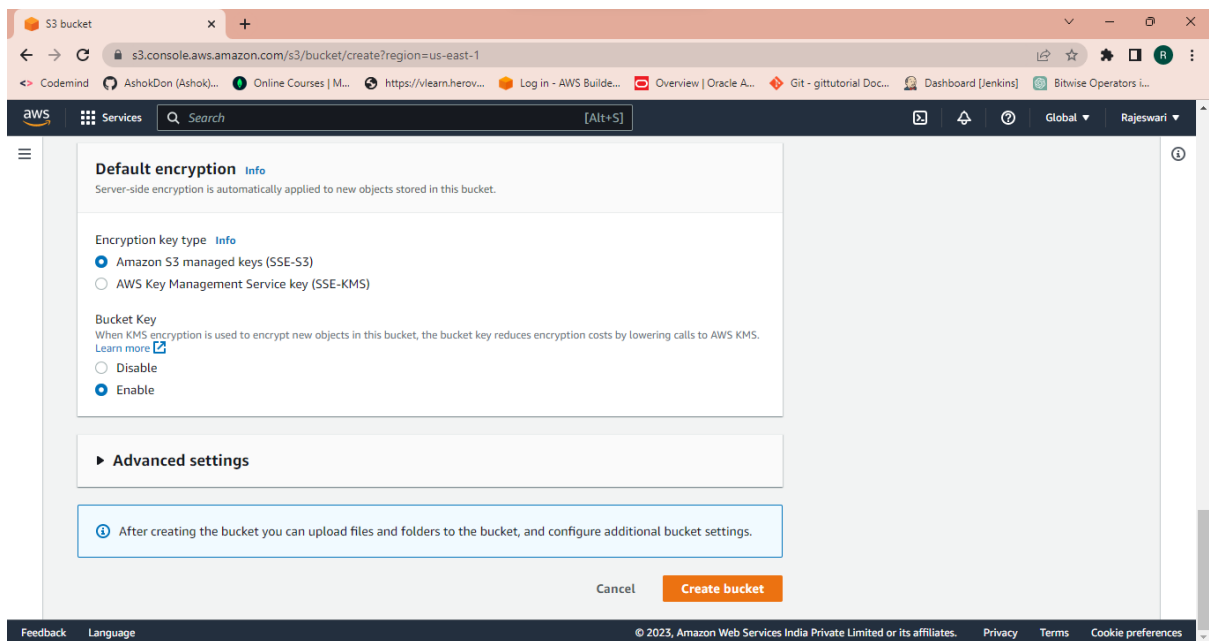
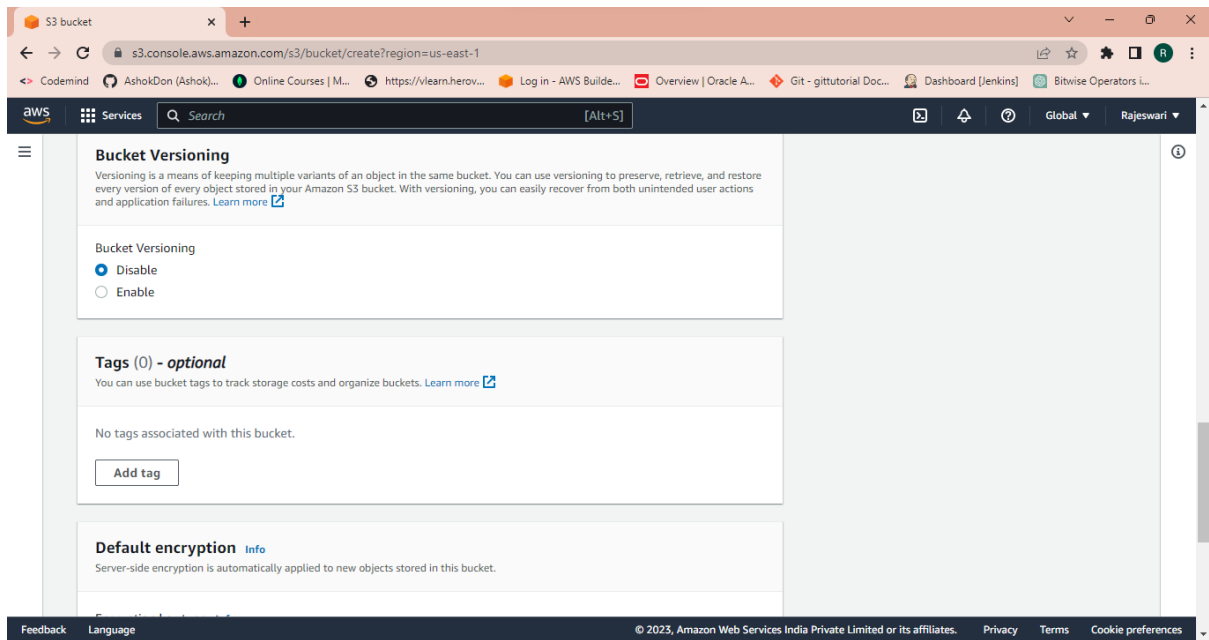
Step 16: Here we check that Elastic Ip address instance and configuring the IP address

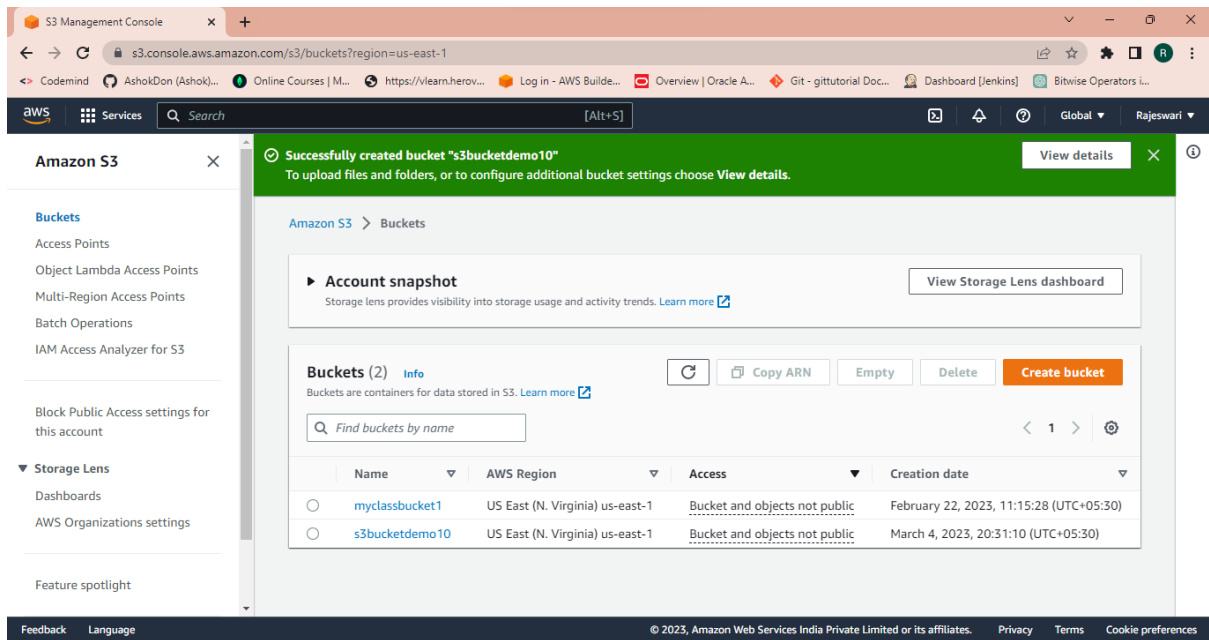
```
ubuntu@ip-172-31-0-23: ~  
RAJESWARI DEV@LAPTOP-VP1EGD5A MINGW64 ~  
$ cd downloads  
RAJESWARI DEV@LAPTOP-VP1EGD5A MINGW64 ~/downloads  
$ chmod 400 devops.pem  
RAJESWARI DEV@LAPTOP-VP1EGD5A MINGW64 ~/downloads  
$ ssh -i "devops.pem" ubuntu@ec2-44-213-137-227.compute-1.amazonaws.com  
The authenticity of host 'ec2-44-213-137-227.compute-1.amazonaws.com (44.213.137.227)' can't be established.  
ED25519 key fingerprint is SHA256:3wr0S6mhuxatmRoG2pV5XgI0IMCcaAhrjTLwz4JbmeY.  
This host key is known by the following other names/addresses:  
  ~/.ssh/known_hosts:5: ec2-44-195-20-234.compute-1.amazonaws.com  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added 'ec2-44-213-137-227.compute-1.amazonaws.com' (ED25519) 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 Sat Mar  4 14:40:00 UTC 2023  
  
System load:  0.0          Processes:    101  
Usage of /:   23.1% of 7.57GB   Users logged in:  1  
Memory usage: 22%          IPv4 address for eth0: 172.31.0.23  
Swap usage:   0%  
  
Expanded Security Maintenance for Applications is not enabled.  
  
96 updates can be applied immediately.  
18 of these updates are standard security updates.  
To see these additional updates run: apt list --upgradable  
  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
  
Last login: Sat Mar  4 14:27:06 2023 from 49.37.149.135  
ubuntu@ip-172-31-0-23:~$  
  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
  
Last login: Sat Mar  4 14:40:01 2023 from 49.37.149.135  
ubuntu@ip-172-31-0-23:~$ pwd  
/home/ubuntu  
ubuntu@ip-172-31-0-23:~$ |
```

Step 17: Now we are creating S3 bucket

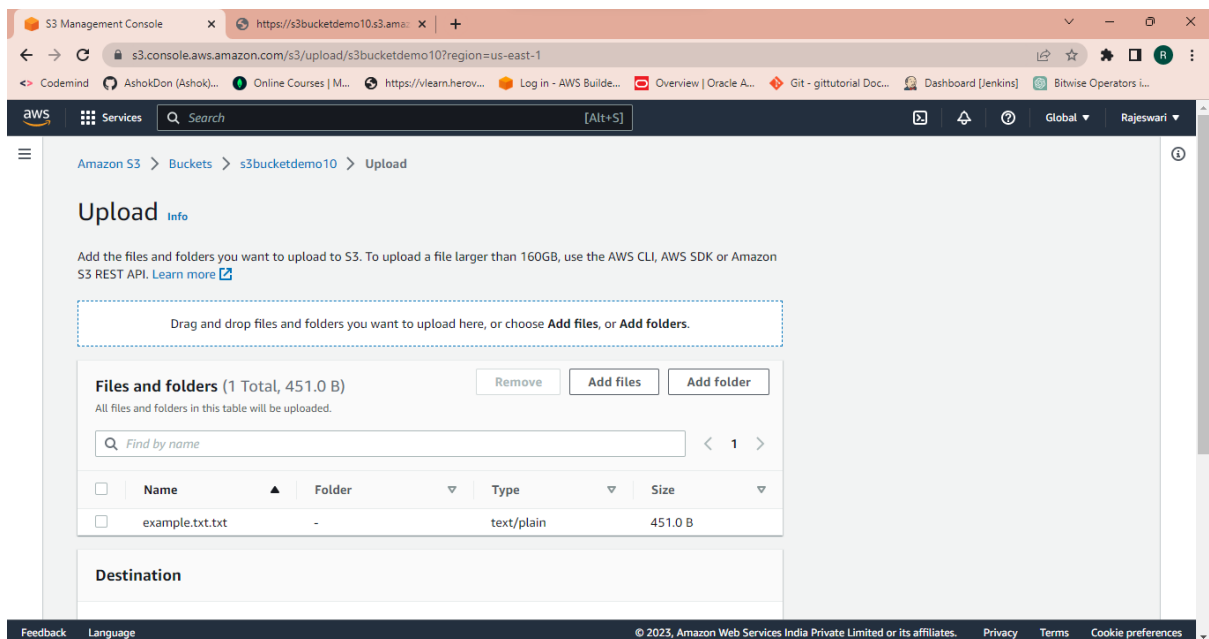


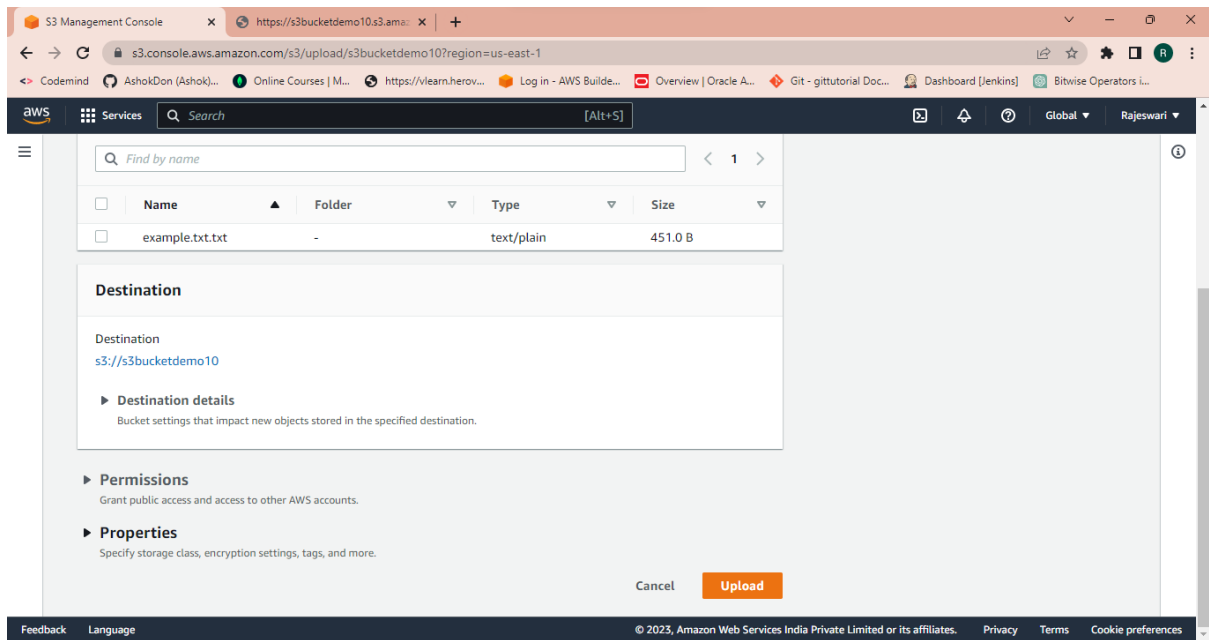




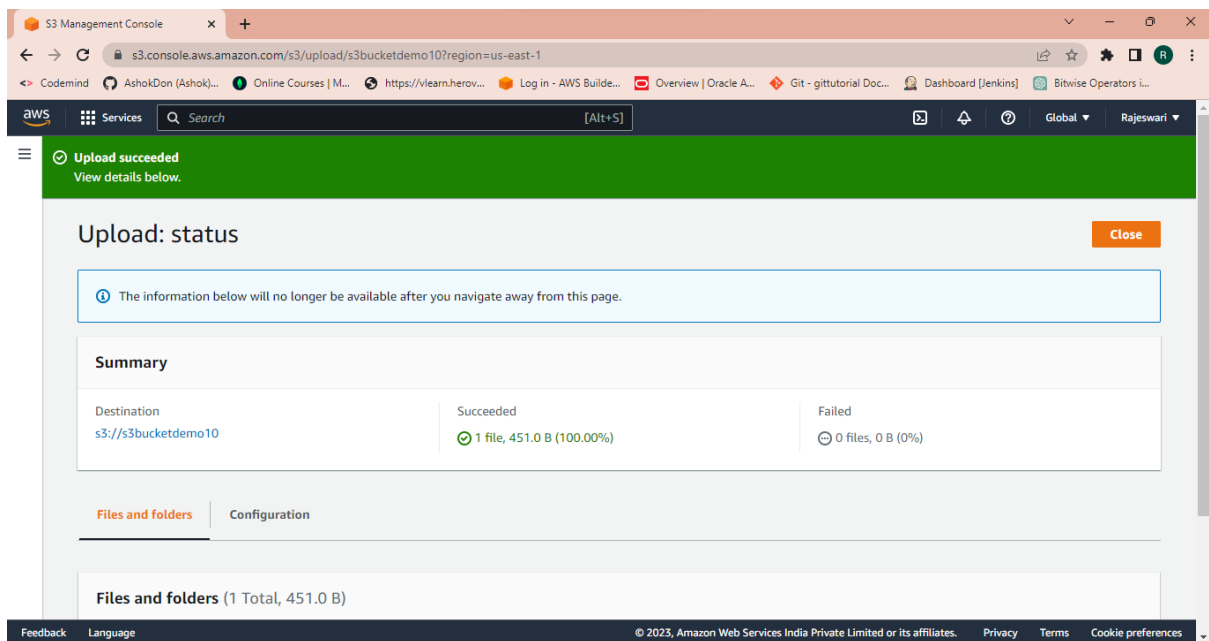


Step 18: Now upload a file in the bucket.

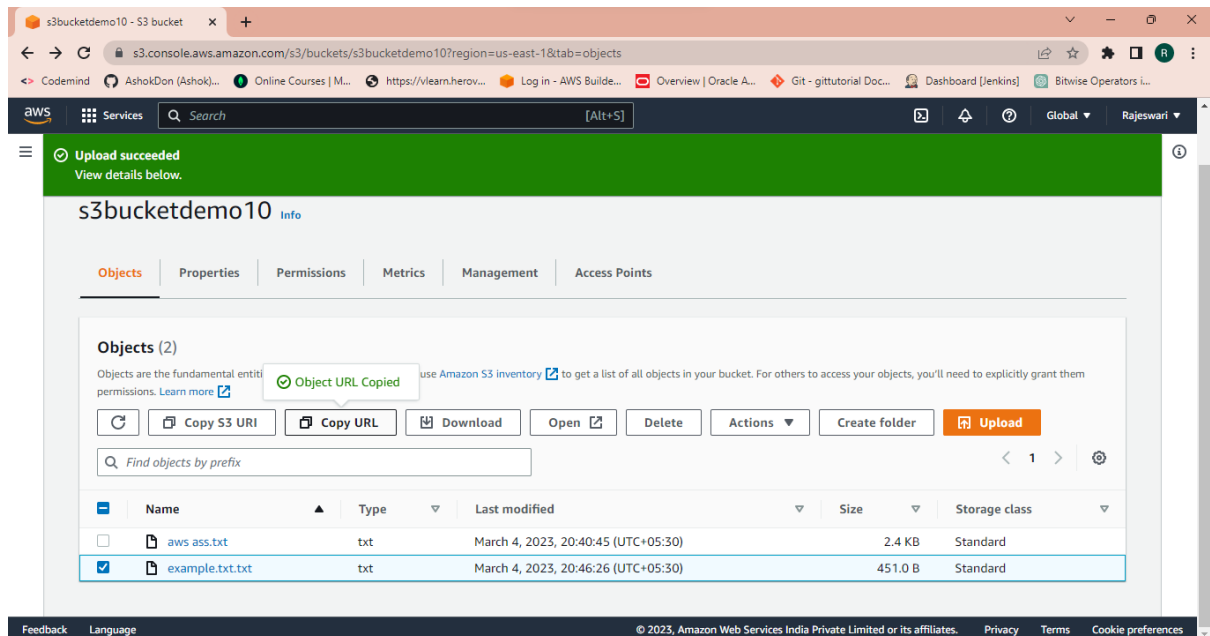




Its uploaded successfully.

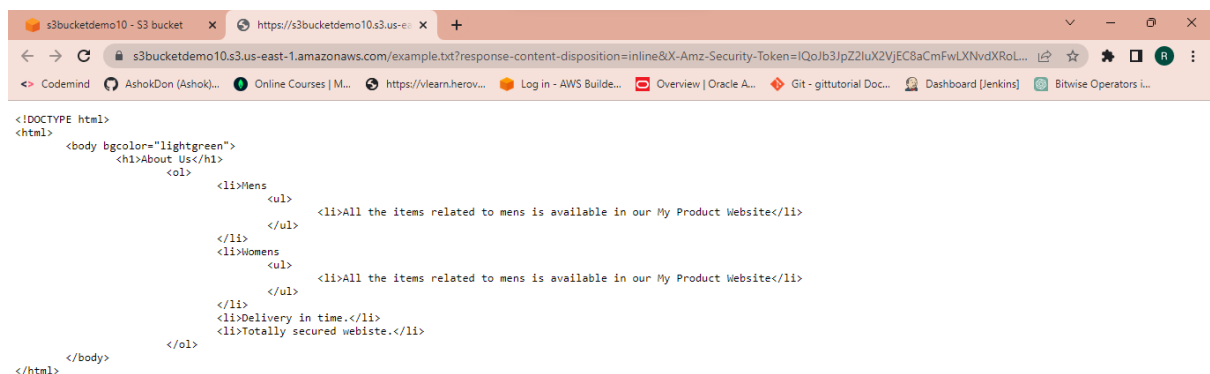


Step 19: Now copy the URL of the object and open in the browser.



Step 20: Here is the link of the object and data.

<https://s3bucketdemo10.s3.amazonaws.com/example.txt>



<https://github.com/Rajeswaridevi123/assignment1.git>

K.R.V.RAJESWARI DEVI