

SVKM'S NMIMS Nilkamal School of Mathematics, Applied Statistics & Analytics Master of Science (Statistics & Data Science)

Practical-1 Infrastructure as a service using AWS

Name: Shreya Nadkarni

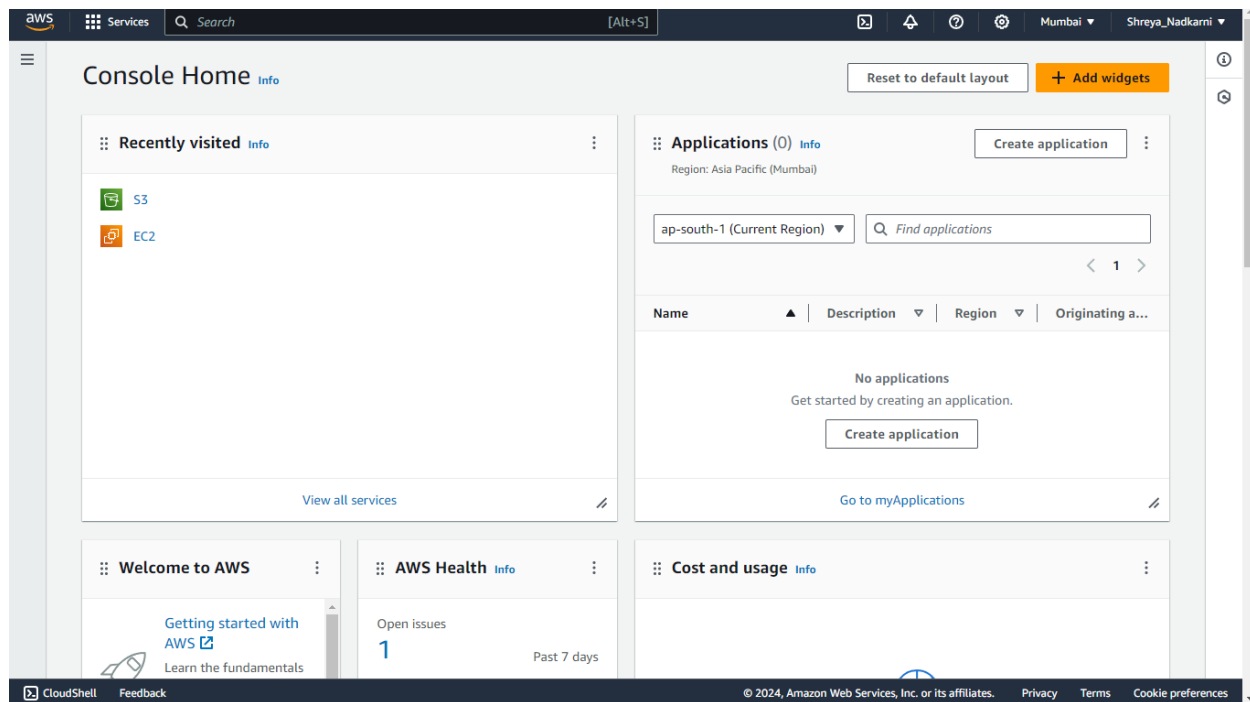
SAP ID: 86062300047

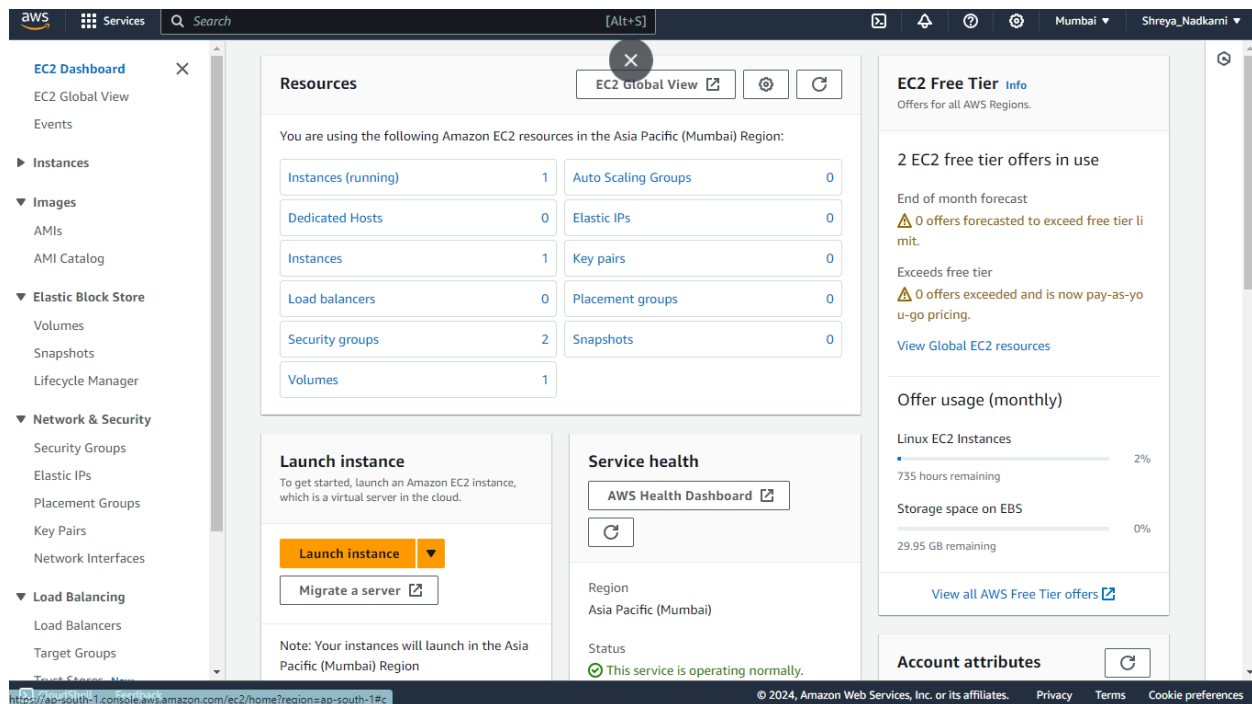
Roll No: A042

Ques 1

1. Launch an EC2 Instance:

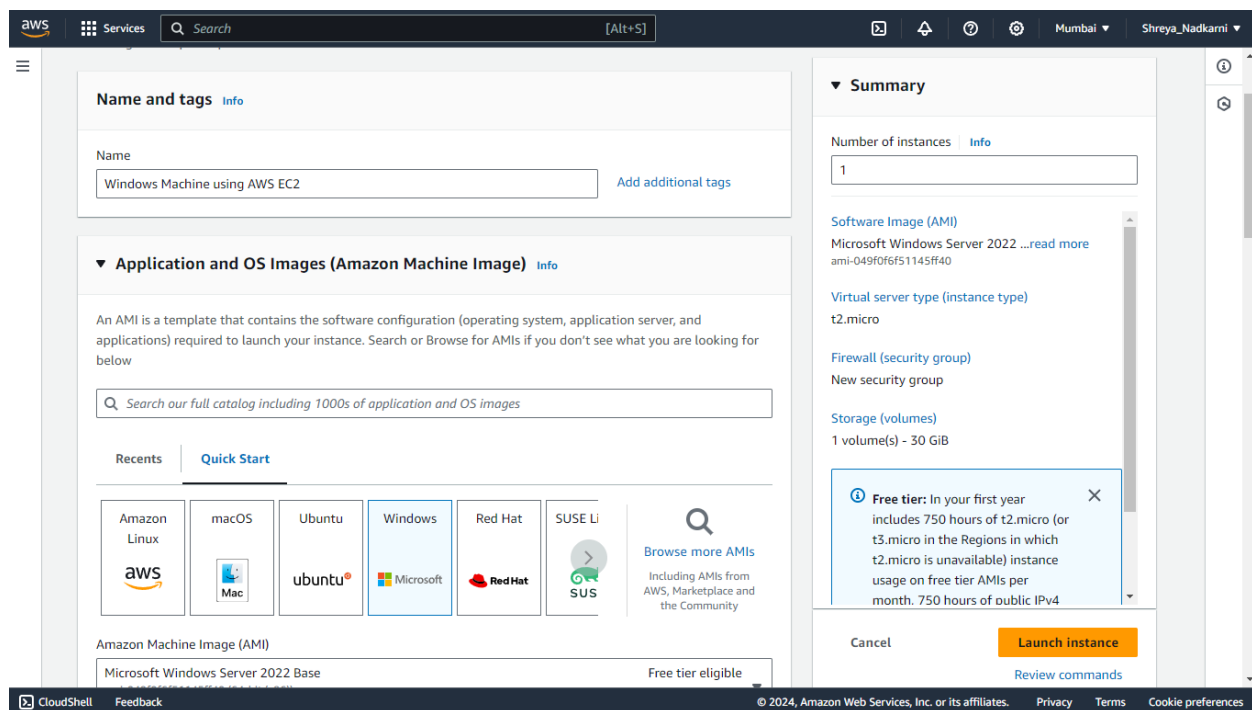
- Navigate to the EC2 Dashboard.
- Click on "Launch Instance".





2. Choose an Amazon Machine Image (AMI):

- Select a Windows AMI.



3. Configure Instance Details:

- Configure the instance details, such as the number of instances, network settings, and IAM role (if needed). Default settings are typically fine for a basic setup.

4. Review and Launch:

- Review your settings and click "Launch".

- Select an existing key pair or create a new key pair. Download the key pair file (.pem), as you will need it to access your instance.

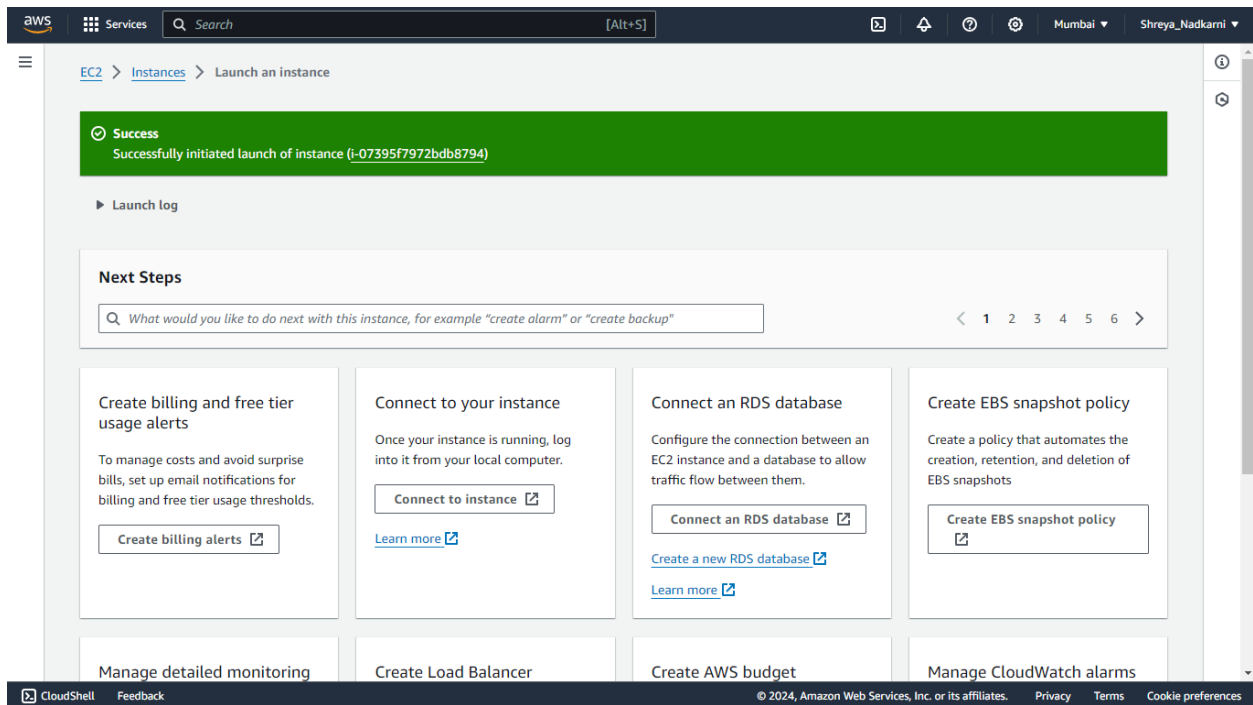
The screenshot shows the 'Create key pair' dialog box in the AWS Management Console. The dialog is titled 'Create key pair' and has a close button (X) in the top right corner. It contains the following fields and options:

- Key pair name:** A text input field with the value 'key3'. Below the field, it says: 'Key pairs allow you to connect to your instance securely. The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.'
- Key pair type:** Two radio button options:
 - ☒ **RSA**
RSA encrypted private and public key pair
 - ☐ **ED25519**
ED25519 encrypted private and public key pair (Not supported for Windows instances)
- Private key file format:** Two radio button options:
 - ☒ **.pem**
For use with OpenSSH
 - ☐ **.ppk**
For use with PuTTY

At the bottom of the dialog, there is a yellow warning box that says: 'When created, store the private key in a secure and accessible location.' Below this, there are two buttons: 'Cancel' and 'Create key pair' (highlighted in orange).

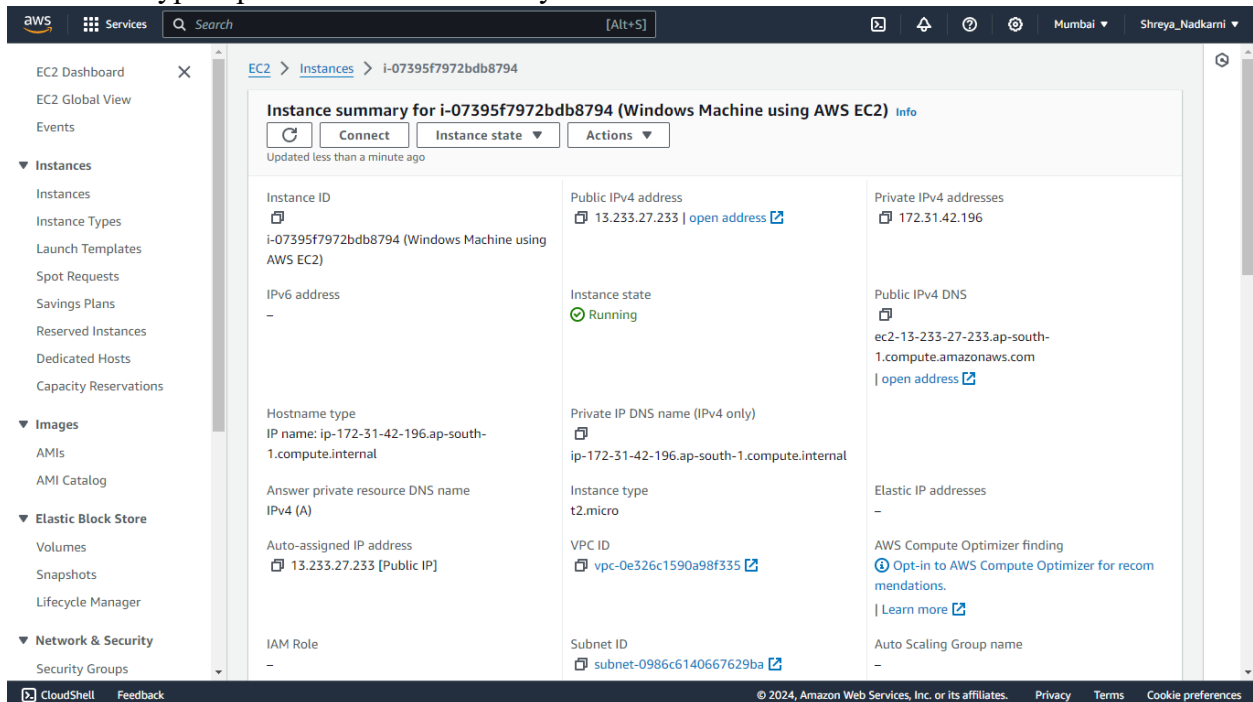
The screenshot shows the 'Launch instance' progress bar in the AWS Management Console. The progress bar is blue and shows a progress of 79%. Below the progress bar, there is a 'Details' link. The main content area displays the following text:

Please wait while we launch your instance.
Do not close your browser while this is loading.



5. Connect to Your Instance:

- After the instance status changes to "running", select the instance.
- Click on "Connect", then "RDP client".
- Download the Remote Desktop File and get the default password by clicking "Get Password" (you'll need the key pair file for decryption).
- Open the downloaded Remote Desktop File and enter the administrator username and decrypted password to connect to your Windows instance.



aws

Services

Search

[Alt+S]

Mumbai

Shreya_Nadkarni

Connect to instance

Info

Connect to your instance i-07395f7972bdb8794 (Windows Machine using AWS EC2) using any of these options

Session Manager

RDP client

EC2 serial console

Instance ID

i-07395f7972bdb8794 (Windows Machine using AWS EC2)

Connection Type

Connect using RDP client

Download a file to use with your RDP client and retrieve your password.

Connect using Fleet Manager

To connect to the instance using Fleet Manager Remote Desktop, the SSM Agent must be installed and running on the instance. For more information, see [Working with SSM Agent](#)

You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:

Download remote desktop file

When prompted, connect to your instance using the following username and password:

Public DNS

ec2-13-233-27-233.ap-south-1.compute.amazonaws.com

Username

Administrator

Password

Get password

CloudShell

Feedback

© 2024, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

Connect to instance | EC2 | ap-s

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#ConnectToInstance:instanceId=i-07395f7972bdb8794;previousPlace=GetWindowsPassword

aws

Services

Search

[Alt+S]

Mumbai

Shreya_Nadkarni

Connect to instance

Info

Connect to your instance i-07395f7972bdb8794 (Windows Machine using AWS EC2) using any of these options

Session Manager

RDP client

EC2 serial console

Instance ID

i-07395f7972bdb8794 (Windows Machine using AWS EC2)

Connection Type

Connect using RDP client

Download a file to use with your RDP client and retrieve your password.

Connect using Fleet Manager

To connect to the instance using Fleet Manager Remote Desktop, the SSM Agent must be installed and running on the instance. For more information, see [Working with SSM Agent](#)

You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:

Download remote desktop file

When prompted, connect to your instance using the following username and password:

Public DNS

ec2-13-233-27-233.ap-south-1.compute.amazonaws.com

Username

Administrator

Password

Get password

If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.

Cancel

CloudShell

Feedback

© 2024, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

84°F

Mostly cloudy

Search

1:01 PM

02-Aug-24

aws

Services

Search

[Alt+S]

Mumbai

Shreya_Nadkarni

Get Windows password

Use your private key to retrieve and decrypt the initial Windows administrator password for this instance.

Instance ID

[i-07395f7972bdb8794](#) (Windows Machine using AWS EC2)

Key pair associated with this instance

[key3](#)

Private key

Either upload your private key file or copy and paste its contents into the field below.

[Upload private key file](#)

Private key contents - optional

Private key contents

CloudShell

Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

aws

Services

Search

[Alt+S]

Mumbai

Shreya_Nadkarni

Instance ID

[i-07395f7972bdb8794](#) (Windows Machine using AWS EC2)

Key pair associated with this instance

[key3](#)

Private key

Either upload your private key file or copy and paste its contents into the field below.

[Upload private key file](#)

[key3.pem](#)
1.674KB

Private key contents - optional

-----BEGIN RSA PRIVATE KEY-----
MIIEowIBAAKCAQEAAnDKUe+rld74RhX8ILHiDmPCJe9HYL/kilYq/dEdFiboxGah
kZ7Q/mCvUnfWFspkup1ROzoYu702iDIHdfjoTzoO4J8SH9Gkwx4qeehzTKv64vG
fqDkJsQyTwR4Nu3NaKdGBJOWsHCMYASnVzsFoEEHbu/Oly6muNSGloTOZeow2fC
eHYhWBkvVjpviy9u6PDrGmPbZdcko3x1rsRtvrXPDIXI7fsMHHNjoWAVzJeLLFDj
s03V4LquVmH8iaRW5BxSv2Q9U+8XZov+H160YuBvMGVtwLgSBk1AYFc3kRGkNpM
7AzTnGOu7q7c/gJEfWIOlwRN7t9Psbx2FRicWQIDAQAABolBACMwrgPLuF+ajVrU
5ymEAKt3RC1hvDYK5YVZJnRqoV/1QinFaY8yNampxLYS5SQM4ya7/KoYS6w4U8nZ

Cancel

Decrypt password

CloudShell

Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

aws

Services

Search

[Alt+S]

Mumbai

Shreya_Nadkarni

You can connect to your Windows instance using a remote desktop client by running the RDP shortcut file below:

[Download remote desktop file](#)

When prompted, connect to your instance using the following information:

Public DNS

[ec2-13-233-27-233.ap-south-1.compute.amazonaws.com](#)

Password

[nDDvjntIv;CL-W?lqF9U4r;Grn?6\\$O4](#)

If you've joined your instance to a directory, you can use the directory information to connect to the instance.

Windows Security

Enter your credentials

These credentials will be used to connect to ec2-13-233-27-233.ap-south-1.compute.amazonaws.com.

Administrator

Password

DESKTOP-SN6O6VT\Administrator

☐ Remember me

More choices

OK

Cancel

CloudShell

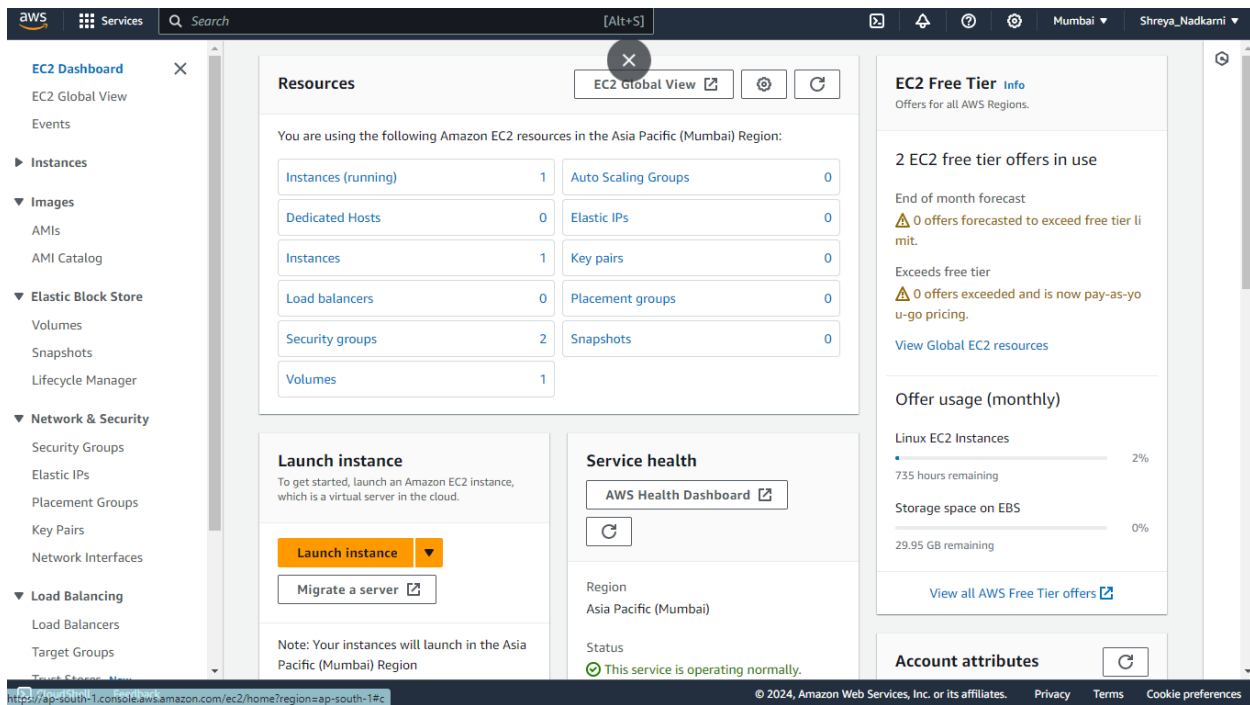
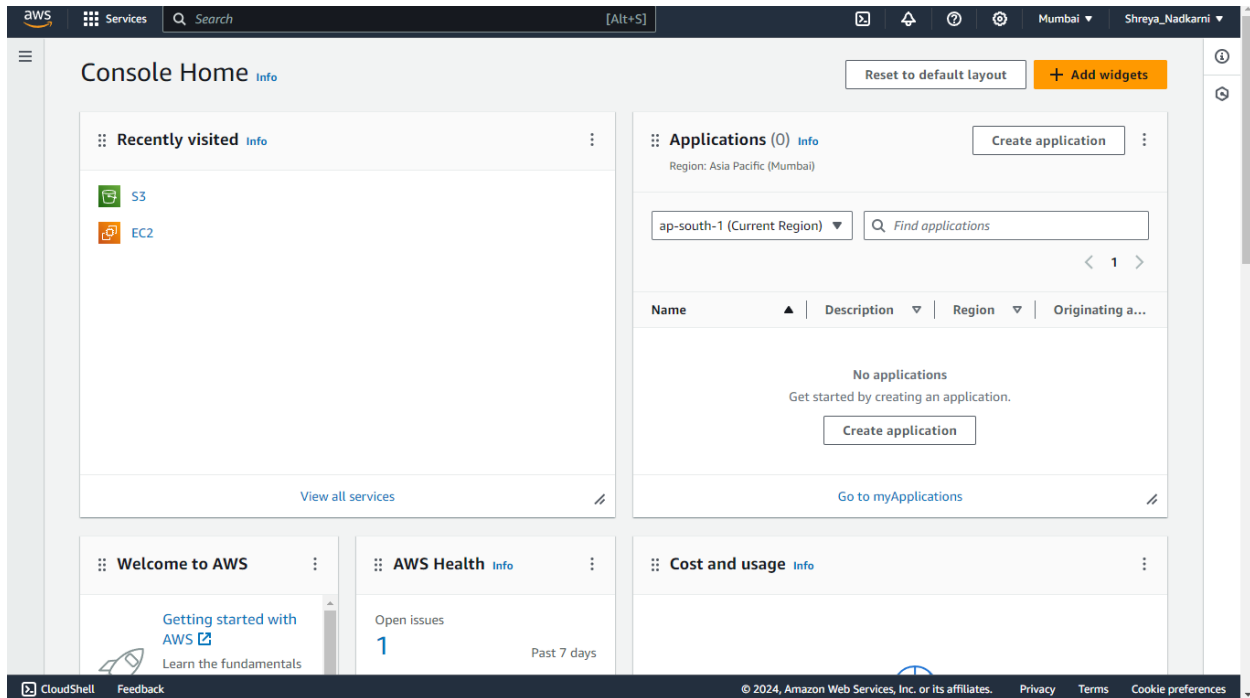
Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Ques 2

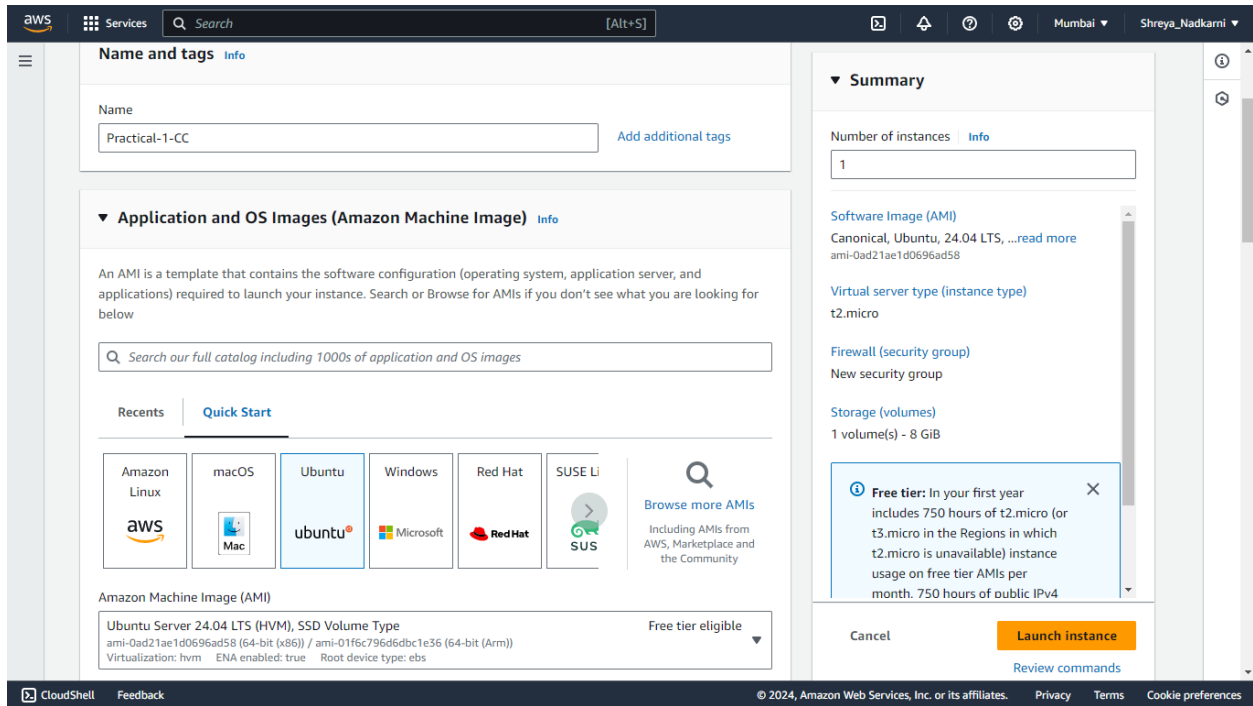
1. Launch an EC2 Instance:

- Navigate to the EC2 Dashboard.
- Click on "Launch Instance".



2. Choose an Amazon Machine Image (AMI):

- Select an Ubuntu AMI. Common choices include "Ubuntu Server 20.04 LTS" or "Ubuntu Server 18.04 LTS".



3. Configure Instance Details:

- Configure the instance details, such as the number of instances, network settings, and IAM role (if needed). Default settings are typically fine for a basic setup.

4. Add Storage:

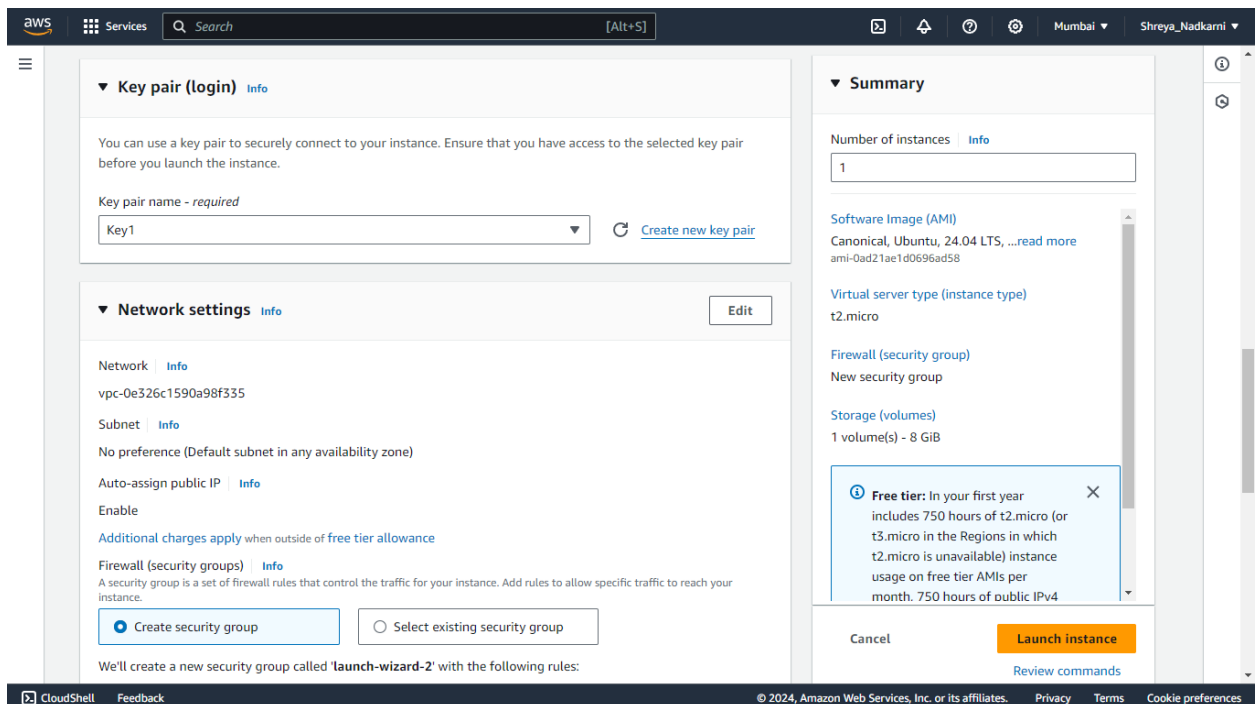
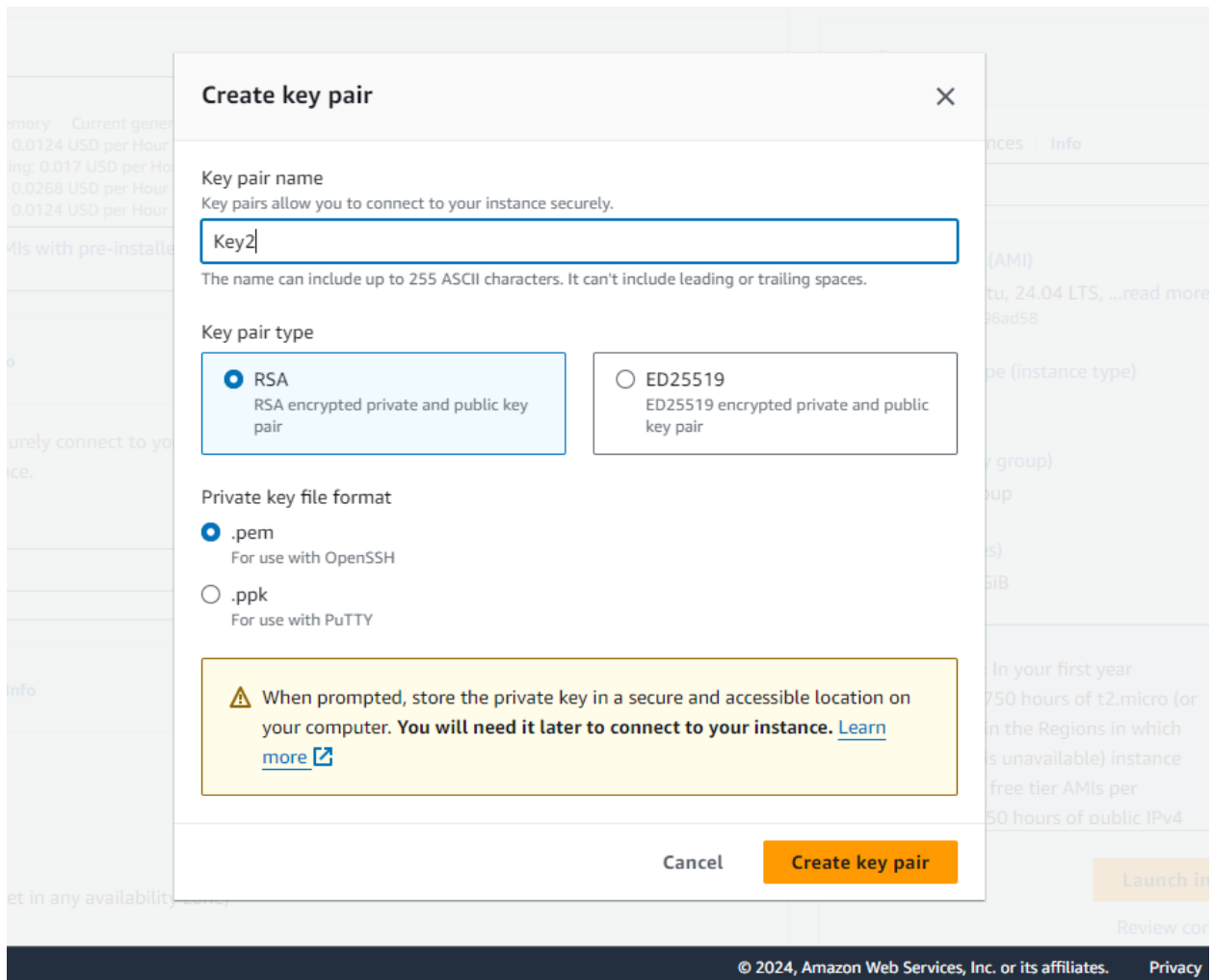
- Adjust the storage settings if necessary. The default size for Ubuntu instances is usually sufficient, but you can increase it based on your needs.

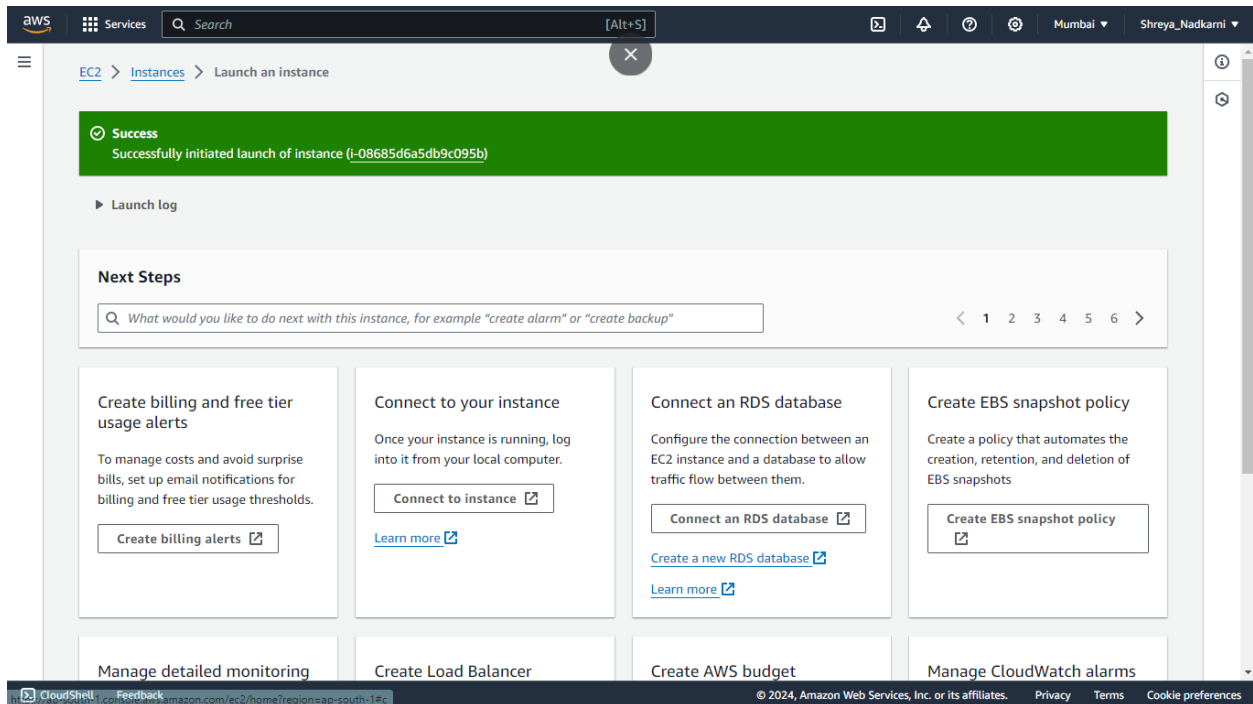
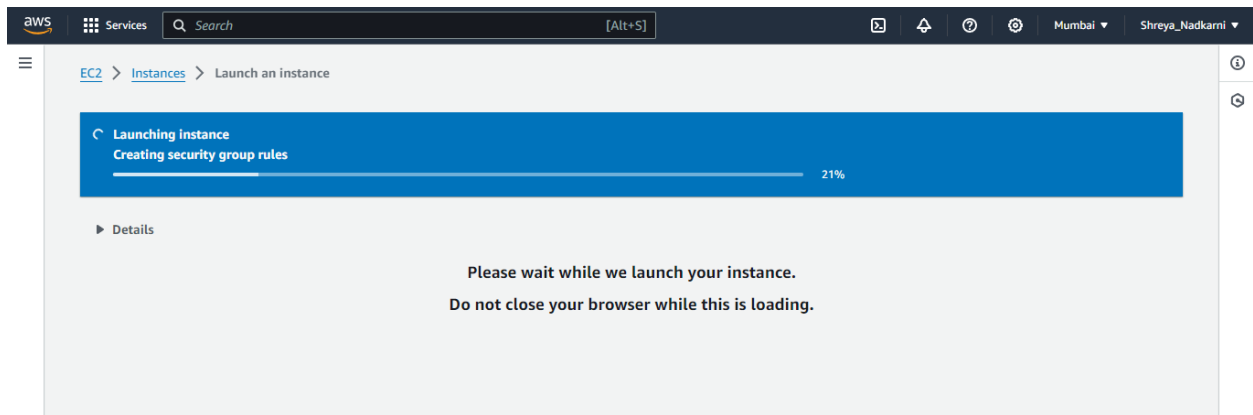
5. Add Tags:

- (Optional) Add tags to help identify your instance. For example, Key: Name, Value: Ubuntu-Server.

6. Review and Launch:

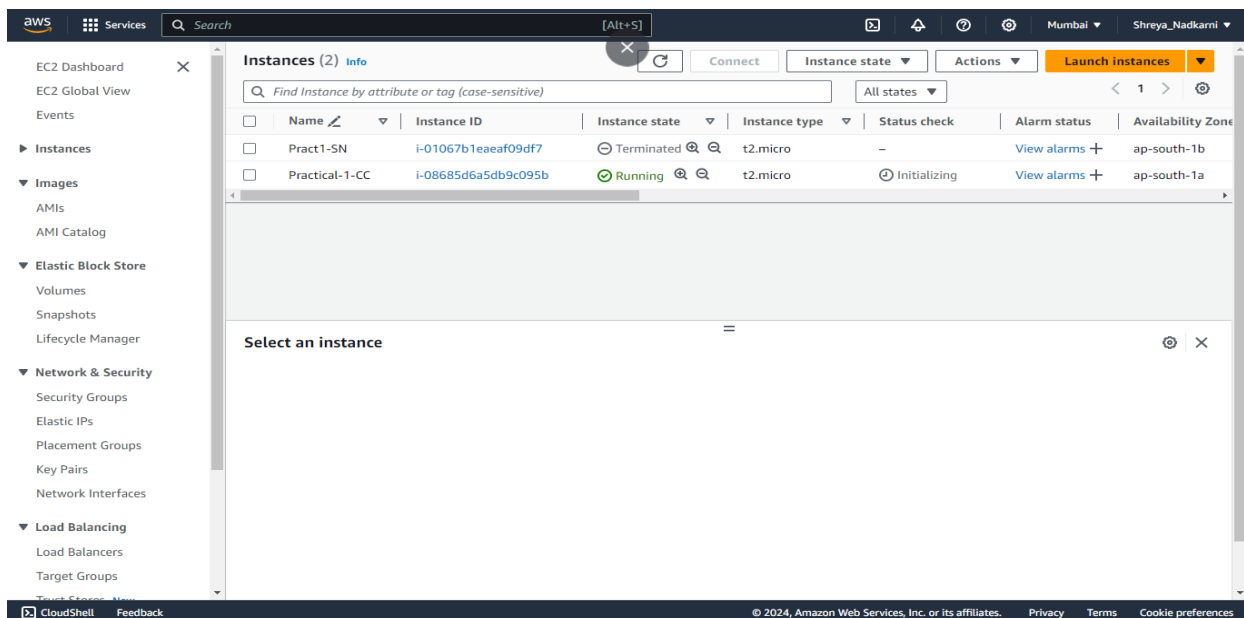
- Review your settings and click "Launch".
- Select an existing key pair or create a new key pair. Download the key pair file (.pem), as you will need it to access your instance.





7. Connect to Your Instance:

- After the instance status changes to "running", select the instance.



- Click on "Connect",

EC2 Dashboard

EC2 Global View

Events

Instances

Images

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

Load Balancers

Target Groups

CloudShell

Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Instance summary for i-08685d6a5db9c095b (Practical-1-CC)

Updated less than a minute ago

[Connect](#) [Instance state](#) [Actions](#)

Instance ID i-08685d6a5db9c095b (Practical-1-CC)	Public IPv4 address 65.2.33.133 open address	Private IPv4 addresses 172.31.34.68
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-65-2-33-133.ap-south-1.compute.amazonaws.com open address
Hostname type IP name: ip-172-31-34-68.ap-south-1.compute.internal	Private IP DNS name (IPv4 only) ip-172-31-34-68.ap-south-1.compute.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more
Auto-assigned IP address 65.2.33.133 [Public IP]	VPC ID vpc-0e326c1590a98f335	Auto Scaling Group name -
IAM Role -	Subnet ID subnet-0986c6140667629ba	
IMDSv2 Required	Instance ARN	

EC2 Instance Connect

Session Manager

SSH client

EC2 serial console

Port 22 (SSH) is open to all IPv4 addresses

Port 22 (SSH) is currently open to all IPv4 addresses, indicated by 0.0.0.0/0 in the inbound rule in your security group. For increased security, consider restricting access to only the EC2 Instance Connect service IP addresses for your Region: 13.233.177.0/29. [Learn more](#).

Instance ID
i-08685d6a5db9c095b (Practical-1-CC)

Connection Type

☒ Connect using EC2 Instance Connect
Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.

☐ Connect using EC2 Instance Connect Endpoint
Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.

Public IP address
65.2.33.133

Username
Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ubuntu.

ubuntu

Note: In most cases, the default username, ubuntu, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

Cancel

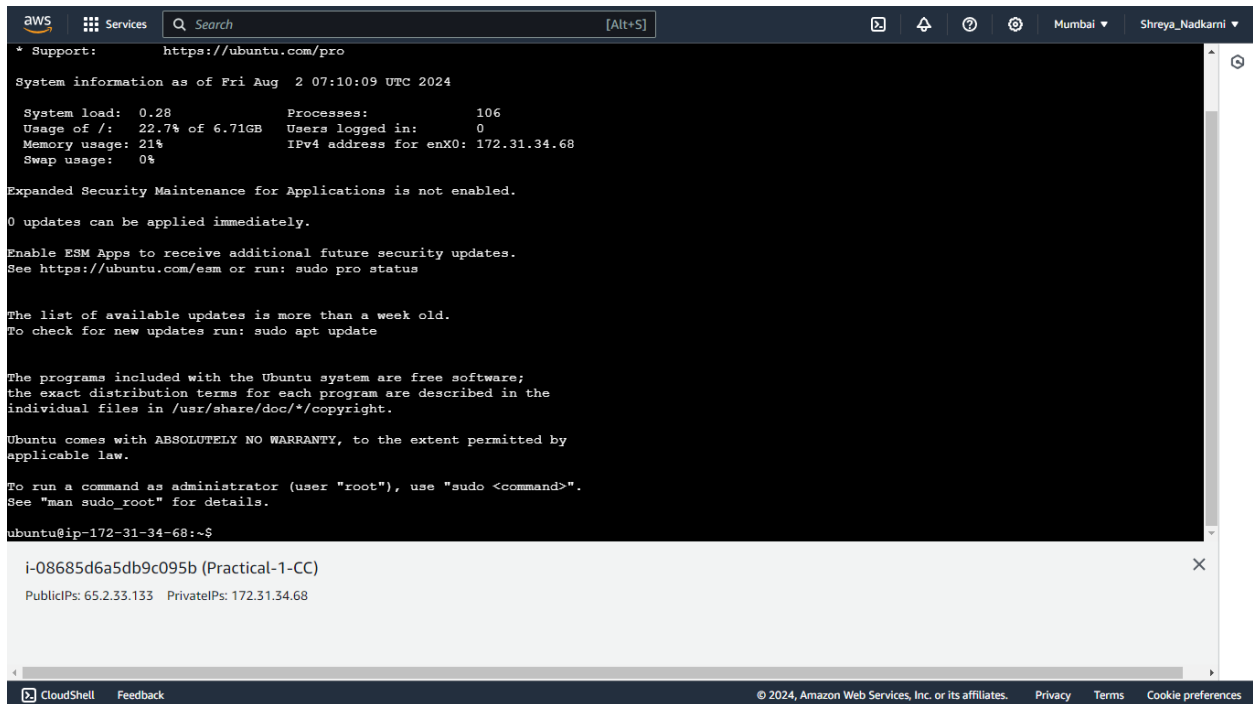
Connect

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

8. Open a terminal.

Run the following command to set the permissions of your key pair file:

- **Check the disk usage:** This command checks current disk usage
- **Check the current directory:** This command prints the current working directory.
- **Create a new directory:** This command creates a new directory named my_new_directory.
- **Create a new file and write text to it:** This command creates a file named hello.txt and writes "Hello, World!" into it.
- **Display the contents of a file:** This command displays the contents of hello.txt.



The screenshot shows the AWS CloudShell interface with a terminal window. The terminal displays system information for an Ubuntu instance. The output includes system load, disk usage, memory usage, and swap usage. It also mentions that Expanded Security Maintenance for Applications is not enabled and that 0 updates can be applied immediately. The terminal prompt is ubuntu@ip-172-31-34-68:~\$.

```
aws
Services
Search [Alt+S]
Mumbai Shreya_Nadkarni

+ Support: https://ubuntu.com/pro

System information as of Fri Aug 2 07:10:09 UTC 2024

System load: 0.28      Processes:      106
Usage of /: 22.7% of 6.71GB  Users logged in: 0
Memory usage: 21%      IPv4 address for enX0: 172.31.34.68
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.

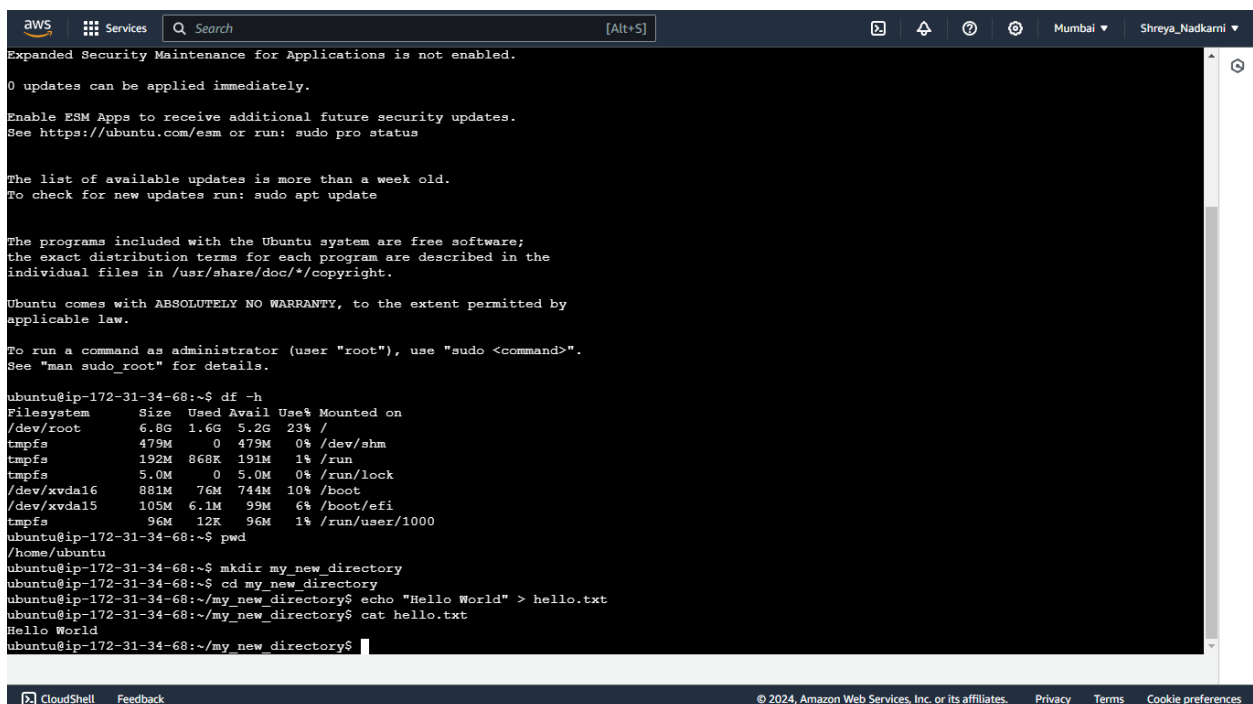
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-34-68:~$

i-08685d6a5db9c095b (Practical-1-CC)
PublicIPs: 65.2.33.133 PrivateIPs: 172.31.34.68

CloudShell Feedback
© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences
```



The screenshot shows the AWS CloudShell interface with a terminal window. The terminal displays the output of the 'df -h' command, showing disk usage for various filesystems. It then shows the user creating a new directory 'my_new_directory' and entering it. The user then creates a file 'hello.txt' and writes 'Hello World' to it. Finally, the user displays the contents of 'hello.txt' using the 'cat' command. The terminal prompt is ubuntu@ip-172-31-34-68:~/my_new_directory\$.

```
aws
Services
Search [Alt+S]
Mumbai Shreya_Nadkarni

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-172-31-34-68:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root        6.8G  1.6G  5.2G  23% /
tmpfs            479M   0  479M   0% /dev/shm
tmpfs            192M  868K  191M   1% /run
tmpfs            5.0M   0   5.0M   0% /run/lock
/dev/xvda16      881M   76M  744M  10% /boot
/dev/xvda15      105M   6.1M   99M   6% /boot/efi
tmpfs            96M   12K   96M   1% /run/user/1000

ubuntu@ip-172-31-34-68:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-34-68:~$ mkdir my_new_directory
ubuntu@ip-172-31-34-68:~$ cd my_new_directory
ubuntu@ip-172-31-34-68:~/my_new_directory$ echo "Hello World" > hello.txt
ubuntu@ip-172-31-34-68:~/my_new_directory$ cat hello.txt
Hello World
ubuntu@ip-172-31-34-68:~/my_new_directory$

CloudShell Feedback
© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences
```

