

EXPERIMENT 1: Exploring AWS CloudShell and the AWS Cloud9 IDE

Steps for working with CloudShell

Step 1: Login to AWS Account

The screenshot shows the AWS Console Home page. On the left, there's a sidebar with 'Recently visited' services: CloudShell, S3, DynamoDB, IAM, Billing and Cost Management, Lambda, and EC2. Below this is a 'View all services' link. To the right, there are sections for 'Applications' (0), 'AWS Health' (Info), and 'Cost and usage'. The 'Applications' section has a 'Create application' button. The 'AWS Health' section shows 0 open issues and 0 scheduled changes. The 'Cost and usage' section shows current month costs of \$0.00. The top navigation bar includes a search bar, a [Alt+S] key shortcut, and account information for United States (N. Virginia) and Vinayak-rajput.

Step 2: Open CloudShell

The screenshot shows the AWS CloudShell interface. The title bar says 'CloudShell | us-east-1'. The main area is a dark terminal window with a single command prompt line: '~ \$>'. The bottom navigation bar includes a 'Feedback' link and copyright information for 2025, Amazon Web Services, Inc. or its affiliates, along with links for Privacy, Terms, and Cookie preferences.

Step 3: Execute shell commands in the terminal

```

~ $ pwd
/home/cloudshell-user
~ $ echo "Welcome to CC Lab"
Welcome to CC Lab
~ $ mkdir Vinayak
~ $ cd Vinayak
~ $ touch test.txt
~ $ ls
test.txt  Vinayak
~ $ cat test.txt
~ $ 

```

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Step 4: To download the created file, choose Download file option from Actions dropdown menu

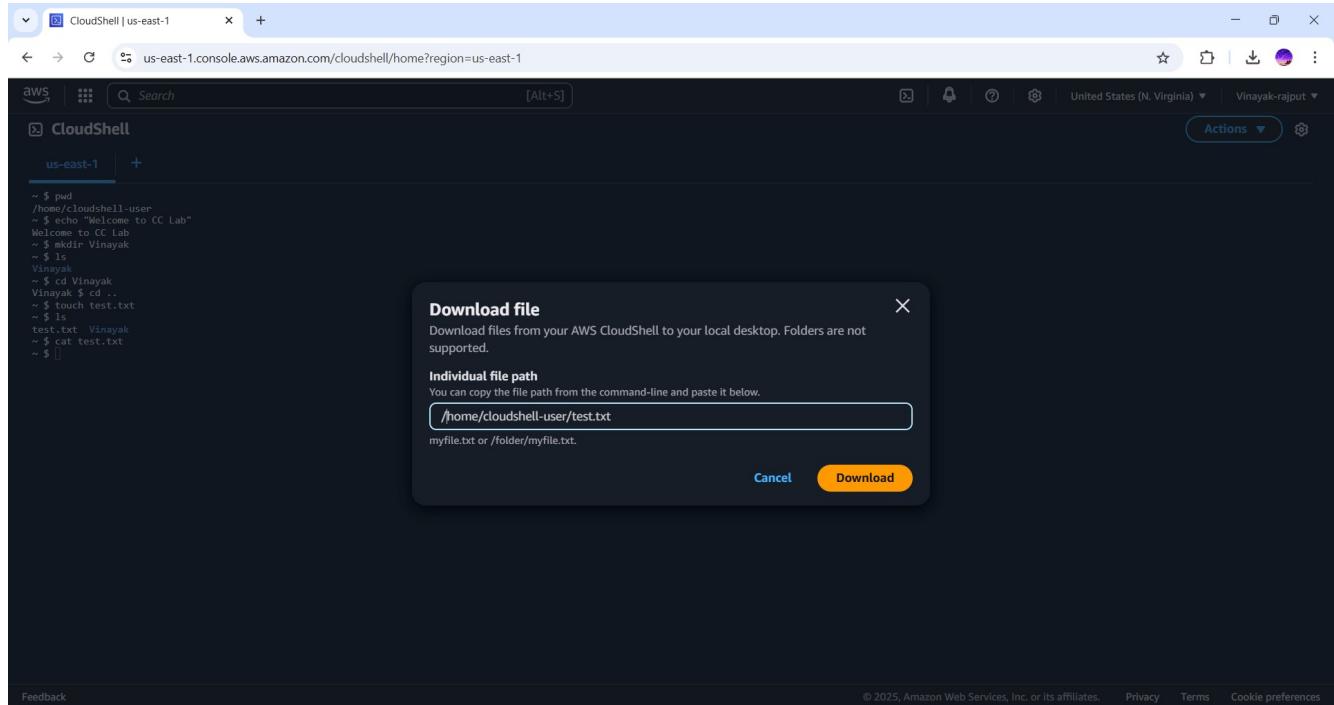
```

~ $ pwd
/home/cloudshell-user
~ $ echo "Welcome to CC Lab"
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~ $ mkdir Vinayak
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test.txt  Vinayak
~ $ cat test.txt
~ $ 

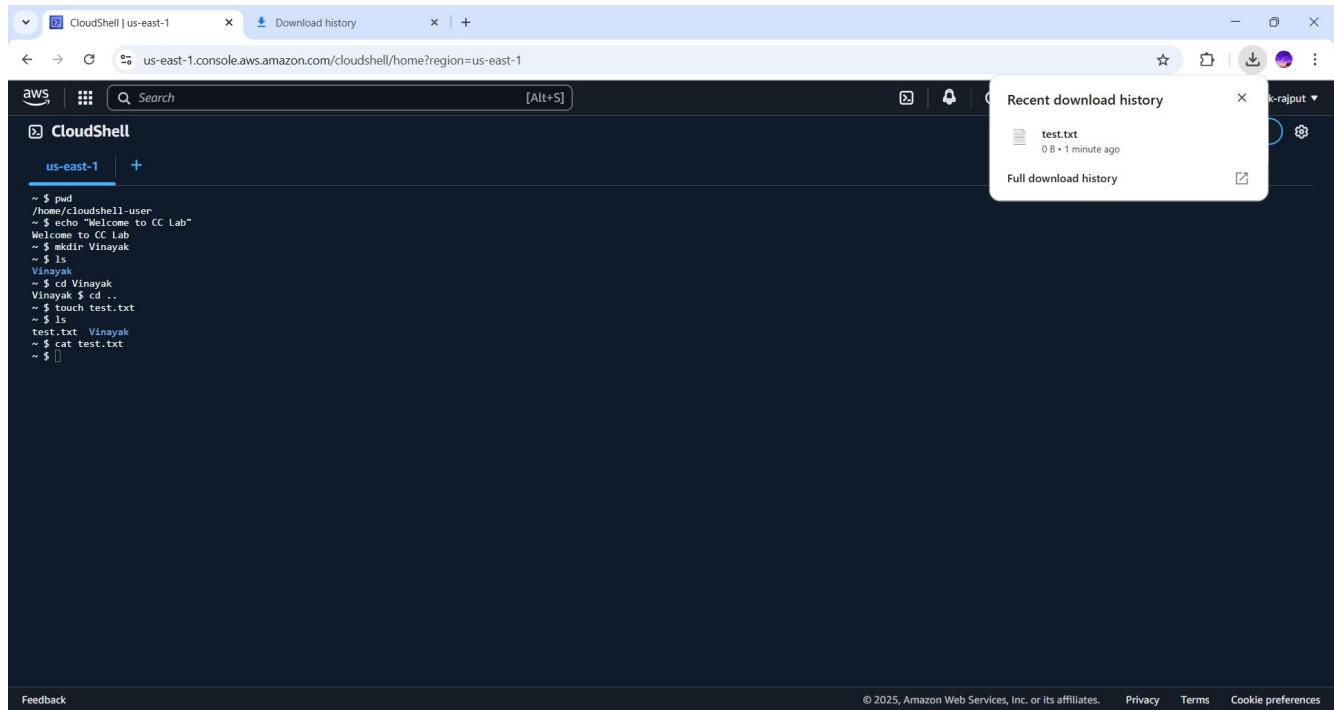
```

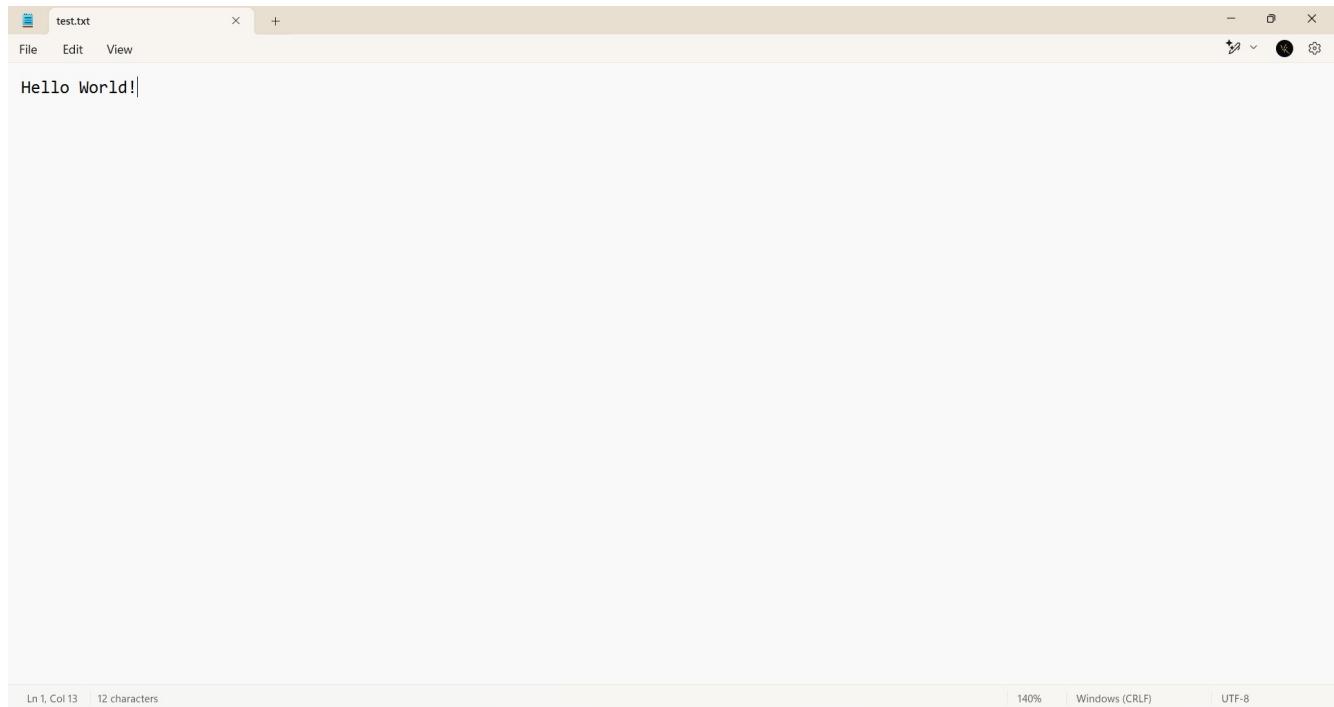
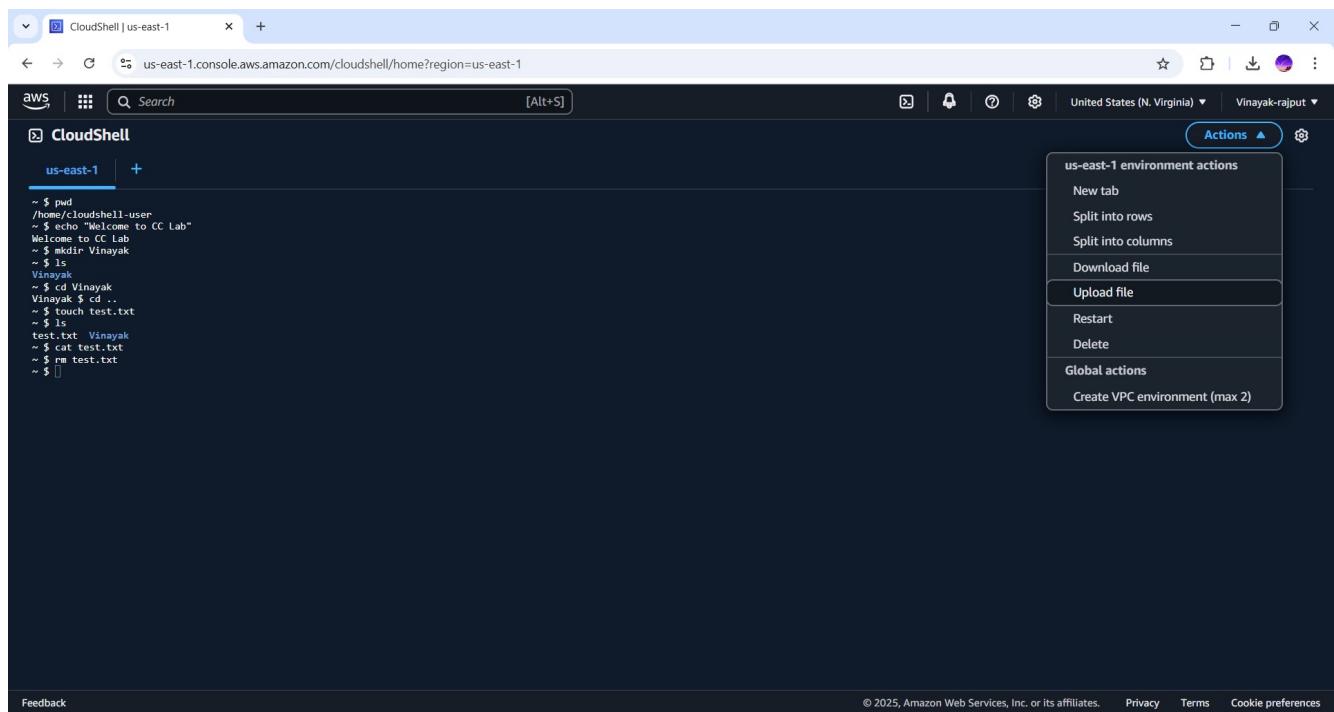
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Step 5: Provide the path to the file created (e.g. test.txt) and click on Download button



Step 6: An empty file “test.txt” is downloaded



Step 7: Add some content to the downloaded file (i.e. test.txt) and save it**Step 8:** Execute 'rm' command to delete the earlier created file and upload the altered file by clicking on Upload file option from the Actions dropdown menu

Step 9: Upload the test.txt file

The screenshot shows the AWS CloudShell interface in a browser window. The terminal session is titled 'us-east-1'. The user has run a series of commands to create a 'test.txt' file and upload it to the CloudShell user home directory. A green notification bar at the bottom right indicates 'File upload successful'.

```
~ $ pwd  
/home/cloudshell-user  
~ $ echo "Welcome to CC Lab"  
Welcome to CC Lab  
~ $ mkdir Vinayak  
~ $ cd Vinayak  
~ $ touch test.txt  
~ $ ls  
test.txt  
~ $ cat test.txt  
~ $ rm test.txt  
~ $
```

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Step 10: Once uploaded successfully, check the contents of “test.txt” using the ‘cat’ command

The screenshot shows the AWS CloudShell interface in a browser window. The terminal session is titled 'us-east-1'. The user has run the 'cat' command to view the contents of the 'test.txt' file, which contains the text 'Hello World!'. The terminal output also includes the previous commands for creating the file and directory.

```
~ $ pwd  
/home/cloudshell-user  
~ $ echo "Welcome to CC Lab"  
Welcome to CC Lab  
~ $ mkdir Vinayak  
~ $ cd Vinayak  
~ $ touch test.txt  
~ $ ls  
test.txt  
~ $ cat test.txt  
~ $ rm test.txt  
~ $ cat test.txt  
Hello World!~ $
```

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Steps for creating a VPC (Virtual Private Cloud) Environment

Step 1: From the Actions menu choose option ‘Create VPC environment (max 2)’

```

~ $ pwd
/home/cloudshell-user
~ $ echo "Welcome to CC Lab"
Welcome to CC Lab
~ $ cd Vinayak
~ $ ls
Vinayak
~ $ cd Vinayak
Vinayak $ cd ..
~ $ touch test.txt
~ $ ls
test.txt Vinayak
~ $ rm test.txt
~ $ cat test.txt
Hello World!~ $ rm test.txt
~ $ ls
Vinayak
~ $ rmdir Vinayak
~ $ ls
~ $ 

```

Step 2: Give VPC a name (e.g. Vinayakvpc) and choose VPC, Subnet and the default security group and click on Create button

Create a VPC environment

After creating a VPC environment, a new tab linked to this environment is added to CloudShell. You can access your VPC environment by selecting this tab.

Name
A unique VPC environment name used to identify it within AWS CloudShell.

Must contain up to 28 alphanumeric characters, hyphens, and no spaces. The first character must be a letter or a number.

Virtual private cloud (VPC)

Subnet

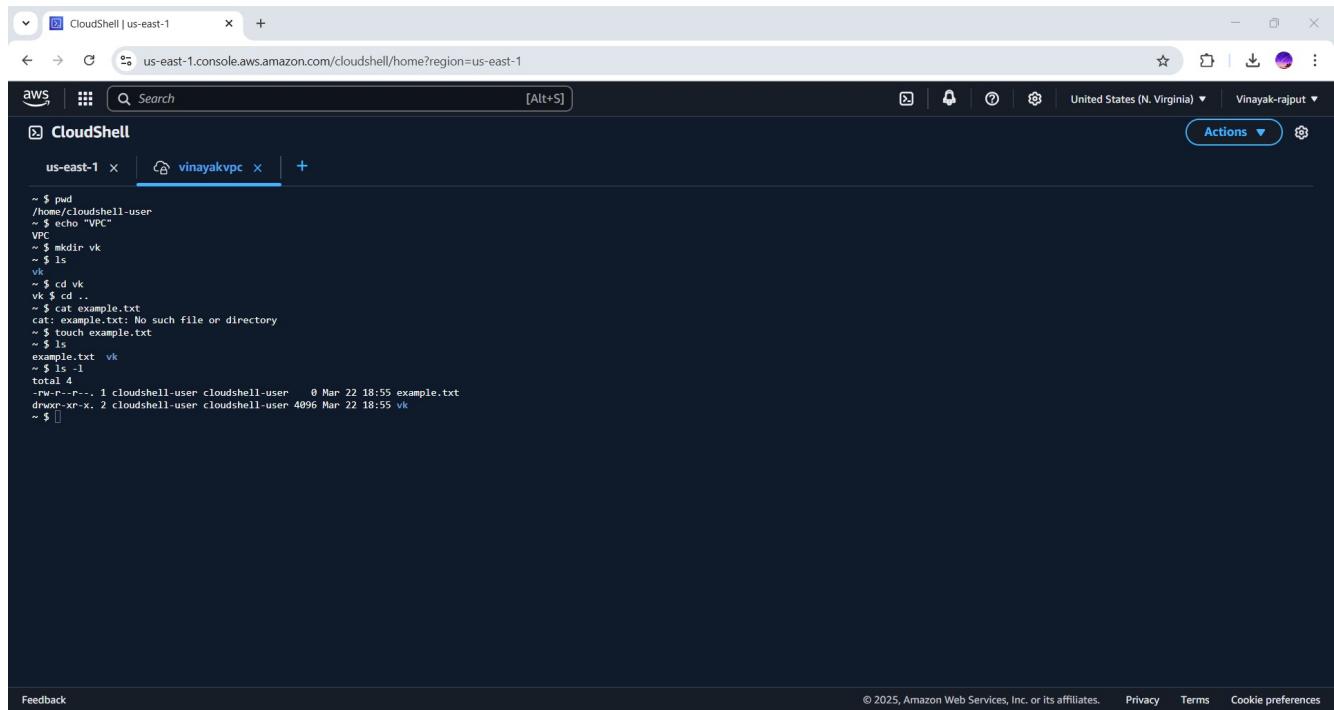
Security group

Default - default VPC security group

Maximum of 5.

After 30 minutes of inactivity, the shell session will terminate and the home directory of the VPC environment will be deleted.

Step 3: Execute the same commands as of CloudShell in the VPC window except for download and upload file options

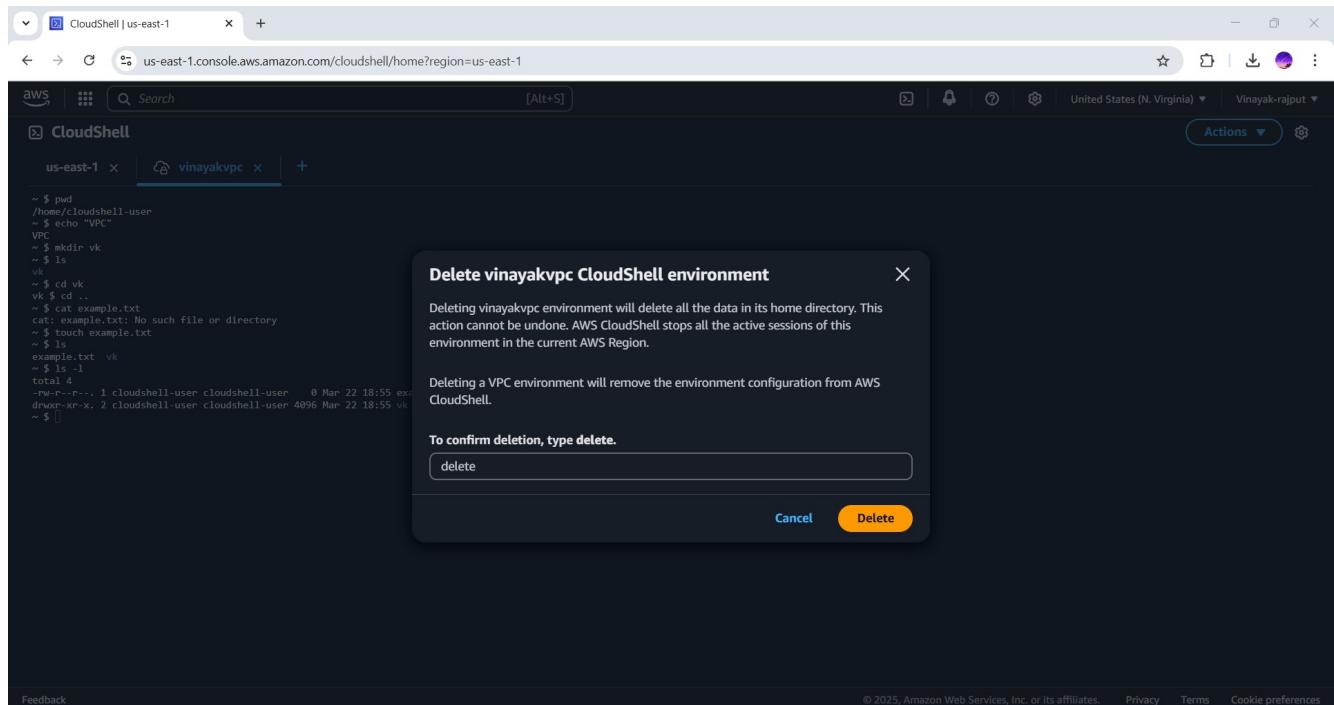


```

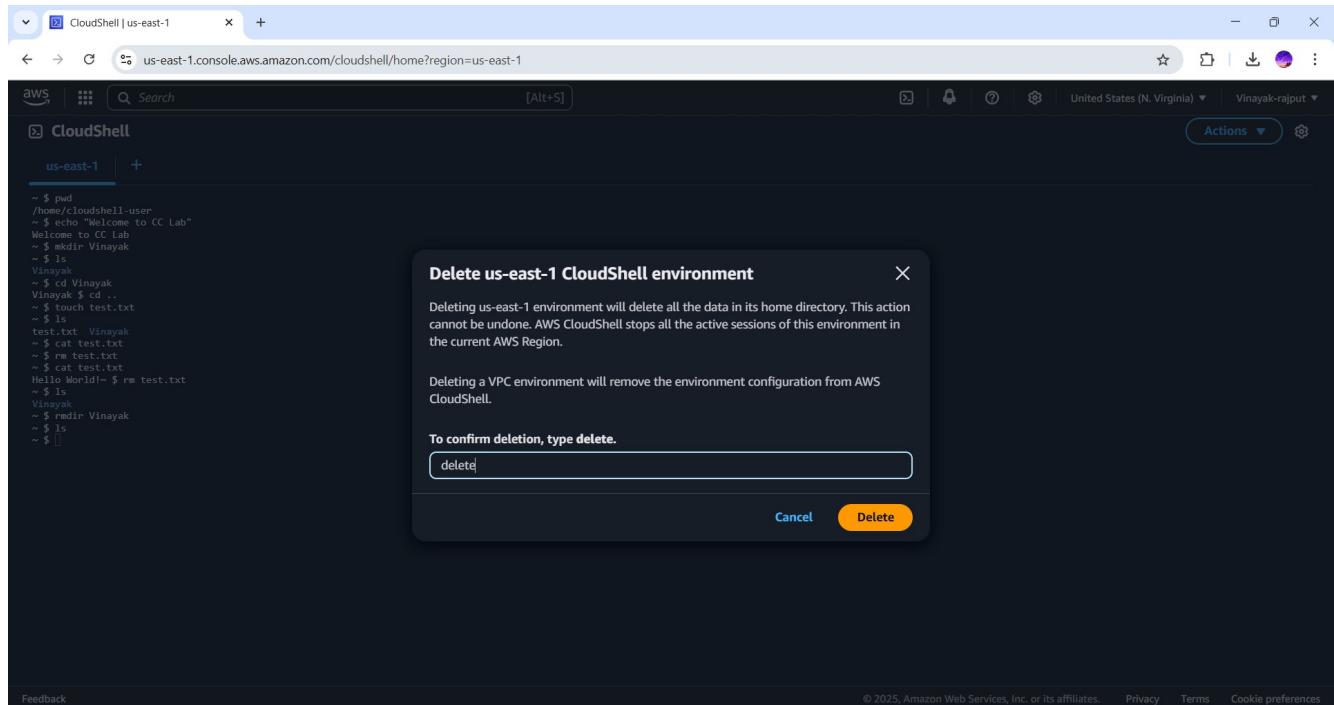
~ $ pwd
/home/cloudshell-user
~ $ echo "VPC"
VPC
~ $ mkdir vk
~ $ ls
vk
~ $ cd vk
vk $ cd ..
~ $ cat example.txt
cat: example.txt: No such file or directory
~ $ touch example.txt
~ $ ls
example.txt  vk
~ $ ls -l
total 4
-rw-r--r-- 1 cloudshell-user cloudshell-user 0 Mar 22 18:55 example.txt
drwxr-xr-x  2 cloudshell-user cloudshell-user 4096 Mar 22 18:55 vk
~ $ 

```

Step 4: Once all the commands are executed, delete the VPC by typing delete and clicking on Delete button

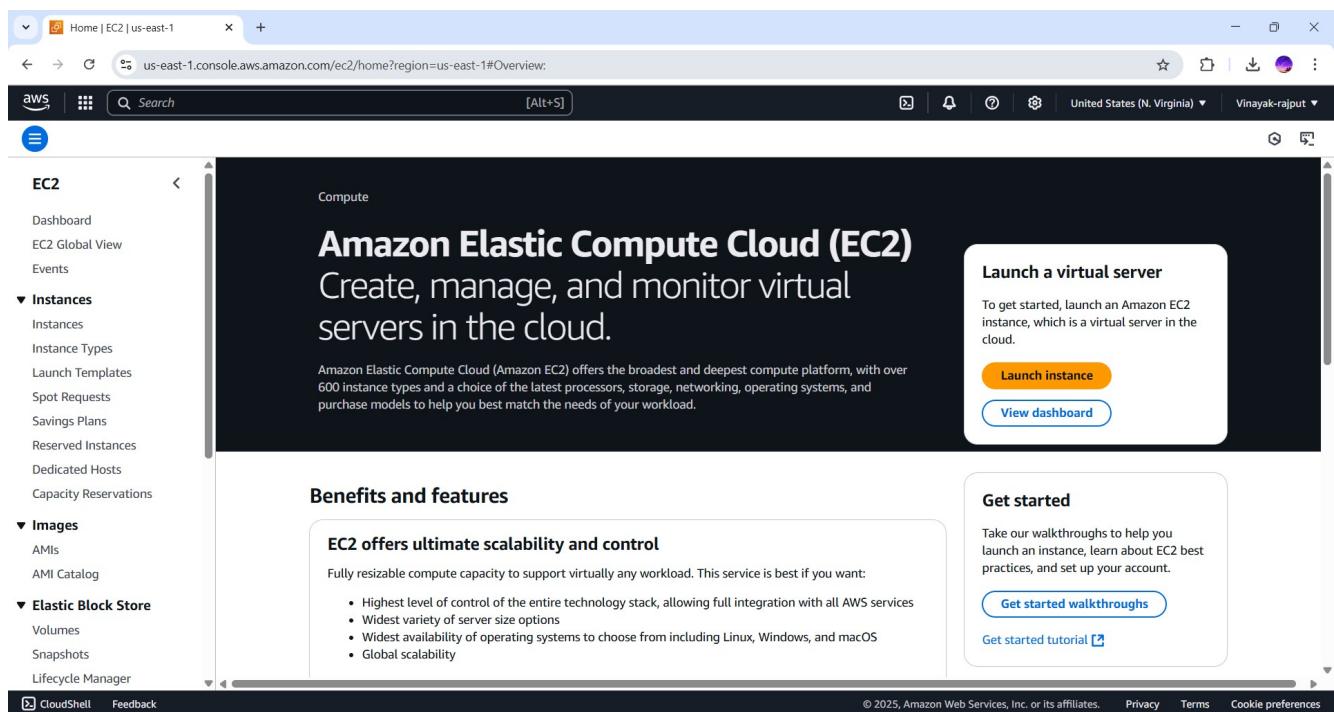


Step 5: Also delete the CloudShell instance once the commands are executed in a similar fashion

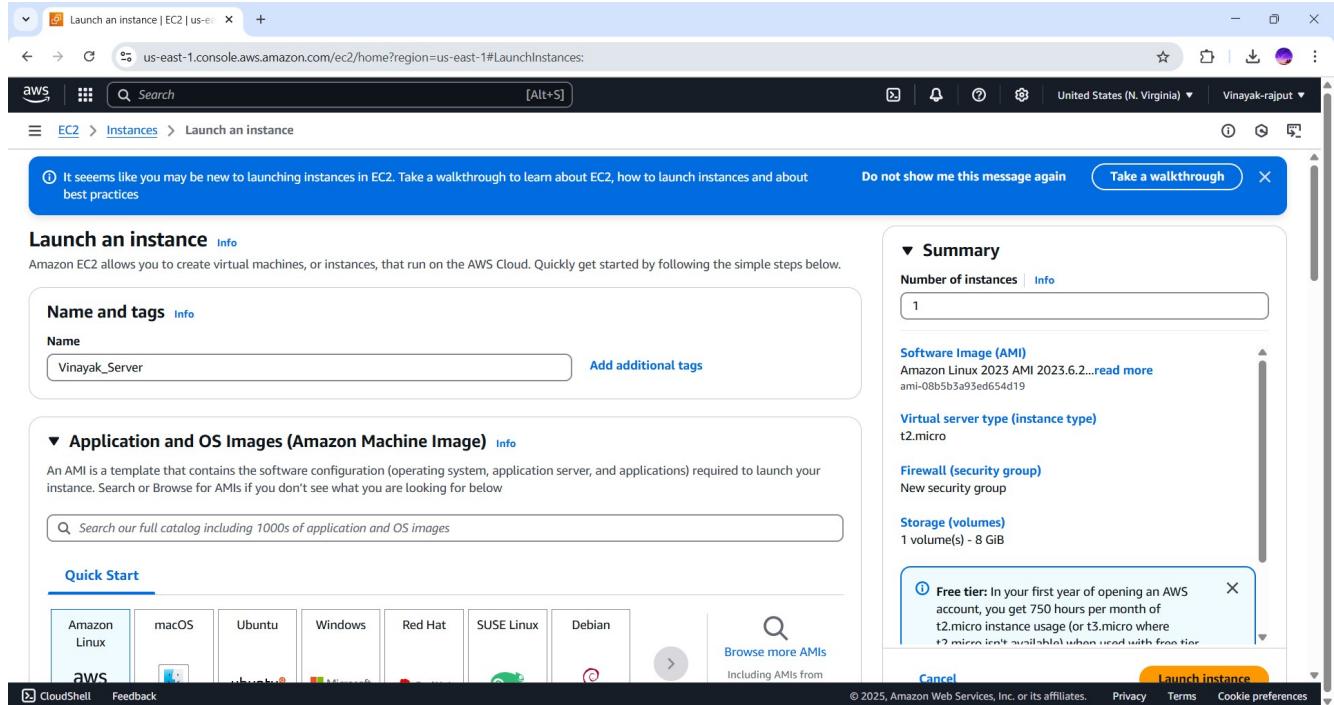


Steps to create EC2 (Elastic Computing 2) instance

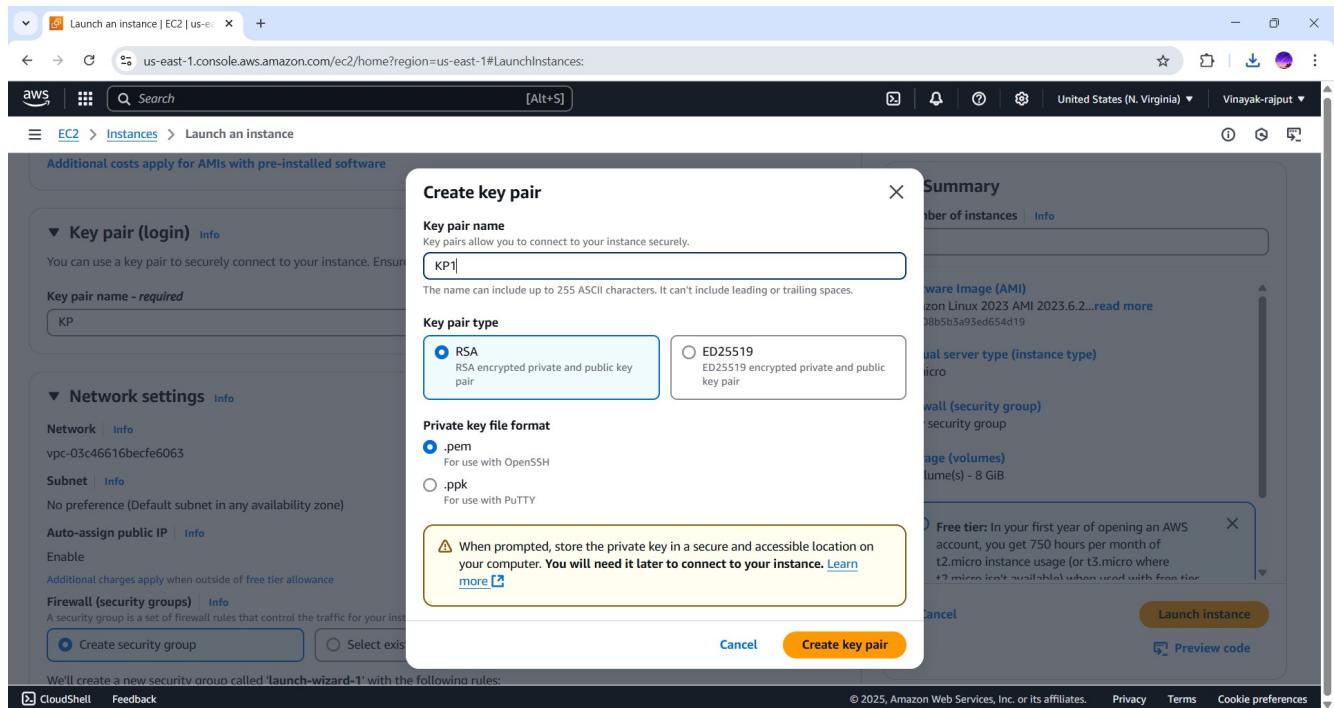
Step 1: Open EC2 dashboard in AWS Console and click on Launch Instance button



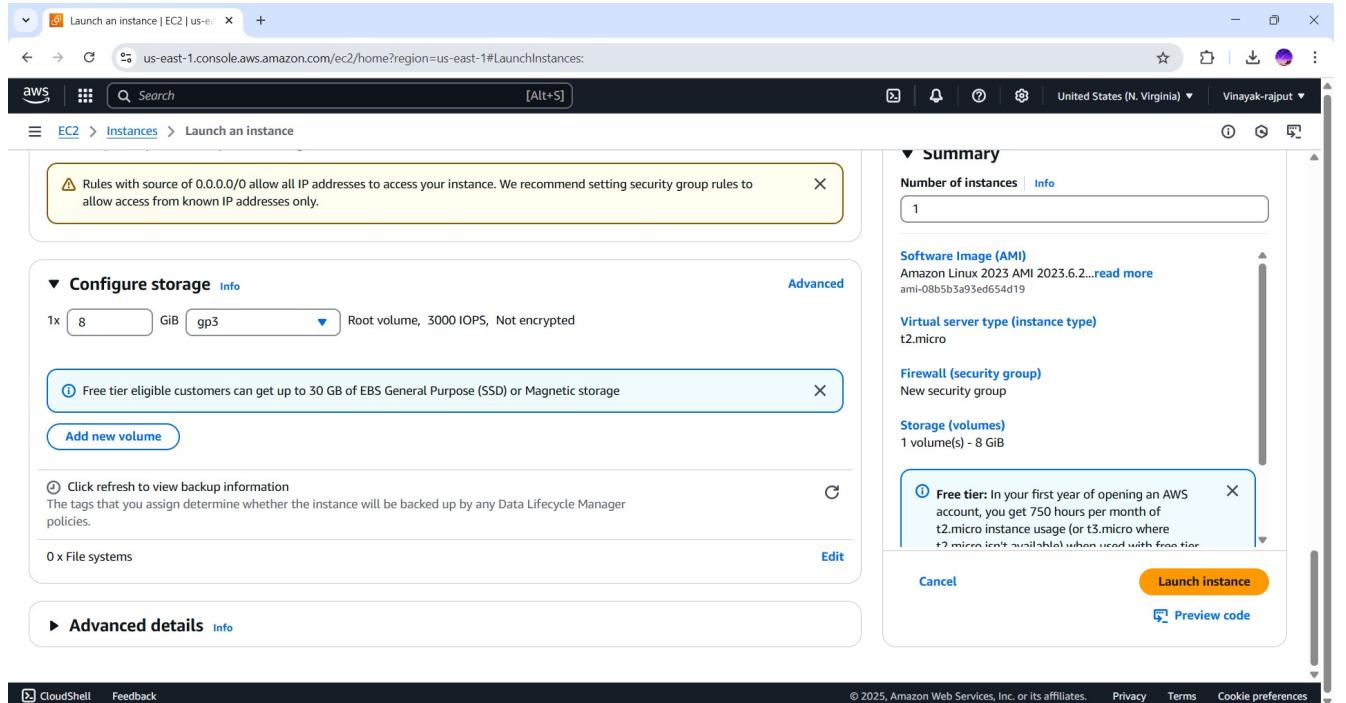
Step 2: Name the instance and scroll down



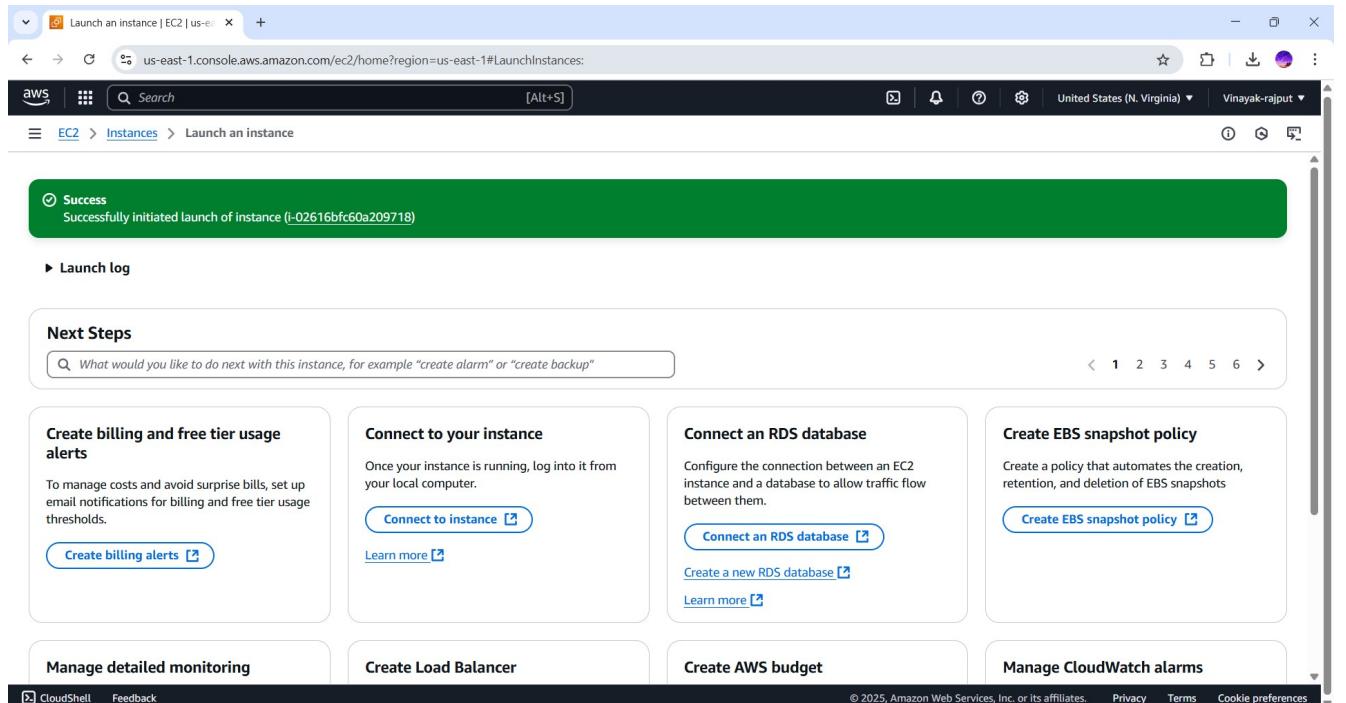
Step 3: Click on create new key pair and create a new key pair by providing a name and clicking on Create key pair button



Step 4: Keep the default options for the rest and click on Launch Instance button



Step 5: A confirmation message regarding Success of launch of our new instance is displayed



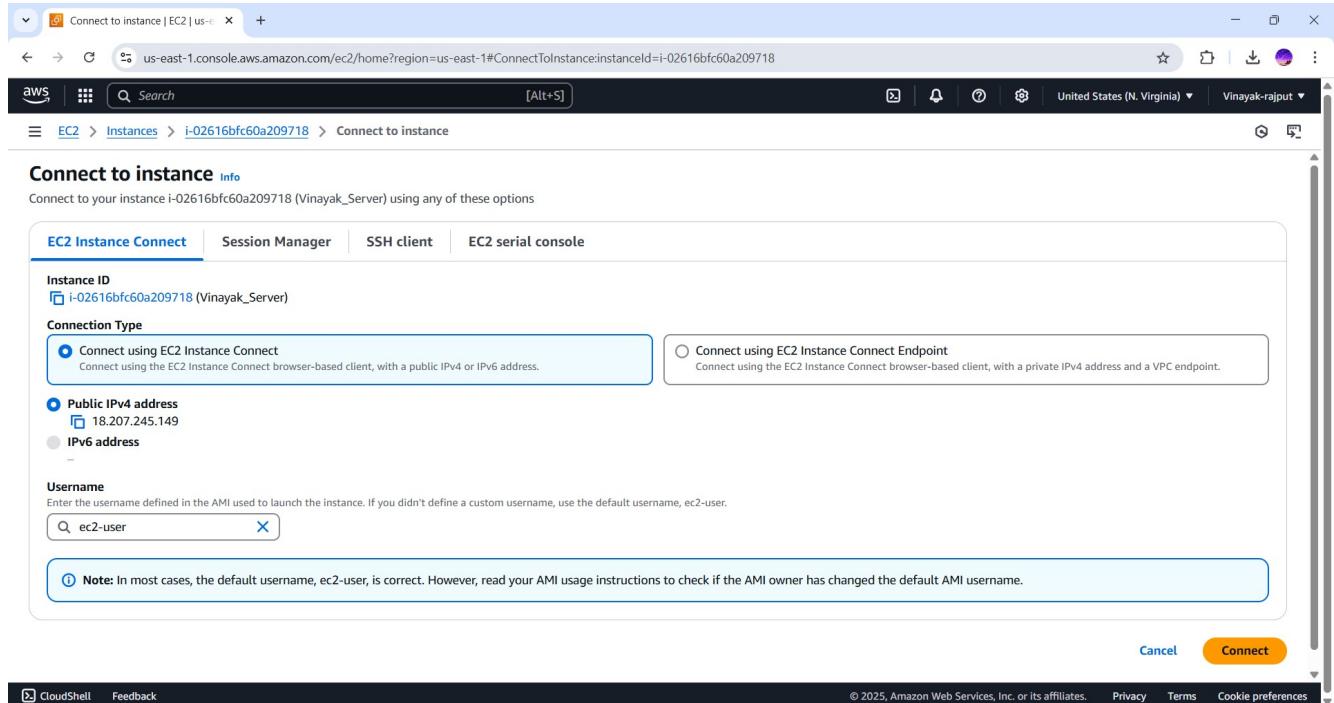
Step 6: Click on Instances. It displays the instances that are running. Click on Instance ID to know about a particular instance.

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with options like Dashboard, EC2 Global View, Events, Instances (selected), Images, and Elastic Block Store. The main area is titled 'Instances (1/1) Info' and shows a single instance named 'Vinayak_Server' with the ID 'i-02616bfc60a209718'. The instance is listed as 'Running' with the type 't2.micro'. Below this, there's a detailed view for 'i-02616bfc60a209718 (Vinayak_Server)' with tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags. The 'Details' tab is selected, showing information such as Public IPv4 address (18.207.245.149), Private IPv4 address (172.31.89.126), and Public IPv4 DNS (ec2-18-207-245-149.compute-1.amazonaws.com). The status is shown as 'Running'.

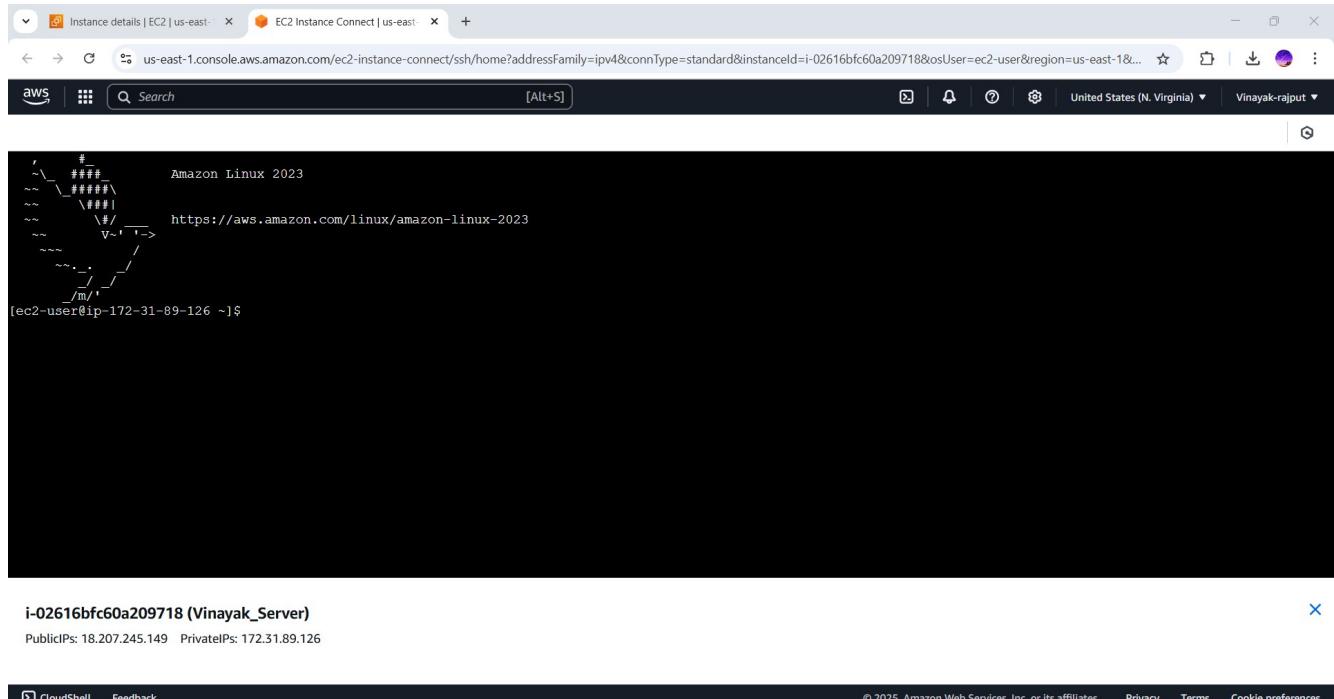
Step 7: Click on the Connect button on the top-right to connect to an instance

The screenshot shows the AWS EC2 Instance details page for the instance 'i-02616bfc60a209718'. The left sidebar is identical to the previous screenshot. The main area is titled 'Instance summary for i-02616bfc60a209718 (Vinayak_Server) Info'. It provides a detailed breakdown of the instance's configuration, including its Public IP (18.207.245.149), Instance Type (t2.micro), and various network identifiers like VPC ID, Subnet ID, and Instance ARN. On the right side, there are buttons for 'Connect', 'Instance state', and 'Actions'. The 'Connect' button is highlighted, indicating it can be clicked to establish a connection to the instance.

Step 8: Keep the default options and click on Connect button



Step 9: An Amazon-Linux terminal is displayed



Step 10: Execute the commands executed in VPC in this terminal

```

Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

[ec2-user@ip-172-31-89-126 ~]$ pwd
/home/ec2-user
[ec2-user@ip-172-31-89-126 ~]$ echo "hello"
hello
[ec2-user@ip-172-31-89-126 ~]$ mkdir vk
[ec2-user@ip-172-31-89-126 ~]$ cd vk
[ec2-user@ip-172-31-89-126 vk]$ cd ..
[ec2-user@ip-172-31-89-126 ~]$ ls
vk
[ec2-user@ip-172-31-89-126 ~]$ cat test.txt
cat: test.txt: No such file or directory
[ec2-user@ip-172-31-89-126 ~]$ touch test.txt
[ec2-user@ip-172-31-89-126 ~]$ ls
test.txt
[ec2-user@ip-172-31-89-126 ~]$ rm test.txt
[ec2-user@ip-172-31-89-126 ~]$ ls
vk
[ec2-user@ip-172-31-89-126 ~]$ 
```

i-02616bfc60a209718 (Vinayak_Server)
PublicIPs: 18.207.245.149 PrivateIPs: 172.31.89.126

Step 11: The CloudShell button on the bottom-left corner can be clicked to open a shell terminal. We can execute commands and create VPC directly from here.

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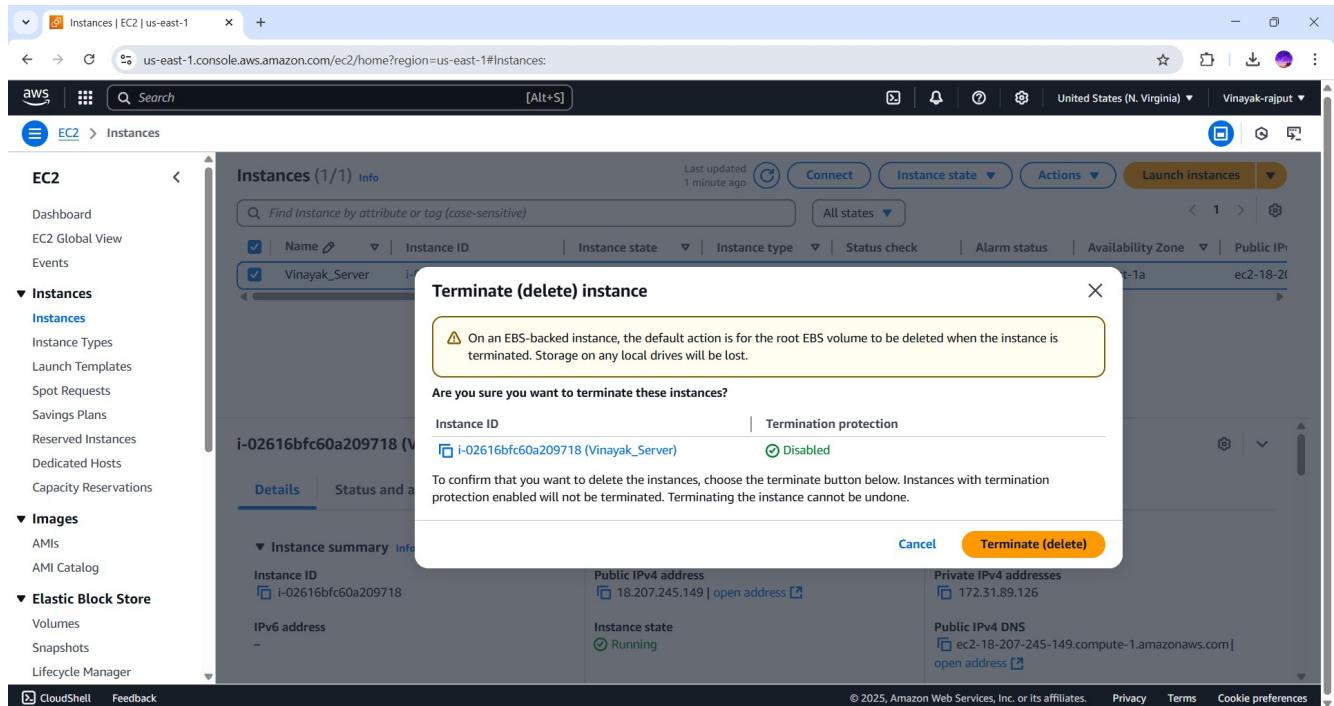
No active tabs

Actions ▾

Open us-east-1 environment Create a VPC environment

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Step 12: Delete the EC2 instance after execution by clicking on Terminate(delete) instance



Step 13: A popped-up message indicates the successful termination of the instance and also delete the corresponding key pair and Security groups associated with this instance in similar manner

We can sign-out of the AWS account after these steps.

