Experiment No -1

Exploring AWS CloudShell and the AWS Cloud9 IDE

Apparatus Required: AWS Account

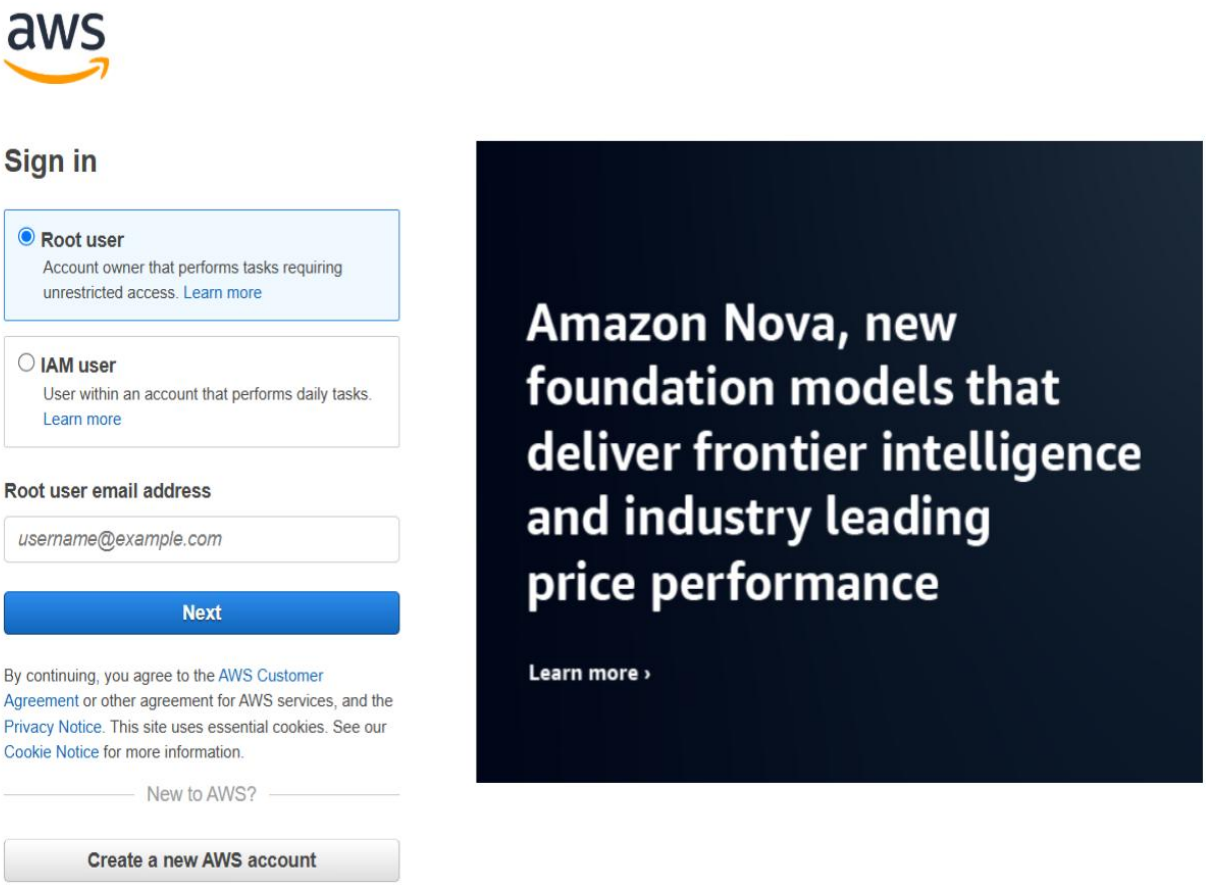
Pre-Requisite: Basic Linux knowledge

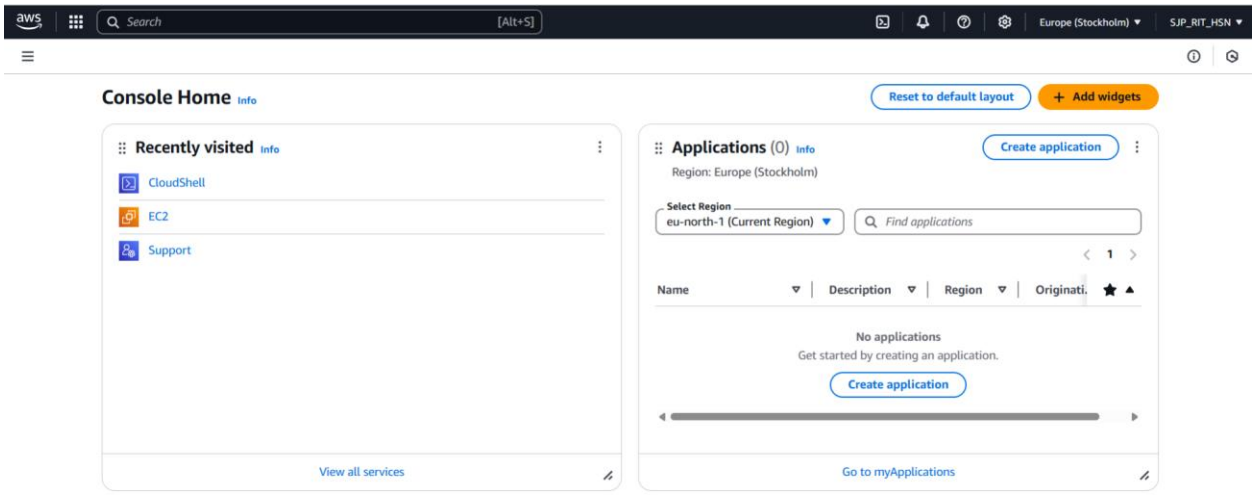
Introduction:

AWS Cloudshell - AWS CloudShell is a browser-based shell that makes it easier to securely manage, explore, and interact with your AWS resources. AWS Cloud9 IDE - AWS Cloud9 is a cloud-based integrated development environment (IDE) that lets you write, run, and debug your code with just a browser. It includes a code editor, debugger, and terminal.

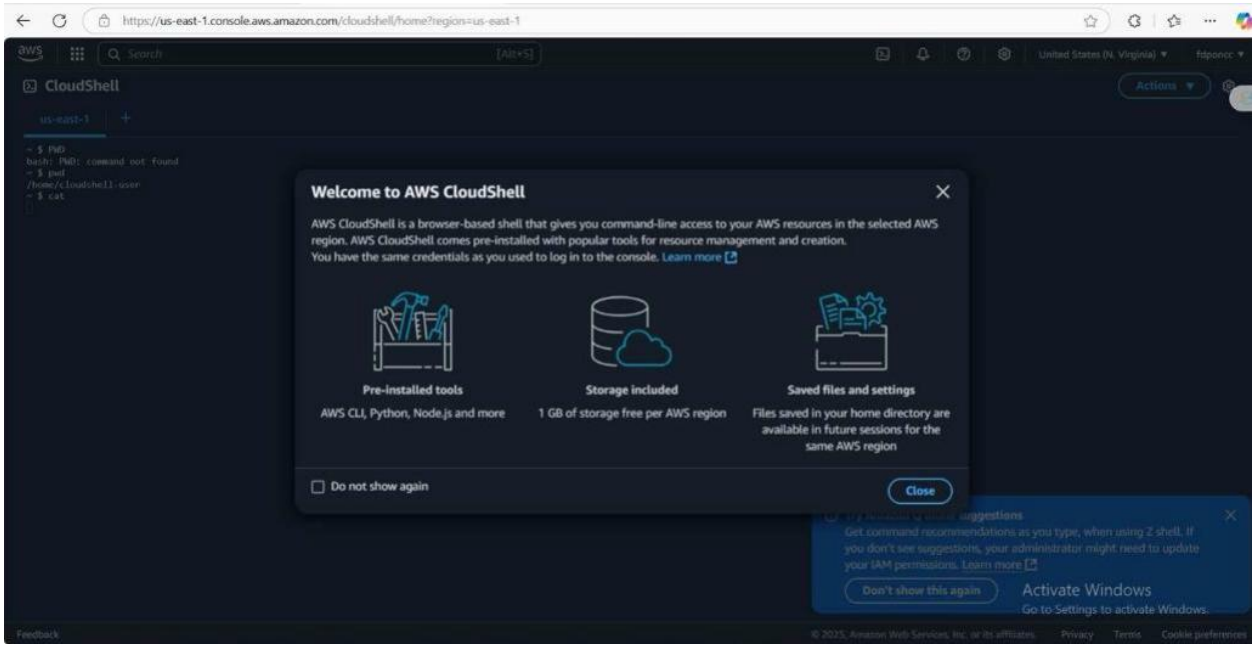
Procedure:

1.Login to the AWS console using AWS account Credentials.





2. Select CLOUDSHELL



3.cloud shell terminal

Execute basic shell commands

Shell Prompt

The prompt, $, which is called the command prompt, is issued by the shell. While the prompt is displayed, you can type a command.

Shell reads your input after you press Enter. It determines the command you want executed by looking at the first word of your input. A word is an unbroken set of characters. Spaces and tabs separate words.

Following is a simple example of the command,

$date # Displays the current date

$pwd # Displays the present working directory.

$ls # Lists the contents of the current directory.

$echo # Prints a string of text, or value of a variable to the terminal.

Create and Execute Bash scripts

```
#!/bin/bash
echo "Today is " `date`
```

Line #1: The shebang (#!/bin/bash) points toward the bash shell path.

Line #2: The echo command is displaying the current date and time on the terminal. Note

that the date is in backticks.

Executing the bash script

To make the script executable, assign execution rights to your user using this command:

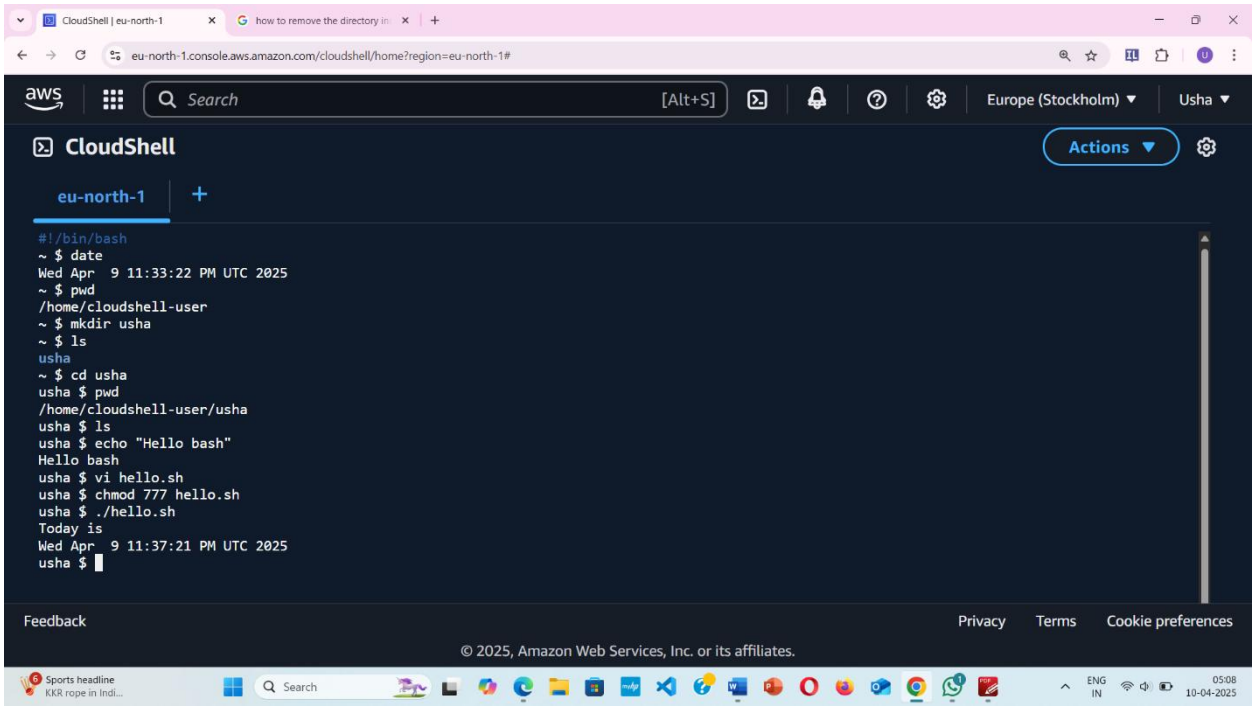
chmod 777 hello.sh

You can run the script using any of the mentioned methods:

sh hello.sh

bash hello.sh

./hello.sh



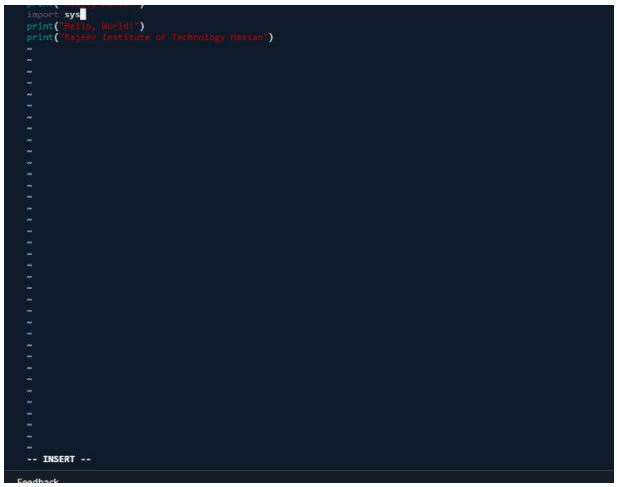
4.Create and Execute Python scripts

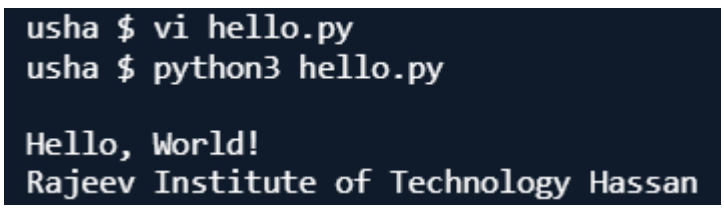
Hello.py

import sys

print("Hello, World!")

print("Rajeev Institute of Technology Hassan ")





Add.py

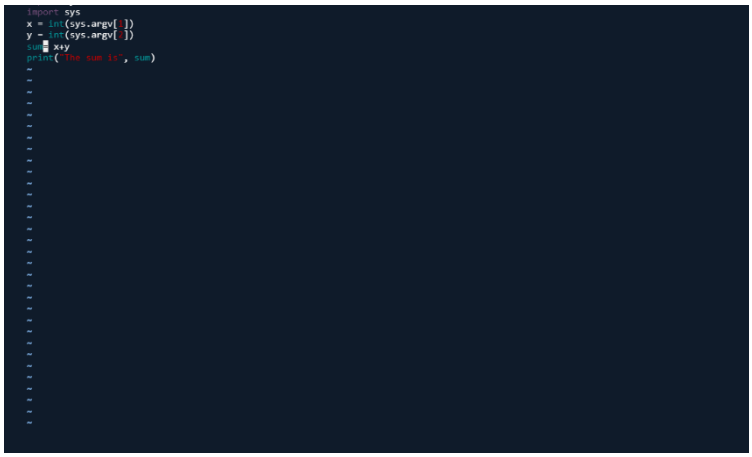
```
import sys

x=int(sys.argv[1])

y=int(sys.argv[2])

sum=x+y

print("The sum is",sum)
```



```
usha $ vi add.py
usha $ python3 add.py 3 4
The sum is 7
usha $
```

You can run the script using any of the mentioned methods:

→python3 hello.py

→python3 Add.py 3 4

ls -l command

The ls -l command in Cloud Shell (just like in any Linux terminal) is used to list files and directories in long format, showing detailed information. Cloud Shell is basically a Linux environment in the cloud, so all typical Linux commands work the same way.

a. rw- → Owner's permissions

- r → read
- w → write
- - → no execute

The **owner** can **read and write**, but **not execute** the file.

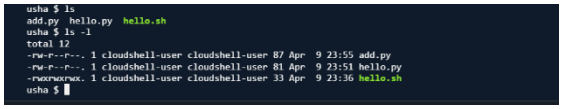
b. r-- → Group's permissions

- r → read
- - → no write
- - → no execute

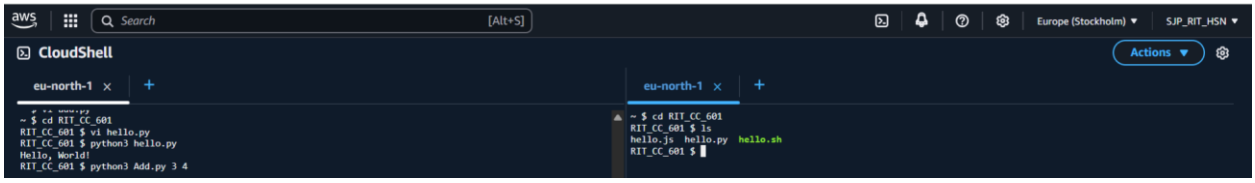
The **group** can only **read** the file.

c. r-- → Others' permissions

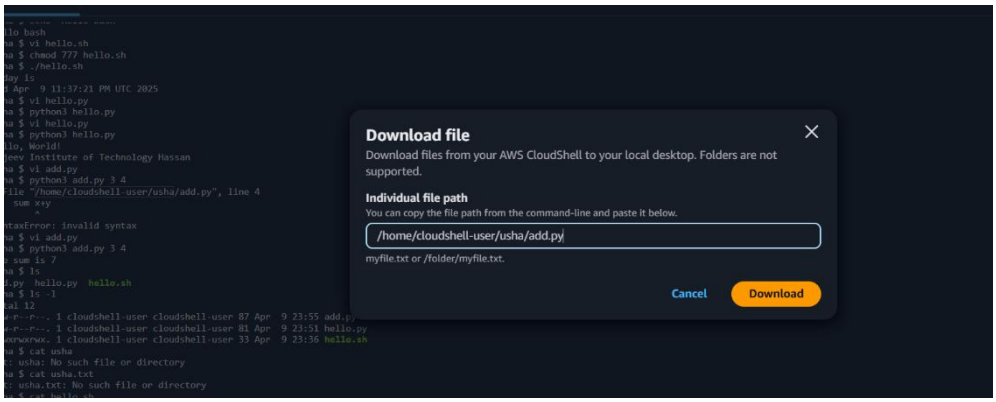
- Same as group: only **read** permission.



5.SPLIT INTO MULTIPLE ENVIRONMENTS

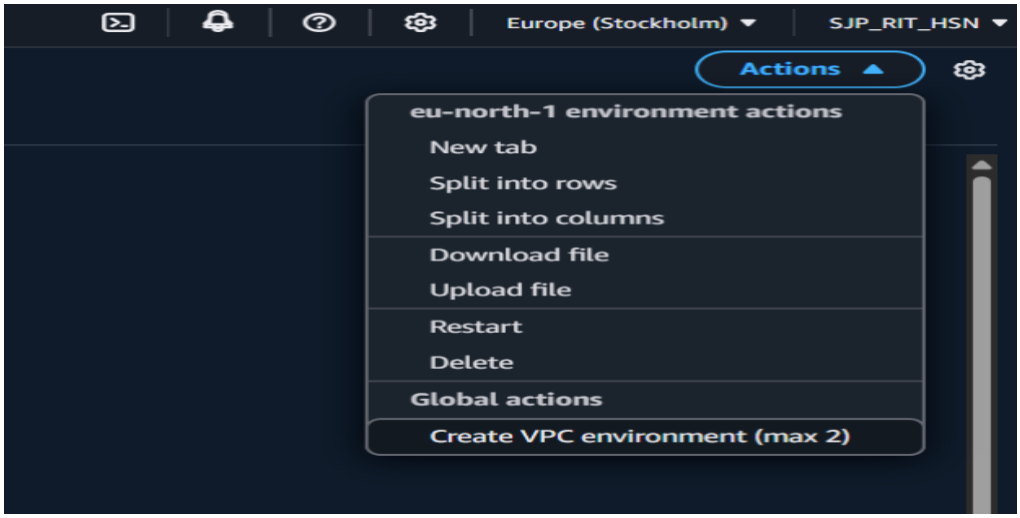


6.Download a file

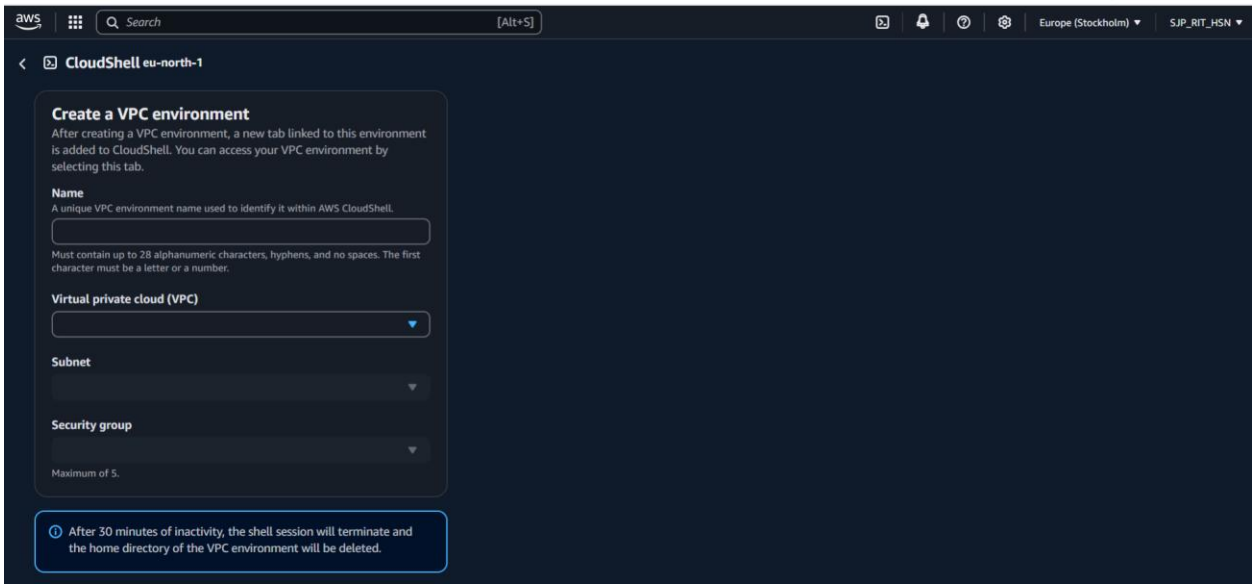


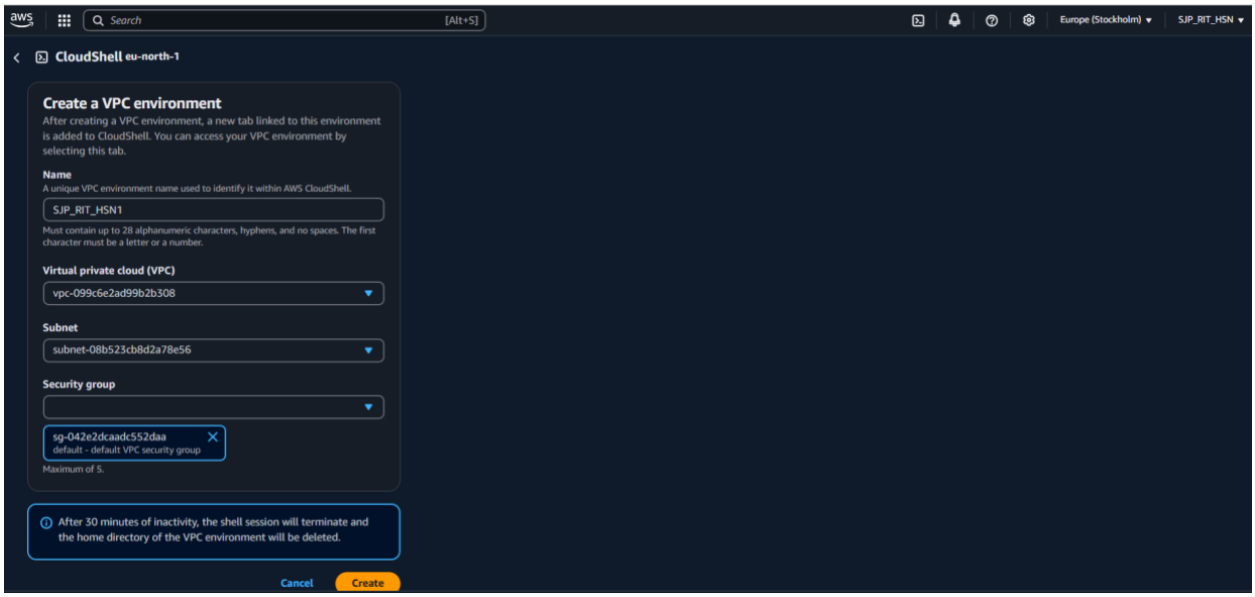
Create a virtual private cloud using cloudshell (it doesn't support upload/download)

go to actions → right top corner

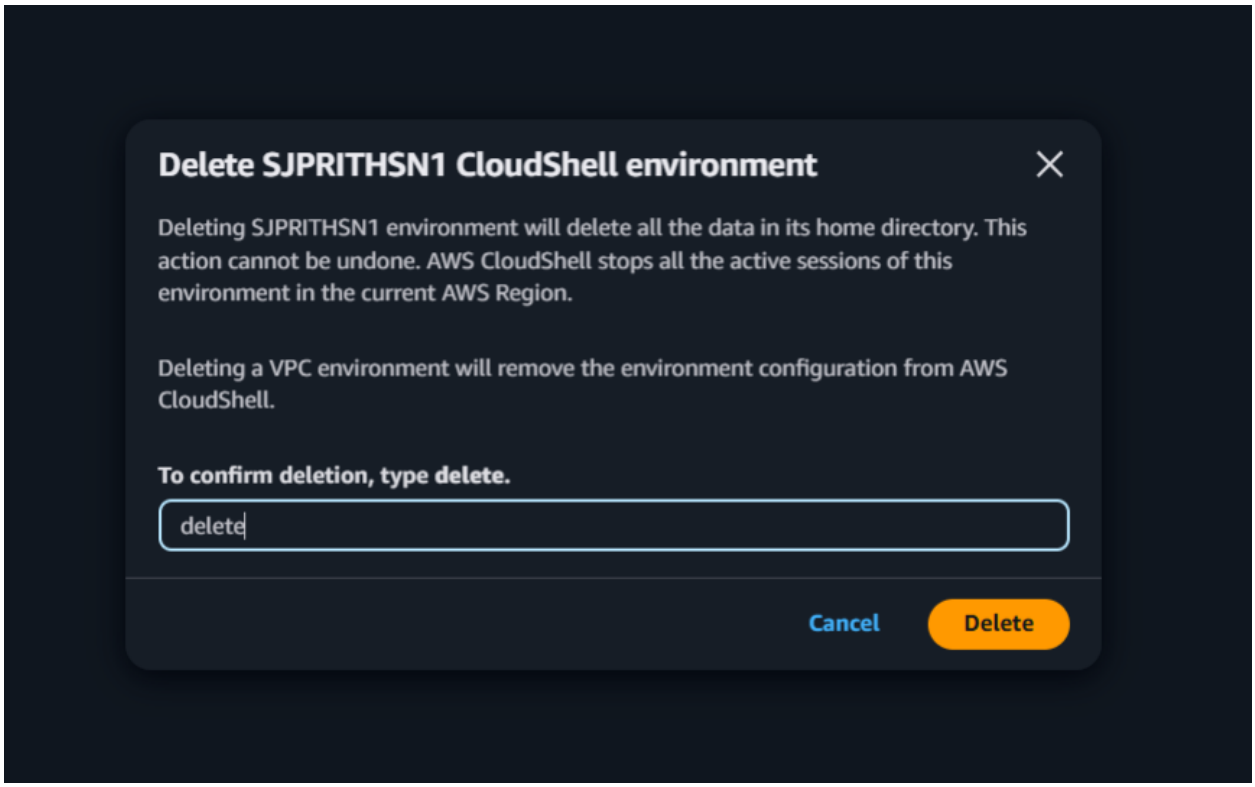


Step1 : click on create VPC environment

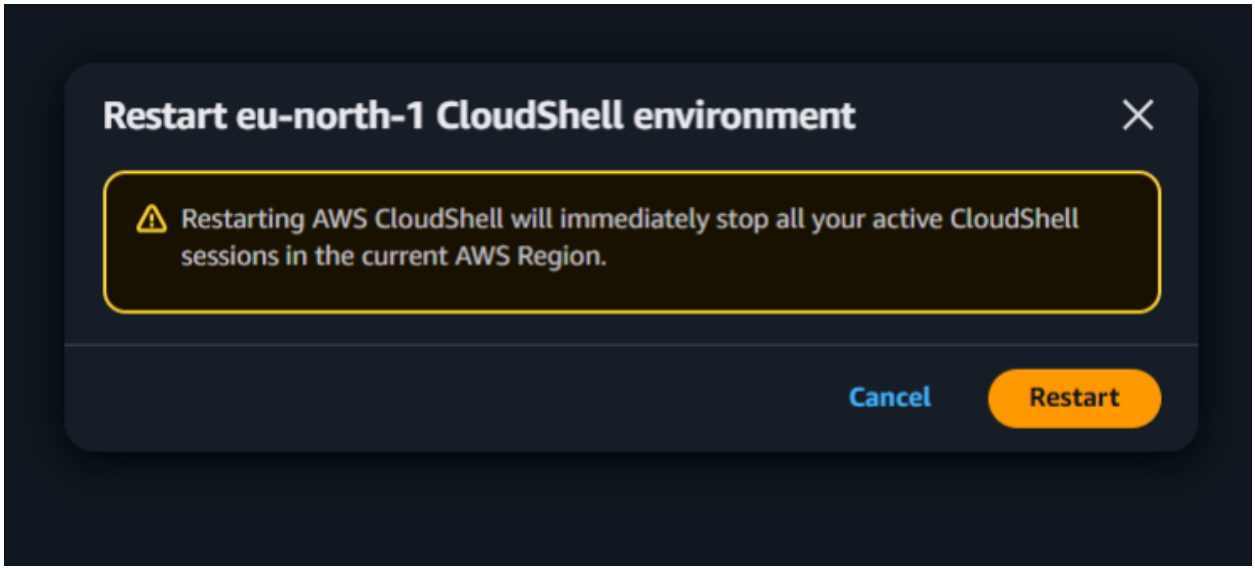


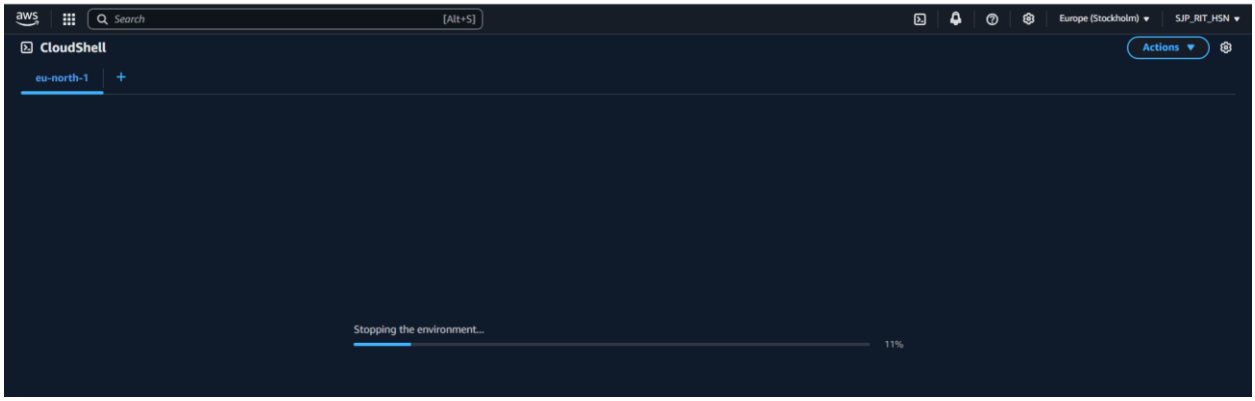


Step2: DELETE A CLOUDSHELL

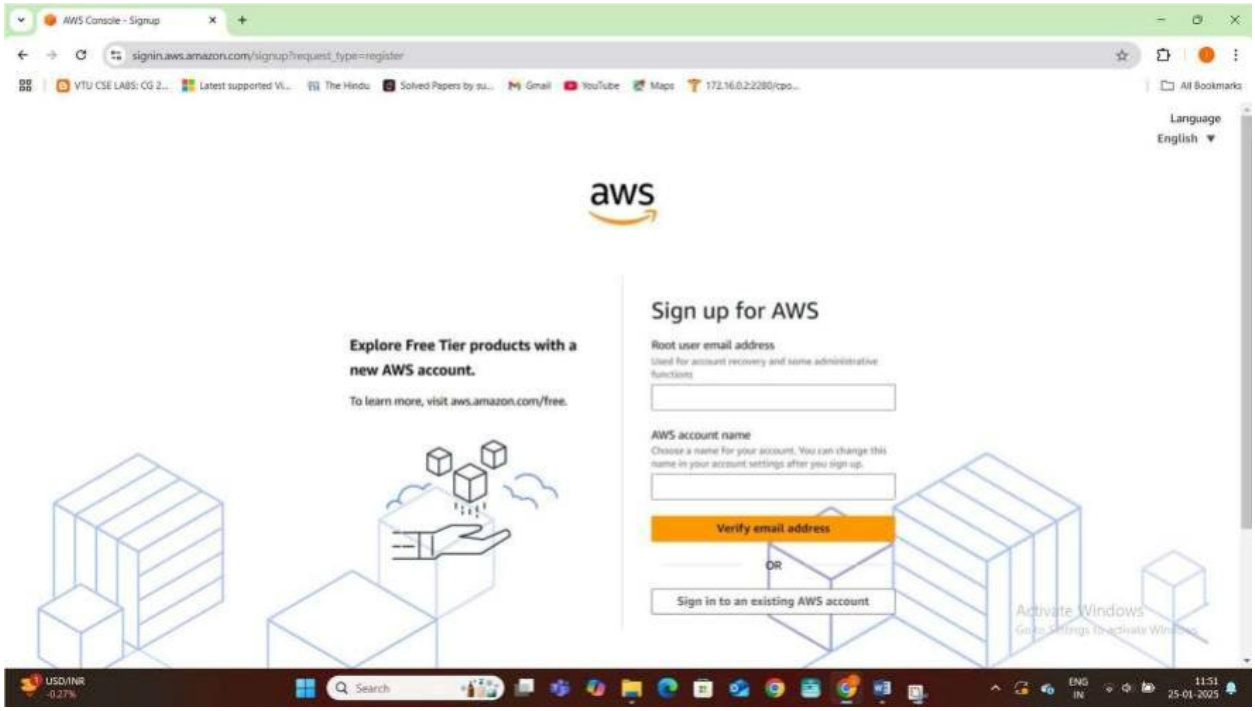


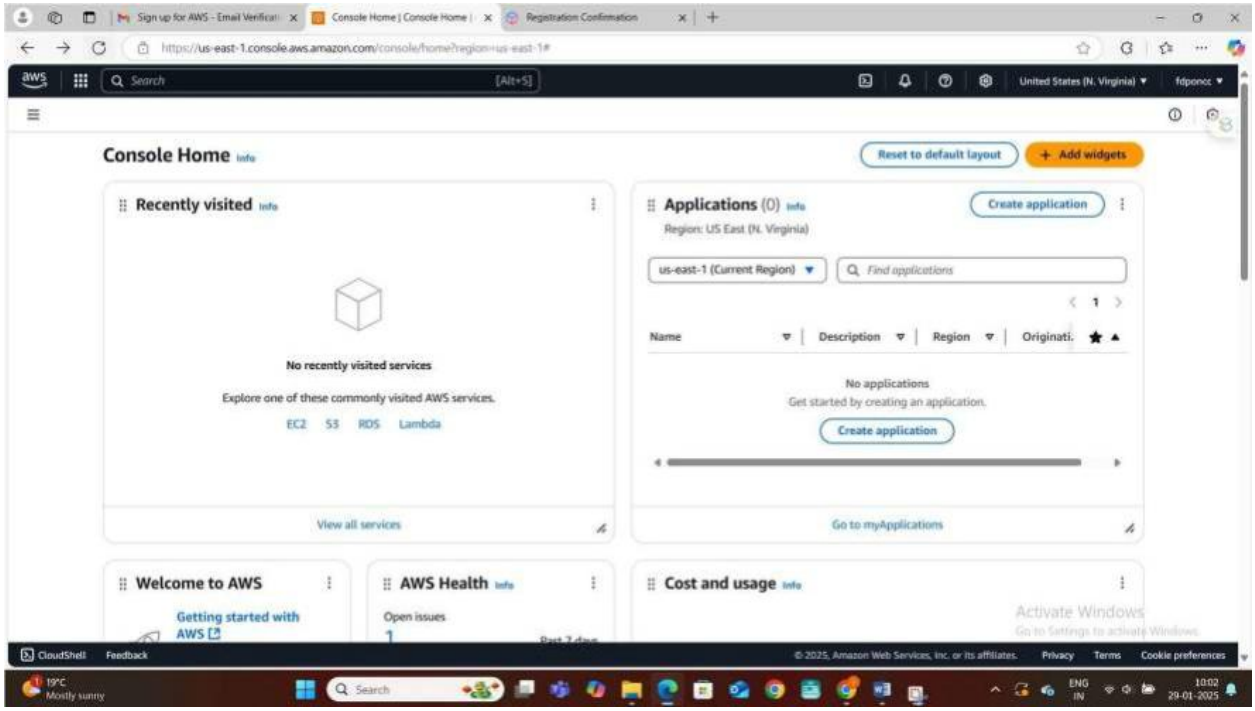
Step3: Restart the cloud shell

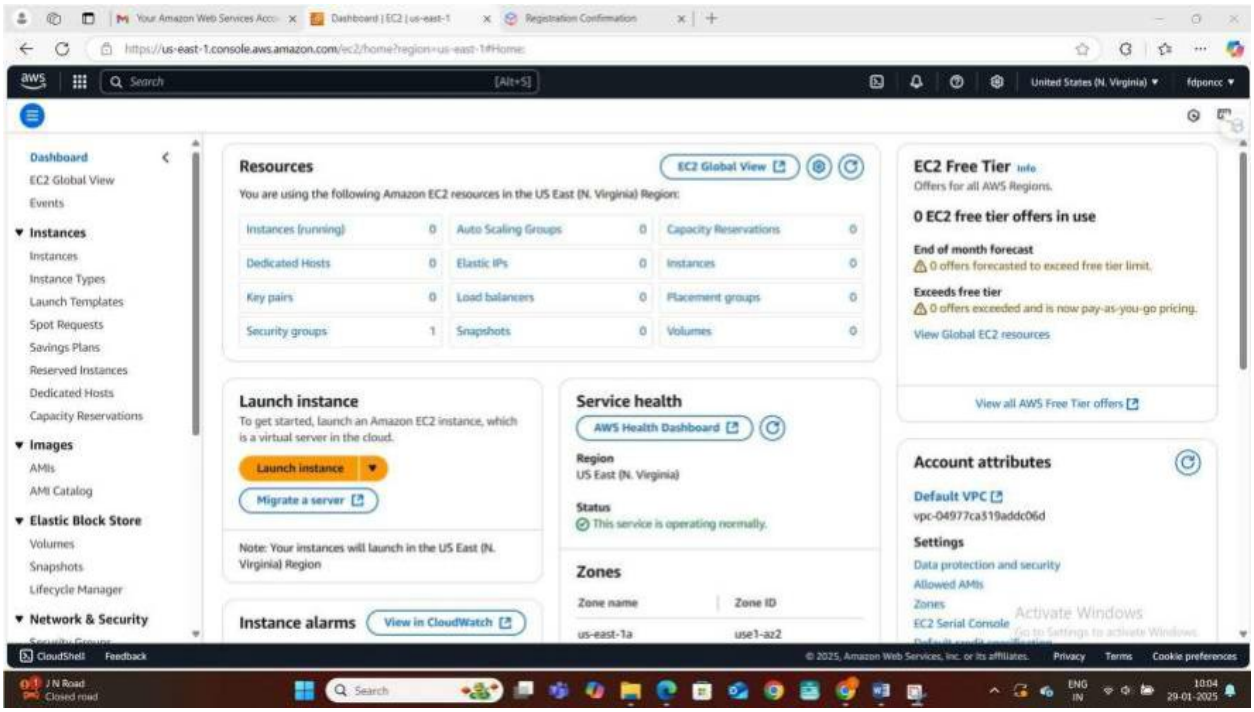


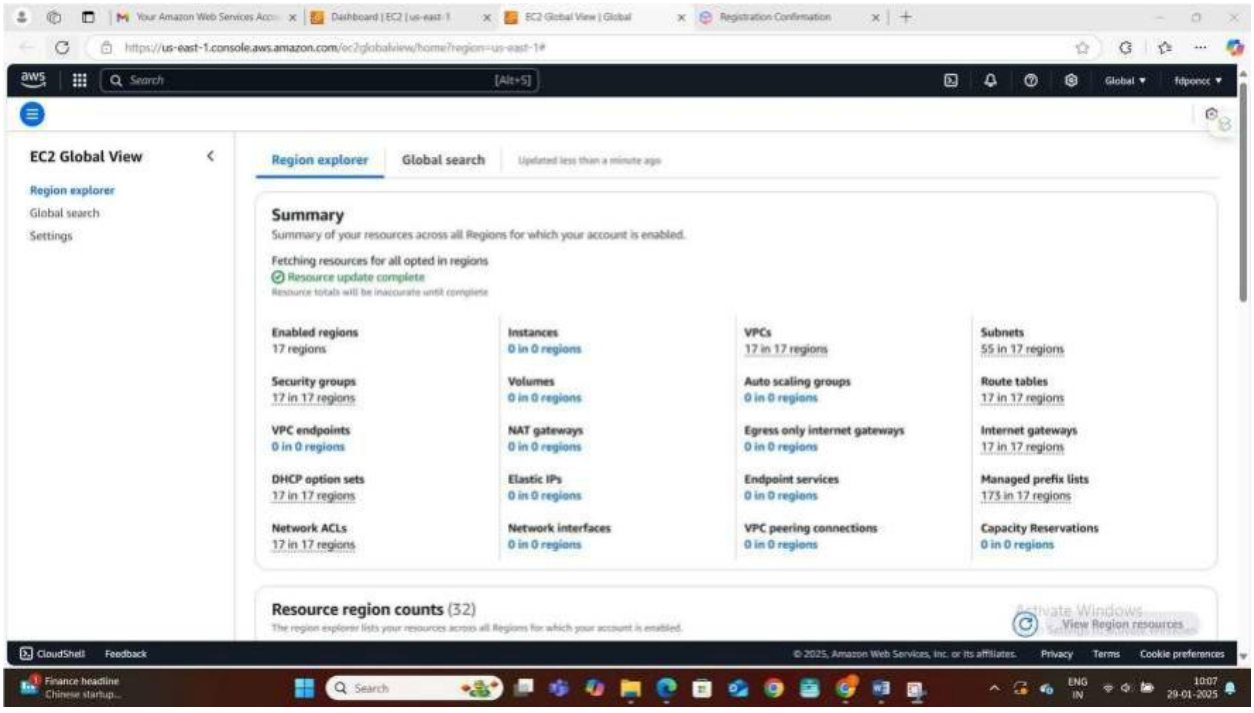


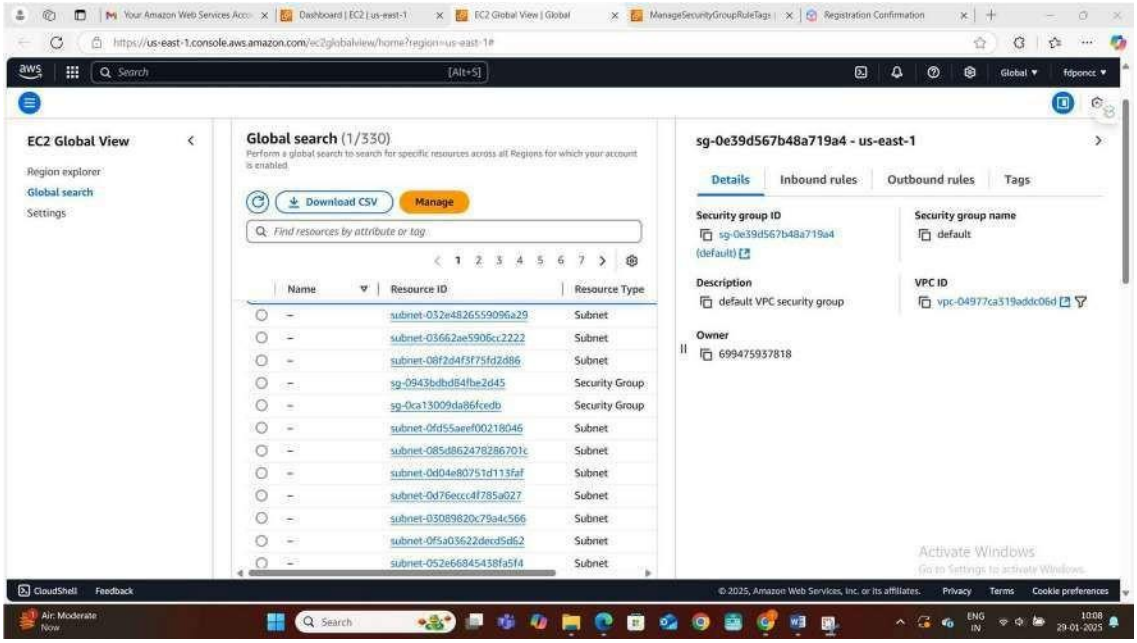
EC2 instead of cloud9






Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Resources
EC2 Global View
You are using the following Amazon EC2 resources in the US East (N. Virginia) Region:
Instances (running) 0
Auto Scaling Groups 0
Capacity Reservations 0
Dedicated Hosts 0
Elastic IPs 0
Instances 0
Key pairs 0
Load balancers 0
Placement groups 0
Security groups 1
Snapshots 0
Volumes 0
Launch instance
To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.
Launch instance
Migrate a server
Note: Your instances will launch in the US East (N. Virginia) Region
Instance alarms
View in CloudWatch
Service health
AWS Health Dashboard
Region
US East (N. Virginia)
Status
This service is operating normally.
Zones
Zone name
Zone ID
us-east-1a
use1-az2
EC2 Free Tier
Info
Offers for all AWS Regions.
0 EC2 free tier offers in use
End of month forecast
0 offers forecasted to exceed free tier limit.
Exceeds free tier
0 offers exceeded and is now pay-as-you-go pricing.
View Global EC2 resources
View all AWS Free Tier offers
Account attributes
Default VPC
vpc-04977ca519addc06d
Settings
Data protection and security
Allowed AMIs
Zones
EC2 Serial Console
CloudShell
Feedback
Privacy
Terms
Cookie preferences


EC2 Global View
Region explorer
Global search
Settings
Region explorer
Global search
Summary
Summary of your resources across all Regions for which your account is enabled.
Fetching resources for all opted in regions
Resource update complete
Enabled regions
17 regions
Instances
0 in 0 regions
VPCs
17 in 17 regions
Subnets
55 in 17 regions
Security groups
17 in 17 regions
Volumes
0 in 0 regions
Auto scaling groups
0 in 0 regions
Route tables
17 in 17 regions
VPC endpoints
0 in 0 regions
NAT gateways
0 in 0 regions
Egress only internet gateways
0 in 0 regions
Internet gateways
17 in 17 regions
DHCP option sets
17 in 17 regions
Elastic IPs
0 in 0 regions
Endpoint services
0 in 0 regions
Managed prefix lists
173 in 17 regions
Network ACLs
17 in 17 regions
Network interfaces
0 in 0 regions
VPC peering connections
0 in 0 regions
Capacity Reservations
0 in 0 regions
Resource region counts (32)
View Region resources
CloudShell
Feedback
Privacy
Terms
Cookie preferences


EC2 Global View
Region explorer
Global search
Settings
Global search (1/330)
Perform a global search to search for specific resources across all Regions for which your account is enabled
Download CSV
Manage
Find resources by attribute or tag
Name
Resource ID
Resource Type
subnet-032e4826559096a29 Subnet
subnet-03662ae5906cc2222 Subnet
subnet-08f2d4f3f75fd2d86 Subnet
sg-0943bdbd84fbe2d45 Security Group
sg-0ca13009da86fcedb Security Group
subnet-0fd55aeef00218046 Subnet
subnet-085d862478286701c Subnet
subnet-0d04e80751d113faf Subnet
subnet-0d76eccc4f785a027 Subnet
subnet-03089820c79a4c566 Subnet
subnet-0f5a03622decd5d62 Subnet
subnet-052e66845438fa5f4 Subnet
sg-0e39d567b48a719a4 - us-east-1
Details
Inbound rules
Outbound rules
Tags
Security group ID
sg-0e39d567b48a719a4 (default)
Security group name
default
Description
default VPC security group
VPC ID
vpc-04977ca319addc06d
Owner
699475937818
Activate Windows
CloudShell
Feedback
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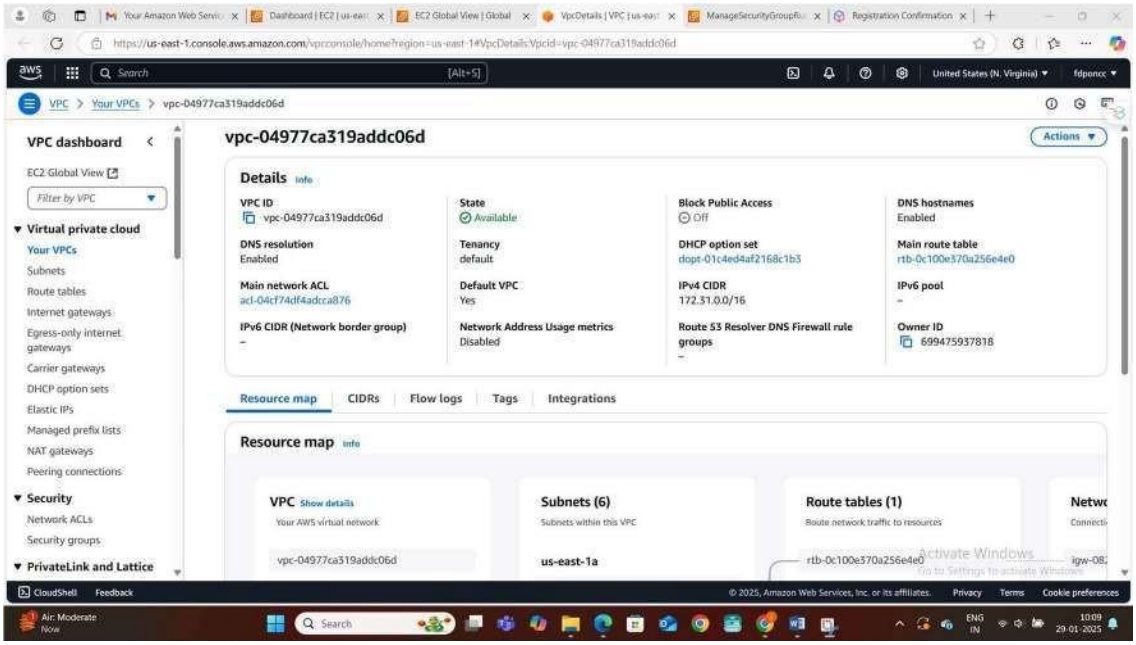
Privacy
Terms
Cookie preferences


VPC dashboard
EC2 Global View
Filter by VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Security
Network ACLs
Security groups
PrivateLink and Lattice
VPC > Your VPCs > vpc-04977ca319addc06d
vpc-04977ca319addc06d
Actions
Details info
VPC ID
vpc-04977ca319addc06d
State
Available
Block Public Access
Off
DNS hostnames
Enabled
DNS resolution
Enabled
Tenancy
default
DHCP option set
dopt-01c4ed4af2168c1b3
Main route table
rtb-0c100e570a256e4e0
Main network ACL
acl-04cf74df4adcca876
Default VPC
Yes
IPv4 CIDR
172.31.0.0/16
IPv6 pool
IPv6 CIDR (Network border group)
Network Address Usage metrics
Disabled
Route 53 Resolver DNS Firewall rule groups
Owner ID
699475937818
Resource map
CIDRs
Flow logs
Tags
Integrations
Resource map info
VPC Show details
Your AWS virtual network
vpc-04977ca319addc06d
Subnets (6)
Subnets within this VPC
us-east-1a
Route tables (1)
Route network traffic to resources
rtb-0c100e570a256e4e0
Activate Windows
CloudShell
Feedback
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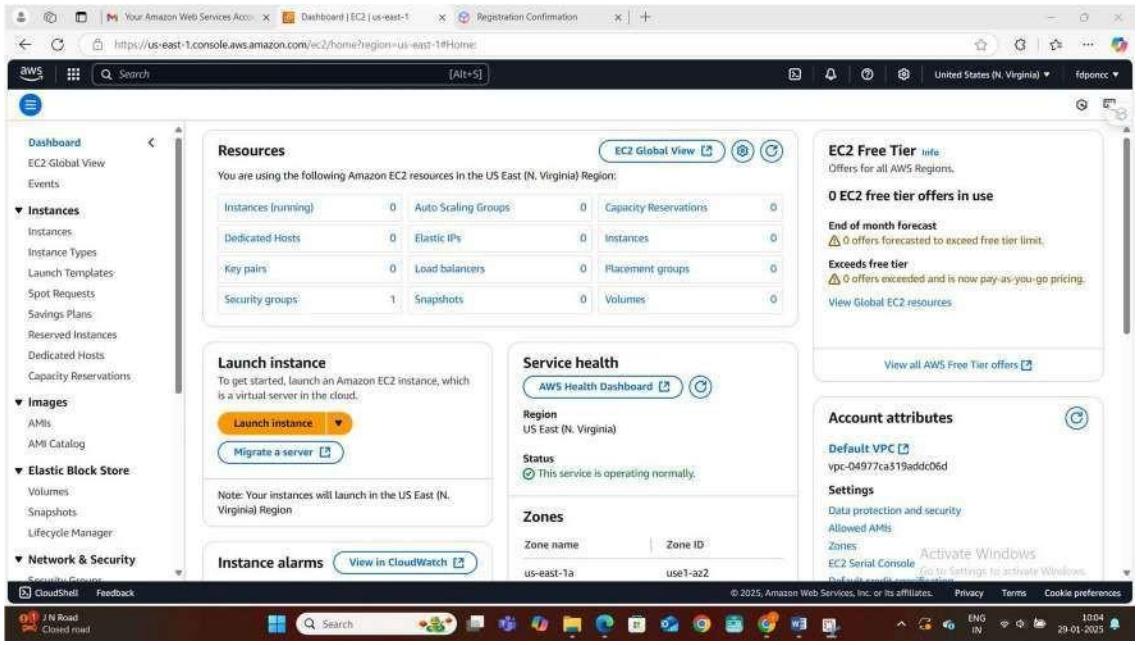
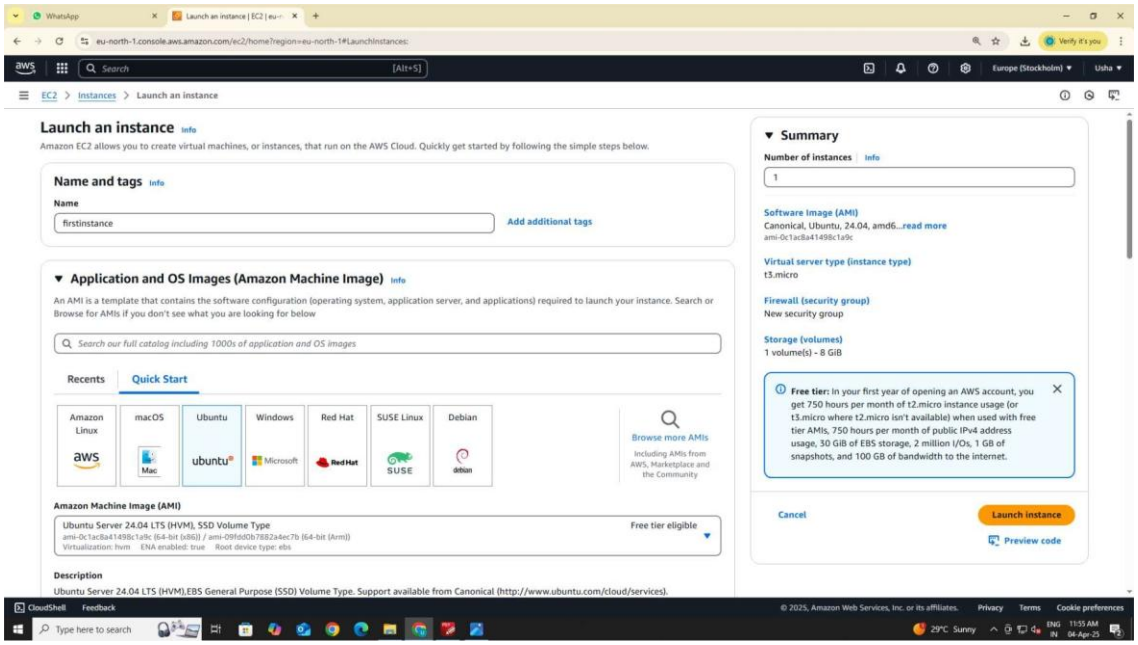
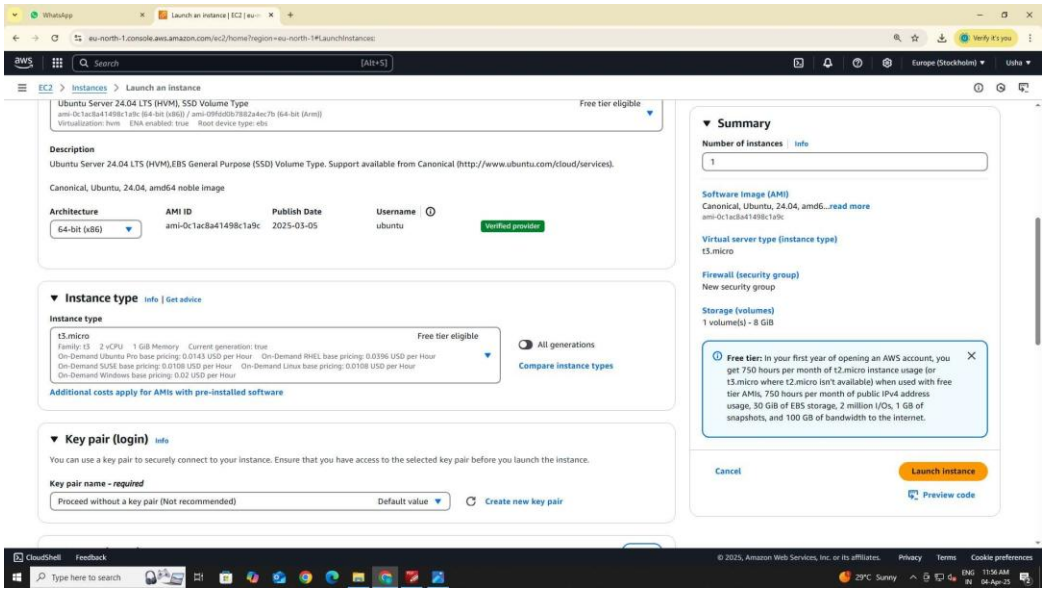
Privacy
Terms
Cookie preferences



LAUNCH INSTANCE




EC2 > Instances > Launch an instance
Ubuntu Server 24.04 LTS (HVM), SSD Volume Type
Free tier eligible
Description
Ubuntu Server 24.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).
Canonical, Ubuntu, 24.04, amd64 noble image
Architecture
AMI ID
Publish Date
Username
64-bit (x86)
ami-0c1ac8a41498c1a9c
2025-03-05
ubuntu
Verified provider
Instance type
t3.micro
Free tier eligible
All generations
Compare instance types
Additional costs apply for AMIs with pre-installed software
Key pair (login)
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name - required
Proceed without a key pair (Not recommended)
Default value
Create new key pair
Summary
Number of instances
1
Software Image (AMI)
Canonical, Ubuntu, 24.04, amd6...read more
Virtual server type (instance type)
t3.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB
Free tier: In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4 address usage, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.
Cancel
Launch instance
Preview code
CloudShell
Feedback
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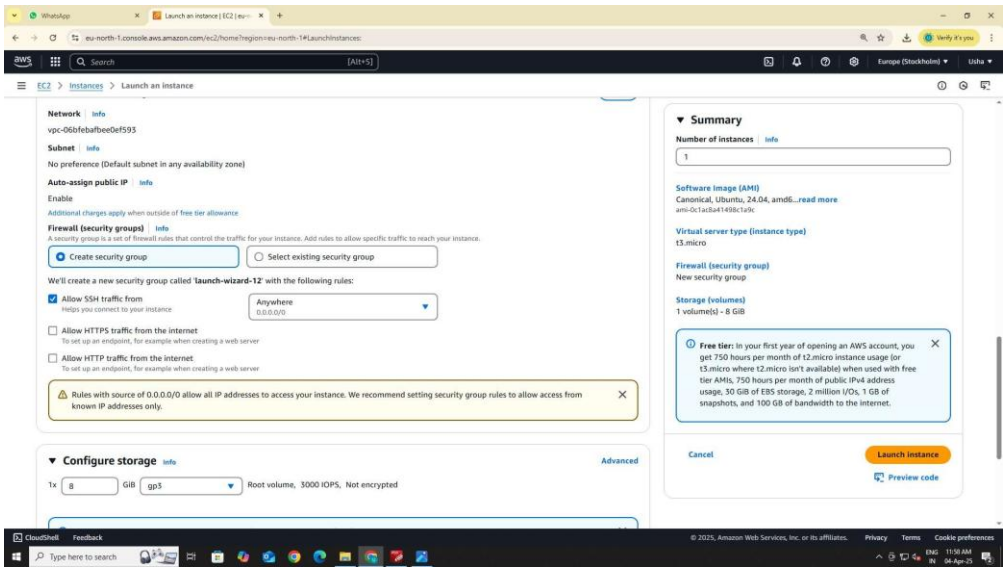
EC2 > Instances > Launch an instance
Network
vpc-06bfebafbee0ef593
Subnet
No preference (Default subnet in any availability zone)
Auto-assign public IP
Enable
Firewall (security groups)
Create security group
Select existing security group
We'll create a new security group called 'launch-wizard-12' with the following rules:
Allow SSH traffic from
Anywhere
0.0.0.0/0
Allow HTTPS traffic from the internet
Allow HTTP traffic from the internet
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.
Configure storage
Advanced
1x
8
GiB
gp3
Root volume, 3000 IOPS, Not encrypted
Summary
Number of instances
1
Software Image (AMI)
Canonical, Ubuntu, 24.04, amd6...read more
Virtual server type (instance type)
t3.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB
Free tier: In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4 address usage, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.
Cancel
Launch instance
Preview code
CloudShell
Feedback
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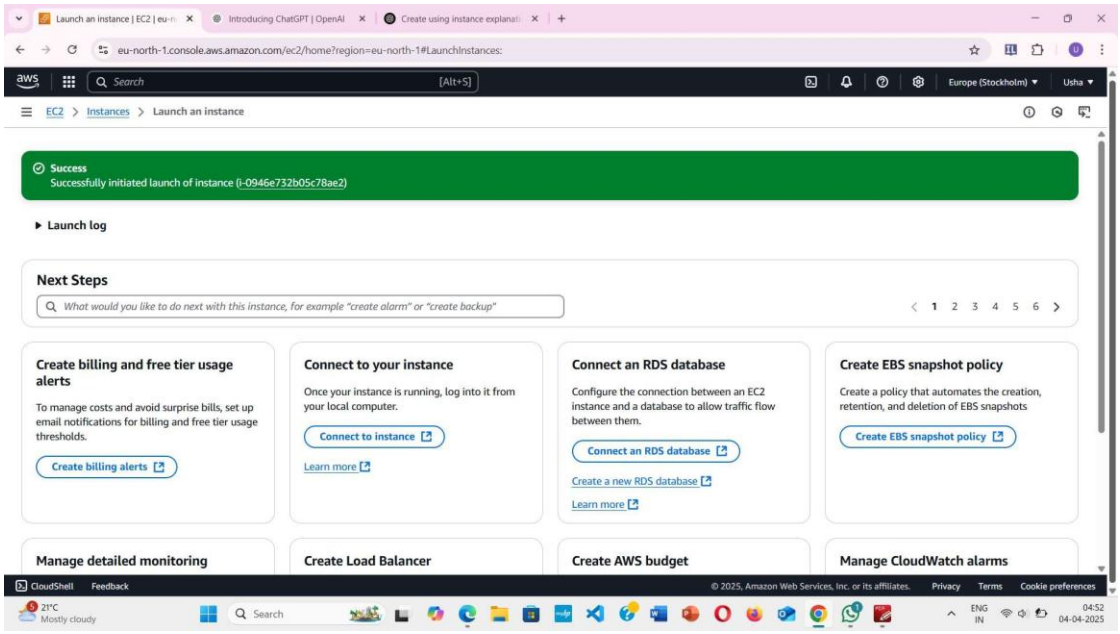
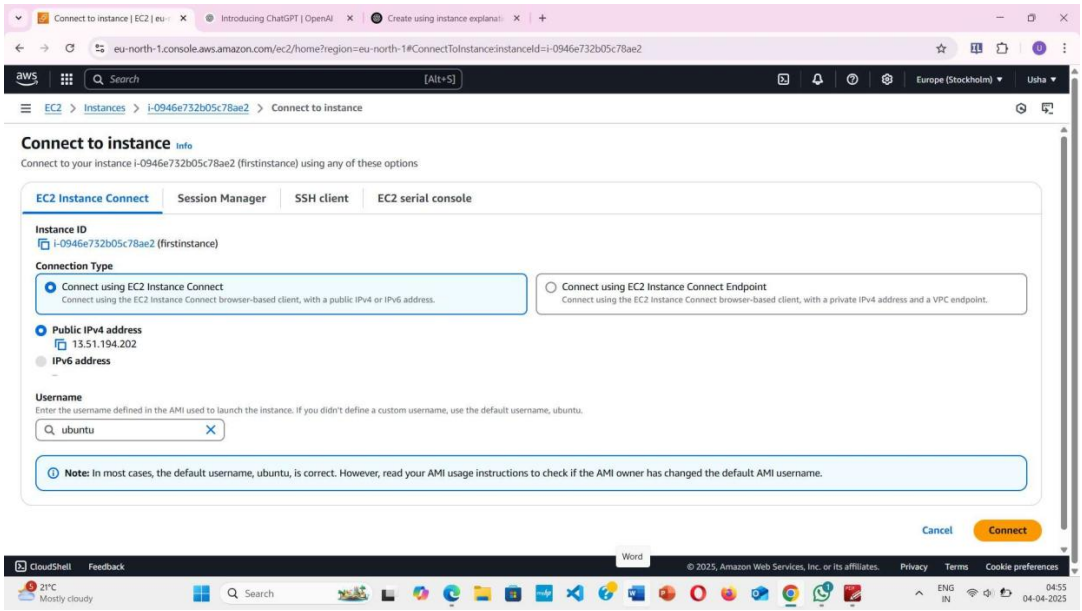
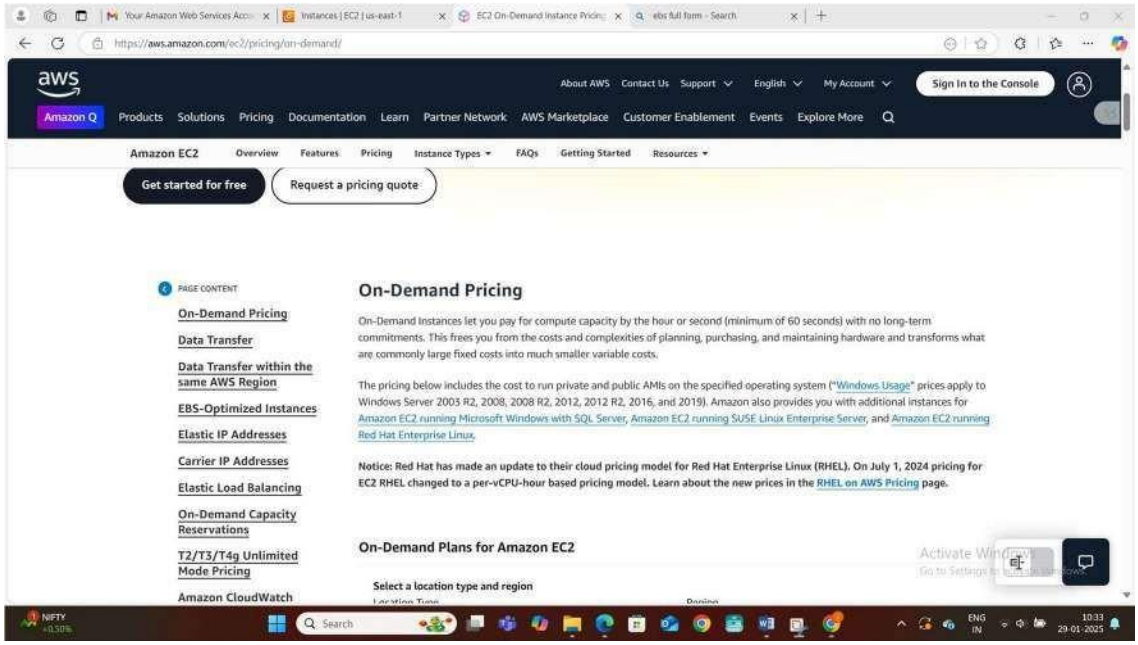


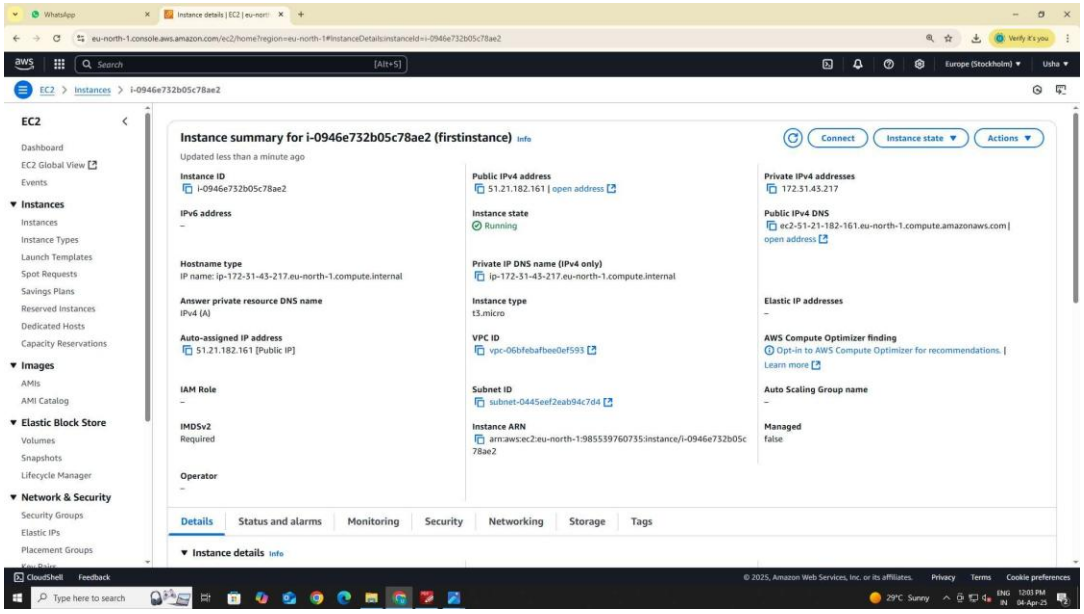
CONNECT TO INSTANCE



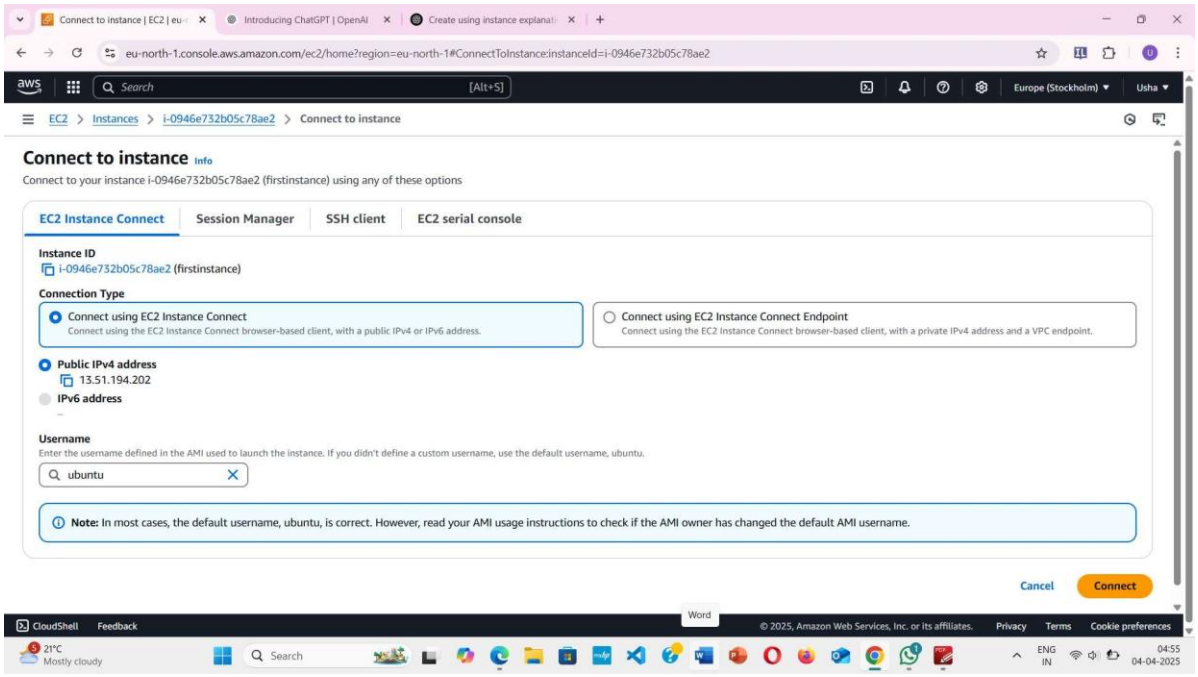
#JUST TO SEE PRICING



CLICK ON ID TO KNOW THE DEATAILS OF INSTANCE



PUBLIC IP:51.21.182.161


Connect to instance | EC2 | eu-
Introducing ChatGPT | OpenAI
Create using instance explanati
eu-north-1.console.aws.amazon.com/ec2/home?region=eu-north-1#ConnectToInstance:instanceId=i-0946e732b05c78ae2
Search
[Alt+S]
Europe (Stockholm)
Usha
EC2 > Instances > i-0946e732b05c78ae2 > Connect to instance
Connect to instance Info
Connect to your instance i-0946e732b05c78ae2 (firstinstance) using any of these options
EC2 Instance Connect
Session Manager
SSH client
EC2 serial console
Instance ID
i-0946e732b05c78ae2 (firstinstance)
Connection Type
Connect using EC2 Instance Connect
Connect using the EC2 Instance Connect browser-based client, with a public IPv4 or IPv6 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 IPv4 address
13.51.194.202
IPv6 address
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
CloudShell
Feedback
Word
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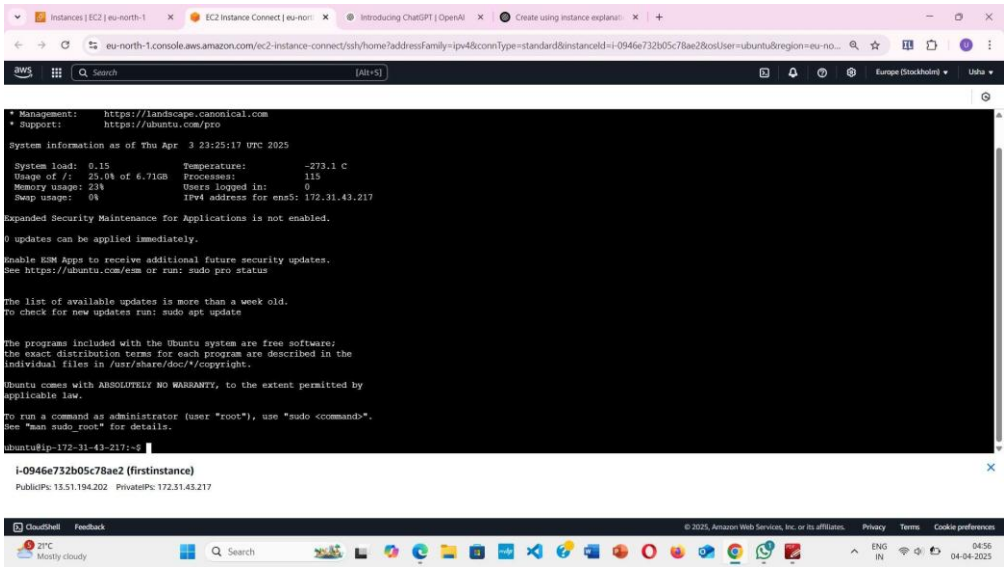
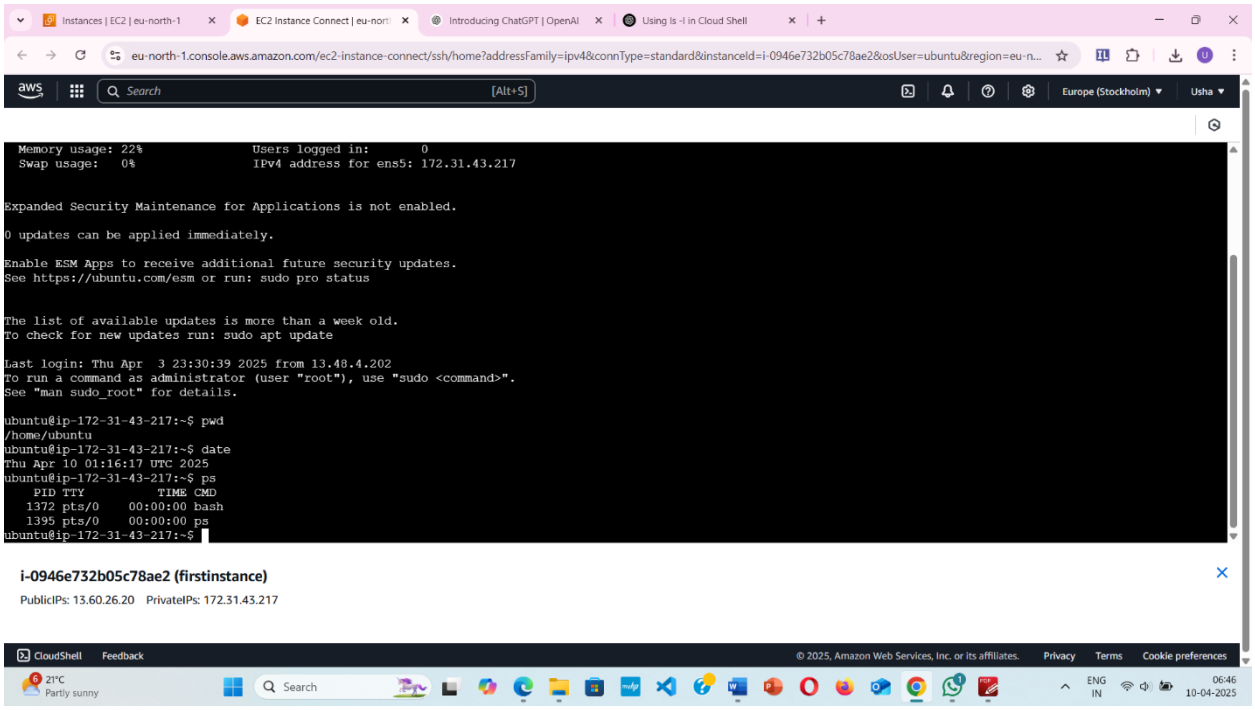
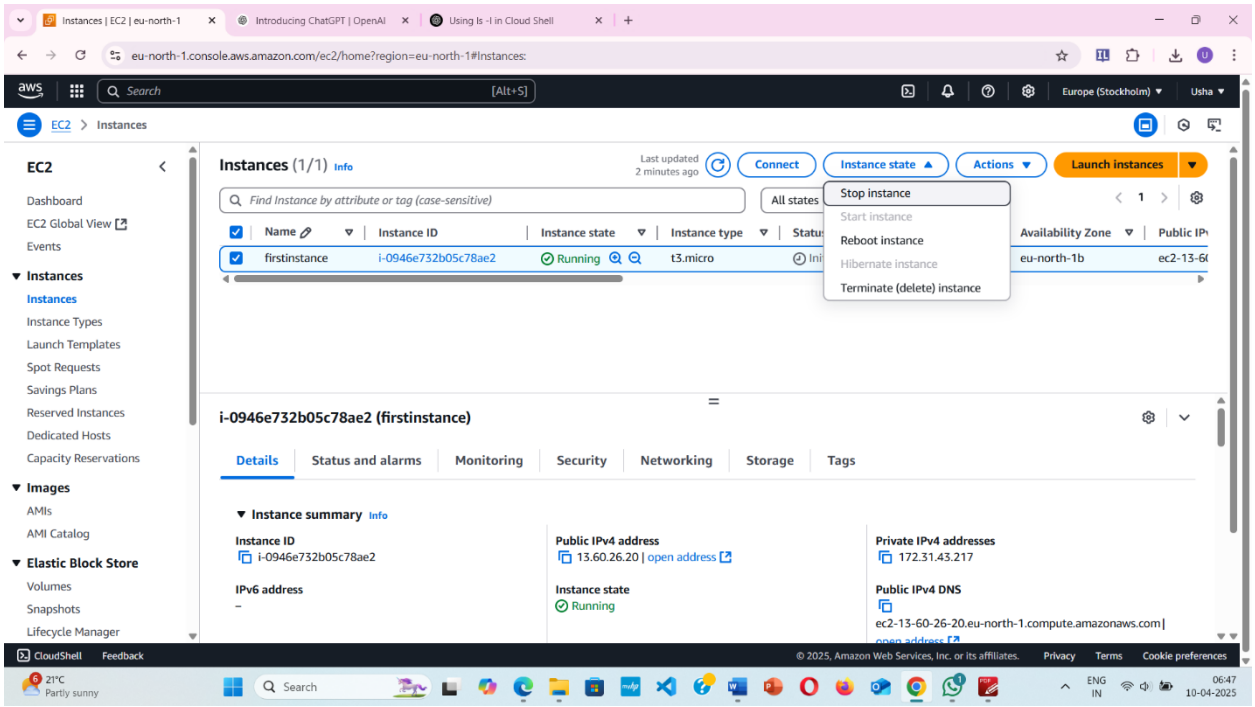
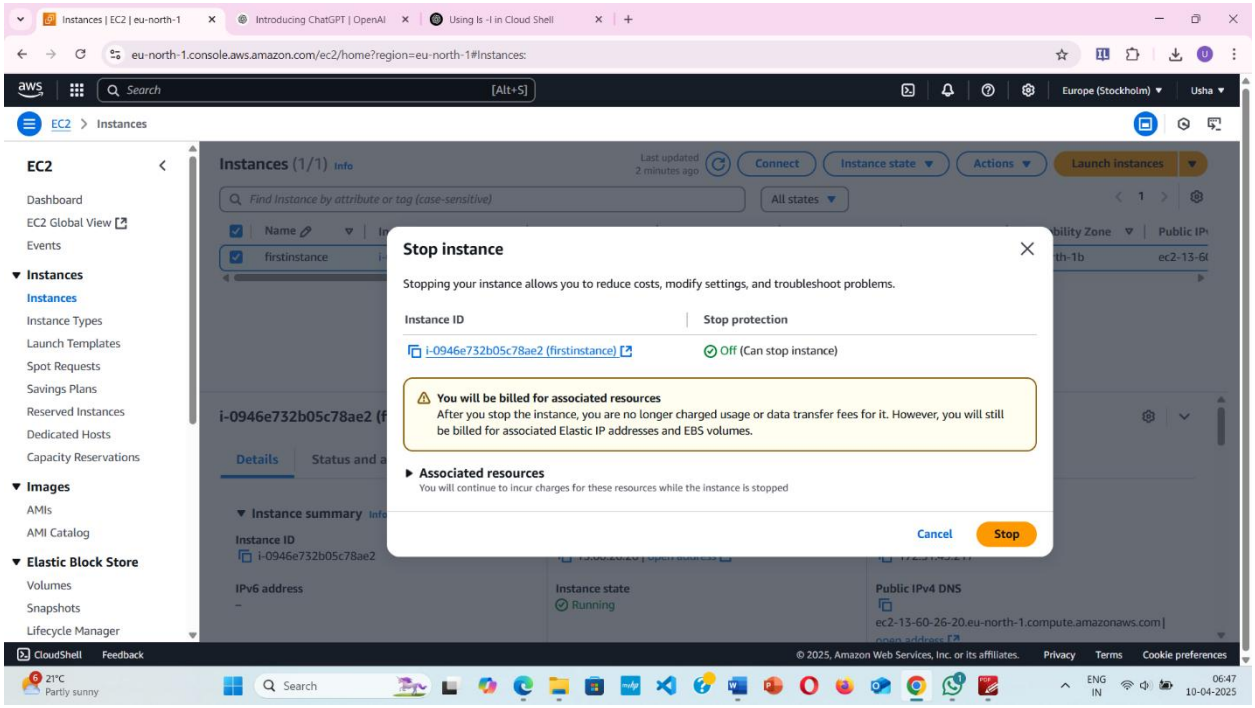
Terms
Cookie preferences
21°C
Mostly cloudy
Search
ENG
IN
04:55
04-04-2025

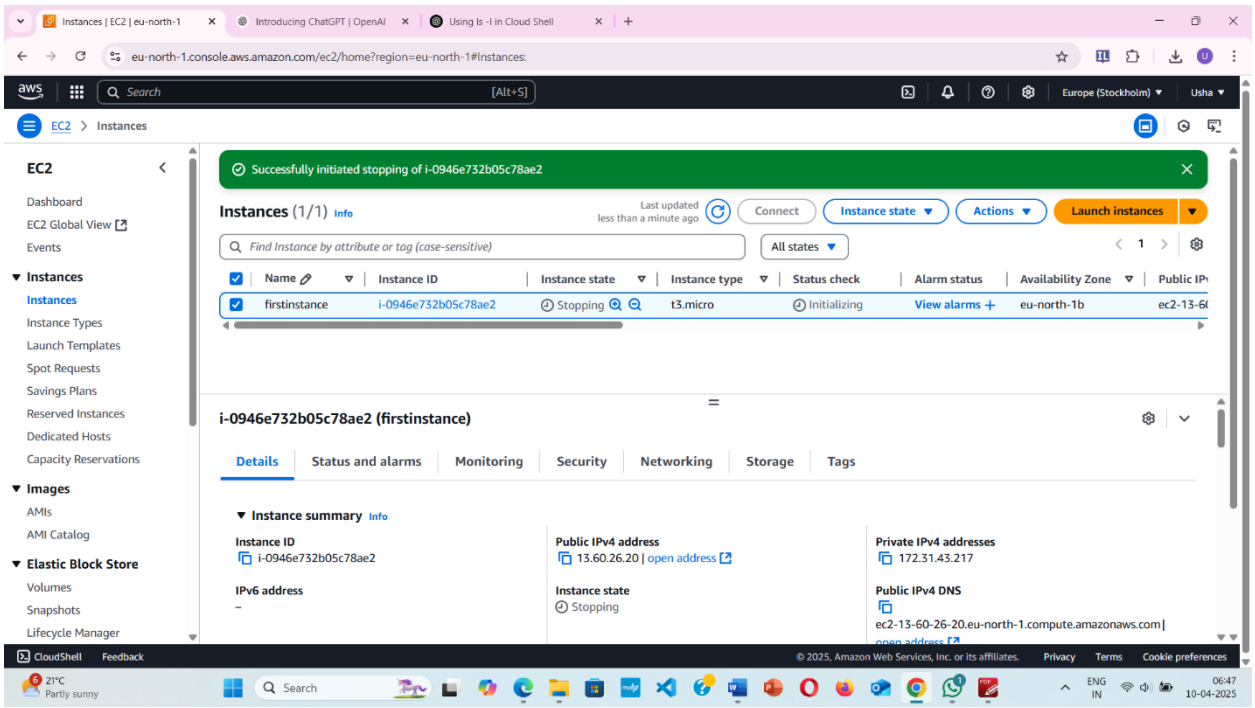

Instances | EC2 | eu-north-1
EC2 Instance Connect | eu-nort
Introducing ChatGPT | OpenAI
Create using instance explanati
eu-north-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?addressFamily=ipv4&connType=standard&instanceId=i-0946e732b05c78ae2&osUser=ubuntu&region=eu-no...
Search
[Alt+S]
Europe (Stockholm)
Usha
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro
System information as of Thu Apr 3 23:25:17 UTC 2025
System load: 0.15
Usage of /: 25.0% of 6.71GB
Memory usage: 23%
Swap usage: 0%
Temperature: -273.1 C
Processes: 115
Users logged in: 0
IPv4 address for ens5: 172.31.43.217
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-172-31-43-217:~$
i-0946e732b05c78ae2 (firstinstance)
PublicIPs: 13.51.194.202 PrivateIPs: 172.31.43.217
CloudShell
Feedback
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
21°C
Mostly cloudy
Search
ENG
IN
04:56
04-04-2025


Memory usage: 22%
Swap usage: 0%
Users logged in: 0
IPv4 address for ens5: 172.31.43.217
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
Last login: Thu Apr 3 23:30:39 2025 from 13.48.4.202
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ubuntu@ip-172-31-43-217:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-43-217:~$ date
Thu Apr 10 01:16:17 UTC 2025
ubuntu@ip-172-31-43-217:~$ ps
PID TTY TIME CMD
1372 pts/0 00:00:00 bash
1395 pts/0 00:00:00 ps
ubuntu@ip-172-31-43-217:~$
i-0946e732b05c78ae2 (firstinstance)
PublicIPs: 13.60.26.20 PrivateIPs: 172.31.43.217


EC2 > Instances
Instances (1/1) Info
Connect
Instance state
Actions
Launch instances
Stop instance
Start instance
Reboot instance
Hibernate instance
Terminate (delete) instance
firstinstance
i-0946e732b05c78ae2
Running
t3.micro
eu-north-1b
i-0946e732b05c78ae2 (firstinstance)
Details
Status and alarms
Monitoring
Security
Networking
Storage
Tags
Instance summary Info
Instance ID
i-0946e732b05c78ae2
Public IPv4 address
13.60.26.20 | open address
Private IPv4 addresses
172.31.43.217
IPv6 address
Instance state
Running
Public IPv4 DNS
ec2-13-60-26-20.eu-north-1.compute.amazonaws.com

Stopping the instance





Terminate the instance

Go to action→ click on terminate(delete) instance