BREEMA ALIAS
SAP ID:- 86092300010

Practical 1 Part 2
Writeup: -

➢ Cloud Computing architecture

Cloud computing architecture refers to the design and layout of how cloud computing services are delivered. It encompasses the various components, their relationships, and the principles that guide their interaction. Think of it as a blueprint for building and running applications in the cloud.

Here's a breakdown of the key elements:

Front-end platform: This is the interface users interact with, such as web browsers, thin clients, or mobile devices.

Back-end platforms: These are the servers, storage systems, and other resources that run applications and store data.

Cloud-based delivery: This refers to how resources are accessed and provisioned over the internet.

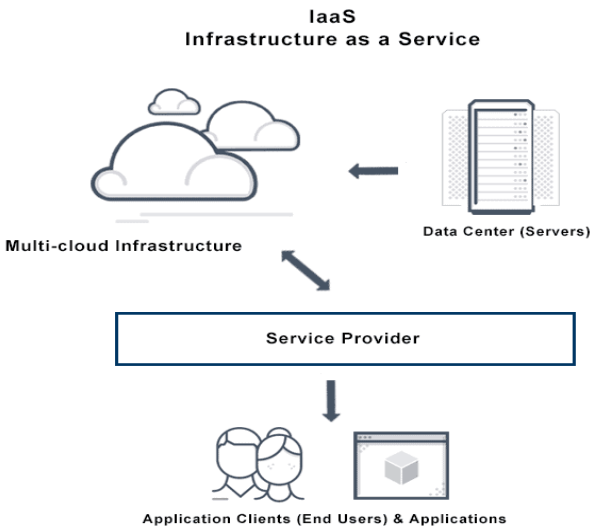
Network: This connects all the components and enables communication between them.

Cloud architectures can be deployed in different ways, such as public, private, or hybrid clouds..

➢ IAAS

Infrastructure as a Service (IaaS)
IaaS is a cloud computing service model that provides the basic building blocks of IT infrastructure, such as servers, storage, networking, and operating systems. Users can then deploy and manage their own applications on top of this infrastructure.

Think of IaaS like renting a bare piece of land and building your own house on it. You have complete control over the environment but are also responsible for managing everything yourself.



➢ AWS

AWS is one of the leading IaaS providers, offering a wide range of cloud computing services. These include:

Compute: EC2 instances, Lambda serverless computing, etc.
Storage: S3 object storage, EBS block storage, etc.
Networking: VPC virtual private clouds, Route 53 DNS, etc.
Databases: DynamoDB NoSQL database, Aurora relational database, etc.
Analytics: Redshift data warehousing, Kinesis real-time data processing, etc.
Machine learning: Amazon SageMaker, Rekognition image recognition, etc.
Security: IAM identity and access management, CloudWatch monitoring, etc.
AWS offers a pay-as-you-go pricing model, so you only pay for the resources you use. This makes it a cost-effective option for businesses of all sizes.

➢ EC2

EC2 is a core AWS service that provides virtual servers in the cloud. You can choose from a variety of instance types with different configurations of CPU, memory, storage, and networking. This allows you to scale your

computing resources up or down as needed, without having to invest in physical hardware.

Image of Amazon EC2 (Elastic Compute Cloud) Opens in a new window
www.whizlabs.com
Amazon EC2 (Elastic Compute Cloud)
With EC2, you can:

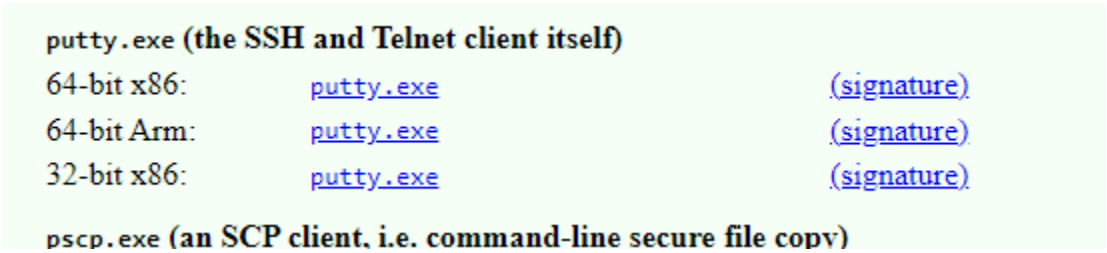
- Launch instances in minutes and terminate them when you're done.
- Configure your instances with different operating systems and software.
- Secure your instances with various security groups and access control measures.
- Scale your resources up or down to meet your application's demands.

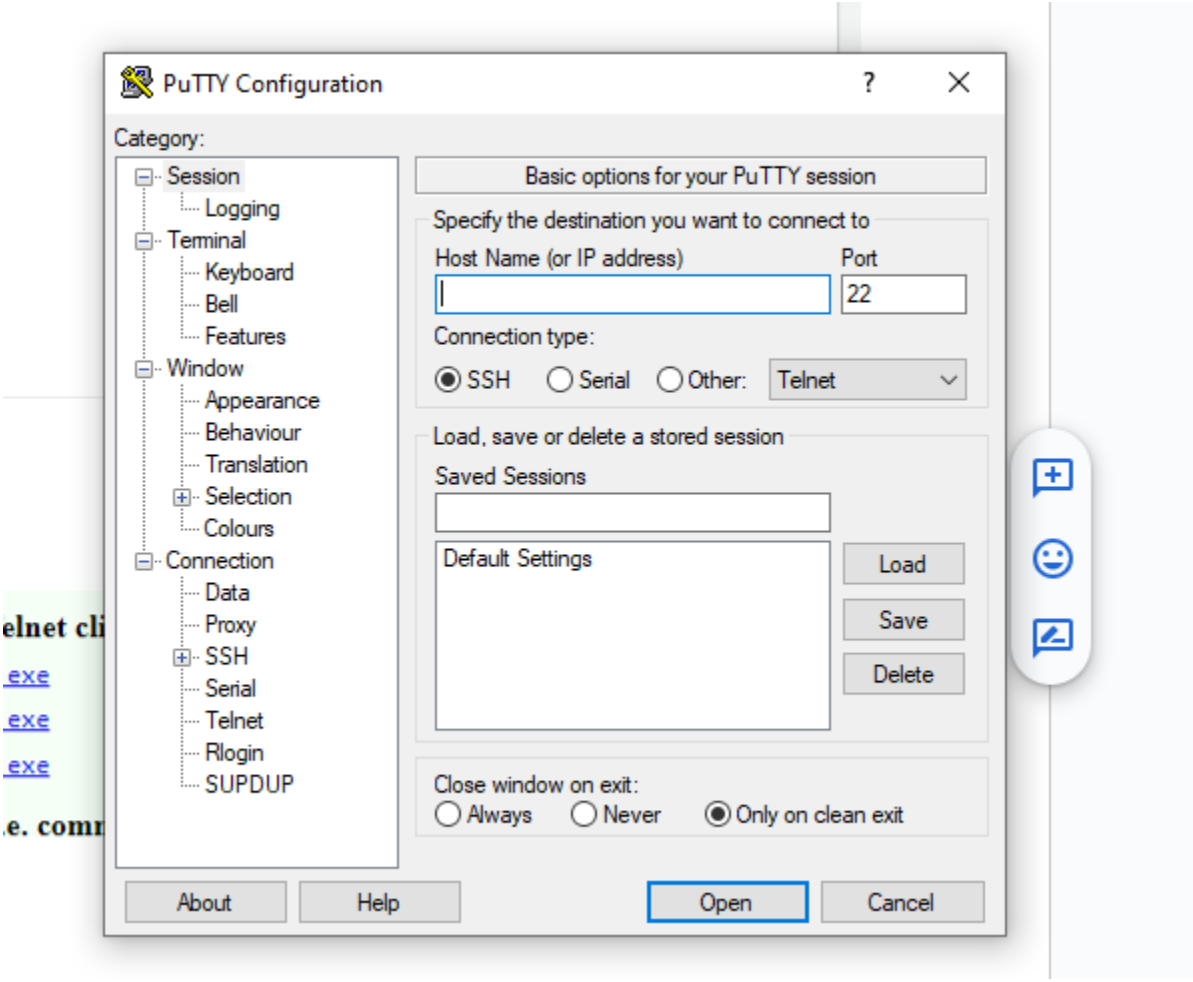
2. Implement Ubuntu machine using AWS ec2 and execute the Linux commands.

- **Disk information in human readable format**
- **Create a folder with your name**
- **Create a file with your cityname and add your address in it**
- **Display the created file**
- **Copy the contents of the created file in other file and print it**
- **Install firefox/python 3**

STEP 1:

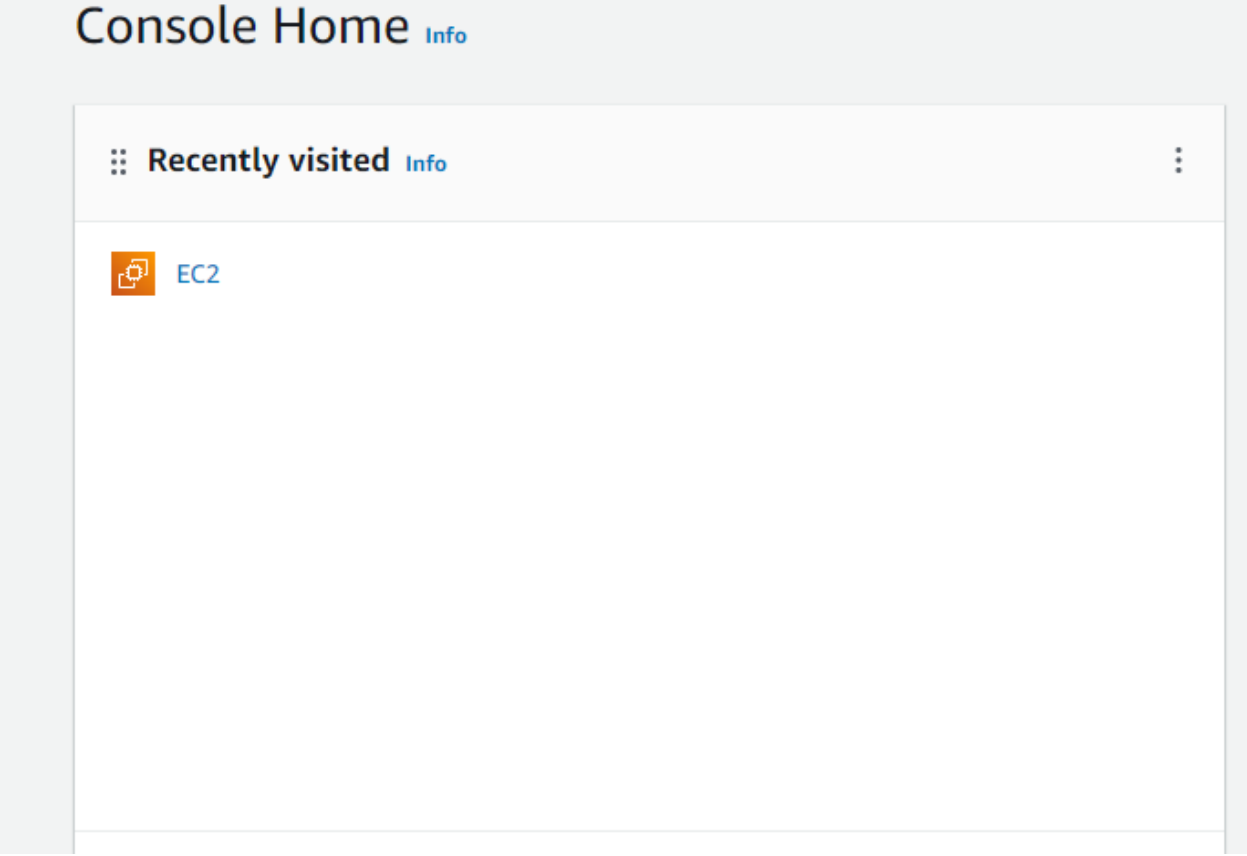
Download Putty.exe

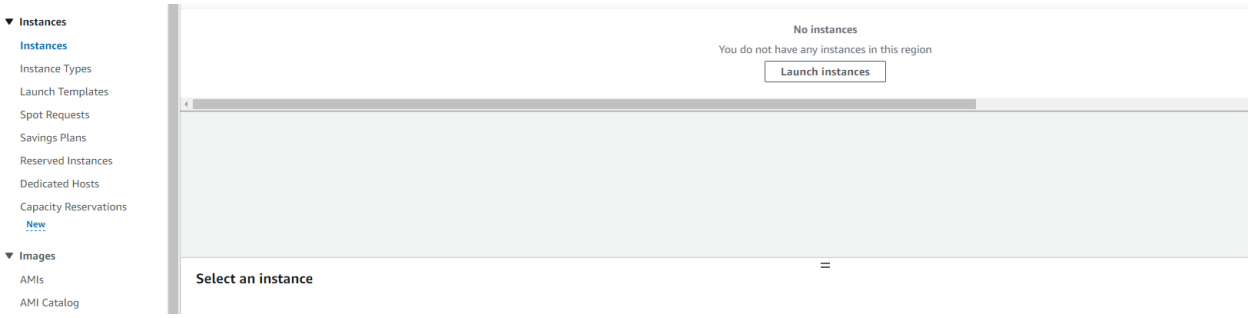


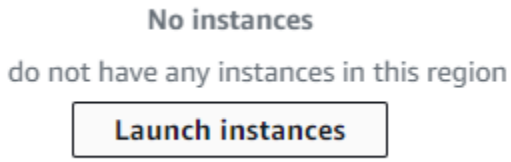


STEP 2:

- Open Cloud Server—EC2
- Launch Instance







STEP 3:

- Name Web Server
- Open Ubuntu
- Set Key Pair Name

Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags Info

Name

Ubuntu_Server

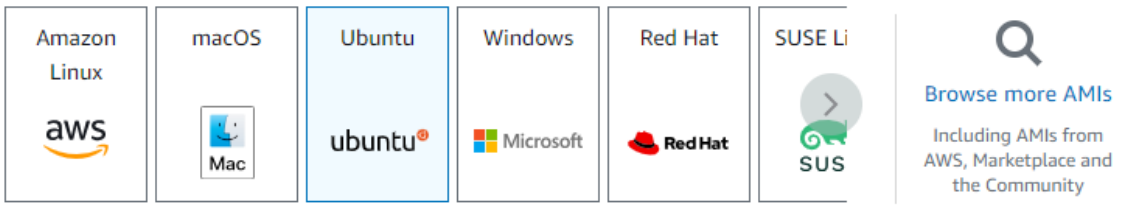
Add additional tags

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Quick Start



Amazon Machine Image (AMI)

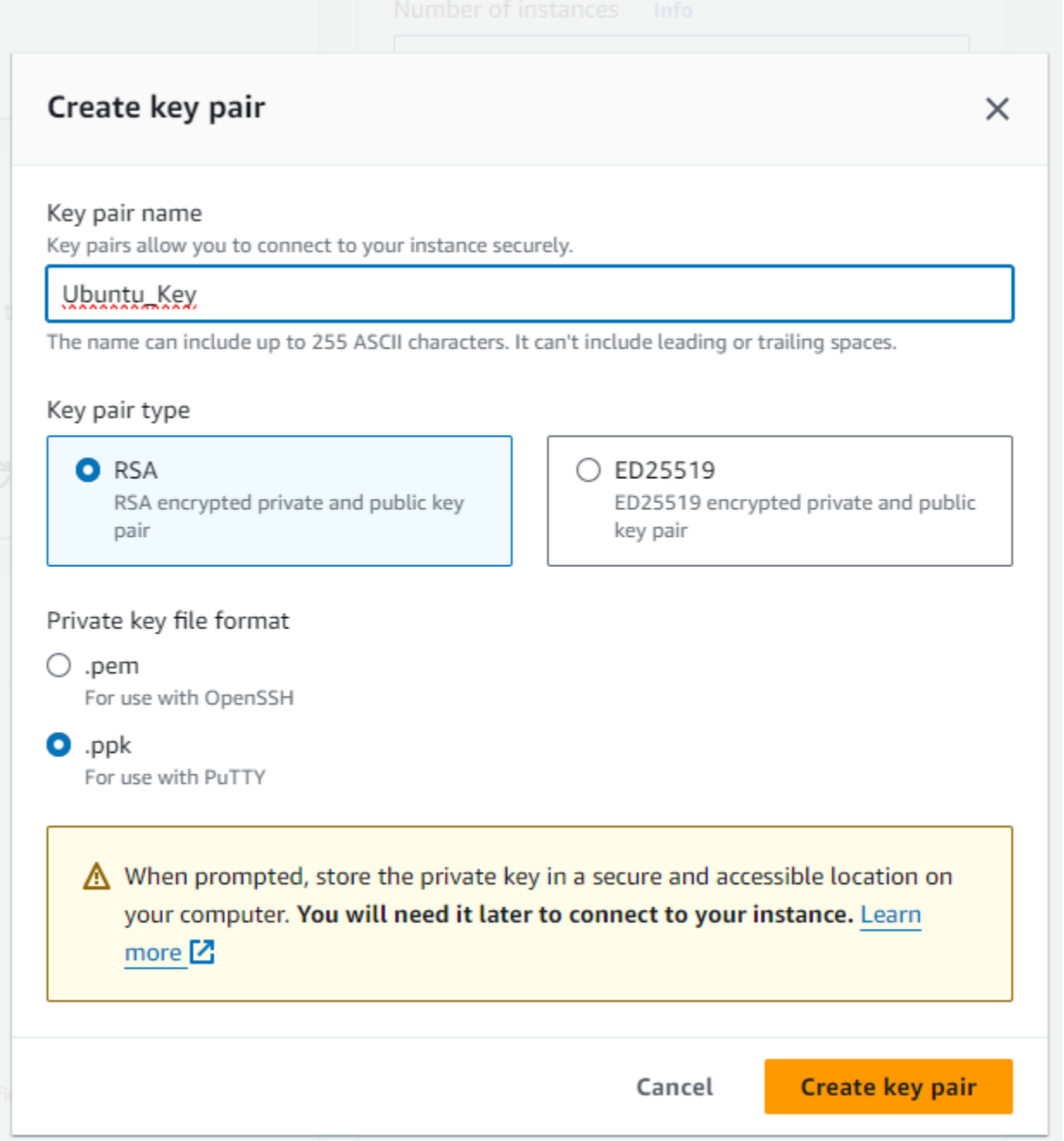
▼ Key pair (login) Info

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*

Select

Create new key pair



STEP 4:

- Create Security Group
- Check SSH, HTTP, HTTPS traffic Rules
- Launch Instance

Network settings Info

Edit

Network Info

vpc-04c6b6def8137de11

Subnet Info

No preference (Default subnet in any availability zone)

Auto-assign public IP Info

Enable

Firewall (security groups) Info

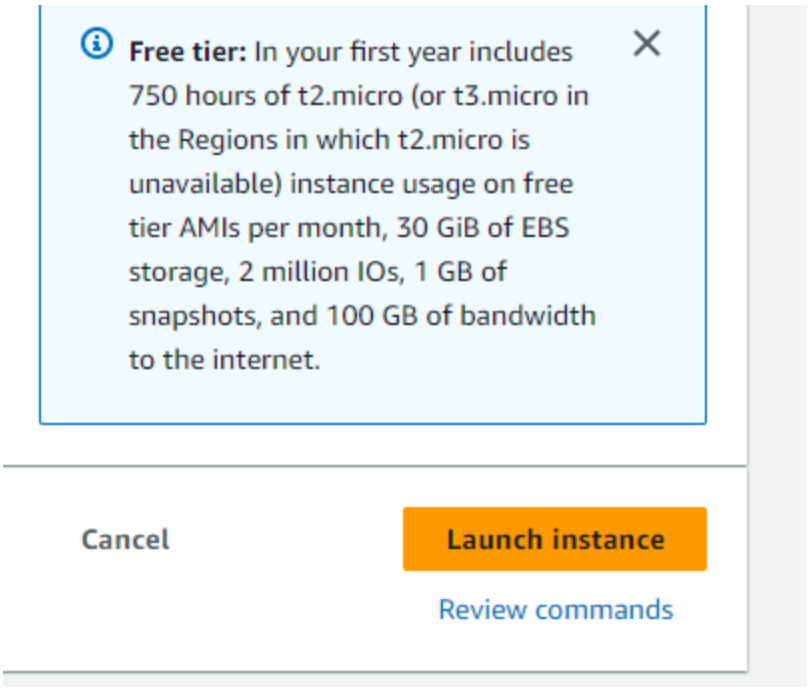
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

- (•) Create security group
- ( ) Select existing security group

We'll create a new security group called '**launch-wizard-1**' with the following rules:

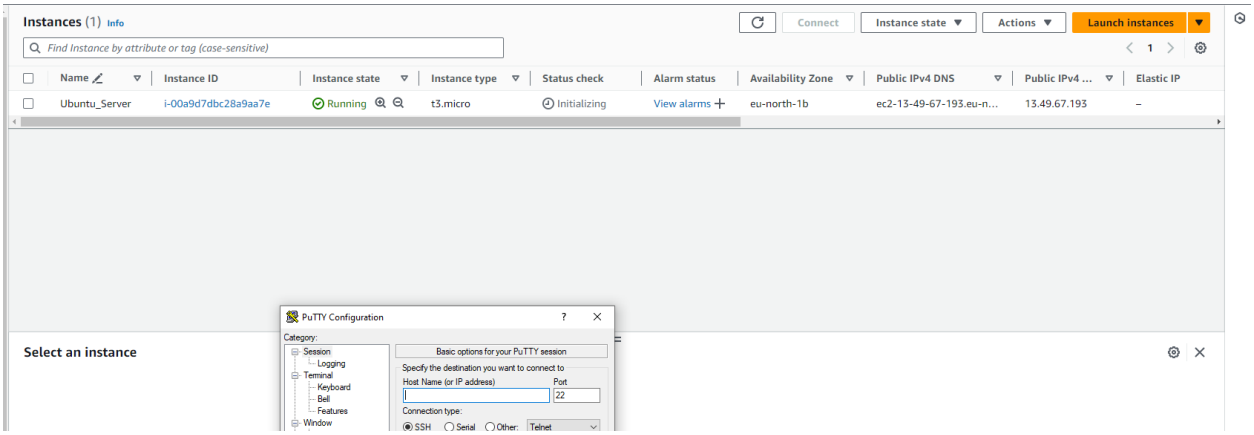
- [x] Allow SSH traffic from
  Helps you connect to your instance
  Anywhere
  0.0.0.0/0
- [x] Allow HTTPS traffic from the internet
  To set up an endpoint, for example when creating a web server
- [x] Allow HTTP traffic from the internet
  To set up an endpoint, for example when creating a web server

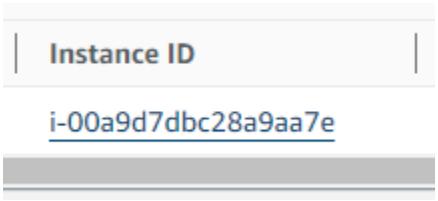
⚠ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. ✕

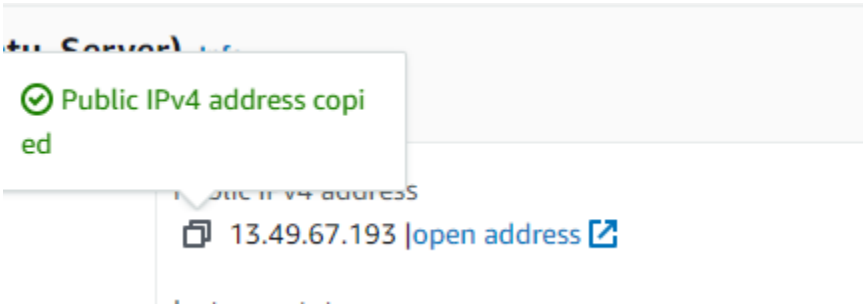


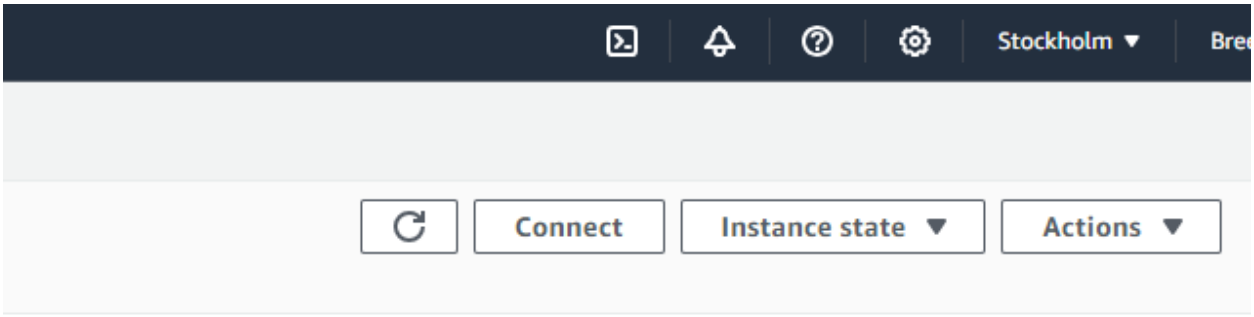
STEP 5:

- Click on Instance ID
- Copy IPV4 Address
- Click on Connect









Private IPv4 addresses
172.31.36.225

Public IPv4 DNS
ec2-13-49-67-193.eu-north-1.compute.amazonaws.com |open address

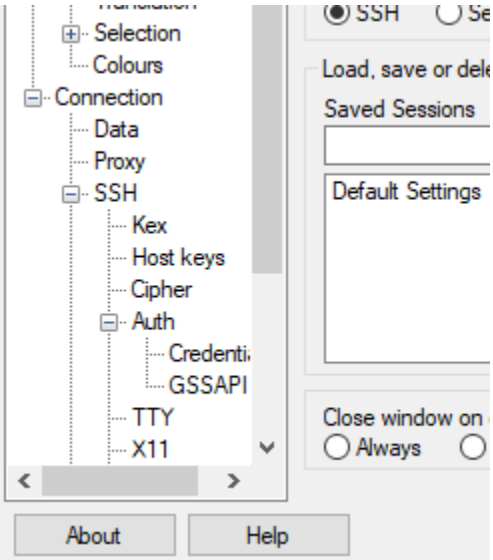
Elastic IP addresses
–

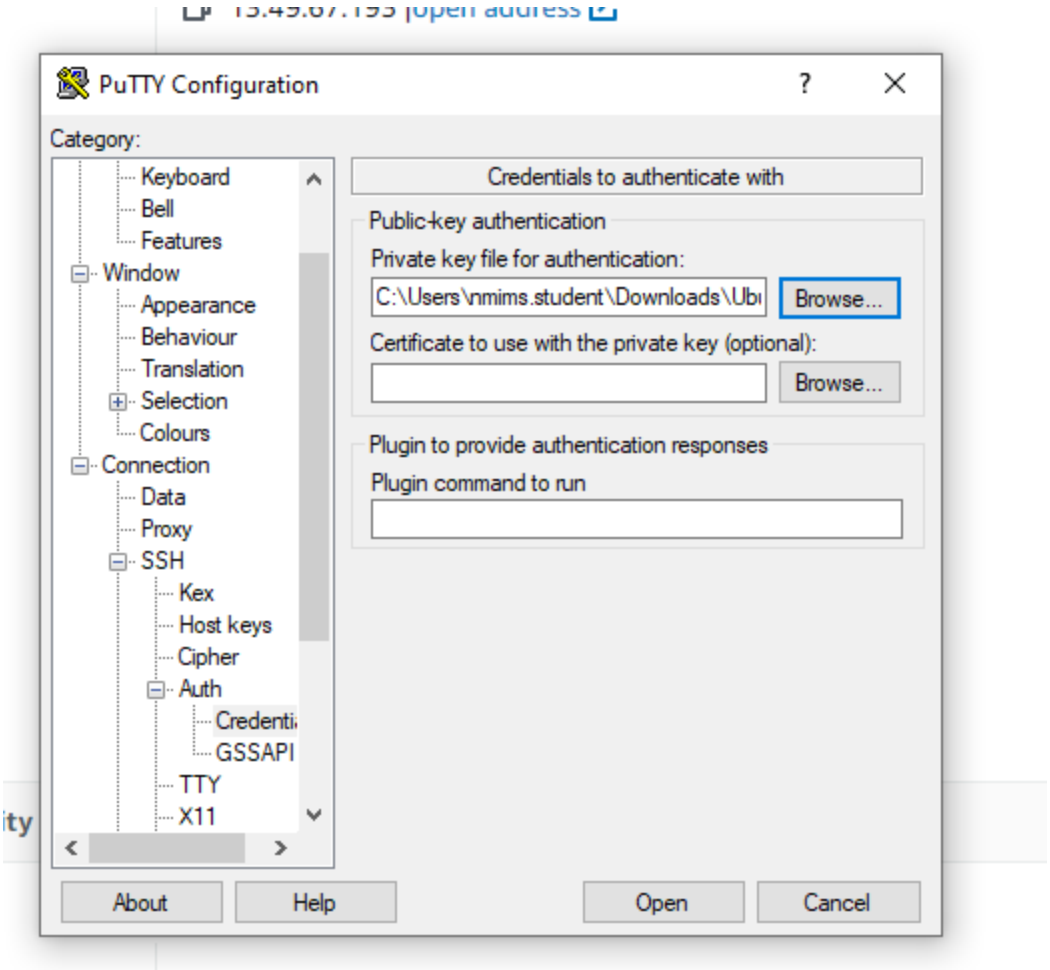
AWS Compute Optimizer finding
Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Auto Scaling Group name
–

STEP 6:

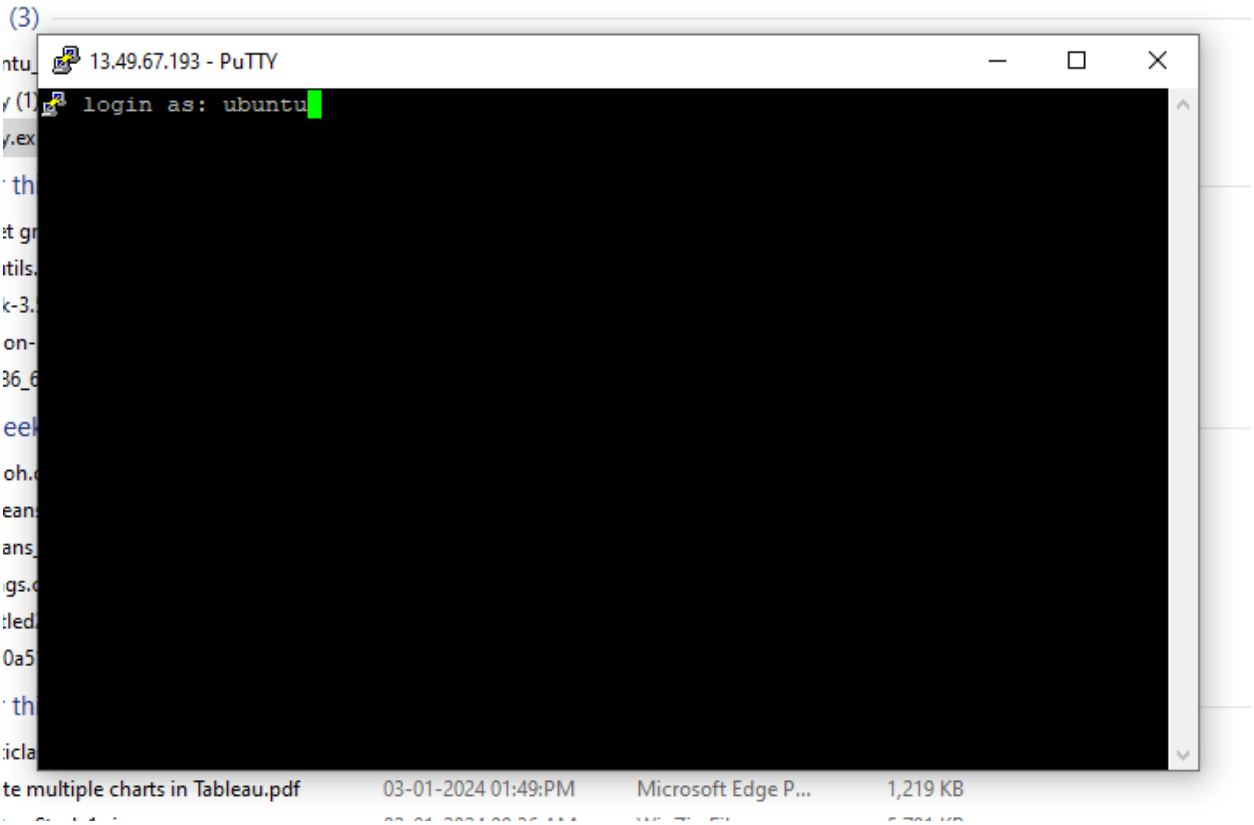
- Open Putty from the desktop---Downloads
- Paste the IPV4 Address
- Click on SSH—Authentication—Credientials----Browse the server and open Key_pair





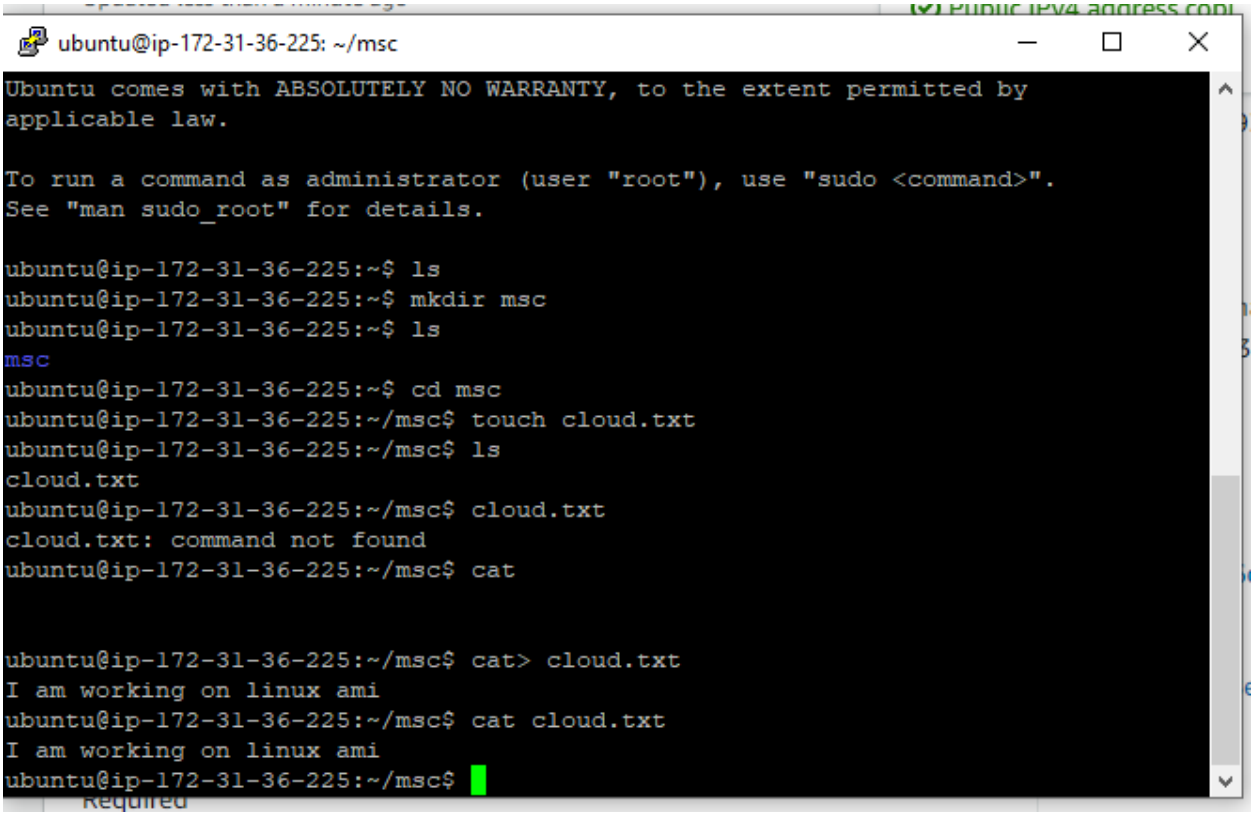
STEP 7:

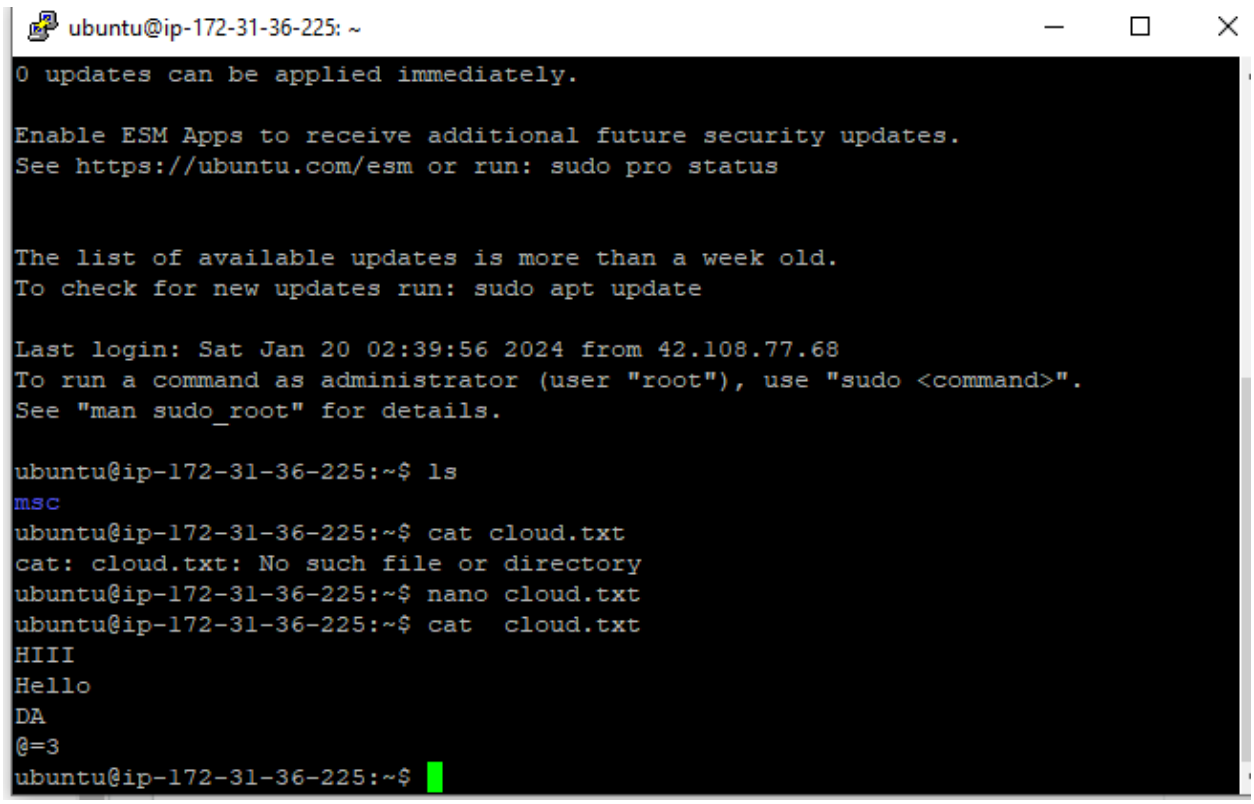
- Putty is open
- Login as Ubuntu



STEP 8:

- CREATE Doc (cd Msc)
- Create Doc Text file (touch cloud.txt)
- List the doc (ls)
- Enter text (cat> cloud.txt/ nano clod.txt)
- Read Text (cat clod.txt)


ubuntu@ip-172-31-36-225: ~/msc
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-172-31-36-225:~$ ls
ubuntu@ip-172-31-36-225:~$ mkdir msc
ubuntu@ip-172-31-36-225:~$ ls
msc
ubuntu@ip-172-31-36-225:~$ cd msc
ubuntu@ip-172-31-36-225:~/msc$ touch cloud.txt
ubuntu@ip-172-31-36-225:~/msc$ ls
cloud.txt
ubuntu@ip-172-31-36-225:~/msc$ cloud.txt
cloud.txt: command not found
ubuntu@ip-172-31-36-225:~/msc$ cat
ubuntu@ip-172-31-36-225:~/msc$ cat> cloud.txt
I am working on linux ami
ubuntu@ip-172-31-36-225:~/msc$ cat cloud.txt
I am working on linux ami
ubuntu@ip-172-31-36-225:~/msc$


ubuntu@ip-172-31-36-225: ~
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: Sat Jan 20 02:39:56 2024 from 42.108.77.68
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ubuntu@ip-172-31-36-225:~$ ls
msc
ubuntu@ip-172-31-36-225:~$ cat cloud.txt
cat: cloud.txt: No such file or directory
ubuntu@ip-172-31-36-225:~$ nano cloud.txt
ubuntu@ip-172-31-36-225:~$ cat cloud.txt
HIII
Hello
DA
@=3
ubuntu@ip-172-31-36-225:~$

STEP 9:

- Python3 is already existing call it (python3)
- Execute python codes