

AWS

Cloud Computing:

- ❖ Cloud computing is to access the computing resource via the internet.
- ❖ Hosted by providers like AWS, Azure and Gcp.
- ❖ Pay-as-you-go Pricing Model.
- ❖ No upfront costs or maintenance needed.

Features:

On-demand self-service is a feature of cloud computing that allows users to automatically provision and manage computing resources (like servers, storage, and applications)

Broad network access is a key characteristic of cloud computing, allowing services to be accessed over the internet from a wide range of devices, such as smartphones, laptops, and tablets.

Resource pooling in cloud computing refers to the provider's ability to serve multiple customers using a shared pool of computing resources, such as storage, processing power, and memory.

Rapid elasticity is a cloud computing feature that allows resources to be automatically scaled up or down based on demand.

Different Service Models:

- ❖ **Infrastructure as a Service** is a cloud computing model that provides virtualized computing resources over the internet, including servers, storage, and networking.
- ❖ It allows users to rent infrastructure on a pay-as-you-go basis to maintain physical hardware.
- ❖ **Platform as a Service** is a cloud computing model that provides a platform allowing developers to build, deploy, and manage applications without managing the underlying infrastructure.
- ❖ **Software as a Service** is a cloud computing model where software applications are delivered over the internet on a subscription basis. Users can access and use the software through a web browser without needing to install or maintain it on their own devices.

Cloud Computing Deployment Models:

- ❖ A **public cloud** is a cloud computing environment where services and infrastructure are owned and operated by a third-party provider, such as AWS, Microsoft Azure, or Google Cloud. Over the internet on a pay-per-use basis.
- ❖ A **private cloud** is a cloud computing environment that is used exclusively by one organization.
- ❖ A **hybrid cloud** is a computing environment that combines both private and public cloud services, allowing data and applications to be shared between them and on-premises to datacentre or public cloud.
- ❖ A **multicloud** is a cloud strategy where an organization uses multiple cloud services from different providers to meet various needs, without necessarily integrating them.

Instance Definition:

- ❖ An **Amazon EC2 instance** is a virtual server in Amazon's Elastic Compute Cloud (EC2) that provides scalable compute capacity for running applications.

How create the EC2 instance steps given below:

Select an Amazon Machine Image (AMI)

- ❖ Choose an **AMI** (Amazon Machine Image) based on the operating system you want, such as Amazon Linux 2, Ubuntu, or Windows.

Choose an Instance Type

- ❖ Select an **instance type** based on the required CPU and memory. The **t2.micro** type is often eligible for the AWS Free Tier.

Select or Create a Key Pair

- ❖ key pair or create a new one to access your instance.
- ❖ Download the key pair (.pem file) and store it securely (you'll need it to connect to your instance via SSH or RDP).

Add Storage

- ❖ By default, an **8 GiB** EBS volume is provided. You can increase this if needed.

Add Tags (Optional)

- ❖ You can add **tags** to your instance (e.g., Name = MyEC2Instance) for easy identification.

Configure Security Group

- ❖ Allow **SSH** (port 22) for Linux instances

Review and Launch

- ❖ Review your configuration and click **Launch**.

1. Create the instance and check the status:

The screenshot displays the AWS Management Console's 'Instances' page. At the top, there's a header for 'Instances (1/1)' with an 'Info' link. Below this, a table lists the instance details. The instance 'webserver' with ID 'i-0598e5bd5e12a4596' is shown in a 'Running' state. The instance type is 't2.micro' and its status check is 'Initializing'. A 'View alarms' link is provided for each instance. Below the table, the 'Details' tab for the selected instance is open, showing a summary of its configuration: Instance ID, Public IPv4 address (13.127.192.232), Private IPv4 addresses (172.31.40.237), Instance state (Running), and Public IPv4 DNS.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status
webserver	i-0598e5bd5e12a4596	Running	t2.micro	Initializing	View alarms

i-0598e5bd5e12a4596 (webserver)

Instance summary

- Instance ID: i-0598e5bd5e12a4596 (webserver)
- Public IPv4 address: 13.127.192.232 | [open address](#)
- Private IPv4 addresses: 172.31.40.237
- Instance state: Running
- Public IPv4 DNS: [Link]

2. To access the Mobaxterm and using ssh:

The screenshot shows the 'Session settings' dialog box in Mobaxterm. The 'SSH' tab is selected. Under 'Basic SSH settings', the 'Remote host' is set to '13.127.192.232', 'Specify username' is checked with 'ec2-user' selected, and the 'Port' is '22'. The 'Advanced SSH settings' tab is also visible, showing options like 'X11-Forwarding', 'Compression', and 'Remote environment' set to 'Interactive shell'. There are buttons for 'OK' and 'Cancel' at the bottom.

Session settings

Basic SSH settings

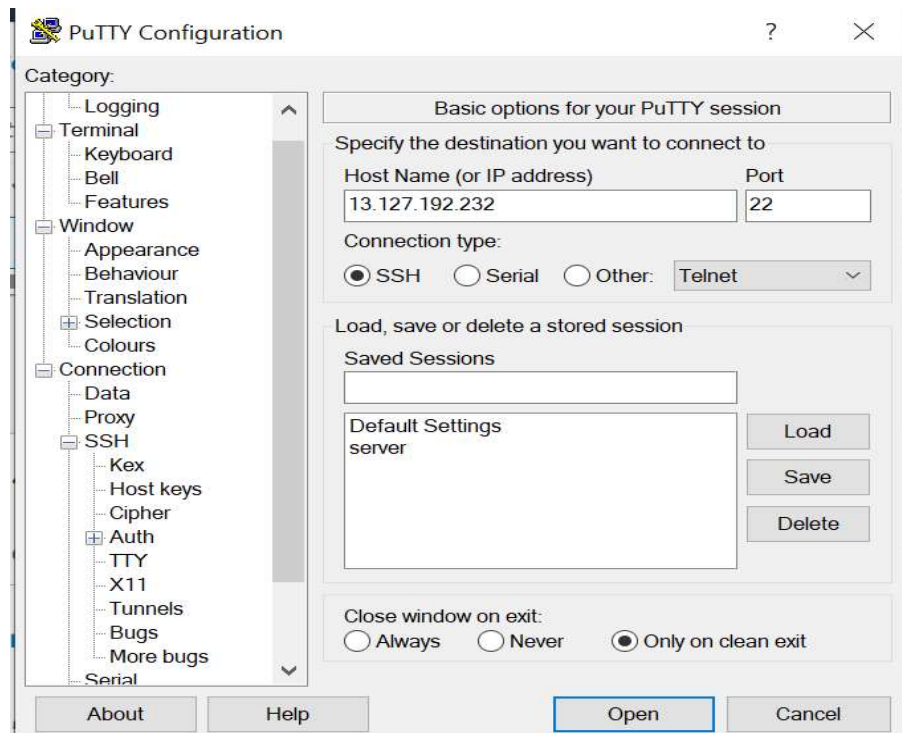
- Remote host: 13.127.192.232
- ☒ Specify username: ec2-user
- Port: 22

Advanced SSH settings

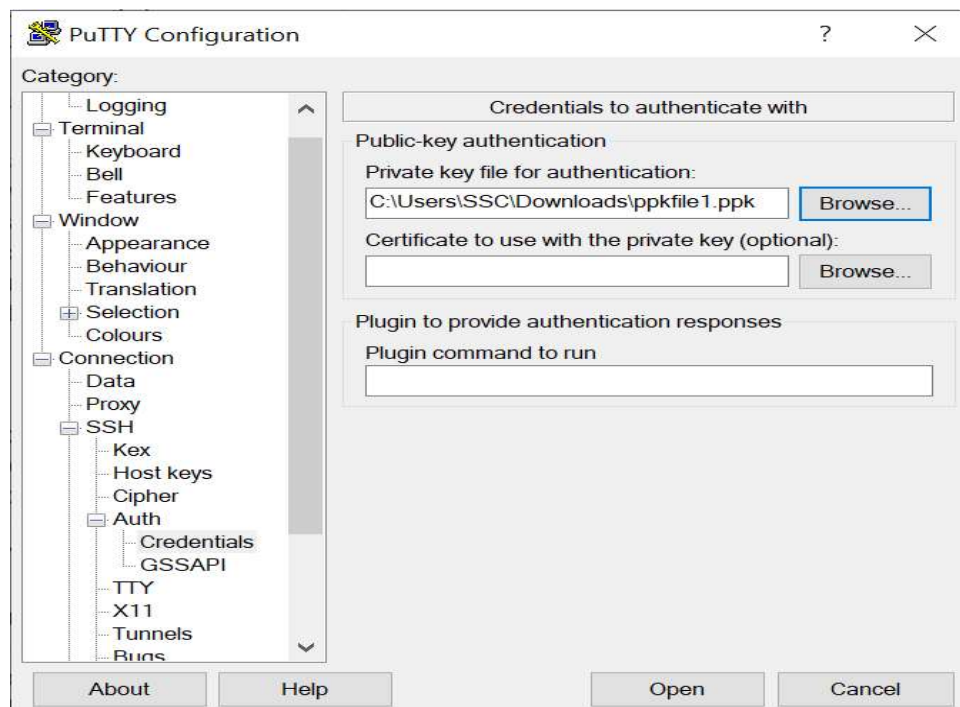
- ☒ X11-Forwarding
- ☒ Compression
- Remote environment: Interactive shell
- Execute command: [Empty field]
- ☐ Do not exit after command ends
- SSH-browser type: SFTP protocol
- ☐ Follow SSH path (experimental)
- ☒ Use private key: C:\Users\SSC\Downloads\gowth...
- [Expert SSH settings](#)
- Execute macro at session start: <none>

OK **Cancel**

2. To enter the public ip and to using putty:



3. To click the ssh and Auth and credentials also click it and to click the ppkfile1:



4. To seeing the ssh putty output:

```
root@ip-172-31-40-237:~  
login as: ec2-user  
Authenticating with public key "imported-openssh-key"  
  
#_##### Amazon Linux 2023  
~/\_\_\_\_\_\_\_\_  
~~\_\_\_\_\_\_\_\_  
~~\_###|  
~~~~\\##/  
~~~~V~'-'>  
~~~~  
~~~~.  
~~~~/_m/'-/
```

Last login: Wed Sep 18 06:38:36 2024 from 122.172.85.53
[ec2-user@ip-172-31-40-237 ~]\$ sudo su -
Last login: Wed Sep 18 06:38:47 UTC 2024 on pts/1
[root@ip-172-31-40-237 ~]# █

Flow chart:

How to working in Public IP and Private IP:

