
Experiment No - 02

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Sem & Sec : 7th Sem - CSE [B]

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Aim : Demonstrate the Creation of Virtual Machine in the Public Cloud based on the given scenario.

Problem Statements:

You are tasked with creating a new EC2 instance on Public Cloud (AWS) to host a web application. The application requires a Linux/Windows-based environment with 1 vCPUs, 1GB of RAM, and 30GB of storage. You also need to ensure that the instance is launched in a public subnet and has a public IP address.

Task 1:

Demonstrate the Scalability and Flexibility of VM Resources by modifying the hardware resources from 1 vCPUs, 1GB of RAM, and 30GB to 2 vCPUs, 4GB of RAM, and 30GB.

Task 2:

Demonstrate that the created VM instance should be accessible via SSH/PUTTY for administration purposes.

Task 3:

Demonstrate the running of an Web application on the Public IP of the VM instance

(Ex: Apache Server)

Task 1 (Scalability and Flexibility of VM Resources)

Step 1 -: Launch the AWS Learners Lab and open EC2 -> Instances -> Launch Instance

Step 2 -: Select the specified configurations

[1 vCPUs, 1GB of RAM, and 30GB of storage]

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

[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


Quick Start




Amazon Linux




macOS




Ubuntu




Windows



Red Hat



SUSE Li



Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Microsoft Windows Server 2022 Base

Free tier eligible

ami-0be0e902919675894 (64-bit (x86))

Virtualization: hvm ENA enabled: true Root device type: ebs

▼ Summary

Number of instances Info

Software Image (AMI)

Microsoft Windows Server 2022 ...[read more](#)

ami-0be0e902919675894

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 30 GiB

Cancel

Launch instance

[Review commands](#)

▼ Instance type Info

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true

On-Demand Windows base pricing: 0.0162 USD per Hour

On-Demand SUSE base pricing: 0.0116 USD per Hour

On-Demand RHEL base pricing: 0.0716 USD per Hour

On-Demand Linux base pricing: 0.0116 USD per Hour

☒ All generations

[Compare instance types](#)

Additional costs apply for AMIs with pre-installed software

Step 3 -: Configuring Key-Pair for connection to instance.

Click Create new key-pair

For Windows, we need to create key file format as .pem

For Linux, we need to create key file format as .ppk

Create key pair

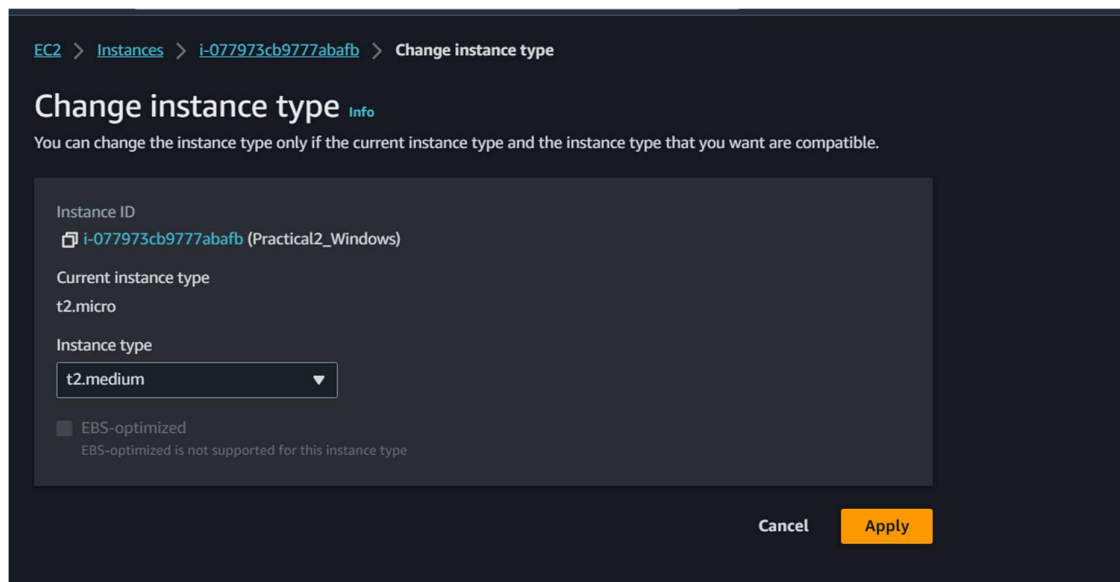
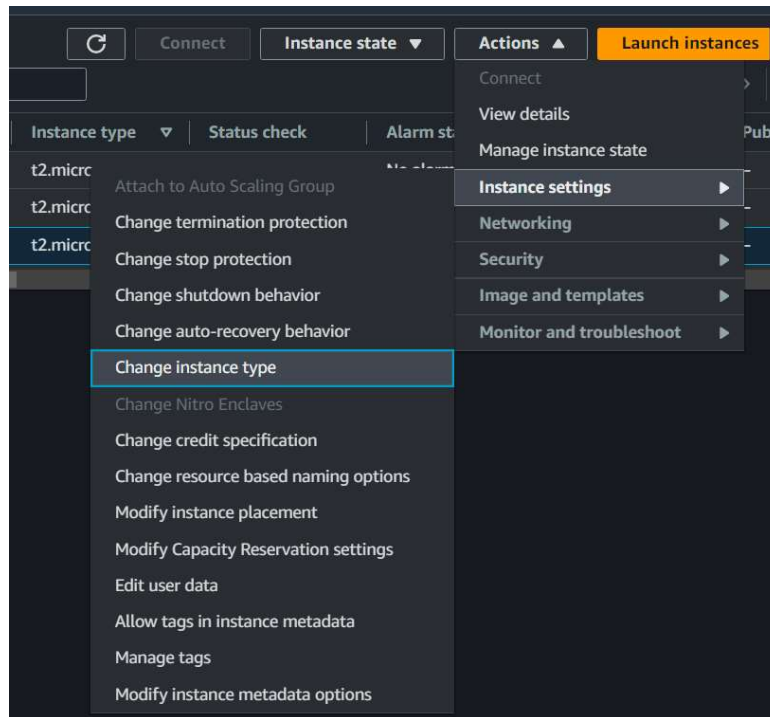
The screenshot shows the 'Create key pair' dialog box. It has a title bar 'Create key pair' with a close button. Below the title bar, there's a section 'Key pair name' with a text input field containing 'Enter key pair name'. A note below says 'The name can include upto 255 ASCII characters. It can't include leading or trailing spaces.' Below this is the 'Key pair type' section with two options: 'RSA' (selected) and 'ED25519'. The 'RSA' option is described as 'RSA encrypted private and public key pair'. The 'ED25519' option is described as 'ED25519 encrypted private and public key pair (Not supported for Windows instances)'. Below this is the 'Private key file format' section with two options: '.pem' (selected) and '.ppk'. The '.pem' option is described as 'For use with OpenSSH'. The '.ppk' option is described as 'For use with PuTTY'. At the bottom, there's a yellow warning box with a triangle icon and text: 'When prompted, store the private key in a secure and accessible location on your computer. You will need it later to connect to your instance. [Learn more](#)'. At the very bottom, there are two buttons: 'Cancel' and 'Create key pair'.

Then launch the instance.

The screenshot shows the AWS Management Console page for an EC2 instance. The breadcrumb navigation at the top is 'EC2 > Instances > i-077973cb9777abafb'. The main heading is 'Instance summary for i-077973cb9777abafb (Practical2_Windows) Info'. Below the heading, it says 'Updated less than a minute ago'. There are three buttons: 'Connect', 'Instance state' (with a dropdown arrow), and 'Actions' (with a dropdown arrow). The instance details are organized into three columns. The first column contains: 'Instance ID' (i-077973cb9777abafb (Practical2_Windows)), 'IPv6 address' (—), 'Hostname type' (IP name: ip-172-31-43-237.ec2.internal), 'Answer private resource DNS name' (IPv4 (A)), 'Auto-assigned IP address' (3.89.44.232 [Public IP]), 'IAM Role' (—), and 'IMDSv2' (Optional). The second column contains: 'Public IPv4 address' (3.89.44.232 [open address]), 'Instance state' (Running), 'Private IP DNS name (IPv4 only)' (ip-172-31-43-237.ec2.internal), 'Instance type' (t2.micro), 'VPC ID' (vpc-0b9bf8b68c032ba51), and 'Subnet ID' (subnet-0004d1bed0980a2d9). The third column contains: 'Private IPv4 addresses' (172.31.43.237), 'Public IPv4 DNS' (ec2-3-89-44-232.compute-1.amazonaws.com [open address]), 'Elastic IP addresses' (—), 'AWS Compute Optimizer finding' (Opt-in to AWS Compute Optimizer for recommendations. [Learn more]), and 'Auto Scaling Group name' (—). At the bottom, there are tabs for 'Details' (selected), 'Security', 'Networking', 'Storage', 'Status checks', 'Monitoring', and 'Tags'. Below the tabs, it says '▼ Instance details Info'. At the very bottom, there's a footer with '© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

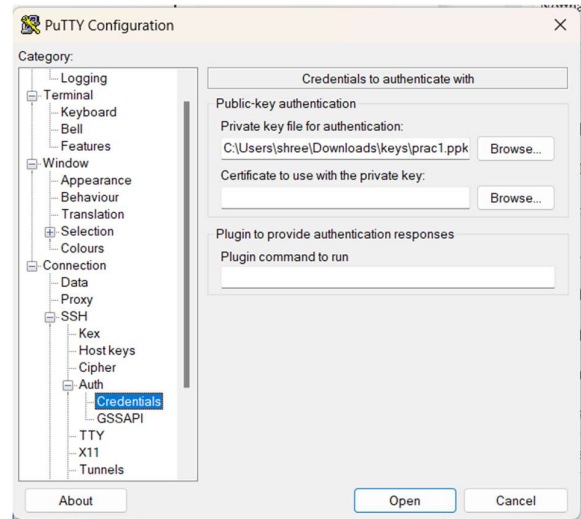
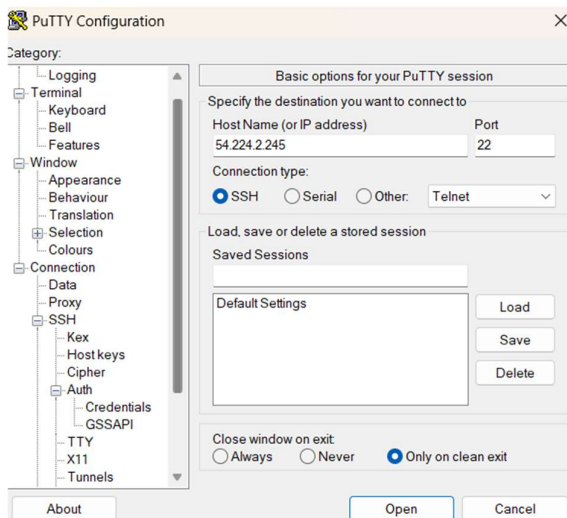
Scaling and Flexible VM Resources

- i. Stop the running instance.
- ii. Change the instance type to t2.medium for specified configuration.
[2 vCPUs, 4GB of RAM, and 30GB]

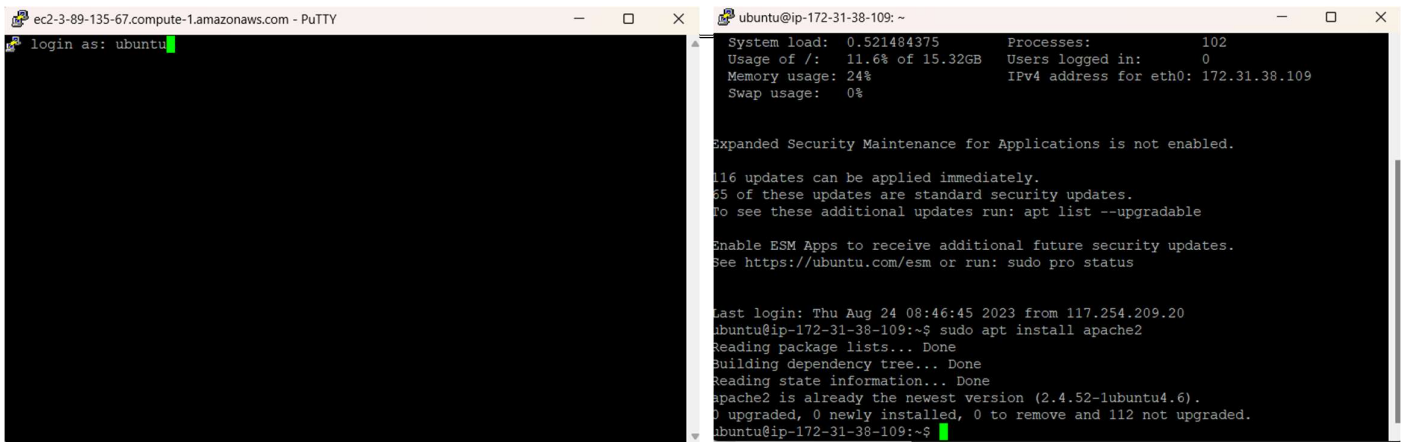


Connecting to Linux Instance:

- i. For connecting to the system you have to install the putty software After installing the software enter the public host ip in hostip section and in connection tab->SSH->Auth->credentials enter the key and click on open



- ii. Enter the hostname in command line as ubuntu(the name that has been specified) and connect to the vm



Part B

Step1:login in your AWS academy learners lab and click on ec2 instance

Step2:click on launch instance

Step3: configure your instance according to your need here for example we have taken windows 7 OS with 2 GB ram 16 GB storage and 1 core then click on launch button

Note: create a access key for connecting to ec2 instance for windows make it in .pem

The screenshot shows the 'Launch an instance' page in the AWS Management Console. The page is divided into two main sections: a configuration area on the left and a summary area on the right.

Configuration Area:

- Name and tags:** A text box contains 'windows10'.
- Application and OS Images (Amazon Machine Image):** A search bar contains the text 'Search our full catalog including 1000s of application and OS images'.
- Quick Start:** A button labeled 'Quick Start'.

Summary Area:

- Number of instances:** A dropdown menu set to '1'.
- Software Image (AMI):** 'Microsoft Windows Server 2022 ...read more'.
- Virtual server type (instance type):** 't2.micro'.
- Firewall (security group):** 'New security group'.
- Storage (volumes):** '1 volume(s) - 30 GiB'.
- Free tier:** A notification box stating 'Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance'.
- Buttons:** 'Cancel', 'Launch instance', and 'Review commands'.

Note : after some time you can change the configuration according to your need

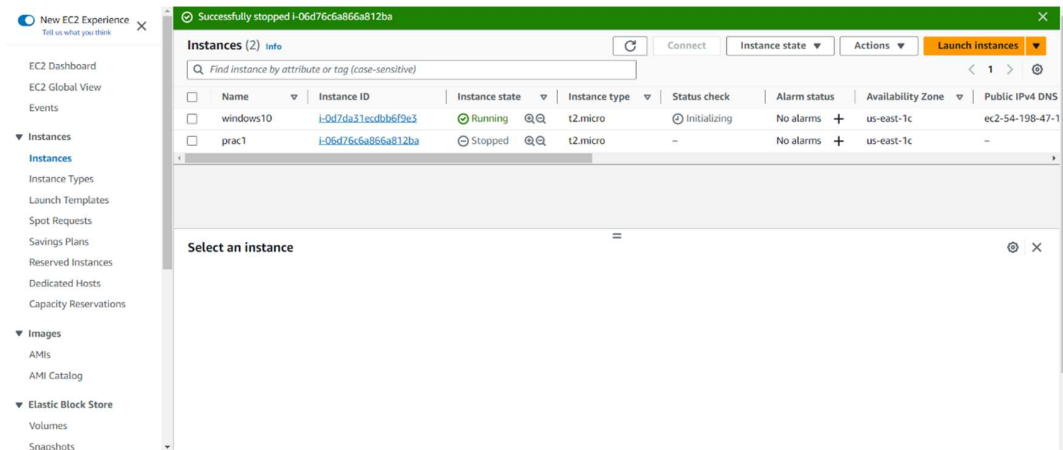
The screenshot shows the 'Instance summary' page for a specific EC2 instance in the AWS Management Console. The instance is named 'i-06d76c6a866a812ba' and is in the 'Running' state.

Instance summary for i-06d76c6a866a812ba (pract1)

Instance details:

- Instance ID:** i-06d76c6a866a812ba (pract1)
- Public IPv4 address:** 54.224.197.35 | [open address](#)
- Instance state:** Running
- Private IPv4 addresses:** 172.31.38.109
- IPV6 address:** --
- Public IPv4 DNS:** ec2-54-224-197-35.compute-1.amazonaws.com | [open address](#)
- Hostname type:** IP name: ip-172-31-38-109.ec2.internal
- Private IP DNS name (IPv4 only):** ip-172-31-38-109.ec2.internal
- Instance type:** t2.micro
- Answer private resource DNS name:** IPv4 (A)
- VPC ID:** vpc-0e7978f235d0e688
- Auto-assigned IP address:** 54.224.197.35 [Public IP]
- Subnet ID:** subnet-0c6cd69d7843b7851
- IAM Role:** --
- IMDSv2:** Optional

Actions: Details, Security, Networking, Storage, Status checks, Monitoring, Tags



Step4: for connecting to the system click on connect button then decrypt the key that you download and click on connect and enter the key to connect

