

## Assignment:

This assignment is deployed below Architecture AWS account to all learners which follow user connect to, and use a Linux instance. An instance is a virtual

server/machine (VM) in the AWS Cloud running a specific operating system and can be used to host applications and databases.

The goal

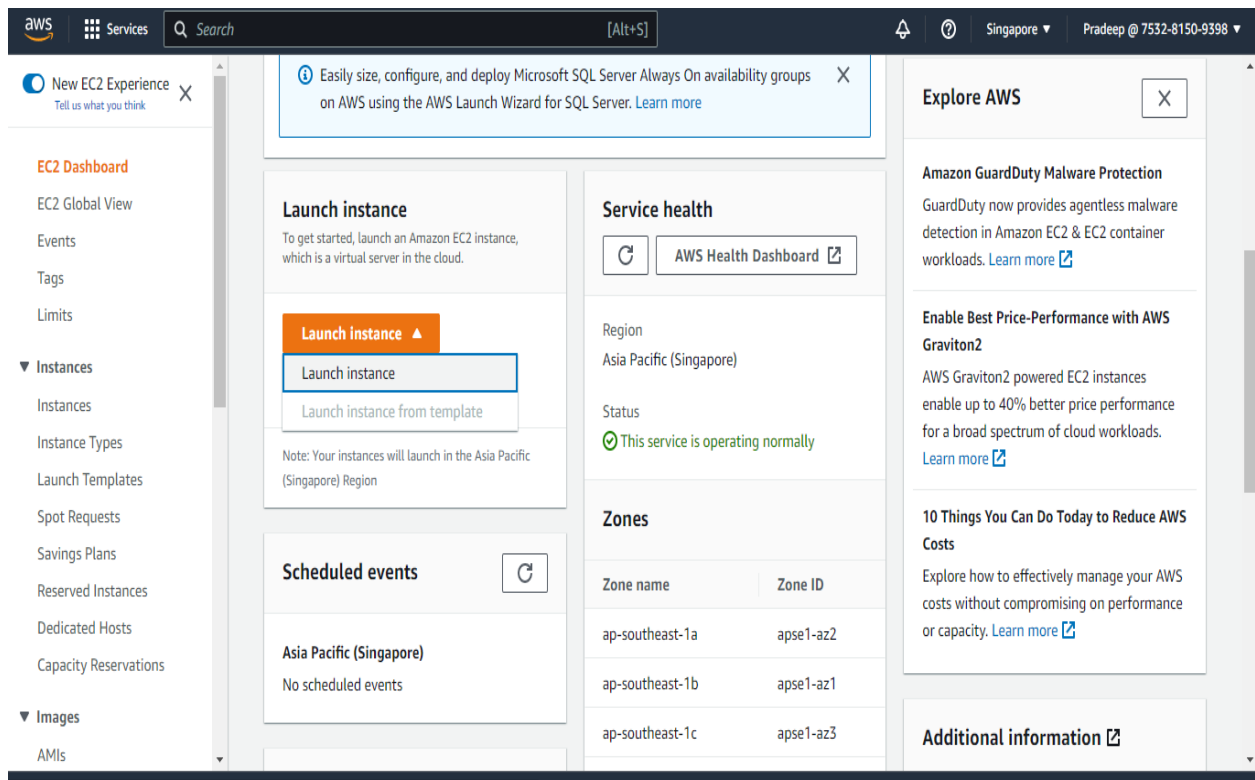
The following are the goals of this hands-on:

1. Understand the process of launching an instance
2. Install a simple http webserver
3. Access the site from a browser
4. Connect to the instance via SSH (optional for non technical learners)
5. Terminate an instance

Please Insert Snapshot of as follow

Ans:

### 1. EC2 Instance Launch Page



The screenshot displays the AWS Management Console's EC2 Instance Launch Page. The interface includes a top navigation bar with the AWS logo, a search bar, and user information (Singapore, Pradeep @ 7532-8150-9398). A left-hand navigation pane lists various EC2 services, with 'Instances' currently selected. The main content area is divided into several sections: a 'Launch instance' section with a prominent orange 'Launch instance' button and a 'Launch instance from template' option; a 'Service health' section showing the 'AWS Health Dashboard' and a status of 'This service is operating normally'; a 'Zones' table listing available zones in the 'ap-southeast-1' region; and a 'Scheduled events' section. On the right side, there are several informational cards for 'Amazon GuardDuty Malware Protection', 'Enable Best Price-Performance with AWS Graviton2', and '10 Things You Can Do Today to Reduce AWS Costs'. The bottom of the page features a footer with copyright information.

Zone name	Zone ID
ap-southeast-1a	apse1-az2
ap-southeast-1b	apse1-az1
ap-southeast-1c	apse1-az3

## 2. EC2 Name and Tag Creation

aws Services Search [Alt+S] Singapore Pradeep @ 7532-8150-9398

EC2 > Instances > Launch an instance

### 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

#### ▼ Summary

Number of instances [Info](#)

Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...[read more](#)  
ami-03f6a11788f8e319e

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

[Free tier](#) In your first year includes 750 X

[Cancel](#) [Launch instance](#)

[Quick Start](#)

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## 3. EC2 AMI Selection

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### ▼ 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

S

[Browse more AMIs](#)

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type

ami-03f6a11788f8e319e (64-bit (x86)) / ami-082fd4c4a1b78fa6 (64-bit (Arm))

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

[Free tier eligible](#)

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20230221.0 x86\_64 HVM gp2

Architecture AMI ID

#### ▼ Summary

Number of instances [Info](#)

Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...[read more](#)  
ami-03f6a11788f8e319e

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

[Free tier](#) In your first year includes 750 X

[Cancel](#) [Launch instance](#)

## 4. EC2 Key Pair Creation

The screenshot shows the 'Create key pair' dialog in the AWS Management Console. The dialog is titled 'Create key pair' and has a close button (X) in the top right corner. It contains the following sections:

- Key pairs allow you to connect to your instance securely.**
- Enter the name of the key pair below. 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.** (with a link to 'Learn more')
- Key pair name:** A text input field containing 'Key2'. Below it, a note states: 'The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.'
- Key pair type:** Two radio buttons are present: '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)'.
- Private key file format:** Two radio buttons are present: '.pem' (selected) and '.ppk'. The '.pem' option is described as 'For use with OpenSSH'. The '.ppk' option is described as 'For use with PuTTY'.

On the left side of the dialog, there is a sidebar with links to 'Instance type', 'Key pair (login)', and 'Network settings'. The 'Key pair (login)' link is highlighted. The 'Network settings' link is also visible. The 'Launch instance' button is visible at the bottom right of the console window.

## 5. EC2 Security Group Creation (SSH, HTTP, HTTPS)

The screenshot shows the 'Create security group' dialog in the AWS Management Console. The dialog is titled 'Create security group' and has a close button (X) in the top right corner. It contains the following sections:

- Inbound security group rules:** Three rules are listed, each with a 'Remove' button.
  - Security group rule 1 (TCP, 22, 0.0.0.0/0):** Type: ssh, Protocol: TCP, Port range: 22, Source type: Anywhere, Source: 0.0.0.0/0, Description: e.g. SSH for admin desktop.
  - Security group rule 2 (TCP, 80, 0.0.0.0/0):** Type: HTTP, Protocol: TCP, Port range: 80, Source type: Anywhere, Source: 0.0.0.0/0, Description: e.g. SSH for admin desktop.
  - Security group rule 3 (TCP, 443, 0.0.0.0/0):** Type: HTTPS, Protocol: TCP, Port range: 443, Source type: Anywhere, Source: 0.0.0.0/0, Description: e.g. SSH for admin desktop.
- Summary:** A section on the right side of the dialog containing the following information:
  - Number of instances:** 1
  - Software Image (AMI):** Amazon Linux 2 Kernel 5.10 AMI...read more (ami-03f6a11788f8e319e)
  - Virtual server type (instance type):** t2.micro
  - Firewall (security group):** New security group
  - Storage (volumes):** 1 volume(s) - 8 GiB
  - Free tier:** In your first year includes 750 hours
  - Buttons:** Cancel and Launch instance

At the bottom of the console window, there is a footer with the text: '© 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences'.

This screenshot is a continuation of the previous one, showing the same 'Create security group' dialog. A warning message is now displayed at the bottom of the dialog, below the 'Add security group rule' button. The warning message reads: '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.' The 'Add security group rule' button is highlighted. The 'Advanced network configuration' link is also visible at the bottom of the dialog.

## 6. EC2 VPC and Subnet Selection

The screenshot shows the AWS Management Console for an EC2 instance. The 'Network settings' section on the left includes a VPC dropdown (vpc-091c9bc478b733809), a Subnet dropdown (subnet-0d8b6ee3256797421), an 'Auto-assign public IP' dropdown set to 'Enable', and a 'Firewall (security groups)' section with a 'Create security group' button and a 'Security group name' field containing 'launch-wizard-3'. The 'Summary' section on the right shows 'Number of instances' as 1, 'Software Image (AMI)' as 'Amazon Linux 2 Kernel 5.10 AMI', 'Virtual server type (instance type)' as 't2.micro', 'Firewall (security group)' as 'New security group', and 'Storage (volumes)' as '1 volume(s) - 8 GiB'. At the bottom right, there are 'Cancel' and 'Launch instance' buttons.

## 7. EC2 EBS Volume Selection

The screenshot shows the AWS Management Console for an EC2 instance, specifically the 'Configure storage' section. The 'Configure storage' section on the left shows a '1x 8 GiB gp2' root volume (Not encrypted) and an 'Add new volume' button. A notification banner states: 'Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage'. The 'Summary' section on the right is identical to the previous screenshot, showing 1 instance, Amazon Linux 2 AMI, t2.micro instance type, new security group, and 1 volume of 8 GiB. 'Cancel' and 'Launch instance' buttons are at the bottom right.

## 8 . User Data Insertion Page with below command

```
#!/bin/bash
yum update -y
yum install httpd -y
service httpd start
chkconfig httpd on
IP_ADDR=$(curl http://169.254.169.254/latest/meta-data/public-ipv4)
echo "Manual instance with IP $IP_ADDR" > /var/www/html/index.html
```

Allow tags in metadata [Info](#)

Select

User data - optional [Info](#)  
Enter user data in the field.

```
#!/bin/bash
yum update -y
yum install httpd -y
service httpd start
chkconfig httpd on
IP_ADDR=$(curl http://169.254.169.254/latest/meta-data/public-ipv4)
echo "Manual instance with IP $IP_ADDR" > /var/www/html/index.html
```

☐ User data has already been base64 encoded

**Summary**

Number of instances [Info](#)  
1

Software Image (AMI)  
Amazon Linux 2 Kernel 5.10 AMI...[read more](#)  
ami-03f6a11788f8e319e

Virtual server type (instance type)  
t2.micro

Firewall (security group)  
New security group

Storage (volumes)  
1 volume(s) - 8 GiB

[Free tier](#) In your first year includes 750

Cancel **Launch instance**

## 9. EC2 Launch Logs

EC2 > Instances > Launch an instance

**Success**  
Successfully initiated launch of instance (i-03c17d7828f32c544)

▼ Launch log

Initializing requests	Succeeded
Creating security groups	Succeeded
Creating security group rules	Succeeded
Launch initiation	Succeeded

**Next Steps**

- Create billing and free tier
- Connect to your instance
- Connect an RDS database

## 10 . EC2 Instance Running State

Instances (1) [Info](#) [Refresh](#) [Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

Find instance by attribute or tag (case-sensitive)

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	INSTANCE-1	i-03c17d7828f32c544	Running	t2.micro	2/2 checks passed	No alarms	ap-southeast-1c

Select an instance

## 11. EC2 Summary Page with Public and Private IP

The screenshot shows the AWS Management Console interface for the EC2 instance summary page. The top navigation bar includes the AWS logo, Services menu, Search bar, and user information (Singapore, Pradeep @ 7532-8150-9398). The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances, Images, and AMIs. The main content area displays the instance summary for i-03c17d7828f32c544 (INSTANCE-1). The instance is in a 'Running' state. Key attributes include: Instance ID (i-03c17d7828f32c544), Public IPv4 address (13.214.147.25), Private IPv4 address (172.31.15.199), Public IPv4 DNS (ec2-13-214-147-25.ap-southeast-1.compute.amazonaws.com), Private IP DNS name (ip-172-31-15-199.ap-southeast-1.compute.internal), Instance type (t2.micro), VPC ID (vpc-091c9bc478b733809), Subnet ID (subnet-0d8b6ee3256797421), and Elastic IP addresses (none). The page also includes a 'Launch Instances' button and a 'Add to dashboard' button.

## 12. EC2 Instance Monitoring Page

The screenshot shows the AWS Management Console interface for the EC2 Instance Monitoring page. The top navigation bar includes the AWS logo, Services menu, Search bar, and user information (Singapore, Pradeep @ 7532-8150-9398). The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances, Images, and AMIs. The main content area displays the instance monitoring page for i-03c17d7828f32c544 (INSTANCE-1). The page shows a table of instances with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. The instance is in a 'Running' state. Below the table, the monitoring dashboard for the selected instance shows CPU utilization, Status check failed counts, and other metrics. The CPU utilization graph shows a peak of 0.503. The Status check failed counts show 1 failed check for any instance, 1 failed check for the instance, and 1 failed check for the system. The page also includes a 'Launch Instances' button and a 'Add to dashboard' button.

The screenshot displays the AWS Management Console interface. On the left, the navigation menu includes options like 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Tags', 'Limits', 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity Reservations', 'Images', and 'AMIs'. The main content area shows the 'Instances (1/1) Info' page. A table lists the instance 'INSTANCE-1' with ID 'i-03c17d7828f32c544', state 'Running', type 't2.micro', and status '2/2 checks passed'. Below this, a detailed view for 'INSTANCE-1' provides a breakdown of network and disk usage metrics over a 15-minute period (17:00 to 17:55).

Metric	Value
Network in (bytes)	803
Network out (bytes)	840
Network packets in (count)	10.5
Network packets out (count)	14
Disk reads (bytes)	402
Disk read operations (count)	5.25
Disk writes (bytes)	0
Disk write operations (count)	7

### 13. SSH Access of EC2 instance in Local Machine.

The screenshot shows the 'Connect to instance' page in the AWS Management Console. It provides a step-by-step guide for connecting to the instance 'i-03c17d7828f32c544' (INSTANCE-1) using an SSH client. The instructions are as follows:

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is Key2.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.  
`chmod 400 Key2.pem`
4. Connect to your instance using its Public DNS:  
`ec2-13-214-147-25.ap-southeast-1.compute.amazonaws.com`

A green notification bubble indicates 'Command copied'. Below the instructions, a terminal command is provided: `ssh -i "Key2.pem" ec2-user@ec2-13-214-147-25.ap-southeast-1.compute.amazonaws.com`. A note at the bottom states: 'Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.'

```
Last login: Sat Mar  4 18:03:05 2023 from ec2-3-0-5-36.ap-southeast-1.compute.amazonaws.com

  __|  __|_ )
 _| (    /   Amazon Linux 2 AMI
---|\\___|___|

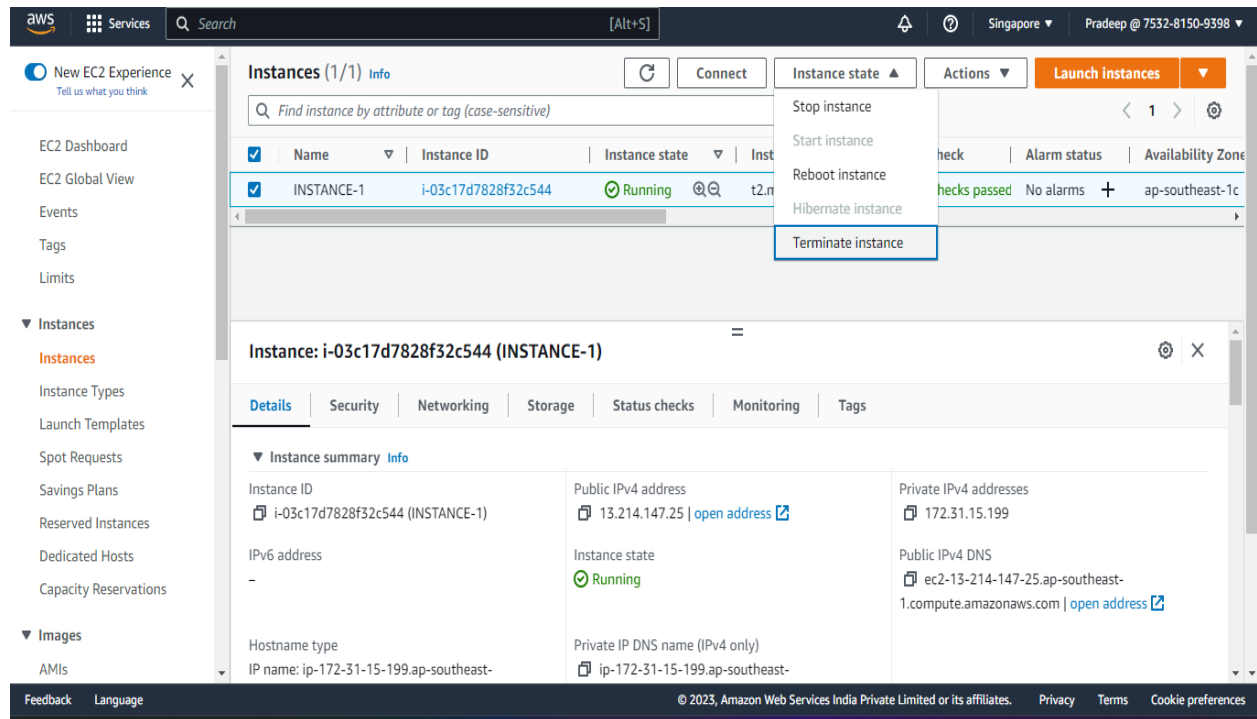
https://aws.amazon.com/amazon-linux-2/
```

## 14. Browsing EC2 instance in the Browser Local Machine.



Manual instance with IP 13.214.147.25

## 15. Terminating the Resource .





aws

Services

Search

[Alt+S]

Singapore

Pradeep @ 7532-8150-9398

New EC2 Experience

Tell us what you think

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

Images

AMIs

Instances (1/1) info

Find instance by attribute or tag (case-sensitive)

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input checked="" type="checkbox"/>	INSTANCE-1	i-03c17d7828f32c544	Running	t2.micro	-	No alarms	ap-southeast-1c

Instance: i-03c17d7828f32c544

DetailsSecurityNetwork

Instance summary info

Instance ID

i-03c17d7828f32c544 (INSTANCE-1)

IPv6 address

-

Instance state

Running

Public IPv4 DNS

ec2-13-214-147-25.ap-southeast-1.compute.amazonaws.com | open address

Hostname type

IP name: ip-172-31-15-199.ap-southeast-1.compute.amazonaws.com | open address

Private IP DNS name (IPv4 only)

ip-172-31-15-199.ap-southeast-1.compute.amazonaws.com | open address

Terminate instance?

On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost.

Are you sure you want to terminate these instances?

☒ i-03c17d7828f32c544 (INSTANCE-1)

To confirm that you want to terminate the instances, choose the terminate button below. Terminating the instance cannot be undone.

CancelTerminate

Successfully terminated i-03c17d7828f32c544

Instances (1) info

Find instance by attribute or tag (case-sensitive)

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	INSTANCE-1	i-03c17d7828f32c544	Terminated	t2.micro	-	No alarms	ap-southeast-1c

Select an instance

Feedback

Language

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