



DEVELOP A RESPONSIVE WEBSITE AND DEPLOY ON AWS

GUIDE BOOK

DR. SAW MYAT SANDAR



What is AWS Cloud?

AWS (Amazon Web Services) is a cloud computing platform.

The first product (S3) was released in 2006.

AWS has grown a lot since then in both size and product range.

It is, to date, the largest cloud provider in the world.

Why Learn AWS?

AWS is the largest of the cloud providers

AWS competence is popular in the job market

You can do most things in the AWS Cloud

Big community/support

What is the Client-Server Model?

The Client-Server model is about a client that interacts and makes requests to a computer server. A client is the way that the person interacts with the server.

What is Cloud Computing?

Cloud computing is a computing service made available over the internet.

Cloud computing is a pay-as-you-go model for delivering IT resources.

You pay only for what you use.

Deployment Models

There are three different kinds of deployment models:

Cloud-based

On-premises

Hybrid

The models are different ways of accessing compute services - over the internet, locally, or in a combination.

Cloud-Based Deployment

Everything runs in the cloud.

This model allows you to build new applications or move existing ones to the cloud.

There are different levels of services ranging from low to high.

The level of service has different requirements on your management, architecting, and infrastructure.

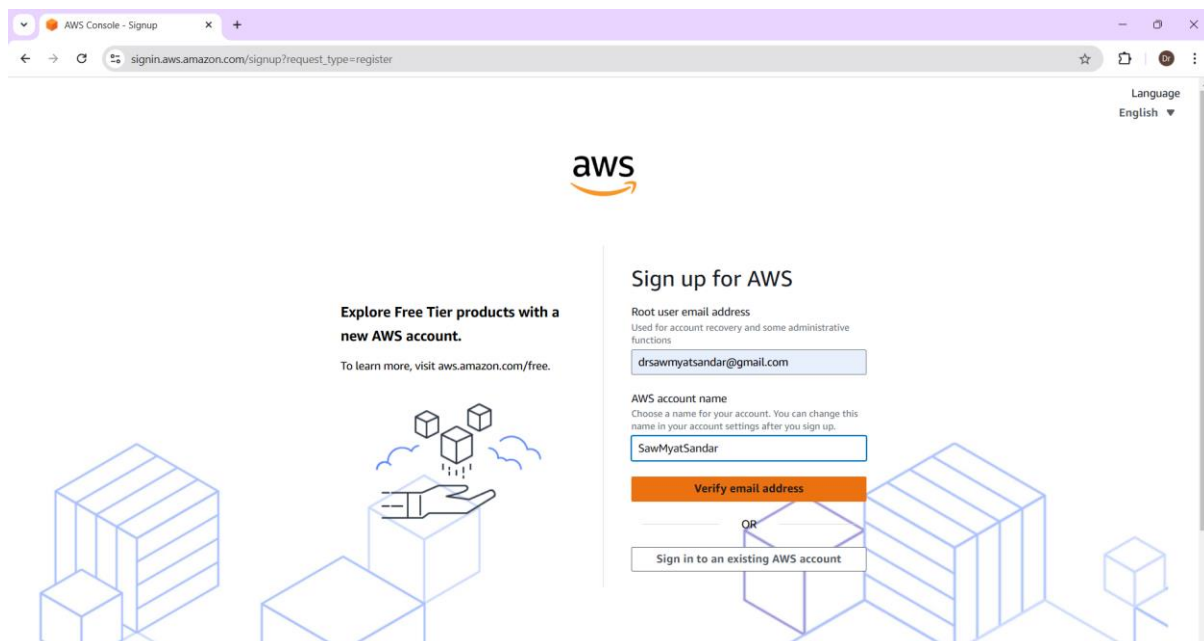
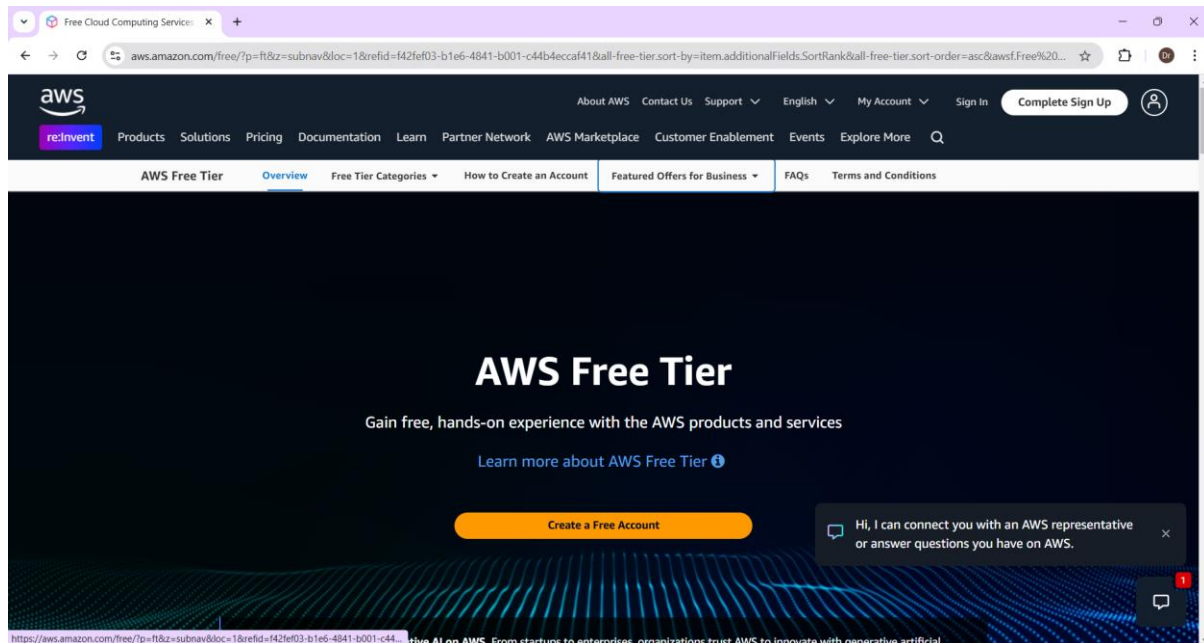
For example, a company might create an application consisting of virtual servers, databases, and networking components entirely based in the cloud.

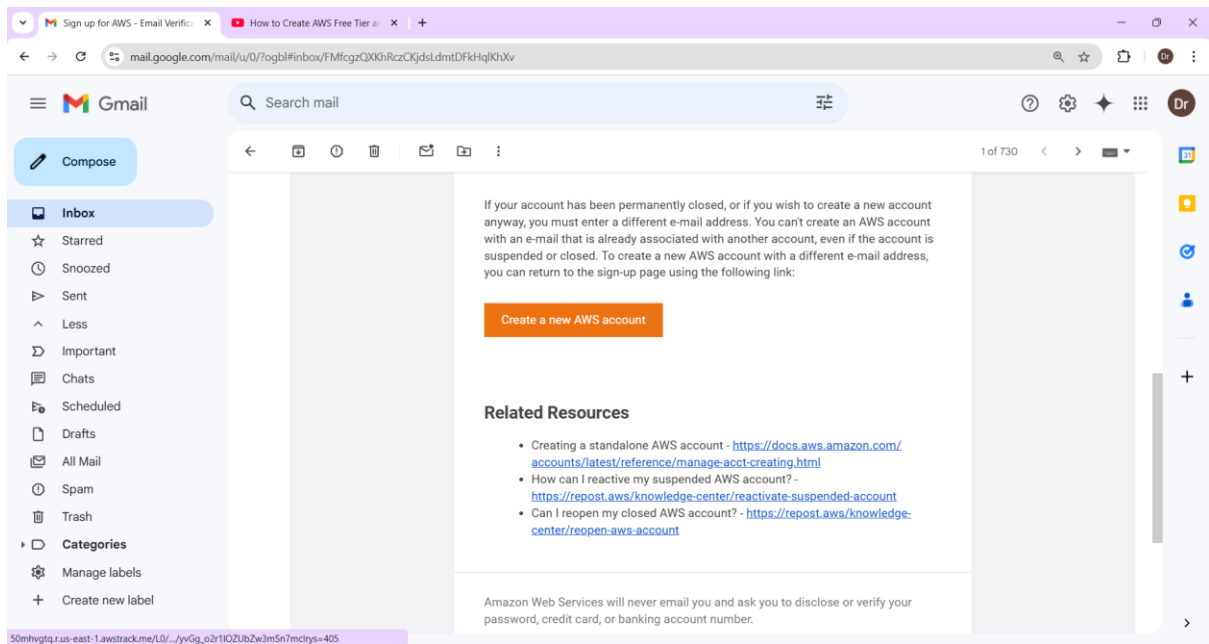
Create Free AWS account

AWS offers a free tier, letting you explore and try out their services.

The free tier offers you limited use of services for free.

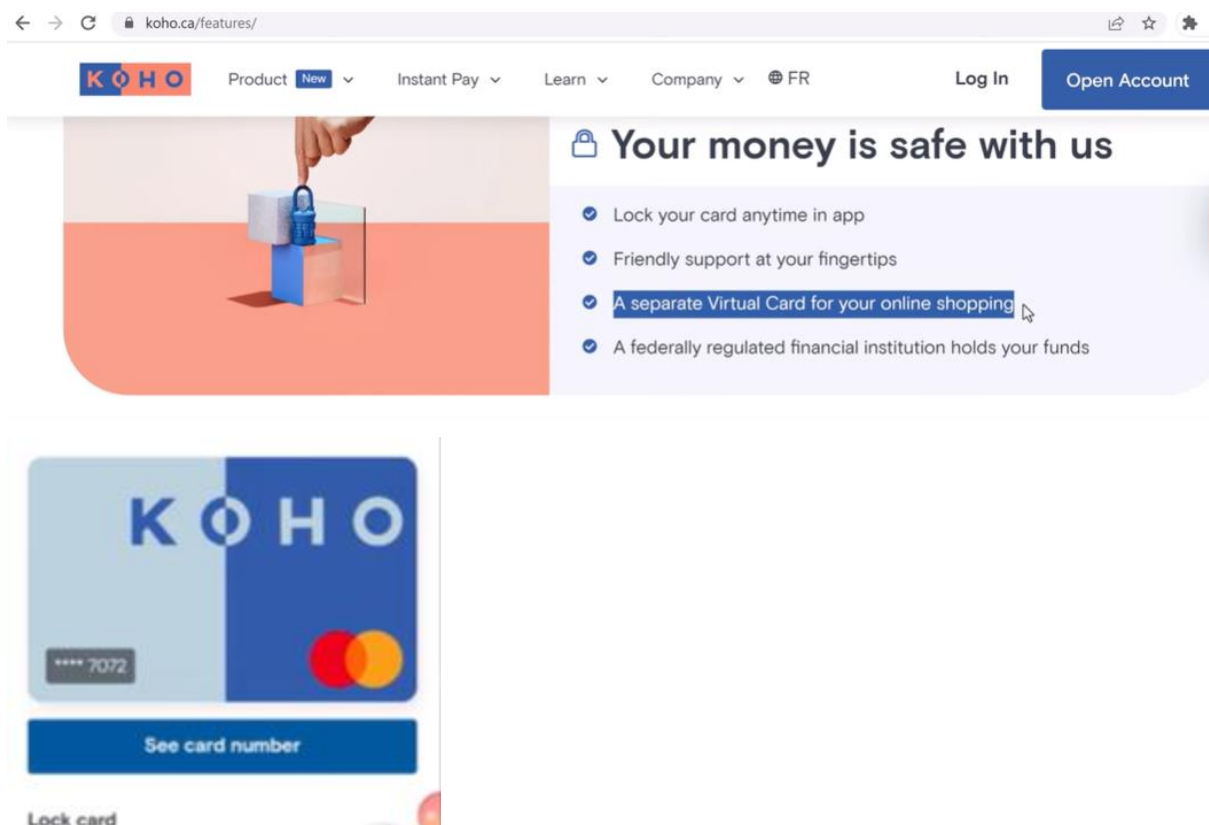
So let us get started with creating your free account!





Visa card အဟောင်းကို အသုံးပြုနိုင်သလို Virtual Account ကို အသုံးပြုပြီးတွေ့လည်း ဖွင့်လို့ရပါတယ်။

Old Visa card or Virtual Account like KOHO can be used to create an AWS free account.

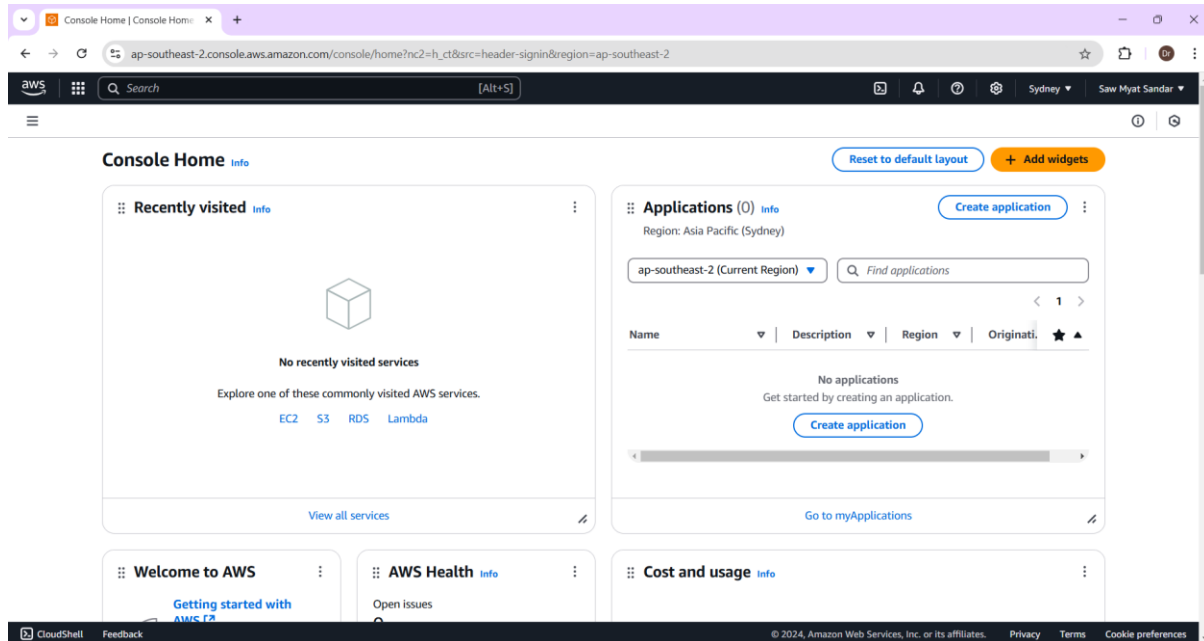


The screenshot shows the AWS sign-up process in two parts. The top part is the 'Sign up for AWS' page, which prompts the user to 'Select a support plan'. It offers three options: 'Basic support - Free' (recommended for new users), 'Developer support - From \$29/month' (recommended for developers), and 'Business support - From \$100/month' (recommended for production workloads). Each plan lists specific benefits like 24x7 self-service access, account/billing support, and response times. A 'Complete sign up' button is at the bottom. The bottom part is the 'Registration Confirmation' page, which says 'Congratulations!' and 'Thank you for signing up with AWS.' It informs the user that their account is being activated and they will receive an email. A 'Go to the AWS Management Console' button is prominent, along with links to 'Sign up for another account' and 'Contact Sales'.



AWS Console

https://ap-southeast-2.console.aws.amazon.com/console/home?nc2=h_ct&src=header-signin®ion=ap-southeast-2

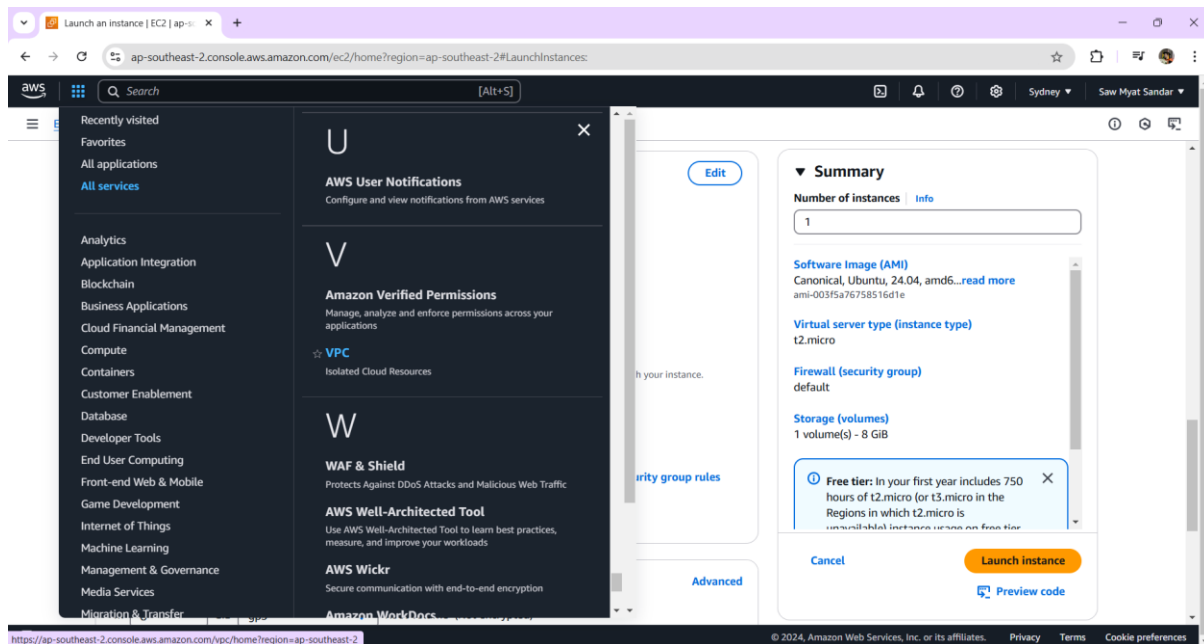




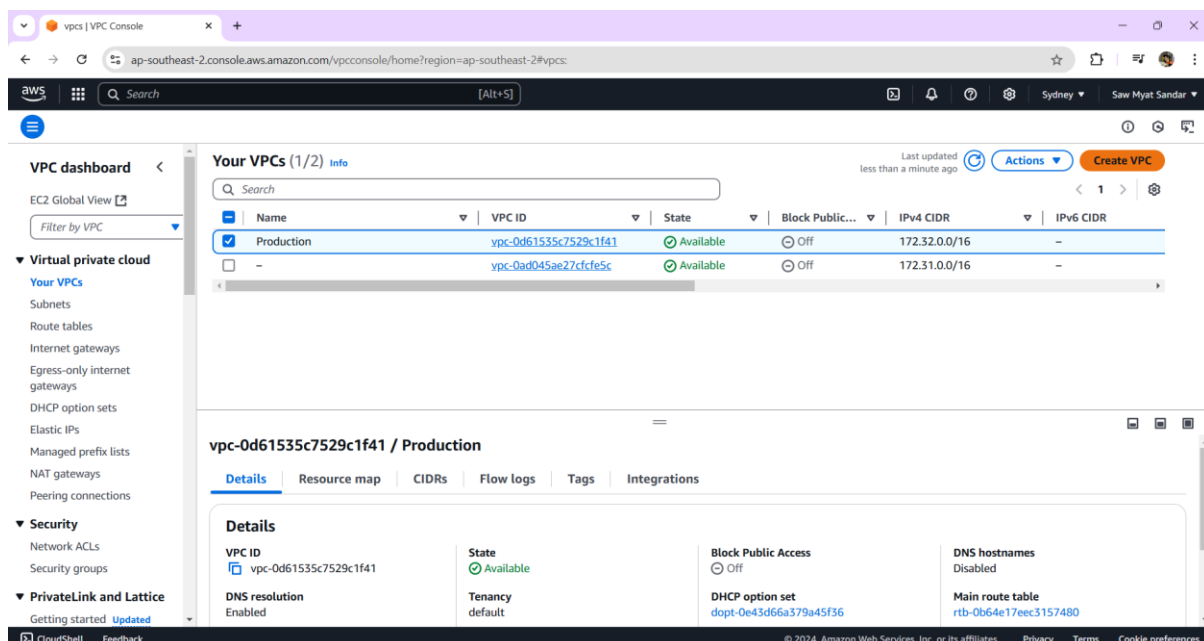
AWS VPC

VPC is Virtual Private Cloud

1. VPC
2. Internet Gateway
3. Subnet
4. Route Table



Your VPC





Create VPC [Info](#)

A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.

VPC settings

Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.

☒ VPC only ☐ VPC and more

Name tag - optional [Info](#)
Creates a tag with a key of 'Name' and a value that you specify.

Portfolio

IPv4 CIDR block [Info](#)
☒ IPv4 CIDR manual input
☐ IPAM-allocated IPv4 CIDR block

IPv4 CIDR
172.16.0.0/32
CIDR block size must be between /16 and /28.

IPv6 CIDR block [Info](#)
☒ No IPv6 CIDR block
☐ IPAM-allocated IPv6 CIDR block
☐ Amazon-provided IPv6 CIDR block
☐ IPv6 CIDR owned by me

Internet Gateway

Internet gateways (2) [Info](#) [Actions](#) [Create internet gateway](#)

<input type="checkbox"/>	Name	Internet gateway ID	State	VPC ID	Owner
<input type="checkbox"/>	Production_Gateway	igw-05fe03e1bbd2106dd	Attached	vpc-0d61535c7529c1f41 Production	211125690626
<input type="checkbox"/>	-	igw-0dfc9962859b8fe57	Attached	vpc-0ad045ae27cfcfe5c	211125690626

Select an internet gateway above

Subnet



VPC | ap-southeast-2

ap-southeast-2.console.aws.amazon.com/vpcconsole/home?region=ap-southeast-2#CreateSubnet:

Create subnet Info

VPC
VPC ID
Create subnets in this VPC.
vpc-Od61535c7529c1f41 (Production)

Associated VPC CIDRs
IPv4 CIDRs
172.32.0.0/16

Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 1

Subnet name
Create a tag with a key of 'Name' and a value that you specify.
my-subnet-01
The name can be up to 256 characters long.

Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.

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Route Table

RouteTables | VPC Console

ap-southeast-2.console.aws.amazon.com/vpcconsole/home?region=ap-southeast-2#RouteTables:

Route tables (1/3) Info

Last updated 2 minutes ago

Find resources by attribute or tag

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
-	rtb-0fb2d884b78a1de4	-	-	Yes	vpc-Oad045ae27cfcfe5c
<input checked="" type="checkbox"/> Production_RouteTable	rtb-0292754ecf50d9ad3	subnet-Oe1f00f0df927de...	-	No	vpc-Od61535c7529c1f41
-	rtb-0b64e17eec3157480	-	-	Yes	vpc-Od61535c7529c1f41

rtb-0292754ecf50d9ad3 / Production_RouteTable

Details Routes Subnet associations Edge associations Route propagation Tags

Details

Route table ID rtb-0292754ecf50d9ad3	Main <input type="checkbox"/> No	Explicit subnet associations subnet-Oe1f00f0df927de13 / Production_Subnet	Edge associations -
VPC vpc-Od61535c7529c1f41 Production	Owner ID 211125690626		

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The screenshot displays two screenshots from the AWS Management Console. The top screenshot shows the 'Create route table' page in the 'ap-southeast-2' region. The 'Route table settings' section has 'RouteTable' entered as the name and 'vpc-0d61535c7529c1f41 (Production)' selected for the VPC. The 'Tags' section shows a key 'Name' and a value 'RouteTable'. The bottom screenshot shows the 'Subnets' page, listing four subnets: 'subnet-0991fcb50f6a31a10', 'subnet-04b160a28598a5acf', 'Production_Subnet' (subnet-0e1f00f0f927de13), and 'subnet-074ab1745dbbab885'. All subnets are in an 'Available' state and are associated with the 'vpc-0ad045ae27cfcfe5c' VPC. The 'Production_Subnet' is associated with the 'vpc-0d61535c7529c1f41 | Prod...' VPC. The page also shows a 'Select a subnet' section at the bottom.

Create route table Info
A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings
Name - optional
Create a tag with a key of 'Name' and a value that you specify.
RouteTable
VPC
The VPC to use for this route table.
vpc-0d61535c7529c1f41 (Production)

Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.
Key
Name
Value - optional
RouteTable
Add new tag
You can add 49 more tags.

Subnets (4) Info
Last updated 2 minutes ago
Find resources by attribute or tag
1

<input type="checkbox"/>	Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
<input type="checkbox"/>	-	subnet-0991fcb50f6a31a10	Available	vpc-0ad045ae27cfcfe5c	Off	172.31.0.
<input type="checkbox"/>	-	subnet-04b160a28598a5acf	Available	vpc-0ad045ae27cfcfe5c	Off	172.31.3.
<input type="checkbox"/>	Production_Subnet	subnet-0e1f00f0f927de13	Available	vpc-0d61535c7529c1f41 Prod...	Off	172.32.0.
<input type="checkbox"/>	-	subnet-074ab1745dbbab885	Available	vpc-0ad045ae27cfcfe5c	Off	172.31.11

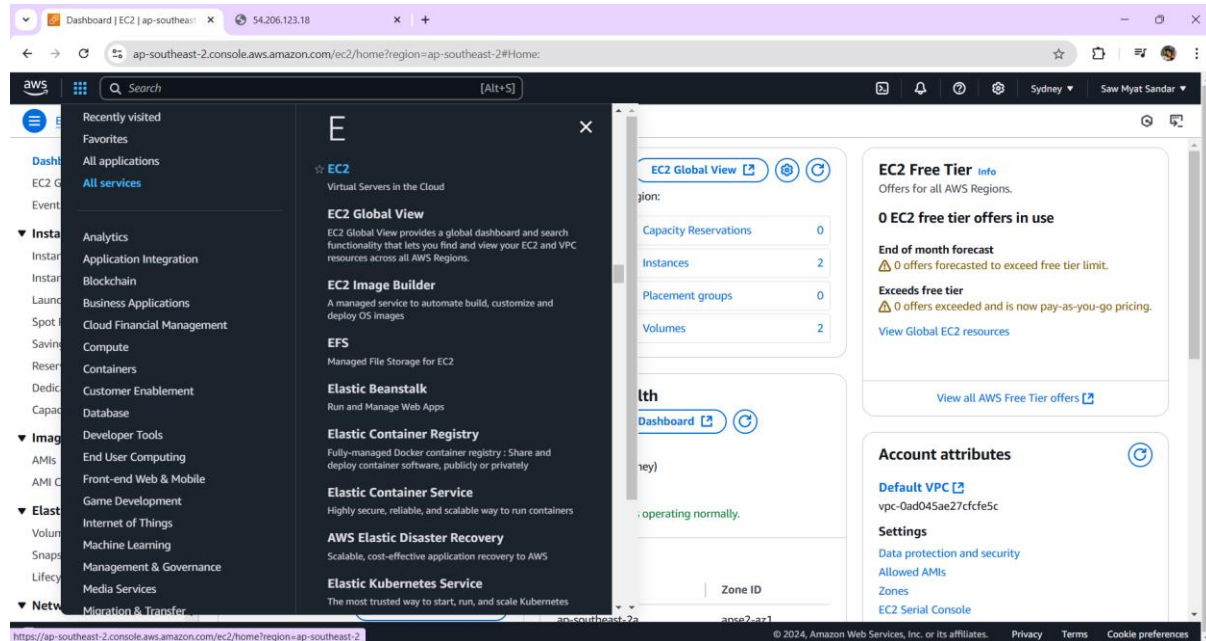
Select a subnet

AWS EC2

EC2 is a virtual server in the AWS Cloud.

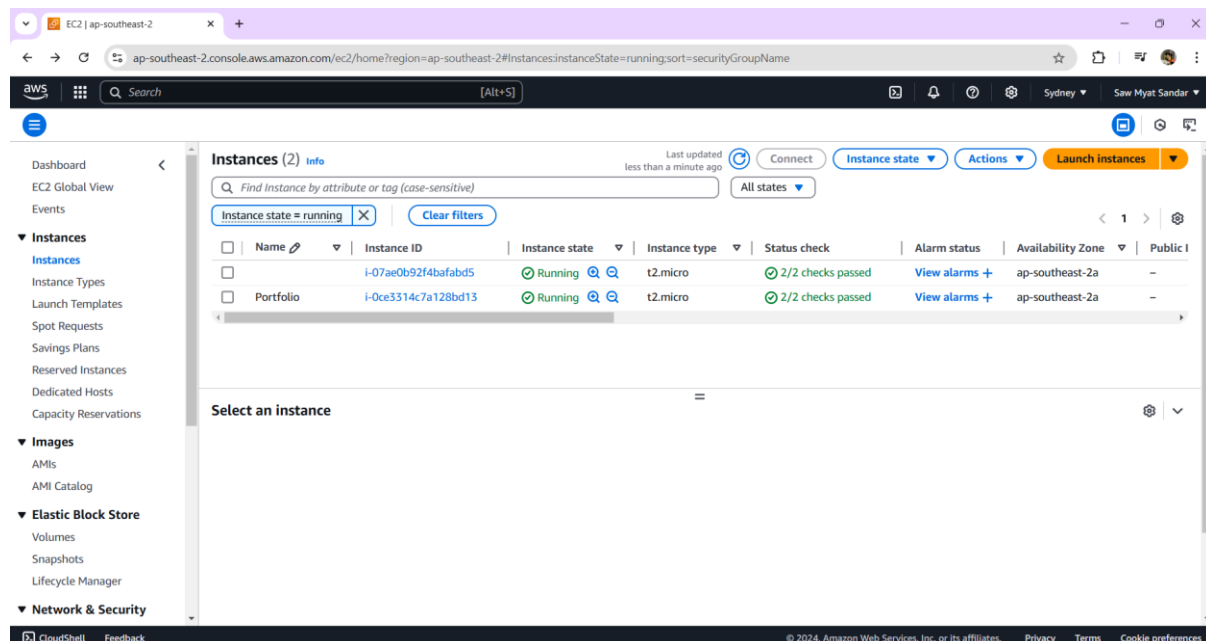
AWS EC2 is short for AWS Elastic Cloud Compute.

It makes scaling of capacity up and down easy.



Create Instance

Select the Instances under the Services of AWS console.



Click 'Launch instance' to create a new 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.

Recents **Quick Start**

Amazon Linux macOS **Ubuntu** Windows Red Hat SUSE Linux [Browse more AMIs](#)

Summary

Number of instances: [Info](#)

Software Image (AMI)
Canonical, Ubuntu, 24.04, amd64...[read more](#)
ami-003f5a76758516d1e

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 of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage as free tier.

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

Type the name such as 'Portfolio' and select Ubuntu to create a Linux server.

Instance type [Info](#) [Get advice](#)

Instance type: **t2.micro** Free tier eligible

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

On-Demand SUSE base pricing: 0.0146 USD per Hour

On-Demand Linux base pricing: 0.0146 USD per Hour

On-Demand Windows base pricing: 0.0192 USD per Hour

On-Demand RHEL base pricing: 0.029 USD per Hour

On-Demand Ubuntu Pro base pricing: 0.0164 USD per Hour

[Additional costs apply for AMIs with pre-installed software](#)

☐ All generations [Compare instance types](#)

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: [Create new key pair](#)

Network settings [Info](#) [Edit](#)

Network: [Info](#)
vpc-0ad045ae27cfcfe5c

Summary

Number of instances: [Info](#)

Software Image (AMI)
Canonical, Ubuntu, 24.04, amd64...[read more](#)
ami-003f5a76758516d1e

Virtual server type (instance type)
t2.micro

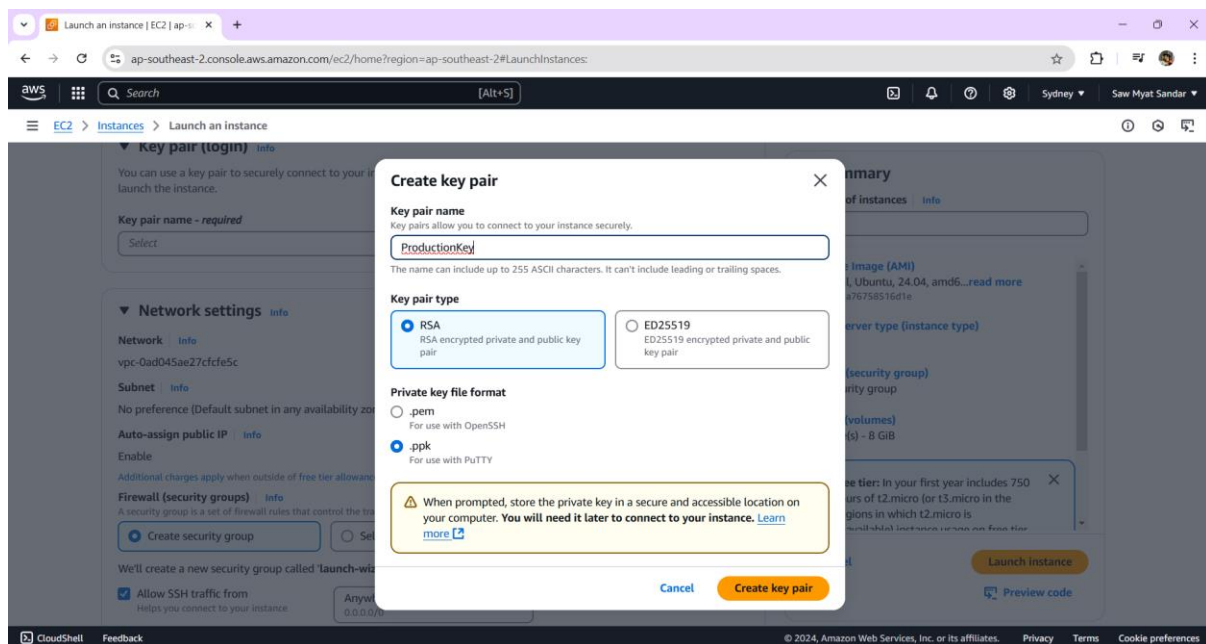
Firewall (security group)
New security group

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

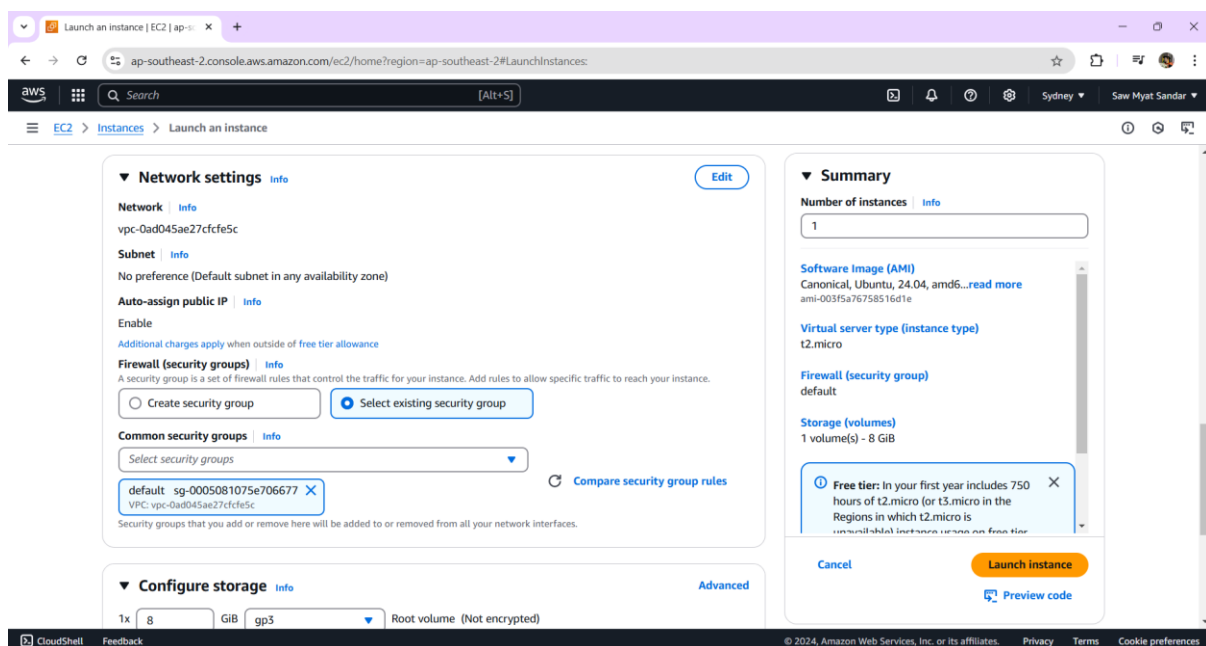
Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage as free tier.

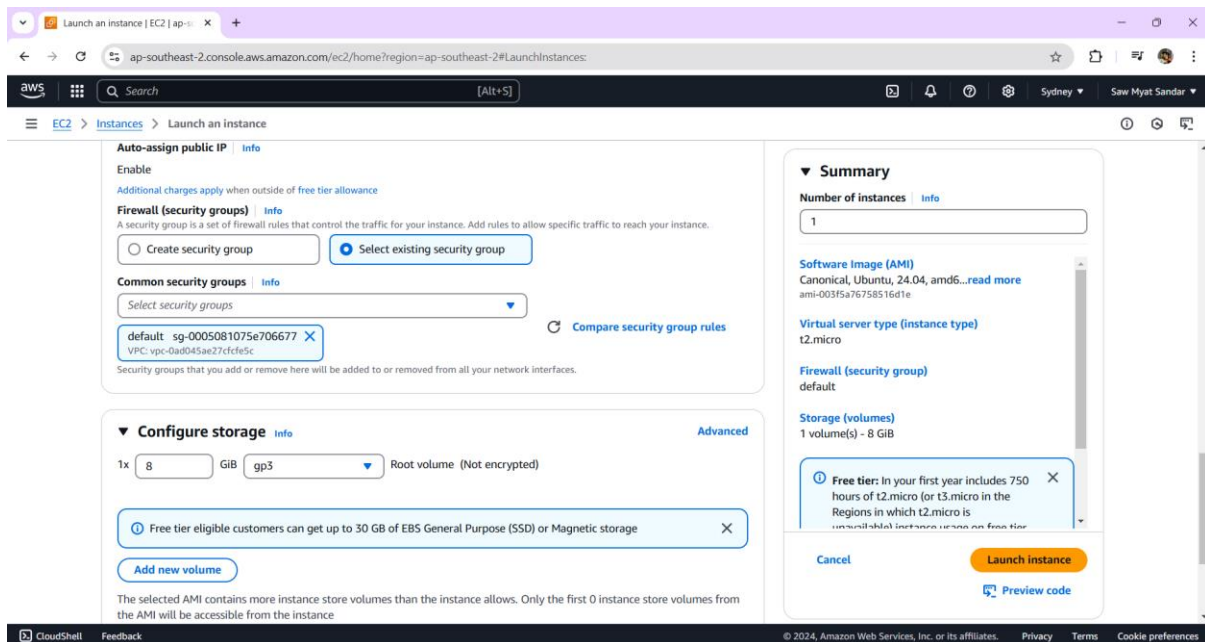
[Cancel](#) [Launch instance](#) [Preview code](#)

Select 'Free tier eligible' for free version and create new key pair.



Select Security Group. If you have already created a new security group, select existing security group.



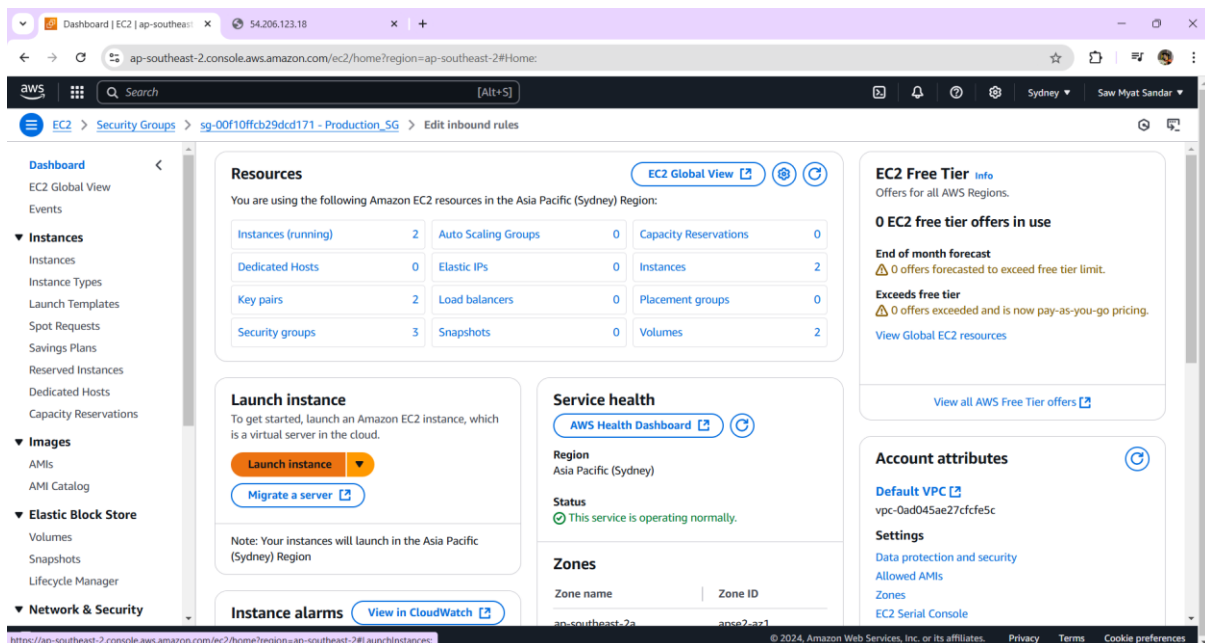


The most important thing is you need to select 'Enable' in Auto-assign public IP.

Number of instances is 1.

You do not need to change Configure storage. Check your configuration again and click 'Launch instance'.

After that you need to change 'Security Groups Inbound Rules'



Security Groups Inbound Rules

Inbound Rules

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional	Actions
sgr-0395b94b633f5a1fa	SSH	TCP	22	Custom	0.0.0.0/0	Delete
sgr-0d5fad582884163b7	RDP	TCP	3389	Custom	0.0.0.0/0	Delete
sgr-07acde34775295043	HTTP	TCP	80	Custom	0.0.0.0/0	Delete

[Add rule](#)

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

[Cancel](#) [Preview changes](#) [Save rules](#)

After changing the inbound rules, the status check shows 2/2 checks passed as shown below.

54.206.123.18

Instances (1/2) Info

Last updated less than a minute ago

[Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

[Find instance by attribute or tag \(case-sensitive\)](#) [All states](#)

[Instance state = running](#) [Clear filters](#)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
i-07ae0b92f4bafab05	i-07ae0b92f4bafab05	Running	t2.micro	2/2 checks passed	View alarms	ap-southeast-2a	-
Portfolio	i-0ce3314c7a128bd13	Running	t2.micro	2/2 checks passed	View alarms	ap-southeast-2a	-

i-0ce3314c7a128bd13 (Portfolio)

[Details](#) [Status and alarms](#) [Monitoring](#) [Security](#) [Networking](#) [Storage](#) [Tags](#)

Instance summary Info

Instance ID i-0ce3314c7a128bd13	Public IPv4 address 54.206.123.18 open address	Private IPv4 addresses 172.32.64.216
IPv6 address -	Instance state Running	Public IPv4 DNS -
Hostname type IP name: ip-172-32-64-216.ap-southeast-	Private IP DNS name (IPv4 only) ip-172-32-64-216.ap-southeast-2.compute.internal	



The screenshot displays the AWS Management Console interface for an EC2 instance. The browser address bar shows the URL: `ap-southeast-2.console.aws.amazon.com/ec2/home?region=ap-southeast-2#instanceDetails:instanceId=i-0ce3314c7a128bd13`. The console header includes the AWS logo, a search bar, and the user's name 'Saw Myat Sandar'.

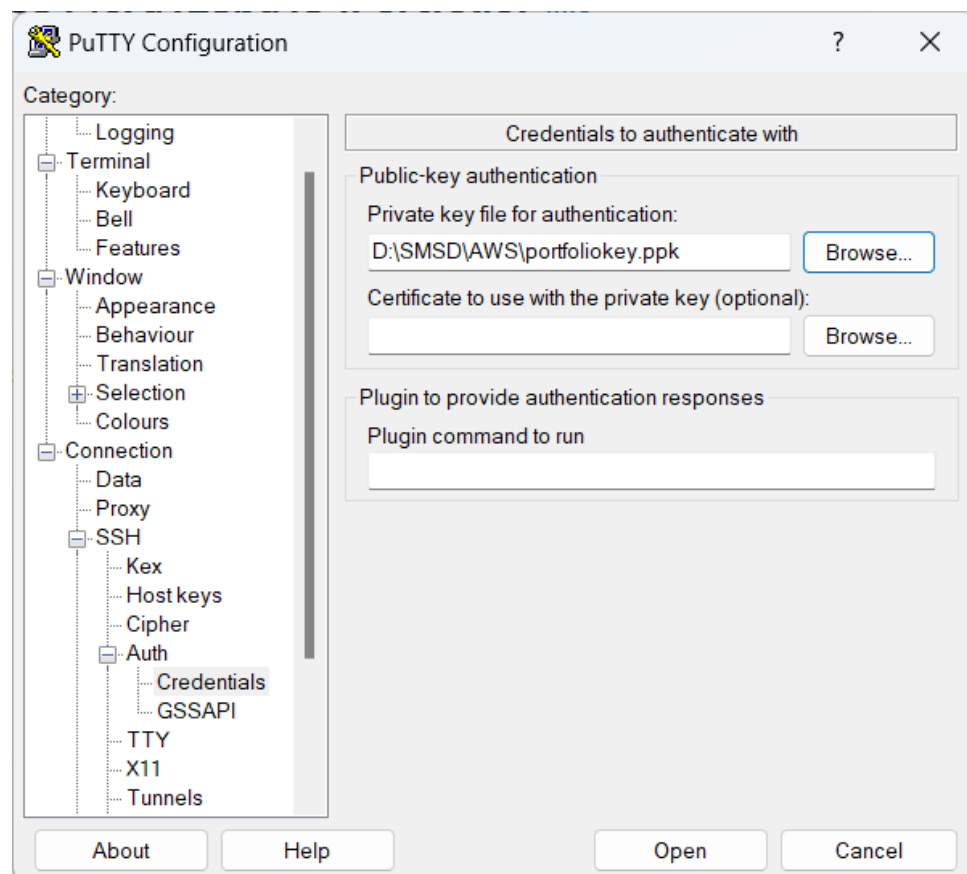
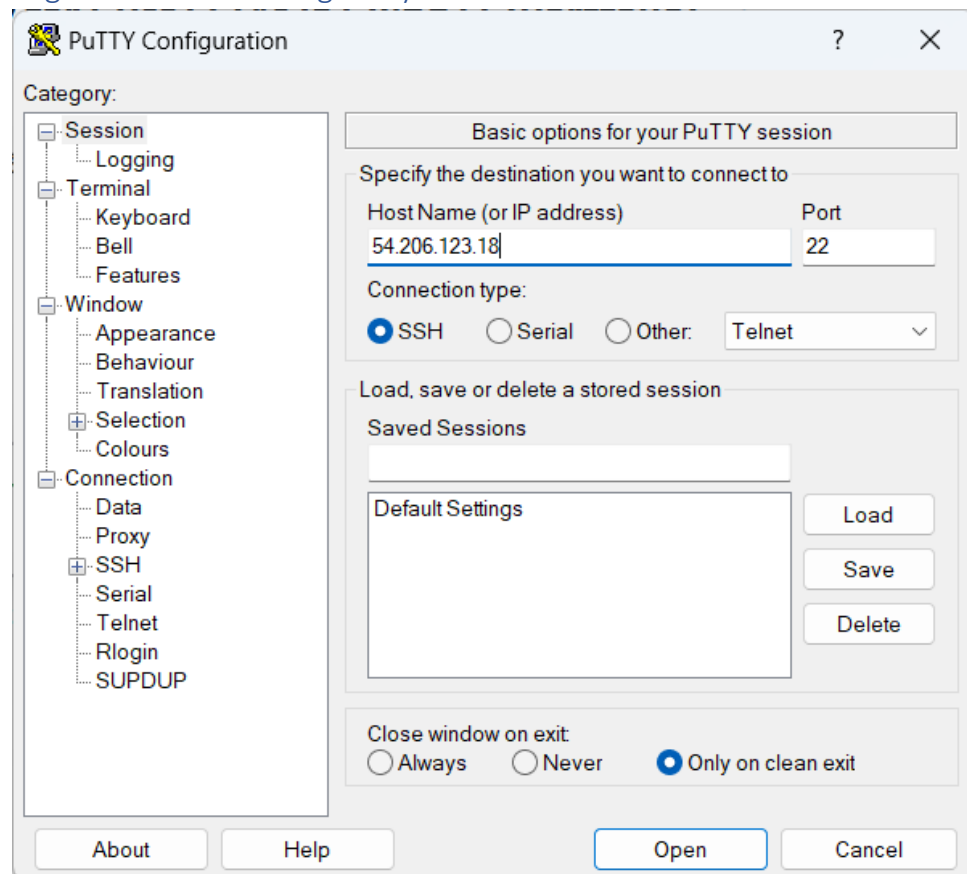
The left-hand navigation pane is expanded to 'Instances', showing a list of instance categories: Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMIs, AMI Catalog), Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), and Network & Security.

The main content area displays the 'Instance summary for i-0ce3314c7a128bd13 (Portfolio)'. At the top right of this section are buttons for 'Connect', 'Instance state', and 'Actions'. The summary is organized into three columns:

- Left Column:**
 - Instance ID:** i-0ce3314c7a128bd13
 - IPv6 address:** -
 - Hostname type:** IP name: ip-172-32-64-216.ap-southeast-2.compute.internal
 - Answer private resource DNS name:** -
 - Auto-assigned IP address:** 54.206.123.18 [Public IP]
 - IAM Role:** -
 - IMDSv2:** Required
 - Operator:** -
- Middle Column:**
 - Public IPv4 address:** 54.206.123.18 | [open address](#)
 - Instance state:** Running
 - Private IP DNS name (IPv4 only):** ip-172-32-64-216.ap-southeast-2.compute.internal
 - Instance type:** t2.micro
 - VPC ID:** vpc-0d61535c7529c1f41 (Production)
 - Subnet ID:** subnet-0e1f00f0df927de13 (Production_Subnet)
 - Instance ARN:** arn:aws:ec2:ap-southeast-2:211125690626:instance/i-0ce3314c7a128bd13
- Right Column:**
 - Private IPv4 addresses:** 172.32.64.216
 - Public IPv4 DNS:** -
 - Elastic IP addresses:** -
 - AWS Compute Optimizer finding:** Opt-in to AWS Compute Optimizer for recommendations. [Learn more](#)
 - Auto Scaling Group name:** -
 - Managed:** false

At the bottom of the instance summary, there are tabs for 'Details', 'Status and alarms', 'Monitoring', 'Security', 'Networking', 'Storage', and 'Tags'. The footer of the console shows 'CloudShell', 'Feedback', and copyright information: '© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

Login or Connect Using Putty



Commands in Putty

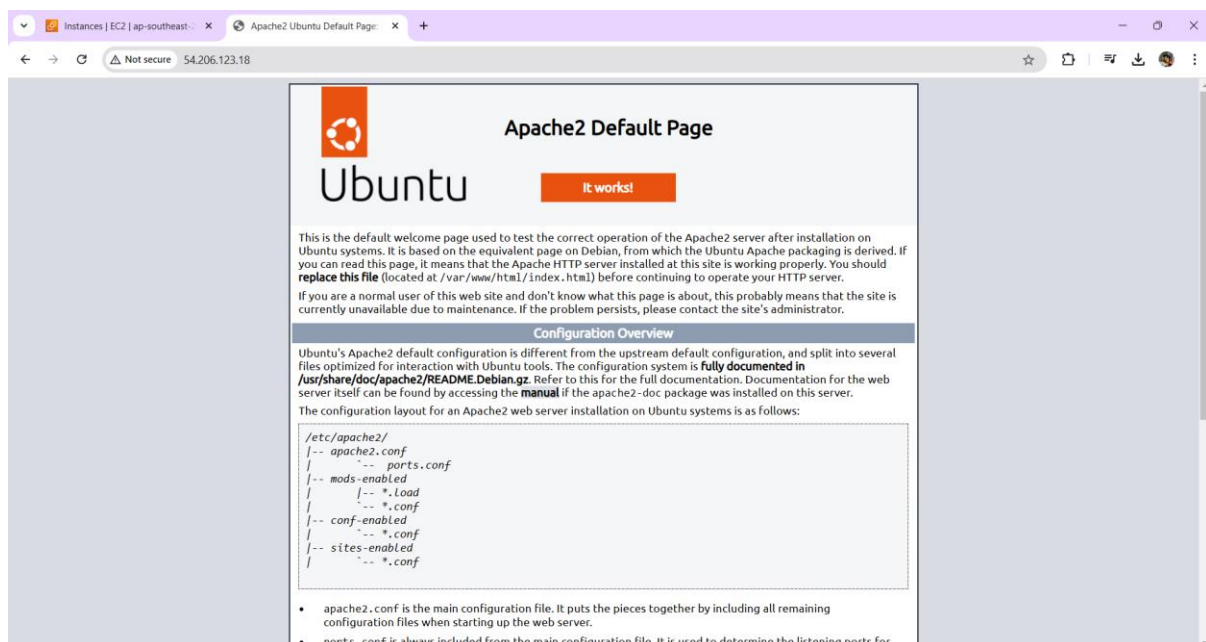
login as: **ubuntu**

ubuntu@linuxserver:~\$ **sudo su**

root@linuxserver:/home/ubuntu# **apt-get update && apt-get upgrade -y**

root@linuxserver:/home/ubuntu# **apt-get install apache2 -y**

http://54.206.123.18/



root@ip-172-32-64-216:/home/ubuntu# **cd /var/www**

root@ip-172-32-64-216:/var/www# **cd html/**

root@ip-172-32-64-216:/var/www/html# **ls**

root@ip-172-32-64-216:/var/www/html# **vim index.html**

copy the following code, go to putty and click "I" and right click on mouse.

Type :wq to save and exit

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Test</title>
</head>
<body>
  <h1>Welcome</h1>
  <p>This is a paragraph.</p>
</body>
</html>
```



```
root@ip-172-32-64-216: /var/www/html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Test</title>
</head>
<body>
  <h1>Welcome</h1>
  <p>This is a paragraph.</p>
</body>
</html>
~
```

```
root@ip-172-32-64-216:/var/www/html# vim index.html
```

```
:wq
```

```
root@ip-172-32-64-216:/var/www/html# etc/init.d/apache2 restart
```

Refresh the browser

