

# AWS Assignment 2

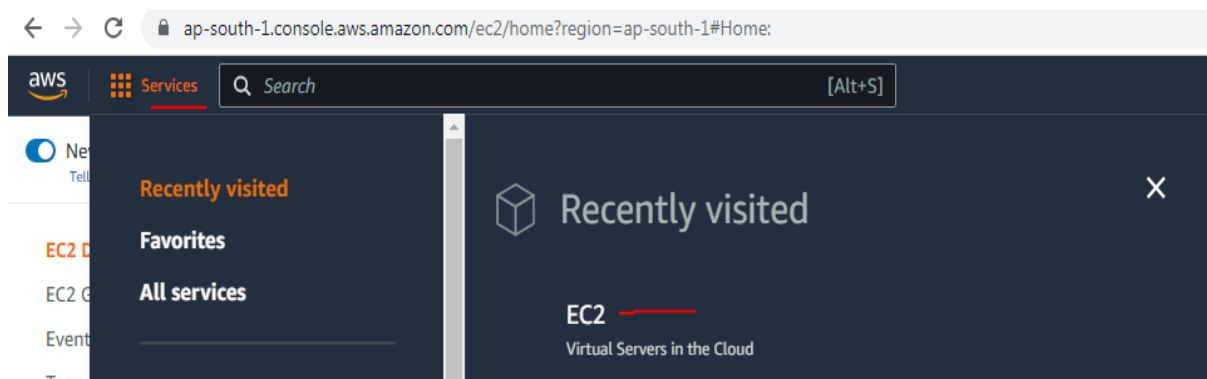
## 1. Creation of EC2 instance : (2 machines - 1st machine-name, 2nd machine-surname)

machine -1 : Shagani

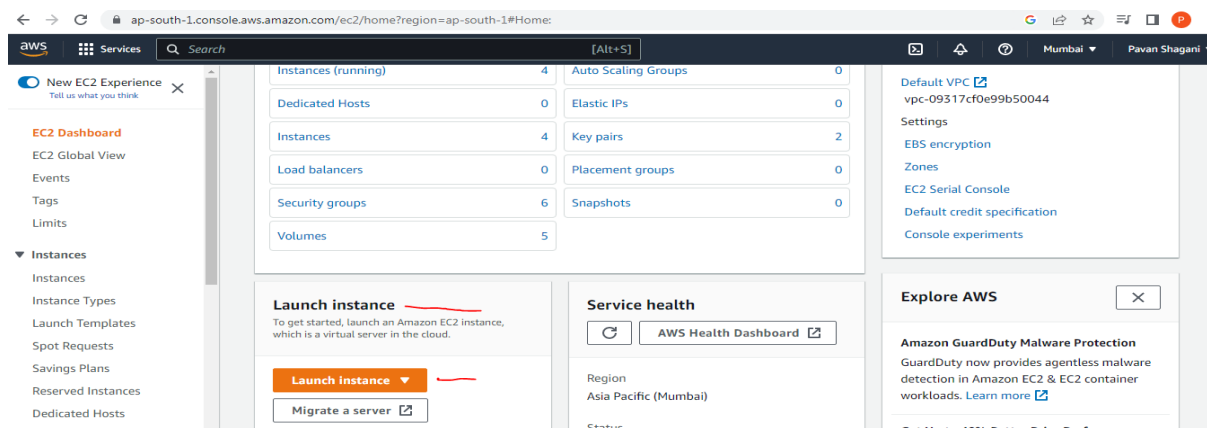
machine -2 : Pavan

### Machine-1 creation [Shagani]

Click on EC2 service by browsing the Services



Click on **Launch Instance**



Provide the name of the instance, **name if the instance is given as 'Shagani'**

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](#)

### Selected Linux with Free Tier

Recents | **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 Free tier eligible

ami-01a4f99c4ac11b03c (64-bit (x86)) / ami-0f3443fa43a3a92d2 (64-bit (Arm))

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

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20230119.1 x86\_64 HVM gp2

Architecture	AMI ID
64-bit (x86)	ami-01a4f99c4ac11b03c <span>Verified provider</span>

### t2.micro which is a free tier is selected as Instance Type

▼ **Instance type** [Info](#)

Instance type

t2.micro Free tier eligible

Family: t2 1 vCPU 1 GiB Memory

On-Demand Linux pricing: 0.0124 USD per Hour

On-Demand Windows pricing: 0.017 USD per Hour

On-Demand RHEL pricing: 0.0724 USD per Hour

On-Demand SUSE pricing: 0.0124 USD per Hour


[Compare instance types](#)

Create or reuse the existing key pair, here I have created a new key pair with name 'Shagani'

▼ **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](#)

### Create key pair ✕

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.** [Learn more](#) 

Key pair name

shagani

The name can include upto 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

- RSA**  
RSA encrypted private and public key pair
- ED25519**  
ED25519 encrypted private and public key pair (Not supported for Windows instances)

Private key file format

- .pem**  
For use with OpenSSH
- .ppk**  
For use with PuTTY

[Cancel](#) [Create key pair](#)

Here I created the key pair to use for the connection through Putty.

A PPK file is created in the local machine, which can be used to connect to machine from putty.

### **Selected default network settings**

**▼ Network settings** [Info](#) Edit

Network [Info](#)  
vpc-09317cf0e99b50044

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-6'** with the following rules:

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

### selected Default Storage settings

**▼ Configure storage** [Info](#) Advanced

1x  GiB  Root volume (Not encrypted)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage ×

Add new volume

---

0 x File systems Edit

**Click on Launch Instance**

## ▼ Summary

Number of instances [Info](#)

### Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...[read more](#)  
ami-01a4f99c4ac11b03c

### 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



### Success

Successfully initiated launch of instance (i-0de03cd0a5f33b646)

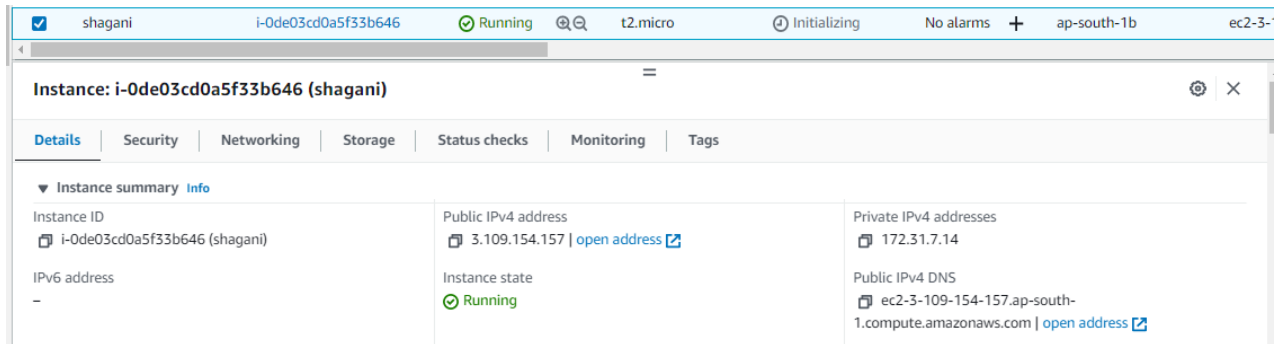
#### ▼ Launch log

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

## EC2 instance created with below details

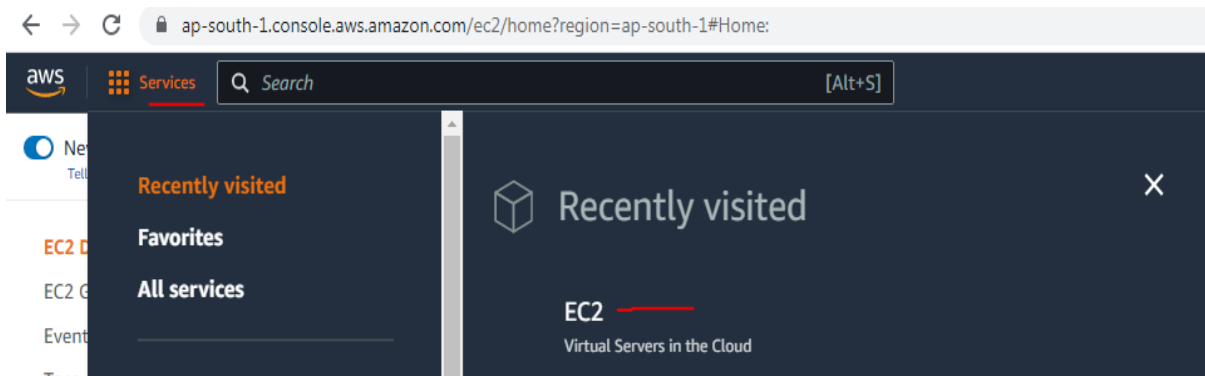
Instance ID            i-0de03cd0a5f33b646

Instance Name        Shagani

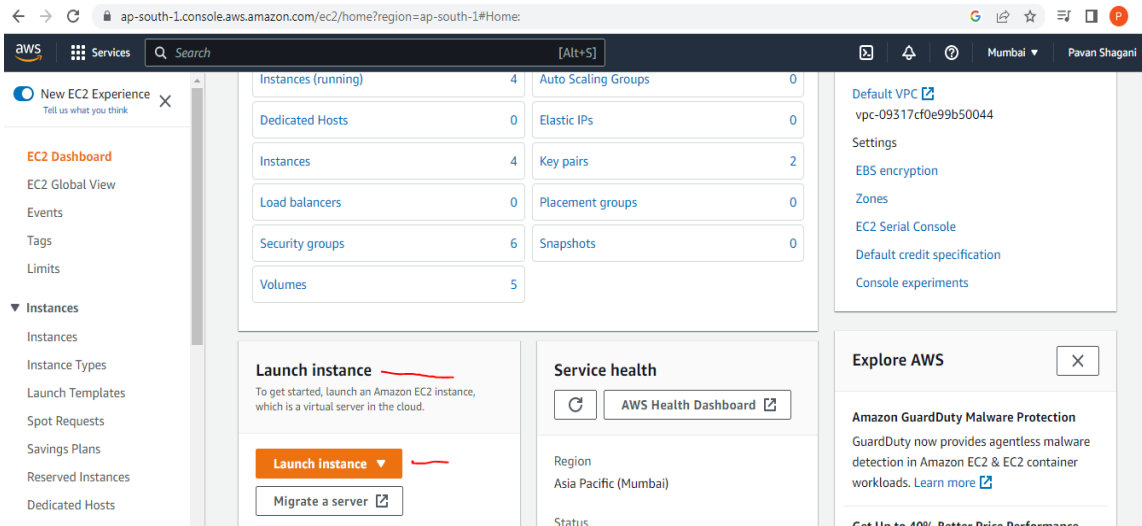


## Machine-2 creation [Pavan ]

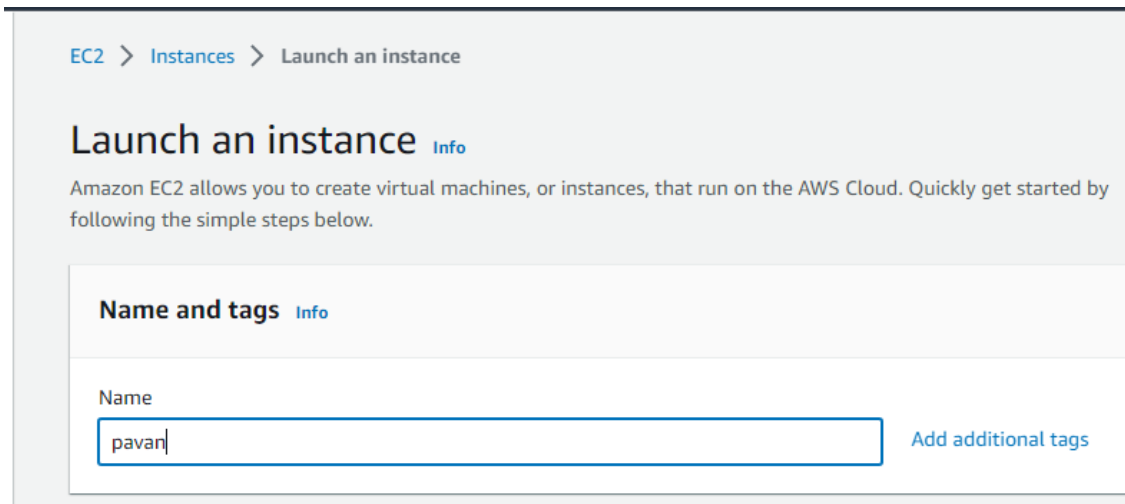
Click on EC2 service by browsing the Services



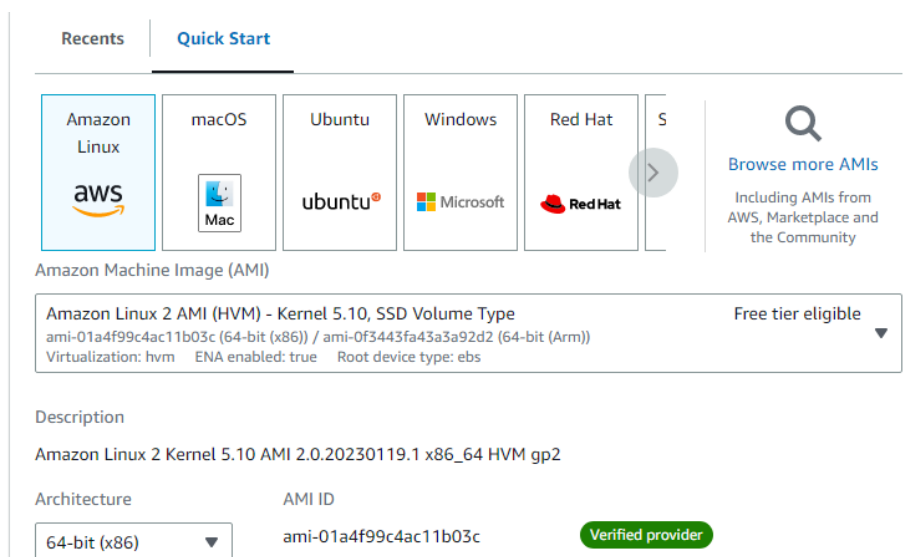
Click on **Launch Instance**



Provide the name of the instance, **name if the instance is given as 'pavan'**



**Selected Linux with Free Tier**



## t2.micro which is a free tier is selected as Instance Type

▼ Instance type [Info](#)

Instance type

t2.micro Free tier eligible

Family: t2 1 vCPU 1 GiB Memory

On-Demand Linux pricing: 0.0124 USD per Hour

On-Demand Windows pricing: 0.017 USD per Hour

On-Demand RHEL pricing: 0.0724 USD per Hour

On-Demand SUSE pricing: 0.0124 USD per Hour

[Compare instance types](#)

## Create or reuse the existing key pair, here I have created a new key pair with name 'pavan'

▼ 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](#)

### Create key pair ✕

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.** [Learn more](#) [↗](#)

Key pair name

pavan

The name can include upto 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

RSA  
RSA encrypted private and public key pair

ED25519  
ED25519 encrypted private and public key pair (Not supported for Windows instances)

Private key file format

.pem  
For use with OpenSSH

.ppk  
For use with PuTTY

[Cancel](#) [Create key pair](#)



Here I created the key pair to use for the connection through Putty.

A PPK file is created in the local machine, which can be used to connect to machine from putty.

### Selected default network settings

The screenshot shows the 'Network settings' section in the AWS console. It includes fields for Network ID (vpc-09317cf0e99b50044), Subnet (No preference), and Auto-assign public IP (Enabled). The Firewall section is expanded, showing the option to 'Create security group' selected. Below, it lists rules for the new security group: 'Allow SSH traffic from Anywhere' is checked, while 'Allow HTTPS traffic from the internet' and 'Allow HTTP traffic from the internet' are unchecked.

▼ **Network settings** [Info](#) Edit

Network [Info](#)  
vpc-09317cf0e99b50044

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-6' with the following rules:

Allow SSH traffic from Anywhere  
Helps you connect to your instance  
0.0.0.0/0

Allow HTTPS traffic from the internet  
To set up an endpoint, for example when creating a web server

Allow HTTP traffic from the internet  
To set up an endpoint, for example when creating a web server

### selected Default Storage settings

The screenshot shows the 'Configure storage' section in the AWS console. It displays a configuration for 1x 8 GiB gp2 Root volume (Not encrypted). A notification banner indicates that free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. There is an 'Add new volume' button and a section for '0 x File systems' with an 'Edit' link.

▼ **Configure storage** [Info](#) Advanced

1x  GiB  Root volume (Not encrypted)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage ×

Add new volume

0 x File systems Edit

Click on Launch Instance

▼ **Summary**



Number of instances [Info](#)

**Software Image (AMI)**  
Amazon Linux 2 Kernel 5.10 AMI...[read more](#)  
ami-01a4f99c4ac11b03c

**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](#)

EC2 > Instances > Launch an instance

 **Success**  
Successfully initiated launch of instance (i-0e9c949a9f45aff48)

▼ **Launch log**

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

## EC2 instance created with below details

Instance ID            i-0e9c949a9f45aff48

Instance Name        pavan

### Instance: i-0e9c949a9f45aff48 (pavan)

Platform details

Linux/UNIX

Stop protection

Disabled

Instance auto-recovery

Default

AMI name

amzn2-ami-kernel-5.10-hvm-2.0.20230119.1-x86\_64-gp2

Launch time

Mon Feb 06 2023 00:37:41 GMT+0530 (India Standard Time) (1 minute)

Lifecycle

normal

Termination protection

Disabled

AMI location

amazon/amzn2-ami-kernel-5.10-hvm-2.0.20230119.1-x86\_64-gp2

Stop-hibernate behavior

disabled

### Instance: i-0e9c949a9f45aff48 (pavan)

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID
vol-0b404e8bd1e050a98	/dev/xvda	8	Attached	Mon Feb 06 2023 00:37:42 G...	No	-

## 2. Elastic Block Storage :

click on create volume under Elastic block store -> Volumes

The screenshot shows the AWS Management Console interface. On the left sidebar, the 'Elastic Block Store' menu item is highlighted with a red arrow, and the 'Volumes' sub-menu is also highlighted with a red arrow. In the main content area, the 'Volumes (6)' section is visible, and the 'Create volume' button is highlighted with a red arrow. Below the button, a table lists existing volumes with columns for Volume ID, Type, Size, IOPS, Throughput, Snapshot, Created, and Availability Zone. The table contains six rows of volume information.

Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability
vol-08a287c5c4ff6aeb9	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:22 GMT+5:...	ap-south-1
vol-06e6a4633fb3e8806	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:44 GMT+5:...	ap-south-1
vol-076b7f862a3629f0d	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:45 GMT+5:...	ap-south-1
vol-0b404e8bd1e050a98	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/06 00:37 GMT+5:...	ap-south-1
vol-07356e33ace1d3ee6	gp2	8 GiB	100	-	snap-0dee069...	2022/09/24 19:16 GMT+5:...	ap-south-1
vol-04250e2320ef9e55b	gp2	1 GiB	100	-	-	2023/02/06 00:12 GMT+5:...	ap-south-1

Give the size and select the Availability Zone, here I selected ap-south-1b, as instance is in same zone. Click on create Volume

Volume type [Info](#)

General Purpose SSD (gp2) ▼

Size (GiB) [Info](#)

1 | ▼

Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS [Info](#)

100 / 3000

Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS.

Throughput (MiB/s) [Info](#)

Not applicable

Availability Zone [Info](#)

ap-south-1b ▼

Snapshot ID - optional [Info](#)

Don't create volume from a snapshot ▼



Encryption [Info](#)

Use Amazon EBS encryption as an encryption solution for your EBS resources associated with your EC2 instances.

Encrypt this volume

Tags - optional [Info](#)

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.

No tags associated with the resource.

[Add tag](#)

You can add 50 more tags.

Cancel

Create volume

## New volume is created and Available now

Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state
la287c5c4ff6aeb9	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:22 GMT+5:...	ap-south-1b	In-use
je6a4633fb3e8806	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:44 GMT+5:...	ap-south-1b	In-use
f6b7f862a3629f0d	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:45 GMT+5:...	ap-south-1b	In-use
y404e8bd1e050a98	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/06 00:37 GMT+5:...	ap-south-1b	In-use
y965210cf7e5bc7a	gp2	1 GiB	100	-	-	2023/02/06 00:49 GMT+5:...	ap-south-1b	Available
r356e33ace1d3ee6	gp2	8 GiB	100	-	snap-0dee069...	2022/09/24 19:16 GMT+5:...	ap-south-1a	In-use

## Attach the volume to Instance 'Pavan'

Volumes (1/6)

Search

Name	Volume ID	Type	Size	IOPS	Throughput	Created	Availability Zone	Volume state
-	vol-08a287c5c4ff6aeb9	gp2	8 GiB	100	-	19:22 GMT+5:...	ap-sc	Available
-	vol-06e6a4633fb3e8806	gp2	8 GiB	100	-	19:44 GMT+5:...	ap-sc	Available
-	vol-076b7f862a3629f0d	gp2	8 GiB	100	-	19:45 GMT+5:...	ap-sc	Available
-	vol-0b404e8bd1e050a98	gp2	8 GiB	100	-	00:37 GMT+5:...	ap-sc	Available
-	vol-00965210cf7e5bc7a	gp2	1 GiB	100	-	00:49 GMT+5:...	ap-sc	Available
-	vol-07356e33ace1d3ee6	gp2	8 GiB	100	-	19:16 GMT+5:...	ap-sc	Available

Actions

- Modify volume
- Create snapshot
- Create snapshot lifecycle policy
- Delete volume
- Attach volume
- Detach volume
- Force detach volume
- Manage auto-enabled I/O
- Manage tags

Create volume

## Attach volume Info

Attach a volume to an instance to use it as you would a regular physical hard disk drive.

### Basic details

Volume ID

Availability Zone  
 ap-south-1b

Instance Info

Only instances in the same Availability Zone as the selected volume are displayed.

Device name Info

Recommended device names for Linux: /dev/sda1 for root volume. /dev/sd[f-p] for data volumes.

ⓘ Newer Linux kernels may rename your devices to **/dev/xvdf** through **/dev/xvdp** internally, even when the device name entered here (and shown in the details) is **/dev/sdf** through **/dev/sdp**.

Instance: i-0e9c949a9f45aff48 (pavan)

EBS

▼ Block devices

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID
vol-0b404e8bd1e050a98	/dev/xvda	8	Attached	Mon Feb 06 2023 00:37:42 G...	No	-
vol-00965210cf7e5bc7a	/dev/sdf	1	Attached	Mon Feb 06 2023 00:55:11 G...	No	-

Verified by connecting from Putty, using lsblk command

```

ec2-user@ip-172-31-8-87:~
login as: ec2-user
Authenticating with public key "pavan"

  _ | _ | _ )
  _ | ( _ _ /   Amazon Linux 2 AMI
  _ | \ _ | _ |

https://aws.amazon.com/amazon-linux-2/
14 package(s) needed for security, out of 14 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-8-87 ~]$ lsblk
NAME        MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
xvda        202:0    0  8G  0 disk
└─xvda1     202:1    0  8G  0 part /
xvdf        202:80   0  1G  0 disk
[ec2-user@ip-172-31-8-87 ~]$
  
```

### 3.Snapshot Creation :

we can create in two ways

1. From Elastic Block store -> snapshot -> create snapshot

2. create from existing storage volume. **Here I create the snapshot from existing volume**


The screenshot shows the AWS console 'Volumes' page. On the left, there is a navigation menu with categories: Images, Elastic Block Store (expanded), Network & Security, and Load Balancing. Under 'Elastic Block Store', 'Volumes' is selected. The main area displays a table of 6 volumes. The volume 'storage vol...' with ID 'vol-00965210c7e5bc7a' and size '1 GiB' is selected. A 'Create volume' button is visible in the top right.

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Avail
<input type="checkbox"/>	-	vol-08a287c5c4ff6aeb9	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:22 GMT+5:...	ap-s
<input type="checkbox"/>	-	vol-06e6a4633fb3e8806	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:44 GMT+5:...	ap-s
<input type="checkbox"/>	-	vol-076b7f862a3629f0d	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:45 GMT+5:...	ap-s
<input type="checkbox"/>	-	vol-0b404e8bd1e050a98	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/06 00:37 GMT+5:...	ap-s
<input checked="" type="checkbox"/>	storage vol...	vol-00965210c7e5bc7a	gp2	1 GiB	100	-	-	2023/02/06 00:49 GMT+5:...	ap-s
<input type="checkbox"/>	-	vol-07356e33ace1d3ee6	gp2	8 GiB	100	-	snap-0dee069...	2022/09/24 19:16 GMT+5:...	ap-s

This screenshot is similar to the one above, but with a context menu open over the selected volume 'storage vol...'. The menu options are: Create volume, Modify volume, Create snapshot, Create snapshot lifecycle policy, Delete volume, and Attach volume. The 'Create volume' button is also present in the top right.

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Avai
<input type="checkbox"/>	-	vol-08a287c5c4ff6aeb9	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:22 GMT+5:...	ap-s
<input type="checkbox"/>	-	vol-06e6a4633fb3e8806	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:44 GMT+5:...	ap-s
<input type="checkbox"/>	-	vol-076b7f862a3629f0d	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/05 19:45 GMT+5:...	ap-s
<input type="checkbox"/>	-	vol-0b404e8bd1e050a98	gp2	8 GiB	100	-	snap-0fdd5b8...	2023/02/06 00:37 GMT+5:...	ap-s
<input checked="" type="checkbox"/>	storage	vol-00965210c7e5bc7a	gp2	1 GiB	100	-	-	2023/02/06 00:49 GMT+5:...	ap-s
<input type="checkbox"/>	-	vol-07356e33ace1d3ee6	gp2	8 GiB	100	-	snap-0dee069...	2022/09/24 19:16 GMT+5:...	ap-s

### Details

Volume ID  
 vol-00965210cf7e5bc7a (storage volume)

Description  
 Add a description for your snapshot  
  
 255 characters maximum.

Encryption [Info](#)  
 Not encrypted

---

### Tags [Info](#)

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.

No tags associated with the resource.

You can add 50 more tags.

## Snapshot created

Dedicated Hosts

Capacity Reservations

Images

Elastic Block Store

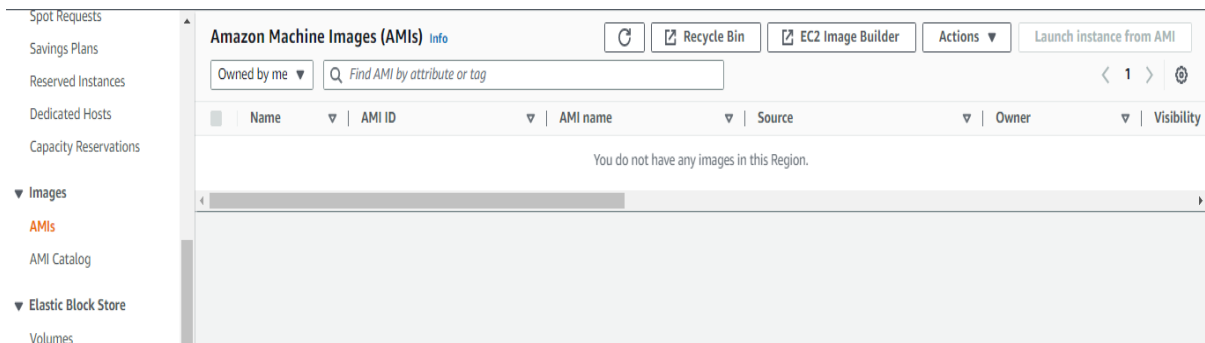
Volumes

**Snapshots**

Snapshots (1)							
Owned by me		Search					
Name	Snapshot ID	Size	Description	Storage...	Snapshot status	Started	Pr
-	snap-06de19043e0e2333e	1 GiB	snapshot from existing stor...	Standard	Completed	2023/02/06 01:11 GMT+5...	

## AMI Creation :

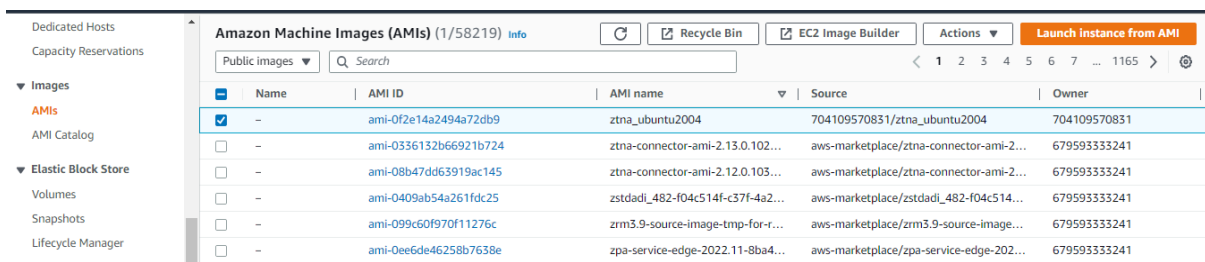
go to Images -> AMIs



select public Images from the drop down to choose the available Images for AMI creation

Check the checkbox for the required Image from market place

Click on Launch Instance from AMI

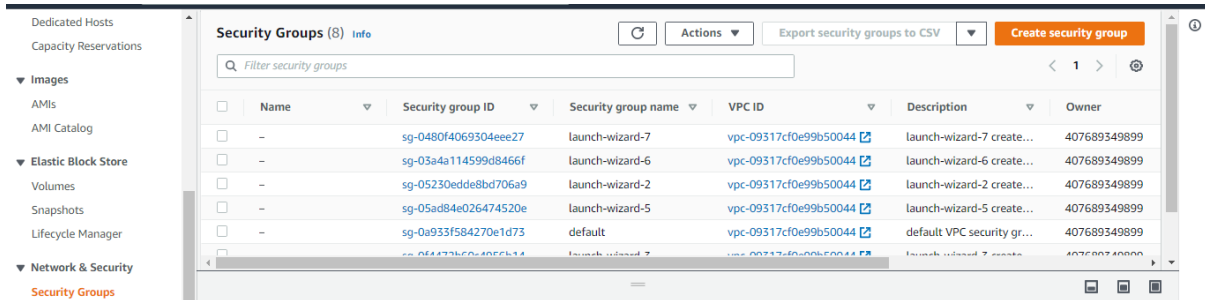




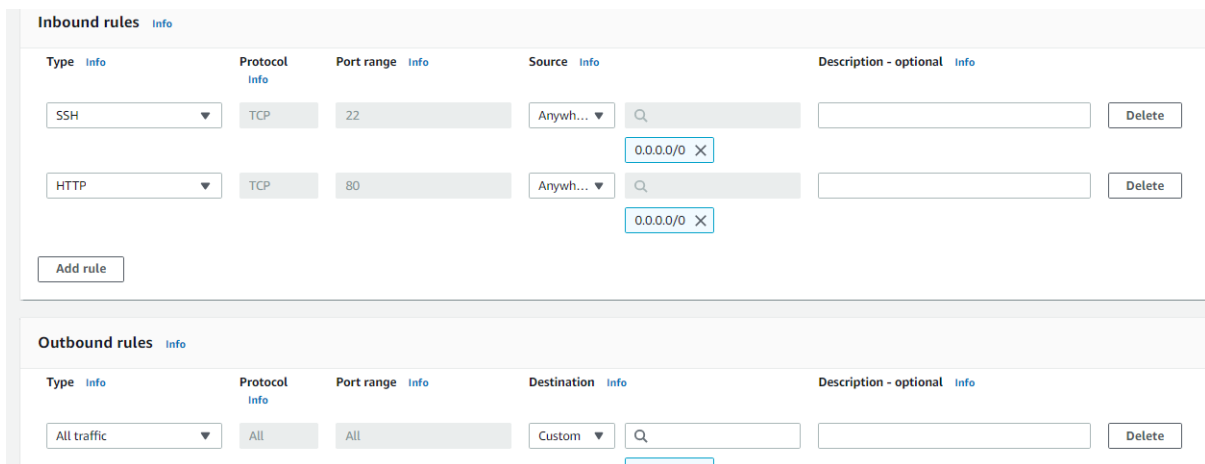
## 5.Load Balancer

create a security group: (name - pavansecuritygroup)

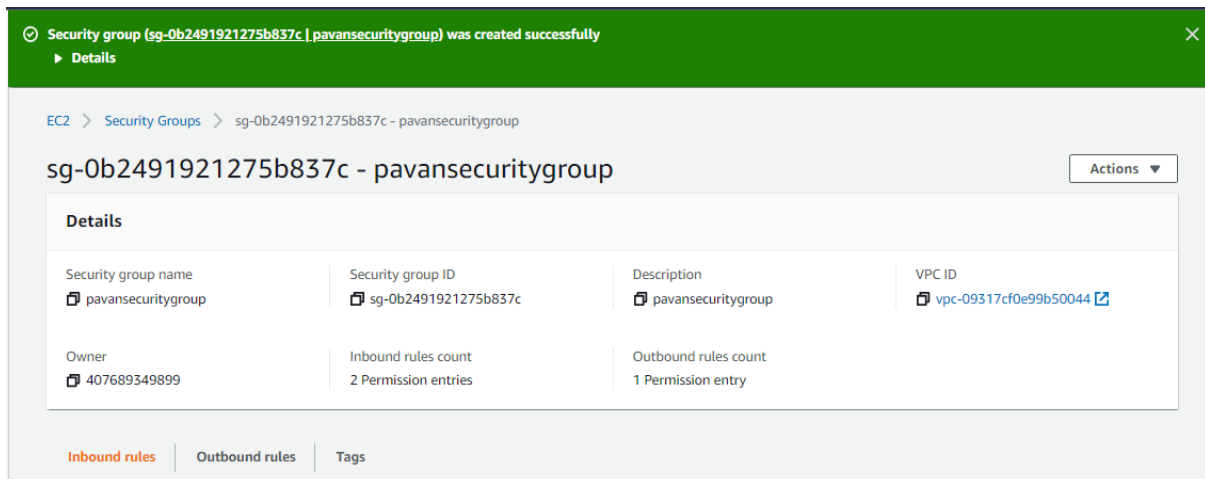
click on create security group (Network & security --> security Groups)



create inbound rules for SSH and HTTP

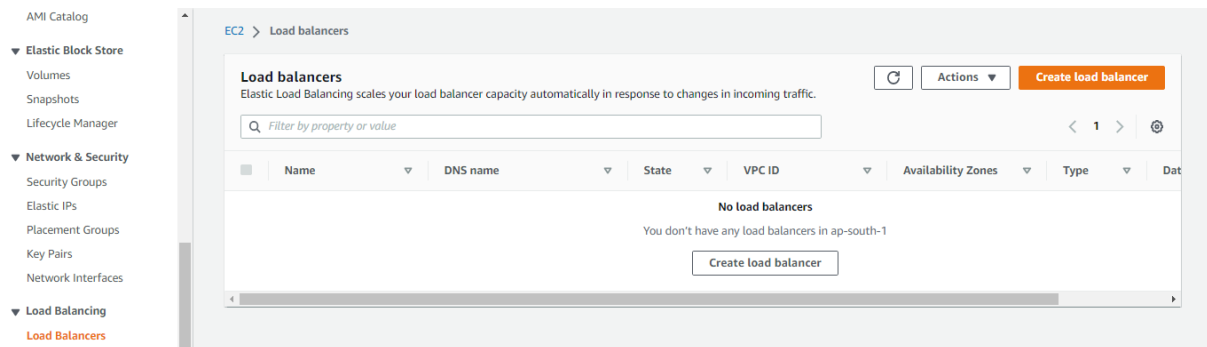


Security group created

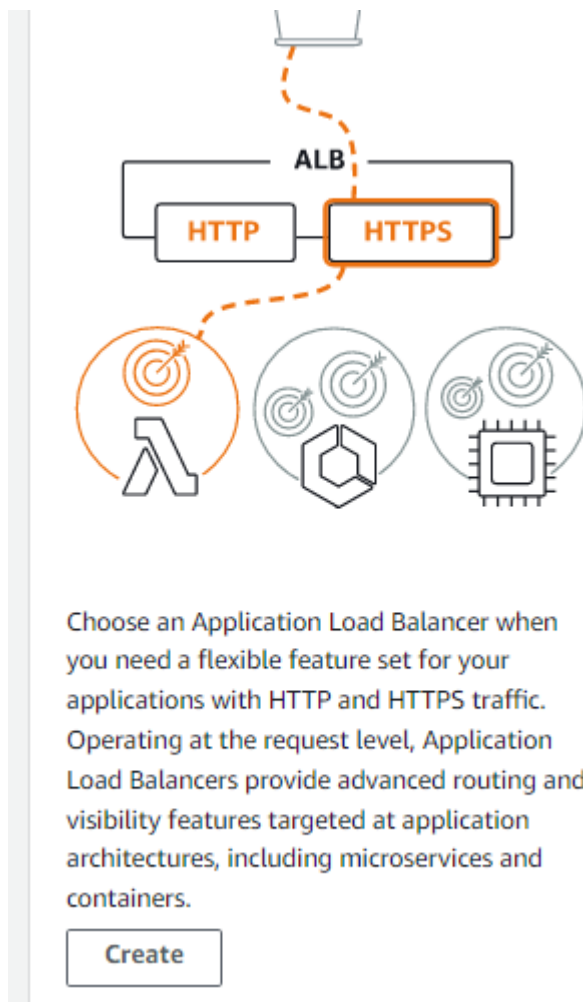


Now create an Application Load balancer by associating the security group created above

Load Balancing - Load Balancers -> create Load balancer



Choose Application Load balancer and click on create (name - pavanloadbalancer)



select the Scheme (Internet-facing) and IP address type as IPv4

### Load balancer name

Name must be unique within your AWS account and cannot be changed after the load balancer is created.

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

### Scheme [Info](#)

Scheme cannot be changed after the load balancer is created.

**Internet-facing**

An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)

**Internal**

An internal load balancer routes requests from clients to targets using private IP addresses.

### IP address type [Info](#)

Select the type of IP addresses that your subnets use.

**IPv4**

Recommended for internal load balancers.

**Dualstack**

Includes IPv4 and IPv6 addresses.

select default VPC, and select check boxes for ap-south-1a, ap-south-1b, ap-south-1c

### Network mapping [Info](#)

The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings.

### VPC [Info](#)

Select the virtual private cloud (VPC) for your targets. Only VPCs with an internet gateway are enabled for selection. The selected VPC cannot be changed after the load balancer is created. To confirm the VPC for your targets, view your [target groups](#)

-  
vpc-09317cf0e99b50044  
IPv4: 172.31.0.0/16



### Mappings [Info](#)

Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.

**ap-south-1a (aps1-az1)**

Subnet

subnet-06272fea215826763

IPv4 settings

Assigned by AWS

**ap-south-1b (aps1-az3)**

Subnet

subnet-0039a2eafbb243eec

IPv4 settings

Assigned by AWS

**ap-south-1c (aps1-az2)**

Subnet

subnet-0c5ebc89712faf603

IPv4 settings

Assigned by AWS

select the security group created in previous step

**Security groups** [Info](#)  
A security group is a set of firewall rules that control the traffic to your load balancer.

Security groups

Select up to 5 security groups ▼ ↻

[Create new security group](#)

default sg-0a933f584270e1d73 ✕ VPC: vpc-09317cf0e99b50044

pavansecuritygroup sg-0b2491921275b837c ✕ VPC: vpc-09317cf0e99b50044

create a target group

▼ Listener HTTP:80 Remove

Protocol: HTTP ▼ Port: 80 1-65535 Default action: Forward to Select a target group ▼ ↻

[Create target group](#)

Listener tags - *optional*  
Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.

Choose the target type, we have selected Instances

Choose a target type

- Instances**
  - Supports load balancing to instances within a specific VPC.
  - Facilitates the use of [Amazon EC2 Auto Scaling](#) to manage and scale your EC2 capacity.
- IP addresses**
  - Supports load balancing to VPC and on-premises resources.
  - Facilitates routing to multiple IP addresses and network interfaces on the same instance.
  - Offers flexibility with microservice based architectures, simplifying inter-application communication.
  - Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.
- Lambda function**
  - Facilitates routing to a single Lambda function.
  - Accessible to Application Load Balancers only.
- Application Load Balancer**
  - Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
  - Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

Give targetgroup name (pavantargetgroup) select HTTP protocol, default VPC

Target group name

pavantargetgroup

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Protocol

HTTP

Port

80

VPC

Select the VPC with the instances that you want to include in the target group.

-  
vpc-09317cf0e99b50044  
IPv4: 172.31.0.0/16

Protocol version

HTTP1

Send requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.

HTTP2

Send requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC, but gRPC-specific features are not available.

gRPC

Send requests to targets using gRPC. Supported when the request protocol is gRPC.

give the numbers based on requirement under Advance healthchecks

▼ Advanced health check settings

Restore defaults

Port

The port the load balancer uses when performing health checks on targets. The default is the port on which each target receives traffic from the load balancer, but you can specify a different port.

Traffic port

Override

Healthy threshold

The number of consecutive health checks successes required before considering an unhealthy target healthy.

4

2-10

Unhealthy threshold

The number of consecutive health check failures required before considering a target unhealthy.

3

2-10

Timeout

The amount of time, in seconds, during which no response means a failed health check.

4

seconds

2-120

Interval

The approximate amount of time between health checks of an individual target

30

seconds

5-300

**Success codes**  
 The HTTP codes to use when checking for a successful response from a target. You can specify multiple values (for example, "200,202") or a range of values (for example, "200-299").

**Attributes**

*ℹ* Certain default attributes will be applied to your target group. You can view and edit them after creating the target group.

**► Tags - optional**  
 Consider adding tags to your target group. Tags enable you to categorize your AWS resources so you can more easily manage them.

**Cancel** **Next**

register the targets , with two new machines created (shagani, pavan)

**Register targets**  
 This is an optional step to create a target group. However, to ensure that your load balancer routes traffic to this target group you must register your targets.

**Available instances (2/2)**

<input checked="" type="checkbox"/>	Instance ID	Name	State	Security groups	Zone	Subnet ID
<input checked="" type="checkbox"/>	i-0e9c949a9f45aff48	pavan	running	launch-wizard-6	ap-south-1b	subnet-0039a2eafbb243eec
<input checked="" type="checkbox"/>	i-0de03cd0a5f33b646	shagani	running	launch-wizard-7	ap-south-1b	subnet-0039a2eafbb243eec

**2 selected**

Ports for the selected instances  
 Ports for routing traffic to the selected instances.

1-65535 (separate multiple ports with commas)

create on 'create target group'

**Review targets**

**Targets (2)** Remove all pending

Remove	Health status	Instance ID	Name	Port	State	Security groups	Zone	Subnet ID
✕	Pending	i-0de03cd0a5f33b646	shagani	80	running	launch-wizard-7	ap-south-1b	subnet-0039a2eafbb243eec
✕	Pending	i-0e9c949a9f45aff48	pavan	80	running	launch-wizard-6	ap-south-1b	subnet-0039a2eafbb243eec

**2 pending** Cancel Previous **Create target group**

## Target group created

The screenshot shows the AWS Management Console interface. At the top, there is a section for "Target groups (1/1)" with a search bar and a "Create target group" button. Below this is a table with columns: Name, ARN, Port, Protocol, Target type, and Load balancer. One target group is listed: "pavantargetgroup" with ARN "arn:aws:elasticloadbalancin...", Port "80", Protocol "HTTP", Target type "Instance", and Load balancer "None associated".

Below the table is a modal window titled "Target group: pavantargetgroup" with a "Deregister" button and a "Register targets" button. It shows "Registered targets (2)" with a search bar. The table below has columns: Instance ID, Name, Port, Zone, Health status, and Health status details. Two targets are listed:

Instance ID	Name	Port	Zone	Health status	Health status details
i-0de03cd0a5f33b646	shagani	80	ap-south-1b	unused	Target group is not configured to receive traffic from the load balancer
i-0e9c949a9f45aff48	pavan	80	ap-south-1b	unused	Target group is not configured to receive traffic from the load balancer

## Associate the Target Group with Load balancer

The screenshot shows the AWS Management Console interface for configuring a listener. The "Listener HTTP:80" section is active, showing "Protocol" as "HTTP" and "Port" as "80". The "Default action" is "Forward to" "pavantargetgroup" (Target type: Instance, IPv4). There is a "Create target group" link below.

Below this is a "Summary" section with a "Review and confirm your configurations. Estimate cost" link. It contains four panels:

- Basic configuration Edit:** pavanloadbalancer, Internet-facing, IPv4.
- Security groups Edit:** default (sg-0a933f584270e1d73), pavansecuritygroup (sg-0b2491921275b837c).
- Network mapping Edit:** VPC vpc-09317cf0e99b50044, subnets: ap-south-1a (subnet-06272fea215826763), ap-south-1b (subnet-0039a2eafbb243eec), ap-south-1c (subnet-0c5ebc89712faf603).
- Listeners and routing Edit:** HTTP:80 defaults to pavantargetgroup.

At the bottom, there are "Add-on services Edit" and "Tags Edit" sections, both showing "..."

## Click on create Load Balancer

Successfully created load balancer: pavanloadbalancer  
Note: It might take a few minutes for your load balancer to be fully set up and ready to route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks.

EC2 > Load balancers > pavanloadbalancer > Create Application Load Balancer

## Create Application Load Balancer

**Suggested next steps**

- Review, customize, or enable attributes for your load balancer and listeners using the **Description** and **Listeners** tabs within pavanloadbalancer.
- Discover other services that you can integrate with your load balancer. Visit the **Integrated services** tab within pavanloadbalancer.

[View load balancer](#)

EC2 > Load balancers

**Load balancers (1/1)**  
Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter by property or value

search: pavanloadbalancer X Clear filters

<input checked="" type="checkbox"/>	Name	DNS name	State	VPC ID	Availability Zones	Type	Date c
<input checked="" type="checkbox"/>	pavanloadbalancer	pavanloadbalancer-110875...	Active	vpc-09317cf0e99b50044	3 Availability Zones	application	Februa (UTC+