

Assignment - AWS July 27 2025 Batch

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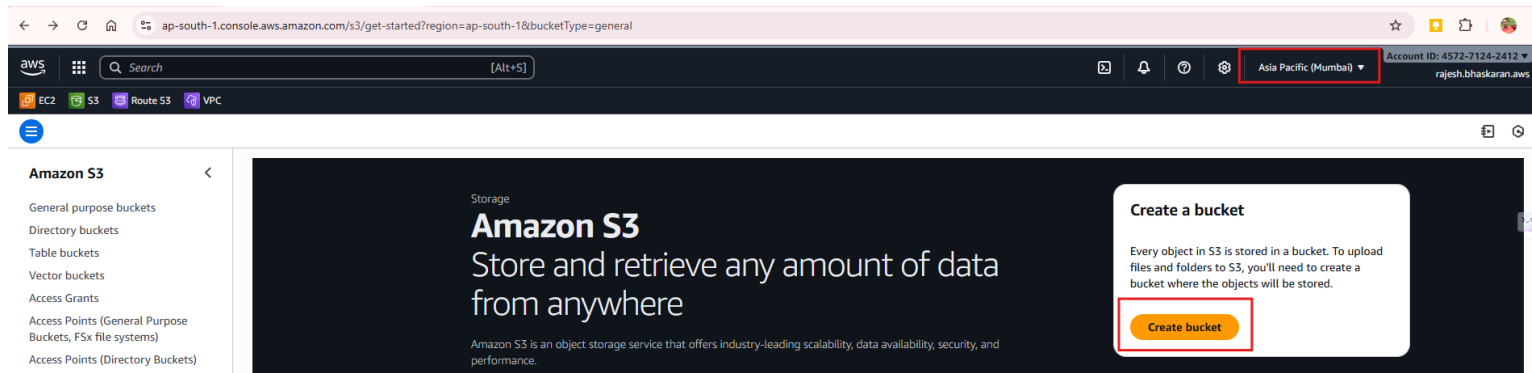
Mobile : 9902888474

Question 1 : VPC Endpoint lab --> Need to connect EC2 instance with S3 bucket

1. Create S3 Bucket

1. Open S3 Console

- Go to AWS Management Console → Services → S3
- Click "**Create bucket**"



1. Configure Bucket

- **Bucket name:** rajesh-s3bucket-27july
- **AWS Region:** Asia Pacific (Mumbai) ap-south-1
- **Block All Public Access:** Tick check

Create bucket [Info](#)

Buckets are containers for data stored in S3.

General configuration

AWS Region

Asia Pacific (Mumbai) ap-south-1

Bucket type [Info](#)

☒ General purpose

Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

☐ Directory

Recommended for low-latency use cases. These buckets use or processing of data within a single Availability Zone.

Bucket name [Info](#)

rajesh-s3bucket-27july

Bucket names must be 3 to 63 characters and unique within the global namespace. Bucket names must also begin and end with a letter or number. Valid characters are a-z, 0-9, periods (.), and hyphens (-). [Learn More](#)

Copy settings from existing bucket - optional

Only the bucket settings in the following configuration are copied.

[Choose bucket](#)

Format: s3://bucket/prefix

Object Ownership [Info](#)

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

Object Ownership

☒ ACLs disabled (recommended)

All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

☐ ACLs enabled

Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

Object Ownership

Bucket owner enforced

- Click "Create bucket"

Successfully created bucket "rajesh-s3bucket-27july"

To upload files and folders, or to configure additional bucket settings, choose [View details](#).

[View details](#) X

General purpose buckets

All AWS Regions

Directory buckets

General purpose buckets (1) [Info](#)

Buckets are containers for data stored in S3.

Find buckets by name

Name	AWS Region	Creation date
rajesh-s3bucket-27july	Asia Pacific (Mumbai) ap-south-1	October 10, 2025, 10:56:49 (UTC+05:30)

Account snapshot [Info](#)

Updated daily

Storage Lens provides visibility into storage usage and activity trends.

[View dashboard](#)

External access summary - new [Info](#)

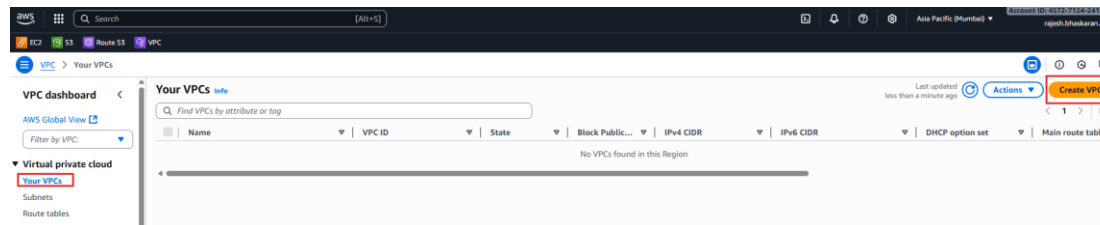
Updated daily

External access findings help you identify bucket permissions that allow public access or access from other AWS accounts.

2. Create VPC

Open VPC Console

- Services → VPC
- Click "**Your VPCs**" in left sidebar
- Click "**Create VPC**"



2. Configure VPC

- **Resources to create:** VPC only
- **Name tag:** rajesh-s3-vpc
- **IPv4 CIDR:** 10.0.0.0/16 → **VPC CIDR: 10.0.0.0/16 || Public Subnet: 10.0.1.0/24 || Private Subnet: 10.0.2.0/24**
- **Tenancy** “Default” - Instances run on shared hardware ,Multiple AWS customers share the same physical server, Cost-effective.
- Click "**Create 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

Creates a tag with a key of 'Name' and a value that you specify.

rajesh-s3-vpc

IPv4 CIDR block [Info](#)

- ☒ IPv4 CIDR manual input
☐ IPAM-allocated IPv4 CIDR block

IPv4 CIDR

10.0.0.0/16

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

Tenancy [Info](#)

Default

You successfully created vpc-06b825f6ac1a5297f / rajesh-s3-vpc

vpc-06b825f6ac1a5297f / rajesh-s3-vpc

Actions

Details [Info](#)

VPC ID
vpc-06b825f6ac1a5297f

DNS resolution
Enabled

Main network ACL
acl-025b30cec390af6e6

IPv6 CIDR (Network border group)
-

State
Available

Tenancy
default

Default VPC
No

Network Address Usage metrics
Disabled

Block Public Access
Off

DHCP option set
dopt-0e0cb66899dbcf823

IPv4 CIDR
10.0.0.0/16

Route 53 Resolver DNS Firewall rule groups
-

DNS hostnames
Disabled

Main route table
rtb-03ae5dca257896de6

IPv6 pool
-

Owner ID
457271242412

Resource map [Info](#)

Show all details

VPC
Your AWS virtual network
rajesh-s3-vpc

Subnets (0)
Subnets within this VPC

Route tables (1)
Route network traffic to resources
rtb-03ae5dca257896de6

Network Connections (0)
Connections to other networks

3. Create Subnets

1. Create Public Subnet

- In VPC Console → **Subnets** → **Create subnet**
- **VPC ID**: Select your VPC
- **Subnet name**: rajesh-public-subnet
- **Availability Zone**: Select any AZ
- **IPv4 CIDR**: 10.0.1.0/24 || Available IPv4 addresses – $2^8 - 5$
- Click "**Create subnet**"

subnet-0842d757f46dca09a / rajesh-public-subnet Actions

Details Subnet ID subnet-0842d757f46dca09a IPv4 CIDR 10.0.1.0/24 Availability Zone ap-s1-az1 (ap-south-1a) Network ACL - Auto-assign customer-owned IPv4 address No IPv6 CIDR reservations - Resource name DNS AAAA record Disabled	Subnet ARN arn:aws:ec2:ap-south-1:457271242412:subnet/subnet-0842d757f46dca09a Available IPv4 addresses 251 Network border group ap-south-1 Default subnet No Customer-owned IPv4 pool - IPv6-only No DNS64 Disabled	State Available IPv6 CIDR - VPC vpc-06b825f6ac1a5297f rajesh-s3-vpc Auto-assign public IPv4 address No Outpost ID - Hostname type IP name Owner 457271242412	Block Public Access OFF IPv6 CIDR association ID - Route table rtb-03ae5dca257896de6 Auto-assign IPv6 address No IPv4 CIDR reservations - Resource name DNS A record Disabled
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2. Create Private Subnet

- **Create subnet** again
- **VPC ID**: Select your VPC
- **Subnet name**: rajesh-private-subnet
- **Availability Zone**: Select same AZ as public subnet

- **IPv4 CIDR:** 10.0.2.0/24
- Click "**Create subnet**"

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.

rajesh-private-subnet

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.

Asia Pacific (Mumbai) / ap-s1-az1 (ap-south-1a)

IPv4 VPC CIDR block [Info](#)

Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.

10.0.0.0/16

IPv4 subnet CIDR block


10.0.2.0/24


256 IPs


< > ^ v

subnet-087a88015b1ccfc05 / rajesh-private-subnet

Details

Subnet ID
 subnet-087a88015b1ccfc05

IPv4 CIDR
 10.0.2.0/24


Availability Zone
 ap-s1-az1 (ap-south-1a)


Network ACL
[acl-025b30cec390a6ec6](#)


Auto-assign customer-owned IPv4 address
No

IPv6 CIDR reservations
-

Resource name DNS AAAA record
Disabled

Subnet ARN
 arn:aws:ec2:ap-south-1:457271242412:subnet/subnet-087a88015b1ccfc05

Available IPv4 addresses
 251

Network border group
 ap-south-1

Default subnet
No

Customer-owned IPv4 pool
-

IPv6-only
No

DNS64
Disabled

State
 Available


IPv6 CIDR
-


VPC
[vpc-06b825f6ac1a5297f](#) | [rajesh-s3-vpc](#)

Auto-assign public IPv4 address
No

Outpost ID
-

Hostname type
IP name

Owner
 457271242412

Block Public Access
 Off

IPv6 CIDR association ID
-

Route table
[rtb-03ae5dca257896de6](#)

Auto-assign IPv6 address
No

IPv4 CIDR reservations
-

Resource name DNS A record
Disabled


4. Create Internet Gateway

1. VPC Console → Internet Gateways → Create internet gateway

- **Name tag:** rajesh-main-igw
- Click "**Create internet gateway**"

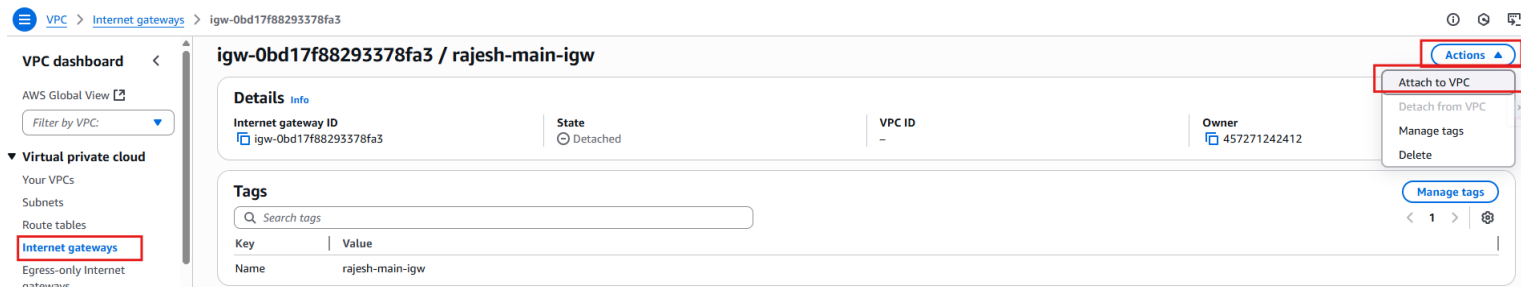
Internet gateways (1) [Info](#)

 Find internet gateways by attribute or tag

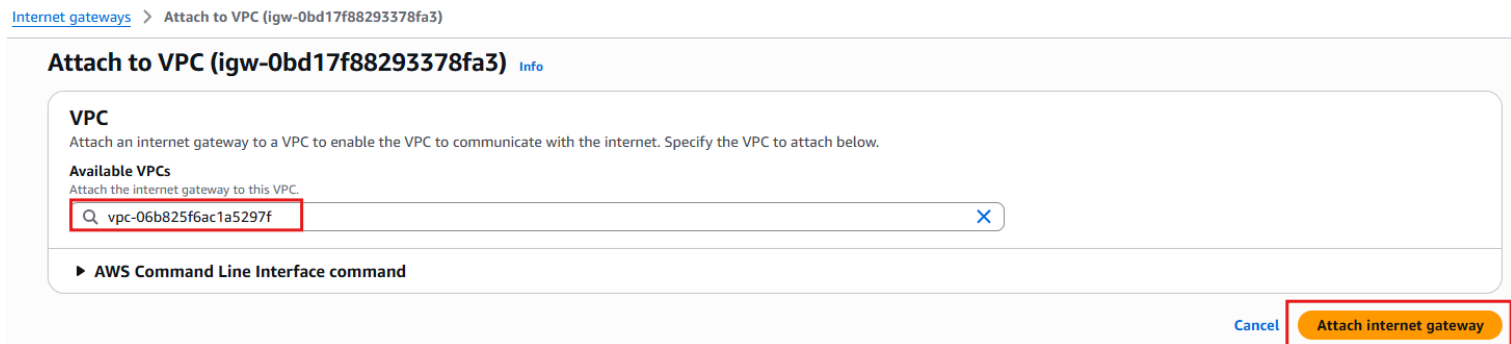
<input type="checkbox"/>	Name	Internet gateway ID	State	VPC ID	Owner
<input type="checkbox"/>	rajesh-main-igw	igw-0bd17f88293378fa3	 Detached	-	457271242412

2. Attach to VPC

- Select the IGW → **Actions** → **Attach to VPC**



- Select your VPC → **Attach internet gateway**



5. Create Route Tables

1. Public Route Table

- **Route Tables** → **Create route table**
- **Name:** rajesh-public-rt
- **VPC:** Select your VPC
- Click "**Create route table**"

Route table rtb-0f7c7115f7f9bd8d5 | rajesh-public-rt was created successfully.

rtb-0f7c7115f7f9bd8d5 / rajesh-public-rt

Actions

Details Info

Route table ID rtb-0f7c7115f7f9bd8d5	Main No	Explicit subnet associations -	Edge associations -
VPC vpc-06b825f6ac1a5297f rajesh-s3-vpc	Owner ID 457271242412		

Routes Subnet associations Edge associations Route propagation Tags

Routes (1)

Filter routes

Destination	Target	Status	Propagated	Route Origin
10.0.0.0/16	local	Active	No	Create Route Table

Both Edit routes

2. Add Internet Route

- Select rajesh-public-rt route table → **Routes tab** → **Edit routes**
- Add route:**
 - Destination:** 0.0.0.0/0
 - Target:** Internet Gateway (select your IGW)
- Click **"Save changes"**

Route table rtb-0f7c7115f7f9bd8d5 | rajesh-public-rt was created successfully.

Route tables (1/2) Info

Find route tables by attribute or tag

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC	Owner ID
-	rtb-03ae5dca257896de6	-	-	Yes	vpc-06b825f6ac1a5297f rajesh...	457271242
rajesh-public-rt	rtb-0f7c7115f7f9bd8d5	-	-	No	vpc-06b825f6ac1a5297f rajesh...	457271242

View details
Set main route table
Edit subnet associations
Edit edge associations
Edit route propagation
Edit routes
Manage tags
Delete route table

Edit routes

Destination	Target	Status	Propagated	Route Origin
10.0.0.0/16	local	Active	No	CreateRouteTable
<input type="text" value="0.0.0.0/0"/>	<input type="text" value="local"/>	-	No	CreateRoute
	Internet Gateway			
	igw-0bd17f88293378fa3			

[Add route](#)

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

3. Associate Public Subnet with Route Table

- Select your public route table
- Go to the Subnet associations tab below
- Click Edit subnet associations
- In the popup, check the box next to your public-subnet
- Click Save associations

☰ [VPC](#) > Route tables

VPC dashboard <

AWS Global View

Filter by VPC: ▾

▼ **Virtual private cloud**

- Your VPCs
- Subnets
- Route tables**
- Internet gateways
- Egress-only Internet gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists

☑ You have successfully updated subnet associations for rtb-0f7c7115f7f9bd8d5 / rajesh-public-rt. ✕

Route tables (1/2) [Info](#) Last updated 2 minutes ago [Actions](#) [Create route table](#)

Find route tables by attribute or tag

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main
<input type="checkbox"/>	-	rtb-03ae5dca257896de6	-	-	Yes
<input checked="" type="checkbox"/>	rajesh-public-rt	rtb-0f7c7115f7f9bd8d5	subnet-0842d757f46dca...	-	No

rtb-0f7c7115f7f9bd8d5 / rajesh-public-rt ▾

Details | Routes | **Subnet associations** | Edge associations | Route propagation | Tags

Explicit subnet associations (1) [Edit subnet associations](#)

4. Private Route Table

- **Create route table**
- **Name:** rajesh-private-rt
- **VPC:** Select your VPC
- Click "**Create route table**"

☑ Route table rtb-01a30d8099a10d788 | rajesh-private-rt was created successfully. ✕

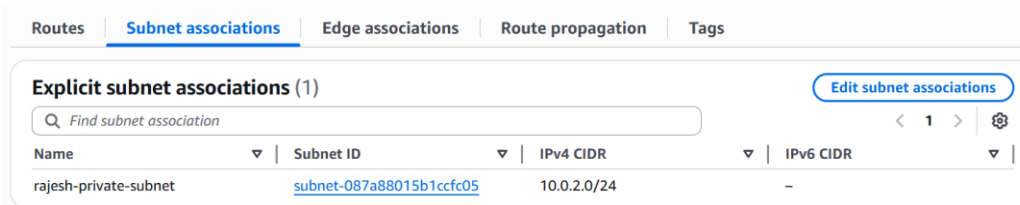
rtb-01a30d8099a10d788 / rajesh-private-rt [Actions](#)

Details [Info](#)

Route table ID rtb-01a30d8099a10d788	Main No	Explicit subnet associations -	Edge associations -
VPC vpc-06b825f6ac1a5297f rajesh-s3-vpc	Owner ID 457271242412		

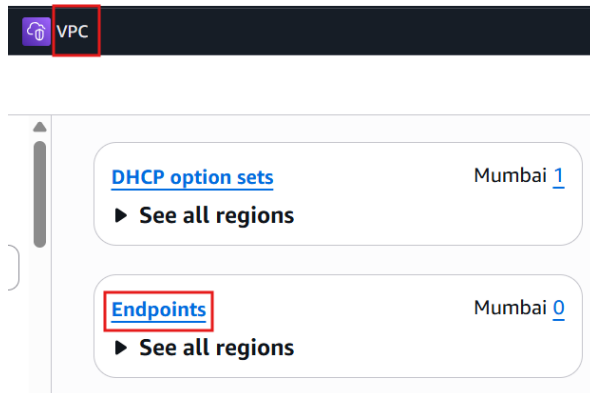
5. Associate Private Subnet

- Select private route table → **Subnet associations** → **Edit subnet associations**
- Check private-subnet → **Save associations**



6. Create VPC Endpoint for S3

1. VPC Console → Endpoints → Create Endpoint



2. Configure Endpoint

- **Service category:** AWS services
- **Service name:** Find com.amazonaws.region.s3 (Gateway type)
- **VPC:** Select your VPC

- **Route tables:** Select private-rt (your private route table)
- **Policy:** Full access (default)
- Click "**Create endpoint**"

☰ [VPC](#) > [Endpoints](#) > Create endpoint

Create endpoint [Info](#)

Create the type of VPC endpoint that supports the service, service

Endpoint settings

Specify a name and select the type of endpoint.

Name tag - *optional*

Creates a tag with a key of 'Name' and a value that you specify. Tags help

my-endpoint-01

Type [Info](#)

Select a category



AWS services

Connect to services provided by Amazon with an Interface endpoint, or a Gateway endpoint

Services (1/2)

Search

Service Name = com.amazonaws.ap-south-1.s3 X

Clear filters

	Service Name	Owner	Type	Service Region
<input checked="" type="radio"/>	com.amazonaws.ap-south-1.s3	amazon	Gateway	ap-south-1
<input type="radio"/>	com.amazonaws.ap-south-1.s3	amazon	Interface	ap-south-1

Network settings

Select the VPC in which to create the endpoint

VPC

Create the VPC endpoint in the VPC in the same AWS Region from which you will access a resource.

vpc-06b825f6ac1a5297f (rajesh-s3-vpc)



7. Create EC2 Instance in Private Subnet

1. EC2 Console → Instances → Launch instances

2. Configure Instance

- **Name:** Rajesh-EC2-private
- **AMI:** Amazon Linux 2023 AMI Kernel 6.1
- **Instance type:** t3.micro
- **Key pair:** Create new

Instances (1) [Info](#)

Find Instance by attribute or tag (case-sensitive) All states ▾

Instance state = running ✕ Clear filters

<input type="checkbox"/>	Name ↗	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm status	Availability Zone ▾	Public IPv4 DNS ▾	Public IPv4 ... ▾	Elastic IP
<input type="checkbox"/>	Rajesh-EC2-private	i-0bd37da725614cd8c	Running 🔍	t3.micro	3/3 checks passed	View alarms +	ap-south-1a	-	-	-

3. Network Settings

- **VPC:** Select your VPC
- **Subnet:** Select private-subnet
- **Auto-assign Public IP:** Disable

Your VPCs (1/2) [Info](#) Last updated 1 minute ago [🔄](#)

Find VPCs by attribute or tag

<input type="checkbox"/>	Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR	DHCP option set
<input checked="" type="checkbox"/>	rajesh-s3-vpc	vpc-00c0e98512cc3fec1	Available	Off	10.0.0.0/16	-	dopt-0e0cb66899
<input type="checkbox"/>	Default-VPC	vpc-097742119f70e009b	Available	Off	172.31.0.0/16	-	dopt-0e0cb66899

vpc-00c0e98512cc3fec1 / rajesh-s3-vpc

[Details](#) [Resource map](#) [CIDRs](#) [Flow logs](#) [Tags](#) [Integrations](#)

Resource map [Info](#)

VPC

Your AWS virtual network

rajesh-s3-vpc

Subnets (2)

Subnets within this VPC

ap-south-1a

[🔍](#) subnet-0c6e42e57545854ba

[🔍](#) subnet-0acd846d43b85bf8b

Route tables (2)

Route network traffic to resources

custom-rt

vpc1-default

Network Connections (2)

Connections to other networks

rajesh-main-igw

rajesh-s3-ep

Able to connect to the Private Subnet EC2 instance.

Issue : But unable to see the S3 bucket contents there.

```

~\##### Amazon Linux 2023
~~\#####\
~~\####|\
~~\#/\ https://aws.amazon.com/linux/amazon-linux-2023
~~~~V~' '~>
~~~~
~~~~_.. \
~/m/' ~\
Last login: Fri Oct 17 12:25:28 2025 from 13.233.177.3
[ec2-user@ip-10-0-1-183 ~]$ sudo su
[root@ip-10-0-1-183 ec2-user]# ssh -i "mykey.pem" ec2-user@10.0.2.44
~\##### Amazon Linux 2023
~~\#####\
~~\####|\
~~\#/\ https://aws.amazon.com/linux/amazon-linux-2023
~~~~V~' '~>
~~~~
~~~~_.. \
~/m/' ~\
Last failed login: Fri Oct 17 14:42:42 UTC 2025 on ttyS0
There was 1 failed login attempt since the last successful login.
Last login: Fri Oct 17 12:37:44 2025 from 10.0.1.183
[ec2-user@ip-10-0-2-44 ~]$
[ec2-user@ip-10-0-2-44 ~]$
[ec2-user@ip-10-0-2-44 ~]$ ls -lrt
total 0
[ec2-user@ip-10-0-2-44 ~]$ touch Hello.txt
[ec2-user@ip-10-0-2-44 ~]$ vim Hello.txt
[ec2-user@ip-10-0-2-44 ~]$ ls -lrt
total 4
-rw-r--r--. 1 ec2-user ec2-user 32 Oct 17 14:44 Hello.txt
[ec2-user@ip-10-0-2-44 ~]$ ls -lrt
total 4
-rw-r--r--. 1 ec2-user ec2-user 32 Oct 17 14:44 Hello.txt
[ec2-user@ip-10-0-2-44 ~]$ pwd
/home/ec2-user
[ec2-user@ip-10-0-2-44 ~]$ cd []

```


✔ Upload succeeded

For more information, see the Files and folders table.

✕

Upload: status

Close

ⓘ After you navigate away from this page, the following information is no longer available.

Summary

Destination
s3://rajesh-s3bucket-27july

Succeeded

✔ 1 file, 515.7 KB (100.00%)

Failed

☹ 0 files, 0 B (0%)

Files and folders

Configuration

Files and folders (1 total, 515.7 KB)

🔍 Find by name

< 1 >

Name	Folder	Type	Size	Status	Error
Tux.png	-	image/png	515.7 KB	✔ Succeeded	-

Question 2 : NAT instance --> How to give internet access to my private subnet EC2 instance using NAT instance.

sg-08f1e2d3b7f49b8fa - launch-wizard-2

Actions

Details

Security group name

launch-wizard-2

Security group ID

sg-08f1e2d3b7f49b8fa

Description

launch-wizard-2 created 2025-10-17T12:16:14.951Z

VPC ID

vpc-00c0e98512cc3fec1

Owner

457271242412

Inbound rules count

2 Permission entries

Outbound rules count

1 Permission entry

Inbound rules

Outbound rules

Sharing - new

VPC associations - new

Tags

Inbound rules (2)

Search



Manage tags

Edit inbound rules

< 1 > ⚙

<input type="checkbox"/>	Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description
<input type="checkbox"/>	-	sgr-02c111402821407c6	IPv4	All traffic	All	All	0.0.0.0/0	-
<input type="checkbox"/>	-	sgr-066494a3a7afb2f08	IPv4	SSH	TCP	22	0.0.0.0/0	-

✓ Elastic IP address associated successfully.

Elastic IP address 43.204.203.219 has been associated with instance i-04bace1eb29ecd076



Elastic IP addresses (1/2) Info

Find elastic IP addresses by attribute or tag



Actions

Allocate Elastic IP address

< 1 > ⚙

<input type="checkbox"/>	Name	Allocated IPv4 addr...	Type	Allocation ID	Reverse DNS record	Associated instance ID	Private IP address
<input type="checkbox"/>	SECONDARY	13.234.135.180	Public IP	eipalloc-040f673fbb5cb1706	-	-	-
<input checked="" type="checkbox"/>	-	43.204.203.219	Public IP	eipalloc-00cc801a55ded0719	-	i-04bace1eb29ecd076	172.31.8.181