

Cycle 08 AWS Homework

1. AWS S3 Bucket Operations Using Boto3 (Python)

Create Bucket

```
python
CopyEdit
import boto3

s3 = boto3.client('s3')
bucket_name = 'your-unique-bucket-name-12345'

s3.create_bucket(
    Bucket=bucket_name,
    CreateBucketConfiguration={'LocationConstraint': 'ap-south-1'}
)
print(f"Bucket '{bucket_name}' created.")
```

List Buckets

```
python
CopyEdit
buckets = s3.list_buckets()
for bucket in buckets['Buckets']:
    print(bucket['Name'])
```

Upload File

```
python
CopyEdit
s3.upload_file('local_file.txt', bucket_name, 'uploaded_file.txt')
print("File uploaded.")
```

Download File

```
python
CopyEdit
s3.download_file(bucket_name, 'uploaded_file.txt', 'downloaded_file.txt')
print("File downloaded.")
```

Delete Object

```
python
CopyEdit
s3.delete_object(Bucket=bucket_name, Key='uploaded_file.txt')
print("Object deleted.")
```

Delete Bucket (must be empty)

```
python
CopyEdit
s3.delete_bucket(Bucket=bucket_name)
print(f"Bucket '{bucket_name}' deleted.")
```

```

import boto3.py X
C: > Users > cheta > Desktop > DE Homework > aws python > import boto3.py > ...
1  import boto3
2
3  s3 = boto3.client('s3')
4
5  bucket_name = 'myawspracticechetan1' # Put your unique bucket name here as a string
6
7  response = s3.create_bucket(
8      Bucket=bucket_name,
9      CreateBucketConfiguration={'LocationConstraint': 'ap-south-1'}
10 )
11 print("Bucket created:", response)
12

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\cheta\Desktop\DE Homework> c:; cd 'c:\Users\cheta\Desktop\DE Homework\aws python'; & 'c:\Users\cheta\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\cheta\.vscode\extensions\ms-python.vscode-pydebug-2025.10.0-win32-x64\bundled\libs\debugpy\launcher' '55908' '...'
 'c:\Users\cheta\Desktop\DE Homework\aws python\import boto3.py'
 Bucket created: {'ResponseMetadata': {'RequestId': 'EQ4D73R8B5DR012Y', 'HostId': 'J1ZwqCUFKgK/00Bkq6j4S+tmI+A7suBwQyoHtxNc8LFnr5wyq9InShdsDZG6jApVNr8MmNmzQ=', 'HTTPStatusCode': 200, 'HTTPHeaders': ['x-amz-id-2': 'J1ZwqCUFKgK/00Bkq6j4S+tmI+A7suBwQyoHtxNc8LFnr5wyq9InShdsDZG6jApVNr8MmNmzQ=', 'x-amz-request-id': 'EQ4D73R8B5DR012Y', 'date': 'Mon, 11 Aug 2025 14:43:05 GMT', 'location': 'http://myawspracticechetan1.s3.amazonaws.com/'}, 'ContentLength': 0, 'Server': 'AmazonS3', 'RetryAttempts': 0, 'Location': 'http://myawspracticechetan1.s3.amazonaws.com/'}

PS C:\Users\cheta\Desktop\DE Homework> aws python

Rain warning In effect

+ ··· [] x powershell... ▾ Python ▾ Python Deb...

Peer connection uses S3 buckets | S3 | ap-south-1

aws Search [Alt+S]

Amazon S3 > Buckets

Amazon S3

General purpose buckets All-AWS Regions

General purpose buckets (1) Info

Copy ARN Empty Delete Create bucket

Buckets are containers for data stored in S3.

Name	AWS Region	Creation date
myawspracticechetan1	Asia Pacific (Mumbai) ap-south-1	August 11, 2025, 20:13:06 (UTC+05:30)

Account snapshot Updated daily View dashboard

Storage Lens provides visibility into storage usage and activity trends.

External access summary - new Updated daily

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

CloudShell Feedback

Rain warning In effect

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a file named "import boto3.py" and a folder "to see buckets.py x".
- Search Bar:** Contains the text "Search".
- Code Editor:** Displays the following Python code:

```
1 import boto3
2
3 s3 = boto3.client('s3')
4 response = s3.list_buckets()
5 print([bucket['Name'] for bucket in response['Buckets']])
6
```
- Terminal:** Shows the command-line history:

```
ent-length': '0', 'server': 'AmazonS3', 'RetryAttempts': 0}, 'Location': 'http://myawspracticechetan1.s3.amazonaws.com/'}
PS C:\Users\chetan\Desktop\DE Homework> aws python <C:\Users\chetan\Desktop\DE Homework\aws python>
PS C:\Users\chetan\Desktop\DE Homework> aws python
PS C:\Users\chetan\Desktop\DE Homework> aws python <c:\Users\chetan\Desktop\DE Homework\aws python> & 'c:\Users\chetan\AppData\Local\Programs\Python\Python313\python.exe' <c:\Users\chetan\.vscode\extensions\ms-python.python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher' '55936' '--<'c:\Users\chetan\Desktop\DE Homework\aws python'> to see buckets.py'
['myawspracticechetan1']
PS C:\Users\chetan\Desktop\DE Homework> aws python
```
- Status Bar:** Includes icons for Rain warning, In effect, ENG IN, battery level (20%), and the date/time (11-08-2025 20:14).

The screenshot shows a Microsoft Visual Studio Code (VS Code) interface. The top bar includes File, Edit, Selection, View, Go, Run, and a search bar. The left sidebar has icons for file operations like Open, Save, Find, and others. The main editor area contains Python code for uploading files to AWS S3:

```
C: > Users > cheta > Desktop > DE Homework > aws python > to upload files.py > ...
1 import boto3
2
3 s3 = boto3.client('s3')
4
5 bucket_name = 'myawspracticechetan1'
6 file_name = r'C:\Users\cheta\Desktop\sql practice2.txt' # raw string for Windows path
7
8 object_name = 'sql_practice2.txt' # This is how it will be stored in S3
9
10 s3.upload_file(file_name, bucket_name, object_name)
11
12 print(f"Uploaded '{file_name}' to bucket '{bucket_name}' as '{object_name}'")
13
```

The terminal at the bottom shows the execution of the script and its output:

```
SyntaxError: (unicode error) 'unicodetools' codec can't decode bytes in position 2-3: truncated \UXXXXXXXXX escape
PS C:\Users\cheta\Desktop\DE Homework\aws python > ^
PS C:\Users\cheta\Desktop\DE Homework\aws python
PS C:\Users\cheta\Desktop\DE Homework\aws python > c:; cd 'c:\Users\cheta\Desktop\DE Homework\aws python'; & 'c:\Users\cheta\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\cheta\.vscode\extensions\ms-python.python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher' '55994' '--'
c:\Users\cheta\Desktop\DE Homework\aws python\to upload files.py"
Uploaded 'C:\Users\cheta\Desktop\sql practice2.txt' to bucket 'myawspracticechetan1' as 'sql_practice2.txt'
PS C:\Users\cheta\Desktop\DE Homework\aws python>
```

The status bar at the bottom right shows the date (11-08-2025), time (3:13.4), and battery level (24%).

The screenshot shows the AWS S3 console interface. On the left, a sidebar lists various bucket types: General purpose buckets (Directory buckets, Table buckets, Vector buckets), Access Grants, Access Points (General Purpose Buckets, FSx file systems), Access Points (Directory Buckets), Object Lambda Access Points, Multi-Region Access Points, Batch Operations, and IAM Access Analyzer for S3. Below this, there's a section for Block Public Access settings. Under Storage Lens, there are links for Dashboards, Storage Lens groups, and AWS Organizations settings. The main area displays the 'myawspracticecheta1' bucket. The 'Objects' tab is selected, showing one object: 'sql_practice2.txt'. The object details show it was last modified on August 11, 2025, at 20:20:40 (UTC+03:30), is 2.1 KB in size, and has a Standard storage class. There are buttons for Actions (Copy S3 URI, Copy URL, Download, Open, Delete, Create folder, Upload), and a search bar for 'Find objects by prefix'.

The screenshot shows a terminal window in VS Code with the following Python code:

```

import boto3
# Initialize S3 client
s3 = boto3.client('s3')
# Your bucket name
bucket_name = 'myawspracticecheta1'
# The key (filename) of the file stored in S3
object_name = 'sql_practice2.txt'
# Local path where the file will be saved after download
download_path = r'C:\Users\cheta\Desktop\DE Homework\aws python\downloaded_sql_practice2.txt' # Use raw string for Windows path
# Download file from S3 bucket
s3.download_file(bucket_name, object_name, download_path)
print(f"Downloaded '{object_name}' from bucket '{bucket_name}' to local path '{download_path}'")

```

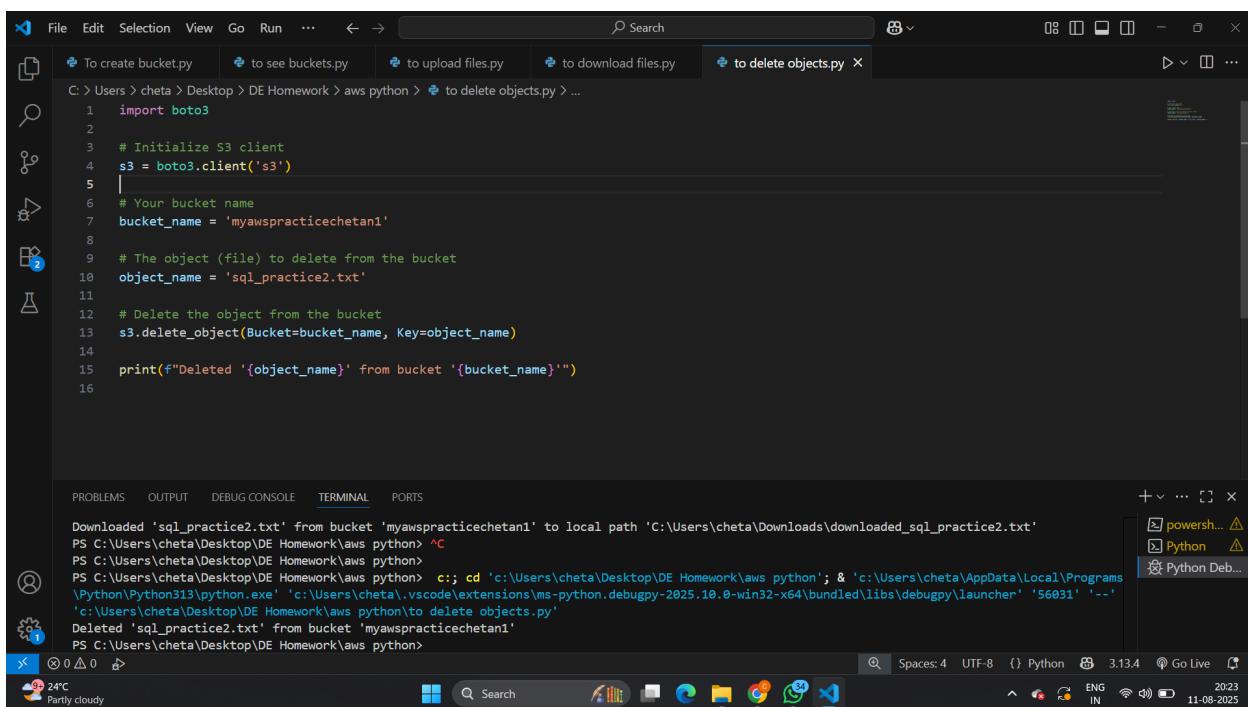
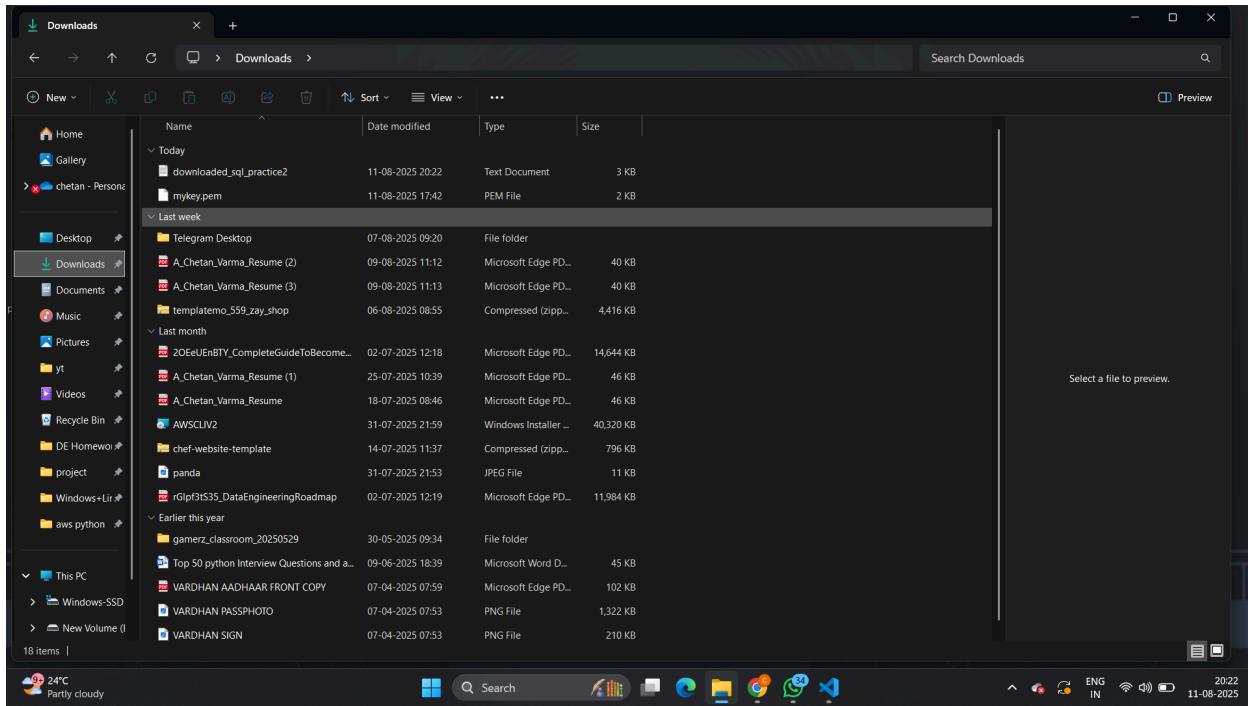
The terminal output shows the file being uploaded and then downloaded back to the local machine:

```

Uploaded 'C:\Users\cheta\Desktop\sql practice2.txt' to bucket 'myawspracticecheta1' as 'sql_practice2.txt'
PS C:\Users\cheta\Desktop\DE Homework\aws python> ^C
PS C:\Users\cheta\Desktop\DE Homework\aws python>
PS C:\Users\cheta\Desktop\DE Homework\aws python> c;; cd 'c:\Users\cheta\Desktop\DE Homework\aws python'; & 'c:\Users\cheta\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\cheta\.vscode\extensions\ms-python.python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher' '56015' '--'
:c:\Users\cheta\Desktop\DE Homework\aws python> to download files.py
Downloaded 'sql_practice2.txt' from bucket 'myawspracticecheta1' to local path 'C:\Users\cheta\Desktop\DE Homework\aws python\downloaded_sql_practice2.txt'
PS C:\Users\cheta\Desktop\DE Homework\aws python>

```

The status bar at the bottom indicates it's 24°C, partly cloudy, and shows the date as 11-08-2025.



The screenshot shows the AWS S3 console interface. On the left, a sidebar lists various bucket types: Directory buckets, Table buckets, Vector buckets (with a 'Preview' option), Access Grants, Access Points (General Purpose Buckets, FSx file systems), Access Points (Directory Buckets), Object Lambda Access Points, Multi-Region Access Points, Batch Operations, and IAM Access Analyzer for S3. Below this, there's a section for 'Block Public Access settings for this account'. Under 'Storage Lens', there are links for Dashboards, Storage Lens groups, and AWS Organizations settings. The main area is titled 'myawspracticecheta1' and shows the 'Info' tab selected. It displays the 'Objects' section with a table header for Name, Type, Last modified, Size, and Storage class. A message states 'No objects' and 'You don't have any objects in this bucket.' At the bottom right of the main area is a blue 'Upload' button.

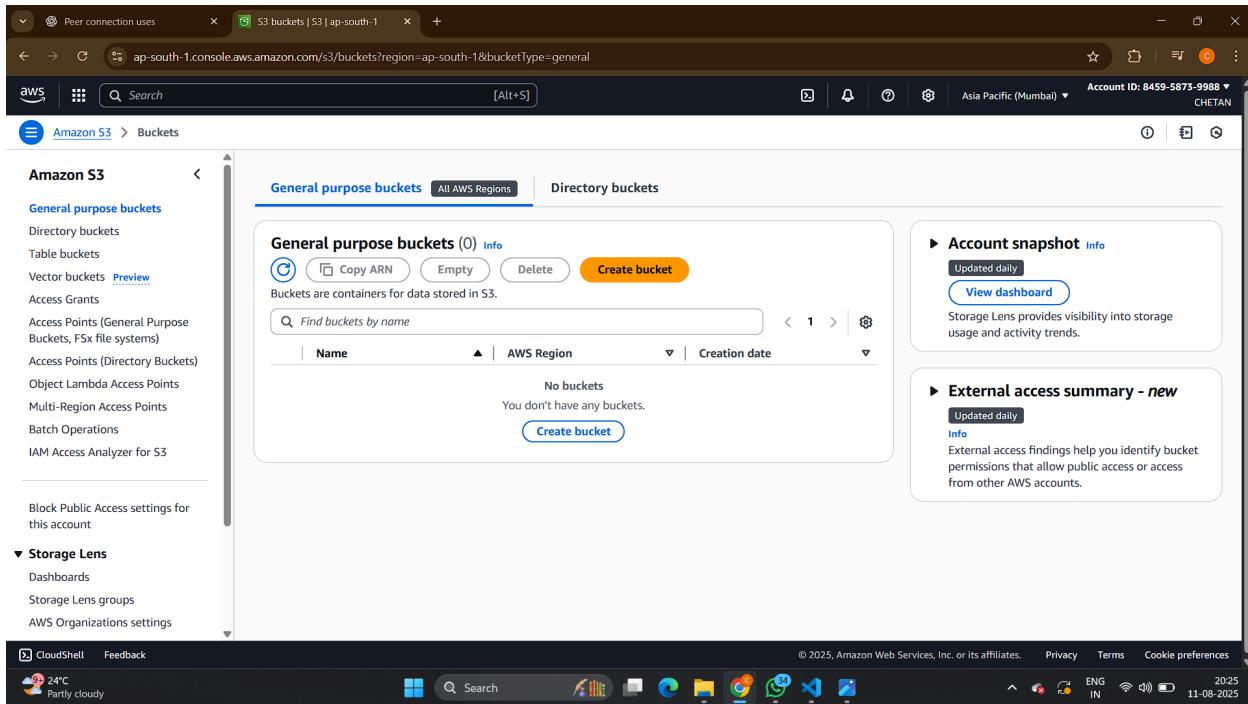
The screenshot shows a terminal window in VS Code with the title bar 'File Edit Selection View Go Run ...'. The terminal is displaying a Python script named 'to delete bucket.py' which uses the boto3 library to delete an S3 bucket. The script content is:

```

1 import boto3
2
3 # Initialize S3 client
4 s3 = boto3.client('s3')
5
6 # Your bucket name
7 bucket_name = 'myawspracticecheta1'
8
9 # Delete the bucket (make sure bucket is empty)
10 s3.delete_bucket(Bucket=bucket_name)
11
12 print(f"Deleted bucket '{bucket_name}'")
13

```

Below the terminal, the code editor shows the same script with syntax highlighting. The status bar at the bottom indicates the current environment: 'CloudShell Feedback', '24°C Partly cloudy', and the date '11-08-2025'. The bottom right corner shows the VS Code interface with icons for PowerShell, Python, and Python Debug.



2. Recursive vs. Force Deletion in S3 (AWS CLI)

Recursive Delete (objects only)

```
bash
CopyEdit
aws s3 rm s3://your-unique-bucket-name-12345 --recursive
```

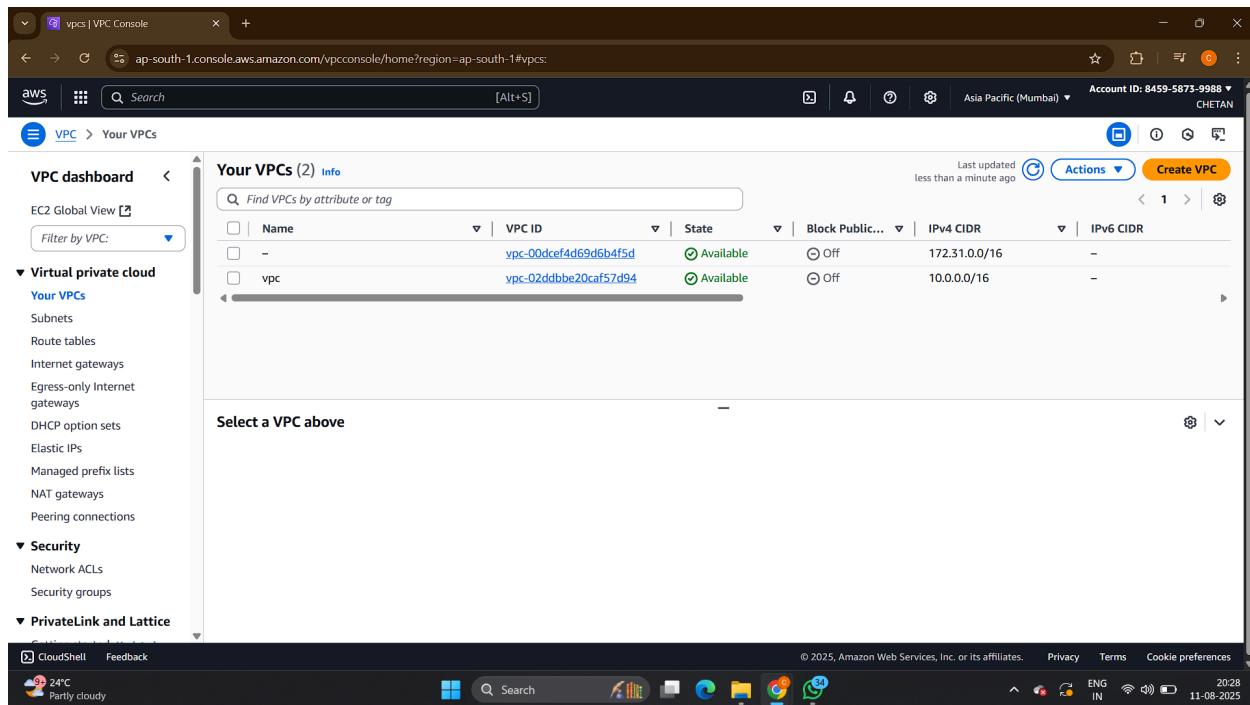
Force Delete Bucket (objects + bucket)

```
bash
CopyEdit
aws s3 rb s3://your-unique-bucket-name-12345 --force
```

3. Connect Public & Private Windows Instances (No direct CLI command)

Setup security groups:

- Public instance SG inbound: allow RDP (3389) from your IP
- Private instance SG inbound: allow RDP (3389) from public subnet CIDR (e.g., 10.0.1.0/24)



The screenshot shows the AWS VPC Console interface. The left sidebar navigation includes 'VPC dashboard', 'Virtual private cloud' (with 'Your VPCs' selected), 'Security' (with 'Network ACLs' and 'Security groups' listed), and 'PrivateLink and Lattice'. The main content area displays a table titled 'Your VPCs (2) Info' with the following data:

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR
-	vpc-00dcef4d69d6b4f5d	Available	Off	172.31.0.0/16	-
vpc	vpc-02ddbbe20caf57d94	Available	Off	10.0.0.0/16	-

A message 'Select a VPC above' is displayed below the table. The top right corner shows account information: Account ID: 8459-5873-9988, Region: Asia Pacific (Mumbai), and User: CHETAN.

Screenshot of the AWS VPC Subnets console page:

Subnets (4) Info

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
-	subnet-00bb156050e0ef090	Available	vpc-00dcef4d69d6b4f5d	Off	172.31.32.0/2
-	subnet-0a14d154b1b33442a	Available	vpc-00dcef4d69d6b4f5d	Off	172.31.0.0/20
public subnet	subnet-0395708346337d105	Available	vpc-02ddbbe20caf57d94 vpc	Off	10.0.1.0/24
private subnet	subnet-035646824b4494dfc	Available	vpc-02ddbbe20caf57d94 vpc	Off	10.0.2.0/24

Select a subnet

Actions: Create subnet

CloudShell Feedback Rain warning In effect

Screenshot of the AWS VPC Internet Gateways console page:

igw-03d9b533ed4014a1c / vpc internet

Details

Internet gateway ID: igw-03d9b533ed4014a1c	State: Attached	VPC ID: vpc-02ddbbe20caf57d94 vpc	Owner: 845958739988
--	-----------------	-------------------------------------	---------------------

Tags

Key: Name	Value: vpc internet
-----------	---------------------

Actions

CloudShell Feedback Rain warning In effect

RouteTables | VPC Console

ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#RouteTables:

VPC > Route tables

Route tables (3) Info

Name	Route table ID	Explicit subnet associations	Main	VPC
default	rtb-005d5bb3045fcfce	2 subnets	Yes	vpc-00dccef4d69d6b4f5d
-	rtb-0d8e4d9252b4488e2	-	Yes	vpc-02ddbbe20caf57d94 vpc
public rt	rtb-0454ff936e600f035	subnet-0395708346337d105 / public	No	vpc-02ddbbe20caf57d94 vpc

Select a route table

CloudShell Feedback Rain warning In effect

VPC | ap-south-1

ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#RouteTableDetails:RouteTableId=rtb-0454ff936e600f035

VPC > Route tables > rtb-0454ff936e600f035 / public rt

rtb-0454ff936e600f035 / public rt

Details

Route table ID rtb-0454ff936e600f035	Main No	Explicit subnet associations subnet-0395708346337d105 / public	Edge associations -
VPC vpc-02ddbbe20caf57d94 vpc	Owner ID 845958739988		

Routes

Destination	Target	Status	Propagated
0.0.0.0/0	igw-03d9b533ed4014a1c	Active	No
10.0.0.0/16	local	Active	No

CloudShell Feedback Rain warning In effect

VPC dashboard

Route table ID: rtb-0454ff936e600f035

Main: No

Owner ID: 845958739988

Explicit subnet associations: subnet-0395708346337d105 / public subnet

Edge associations: -

Subnet associations tab selected.

Explicit subnet associations (1):

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
public subnet	subnet-0395708346337d105	10.0.1.0/24	-

Subnets without explicit associations (1):

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
private subnet	subnet-035646824b4494dfc	10.0.2.0/24	-

NAT gateway settings

Name - optional: my nat gateway

Subnet: subnet-0395708346337d105 (public subnet)

Connectivity type: Public

Elastic IP allocation ID: eipalloc-0049d9a225818a264

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: my nat gateway

Allocate Elastic IP: Allocate Elastic IP

RouteTables | VPC Console

ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#RouteTables:

VPC > Route tables

Route tables (4) Info

Name	Route table ID	Explicit subnet associations	Main	VPC
default	rtb-005d5bb3045fcfce	2 subnets	Yes	vpc-00dcf4d69d6b4f5d
-	rtb-0d8e4d9252b4488e2	-	Yes	vpc-02ddbbe20caf57d94 vpc
public rt	rtb-0454ff936e600f035	subnet-0395708346337d...	No	vpc-02ddbbe20caf57d94 vpc
private rt	rtb-01729ecfbba404b64	subnet-035646824b4494...	No	vpc-02ddbbe20caf57d94 vpc

Select a route table

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VPC | ap-south-1

ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#RouteTableDetails:RouteTableId=rtb-01729ecfbba404b64

VPC > Route tables > rtb-01729ecfbba404b64

Updated routes for rtb-01729ecfbba404b64 / private rt successfully

rtb-01729ecfbba404b64 / private rt

Details

Route table ID rtb-01729ecfbba404b64	Main No	Explicit subnet associations subnet-035646824b4494dfc / private subnet	Edge associations -
VPC vpc-02ddbbe20caf57d94 vpc	Owner ID 845958739988		

Routes

Destination	Target	Status	Propagated
0.0.0.0/0	nat-076f251caa9a5b933	Active	No
10.0.0.0/16	local	Active	No

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The screenshot shows the AWS VPC console with the URL ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#RouteTableDetails:RouteTableId=rtb-01729ecfbba404b64. The page displays the details for Route Table ID rtb-01729ecfbba404b64, which is associated with VPC vpc-02ddbbe20caf57d94. The main section shows 'Updated routes for rtb-01729ecfbba404b64 / private rt successfully' and 'Details'. The 'Subnet associations' tab is selected, showing one explicit subnet association: subnet-035646824b4494dfc / private subnet. There are no edge associations. The 'Routes' tab is also visible.

The screenshot shows the AWS EC2 console with the URL ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances. The page is titled 'Launch an instance | EC2 | ap-south-1'. It shows the 'Name and tags' section with 'Name' set to 'public windows'. The 'Application and OS Images (Amazon Machine Image)' section lists various AMIs, with 'Windows' selected. The 'Summary' section indicates 1 instance will be launched. It includes details like 'Software Image (AMI)', 'Virtual server type (instance type)', 'Firewall (security group)', and 'Storage (volumes)'. The 'Launch instance' button is prominently displayed at the bottom right. The status bar at the bottom shows 'CloudShell Feedback' and the date '11-08-2025'.

The screenshot shows the 'Launch an instance' wizard in the AWS EC2 console. The 'VPC - required' step is selected. A dropdown menu shows 'vpc-02ddbbe20caf57d94 (vpc) 10.0.0.0/16'. Below it, a 'Subnet' section shows 'subnet-0395708346537d105 public subnet VPC: vpc-02ddbbe20caf57d94 Owner: 845958739988 Availability Zone: ap-south-1b Zone type: Availability Zone IP addresses available: 250 CIDR: 10.0.1.0/24'. A 'Create new subnet' button is available. The 'Auto-assign public IP' section is set to 'Enable'. The 'Firewall (security groups)' section shows a dropdown with 'Create security group' selected. The 'Description - required' field contains 'launch-wizard-1 created 2025-08-11T15:10:44.517Z'. The right panel displays a summary: 1 instance, Microsoft Windows Server 2019, t2.micro instance type, New security group, 1 volume(s) - 30 GiB. A promotional message for the Free tier is visible.

This screenshot continues the 'Launch an instance' wizard. The 'Inbound Security Group Rules' section is expanded, showing two rules. Rule 1: Type rdp, Protocol TCP, Port range 3389, Source type Custom, Source 0.0.0.0/0. Rule 2: Type rdp, Protocol TCP, Port range 3389, Source type Custom, Source ::/0. The right panel remains the same as the previous screenshot, showing the summary and Free tier offer.

Screenshot of the AWS EC2 Instances Launch screen:

The screenshot shows the AWS EC2 Instances Launch screen. The top navigation bar includes tabs for 'NatGateways | VPC Console' and 'Launch an instance | EC2 | ap-south-1'. The main search bar contains 'Search' and an 'Add additional tags' button. The breadcrumb navigation shows 'EC2 > Instances > Launch an instance'.

Name and tags

The 'Name' field is set to 'private windows'. There is also an 'Add additional tags' button.

Application and OS Images (Amazon Machine Image)

An AMI contains the operating system, application server, and applications for your instance. If you don't see a suitable AMI below, use the search field or choose [Browse more AMIs](#).

Recent AMIs

Recent AMIs listed include: Amazon Linux, macOS, Ubuntu, Windows (selected), Red Hat, SUSE Linux, and Debian.

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community.

Amazon Machine Image (AMI)

Selected AMI: Microsoft Windows Server 2019 Core Base (ami-0ec73a27d7764e6b3) (64-bit (x86))

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

Summary

Number of instances: 1

Software Image (AMI)

Microsoft Windows Server 2019 ...[read more](#)

ami-0ec73a27d7764e6b3

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 30 GB

Free tier: In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where applicable).

Launch instance

Preview code

The screenshot shows the AWS EC2 'Launch an instance' wizard. On the left, under 'Network settings', a VPC is selected (vpc-02dbdbe20caf57d94). A private subnet (subnet-035646824b449dfc) is chosen, located in Availability Zone ap-south-1b. The 'Auto-assign public IP' option is set to 'Disable'. Under 'Firewall (security groups)', a new security group is being created with the name 'launch-wizard-2'. A note states that this group will be added to all network interfaces. A 'Description' field contains the text 'launch-wizard-2 created 2025-08-11T15:12:19.510Z'. On the right, a summary box shows 1 instance launching with the Microsoft Windows Server 2019 AMI, instance type t2.micro, and a note about the free tier for new accounts.

The screenshot shows the AWS EC2 'Launch an instance' wizard. The top navigation bar includes tabs for 'NatGateways | VPC Console', 'Launch an instance | EC2 | ap-south-1', and 'LaunchInstances'. The search bar contains 'ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances'. The account information at the top right shows 'Account ID: 8459-5873-9988' and 'Region: Asia Pacific (Mumbai)'. A user named 'CHETAN' is logged in.

The main page displays the 'EC2 > Instances > Launch an instance' path. A note above the form states: 'a-z, A-Z, 0-9, spaces, and _-~!/#,@[]+=;&[]!\$*'. The 'Description - required' field contains 'Info' and the value 'launch-wizard-2 created 2025-08-11T15:12:19.510Z'. The 'Inbound Security Group Rules' section lists two security group rules:

- Security group rule 1 (TCP, 3389, 0.0.0.0/0)**:
 - Type: rdp
 - Protocol: TCP
 - Port range: 3389
 - Source type: Custom
 - Source: 0.0.0.0/0
 - Description - optional: e.g. SSH for admin desktop
- Security group rule 2 (TCP, 3389, -/0)**:
 - Type: rdp
 - Protocol: TCP
 - Port range: 3389
 - Source type: Custom
 - Source: ::/0
 - Description - optional: e.g. SSH for admin desktop

The right side of the screen shows a summary panel with the following details:

- Number of instances**: 1
- Software Image (AMI)**: Microsoft Windows Server 2019 ... [read more](#)
- Virtual server type (instance type)**: t2.micro
- Firewall (security group)**: New security group
- Storage (volumes)**: 1 volume(s) - 30 GiB

A blue callout box highlights the 'Free tier' information: 'In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where applicable)'.

NatGateways | VPC Console

ModifyInboundSecurityGroupRules

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#ModifyInboundSecurityGroupRules:securityGroupId=sg-03c9bfa236e7c11df

aws Search [Alt+S]

Account ID: 8459-5873-9988
CHETAN

EC2 > Security Groups > sg-03c9bfa236e7c11df - launch-wizard-2 > Edit inbound rules

Edit inbound rules Info

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

Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range	Source <small>Info</small>	Description - optional <small>Info</small>
sgr-069b49fe305c831d1	RDP	TCP	3389	Custom	<input type="text" value="::/0"/> <small>X</small>
sgr-037da492e208fd337	RDP	TCP	3389	Custom	<input type="text" value="0.0.0.0/0"/> <small>X</small>
-	Custom TCP	TCP	3389	Custom	<input type="text" value="Q 10.0.1.0/24"/> <small>X</small> <input type="text" value="10.0.1.0/24"/> <small>X</small>

[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](#)

NatGateways | VPC Console Instances | EC2 | ap-south-1

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#Instancesv=3;\$case=tags:true%5C;client:false;\$regex=tags:false%5C;client:false

aws Search [Alt+S] Asia Pacific (Mumbai) Account ID: 8459-5873-9988 CHETAN

EC2 > Instances

Instances (2) Info

Last updated less than a minute ago

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
public windows	i-0dcbfd8a374f5c29a	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	-
private windows	i-06d45e85ddd03f216	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	-

Select an instance

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NatGateways | VPC Console Instance details | EC2 | ap-south-1

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#InstanceDetails:instanceId=i-06d45e85ddd03f216

aws Search [Alt+S] Asia Pacific (Mumbai) Account ID: 8459-5873-9988 CHETAN

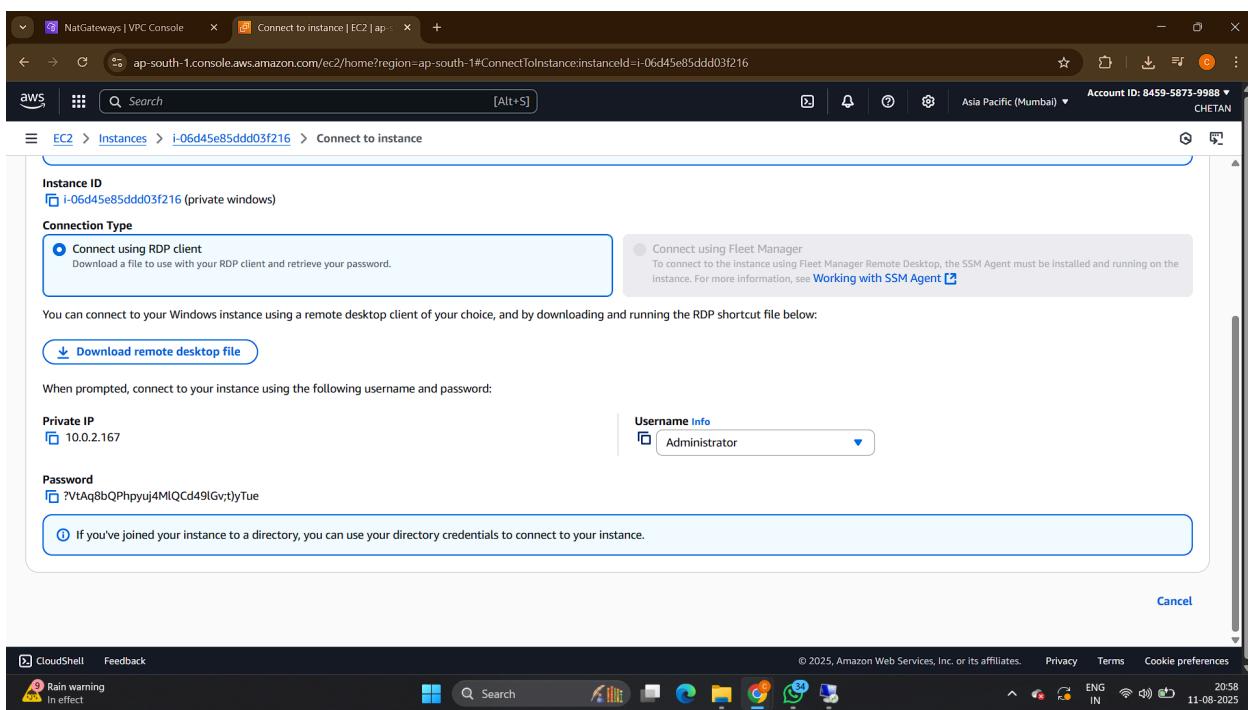
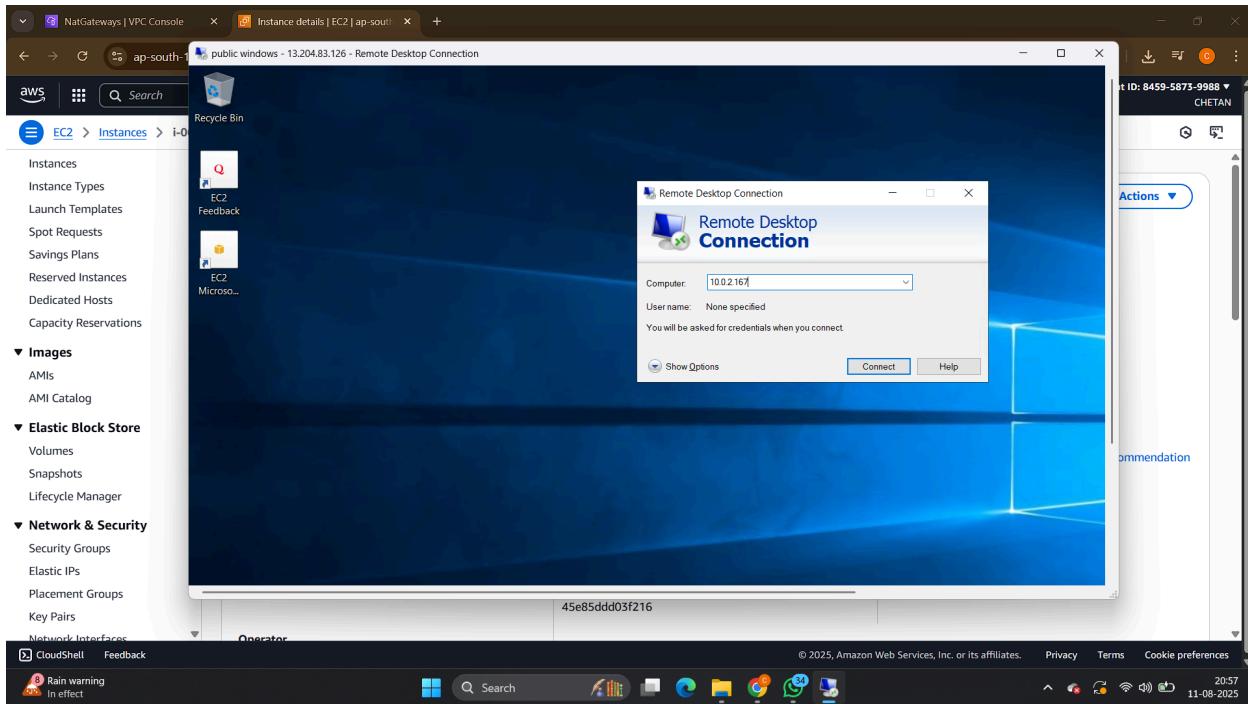
EC2 > Instances > i-06d45e85ddd03f216

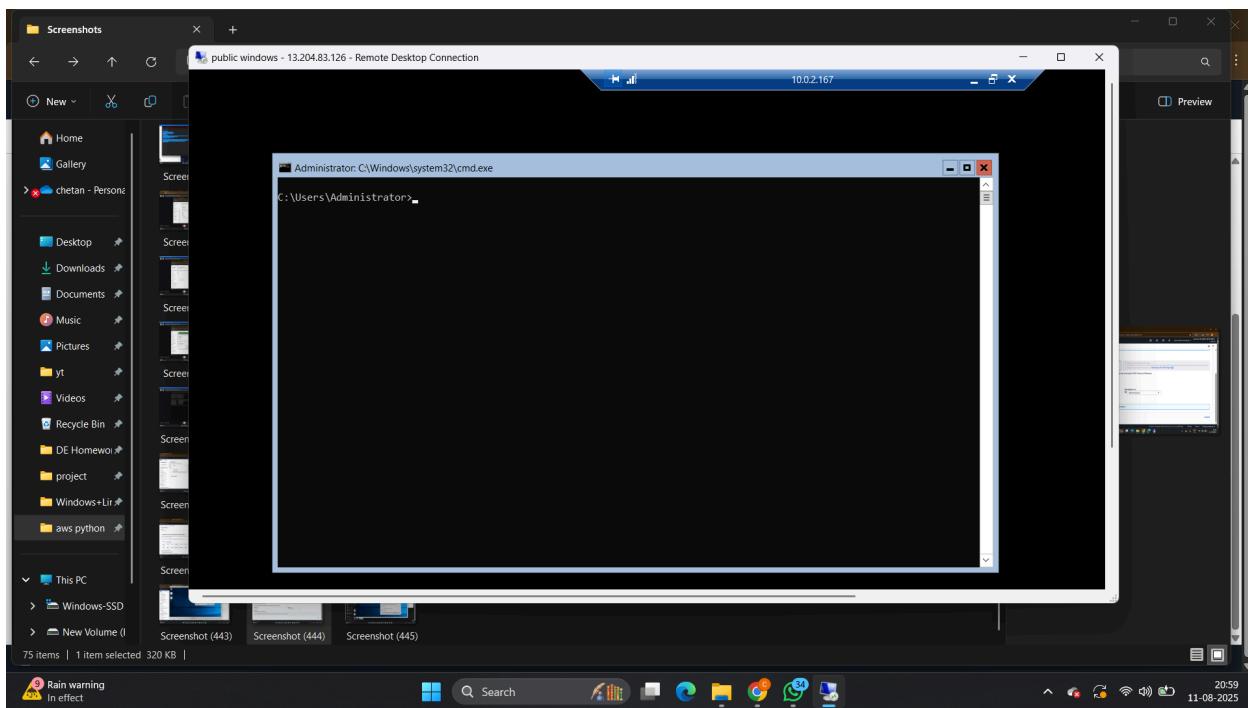
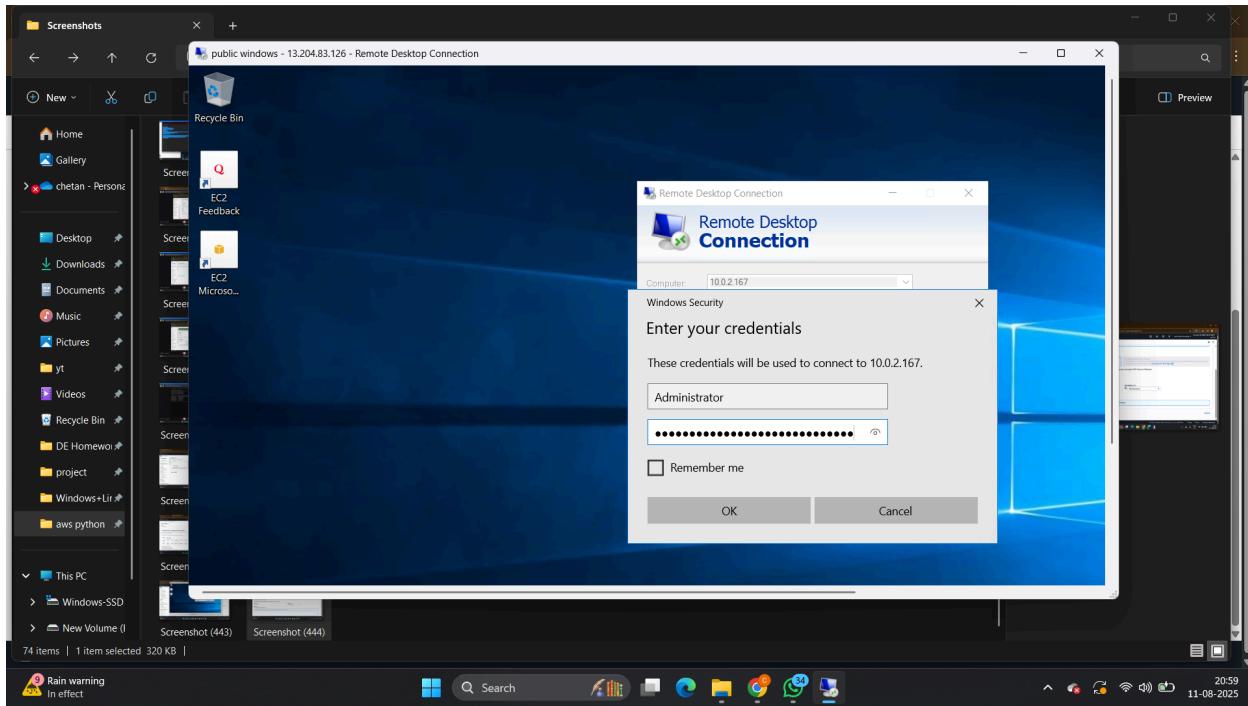
Instance summary for i-06d45e85ddd03f216 (private windows)

Updated less than a minute ago

Instance ID	i-06d45e85ddd03f216	Public IPv4 address	-
IPv6 address	-	Instance state	Running
Hostname type	IP name: ip-10-0-2-167.ap-south-1.compute.internal	Private IP DNS name (IPv4 only)	ip-10-0-2-167.ap-south-1.compute.internal
Answer private resource DNS name	-	Instance type	t2.micro
Auto-assigned IP address	-	VPC ID	vpc-02ddbbe20caf57d94 (vpc)
IAM Role	-	Subnet ID	subnet-035646824b4494dc (private subnet)
IMDSv2	Required	Instance ARN	arn:aws:ec2:ap-south-1:845958739988:instance/i-06d45e85ddd03f216
Operator	-	Managed	false

Private IPv4 address copied 10.0.2.167 © 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences ENG IN 20:56 11-08-2025





4. Advanced S3 Operations with Boto3 (Python)

Enable Versioning

```
python
CopyEdit
s3.put_bucket_versioning(
    Bucket=bucket_name,
    VersioningConfiguration={'Status': 'Enabled'}
)
print("Versioning enabled.")
```

Disable Versioning

```
python
CopyEdit
s3.put_bucket_versioning(
    Bucket=bucket_name,
    VersioningConfiguration={'Status': 'Suspended'}
)
print("Versioning suspended.")
```

Apply Lifecycle Policy (auto delete after 30 days)

```
python
CopyEdit
lifecycle_configuration = {
    'Rules': [
        {
            'ID': 'DeleteOldObjects',
            'Filter': {'Prefix': ''},
            'Status': 'Enabled',
            'Expiration': {'Days': 30}
        }
    ]
}
```

```
}

s3.put_bucket_lifecycle_configuration(
    Bucket=bucket_name,
    LifecycleConfiguration=lifecycle_configuration
)
print("Lifecycle policy applied.")
```

Generate Pre-signed URL

```
python
CopyEdit
url = s3.generate_presigned_url(
    'get_object',
    Params={'Bucket': bucket_name, 'Key': 'uploaded_file.txt'},
    ExpiresIn=3600 # valid for 1 hour
)
print("Pre-signed URL:", url)
```

5. Automating S3 Cleanup (Python, simplified)

```
python
CopyEdit
response = s3.list_object_versions(Bucket=bucket_name)

for version in response.get('Versions', []):
    s3.delete_object(Bucket=bucket_name, Key=version['Key'], VersionId=version['VersionId'])

for marker in response.get('DeleteMarkers',[]):
```

```
s3.delete_object(Bucket=bucket_name, Key=marker['Key'], VersionId=marker['VersionId'])

print("All versions and delete markers removed.")
```

6. AWS CLI S3 Sync & Bucket Policy & CloudTrail

Sync local folder to S3 bucket

```
bash
CopyEdit
aws s3 sync /local/folder/path s3://your-unique-bucket-name-12345
```

Set Bucket Policy (example to allow public read)

```
bash
CopyEdit
aws s3api put-bucket-policy --bucket your-unique-bucket-name-12345 --policy file://policy.json
```

policy.json example:

```
json
CopyEdit
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "PublicReadGetObject",
      "Effect": "Allow",
```

```
"Principal": "*",
"Action": "s3:GetObject",
"Resource": "arn:aws:s3:::your-unique-bucket-name-12345/*"
}]
}
```

Lookup CloudTrail Events

```
bash
CopyEdit
aws cloudtrail lookup-events --lookup-attributes AttributeKey=EventName,AttributeValue=PutObject
```

7. Create IAM Policy (allow GetObject but deny DeleteObject)

Example JSON policy:

```
json
CopyEdit
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": "s3:GetObject",
      "Resource": "arn:aws:s3:::your-unique-bucket-name-12345/*"
    },
    {
      "Effect": "Deny",
      "Action": "s3:DeleteObject",
    }
  ]
}
```

```
        "Resource": "arn:aws:s3:::your-unique-bucket-name-12345/*"
    }
]
}
```

Attach policy to user: Use AWS Console or CLI:

```
bash
CopyEdit
aws iam put-user-policy --user-name test-user --policy-name S3ReadOnlyPolicy --policy-document file://
```