

Cycle 08 AWS Homework

1. AWS CLI Installation & Configuration

- Install AWS CLI v2 on your local machine.
- Verify installation:

```
bash
CopyEdit
aws --version
```

- Configure IAM credentials:

```
bash
CopyEdit
aws configure
```

- Test configuration by listing S3 buckets:

```
bash
CopyEdit
aws s3 ls
```

2. Practice AWS CLI Commands

- Explore basic S3 operations before the next session:
 - Create bucket: `aws s3 mb`
 - Copy file: `aws s3 cp`

```
Command Prompt
ls
cp
rm
mb
presign

C:\Users\cheta>aws s3 cp "C:\Users\cheta\Desktop\sql practice2.txt" s3://mrbobbie1/
upload: Desktop\sql practice2.txt to s3://mrbobbie1/sql practice2.txt

C:\Users\cheta>aws s3 ls
2025-08-10 21:45:53 mrbobbie1/

C:\Users\cheta>aws s3 ls s3://mrbobbie1/
2025-08-10 21:49:01 2140 sql practice2.txt

C:\Users\cheta>aws s3 rm "C:\Users\cheta\Desktop\sql practice2.txt" s3://mrbobbie1/
Unknown options: s3://mrbobbie1/

C:\Users\cheta>aws s3 rm s3://mrbobbie1/sql practice2.txt
Unknown options: practice2.txt

C:\Users\cheta>aws s3 rm "s3://mrbobbie1/sql practice2.txt"
delete: s3://mrbobbie1/sql practice2.txt

C:\Users\cheta>aws s3 ls s3://mrbobbie1/

C:\Users\cheta>aws s3 rb s3://mrbobbie1
remove_bucket: mrbobbie1

C:\Users\cheta>aws s3 ls

C:\Users\cheta>
```

Create access key | IAM | Global

us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#/security_credentials/access-key-wizard

Access key created
This is the only time that the secret access key can be viewed or downloaded. You cannot recover it later. However, you can create a new access key any time.

Step 1
Access key best practices & alternatives

Step 2 - optional
Set description tag

Step 3
Retrieve access keys

Retrieve access keys

Access key
If you lose or forget your secret access key, you cannot retrieve it. Instead, create a new access key and make the old key inactive.

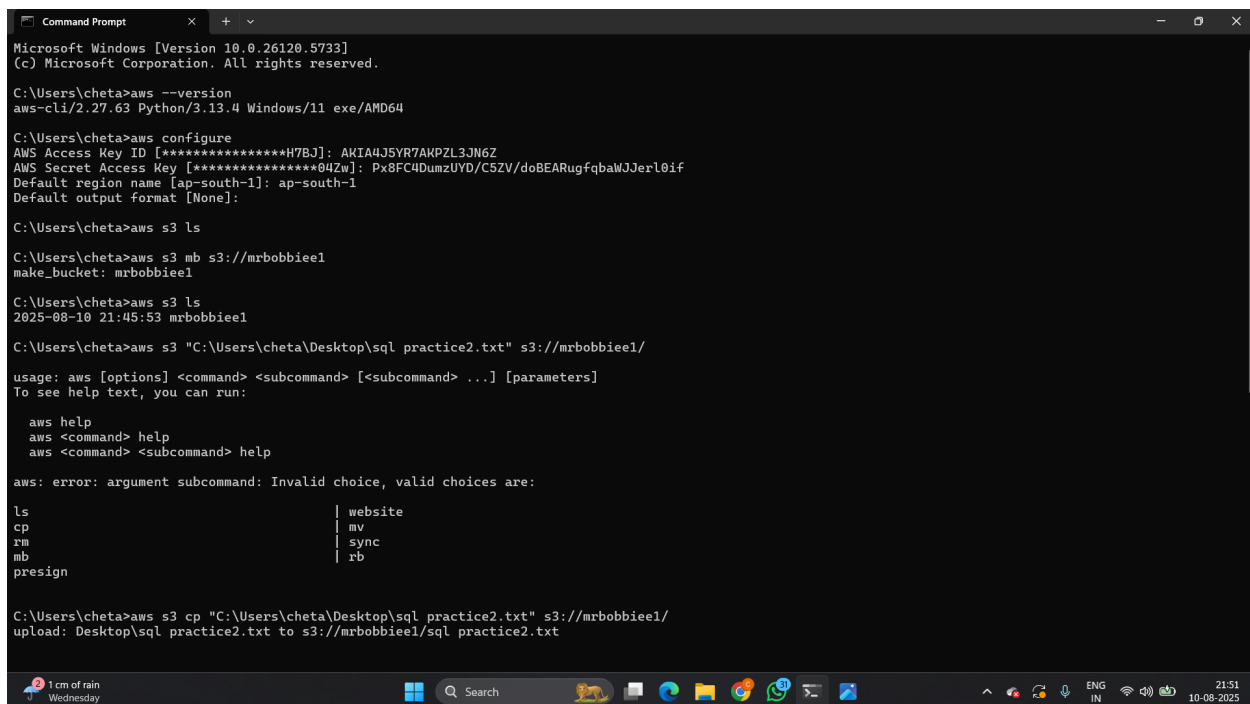
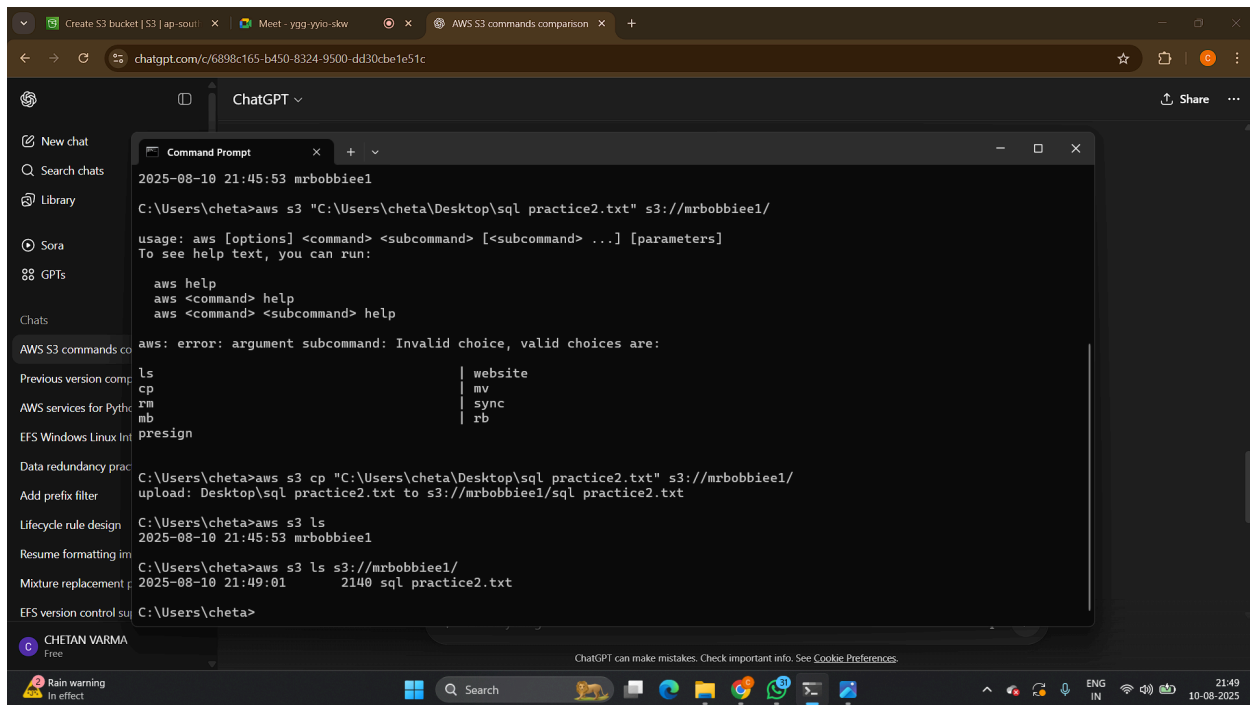
Access key	Secret access key
AKIA4J5YR7AKPZL3JN6Z	***** Show

Access key best practices

- Never store your access key in plain text, in a code repository, or in code.
- Disable or delete access key when no longer needed.
- Enable least-privilege permissions.
- Rotate access keys regularly.

For more details about managing access keys, see the [best practices for managing AWS access keys](#).

[Download .csv file](#) [Done](#)



```
Command Prompt
ls
cp
rm
mb
presign

| website
| mv
| sync
| rb

C:\Users\cheta>aws s3 cp "C:\Users\cheta\Desktop\sql practice2.txt" s3://mrbobbieel/
upload: Desktop\sql practice2.txt to s3://mrbobbieel/sql practice2.txt

C:\Users\cheta>aws s3 ls
2025-08-10 21:45:53 mrbobbieel/

C:\Users\cheta>aws s3 ls s3://mrbobbieel/
2025-08-10 21:49:01 2140 sql practice2.txt

C:\Users\cheta>aws s3 rm "C:\Users\cheta\Desktop\sql practice2.txt" s3://mrbobbieel/
Unknown options: s3://mrbobbieel/

C:\Users\cheta>aws s3 rm s3://mrbobbieel/sql practice2.txt
Unknown options: practice2.txt

C:\Users\cheta>aws s3 rm "s3://mrbobbieel/sql practice2.txt"
delete: s3://mrbobbieel/sql practice2.txt

C:\Users\cheta>aws s3 ls s3://mrbobbieel/

C:\Users\cheta>
```

3. Review S3 Lifecycle & Replication Rules

- Experiment with creating lifecycle rules in the AWS Console:
 - Example: Transition objects to Glacier after a specific number of days.
 - Example: Delete incomplete multipart uploads.
- Experiment with cross-region replication (CRR).
- **Prerequisite:** Enable versioning on buckets.

us-east-1.console.aws.amazon.com/s3/buckets/myawschetan002?region=us-east-1&bucketType=general&tab=objects

Amazon S3 > Buckets > myawschetan002

myawschetan002 info

Objects Metadata Properties Permissions Metrics Management Access Points

Objects (1) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#) [Actions](#) [Create folder](#) [Upload](#)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

☐ Show versions < 1 > [Settings](#)

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	Chetan-sql_practice.sql	sql	August 9, 2025, 21:34:31 (UTC+05:30)	2.0 KB	Standard

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Thunderstorm w... In effect

ap-south-1.console.aws.amazon.com/s3/buckets/myawschetan001?region=ap-south-1&bucketType=general&tab=objects&showversions=false

Amazon S3 > Buckets > myawschetan001

myawschetan001 info

Objects Properties Permissions Metrics Management Access Points

Objects (0) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#) [Actions](#) [Create folder](#) [Upload](#)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

☐ Show versions < 1 > [Settings](#)

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
No objects You don't have any objects in this bucket.					

[Upload](#)

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Trending videos Love is Blind: UK...

us-east-1.console.aws.amazon.com/s3/buckets/myawschetan002?region=us-east-1&bucketType=general&tab=objects&showversions=true

Amazon S3 Buckets myawschetan002

myawschetan002 [Info](#)

Objects (0)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Find objects by prefix Show versions ☒

Name	Type	Version ID	Last modified	Size	Storage class
No objects					
You don't have any objects in this bucket.					

[Upload](#)

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Search

ENG IN

21:28 09-08-2025

us-east-1.console.aws.amazon.com/s3/buckets?region=us-east-1&bucketType=general

Amazon S3 Buckets

General purpose buckets [All AWS Regions](#) Directory buckets

General purpose buckets (3) [Info](#)

Buckets are containers for data stored in S3.

Find buckets by name

Name	AWS Region	Creation date
<input type="radio"/> maneesh1	Asia Pacific (Mumbai) ap-south-1	August 9, 2025, 21:27:09 (UTC+05:30)
<input type="radio"/> myawschetan001	Asia Pacific (Mumbai) ap-south-1	August 9, 2025, 21:25:15 (UTC+05:30)
<input type="radio"/> myawschetan002	US East (N. Virginia) us-east-1	August 9, 2025, 21:28:17 (UTC+05:30)

[Account snapshot](#) [Info](#) [View dashboard](#)

Updated daily

Storage Lens provides visibility into storage usage and activity trends.

[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.

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ENG IN

21:28 09-08-2025

Meet - jeb-efwr-msj x Create replication rule - S3 bu... x +

ap-south-1.console.aws.amazon.com/s3/management/myawschetan001/replication/create?region=ap-south-1&bucketType=general

aws Search [Alt+S]

Asia Pacific (Mumbai) Account ID: 8459-5873-9988 CHETAN

Amazon S3 > Buckets > myawschetan001 > Replication rules > Create replication rule

Create replication rule [Info](#)

Replication rule configuration

Replication rule name

myreplication

Up to 255 characters. In order to be able to use CloudWatch metrics to monitor the progress of your replication rule, the replication rule name must only contain English characters.

Status

Choose whether the rule will be enabled or disabled when created.

☒ Enabled

☐ Disabled

Priority

The priority value resolves conflicts that occur when an object is eligible for replication under multiple rules to the same destination. The rule is added to the configuration at the highest priority and the priority can be changed on the replication rules table.

0

Source bucket

Source bucket name

myawschetan001

Source Region

Asia Pacific (Mumbai) ap-south-1

Meet - jeb-efwr-msj x Create replication rule - S3 bu... x +

ap-south-1.console.aws.amazon.com/s3/management/myawschetan001/replication/create?region=ap-south-1&bucketType=general

aws Search [Alt+S]

Asia Pacific (Mumbai) Account ID: 8459-5873-9988 CHETAN

Amazon S3 > Buckets > myawschetan001 > Replication rules > Create replication rule

Source bucket name

myawschetan001

Source Region

Asia Pacific (Mumbai) ap-south-1

Choose a rule scope

☐ Limit the scope of this rule using one or more filters

☒ Apply to all objects in the bucket

Destination

Destination

You can replicate objects across buckets in different AWS Regions (Cross-Region Replication) or you can replicate objects across buckets in the same AWS Region (Same-Region Replication). You can also specify a different bucket for each rule in the configuration. [Learn more](#) or see [Amazon S3 pricing](#)

☒ Choose a bucket in this account

☐ Specify a bucket in another account

Bucket name

Choose the bucket that will receive replicated objects.

myawschetan002 [Browse S3](#)

Destination Region

US East (N. Virginia) us-east-1

Browser tabs: Meet - jeb-shwr-msj, Create replication rule - S3 bucket

URL: ap-south-1.console.aws.amazon.com/s3/management/myawschetan001/replication/create?region=ap-south-1&bucketType=general

Navigation: Amazon S3 > Buckets > myawschetan001 > Replication rules > Create replication rule

Destination storage class

Amazon S3 offers a range of storage classes designed for different use cases. [Learn more](#) or see [Amazon S3 pricing](#)

☐ Change the storage class for the replicated objects

Additional replication options

☒ Replication Time Control (RTC)
Replication Time Control replicates 99.99% of new objects within 15 minutes and includes replication metrics. Additional fees will apply. [Learn more](#)

☒ Replication metrics
With replication metrics, you can monitor the total number and size of objects that are pending replication, and the maximum replication time to the destination Region. You can also view and diagnose replication failures. CloudWatch metrics fees apply. [Learn more](#) or see [Amazon CloudWatch pricing](#)

To publish event notifications to a destination whenever replication events occur, set S3 event notifications or CloudWatch alarms before replication begins. [Learn more](#)

☐ Delete marker replication
Delete markers created by S3 delete operations will be replicated. Delete markers created by lifecycle rules are not replicated. [Learn more](#)

☐ Replica modification sync
Replicate metadata changes made to replicas from the destination bucket to the source bucket. [Learn more](#)

Cancel Save

Browser tabs: Meet - jeb-shwr-msj, Replication rule list - S3 bucket

URL: ap-south-1.console.aws.amazon.com/s3/management/myawschetan001/replication?region=ap-south-1&bucketType=general

Navigation: Amazon S3 > Buckets > myawschetan001 > Replication rules

Replication configuration settings

Configuration settings affect all replication rules in the bucket.

Source bucket
myawschetan001

Source Region
Asia Pacific (Mumbai) ap-south-1

IAM role
[s3scr_role_for_myawschetan001](#)

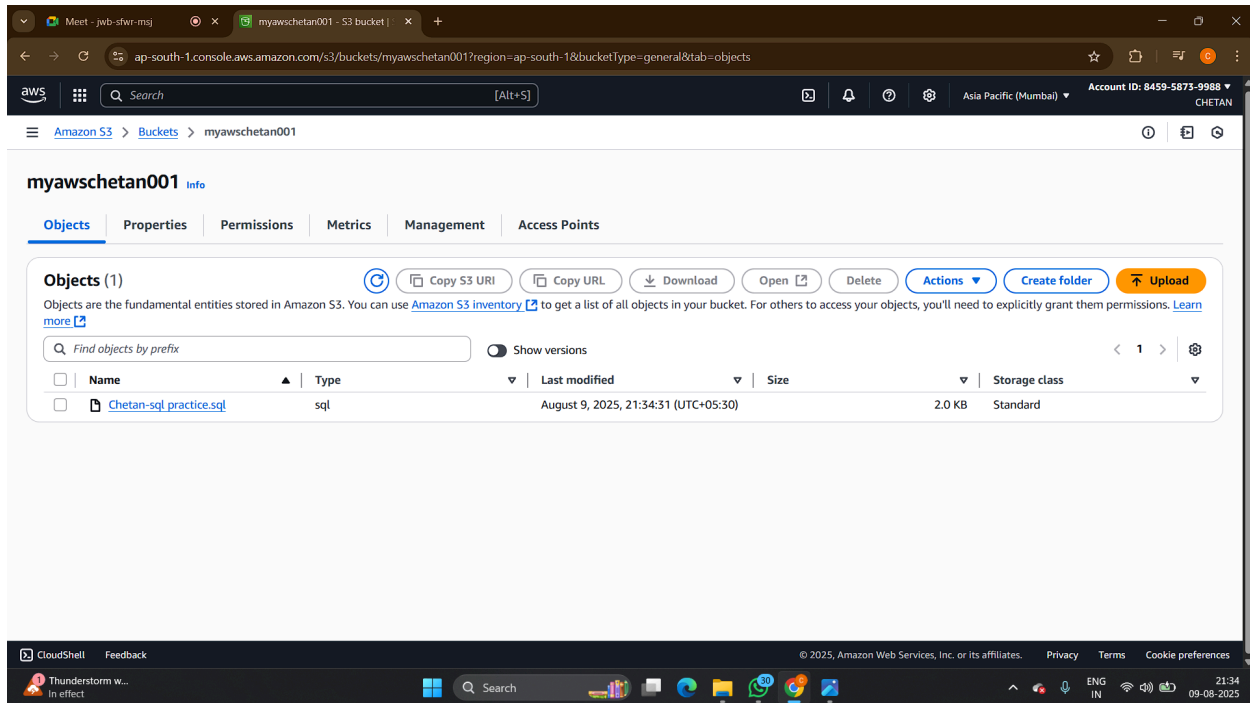
Create replication job Edit

Replication rules (1)

Use replication rules to define options you want Amazon S3 to apply during replication such as server-side encryption, replica ownership, transitioning replicas to another storage class, and more. [Learn more](#)

View details Edit rule Delete Actions Create replication rule

Replication rule name	Status	Destination bucket	Destination Region	Priority	Scope	Storage class	Replica owner	Replication Time Control	KMS-encrypted objects (SSE-KMS or DSSE-KMS)	Replica modification on sync
<input type="radio"/> myreplication	Enabled	s3://myawschetan002	US East (N. Virginia) us-east-1	0	Entire bucket	Same as source	Same as source	Enabled	Do not replicate	Disabled



Explore, Understand, and Document Findings

1. AWS S3 Lifecycle Management

- Create a bucket with:
 - A lifecycle rule to move objects to **S3 Infrequent Access** after 30 days.
 - A rule to delete incomplete multipart uploads after 7 days.
- Deliverable:
 - Screenshot of configured rules.
 - Short explanation of how these settings reduce costs.

2. Data Redundancy via Replication

- Set up **Cross-Region Replication** between two buckets (e.g., **ap-south-1** → **us-east-1**).
- Enable versioning on both buckets.
- Upload a test file and measure replication latency.

- Deliverable:
 - Replication configuration JSON and IAM policy used.
-

3. AWS CLI Hands-On

- Commands to practice:
 - Create bucket:

```
bash
CopyEdit
aws s3 mb s3://your-unique-bucket-name
```

- Upload file:

```
bash
CopyEdit
aws s3 cp file.txt s3://bucket-name
```

- Download file:

```
bash
CopyEdit
aws s3 cp s3://bucket-name/file.txt .
```

- Sync local folder to S3:

```
bash
CopyEdit
aws s3 sync ./local-folder s3://bucket-name
```

- Deliverable:

- List of executed commands.
 - Output logs.
-

4. Python Scripting (Preparation for Next Session)

- Write a Python script using `boto3` to:
 - List all S3 buckets in your account.
 - Upload a file programmatically.
 - Reference: Boto3 S3 documentation.
-

End-of-Day Requirement

- Prepare **detailed documentation** with:
 - Screenshots of configurations.
 - Outputs of CLI commands.
 - Observations and learning outcomes.