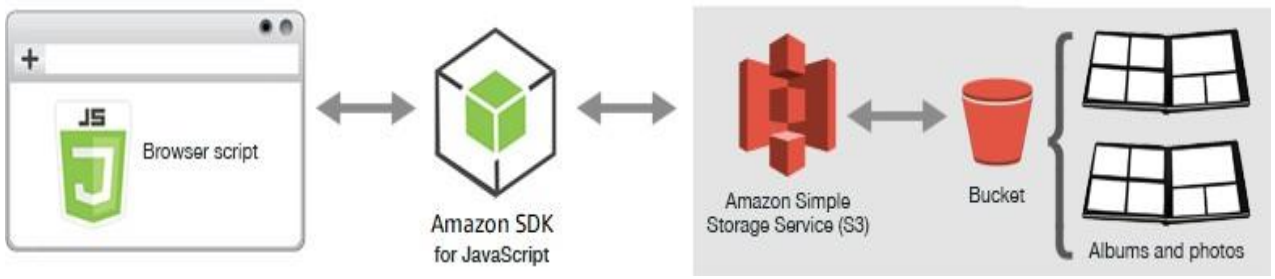
AWS Documentation

No:-	Content
1.	**S3(simple storage service)**
2.	**Create simple bucket** • Publicly available • Privately available
3.	**Storing logs into another bucket.**
4.	**Versioning of bucket**
5.	**Hosting one static website.**
6.	**Storage classes**
7.	**Replication of bucket objet**

S3(simple storage service):

Amazon Simple Storage Service (Amazon S3) is an object storage service that offers industry-leading scalability, data availability, security, and performance. Customers of all sizes and industries can use Amazon S3 to store and protect any amount of data for a range of use cases, such as data lakes, websites, mobile applications, backup and restore, archive, enterprise applications, IoT devices, and big data analytics. Amazon S3 provides management features so that you can optimize, organize, and configure access to your data to meet your specific business, organizational, and compliance requirements.

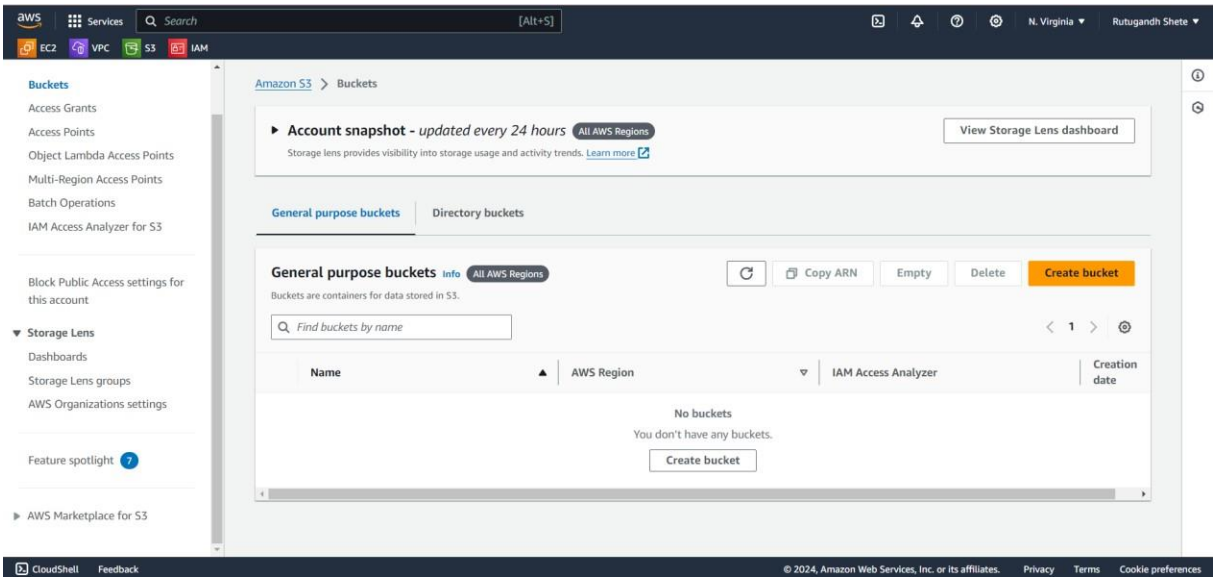


Create simple bucket:

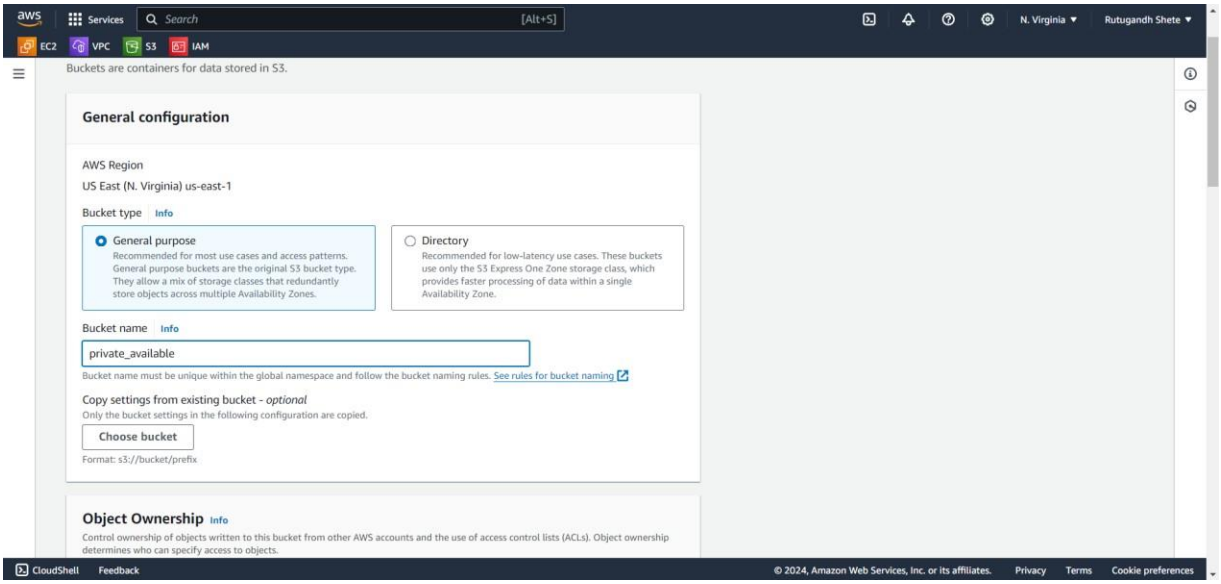
Private-Bucket

Steps:

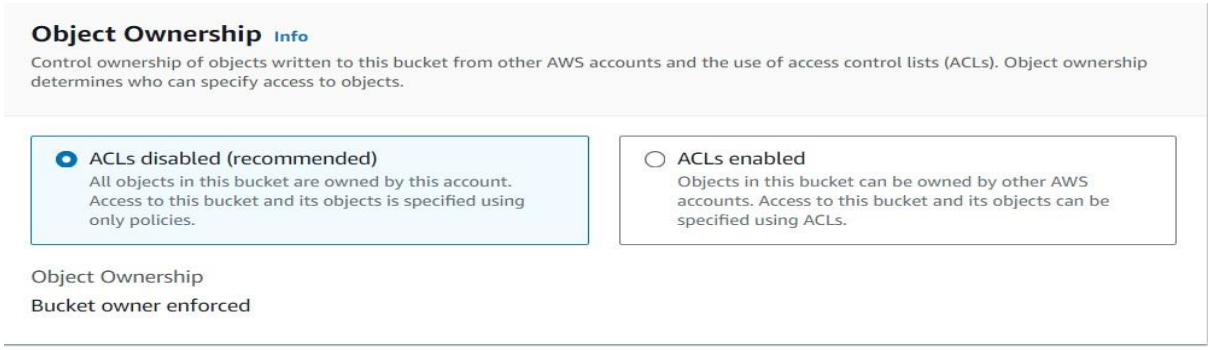
- Go to S3 service.



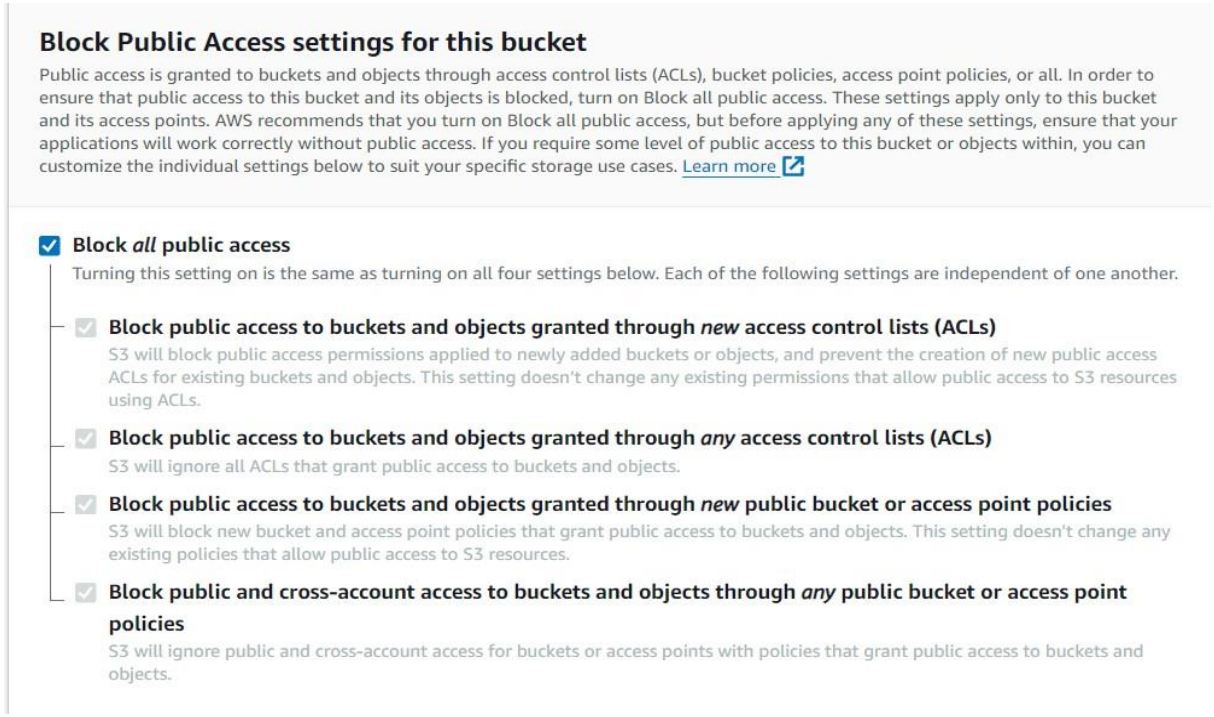
- Click on create bucket→Name→Bucket type→



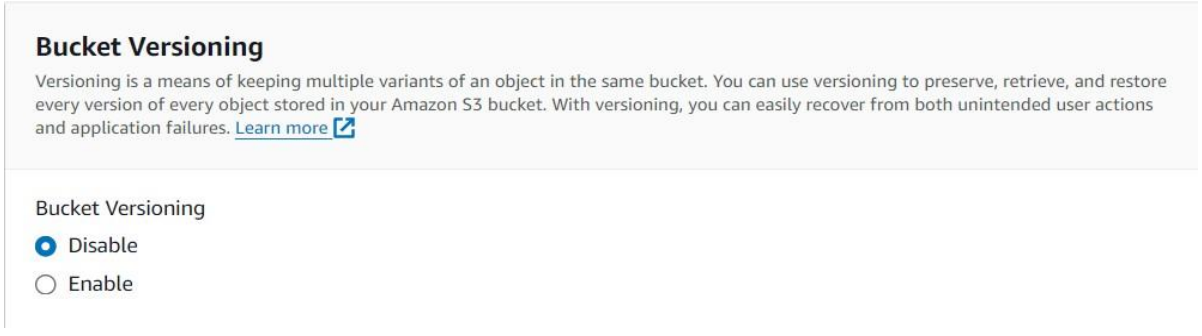
- To make bucket private then mention bucket ownership→1. ACL's is disabled(for private bucket)2. ACL's is enabled(for public bucket).



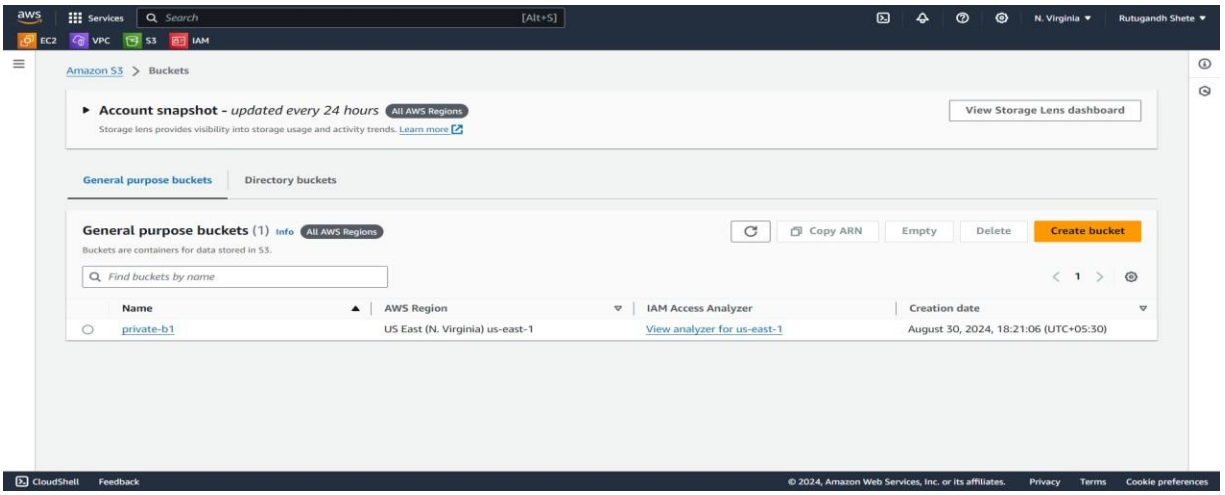
- Check this block to make to private or else we can uncheck it to make it public.



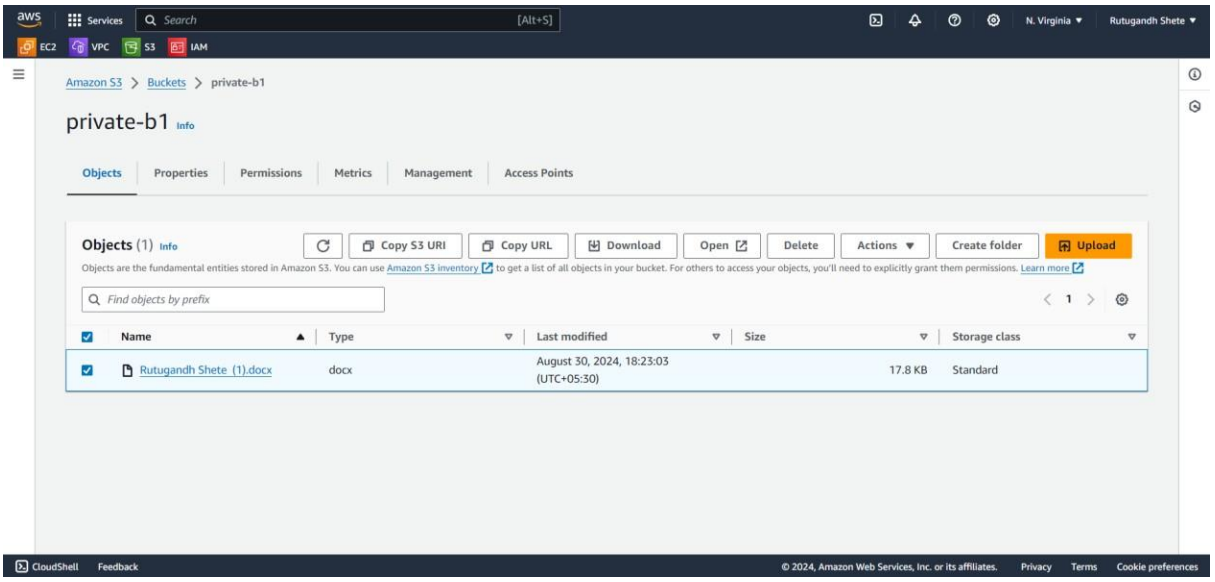
- In Bucket versioning → **Disabled:** The default state where versioning is not enabled, and objects do not have version IDs.
  Enabled: Once versioning is enabled, each object that you upload to the bucket receives a unique version ID.



- After creating bucket



- Add file into that bucket



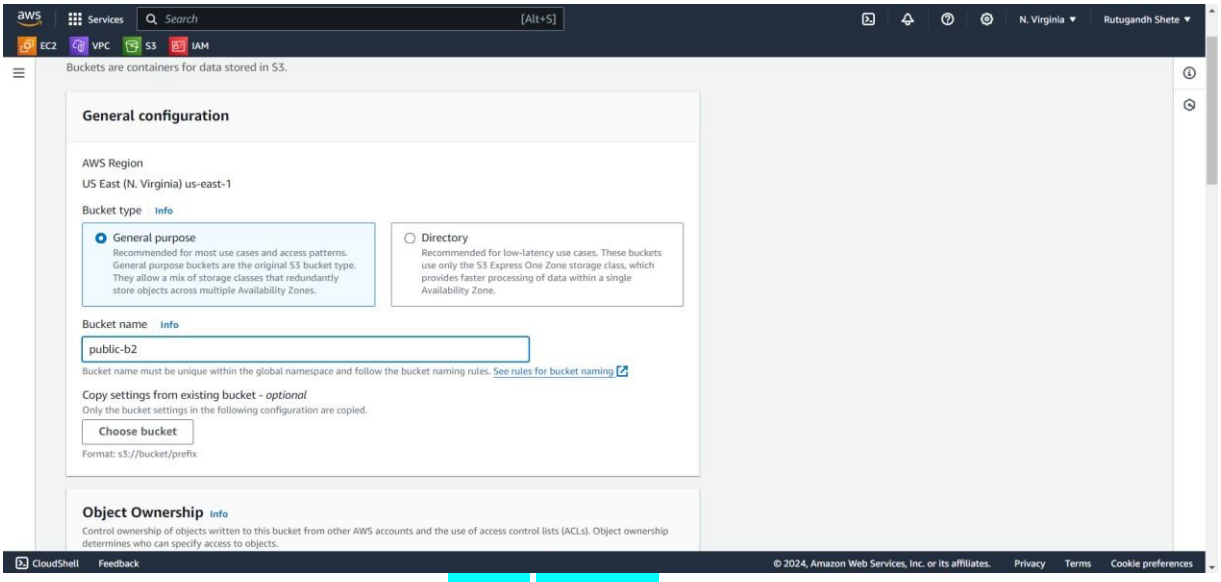
- Copy URL and paste it into browser but we wont be able to access it publicly

Create simple bucket:

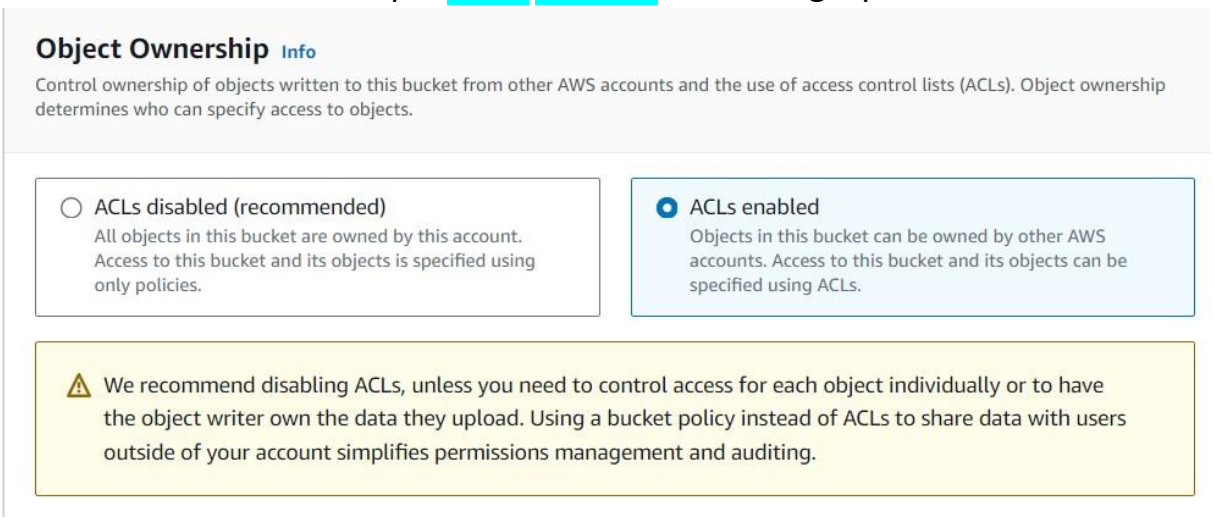
Private-Bucket

Steps:

- Create bucket→Name→bucket type

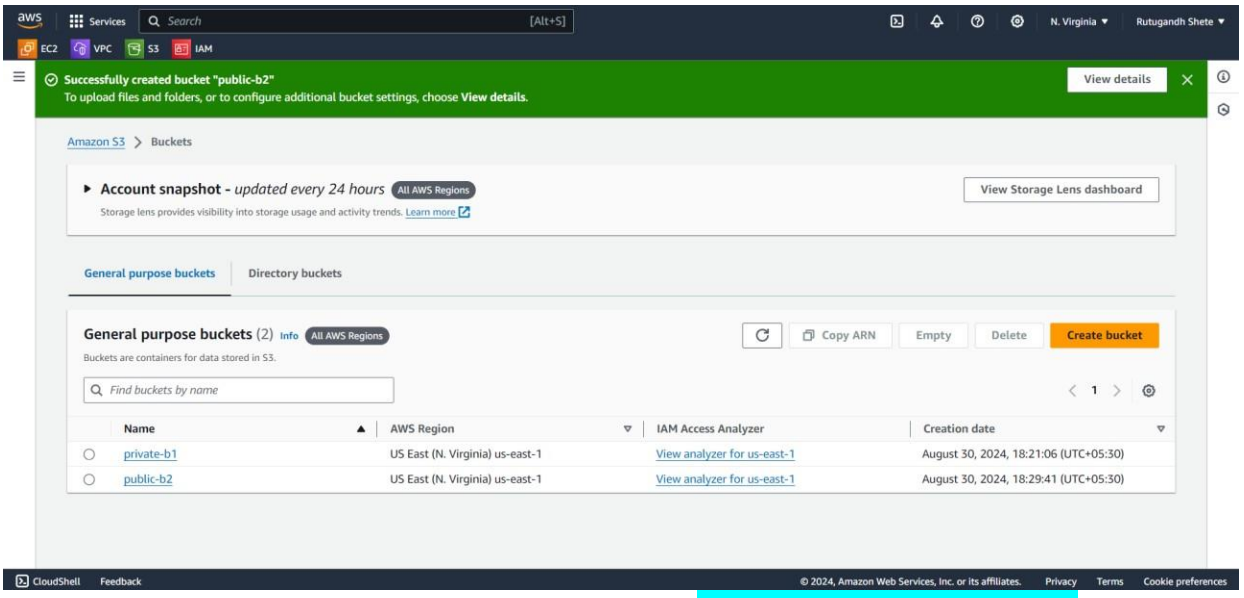


- Mention bucket ownership→ACL's enabled for making it public.

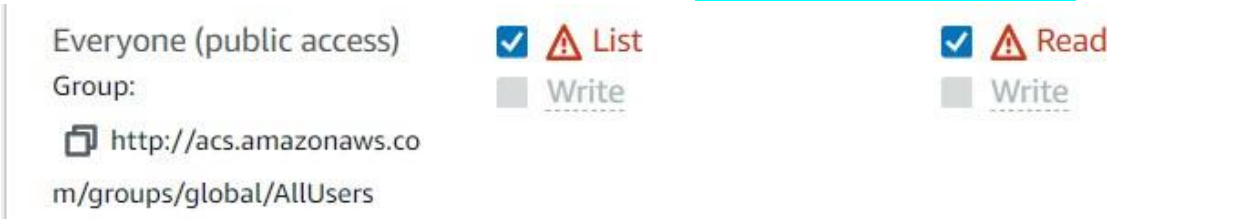


- Uncheck this block

- After creating it

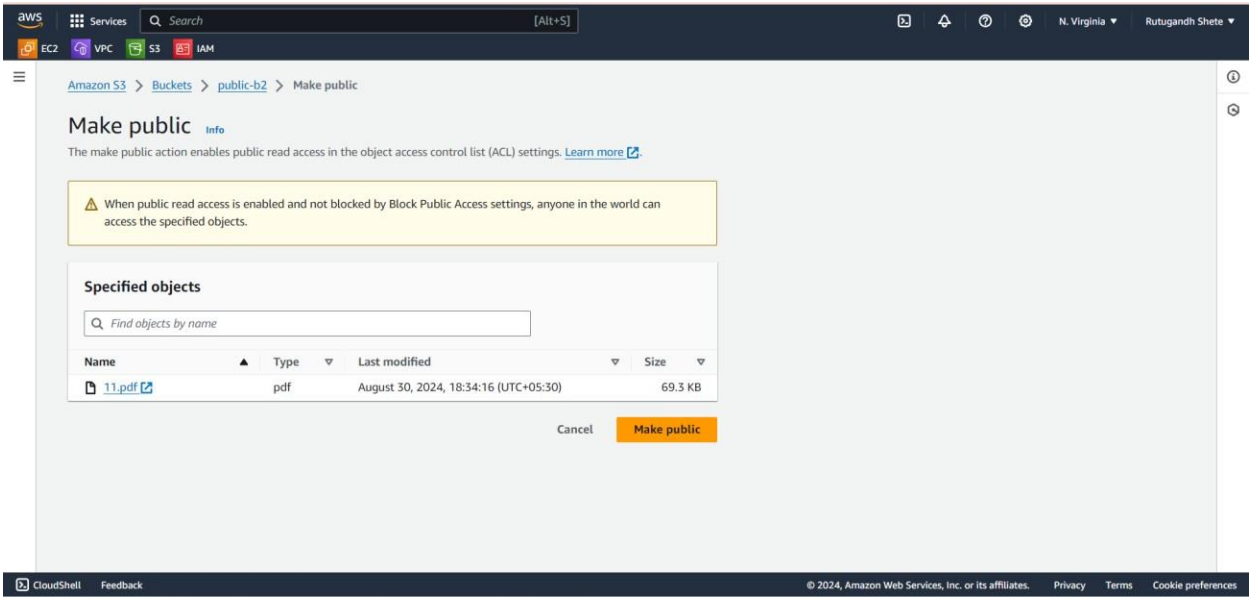


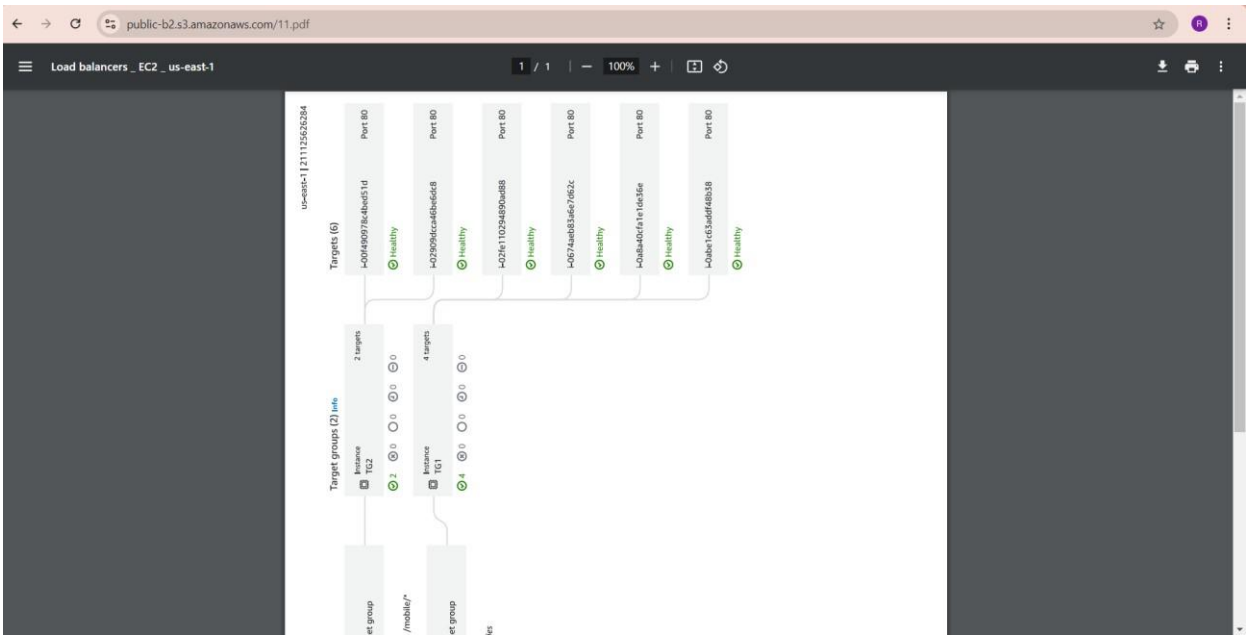
- Click on bucket→permissions→ACL's→edit→check box to list and read.



- We can give access to other AWS acoount

- Add one file into bucket→click on that file →actions→make it public using ACL

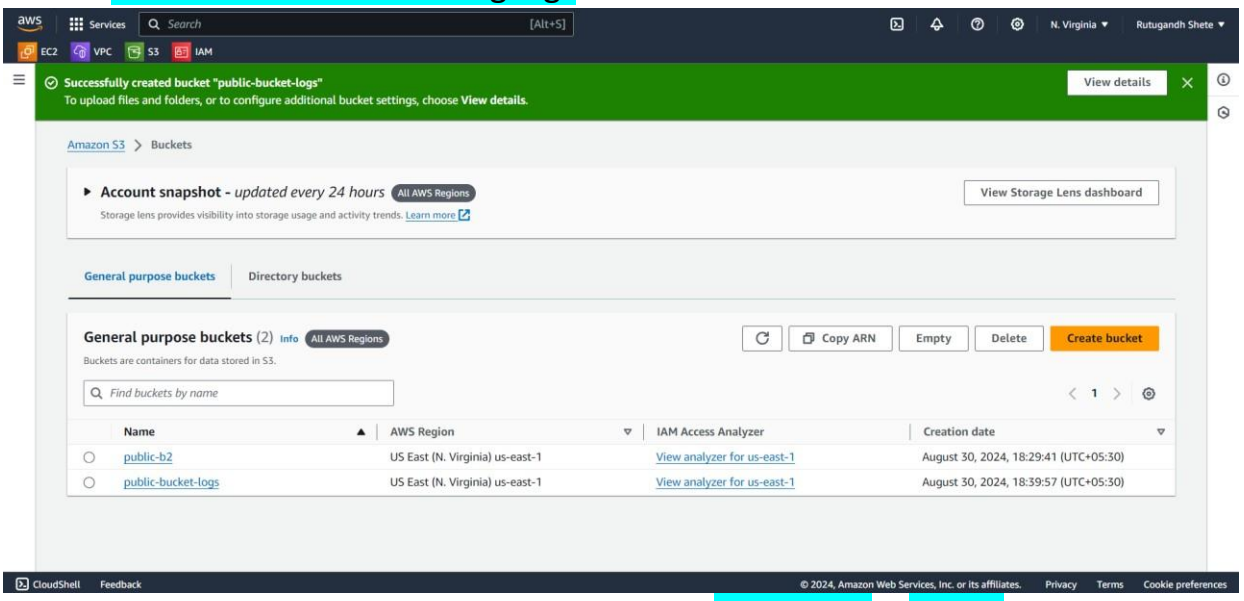



public-b2.s3.amazonaws.com/11.pdf
Load balancers _ EC2 _ us-east-1
1 / 1
100%
Targets (6)
Port 80
Healthy
Target groups (2) Info
2 targets
4 targets
Instance
TG2
TG1
/mobile/*

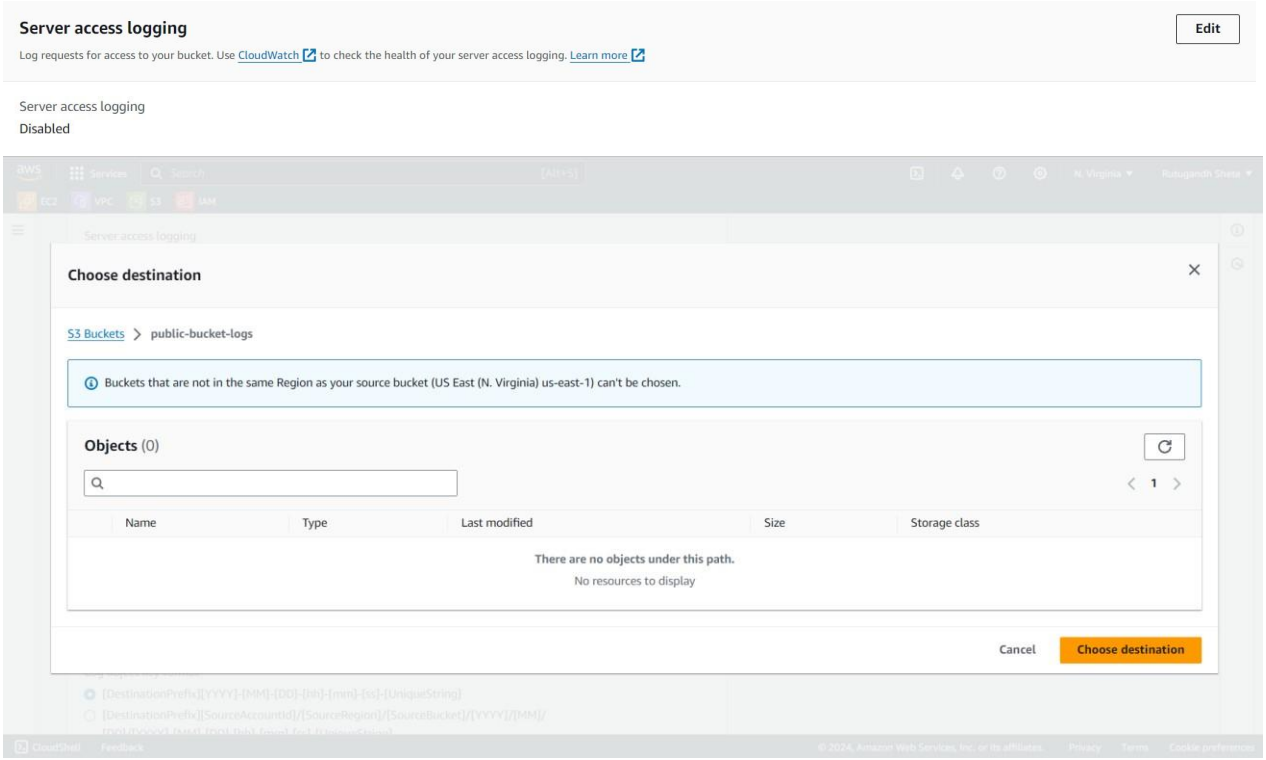
Storing logs into another bucket.

Steps:

- Create another bucket for storing logs into that bucket.



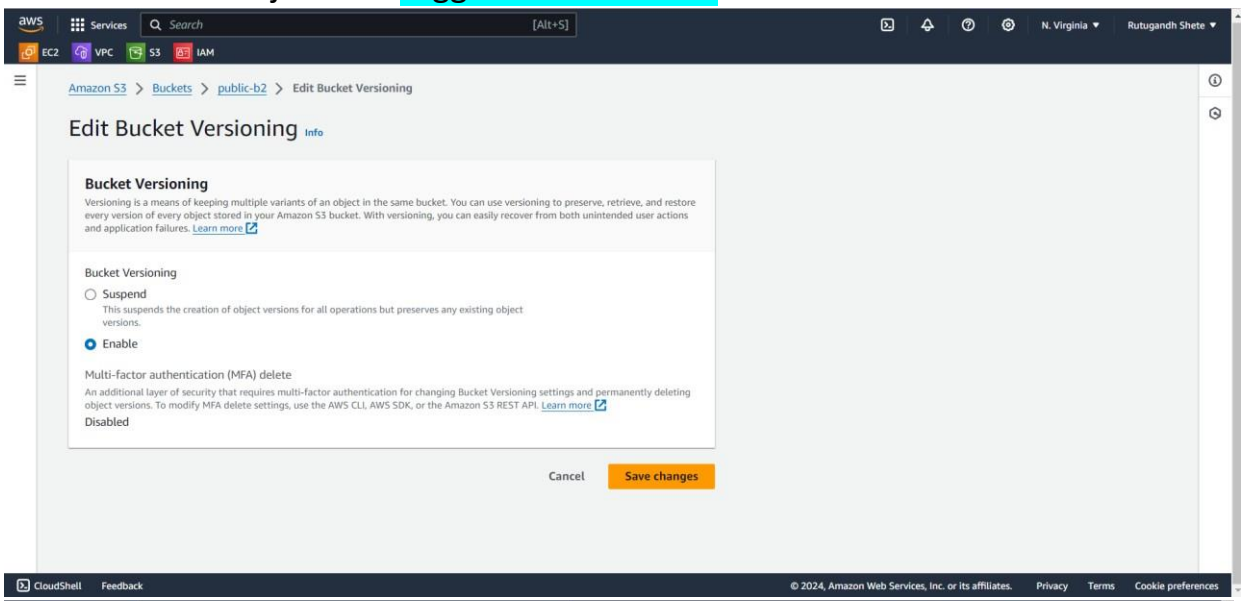
- Select bucket that we are going to check logs→properties→server logging→edit→enable→select bucket into which we are going to put all the logs

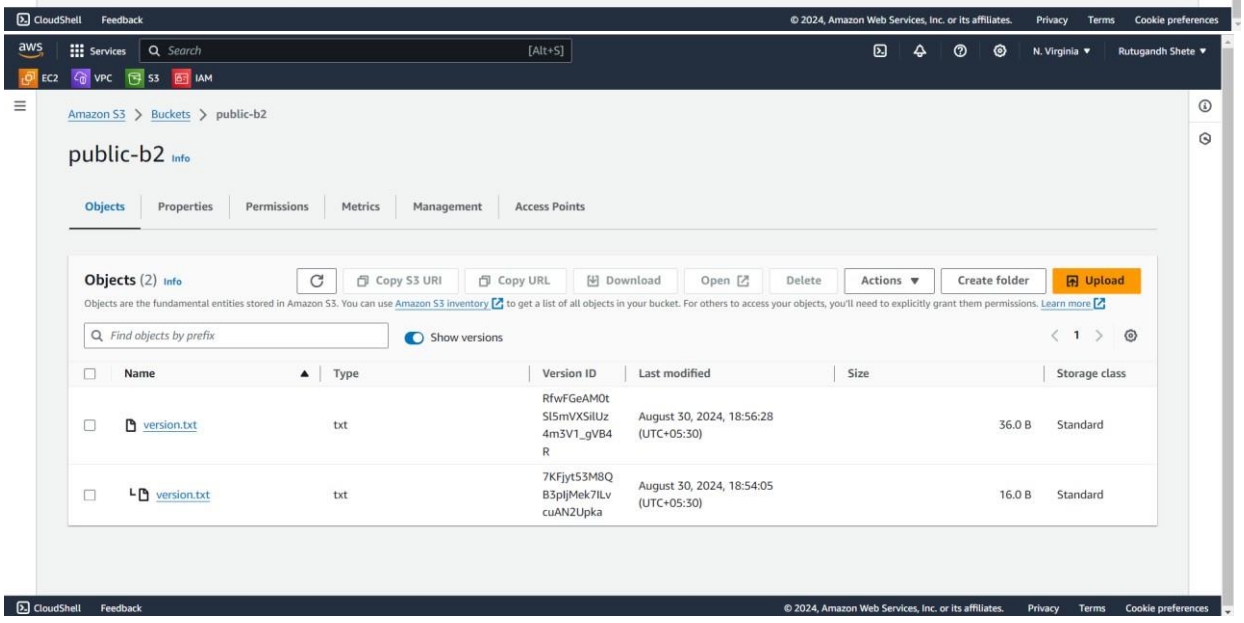


Versioning of bucket

Steps:

- Create bucket while creating it mention bucket versioning enable→add file into it →click on that object and toggle show versions.

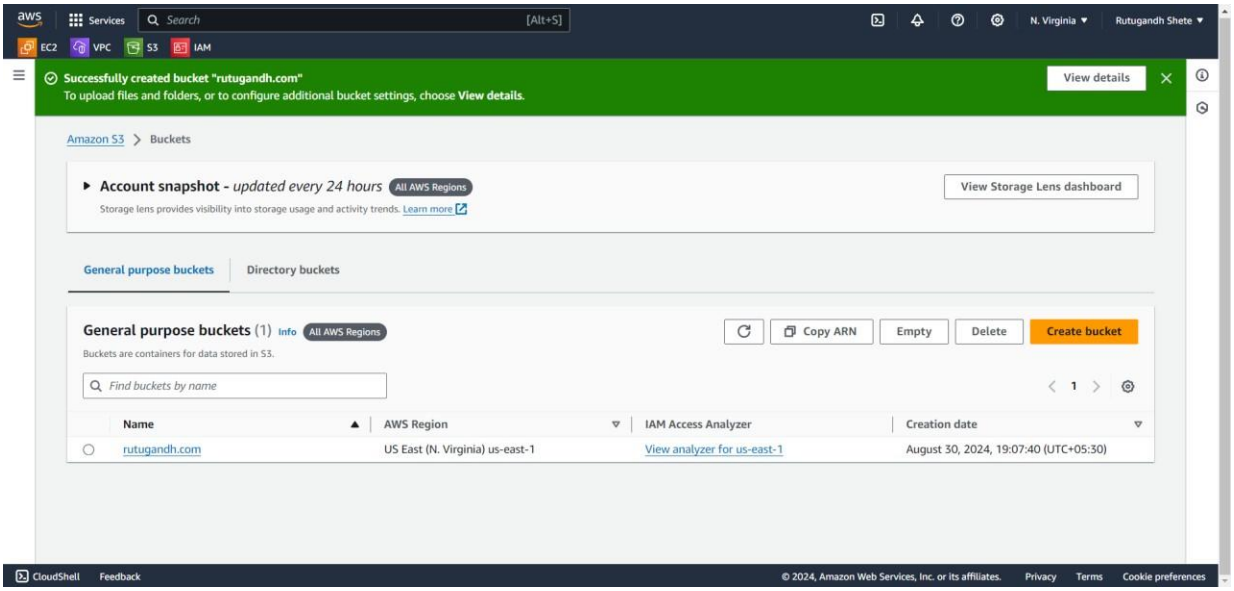




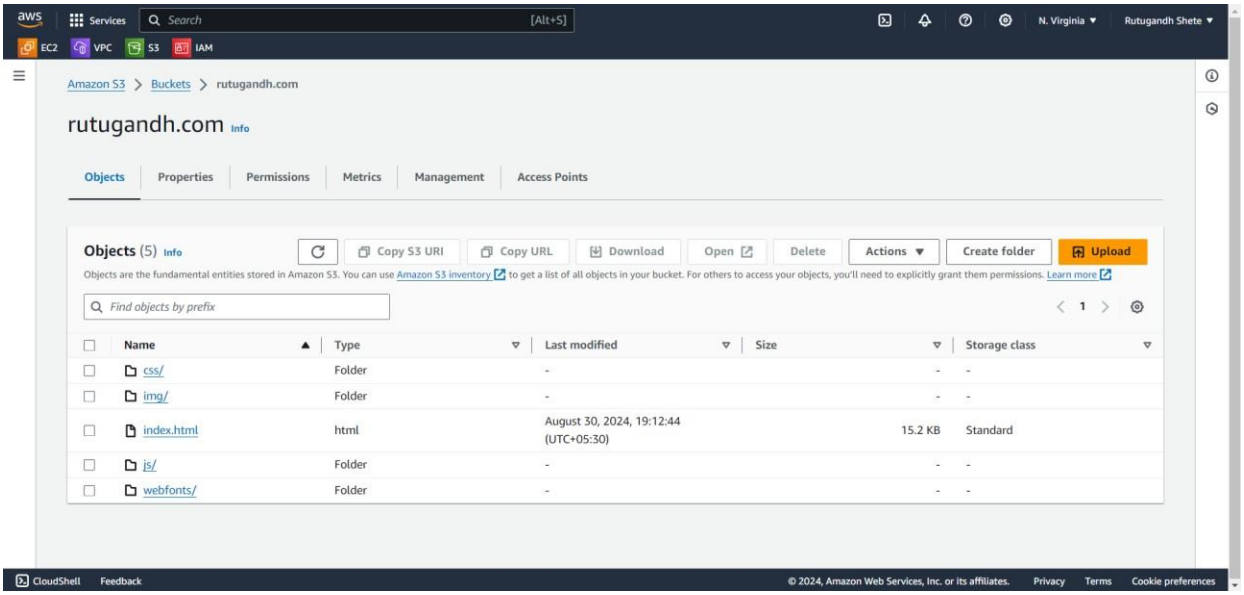
Hosting one static website:

Steps:

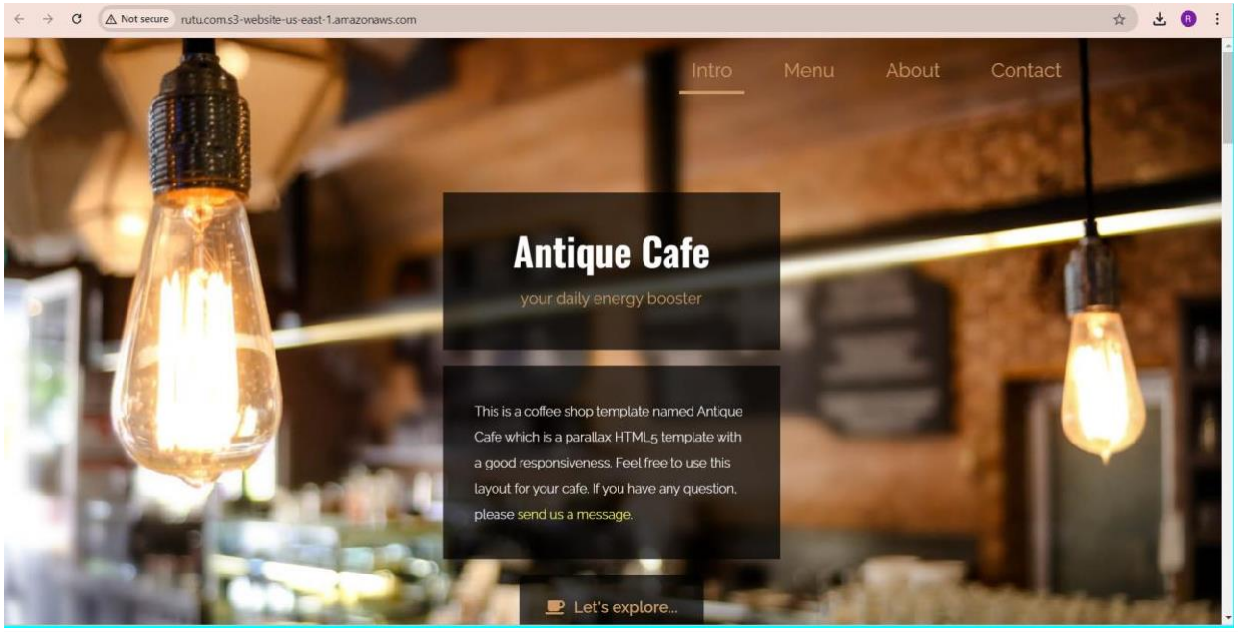
- Create bucket →ACL's is enabled→uncheck the public block→create bucket



- Download free template and all files into that bucket



- After adding files→go to properties→edit→enable→give html file name→save changes→make it public→paste static website URL on the browser.



Static website hosting

Use this bucket to host a website or redirect requests. Learn more

Edit

Static website hosting

Disabled

S3 storage classes.

1.General purpose

Amazon S3 Standard (S3 Standard)

S3 Standard offers high durability, availability, and performance object storage for frequently accessed data. Because it delivers low latency and high throughput, S3 Standard is appropriate for a wide variety of use cases, including cloud applications, dynamic websites, content distribution, mobile and gaming applications, and big data analytics.

Key features:

- General purpose storage for frequently accessed data
- Low latency and high throughput performance
- Designed to deliver 99.99% availability with an availability SLA of 99.9%

2. Amazon S3 Intelligent-Tiering (S3 Intelligent-Tiering)

The first cloud storage automatically decreases the user's storage cost. It provides very cost-effective access based on frequency, without affecting other performances. It also manages tough operations. Amazon S3 Intelligent – Tiering reduces the cost of granular objects automatically. No retrieval charges are there in Amazon S3 Intelligent – Tiering.

Characteristics of S3 Intelligent-Tiering

- Required less monitoring and automatically tier charge.
- No minimum storage duration and no recovery charges are required to access the service.
- Availability criteria are quite good like 99.9%.
- Durability of S3 Intelligent- Tiering is 99.999999999%.\
  Amazon S3 Express One Zone

3. Amazon S3 Express One Zone is a high-performance, single-Availability Zone storage class purpose-built to deliver consistent single-digit millisecond data access for your most frequently accessed data and latency-sensitive applications. S3 Express One Zone can improve data access speeds by 10x and reduce request costs by 50% compared to S3 Standard. While you have always been able to choose a specific AWS Region to store your S3 data, with S3 Express One Zone you can select a specific AWS Availability Zone within an AWS Region to store your data. You can choose to co-locate your storage and compute resources in the same Availability Zone to further optimize performance, which helps lower compute costs and run workloads faster. With S3 Express One Zone, data is stored in a different bucket type—an Amazon S3 directory bucket—which supports hundreds of thousands of requests per second. Additionally, you can use S3 Express One Zone with services such as Amazon SageMaker Model Training, Amazon Athena, Amazon EMR, and AWS Glue Data Catalog to accelerate your ML and analytics workloads. With S3 Express One Zone, storage automatically scales up or down based on your consumption and need, and you no longer need to manage multiple storage systems for low-latency workloads.

Key features:

- High performance storage for your most frequently accessed data
- Consistent single-digit millisecond request latency
- Improve access speeds by 10x and reduce request costs by 50% compared to S3 Standard
- Designed to deliver 99.95% availability with an availability SLA of 99.9%

4.S3 Standard-(IA)Infrequent Access: Cost-Effective Storage for Less Frequently Used Data

To access the less frequently used data, users use S3 Standard-IA. It requires rapid access when needed. We can achieve high strength, high output, and low bandwidth by using S3 Standard-IA. It is best in storing the backup, and recovery of data for a long time. It acts as a data store for disaster recovery files.

Identifying Suitable Data for S3 Standard-Infrequent Access

To choose which type of data is suitable for the for S3 standard-infrequent access.

- Access Frequency
- Data Size
- Access Latency Requirements
- Data Durability Requirements

Characteristics of S3 Standard-Infrequent Access

- High performance and same action rate.
- Very Durable in all AZs.
- Availability is 99.9% in S3 Standard-IA.
- Durability is of 99.999999999%.

5. S3 Glacier Instant Retrieval: High-Performance Archiving with Rapid Retrieval

It is an archive storage class that delivers the lowest-cost storage for data archiving and is organized to provide you with the highest performance and with more flexibility. S3 Glacier Instant Retrieval delivers the fastest access to archive storage. Same as in S3 standard, Data retrieval in milliseconds

Characteristics of S3 Glacier Instant Retrieval

- It just takes milliseconds to recover the data.
- The minimum object size should be 128KB.
- Availability is 99.9% in S3 glacier Instant Retrieval.
- Durability is of 99.999999999%.

6. S3 One Zone-Infrequent Access: Cost-Optimized Storage for Single Availability Zone

Different from other S3 Storage Classes which store data in a minimum of three Availability Zones, S3 One Zone-IA stores data in a single Availability Zone and costs 20% less than S3 Standard-IA. It's a very good choice for storing secondary backup copies of on-premises data or easily re-creatable data. S3 One Zone-IA provides you the same high durability, high throughput, and low latency as in S3 Standard.

Characteristics of S3 One Zone-Infrequent Access

- Supports SSL (Secure Sockets Layer) for data in transferring and encryption of data.

- Availability Zone destruction can damage the data.
- Availability is 99.5% in S3 one Zone- Infrequent Access.
- Durability is of 99.999999999%.

7.S3 Glacier Flexible Retrieval: Balancing Cost and Retrieval Flexibility for Archiving

It provides low-cost storage compared to S3 Glacier Instant Retrieval. It is a suitable solution for backing up the data so that it can be recovered easily a few times in a year. It just takes minutes to access the data.

Characteristics of S3 Glacier Flexible Retrieval

- Free recoveries in high quantity.
- AZs destruction can lead to difficulty in accessing data.
- when you have to retrieve large data sets, then S3 glacier flexible retrieval is best for backup and disaster recovery use cases.
- Availability is 99.99% in S3 glacier flexible retrieval.
- Durability is of 99.999999999%

8. Amazon S3 Glacier Deep Archive

The Glacier Deep Archive storage class is designed to provide long-lasting and secure long-term storage for large amounts of data at a price that is competitive with off-premises tape archival services that is very cheap. You no longer need to deal with expensive services. Accessibility is very much efficient, that it can restore data within 12 hours. This storage class is designed in such a way that users can easily get long-lasting and more secured storage for a huge amount of data at very less cost. Efficient accessibility and can restore data within very less time, therefore its time complexity is also efficient. S3 Glacier Deep Archive also have the feature of objects replication.

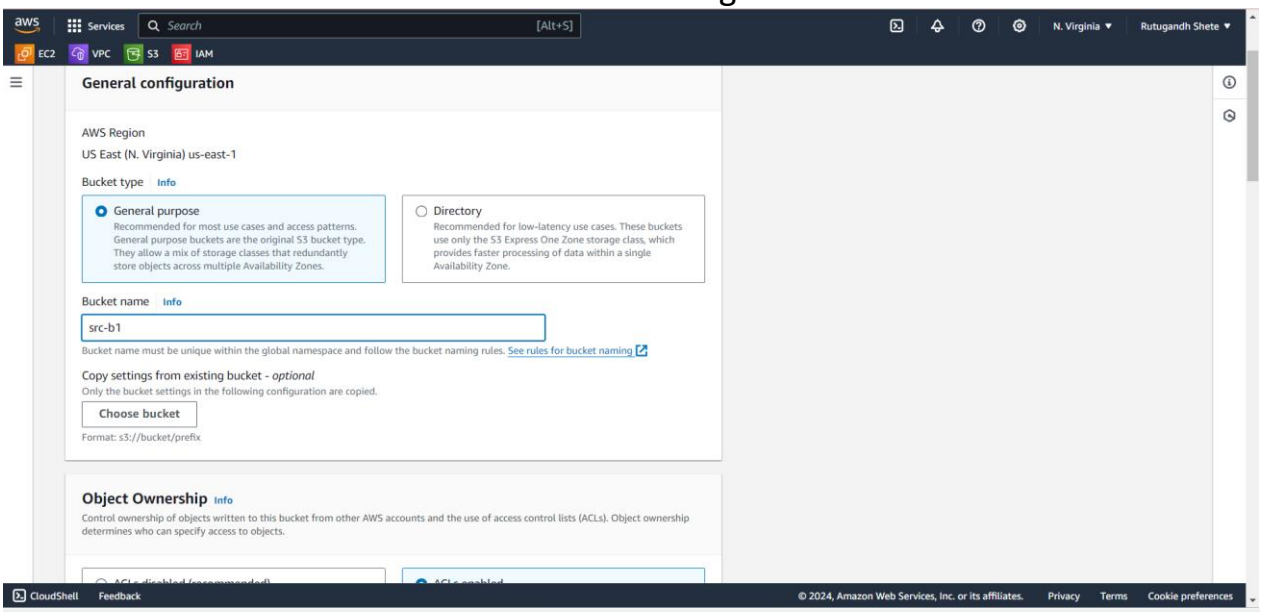
Characteristics of S3 Glacier Deep Archive

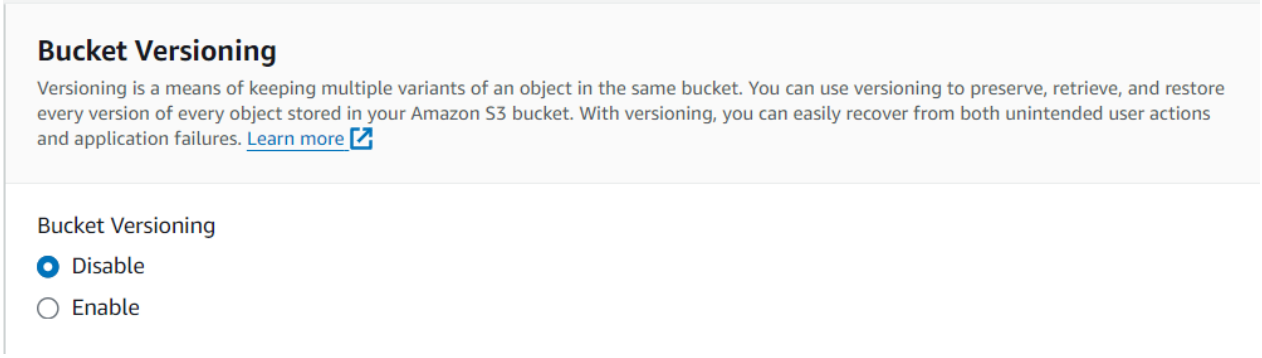
- More secured storage.
- Recovery time is less requiring less time.
- Availability is 99.99% in S3 glacier deep archive.
- Durability is of 99.999999999%.

Replication of bucket object:

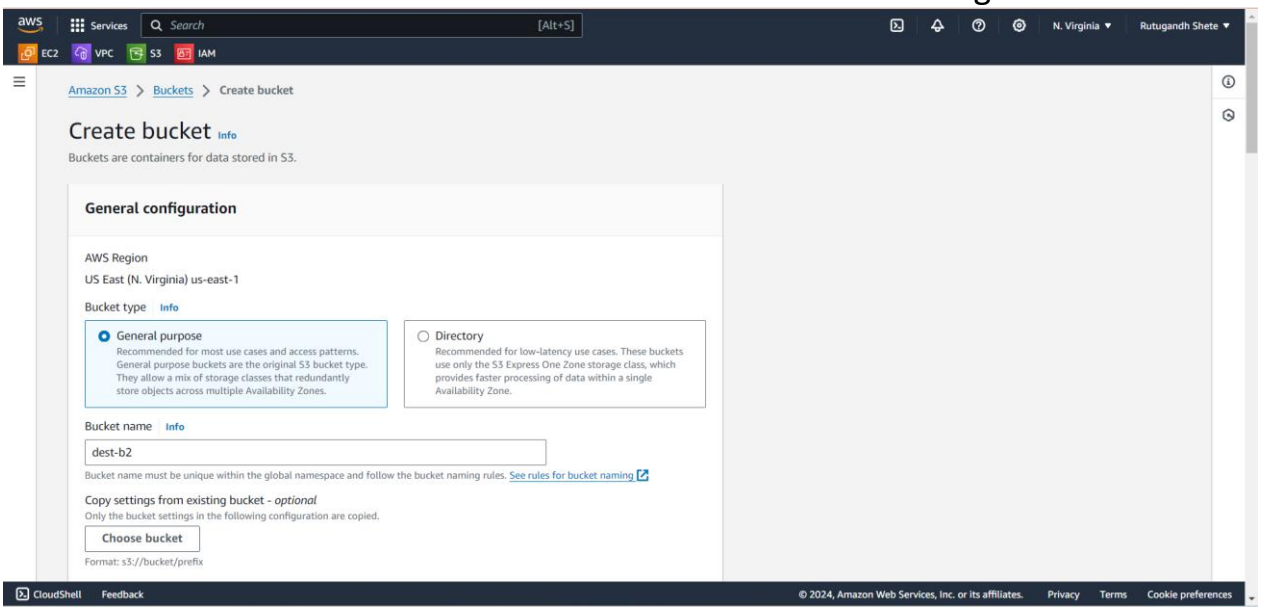
Steps:

- Create 2 s3 buckets one for source and another for destination, while creating s3 buckets ensure that we have enabled versioning. Name→enable versionv

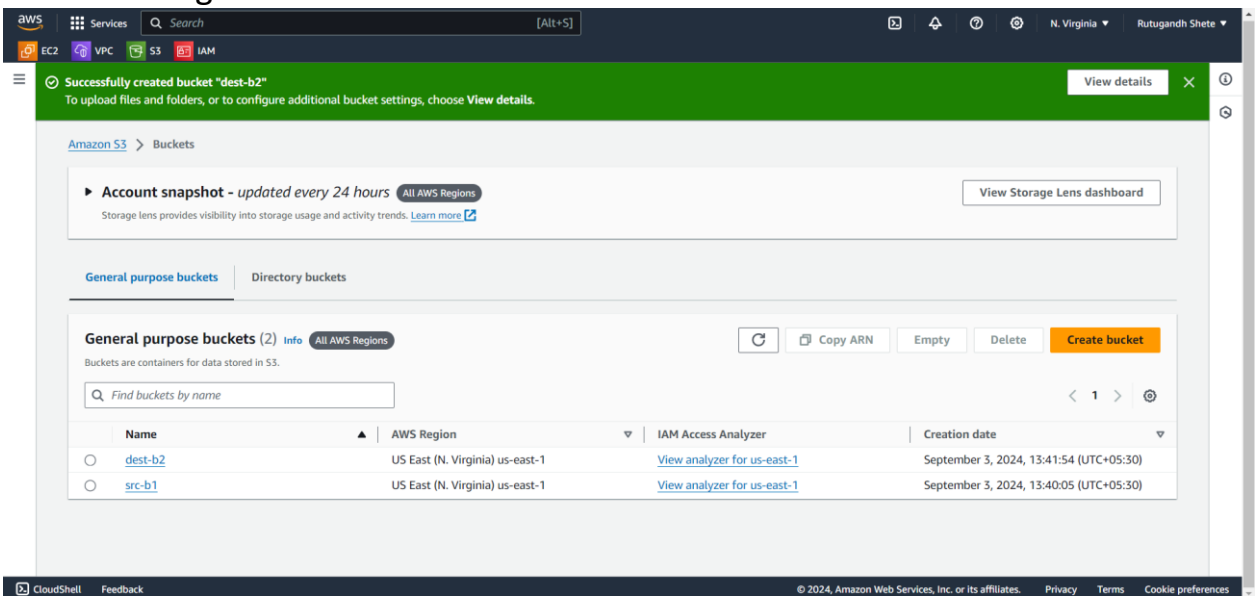




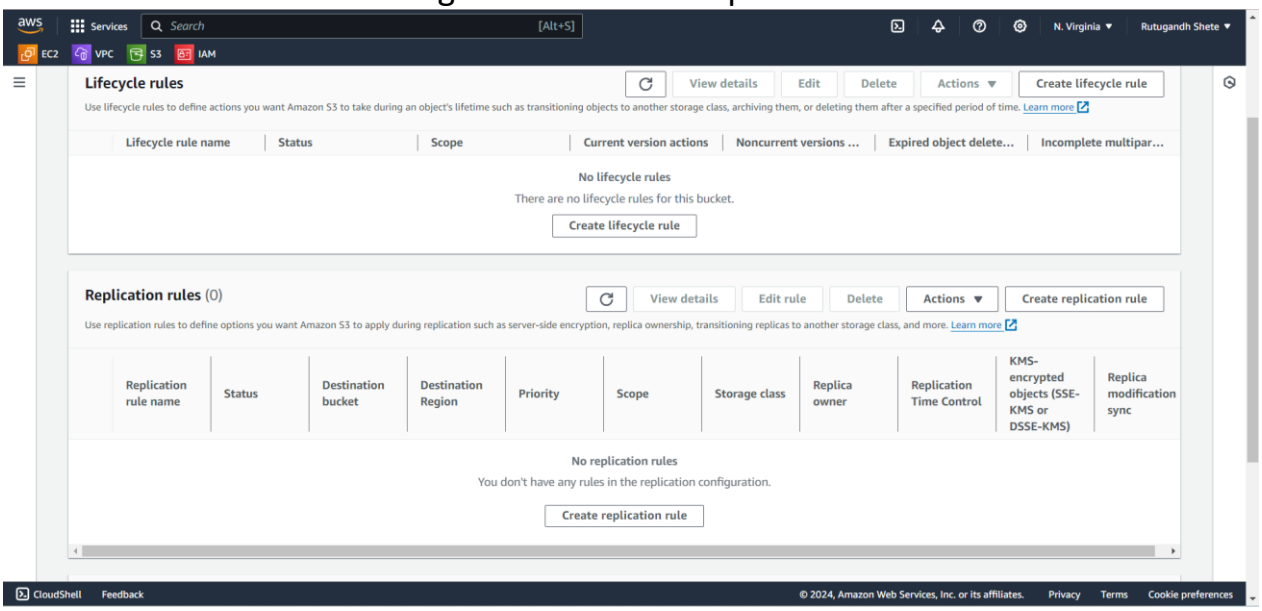
- Create another bucket for destination. Name→enable versioning



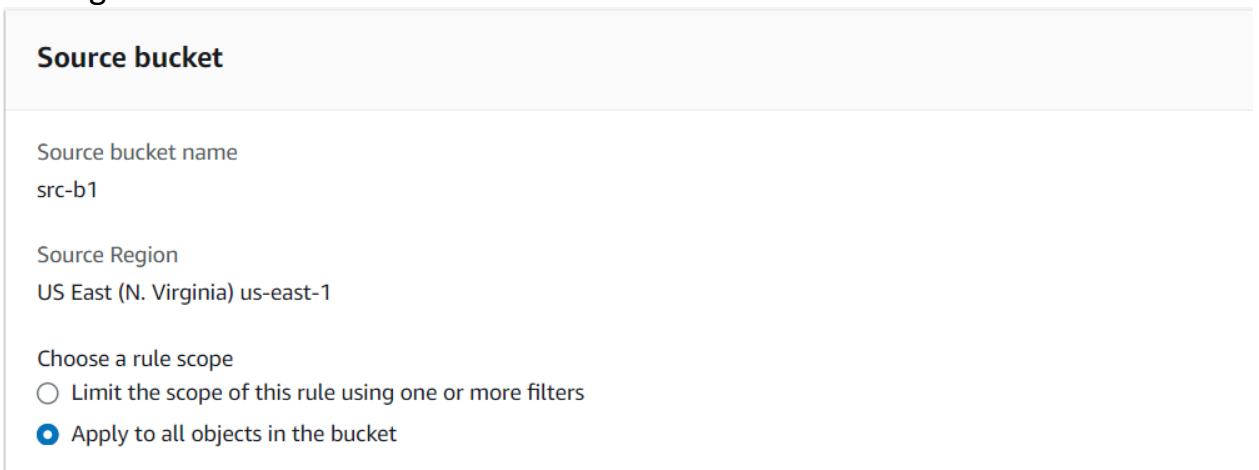
- After creating 2 buckets.



- select source bucket→Management→create replication



- adding the source to bucket.



- choose the destination

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.

dest-b2 | Browse S3

Destination Region

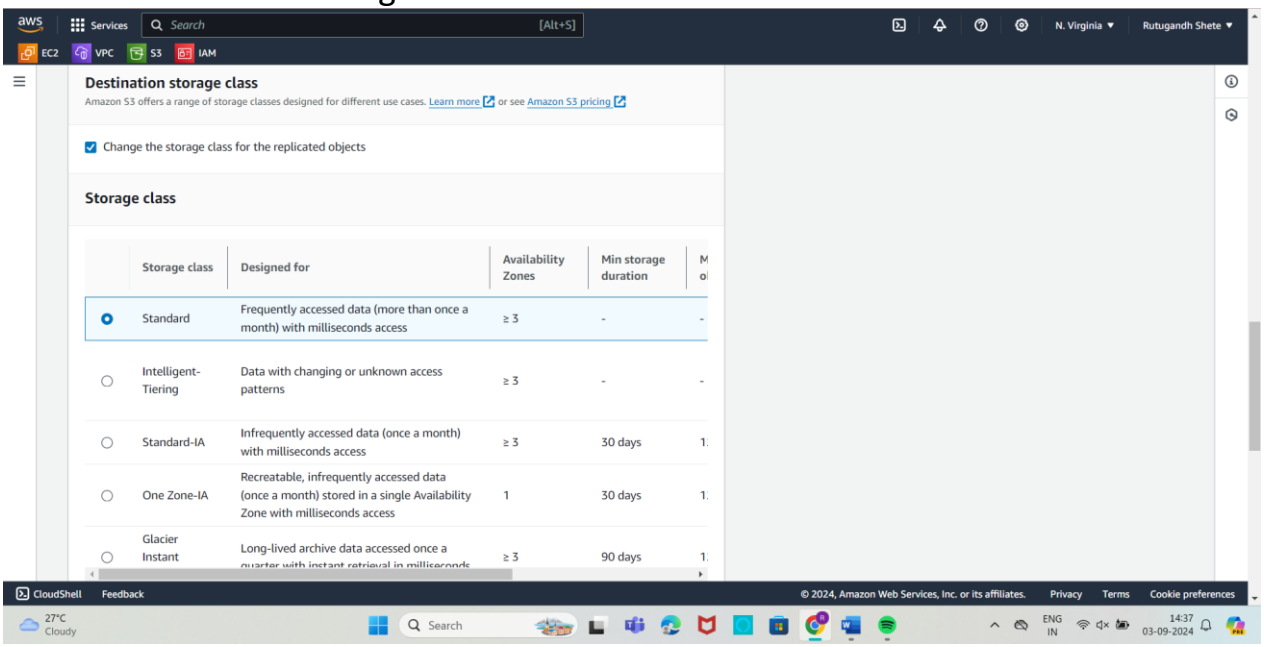
US East (N. Virginia) us-east-1

- set the IAM rule for replication

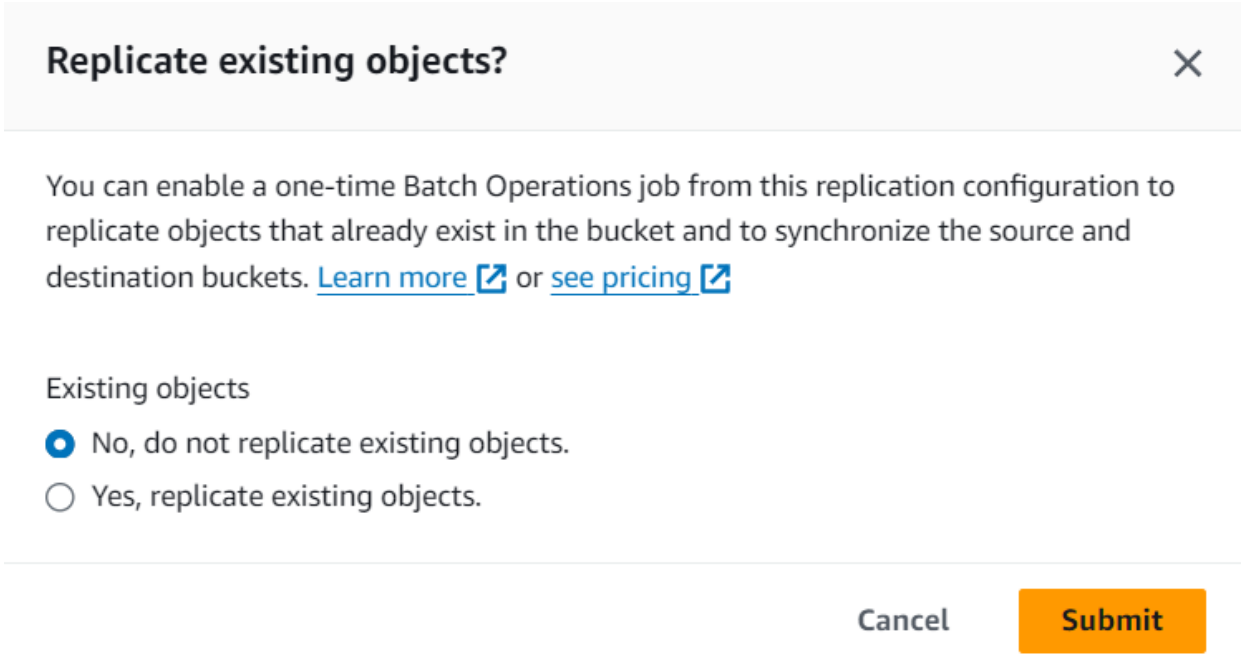
IAM role

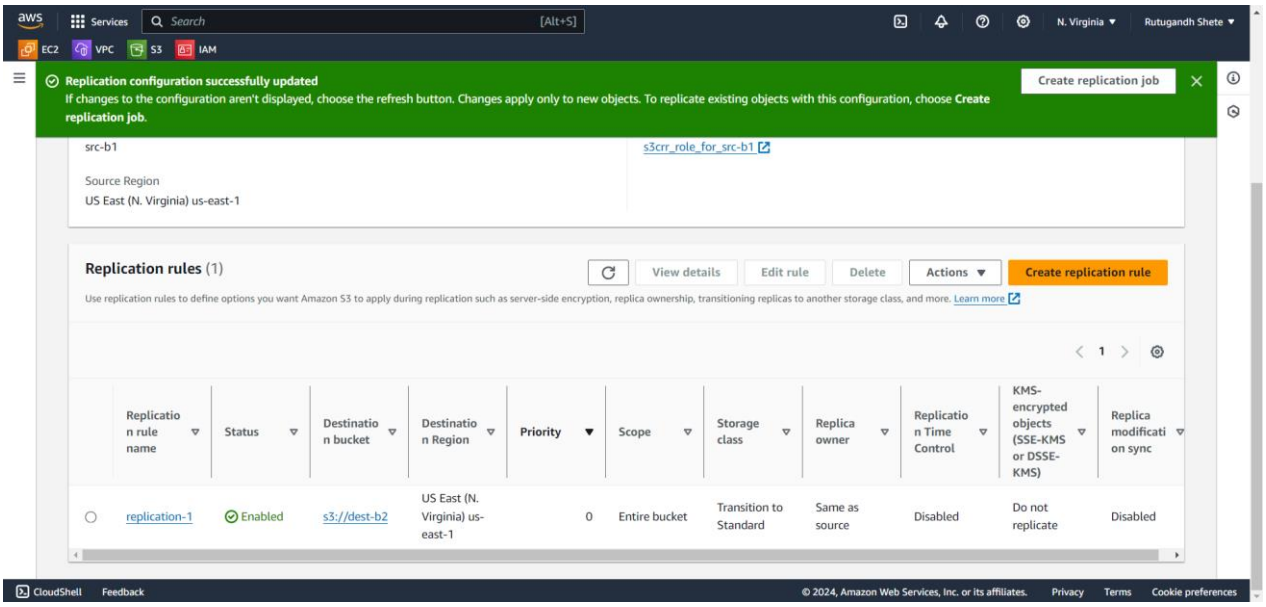
- (•) Create new role
- ( ) Choose from existing IAM roles
- ( ) Enter IAM role ARN

- choose destination storage class.



- after clicking on saving select whether you want to replicate existing object.

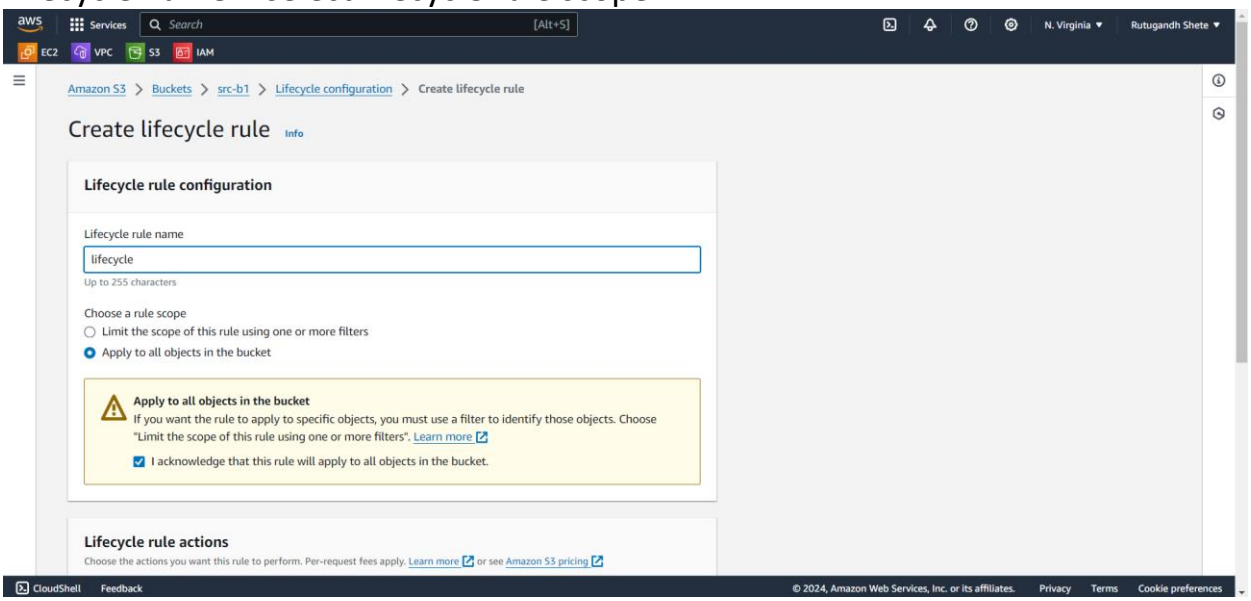




Create life-cycle rule:

Steps:

- Lifecycle name→select lifecycle rule scope.



- Select lifecycle rule action→and also select the transitions period between them. **1.**

1.Transition Actions

Purpose: Move objects to a different storage class to save money.

How It Works: You set a rule that moves your data to a cheaper storage class after a certain number of days.

Example:

You have a file that is frequently accessed for the first 30 days.

After 30 days, you don't need to access it as often, so you set a rule to move it to the **Standard-IA** (Infrequent Access) storage class.

Later, after 90 days, you might move it to **Glacier** for long-term, low-cost storage.

2. Expiration Actions

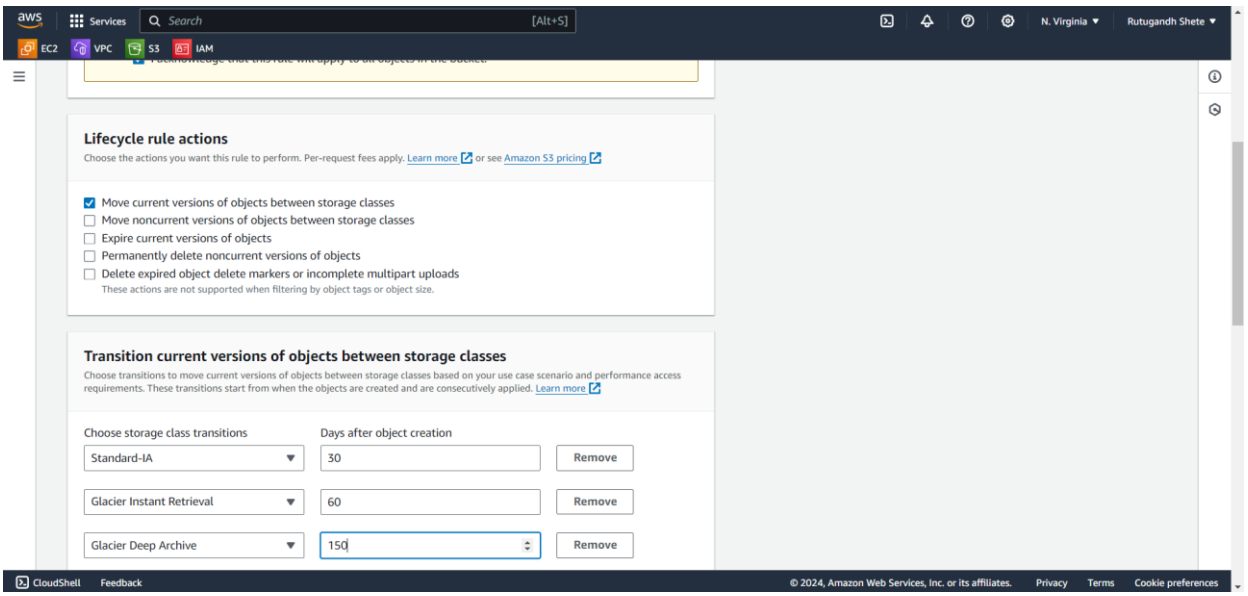
Purpose: Automatically delete objects or their versions after a certain time to free up space.

How It Works: You set a rule that deletes objects or old versions of them after a specified period.

Example:

You have log files that are only useful for 60 days.

You set a rule to delete these files after 60 days.



- To review all the transition