

Lesson 04 Demo 05

Implementing Object Replication Between S3 Buckets

Objective: To demonstrate the replication of an object from a source to a destination S3 bucket using replication rules

Tools required: None

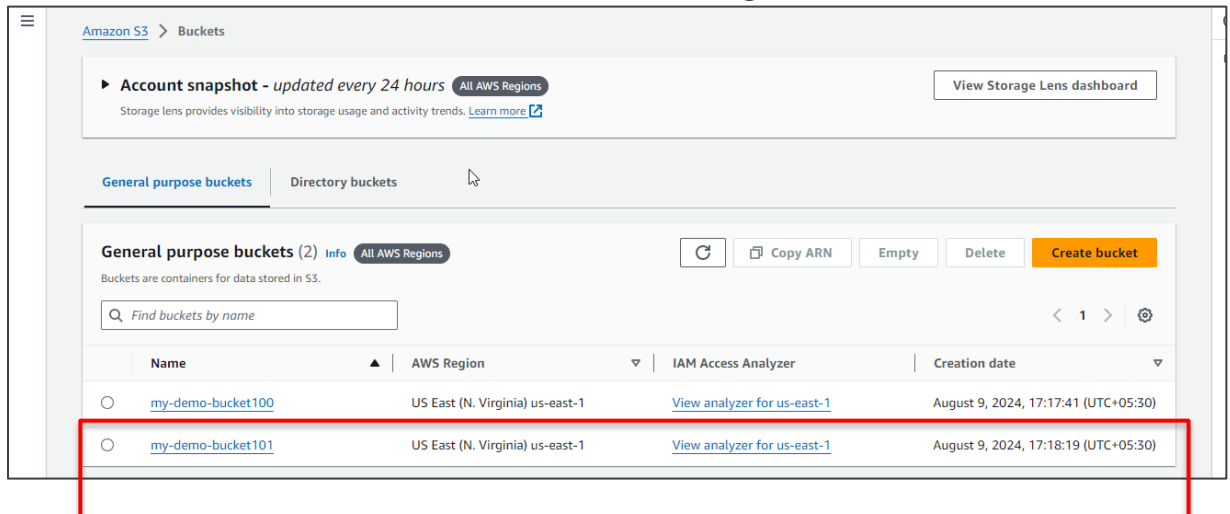
Prerequisites: None

Steps to be followed:

1. Create two S3 buckets for source and destination
2. Add a file to the source bucket
3. Create a replication rule from the source bucket
4. Replicate the object file from the source to the destination bucket
5. Delete and verify the replicated object file

Step 1: Create two S3 buckets for source and destination

1.1 Create two new S3 buckets and use the different AWS regions



The screenshot shows the Amazon S3 console interface. At the top, there's a navigation bar with 'Amazon S3' and 'Buckets'. Below this, there's a section for 'Account snapshot - updated every 24 hours' with a link to 'View Storage Lens dashboard'. The main content area is titled 'General purpose buckets (2)' and includes a search bar 'Find buckets by name'. Below the search bar, there's a table listing the buckets. The table has columns for 'Name', 'AWS Region', 'IAM Access Analyzer', and 'Creation date'. Two buckets are listed: 'my-demo-bucket100' and 'my-demo-bucket101', both in the 'US East (N. Virginia) us-east-1' region. The second row is highlighted with a red box.

| Name | AWS Region | IAM Access Analyzer | Creation date |
|-------------------|---------------------------------|---|--------------------------------------|
| my-demo-bucket100 | US East (N. Virginia) us-east-1 | View analyzer for us-east-1 | August 9, 2024, 17:17:41 (UTC+05:30) |
| my-demo-bucket101 | US East (N. Virginia) us-east-1 | View analyzer for us-east-1 | August 9, 2024, 17:18:19 (UTC+05:30) |

Note: Refer to the previous demos to understand how to create an S3 bucket

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

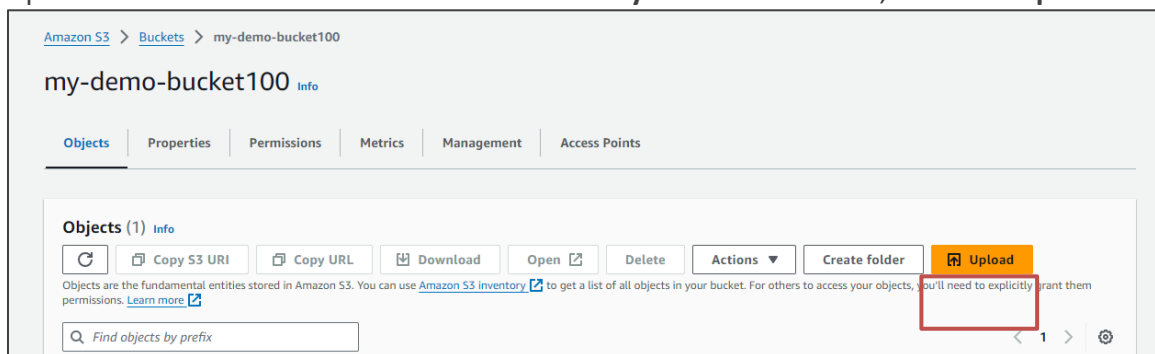
Bucket Versioning

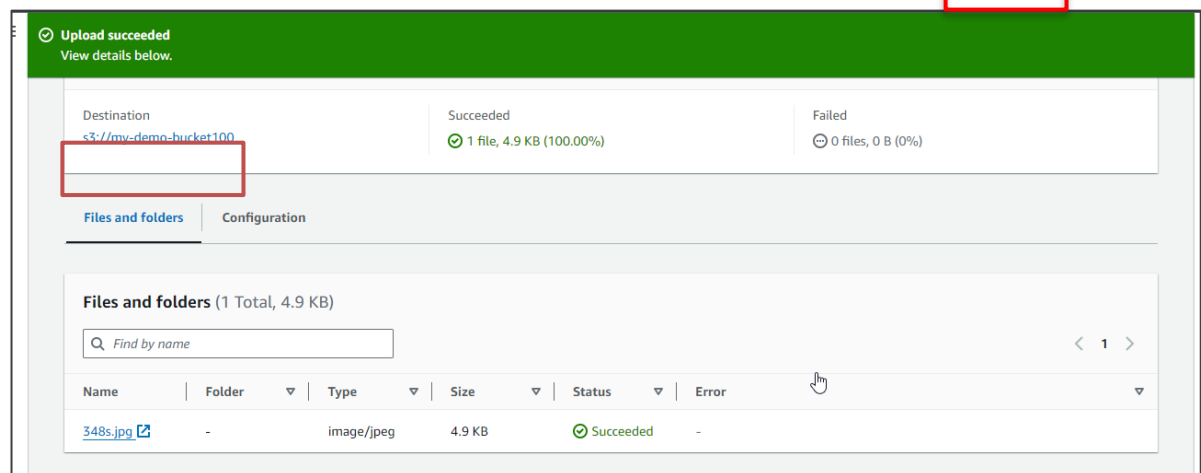
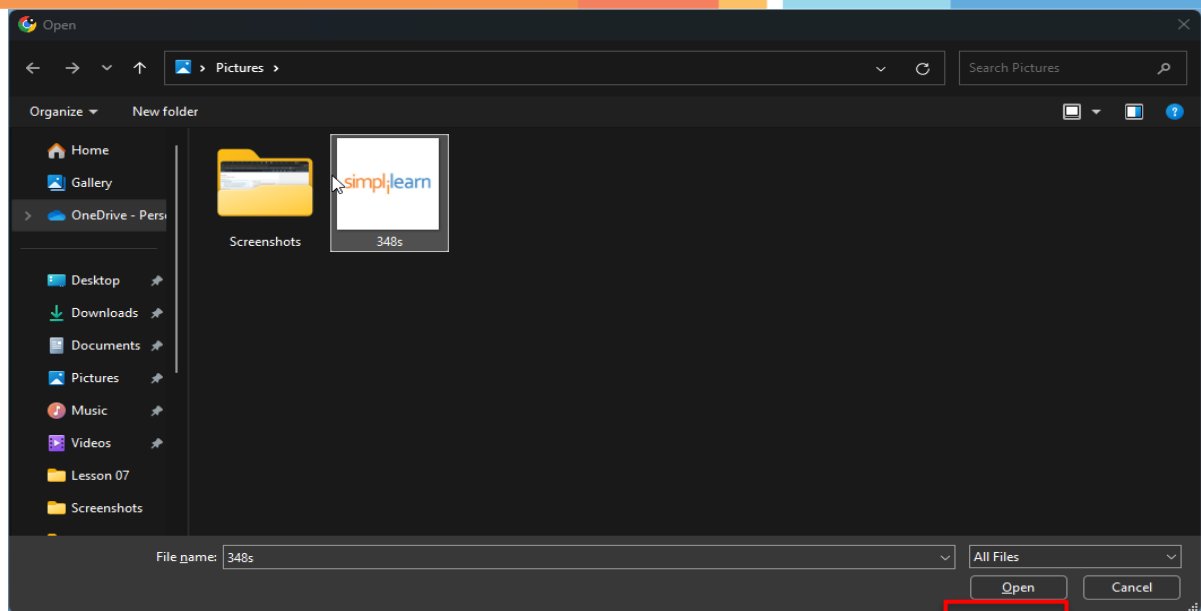
- ☐ Disable
☒ Enable

Note: Ensure that versioning is enabled when creating the buckets, and select different AWS regions for each bucket

Step 2: Add a file to the source bucket

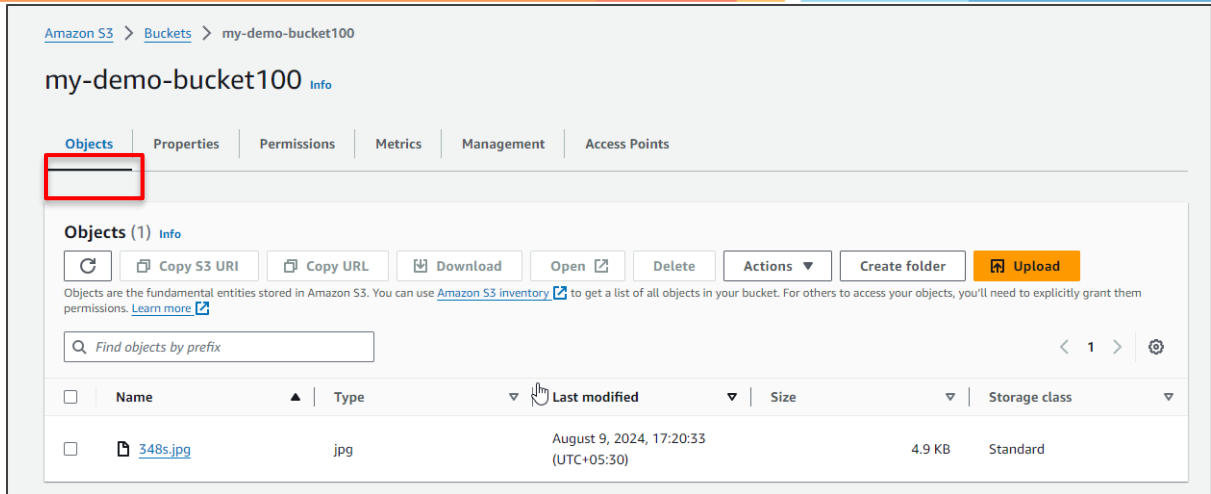
2.1 Upload a JPG file to the source bucket named **my-demo-bucket100**, and click **Open**





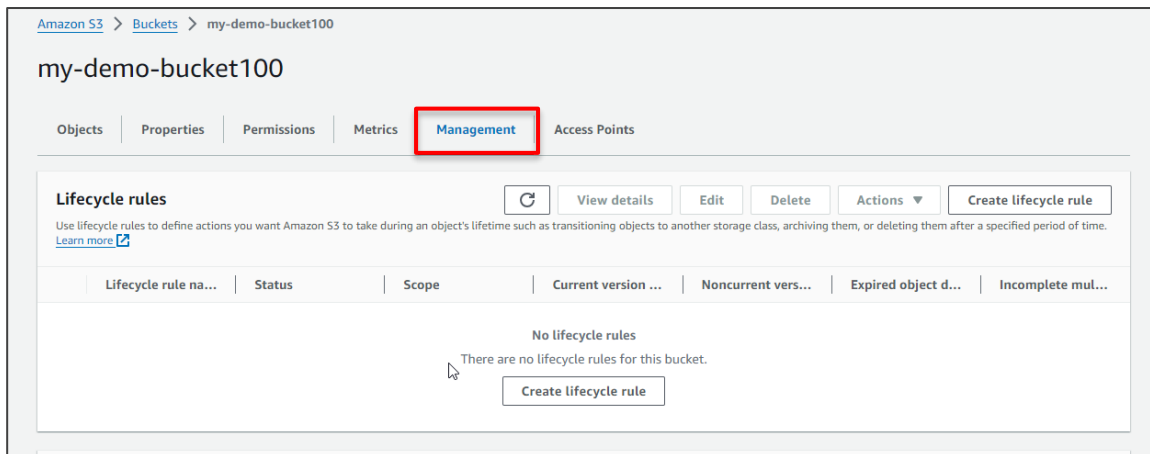
The image has been uploaded successfully.

2.2 Navigate to the **my-demo-bucket100** bucket and click on **Objects** to verify the file upload



Step 3: Create a Replication rule from the source bucket

- 3.1 Navigate to the **Management** tab of the source bucket, **my-demo-bucket100**, click on **Create replication rule**; enter the name **Demo rule** under **Replication rule name**, and select **Enabled** under Status



Replication rules (0) [View details](#) [Edit rule](#) [Delete](#) [Actions ▼](#) [Create replication rule](#)

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](#)

| Replication rule name | Status | Destination bucket | Destination Region | Priority | Scope | Storage class | Replica owner | Replication Time Control | KMS-encryption object (SSE- or DS KMS) |
|--|--------|--------------------|--------------------|----------|-------|---------------|---------------|--------------------------|--|
| No replication rules | | | | | | | | | |
| You don't have any rules in the replication configuration. | | | | | | | | | |
| Create replication rule | | | | | | | | | |

Inventory configurations (0) [Edit](#) [Delete](#) [Create job from manifest](#) [Create inventory configuration](#)

You can create inventory configurations on a bucket to generate a flat file list of your objects and metadata. These scheduled reports can include all objects in the bucket or be limited to a shared prefix. [Learn more](#)

Replication rule configuration

Replication rule name

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

3.2 Choose the rule scope as **Apply to all objects in the bucket**

Source bucket

Source bucket name

my-demo-bucket100

Source Region

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

Choose a rule scope

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

☒ Apply to all objects in the bucket

Destination

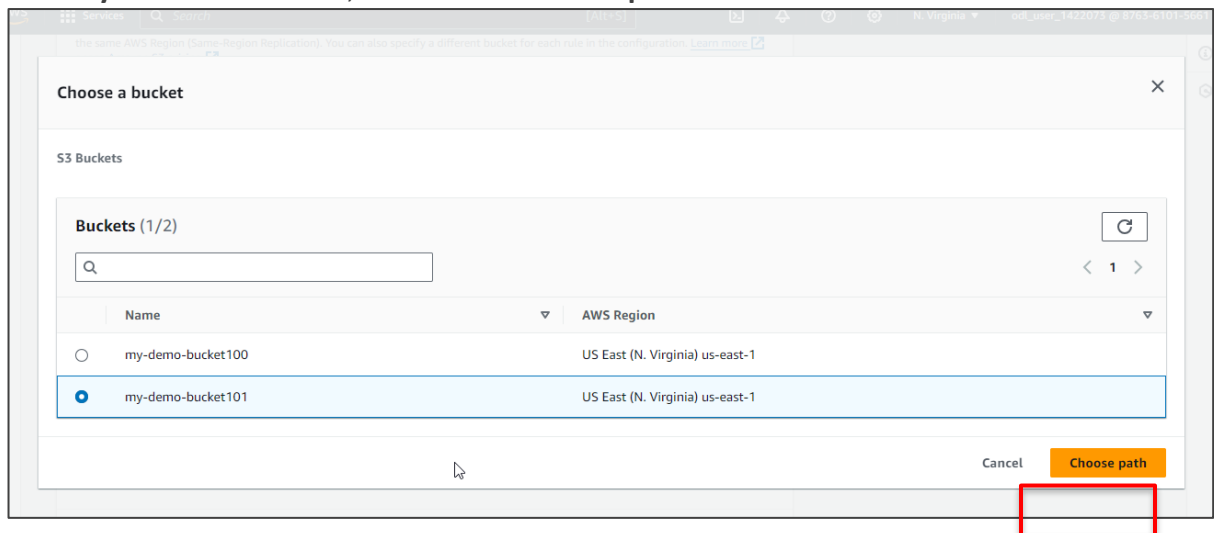
Destination

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](#)

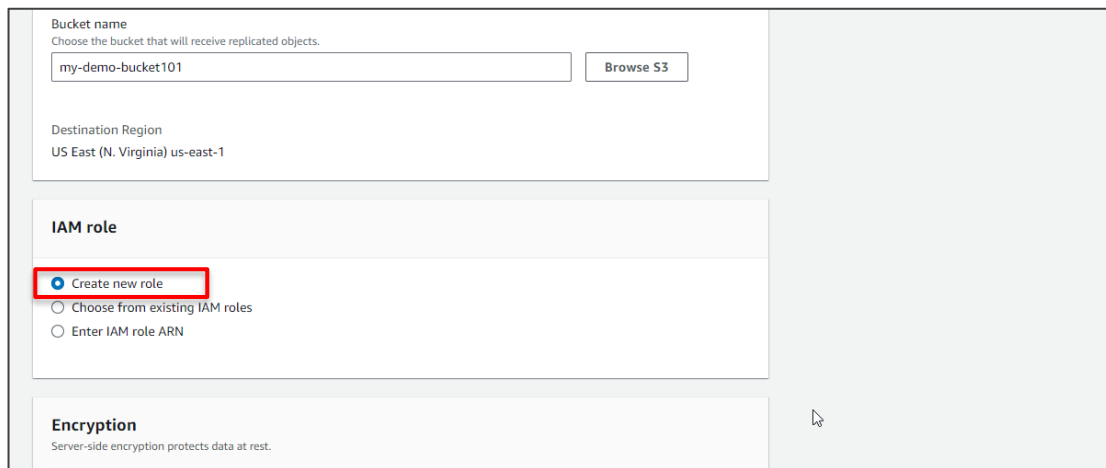
☒ Choose a bucket in this account

☐ Specify a bucket in another account

3.3 Choose **my-demo-bucket101**, and click on **Choose path**



3.4 Click on **Create new role**



3.5 Click on **Delete marker replication** in the Additional replication options before saving the replication rule, and click **Save**

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](#)

☒ **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

3.6 Click on **Submit** without making any changes

yaws-origin-2022 > Replication rules

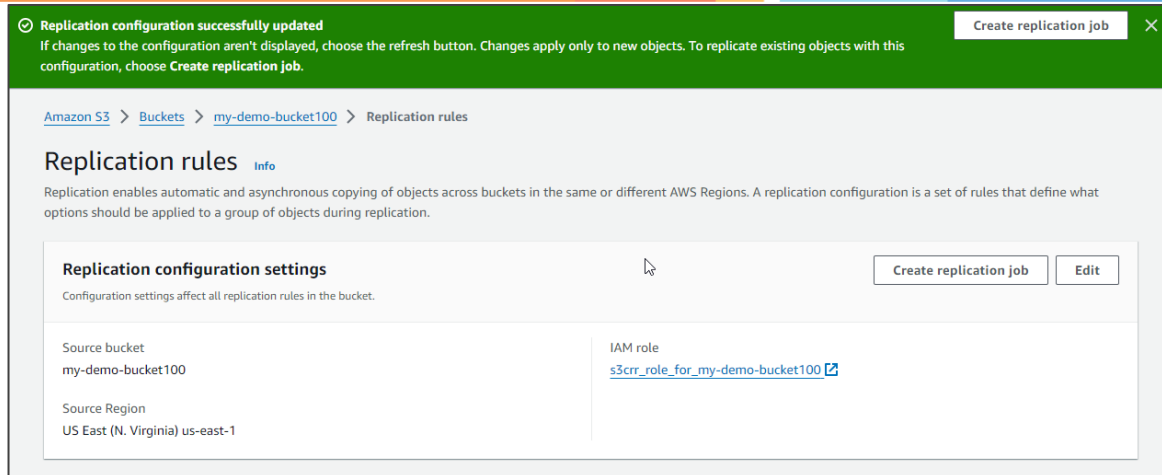
Replicate existing objects?

You can enable a one-time Batch Operations job from this replication configuration to replicate objects that already exist in the bucket and to synchronize the source and destination buckets. [Learn more](#) or [see pricing](#)

Existing objects

☒ No, do not replicate existing objects.
☐ Yes, replicate existing objects.

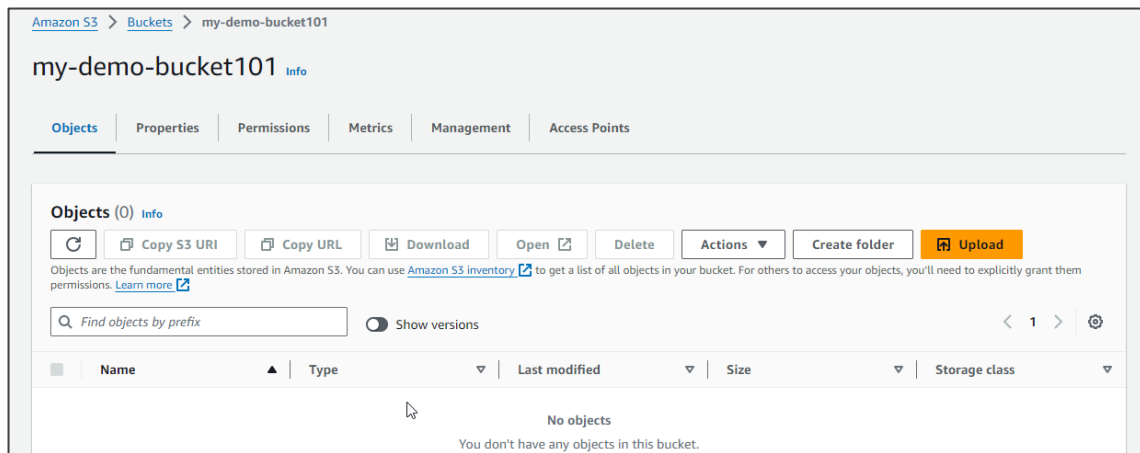
Cancel Submit



The replication rule has been successfully created.

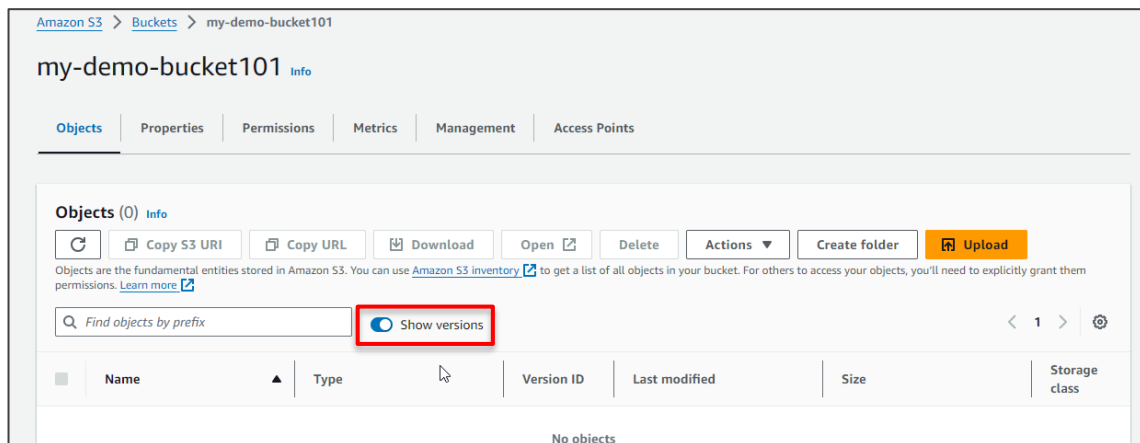
Step 4: Replicate the object file from the source to the destination bucket

4.1 Navigate to the destination bucket, **my-demo-bucket101**, to verify if the object file is present or if the bucket is empty

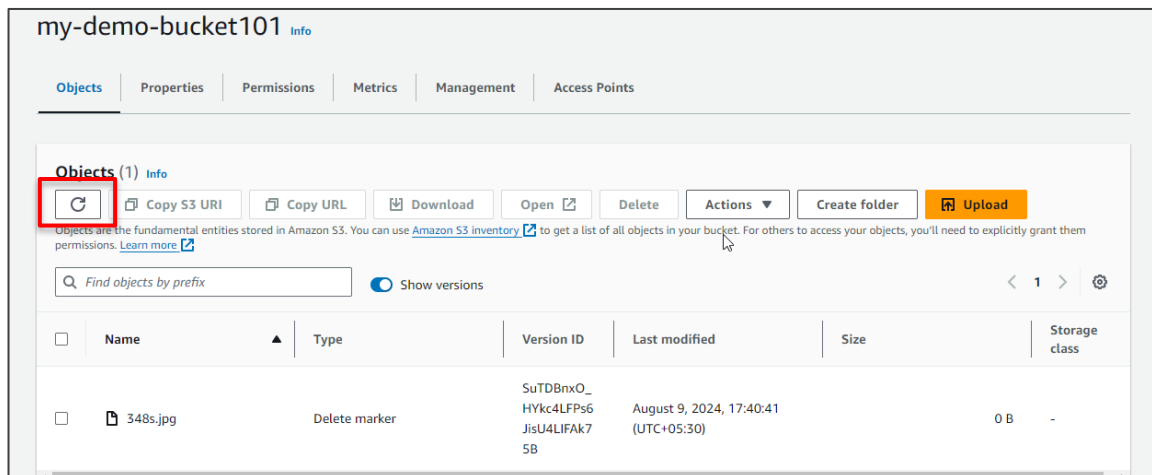


Note: The destination bucket will be empty, as the replication property is set to not replicate existing objects.

- 4.2 Go to the source bucket, **my-demo-bucket101**, to re-upload the object file; click on the **Show versions** tab to view both the uploaded files

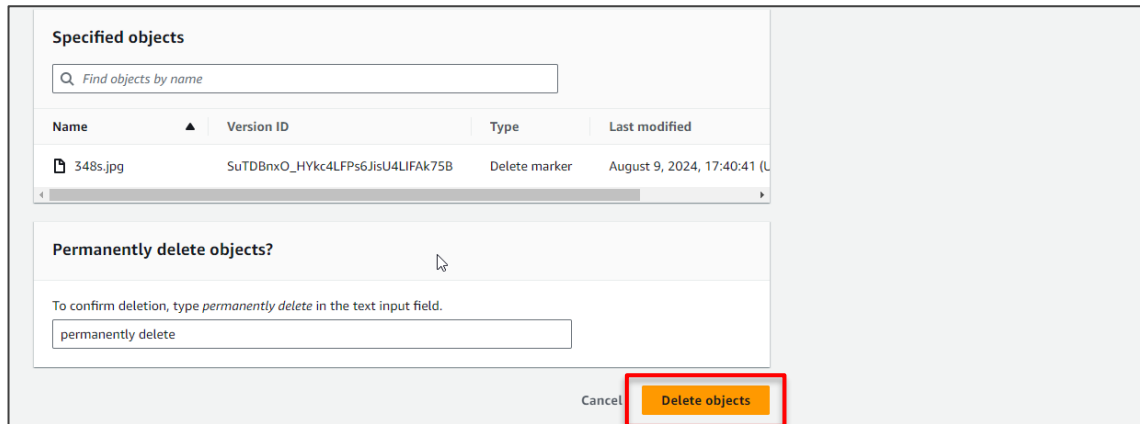


- 4.3 Navigate to the destination bucket, **my-demo-bucket101**, and click on the **refresh** icon to view the replicated object file

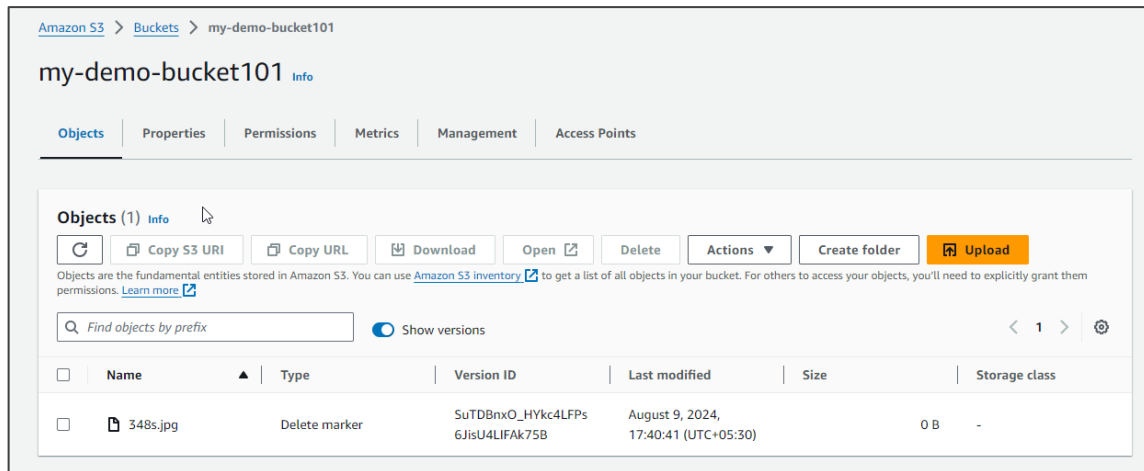


step 5: Delete and verify the replicated object file

5.1 Navigate to the source bucket, **my-demo-bucket100**, and click on **Delete objects** to delete the uploaded object file



5.2 Navigate to the destination bucket, **my-demo-bucket101** and verify if the replicated object file is still available and has not been deleted



Note: The object file is available in the **destination bucket** because the **Delete marker Replication rule** has been enabled.

By following these steps, you have successfully implemented the process of replicating an object from a source bucket to a destination bucket within Amazon S3.