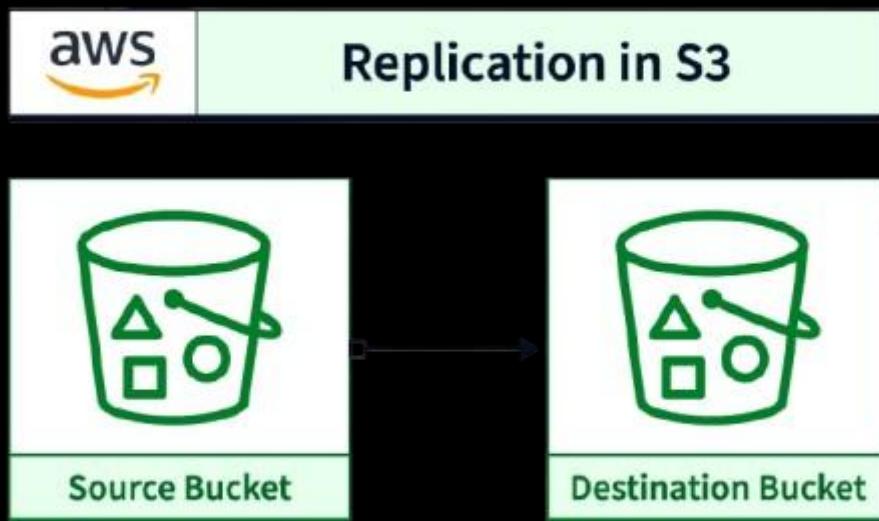


# PROJECT DOCUMENTATION: SEAMLESS DATA SYNC WITH AMAZON S3 CROSS- REGION REPLICATION (CRR)



This document provides a step-by-step guide to set up S3 bucket replication between two AWS regions. Follow along to ensure a smooth and successful replication process. 

## Overview

**Amazon S3 Cross-Region Replication (CRR)** enables automatic, asynchronous copying of objects between S3 buckets in different AWS regions. This feature supports disaster recovery, compliance with geographic data residency requirements, and improved data access speeds for distributed teams.

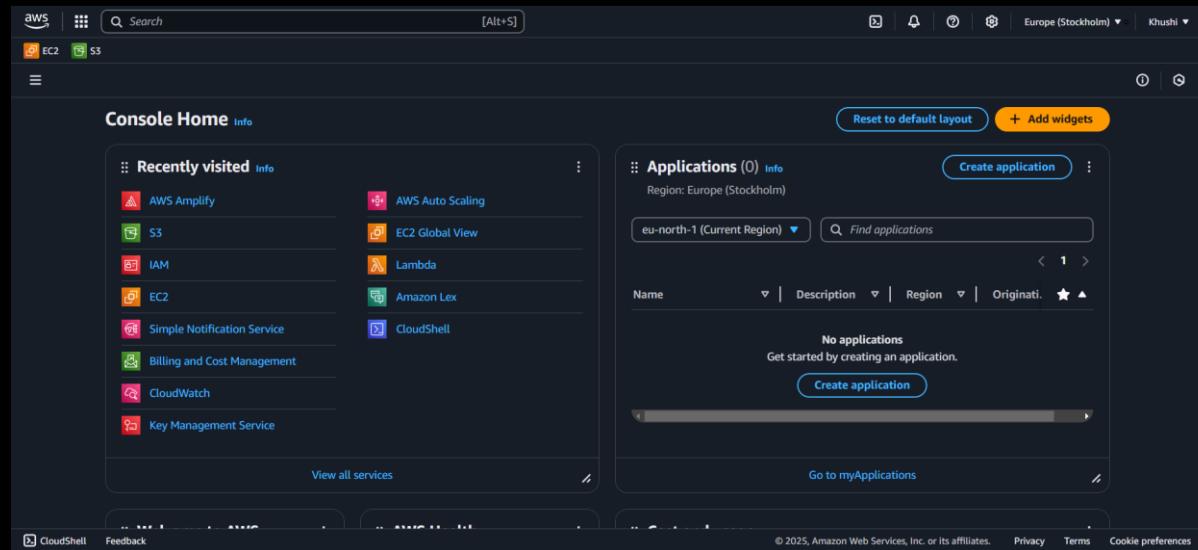
## Objectives

1. Create an S3 bucket in the source region.
2. Create an S3 bucket in the destination region.
3. Configure CRR to replicate data between these buckets.
4. Test and validate the replication setup.

## Step-by-Step Guide 🔧

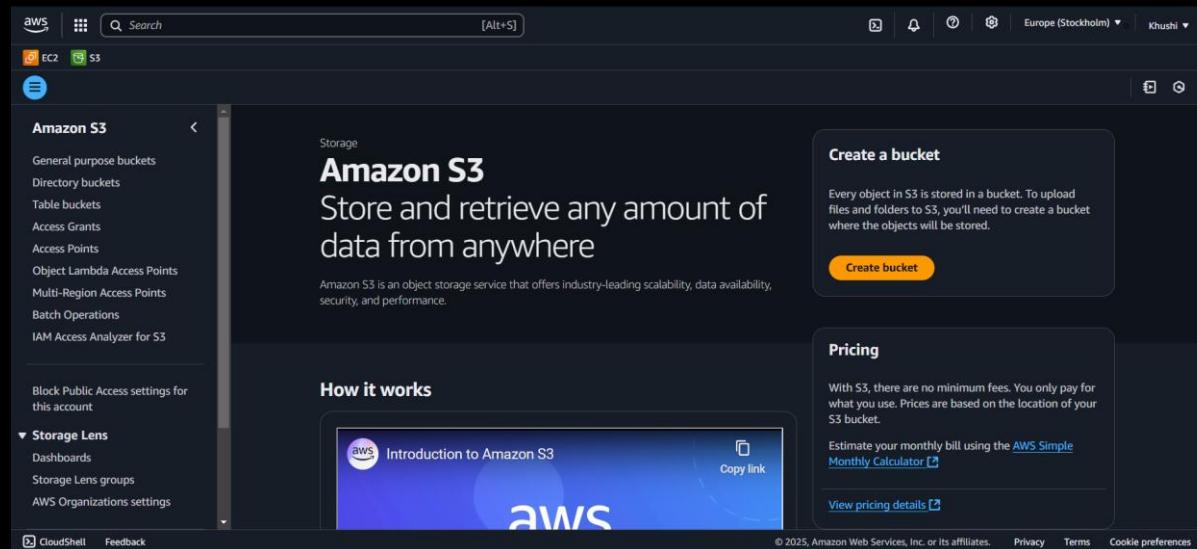
### 1. Open AWS Management Console 🔑

Log in to your AWS Management console to begin.



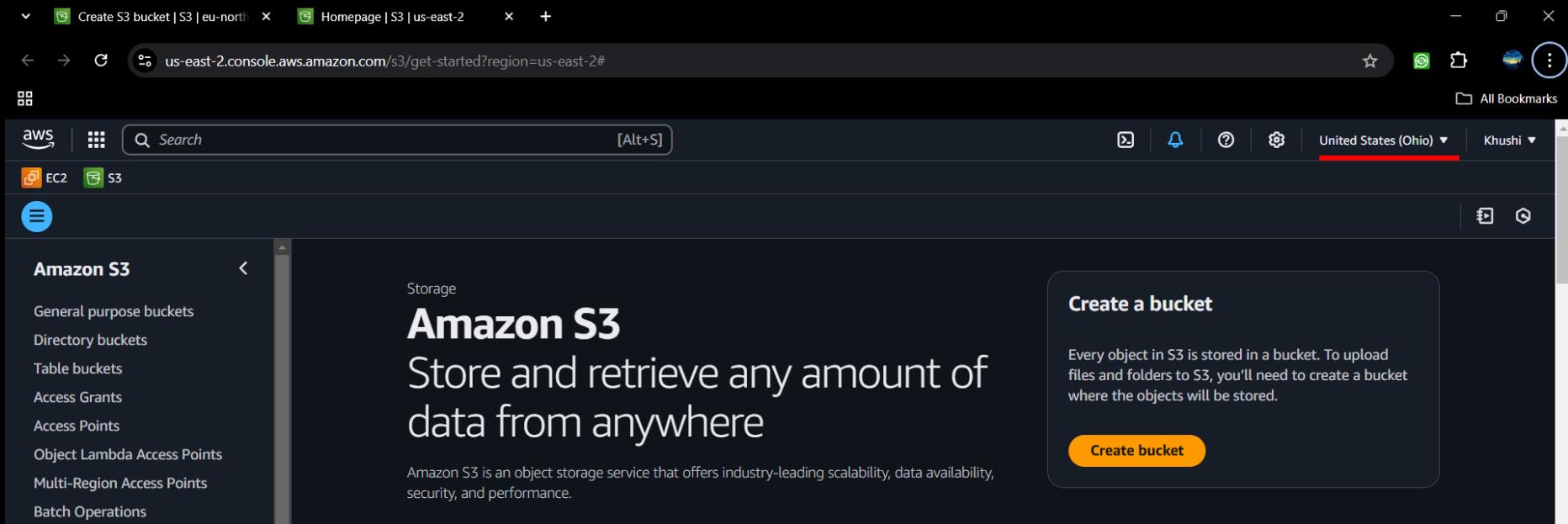
## 2. Navigate to S3 Dashboard

- Go to the S3 dashboard from the AWS services menu.



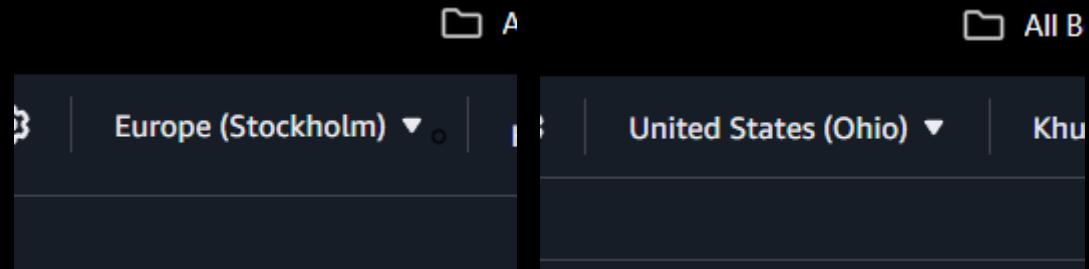
### 3. Open Two S3 Dashboards

- Select a region (e.g., Ohio) and open the S3 dashboard in a new tab.



The screenshot shows the AWS S3 dashboard for the 'United States (Ohio)' region. The left sidebar lists various bucket types: General purpose buckets, Directory buckets, Table buckets, Access Grants, Access Points, Object Lambda Access Points, Multi-Region Access Points, and Batch Operations. The main content area features the 'Amazon S3' logo and the tagline 'Store and retrieve any amount of data from anywhere'. Below this, a paragraph describes Amazon S3 as an object storage service with industry-leading scalability, data availability, security, and performance. A callout box titled 'Create a bucket' contains the text: 'Every object in S3 is stored in a bucket. To upload files and folders to S3, you'll need to create a bucket where the objects will be stored.' A prominent yellow 'Create bucket' button is at the bottom of the box. The browser's address bar shows the URL 'us-east-2.console.aws.amazon.com/s3/get-started?region=us-east-2#'. The top navigation bar includes tabs for 'Create S3 bucket | S3 | eu-north' and 'Homepage | S3 | us-east-2', along with standard browser controls like back, forward, and search.

- You should now have two S3 dashboards open in different regions (e.g., Stockholm and Ohio).



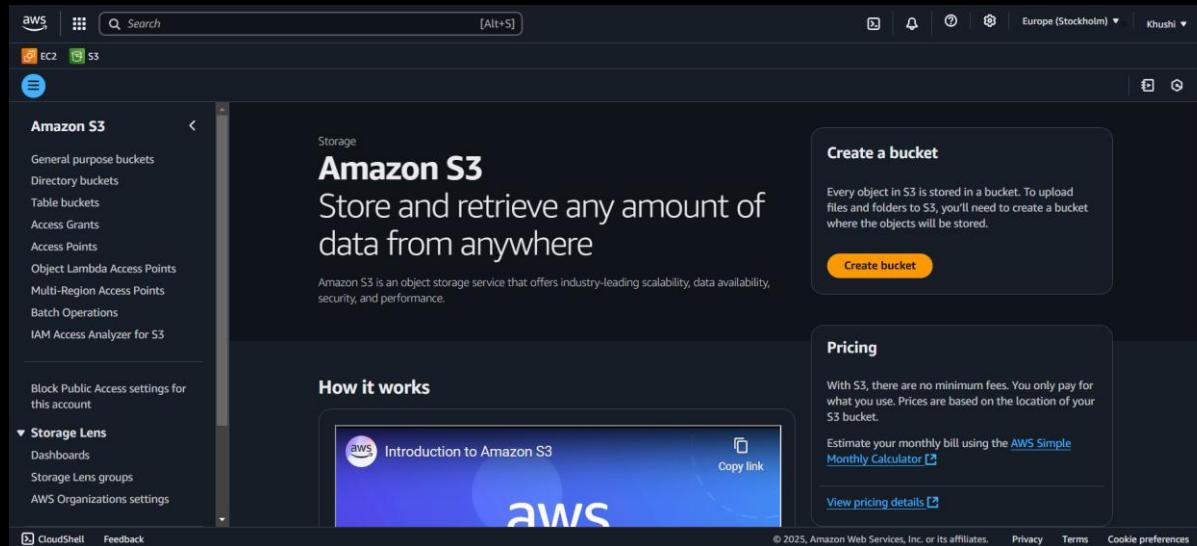
#### 4. Decide Source and Destination Regions

- Choose the **Stockholm** region for the **source bucket**.
- Choose the **Ohio** region for the **destination bucket**.

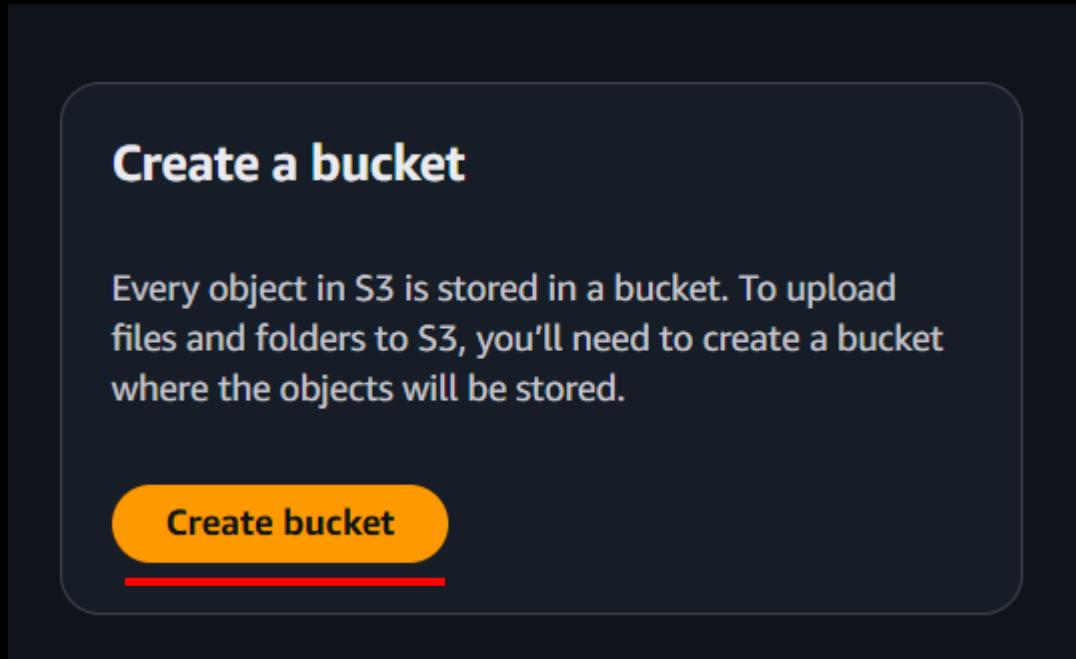
# CREATING BUCKETS

## 5. Create the Source Bucket in Stockholm Region

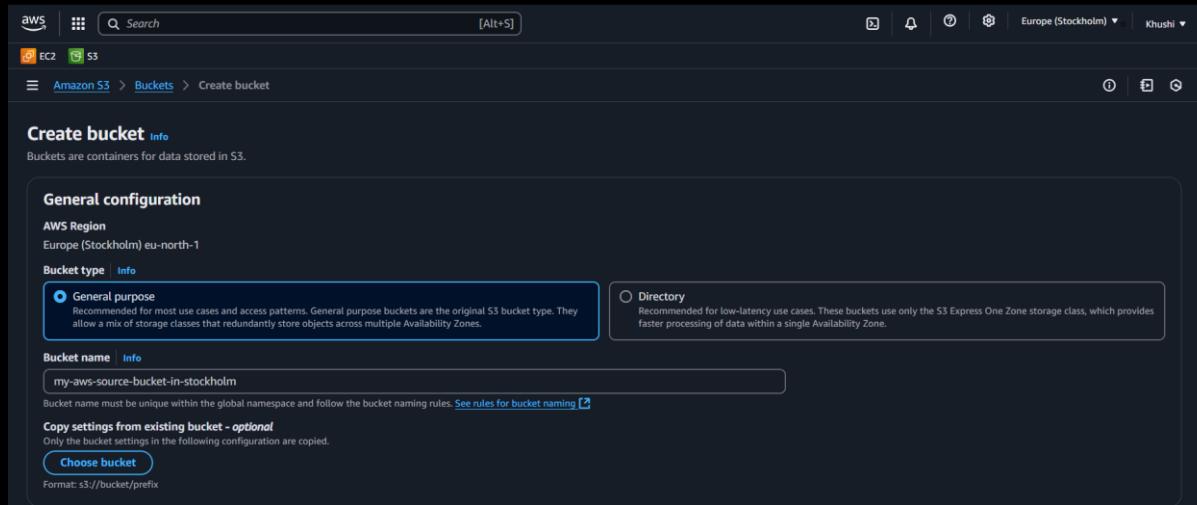
- Open the **Stockholm S3** dashboard.



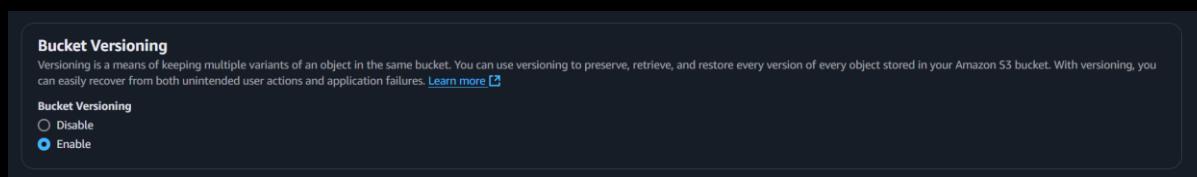
- Click **Create bucket**.



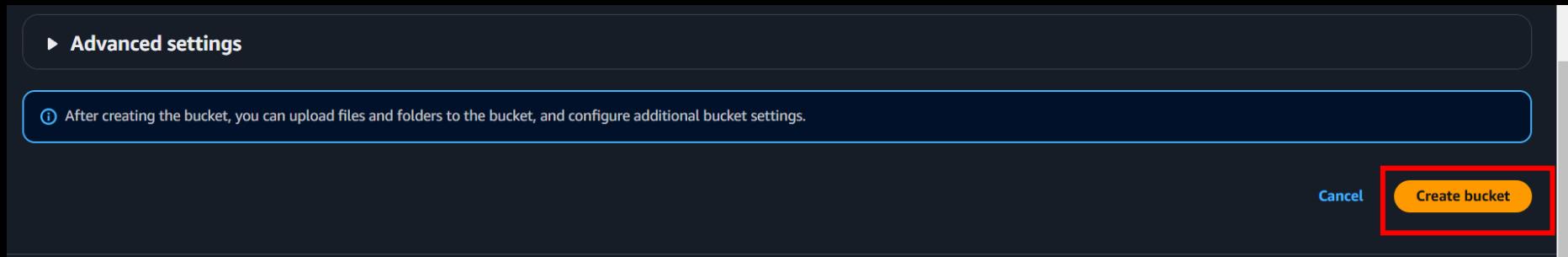
- Provide a bucket name (e.g., my-aws-source-bucket-in-stockholm).



- Enable Bucket Versioning by scrolling down.



- Click **Create bucket** to finalize.



The screenshot shows the AWS S3 Buckets dashboard. At the top, there's a navigation bar with the AWS logo, a search bar, and a dropdown menu set to "Europe (Stockholm)". Below the navigation bar, there are links for EC2 and S3, and a breadcrumb trail showing "Amazon S3 > Buckets". A callout box highlights the "Europe (Stockholm)" region selection.

A banner at the top of the main content area says "Account snapshot - updated every 24 hours" and includes a link to "All AWS Regions". To the right of the banner is a button to "View Storage Lens dashboard".

The main content area has two tabs: "General purpose buckets" (selected) and "Directory buckets". Under the "General purpose buckets" tab, there's a section header "General purpose buckets (2)" with "Info" and "All AWS Regions" buttons. It says "Buckets are containers for data stored in S3." and includes a search bar "Find buckets by name".

A table lists the buckets:

Name	AWS Region	IAM Access Analyzer	Creation date
mock-interview-audio-recordings	Asia Pacific (Mumbai) ap-south-1	<a href="#">View analyzer for ap-south-1</a>	January 21, 2025, 13:03:56 (UTC+05:30)
my-aws-source-bucket-in-stockholm	Europe (Stockholm) eu-north-1	<a href="#">View analyzer for eu-north-1</a>	January 22, 2025, 23:19:30 (UTC+05:30)

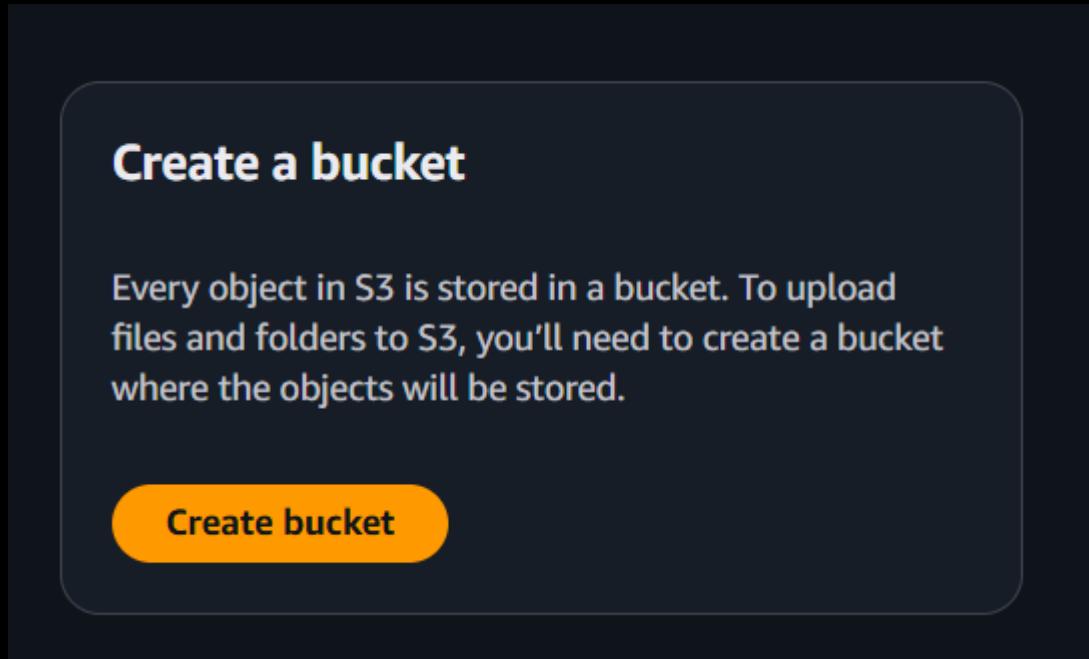
At the top right of the table are buttons for "Copy ARN", "Empty", "Delete", and "Create bucket". Navigation arrows and a settings icon are also present.

## 6. Create the Destination Bucket in Ohio Region

- Open the Ohio S3 dashboard.

The screenshot shows the AWS S3 landing page. At the top, there's a navigation bar with the AWS logo, search bar, and various service links like EC2 and S3. The main content area has a sidebar titled "Amazon S3" with links for General purpose buckets, Directory buckets, Table buckets, Access Grants, Access Points, Object Lambda Access Points, Multi-Region Access Points, Batch Operations, and IAM Access Analyzer for S3. Below this is a section for "Block Public Access settings for this account". A "Storage Lens" section is also present with links for Dashboards, Storage Lens groups, and AWS Organizations settings. The main content area features a large "Amazon S3" title and a sub-section "How it works" with a video thumbnail titled "Introduction to Amazon S3". To the right, there are two callout boxes: one for "Create a bucket" which says "Every object in S3 is stored in a bucket. To upload files and folders to S3, you'll need to create a bucket where the objects will be stored." and another for "Pricing" which says "With S3, there are no minimum fees. You only pay for what you use. Prices are based on the location of your S3 bucket." Both boxes have a "Create bucket" and "View pricing details" button respectively. At the bottom, there are footer links for CloudShell, Feedback, Copyright notice (© 2025, Amazon Web Services, Inc. or its affiliates.), Privacy, Terms, and Cookie preferences.

- Click **Create bucket**.



- Provide a bucket name (e.g., my-aws-destination-bucket-in-ohio).

The screenshot shows the 'Create bucket' page in the AWS S3 console. At the top, there are navigation links for EC2 and S3, and a breadcrumb trail: Amazon S3 > Buckets > Create bucket. On the right side of the header are three small icons: a person, a square with a checkmark, and a gear.

**Create bucket Info**

Buckets are containers for data stored in S3.

**General configuration**

**AWS Region**  
US East (Ohio) us-east-2

**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 only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

**Bucket name** Info

my-aws-destination-bucket-in-ohio

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#)

**Copy settings from existing bucket - optional**  
Only the bucket settings in the following configuration are copied.

**Choose bucket**

Format: s3://bucket/prefix

- Enable Bucket Versioning by scrolling down.

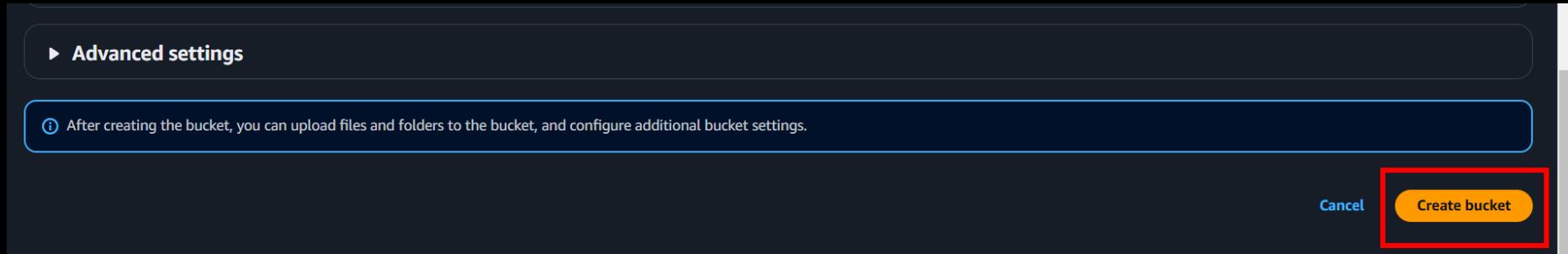
**Bucket Versioning**

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

- Click **Create bucket** to finalize.



# SETTING UP REPLICATION



## 7. Configure Replication from Source Bucket ⚡

- Go to the Stockholm region S3 dashboard.

The screenshot shows the AWS S3 buckets dashboard for the Europe (Stockholm) region. The top navigation bar includes the AWS logo, search bar, and region selector (Europe (Stockholm)). The main content area displays two general purpose buckets: "mock-interview-audio-recordings" (Region: Asia Pacific (Mumbai) ap-south-1) and "my-aws-source-bucket-in-stockholm" (Region: Europe (Stockholm) eu-north-1). The "General purpose buckets" tab is selected. A summary box at the top left provides an account snapshot updated every 24 hours, mentioning storage usage and activity trends. On the right side, there are buttons for "Create bucket", "Copy ARN", "Empty", and "Delete". The bottom right corner shows a page number indicator (1).

Name	AWS Region	IAM Access Analyzer	Creation date
mock-interview-audio-recordings	Asia Pacific (Mumbai) ap-south-1	<a href="#">View analyzer for ap-south-1</a>	January 21, 2025, 13:03:56 (UTC+05:30)
my-aws-source-bucket-in-stockholm	Europe (Stockholm) eu-north-1	<a href="#">View analyzer for eu-north-1</a>	January 22, 2025, 23:19:30 (UTC+05:30)

- Select the **source bucket** and click the **Management** tab.

The screenshot shows the AWS S3 Management console interface. At the top, there are navigation links for EC2 and S3, followed by the Amazon S3 navigation bar with 'Buckets' and 'my-aws-source-bucket-in-stockholm'. Below the navigation bar, the bucket name 'my-aws-source-bucket-in-stockholm' is displayed with an 'Info' link. A horizontal menu bar includes 'Objects', 'Properties', 'Permissions', 'Metrics', 'Management' (which is underlined in red), and 'Access Points'. Under the 'Management' tab, there is a sub-menu with options: 'C' (Copy S3 URI), 'Copy URL', 'Download', 'Open', 'Delete', 'Actions', 'Create folder', and 'Upload'. A search bar below the sub-menu contains the placeholder 'Find objects by prefix'. To the right of the search bar is a 'Show versions' button. Below these controls, there are four filter buttons: 'Name' (selected), 'Type', 'Last modified', and 'Size'. Further down, there is a 'Storage class' filter. The main content area displays a message: 'No objects' and 'You don't have any objects in this bucket.' At the bottom of this area is a large blue 'Upload' button.

Amazon S3 > Buckets > my-aws-source-bucket-in-stockholm

my-aws-source-bucket-in-stockholm

Objects Properties Permissions Metrics Management Access Points

**Lifecycle configuration**

To manage your objects so that they are stored cost effectively throughout their lifecycle, configure their lifecycle. A lifecycle configuration is a set of rules that define actions that Amazon S3 applies to a group of objects. Lifecycle rules run once per day.

**Lifecycle rules**

Use lifecycle rules to define actions you want Amazon S3 to take during an object's lifetime such as transitioning objects to another storage class, archiving them, or deleting them after a specified period of time. [Learn more](#)

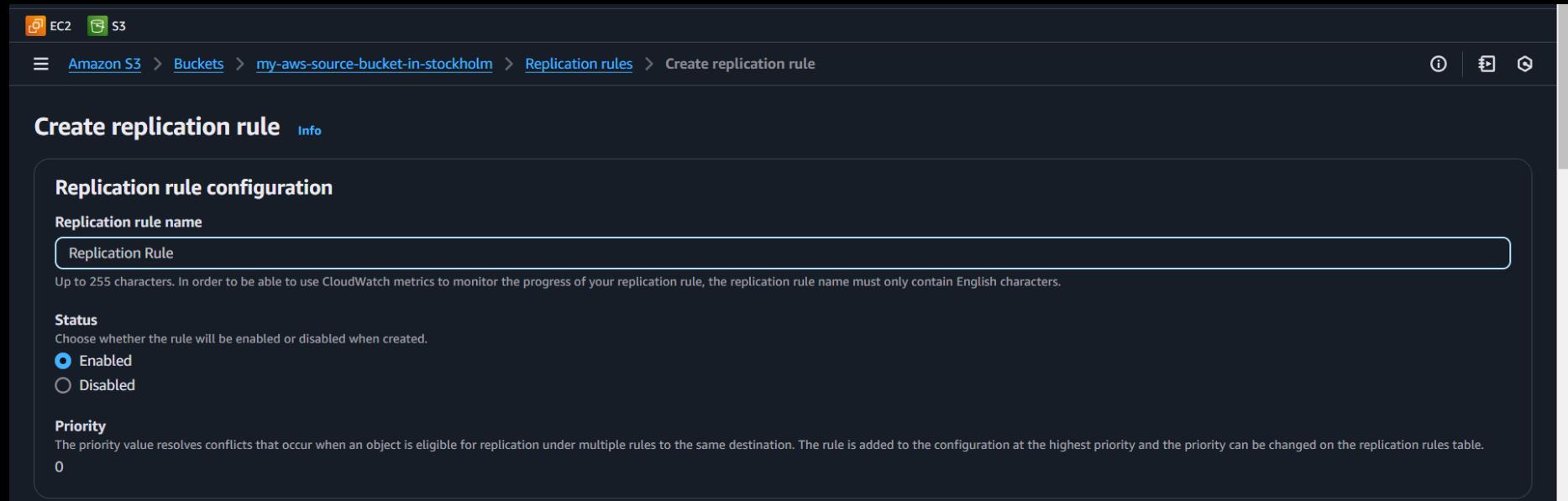
Lifecycle rule name	Status	Scope	Current version actions	Noncurrent versions ac...	Expired object delete ...	Incomplete multipart ...
No lifecycle rules						
There are no lifecycle rules for this bucket.						
<a href="#">Create lifecycle rule</a>						

- Scroll down to find **Replication rules** and click **Create replication rule**.

The screenshot shows the AWS S3 Replication Rules configuration page for a bucket named "my-aws-source-bucket-in-stockholm". The top navigation bar includes EC2 and S3 icons, and the breadcrumb path "Amazon S3 > Buckets > my-aws-source-bucket-in-stockholm". The main section is titled "Replication rules (0)". It contains a table header with columns: 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), and Replica modification sync. Below the table, a message states "No replication rules" and "You don't have any rules in the replication configuration." A prominent blue button labeled "Create replication rule" is centered at the bottom of the page, with a red box highlighting it.

## 8. Define Replication Rule

- Provide a rule name (e.g., Replication Rule).



- In the **Source Bucket** section:
  - Select **Apply to all objects in the bucket**.

The screenshot shows the 'Create replication rule' page in the Amazon S3 console. The 'Source bucket' section is displayed, containing the following details:

- Source bucket name:** my-aws-source-bucket-in-stockholm
- Source Region:** Europe (Stockholm) eu-north-1
- Choose a rule scope:** A radio button for "Limit the scope of this rule using one or more filters" is selected, while "Apply to all objects in the bucket" is unselected.
- Filter type:** A note states: "You can filter objects by prefix, object tags, or a combination of both." Below this, there is a "Prefix" section with a "Enter prefix" input field and a note: "Don't include the bucket name in the prefix. Using certain characters in key names can cause problems with some applications and protocols."
- Tags:** A note states: "You can limit the scope of this rule to the key value pairs added below." Below this is an "Add tag" button.

The screenshot shows the 'Source bucket' configuration section. It includes:

- Source bucket name:** my-aws-source-bucket-in-stockholm
- Source Region:** Europe (Stockholm) eu-north-1
- Choose a rule scope:**
  - Limit the scope of this rule using one or more filters
  - Apply to all objects in the bucket

- In the Destination section:
  - Click **Browse S3** and select the destination bucket in Ohio.

The screenshot shows the 'Destination' configuration section. It includes:

- Destination:** Choose a bucket in this account
- Bucket name:** Enter bucket name (input field)
- Browse S3:** A button to browse for destination buckets.
- Destination Region:** A dropdown menu currently set to '-'.

Limit the scope of this rule using one or more filters

Choose a bucket

S3 Buckets

Buckets (1/3)

Find buckets by name

Name	AWS Region
mock-interview-audio-recordings	Asia Pacific (Mumbai) ap-south-1
my-aws-destination-bucket-in-ohio	US East (Ohio) us-east-2
my-aws-source-bucket-in-stockholm	Europe (Stockholm) eu-north-1

< 1 >

C Cancel Choose path

**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.

my-aws-destination-bucket-in-ohio

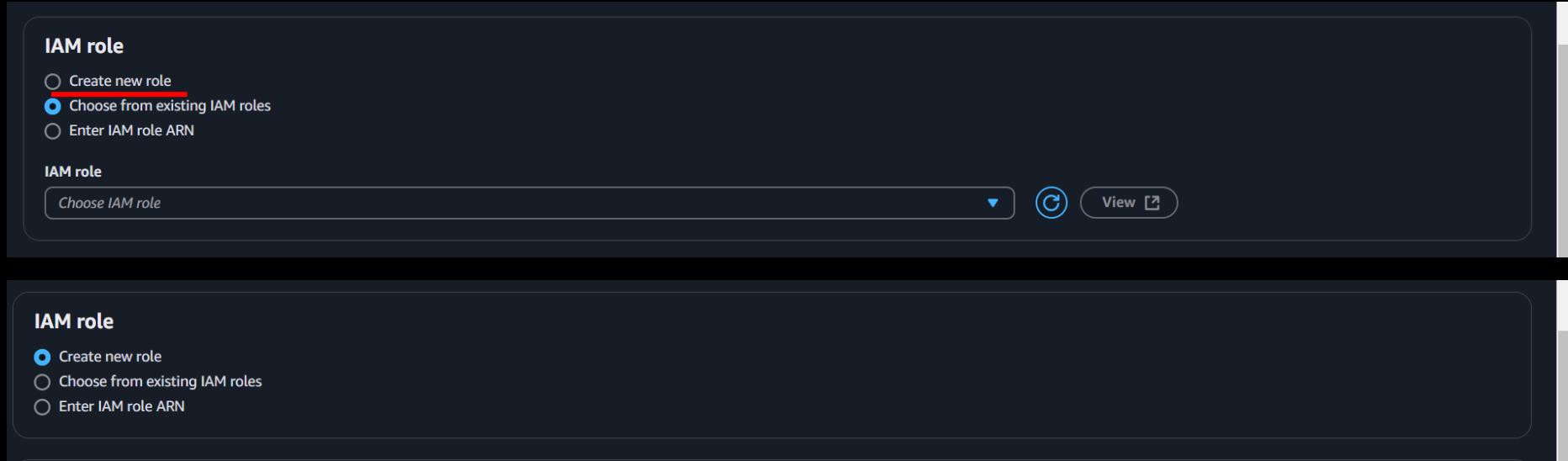
[Browse S3](#)

**Destination Region**

US East (Ohio) us-east-2

## 9. Configure IAM Role

- In the **IAM Role** section, create a new IAM role.



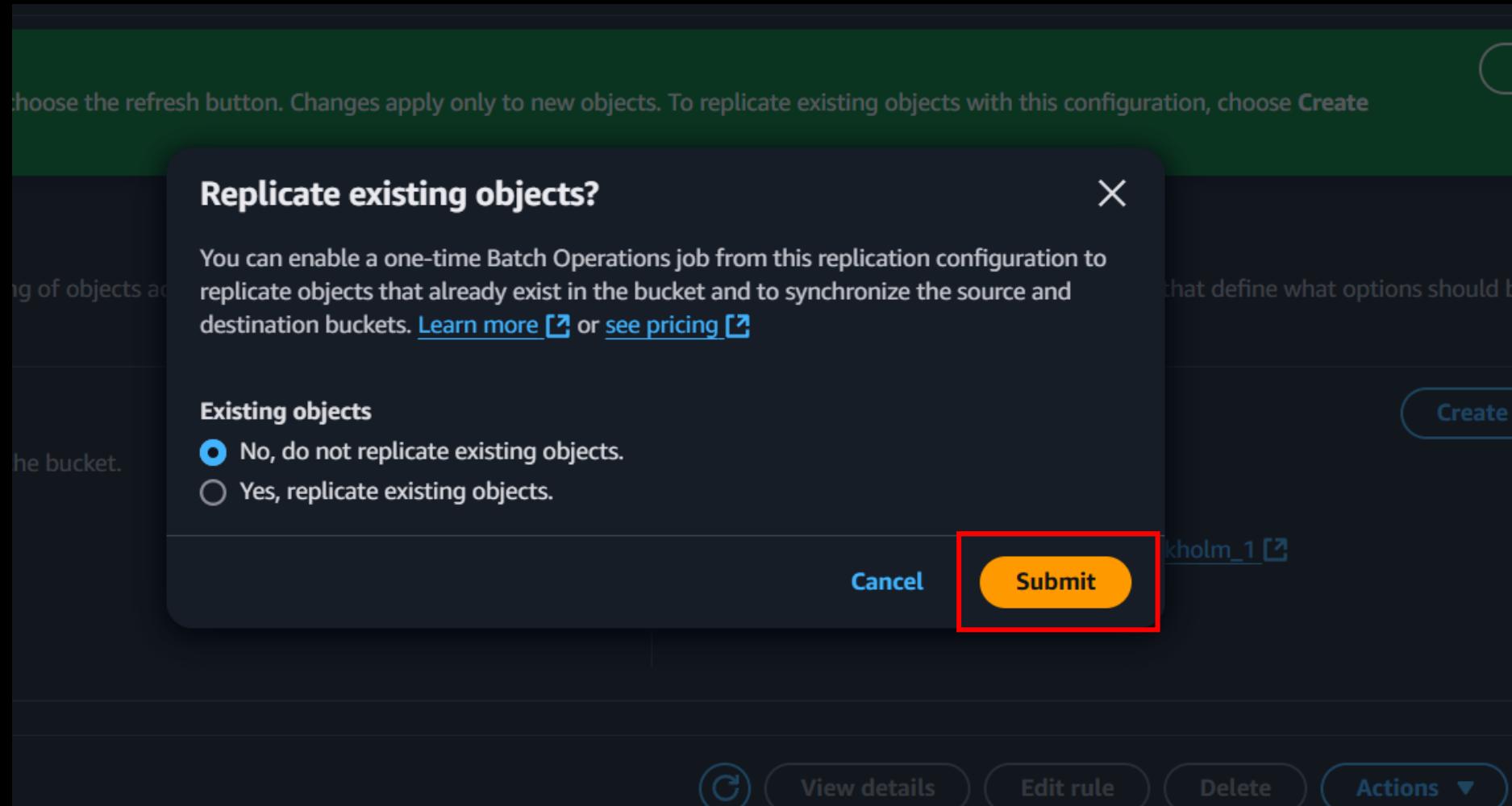
- Scroll down and click Save.

The screenshot shows the AWS S3 console with the path: Amazon S3 > Buckets > my-aws-source-bucket-in-stockholm > Replication rules > Create replication rule. The 'Destination storage class' section is shown, followed by a note about storage classes. Below is a list of replication options:

- Change the storage class for the replicated objects
- 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](#)

At the bottom right, there are 'Cancel' and 'Save' buttons. The 'Save' button is highlighted with a red box.

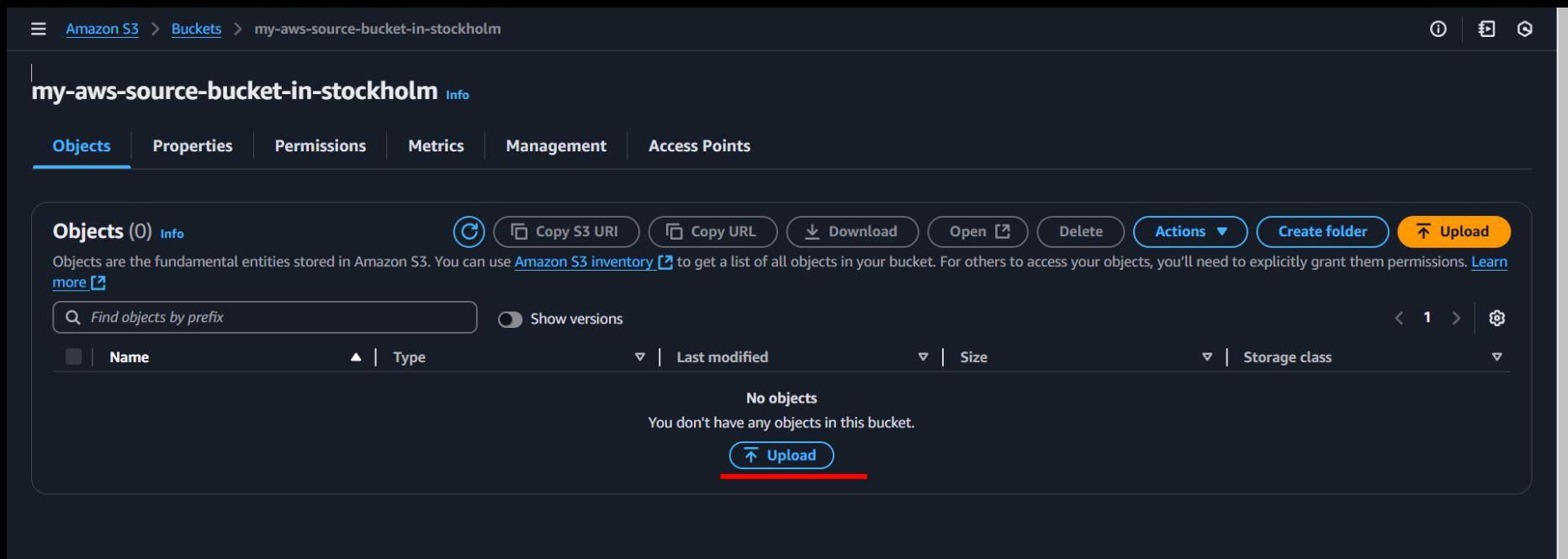
- A pop-up may appear asking to replicate existing objects. Keep the default option selected and click **Submit**.



# TESTING REPLICATION

## 10. Upload an Object to Source Bucket

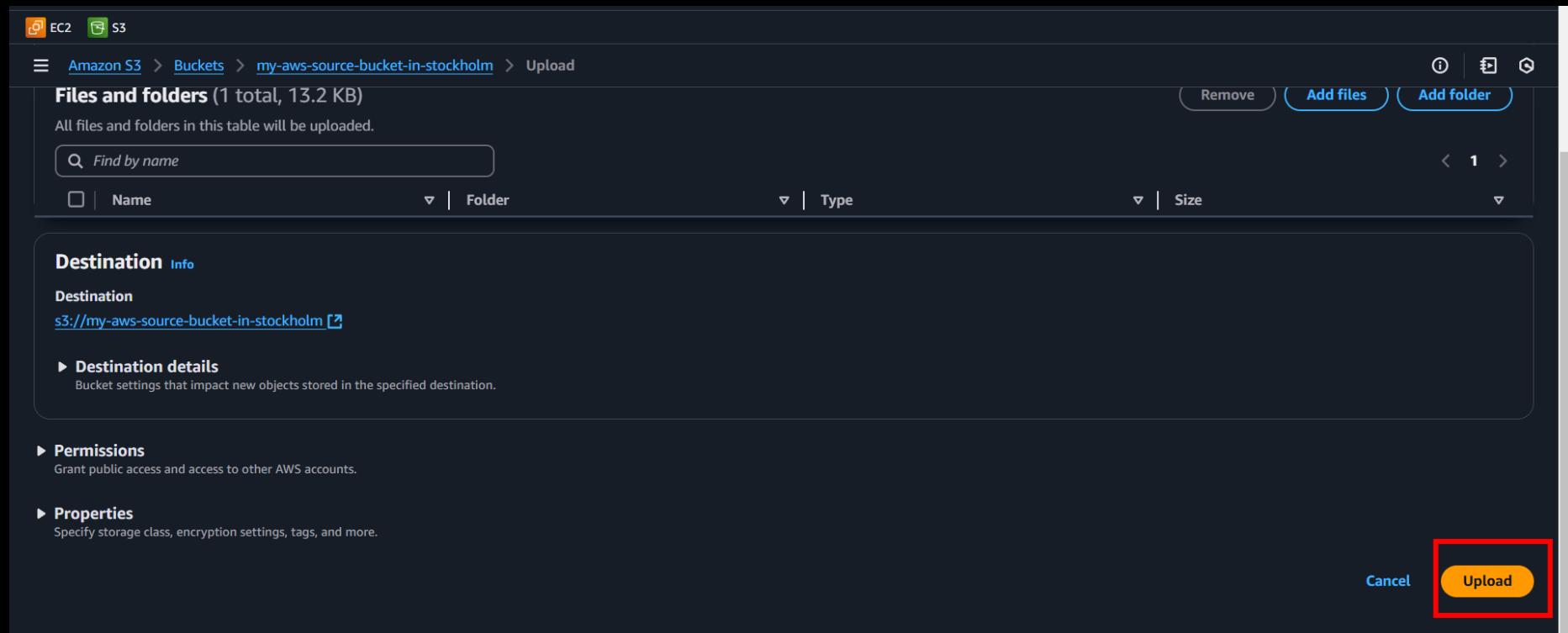
- Go to the **source bucket** (Stockholm region).
- Upload a file:
  - Click **Upload**.



- o Click on add file, select a file and click Upload.

The screenshot shows the Amazon S3 'Upload' interface. At the top, the navigation path is: Amazon S3 > Buckets > my-aws-source-bucket-in-stockholm > Upload. The main section is titled 'Upload' with a 'Info' link. It contains instructions: 'Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDKs or Amazon S3 REST API. [Learn more](#)' and a placeholder text 'Drag and drop files and folders you want to upload here, or choose Add files or Add folder.' Below this is a table titled 'Files and folders (0)' with a count of 0. It includes a search bar 'Find by name' and columns for 'Name', 'Folder', 'Type', and 'Size'. A message 'No files or folders' and 'You have not chosen any files or folders to upload.' is displayed. At the bottom right of this section are 'Remove', 'Add files' (which is highlighted with a red underline), and 'Add folder' buttons. The number '1' is shown in a small box next to the 'Add files' button. The 'Destination' section follows, with a similar layout and a table showing 1 total file: 'Simple Storage Service.png' (image/png, 13.2 KB). The 'Add files' button here is also underlined in red.

Name	Folder	Type	Size
Simple Storage Service.png	-	image/png	13.2 KB

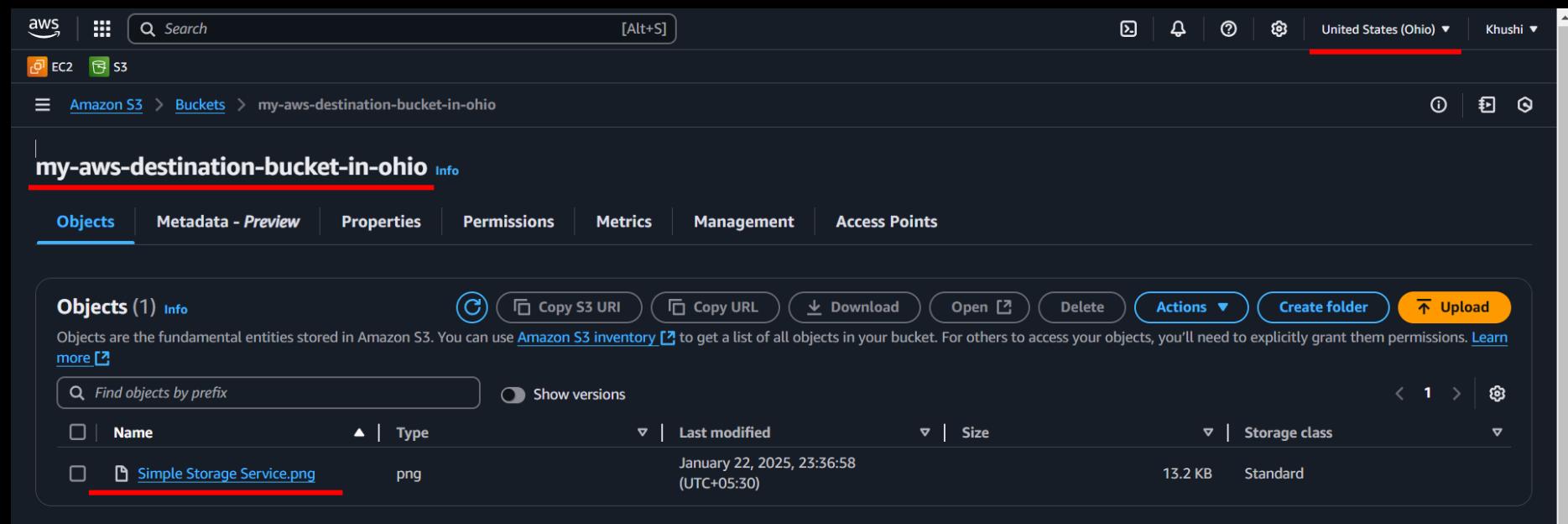


The screenshot shows the AWS S3 console interface. At the top, there's a navigation bar with icons for AWS, EC2, S3, and a search bar labeled "Search [Alt+S]". On the far right of the top bar, it says "Europe (Stockholm)" and "Khushi". Below the navigation bar, the breadcrumb trail shows "Amazon S3 > Buckets > my-aws-source-bucket-in-stockholm". The main title "my-aws-source-bucket-in-stockholm" is underlined in red. Below the title, there are tabs for "Objects", "Properties", "Permissions", "Metrics", "Management", and "Access Points". The "Objects" tab is selected. A sub-header "Objects (1) Info" is displayed. To the right of this, there are several buttons: "Copy S3 URI", "Copy URL", "Download", "Open", "Delete", "Actions", "Create folder", and "Upload". Below these buttons, a note states: "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](#)". There's also a "Find objects by prefix" input field and a "Show versions" button. The main table lists one object: "Simple Storage Service.png" (Type: png), last modified on January 22, 2025, at 23:36:58 (UTC+05:30), with a size of 13.2 KB and a storage class of Standard.

Name	Type	Last modified	Size	Storage class
Simple Storage Service.png	png	January 22, 2025, 23:36:58 (UTC+05:30)	13.2 KB	Standard

## 11. Verify Replication

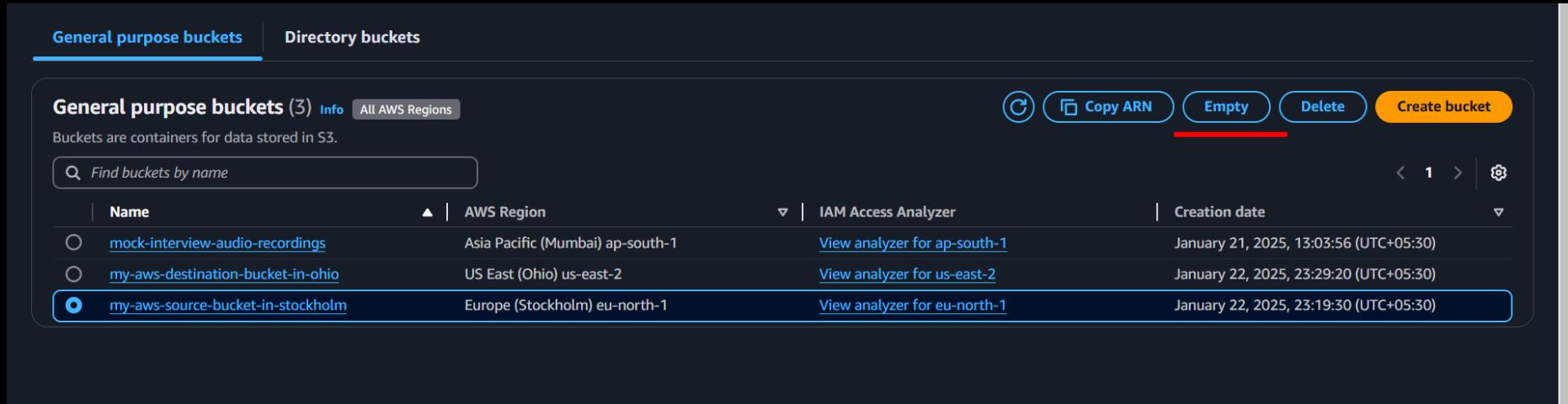
- Wait a few seconds.
- Go to the **destination bucket** (Ohio region).
- Refresh the **Objects** section.
- The uploaded file should now appear in the destination bucket, confirming successful replication.



# CLEANUP

## 12. Delete Buckets

- Empty and delete both the source and destination buckets from the Stockholm and Ohio regions to clean up resources.



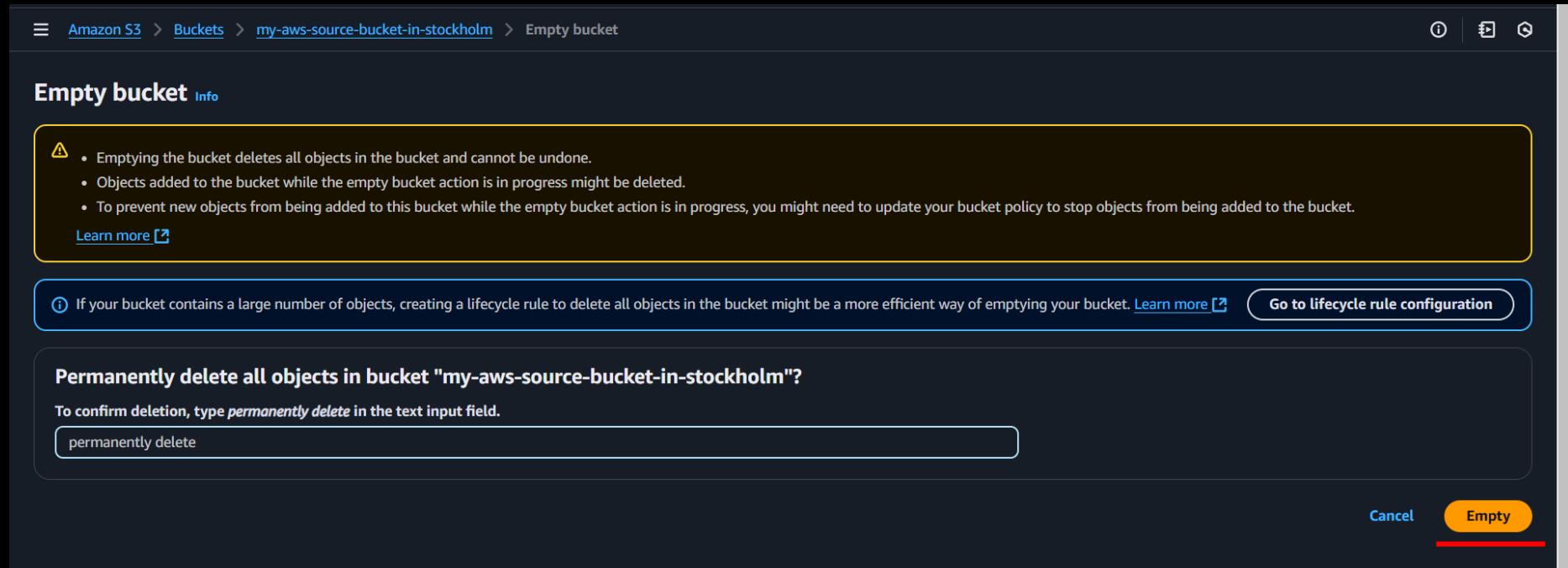
General purpose buckets (3) [Info](#) [All AWS Regions](#)

Buckets are containers for data stored in S3.

Name	AWS Region	IAM Access Analyzer	Creation date
<a href="#">mock-interview-audio-recordings</a>	Asia Pacific (Mumbai) ap-south-1	<a href="#">View analyzer for ap-south-1</a>	January 21, 2025, 13:03:56 (UTC+05:30)
<a href="#">my-aws-destination-bucket-in-ohio</a>	US East (Ohio) us-east-2	<a href="#">View analyzer for us-east-2</a>	January 22, 2025, 23:29:20 (UTC+05:30)
<a href="#">my-aws-source-bucket-in-stockholm</a>	Europe (Stockholm) eu-north-1	<a href="#">View analyzer for eu-north-1</a>	January 22, 2025, 23:19:30 (UTC+05:30)

[Find buckets by name](#)

[Copy ARN](#) [Empty](#) [Delete](#) [Create bucket](#)



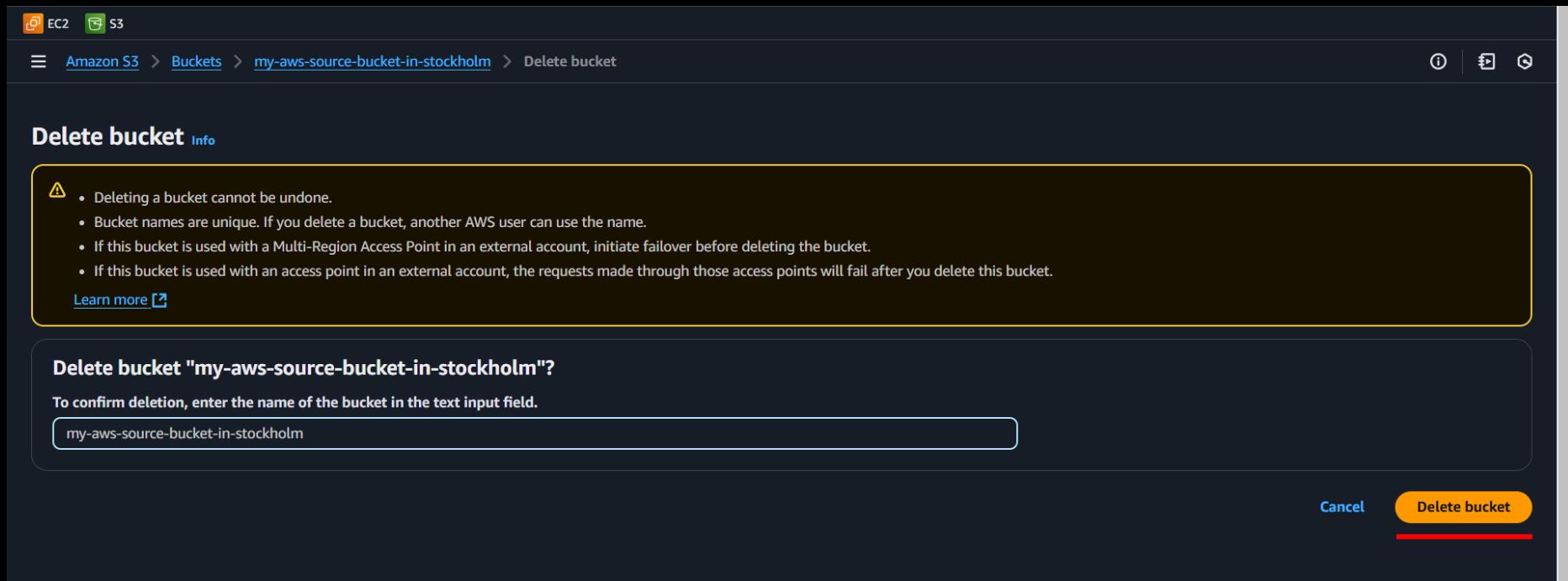
The screenshot shows the AWS S3 console interface. At the top, there are navigation links for EC2 and S3. A green success message box is displayed, stating: "Successfully emptied bucket 'my-aws-source-bucket-in-stockholm'. View details below. If you want to delete this bucket, use the [delete bucket configuration](#)." Below this, a section titled "Empty bucket: status" shows a note: "The details below are no longer available after you navigate away from this page." A "Summary" table provides a breakdown of deleted objects:

Source	Successfully deleted	Failed to delete
<a href="s3://my-aws-source-bucket-in-stockholm">s3://my-aws-source-bucket-in-stockholm</a>	1 object, 13.2 KB	0 objects

Below the summary, there are tabs for "General purpose buckets" (selected) and "Directory buckets". The "General purpose buckets" table lists three buckets:

Name	AWS Region	IAM Access Analyzer	Creation date
<a href="#">mock-interview-audio-recordings</a>	Asia Pacific (Mumbai) ap-south-1	<a href="#">View analyzer for ap-south-1</a>	January 21, 2025, 13:03:56 (UTC+05:30)
<a href="#">my-aws-destination-bucket-in-ohio</a>	US East (Ohio) us-east-2	<a href="#">View analyzer for us-east-2</a>	January 22, 2025, 23:29:20 (UTC+05:30)
<a href="#">my-aws-source-bucket-in-stockholm</a>	Europe (Stockholm) eu-north-1	<a href="#">View analyzer for eu-north-1</a>	January 22, 2025, 23:19:30 (UTC+05:30)

Action buttons for the selected bucket include: Copy ARN, Empty (highlighted in red), Delete, and Create bucket.



► **Account snapshot - updated every 24 hours** [All AWS Regions](#)

Storage lens provides visibility into storage usage and activity trends. Metrics don't include directory buckets. [Learn more](#)

[View Storage Lens dashboard](#)

**General purpose buckets** [Directory buckets](#)

**General purpose buckets (2)** [Info](#) [All AWS Regions](#)

Buckets are containers for data stored in S3.

Name	AWS Region	IAM Access Analyzer	Creation date
<a href="#">mock-interview-audio-recordings</a>	Asia Pacific (Mumbai) ap-south-1	<a href="#">View analyzer for ap-south-1</a>	January 21, 2025, 13:03:56 (UTC+05:30)
<a href="#">my-aws-destination-bucket-in-ohio</a>	US East (Ohio) us-east-2	<a href="#">View analyzer for us-east-2</a>	January 22, 2025, 23:29:20 (UTC+05:30)

[C](#) [Copy ARN](#) [Empty](#) [Delete](#) [Create bucket](#)

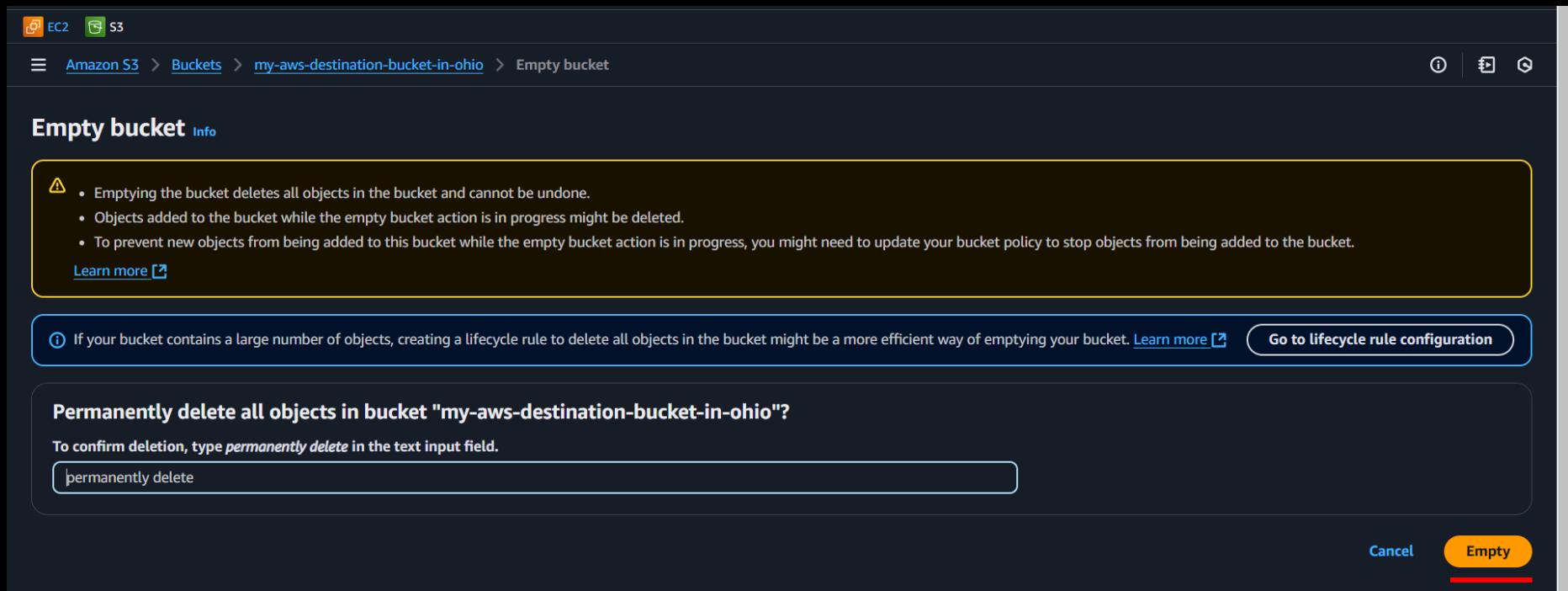
**General purpose buckets** [Directory buckets](#)

**General purpose buckets (2)** [Info](#) [All AWS Regions](#)

Buckets are containers for data stored in S3.

Name	AWS Region	IAM Access Analyzer	Creation date
<a href="#">mock-interview-audio-recordings</a>	Asia Pacific (Mumbai) ap-south-1	<a href="#">View analyzer for ap-south-1</a>	January 21, 2025, 13:03:56 (UTC+05:30)
<a href="#">my-aws-destination-bucket-in-ohio</a>	US East (Ohio) us-east-2	<a href="#">View analyzer for us-east-2</a>	January 22, 2025, 23:29:20 (UTC+05:30)

[C](#) [Copy ARN](#) [Empty](#) [Delete](#) [Create bucket](#)



The screenshot shows the AWS S3 console interface. At the top, there's a green success message: "Successfully emptied bucket 'my-aws-destination-bucket-in-ohio'. View details below. If you want to delete this bucket, use the [delete bucket configuration](#).  
X". Below this, a section titled "Empty bucket: status" contains a note: "The details below are no longer available after you navigate away from this page." On the right of this section are "Cancel" and "Exit" buttons.

**Summary**

Source	Successfully deleted	Failed to delete
<a href="s3://my-aws-destination-bucket-in-ohio">s3://my-aws-destination-bucket-in-ohio</a>	1 object, 13.2 KB	0 objects

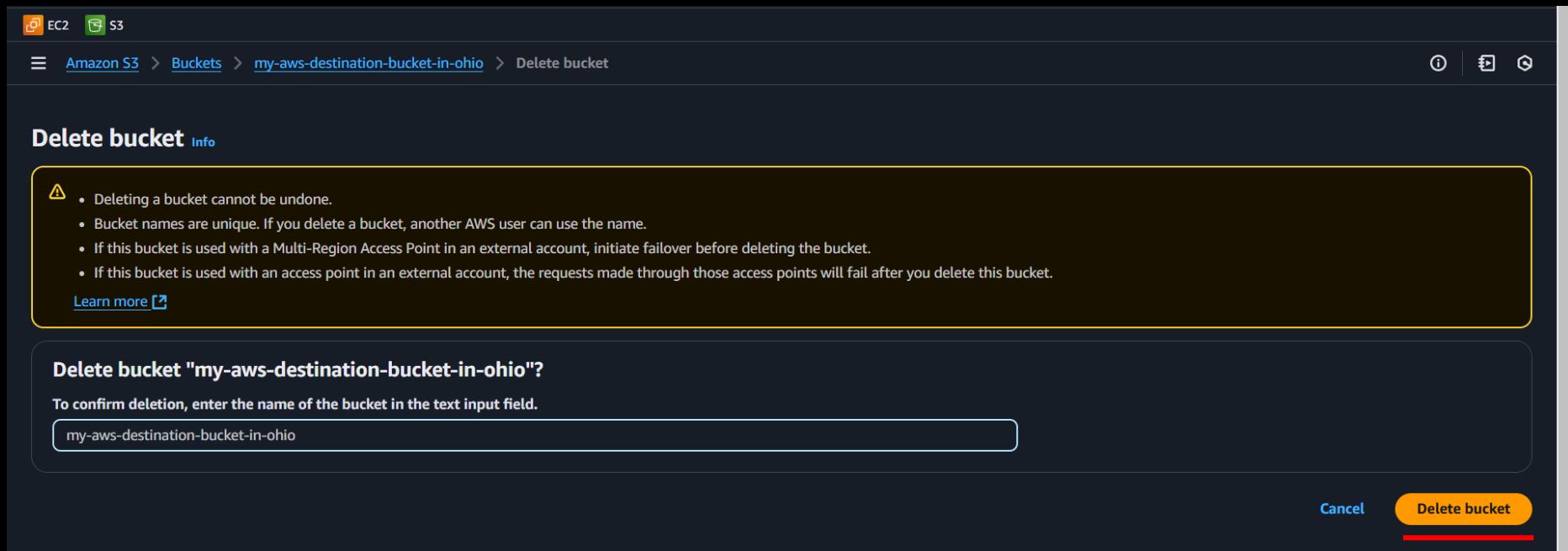
Below the summary, there are two tabs: "General purpose buckets" (selected) and "Directory buckets". Under "General purpose buckets", there are two items:

- General purpose buckets (2)** Info All AWS Regions
- Buckets are containers for data stored in S3.
- A search bar:
- A table with columns: Name, AWS Region, IAM Access Analyzer, and Creation date.

The table data is as follows:

Name	AWS Region	IAM Access Analyzer	Creation date
<a href="#">mock-interview-audio-recordings</a>	Asia Pacific (Mumbai) ap-south-1	<a href="#">View analyzer for ap-south-1</a>	January 21, 2025, 13:03:56 (UTC+05:30)
<a href="#">my-aws-destination-bucket-in-ohio</a>	US East (Ohio) us-east-2	<a href="#">View analyzer for us-east-2</a>	January 22, 2025, 23:29:20 (UTC+05:30)

Actions available for each row include: Copy ARN, Empty (highlighted with a red underline), Delete, and Create bucket.



## Conclusion

You've successfully configured Amazon S3 Cross-Region Replication (CRR) between two AWS regions! This setup not only enhances **data redundancy** but also ensures **seamless and automated replication** of objects across regions. By leveraging CRR, your system is now better equipped for:

- **Disaster Recovery:** Safeguard your data against regional outages.
- **Compliance:** Meet geographical data residency requirements effortlessly.
- **Global Accessibility:** Improve data access speeds for users around the world.

Your data is now more secure, accessible, and resilient than ever! 

**DATA IS A PRECIOUS THING, AND WILL LAST LONGER THAN THE SYSTEMS THEMSELVES.**

— Tim Berners-Lee