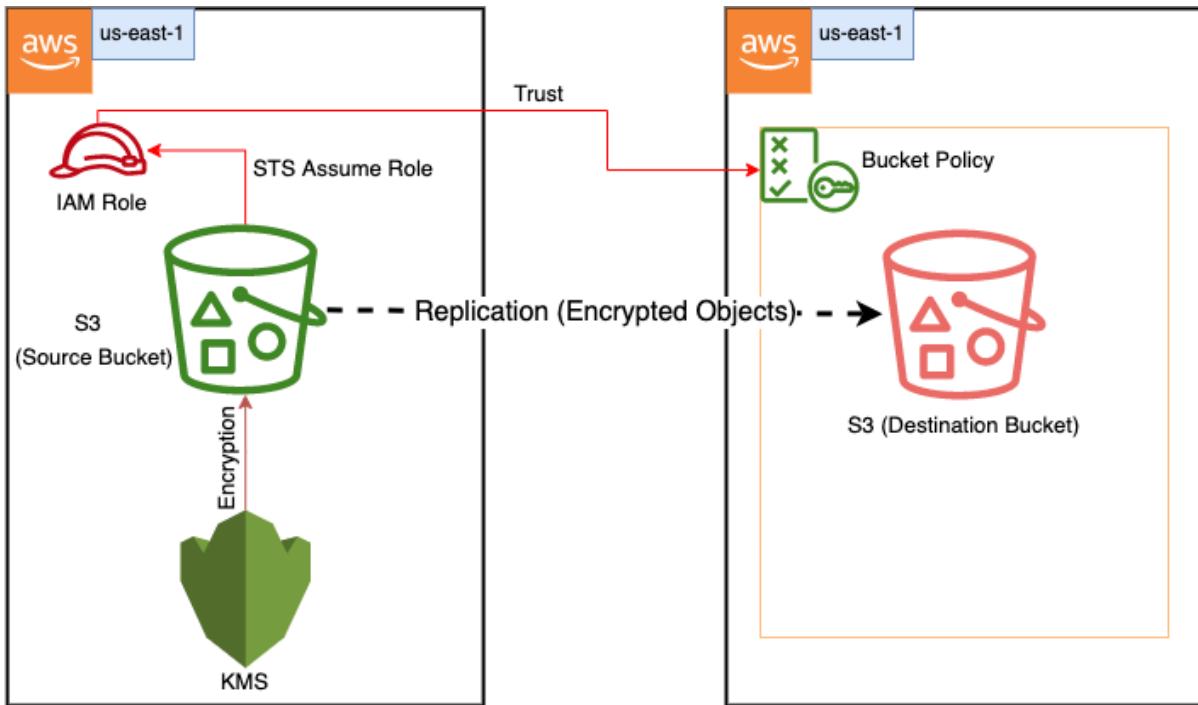


Project



Replicate Data within and between AWS Regions Using Amazon S3 Replication

31.10.2023

Himanshu Nimje
Nagpur-440017

Overview

Amazon Simple Storage Service (S3) Replication is an elastic, fully managed, low cost feature that replicates objects between buckets. S3 Replication offers the most flexibility and functionality in cloud storage, giving you the controls you need to meet your data sovereignty and other business needs.

Goals

1. Backing up data: Backup critical data that can't be lost in an unlikely situation of entire AWS region failure
2. Migrating data: Migrate data across accounts
3. Minimizing latency: Minimize latency for your applications using the S3 bucket

Benefits

1. Data redundancy: Creates redundant copies of data in different locations
2. High availability: Reduces latency by serving data from the nearest available location
3. Compliance: Meets compliance and data sovereignty requirements
4. Disaster recovery: Creates additional resiliency for disaster recovery planning
5. Security: Helps with security
6. Regional efficiency: Helps with regional efficiency

Service Used

Amazon S3

Steps

1. Create an S3 Bucket
2. Create an S3 Replication Rule on S3 Bucket
3. Choose Destination S3 Bucket
4. Choose or Create IAM Roles for Replication

Implementation

Click on the S3

The screenshot shows the AWS search interface with the query 's3' entered in the search bar. The results are filtered under the 'Services' category. The top result is 'S3 Scalable Storage in the Cloud', which is highlighted with a red box. Below it are 'S3 Glacier Archive Storage in the Cloud' and 'Athena Query Data in S3 using SQL'. A sidebar on the left lists various AWS services like Features, Blogs, Documentation, Knowledge Articles, Tutorials, Events, and Marketplace.

Create Amazon S3 Bucket

The screenshot shows the AWS S3 buckets management interface. The 'Create bucket' button is highlighted with an orange box. The page displays an 'Account snapshot' section with a 'Storage lens provides visibility into storage usage and activity trends.' link. Below it is a table for managing buckets, with columns for Name, AWS Region, Access, and Creation date. A message states 'No buckets' and 'You don't have any buckets.' with a 'Create bucket' button. The browser's address bar shows the URL 's3.console.aws.amazon.com/s3/buckets?region=ap-south-1®ion=ap-south-1'.

Assign name of the Bucket (mumbaibucket97), i.e. Source bucket

Create bucket [Info](#)
Buckets are containers for data stored in S3. [Learn more](#)

General configuration

Bucket name: mumbaibucket97
Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#)

AWS Region: Asia Pacific (Mumbai) ap-south-1

Copy settings from existing bucket - optional
Only the bucket settings in the following configuration are copied.
[Choose bucket](#)

Object Ownership [Info](#)
Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

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Keep Block all Public Access Uncheck

Create S3 bucket | S3 | Global [Info](#)

s3.console.aws.amazon.com/s3/bucket/create?region=ap-south-1

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Services Search [Alt+S]

Block Public Access settings for this bucket

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

Block all public access
Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.

- Block public access to buckets and objects granted through new access control lists (ACLs)**
S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.
- Block public access to buckets and objects granted through any access control lists (ACLs)**
S3 will ignore all ACLs that grant public access to buckets and objects.
- Block public access to buckets and objects granted through new public bucket or access point policies**
S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.
- Block public and cross-account access to buckets and objects through any public bucket or access point policies**
S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

⚠️ Turning off block all public access might result in this bucket and the objects within becoming public
AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting.

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The screenshot shows the AWS S3 Bucket Creation wizard. In the 'Bucket Versioning' section, there is a note: "AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting." Below this, a checkbox is checked with the text: "I acknowledge that the current settings might result in this bucket and the objects within becoming public." The 'Enable' radio button for Bucket Versioning is selected. The Tags section is shown as optional with no tags associated.

Enable Bucket Versioning because this provides multiple variants of an object in the same Bucket And your data is protected from accidental deletion

Benefits of Bucket Versioning :- Data Protection And Recovery, Audit Trail, Protection Against Data Corruption, etc.

The screenshot shows the AWS S3 Bucket Creation wizard. In the 'Default encryption' section, it says "Server-side encryption is automatically applied to new objects stored in this bucket." Under 'Encryption type', the 'Server-side encryption with Amazon S3 managed keys (SSE-S3)' radio button is selected. The 'Bucket Key' section notes that using an S3 Bucket Key for SSE-KMS reduces costs but is not supported for DSSE-KMS. The 'Bucket Key' radio button is checked. The 'Advanced settings' section contains a note about configuring additional bucket settings after creation. At the bottom right is a 'Create bucket' button.

Creating another Bucket i.e. Destination Bucket

Create S3 bucket | S3 | Global

s3.console.aws.amazon.com/s3/bucket/create?region=ap-southeast-1

Amazon S3 > Buckets > Create bucket

Create bucket Info

Buckets are containers for data stored in S3. [Learn more](#)

General configuration

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

AWS Region

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

[Choose bucket](#)

Object Ownership Info

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

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Select a Region

Create S3 bucket | S3 | Global

s3.console.aws.amazon.com/s3/bucket/create?region=ap-southeast-1

Amazon S3 > Buckets > Create bucket

Create bucket Info

Buckets are containers for data stored in S3. [Learn more](#)

General configuration

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

AWS Region

Asia Pacific (Singapore) ap-southeast-1

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

[Choose bucket](#)

Object Ownership Info

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

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Create S3 bucket | S3 | Global

s3.console.aws.amazon.com/s3/bucket/create?region=ap-southeast-1

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Services Search [Alt+S]

Block Public Access settings for this bucket

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

Block all public access
Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.

- Block public access to buckets and objects granted through new access control lists (ACLs)**
S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.
- Block public access to buckets and objects granted through any access control lists (ACLs)**
S3 will ignore all ACLs that grant public access to buckets and objects.
- Block public access to buckets and objects granted through new public bucket or access point policies**
S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.
- Block public and cross-account access to buckets and objects through any public bucket or access point policies**
S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

⚠ Turning off block all public access might result in this bucket and the objects within becoming public
AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting.

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Create S3 bucket | S3 | Global

s3.console.aws.amazon.com/s3/bucket/create?region=ap-southeast-1

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Services Search [Alt+S]

⚠ Turning off block all public access might result in this bucket and the objects within becoming public
AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting.
 I acknowledge that the current settings might result in this bucket and the objects within becoming public.

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

Tags - optional (0)
You can use bucket tags to track storage costs and organize buckets. [Learn more](#)

No tags associated with this bucket.

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Bucket Key
Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSE-KMS. [Learn more](#)

Disable
 Enable

Advanced settings

Object Lock
Store objects using a write-once-read-many (WORM) model to help you prevent objects from being deleted or overwritten for a fixed amount of time or indefinitely. [Learn more](#)

Disable
 Enable
Permanently allows objects in this bucket to be locked. Additional Object Lock configuration is required in bucket details after bucket creation to protect objects in this bucket from being deleted or overwritten.

Object Lock works only in versioned buckets. Enabling Object Lock automatically enables Bucket Versioning.

After creating the bucket, you can upload files and folders to the bucket, and configure additional bucket settings.

Create bucket

Click on the Create bucket

Name	AWS Region	Access	Creation date
actualbucket7744	Asia Pacific (Singapore) ap-southeast-1	Objects can be public	October 19, 2023, 13:07:20 (UTC+05:30)
mumbaibucket970	Asia Pacific (Mumbai) ap-south-1	Objects can be public	October 19, 2023, 13:05:31 (UTC+05:30)

Now we can see both the Buckets

Select actualbucket7744

The screenshot shows the AWS S3 Buckets page. At the top, there's an account snapshot section with a link to 'View Storage Lens dashboard'. Below it, a table lists two buckets:

Name	AWS Region	Access	Creation date
actualbucket7744	Asia Pacific (Singapore) ap-southeast-1	Objects can be public	October 19, 2023, 13:07:20 (UTC+05:30)
mumbaibucket970	Asia Pacific (Mumbai) ap-south-1	Objects can be public	October 19, 2023, 13:05:31 (UTC+05:30)

At the bottom of the page, there are links for CloudShell, Feedback, and a copyright notice from 2023. On the right side of the browser window, there's a vertical taskbar with icons for various services like CloudWatch Metrics, Lambda, and CloudWatch Logs.

Go to the Management option and scroll down

The screenshot shows the AWS S3 Bucket Management page for 'actualbucket7744'. The 'Management' tab is highlighted in orange. Below it, the 'Objects' tab is selected, showing a table with one row: 'No objects'. There are also tabs for Properties, Permissions, Metrics, and Access Points.

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

At the bottom of the page, there are links for CloudShell, Feedback, and a copyright notice from 2023. On the right side of the browser window, there's a vertical taskbar with icons for various services like CloudWatch Metrics, Lambda, and CloudWatch Logs.

Select Replication Rule Option and Create Replication Rule

Replication rule configuration

Replication rule name
mybucketmyrule

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
actualbucket7744

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In the source bucket, Click on the (Apply to all objects in the bucket) option

Source bucket

Source bucket name
actualbucket7744

Source Region
Asia Pacific (Singapore) ap-southeast-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.
Enter bucket name Browse S3

Format: s3://bucket/prefix

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Select Destination bucket

Choose a rule scope

- Limit the scope of this rule using one or more filters
- Apply to all objects in the bucket

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.

Enter bucket name Browse S3

Format: s3://bucket/prefix

IAM role

- Choose from existing IAM roles
- Enter IAM role ARN

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Choose bucket Path

Choose a rule scope

- Limit the scope of this rule using one or more filters
- Apply to all objects in the bucket

Choose a bucket

S3 Buckets

Buckets (2)

Name	AWS Region
actualbucket7744	Asia Pacific (Singapore) ap-southeast-1
mumbaibucket970	Asia Pacific (Mumbai) ap-south-1

Cancel **Choose path**

IAM role

- Choose from existing IAM roles
- Enter IAM role ARN

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Create IAM Role , Select (Create new role)

The screenshot shows the AWS S3 management console for creating a replication rule. The URL is s3.console.aws.amazon.com/s3/management/actualbucket7744/replication/create?region=ap-southeast-1. The 'Services' bar is visible at the top, and the user 'Himanshu Balkrushna Nimje' is logged in. The main form has a bucket name 'mumbaibucket970' entered. In the 'IAM role' section, the radio button for 'Choose from existing IAM roles' is selected, and the dropdown menu shows 'Choose IAM role' as the current choice.

Select Role and Go ahead

This screenshot shows the same AWS S3 replication rule creation page as the previous one, but with a different selection in the 'IAM role' dropdown. The 'Create new role' option is now selected and highlighted with an orange border. The rest of the interface remains the same, with the bucket name 'mumbaibucket970' and destination region 'Asia Pacific (Mumbai) ap-south-1' set.

Then Use Encryption option, choose Replicate object encrypted with AWS KMS

The screenshot shows the AWS S3 management console with a replication rule being created. In the 'Encryption' section, there is a checkbox labeled 'Replicate objects encrypted with AWS Key Management Service (AWS KMS)'. This checkbox is checked, indicating that replicated objects will be encrypted using AWS KMS. Other options like 'Change the storage class for the replicated objects' and 'Replication Time Control (RTC)' are also present but not selected.

Select AWS KMS then later Select Alias

The screenshot shows the 'AWS KMS keys for decrypting source objects' section. A dropdown menu is open, showing two entries: 'Alias' and 'aws/s3'. The 'aws/s3' entry is selected and highlighted with a blue background. Below this section, there is a note about customer ARNs and an 'Add key' button. Further down, there is a section for 'AWS KMS key for encrypting destination objects' with a radio button for 'Enter AWS KMS key ARN' selected.

Select choose from your AWS KMS Keys

Create replication rule - S3 bucket

s3.console.aws.amazon.com/s3/management/actualbucket7744/replication/create?region=ap-southeast-1

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AWS Services Search [Alt+S]

Alias Key ID

aws/s3 alias/aws/s3

Customer ARNs - optional
Add custom ARNs using the key ARN or the alias ARN

AWS KMS key for encrypting destination objects [Info](#)
 Choose from your AWS KMS keys
 Enter AWS KMS key ARN

Available AWS KMS keys

 Change the storage class for the replicated objects

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

Additional replication options

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Click on save 

Create replication rule - S3 bucket

s3.console.aws.amazon.com/s3/management/actualbucket7744/replication/create?region=ap-southeast-1

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AWS Services Search [Alt+S]

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](#)

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 in this bucket to the destination bucket. [Learn more](#)

Cancel

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Now the Replication rule is successfully Created

The screenshot shows the AWS S3 management console for a bucket named 'actualbucket7744'. In the 'Replication rules' section, a new rule named 'mybucketmyrule' is listed. The rule is enabled and configured to replicate objects from the source bucket to a destination bucket ('s3://mumbaibucket970') in the 'Asia Pacific (Mumbai) ap-south-1' region. The replication scope is set to 'Entire bucket' and the storage class to 'Same as source'. The rule is currently disabled.

Replication rule name	Status	Destination bucket	Destination Region	Priority	Scope	Storage class	Replica owner	Replication Time Control
mybucketmyrule	Enabled	s3://mumbaibucket970	Asia Pacific (Mumbai) ap-south-1	0	Entire bucket	Same as source	Same as source	Disabled

Now go to source bucket (actualbucket7744) and select the Upload option

The screenshot shows the AWS S3 management console for the source bucket 'actualbucket7744'. The 'Objects' tab is selected. A single 'Upload' button is highlighted in orange at the top of the object list. Below it, there is a search bar and a 'Show versions' toggle. The main area displays a message stating 'No objects' and 'You don't have any objects in this bucket.' An 'Upload' button is located at the bottom of this section.

Select Add files option and upload file

The screenshot shows the AWS S3 'Upload objects' interface. At the top, there's a message: 'Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)'.

In the center, there's a large dashed box with the placeholder text: 'Drag and drop files and folders you want to upload here, or choose Add files or Add folder.' Below this, a table lists 'Files and folders (1 Total, 180.2 KB)'. The table has columns: Name, Folder, Type, and Size. A single row is shown: 'MUSIC.jpg' (image/jpeg, 180.2 KB). The 'Add files' button is highlighted with a red box.

On the right side, there's a 'Destination' section with the destination set to 's3://actualbucket7744'. Below it, a 'Destination details' section provides information about bucket settings.

At the bottom, there are links for CloudShell, Feedback, and a copyright notice: '© 2023, Amazon Web Services, Inc. or its affiliates.' followed by Privacy, Terms, and Cookie preferences.

The screenshot shows the 'Uploading' progress bar. The progress is at 80%, with a message below stating: 'Total remaining: 1 file: 36.2 KB(20.09%)', 'Estimated time remaining: a few seconds', and 'Transfer rate: 27.9 KB/s'.

Below the progress bar, there's a summary table under the 'Upload: status' heading:

Summary		
Destination s3://actualbucket7744	Succeeded 0 files, 144.0 KB (79.91%)	Failed 0 files, 0 B (0%)

At the bottom, there are tabs for 'Files and folders' (which is active) and 'Configuration'.

On the left, there's a 'Files and folders (1 Total, 180.2 KB)' section with a 'Find by name' search bar.

At the very bottom, there are links for CloudShell, Feedback, and a copyright notice: '© 2023, Amazon Web Services, Inc. or its affiliates.' followed by Privacy, Terms, and Cookie preferences.

The screenshot shows the AWS S3 console interface. A progress bar at the top indicates "Uploading" is complete at 100%. Below it, a message states "Total remaining: 1 file: 0 B(0%)", "Estimated time remaining: a few seconds", and "Transfer rate: 24.5 KB/s". A "Cancel" button is visible. The main area is titled "Upload: status" and contains a summary table:

Destination	Succeeded	Failed
s3://actualbucket7744	0 files, 180.2 KB (100.00%)	0 files, 0 B (0%)

Below the summary, there are tabs for "Files and folders" (selected) and "Configuration". A "Find by name" search bar is present. The status bar at the bottom includes links for CloudShell and Feedback, and copyright information for 2023.

The File has been Uploaded Successfully

The screenshot shows the AWS S3 console interface after a successful upload. A green banner at the top says "Upload succeeded View details below.". Below it, a message states "The information below will no longer be available after you navigate away from this page." The main area is titled "Upload: status" and contains a summary table:

Destination	Succeeded	Failed
s3://actualbucket7744	1 file, 180.2 KB (100.00%)	0 files, 0 B (0%)

Below the summary, there are tabs for "Files and folders" (selected) and "Configuration". A "Find by name" search bar is present. The status bar at the bottom includes links for CloudShell and Feedback, and copyright information for 2023.

actualbucket7744 | Info

Objects (1)

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](#)

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

Find objects by prefix Show versions

Name	Type	Last modified	Size	Storage class
MUSIC.jpg	jpg	October 19, 2023, 13:12:28 (UTC+05:30)	180.2 KB	Standard

Now go to Destination bucket (mumbaibucket970) and check whether the file has been Replicated There or Not

S3 buckets | S3 | Global

[View Storage Lens dashboard](#)

Buckets (2) Info

Buckets are containers for data stored in S3. [Learn more](#)

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

Find buckets by name

Name	AWS Region	Access	Creation date
actualbucket7744	Asia Pacific (Singapore) ap-southeast-1	Objects can be public	October 19, 2023, 13:07:20 (UTC+05:30)
mumbaibucket970	Asia Pacific (Mumbai) ap-south-1	Objects can be public	October 19, 2023, 13:05:31 (UTC+05:30)

Refresh

mumbaibucket970 [Info](#)

[Objects](#) [Properties](#) [Permissions](#) [Metrics](#) [Management](#) [Access Points](#)

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](#)

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

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File has been successfully Replicated to the Destination Bucket, Which means lab has been Successfully Performed

mumbaibucket970 [Info](#)

[Objects](#) [Properties](#) [Permissions](#) [Metrics](#) [Management](#) [Access Points](#)

Objects (1)
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](#)

Name	Type	Last modified	Size	Storage class
MUSIC.jpg	jpg	October 19, 2023, 13:12:28 (UTC+05:30)	180.2 KB	Standard

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S3 buckets | S3 | Global

s3.console.aws.amazon.com/s3/buckets?region=ap-south-1®ion=ap-south-1

Amazon S3 > Buckets

Buckets (2) Info

Buckets are containers for data stored in S3. [Learn more](#)

Name	AWS Region	Access	Creation date
actualbucket7744	Asia Pacific (Singapore) ap-southeast-1	Objects can be public	October 19, 2023, 13:07:20 (UTC+05:30)
mumbaibucket970	Asia Pacific (Mumbai) ap-south-1	Objects can be public	October 19, 2023, 13:05:31 (UTC+05:30)

View Storage Lens dashboard

Copy ARN Empty Delete Create bucket

https://s3.console.aws.amazon.com/s3/buckets/actualbucket7744?region=ap-south-1

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Upload objects - S3 bucket actualbucket7744

s3.console.aws.amazon.com/s3/upload/actualbucket7744?region=ap-southeast-1

Upload

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose Add files or Add folder.

Files and folders (1 Total, 1.8 MB)

All files and folders in this table will be uploaded.

Name	Folder	Type	Size
towers-7594002.jpg	-	image/jpeg	1.8 MB

Destination

Destination
s3://actualbucket7744

Destination details

Bucket settings that impact new objects stored in the specified destination.

CloudShell Feedback

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The screenshot shows the AWS S3 console interface. The URL in the address bar is s3.console.aws.amazon.com/s3/buckets/actualbucket7744?region=ap-southeast-1&tab=objects. The page title is "actualbucket7744 Info". Below the title, there are tabs for Objects, Properties, Permissions, Metrics, Management, and Access Points. The Objects tab is selected. A sub-header "Objects (2)" indicates there are two items in the bucket. A table lists the objects:

Name	Type	Last modified	Size	Storage class
MUSIC.jpg	jpg	October 19, 2023, 13:12:28 (UTC+05:30)	180.2 KB	Standard
towers-7594002.jpg	jpg	October 19, 2023, 13:14:39 (UTC+05:30)	1.8 MB	Standard

At the bottom of the table, the "towers-7594002.jpg" row is highlighted with an orange border. The status bar at the bottom right shows the date and time: 01:14 PM 19-10-2023.

The screenshot shows the AWS S3 console interface. The URL in the address bar is s3.console.aws.amazon.com/s3/buckets/mumbaibucket970?region=ap-south-1&tab=objects. The page title is "mumbaibucket970 Info". 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)" indicates there is one item in the bucket. A table lists the object:

Name	Type	Last modified	Size	Storage class
MUSIC.jpg	jpg	October 19, 2023, 13:12:28 (UTC+05:30)	180.2 KB	Standard

At the bottom of the table, the "MUSIC.jpg" row is highlighted with a blue border. The status bar at the bottom right shows the date and time: 01:15 PM 19-10-2023.

mumbaibucket970 Info

Objects (2)

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](#)

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	MUSIC.jpg	jpg	October 19, 2023, 13:12:28 (UTC+05:30)	180.2 KB	Standard
<input type="checkbox"/>	towers-7594002.jpg	jpg	October 19, 2023, 13:14:39 (UTC+05:30)	1.8 MB	Standard

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S3 buckets | S3 | Global

Buckets (1) Info

Buckets are containers for data stored in S3. [Learn more](#)

Name	AWS Region	Access	Creation date
mumbaibucket970	Asia Pacific (Mumbai) ap-south-1	Objects can be public	October 19, 2023, 13:05:31 (UTC+05:30)

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What I Learned

I have potentially gained valuable knowledge and skills related to AWS S3 replication features

1. Understanding S3 Replication:- I Learned about Amazon S3 replication, a feature that allows automatic and asynchronous replication of objects between S3 buckets.
2. Setting Up Source and Destination Buckets:- **(A)** Create a source S3 bucket containing the data we want to replicate.**(B)** Set up a destination S3 bucket where the replicated data will be stored.
3. Configuring Cross-Region Replication (CRR):- Configured cross-region replication for the source bucket, specifying the destination bucket and the target AWS region.
4. Understanding Replication Rules:- Explored and configured replication rules to define which objects in the source bucket should be replicated and the storage class to use in the destination bucket.
5. Monitoring Replication Progress:- Utilized Amazon S3 metrics and CloudWatch to monitor the progress and status of the replication, ensuring that the data is being replicated successfully.
6. Object Versioning and Replication:- Consider the impact of versioning on replication, especially if versioning is enabled for the S3 buckets.
7. Cross-Region Replication Cost Considerations:- I Learned about the cost implications of cross-region replication, including data transfer costs and storage costs in the destination region.
8. Compliance and Data Governance:- Understood how S3 replication can be used to meet compliance requirements and enhance data governance by ensuring data resilience across multiple regions.

I have a Good understanding of how to configure and manage Amazon S3 replication across regions, ensuring data durability, availability, and compliance in a multi-region AWS environment.