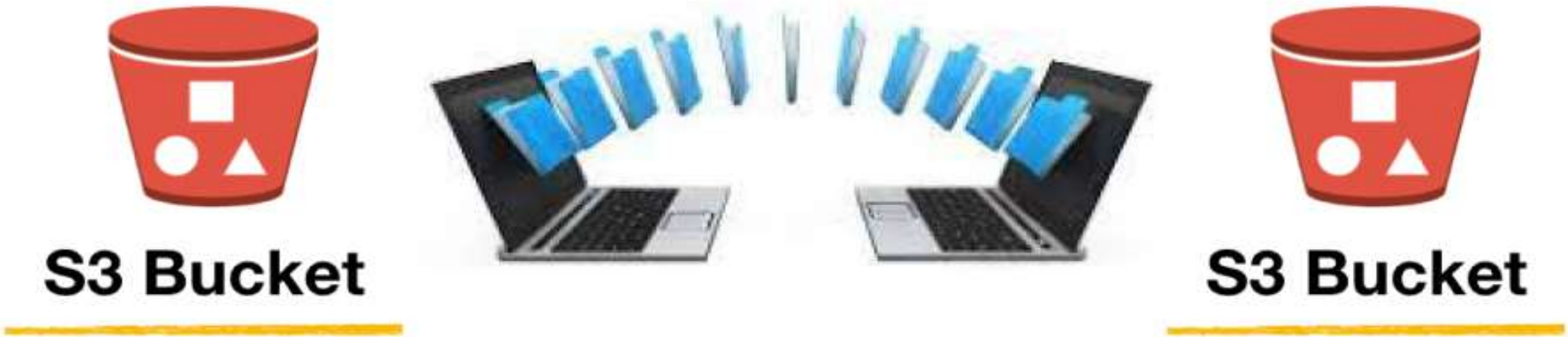
S3 cross replication

S3 REPLICATION



Transfer of data or replication between two different AWS accounts of two different regions.

Introduction:

In today's fast-paced digital landscape, businesses often require seamless data replication and backup strategies to ensure data durability and availability. AWS S3 (Simple Storage Service) comes to the rescue with its powerful cross-account replication feature, allowing organizations to replicate data across different AWS accounts. In this blog, we'll explore the benefits and implementation of S3 replication across multiple AWS accounts.

Benefits of Cross-Account S3 Replication:

1. **Enhanced Data Resiliency:** Replicating data across different AWS accounts provides an added layer of resiliency, protecting your critical data against accidental deletions, data corruption, or regional outages.
2. **Compliance and Governance:** Cross-account replication enables organizations to meet compliance requirements by securely storing data in separate AWS accounts, ensuring data privacy and separation of responsibilities.
3. **Disaster Recovery:** By replicating data to a different AWS account, you can establish a robust disaster recovery mechanism, ensuring business continuity in case of unexpected events or system failures.
4. **Simplified Collaboration:** Sharing data across accounts becomes easier with cross-account replication. Different teams or business units can securely access and work on the replicated data without compromising its integrity or security.

Implementing Cross-Account S3 Replication:

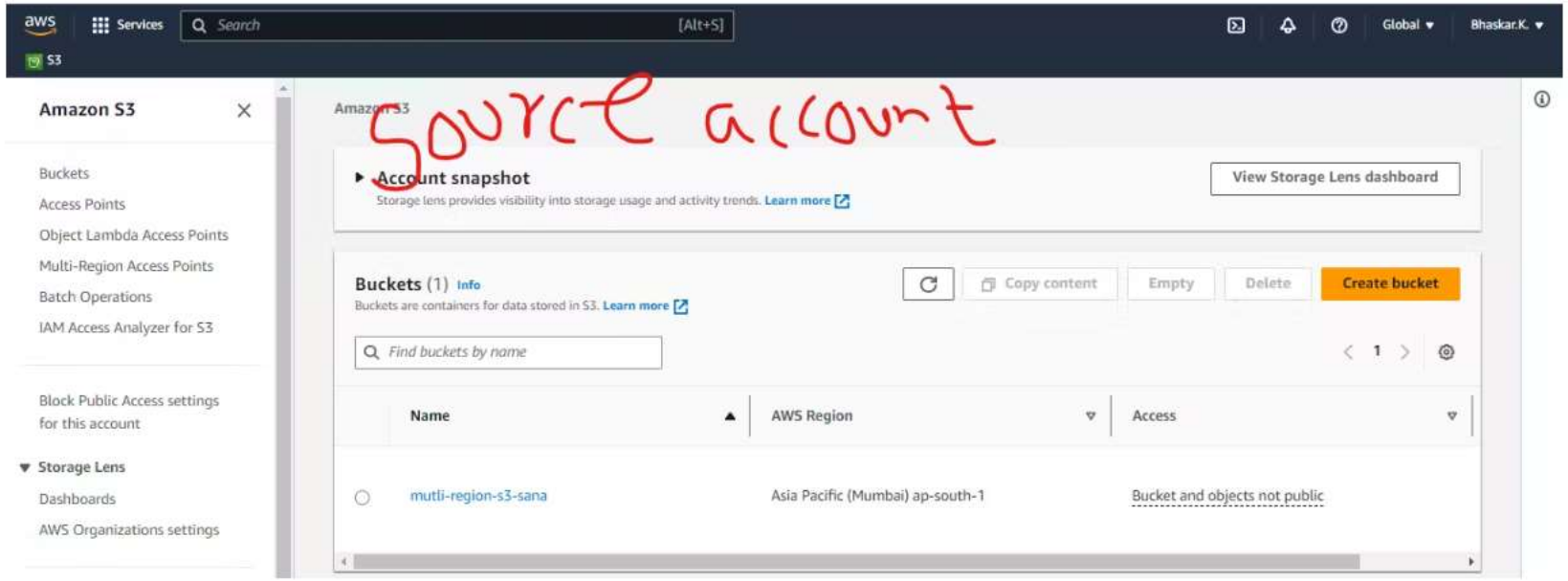
To enable cross-account replication in AWS S3, follow these steps:

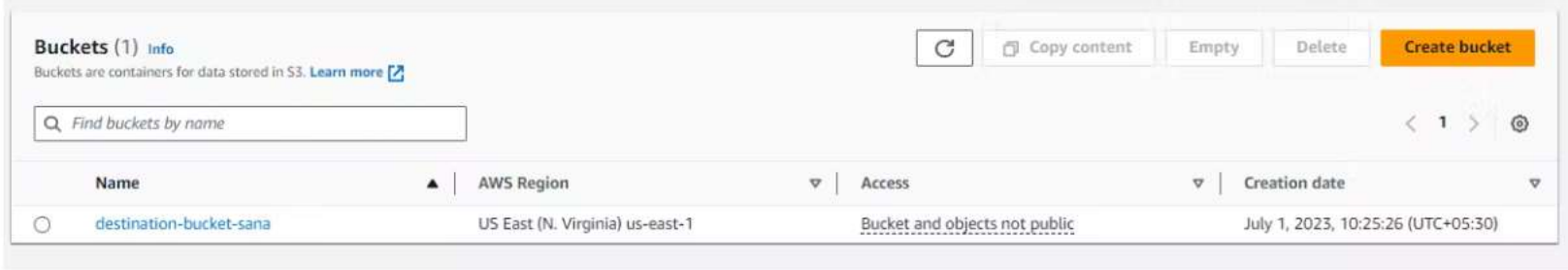
Step 1:

First login 2 aws account Source s3 account and Destination s3 account.

In the source account create an s3 bucket here I created "multi-region-s3-sana" (this bucket I was created in ap-south-1)and destination I created a bucket in the name of "destination-bucket-sana"(this bucket I created in us-east-1)

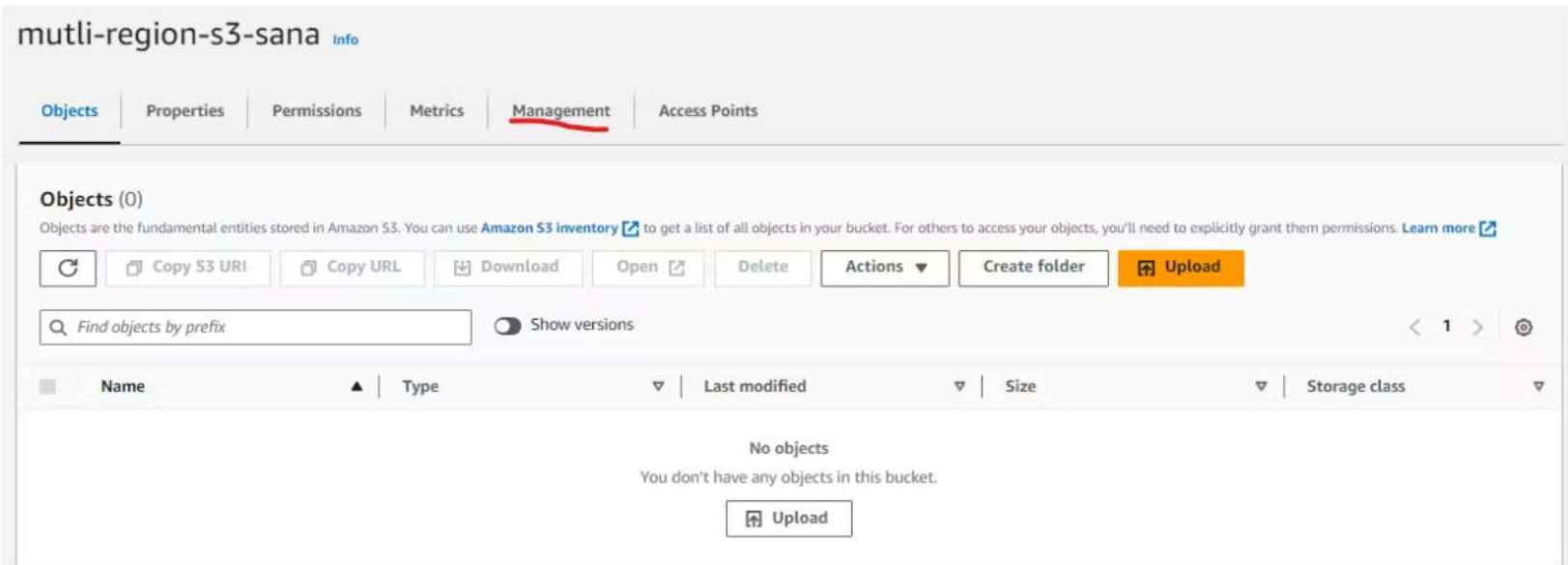
Enable versioning on both the source and destination buckets. Versioning allows S3 to keep track of changes to objects and ensures accurate replication across accounts.


aws
Services
Search
[Alt+S]
S3
Global
Bhaskar.K.
Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Amazon S3
Source account
Account snapshot
Storage lens provides visibility into storage usage and activity trends. Learn more
View Storage Lens dashboard
Buckets (1) Info
Buckets are containers for data stored in S3. Learn more
Copy content
Empty
Delete
Create bucket
Find buckets by name
1
Name
AWS Region
Access
mutli-region-s3-sana
Asia Pacific (Mumbai) ap-south-1
Bucket and objects not public

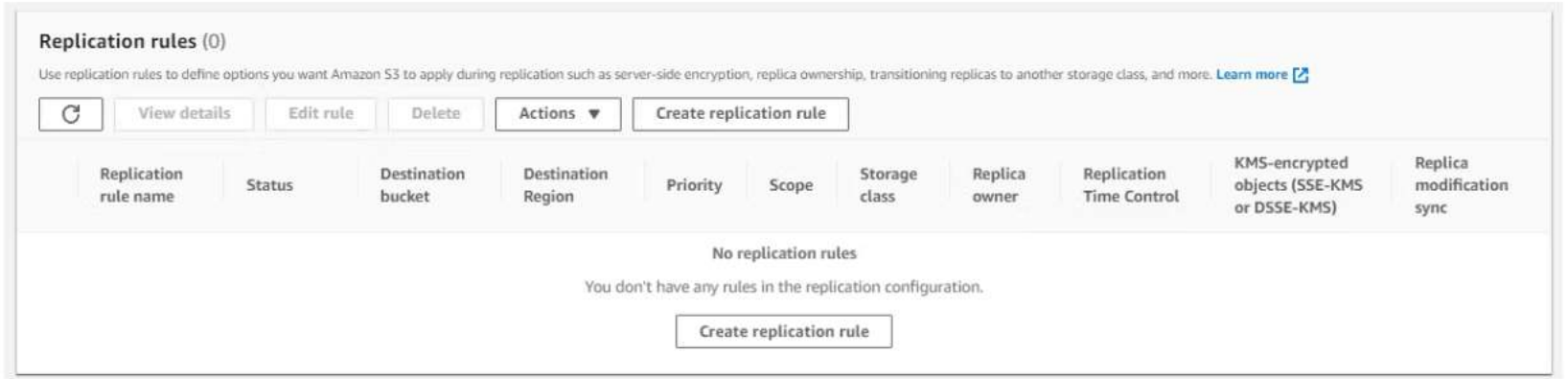

Buckets (1) Info
Buckets are containers for data stored in S3. Learn more
Copy content
Empty
Delete
Create bucket
Find buckets by name
1
Name
AWS Region
Access
Creation date
destination-bucket-sana
US East (N. Virginia) us-east-1
Bucket and objects not public
July 1, 2023, 10:25:26 (UTC+05:30)

Step-2:

In the source bucket create the replication rules for transferring data from different accounts to different regions.



click on the source bucket and go to the management, then create replication rule.



give replication rule id.

Create replication rule Info

Replication rule configuration

Replication rule name

mumbai-nv

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.

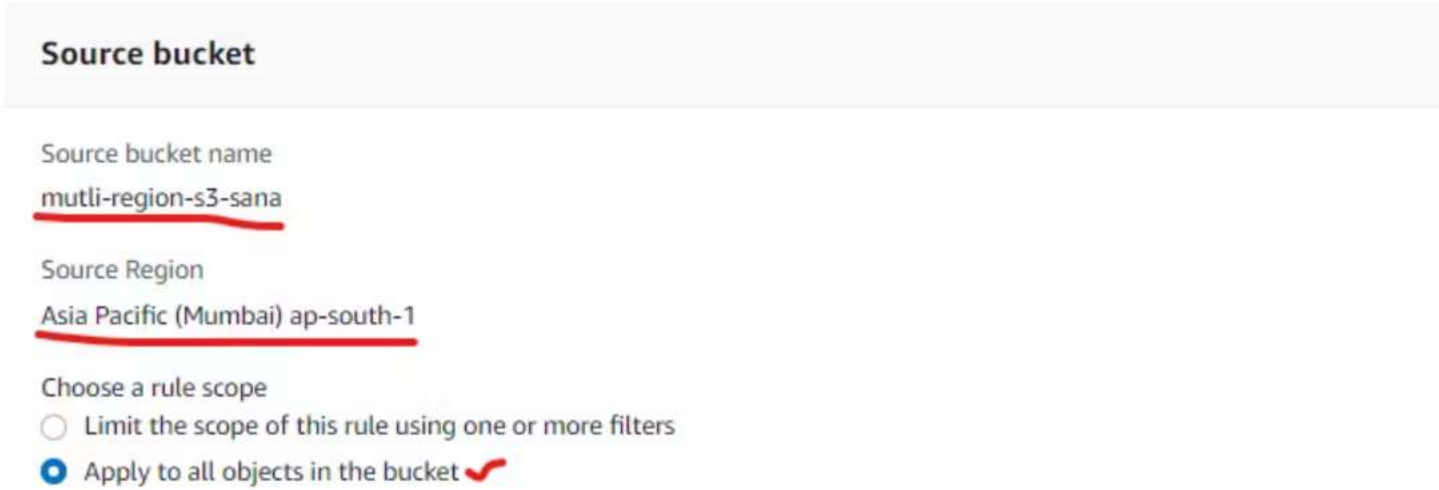
- (•) Enabled
- ( ) Disabled

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

make sure your bucket region is in the replication rule.



Now in the replication rule destination, u can choose ur requirements like if you want to transfer the date within the account of different buckets of different regions. (or) if you want to transfer the data from different accounts of different regions.

Here I selected another account for that u have to destination account id and destination bucket name.

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

Account ID

691186113147

Bucket name

Choose the bucket that will receive replicated objects.

destination-bucket-sana

Destination Region

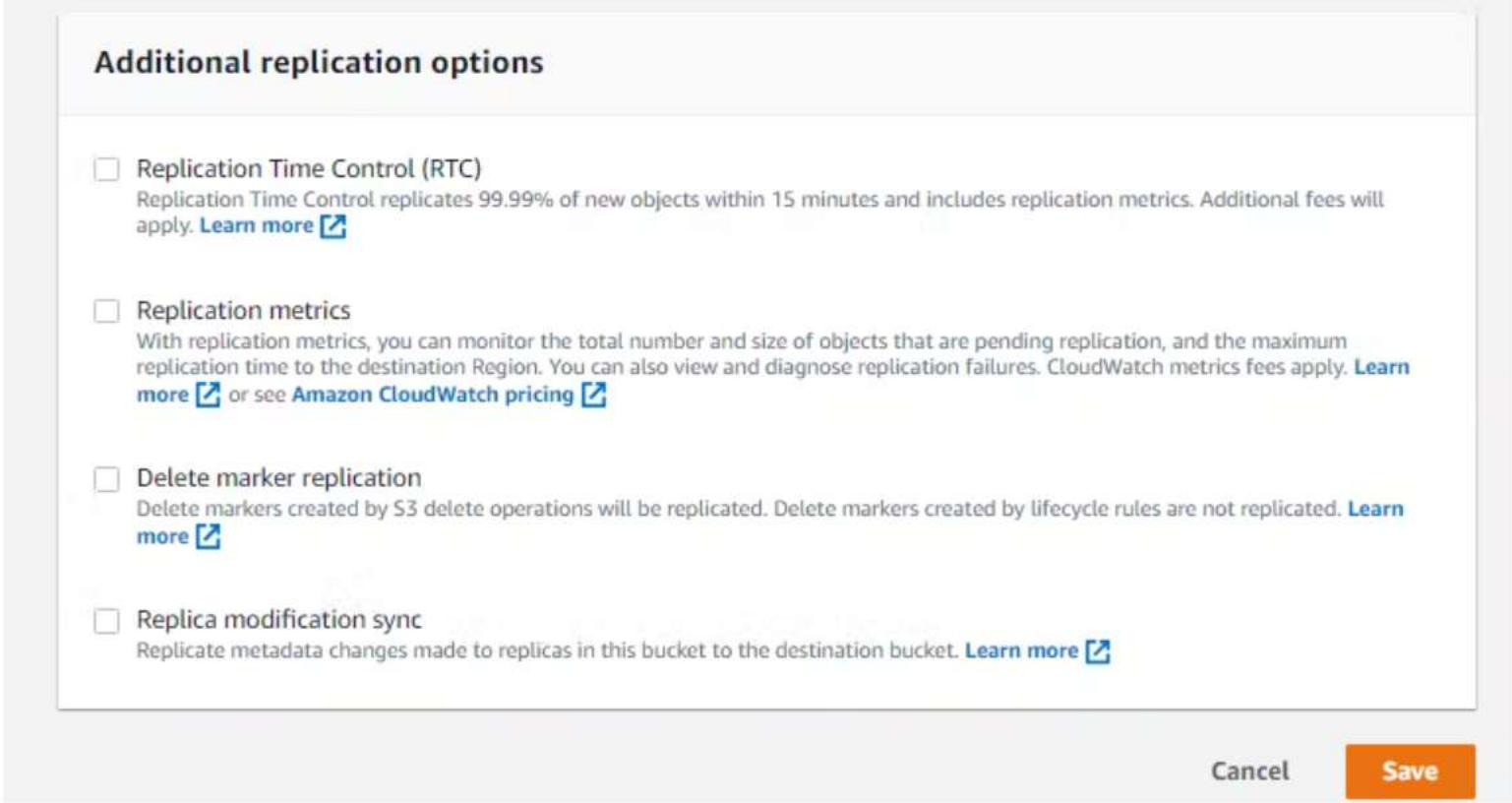
US East (N. Virginia) us-east-1

☐ Change object ownership to destination bucket owner

Objects in the source bucket not owned by the source bucket owner will be replaced with access policy that grants full permission to the destination bucket owner

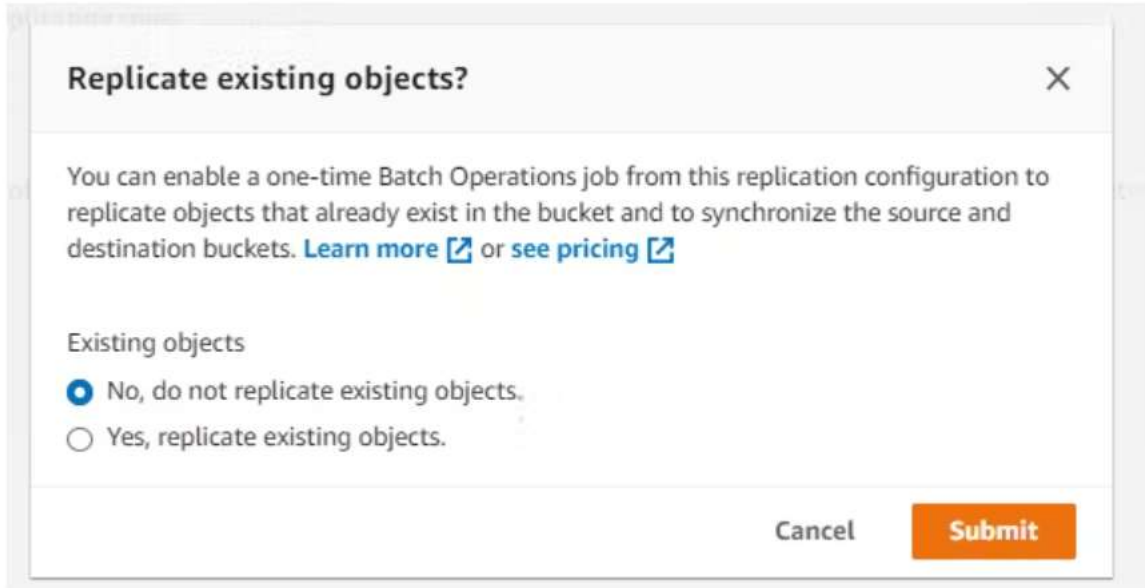
In the IAM role select create a new role for replication.

And save your replication settings



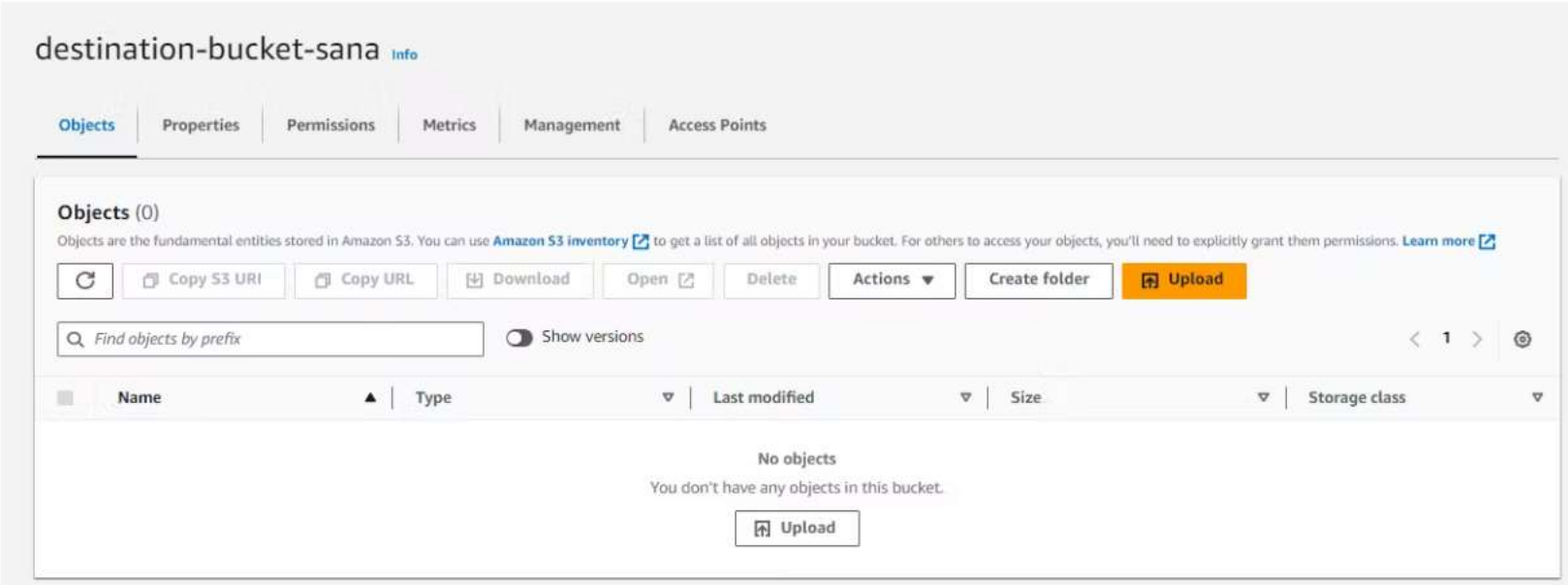
After clicking on save You will get a pop-up like this it means that if u have any existing objects to replicate to the destination bucket or not, I don't want to replicate existing objects to a destination bucket.

Based on your requirement you will select the options, here I am selecting "No, don't replicate existing objects".

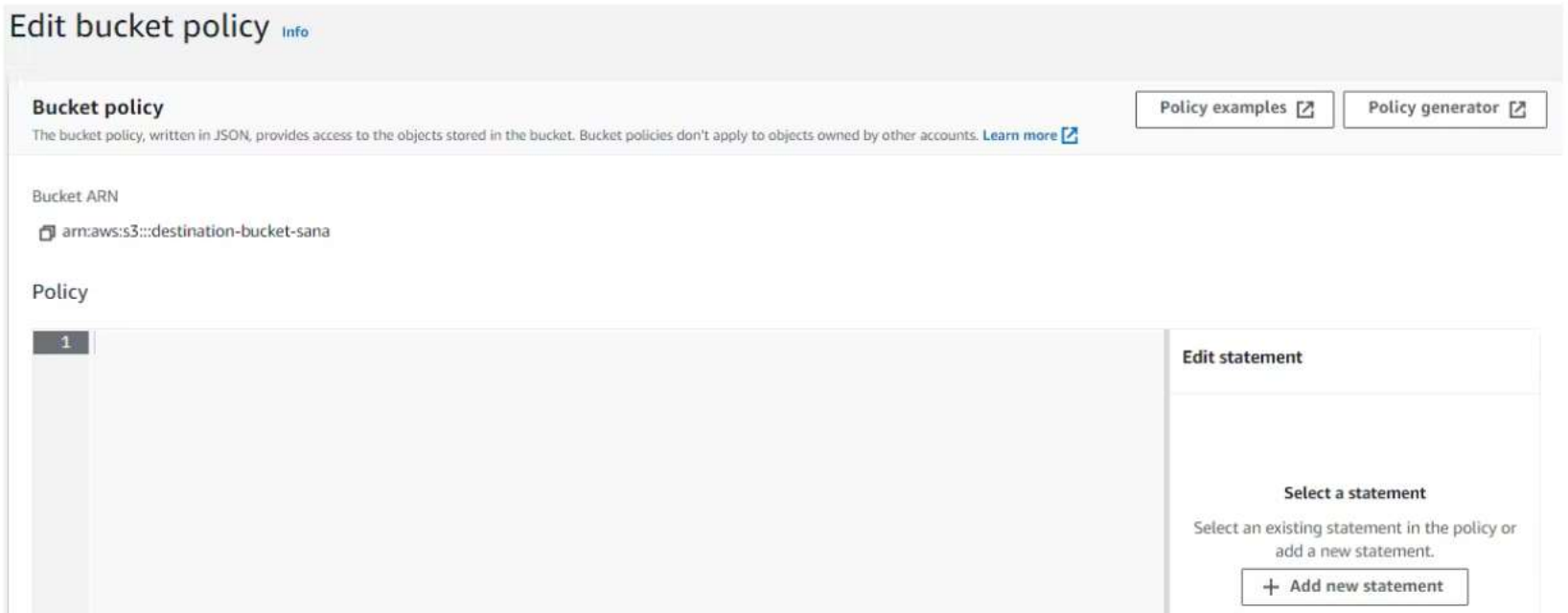

Replicate existing objects?
You can enable a one-time Batch Operations job from this replication configuration to replicate objects that already exist in the bucket and to synchronize the source and destination buckets. Learn more or see pricing
Existing objects
No, do not replicate existing objects.
Yes, replicate existing objects.
Cancel
Submit

Step-3:

Now go to the destination bucket of 2nd aws account.



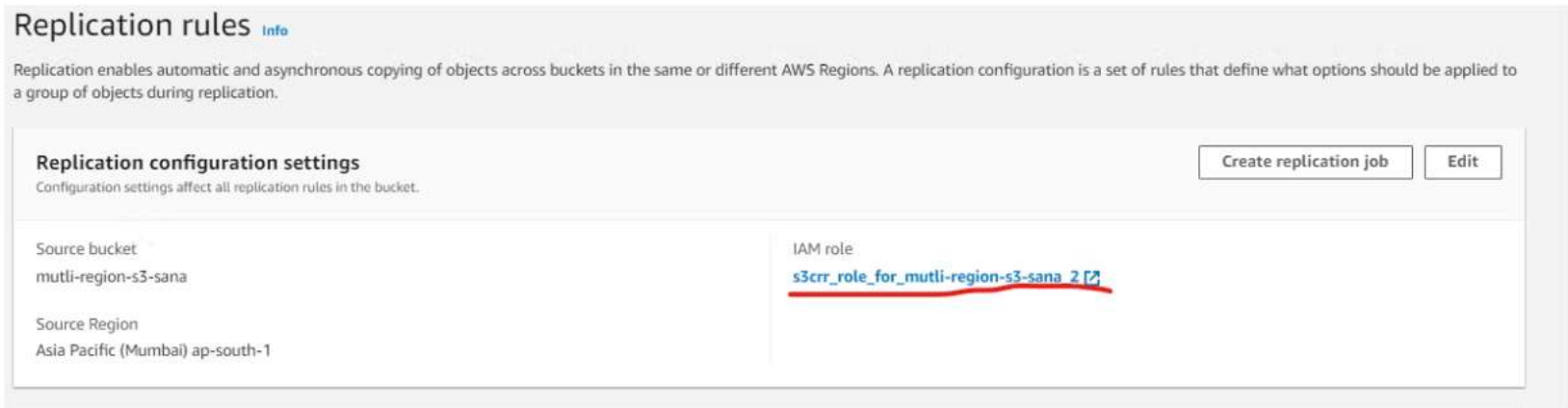
Now go to the permission option of the destination account of aws and edit the bucket policy of the destination bucket.

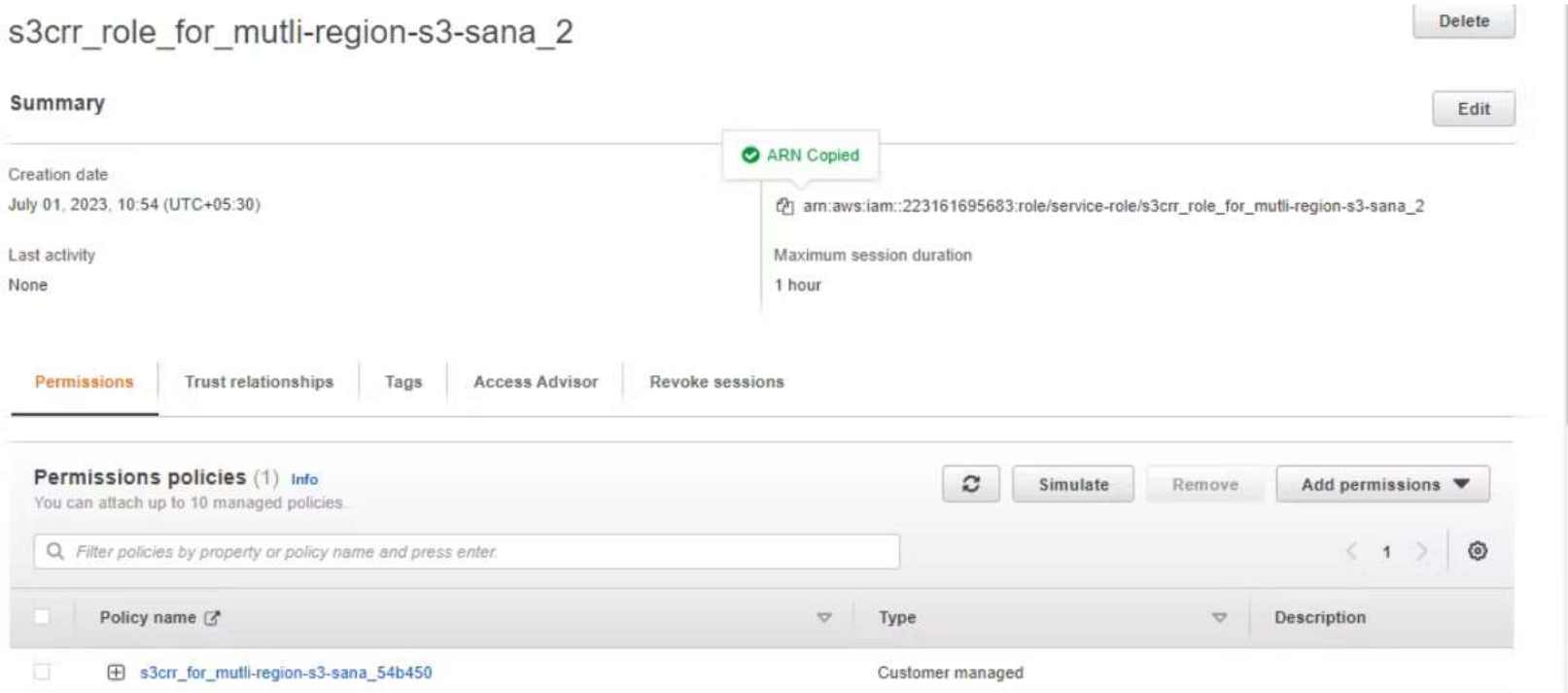


Now I followed the code of the bucket policy

```
{
   "Version":"2012-10-17",
   "Id":"",
   "Statement":[
      {
         "Sid":"1",
         "Effect":"Allow",
         "Principal":{
            "AWS":"arn:aws:iam::223161695683:role/service-role/s3crr_role_for_mutli-region-s3-sana_2"
         },
         "Action":["s3:ReplicateObject", "s3:ReplicateDelete"],
         "Resource":"arn:aws:s3:::destination-bucket-sana/*"
      },
      {
         "Sid":"2",
         "Effect":"Allow",
         "Principal":{
            "AWS":"arn:aws:iam::223161695683:role/service-role/s3crr_role_for_mutli-region-s3-sana_2"
         },
         "Action":["s3:List*", "s3:GetBucketVersioning", "s3:PutBucketVersioning"],
         "Resource":"arn:aws:s3:::destination-bucket-sana"
      }
   ]
}
```

To get the replication arn IAM policy, go to the replication rule of the source bucket click on IAM role and copy IAM arn role, and paste it into the destination bucket policy.

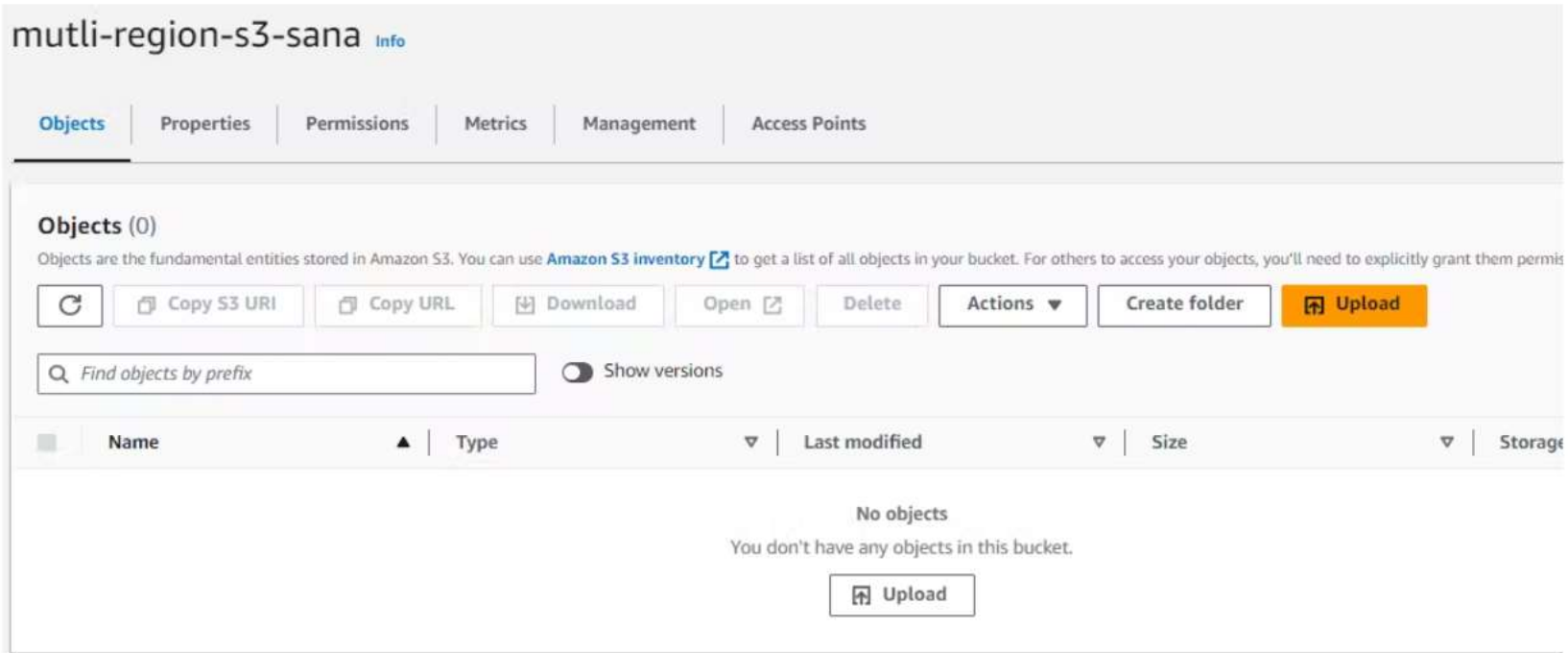


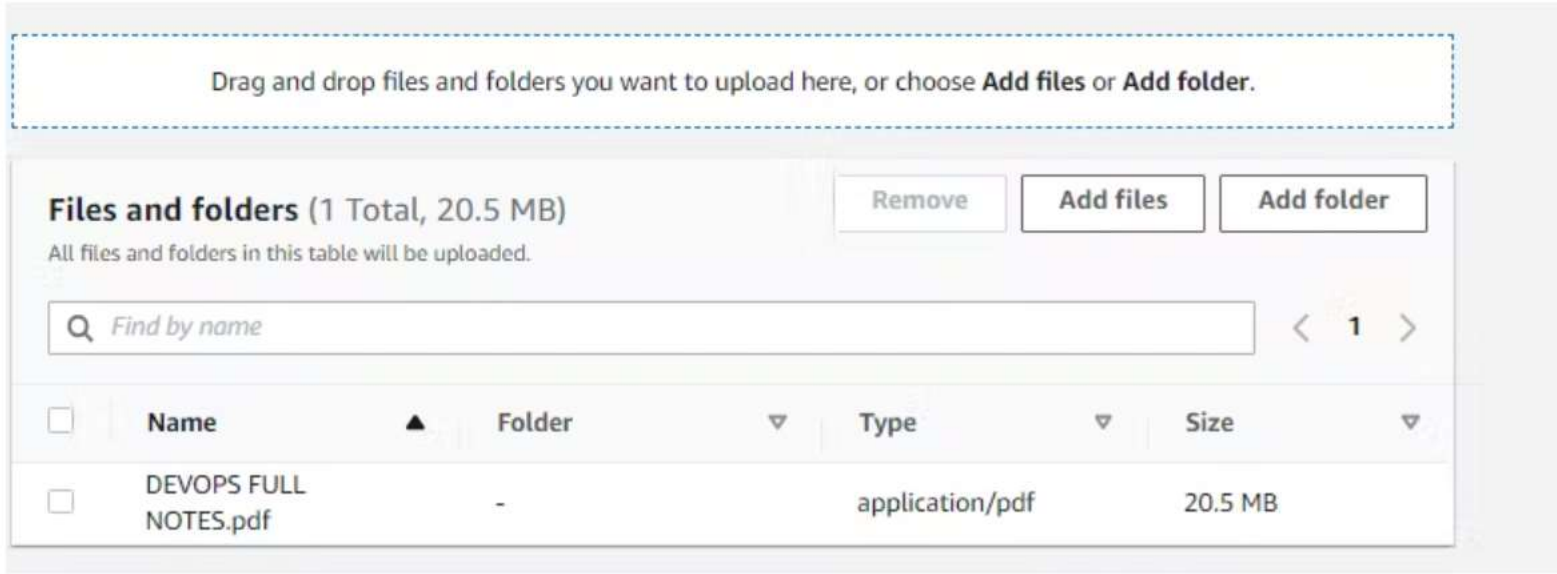

s3crr_role_for_mutli-region-s3-sana_2
Delete
Summary
Edit
ARN Copied
Creation date
July 01, 2023, 10:54 (UTC+05:30)
arn:aws:iam::223161695683:role/service-role/s3crr_role_for_mutli-region-s3-sana_2
Last activity
None
Maximum session duration
1 hour
Permissions
Trust relationships
Tags
Access Advisor
Revoke sessions
Permissions policies (1) Info
You can attach up to 10 managed policies
Simulate
Remove
Add permissions
Filter policies by property or policy name and press enter.
1
Policy name
Type
Description
s3crr_for_mutli-region-s3-sana_54b450
Customer managed

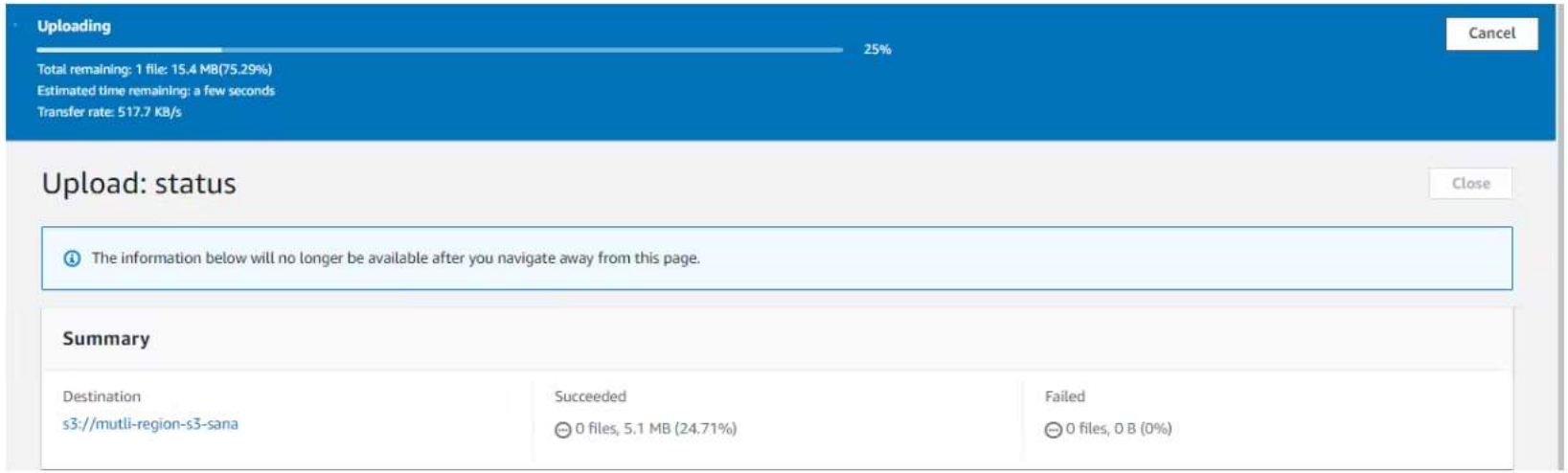
And finally, we did a replication of two different accounts of two different regions. Lets check if it will work or not.

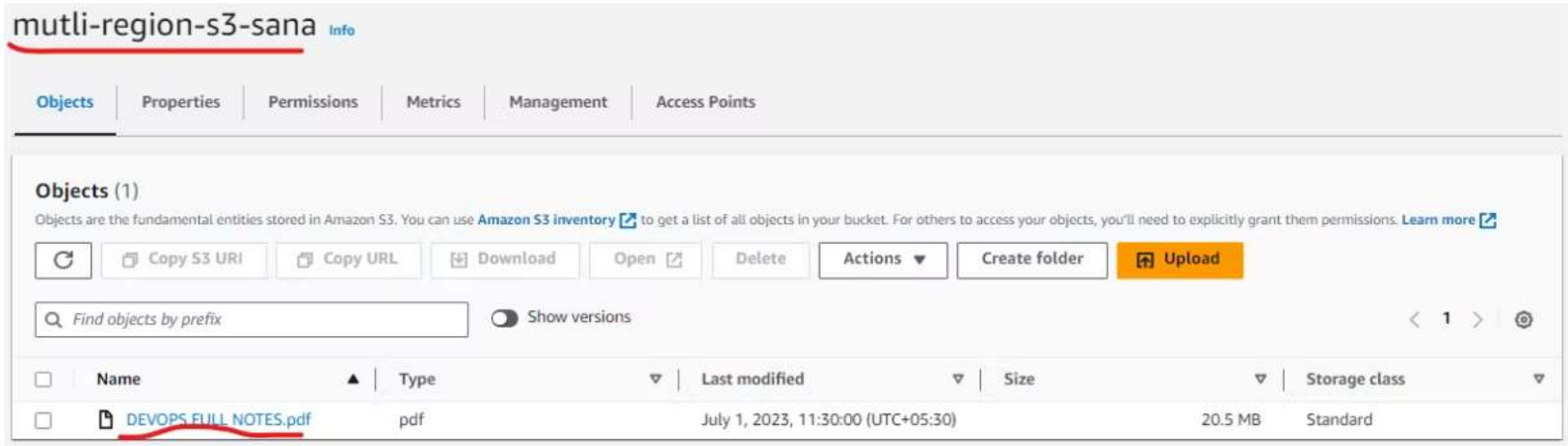
For checking purpose I am uploading a few files in source bucket.

At present, in my source, nothing is there.

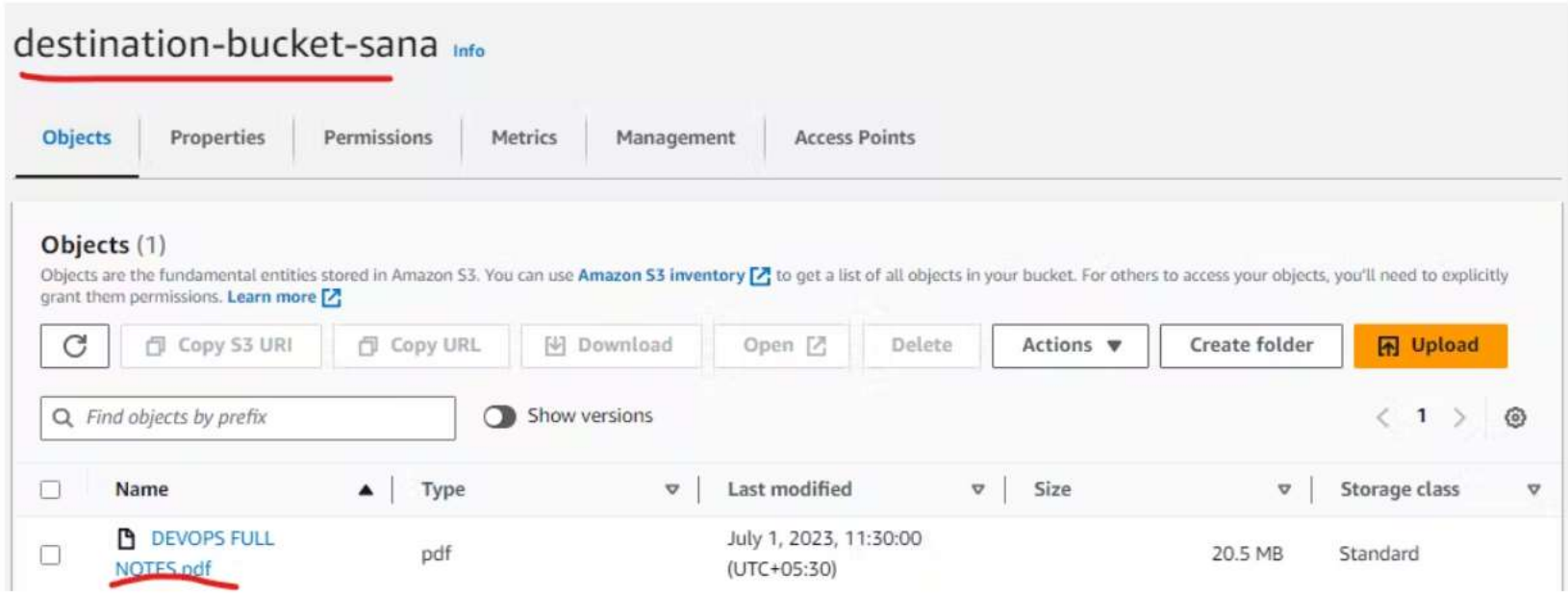



Drag and drop files and folders you want to upload here, or choose Add files or Add folder.
Files and folders (1 Total, 20.5 MB)
All files and folders in this table will be uploaded.
Remove
Add files
Add folder
Find by name
1
Name
Folder
Type
Size
DEVOPS FULL NOTES.pdf
-
application/pdf
20.5 MB


Uploading
25%
Cancel
Total remaining: 1 file: 15.4 MB(75.29%)
Estimated time remaining: a few seconds
Transfer rate: 517.7 KB/s
Upload: status
Close
The information below will no longer be available after you navigate away from this page.
Summary
Destination
s3://mutli-region-s3-sana
Succeeded
0 files, 5.1 MB (24.71%)
Failed
0 files, 0 B (0%)



Here I uploaded one file to my source bucket. Now go to the destination bucket and refresh the page of the 2nd AWS account.



So, here we transfer the data from one account of s3 aws to another account os s3 aws.