S3 (SIMPLE STORAGE SERVICE)

Amazon S3: ESSENTIALS

- **File and Object Storage**
  - Unlimited Storage
  - High availability
  - 99.999999999% Durability (Think of Disk set with RAID 1)
  - 99.99% Availability (Spread across AZ's)
  - Objects size can be from 1byte to 5TB

- **Objects:** Are static files
  - Contains Key and Value pair (meta data)

- **Buckets:** Contain a group of objects/files
  - Each bucket name must be unique across AWS S3

- **Lifecycle Management**
  - Archive or Delete Objects

- **Versioning**
  - preserve, retrieve, and restore every version of every object

- **Encryption**
  - Server Side Encryption (S3 or KMS) or Client Side Encryption

STORAGE TYPES

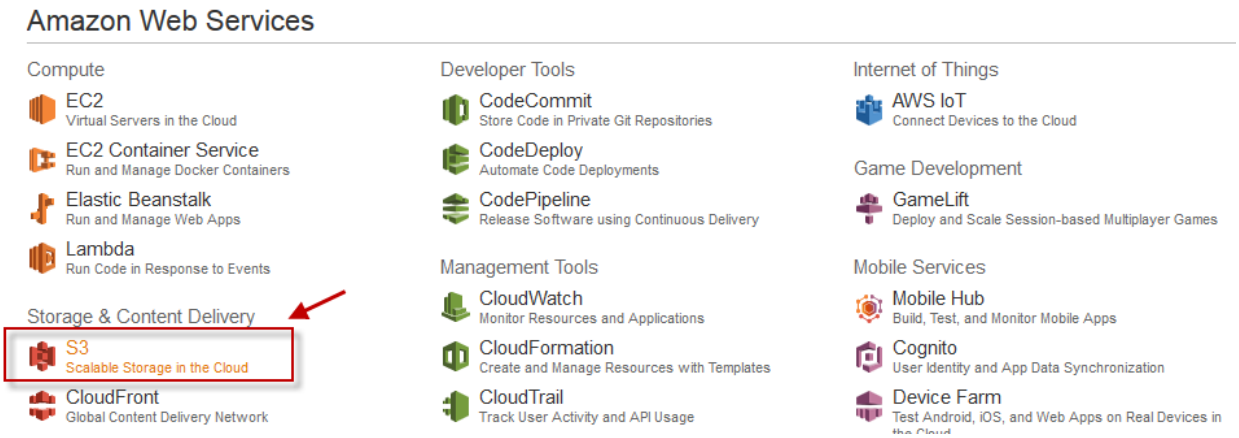
	Standard	Standard - Infrequent Access	Reduced Redundancy Storage
Durability	99.999999999%	99.999999999%	99.99%
Availability	99.99%	99.9%	99.99%

GLACIER:

- Extremely low cost storage service.
- Archival storage, which takes 3 to 5 hours to for retrieval

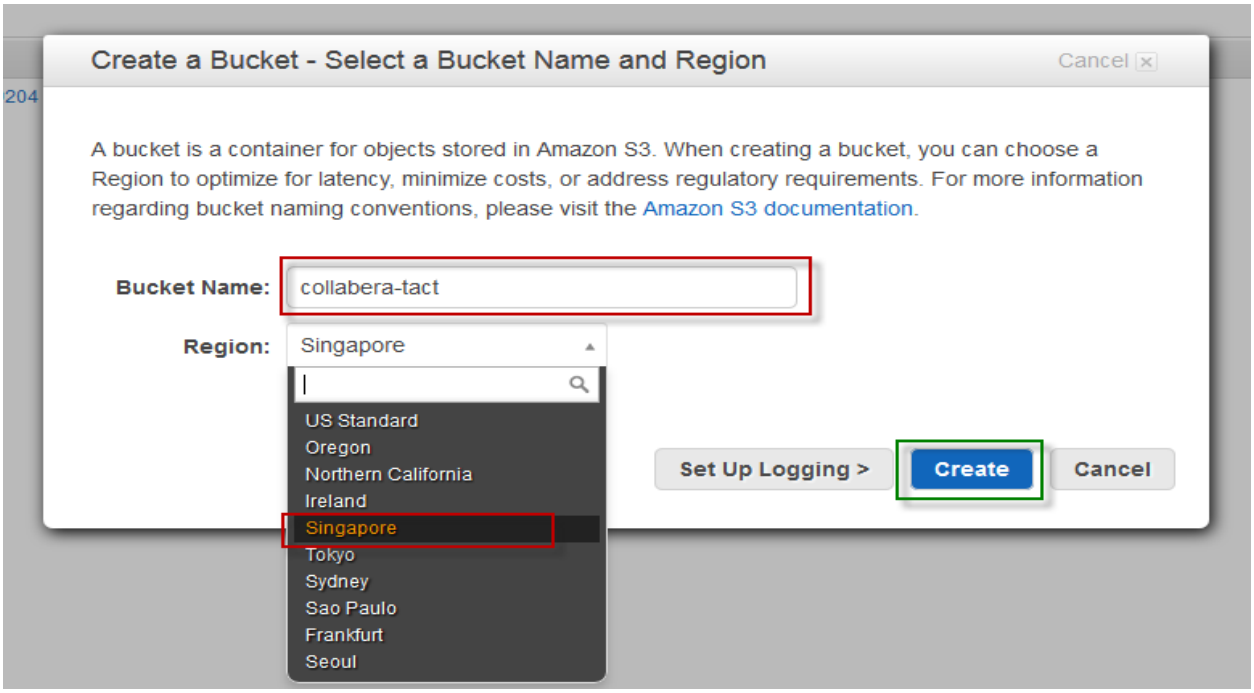
CREATE S3 BUCKET

Once you logged in to AWS console, choose S3 under Storage & Content Delivery From Management Console.

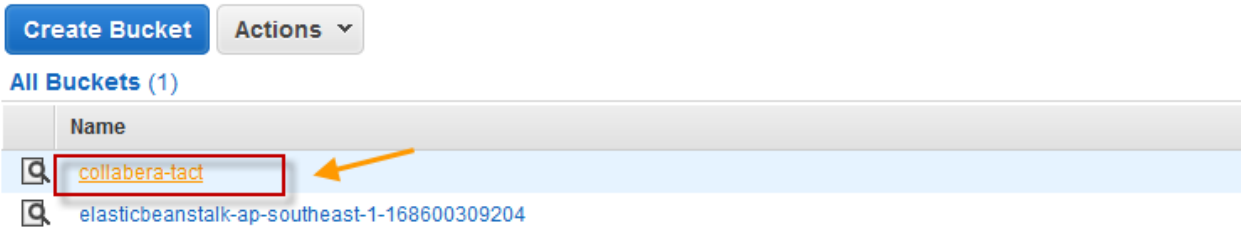


Click on Create Bucket to create a new one.

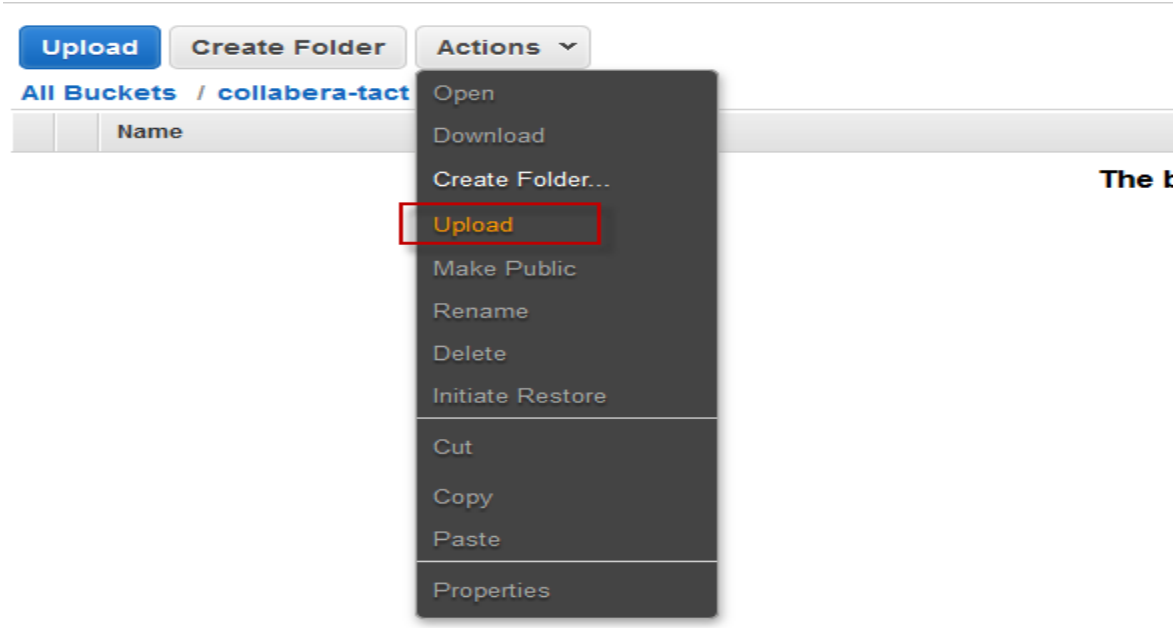
Specify a name in Bucket Name text field, choose a region for Bucket, the click on Create.



Choose the newly created Bucket to upload data.

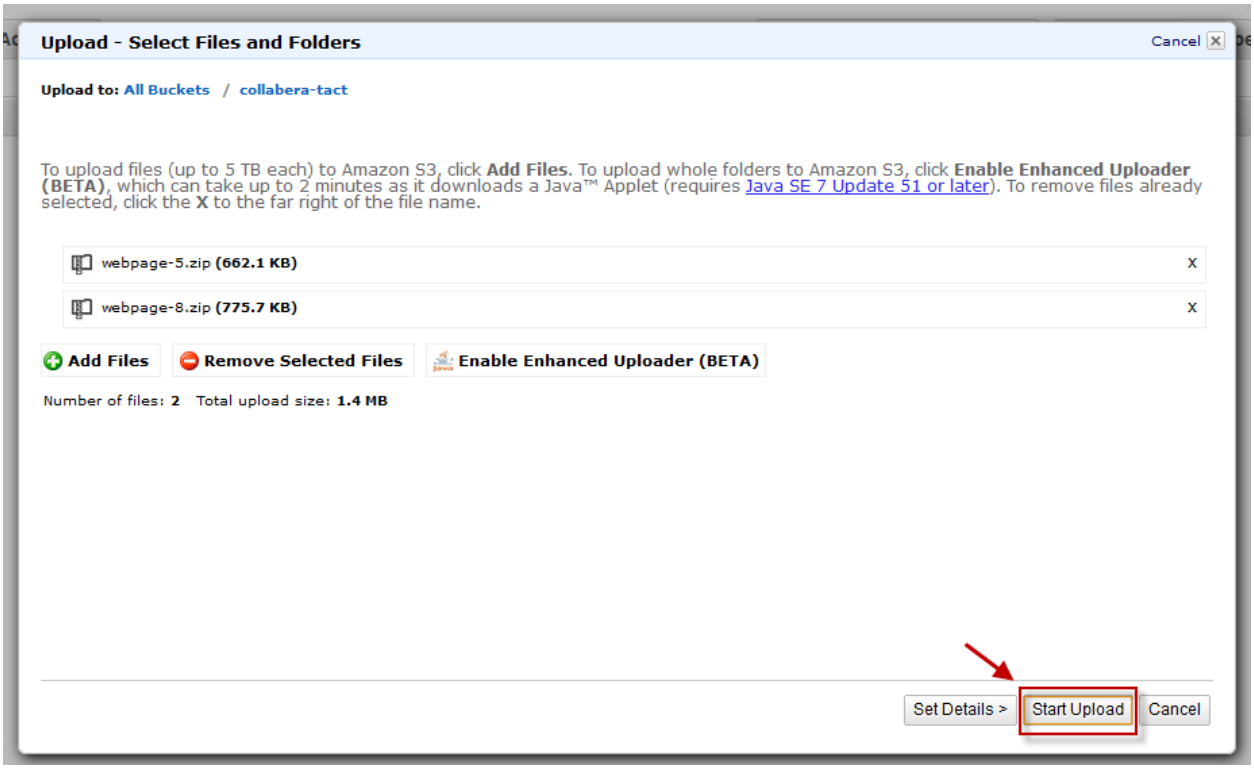


Once you are under the Bucket, choose Upload from the Actions drop down list.

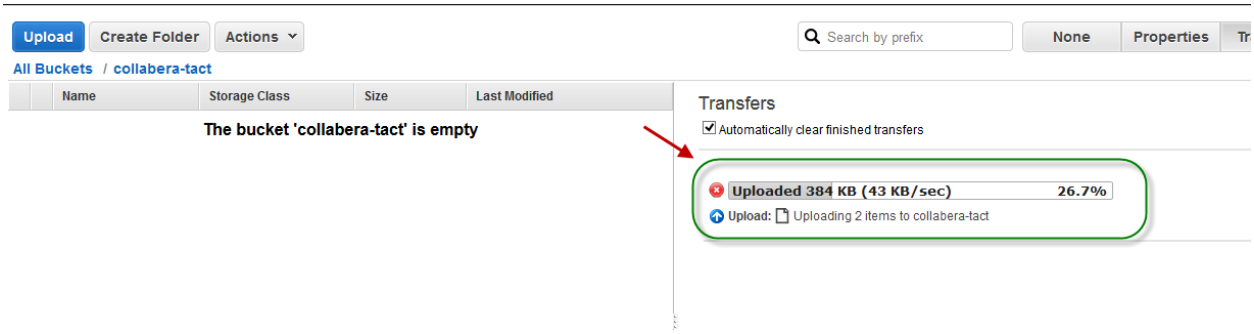


Click on Add files to upload files to S3 Bucket.

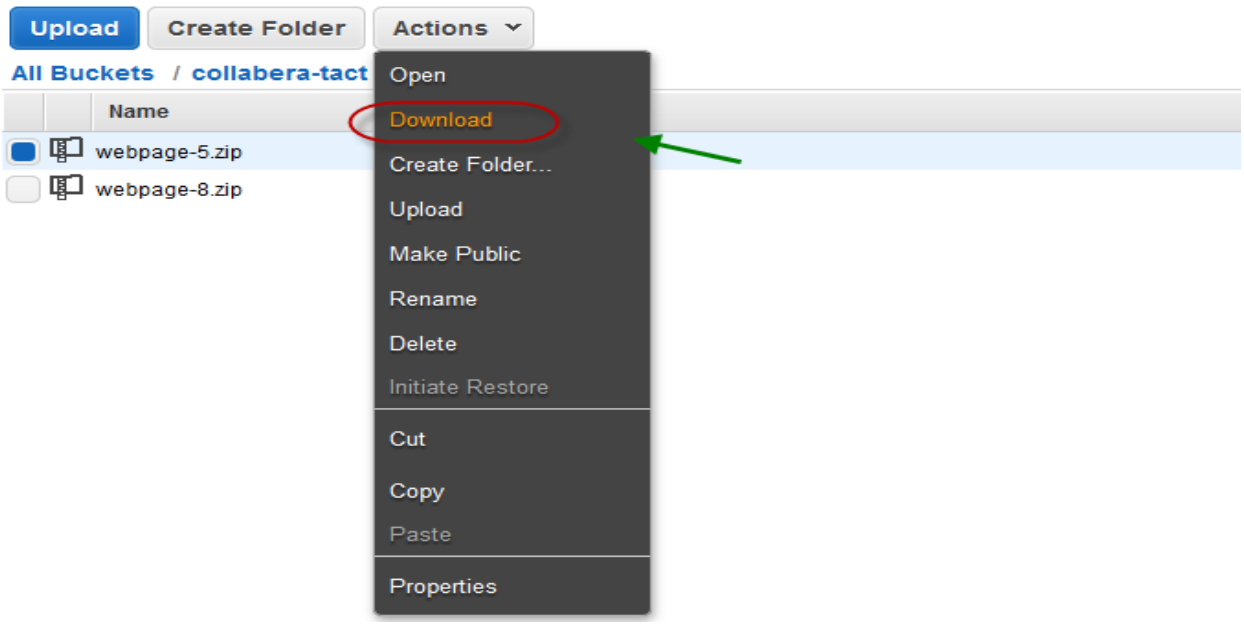
Select the files to upload and then select Start Upload button.



Files will start upload; you can see the upload status from the right pane.



To download the file, choose file and click Download from actions tab.

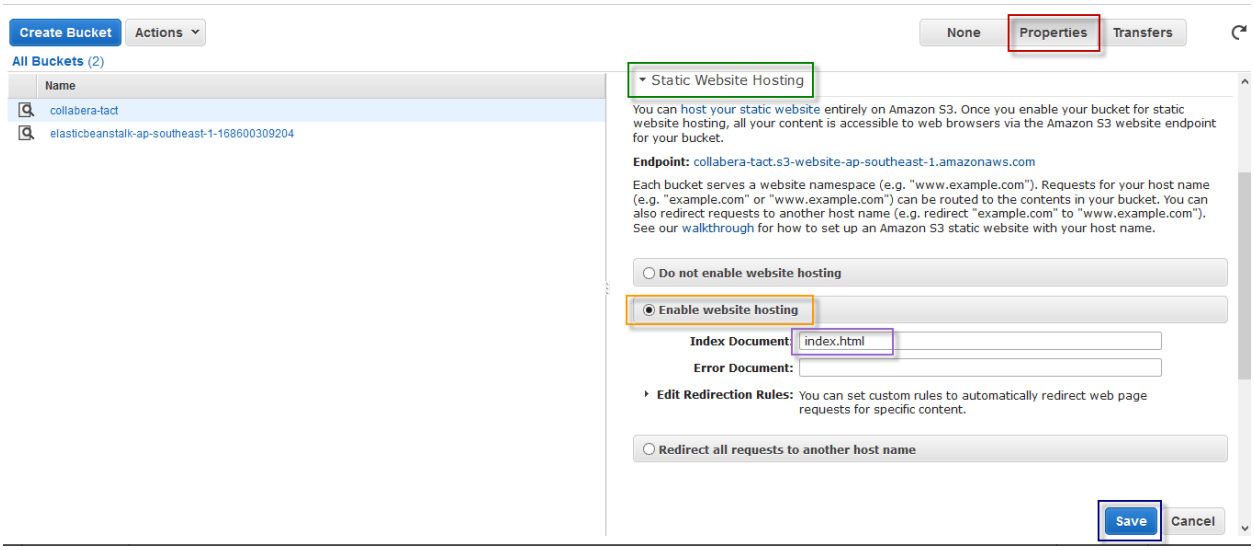


HOSTING A WEBSITE ON S3

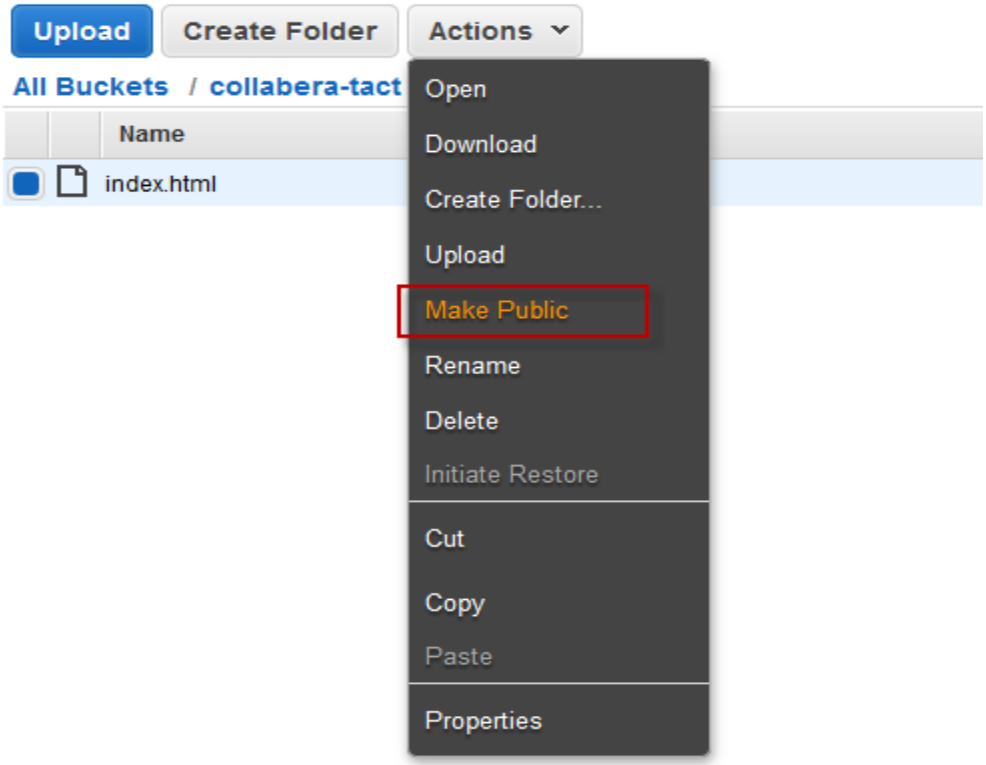
Once you created a bucket, create a html file with following code and name that file as index.html and upload to created bucket.

```
<html>
<body>
<h1 style="color:blue;">This is for testing S3</h1>
</body>
</html>
```

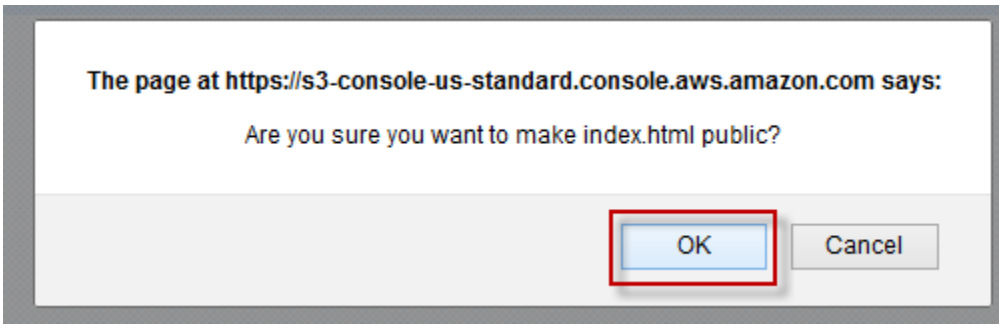
Once you uploaded, under All Buckets, click Properties for the bucket.
Under Properties, expand Static Website Hosting, choose Enable website hosting and specify Index Document as index.html which was created and uploaded.
Then choose save button.



Then go inside of the bucket, choose index.html file select Make Public under Actions tab.



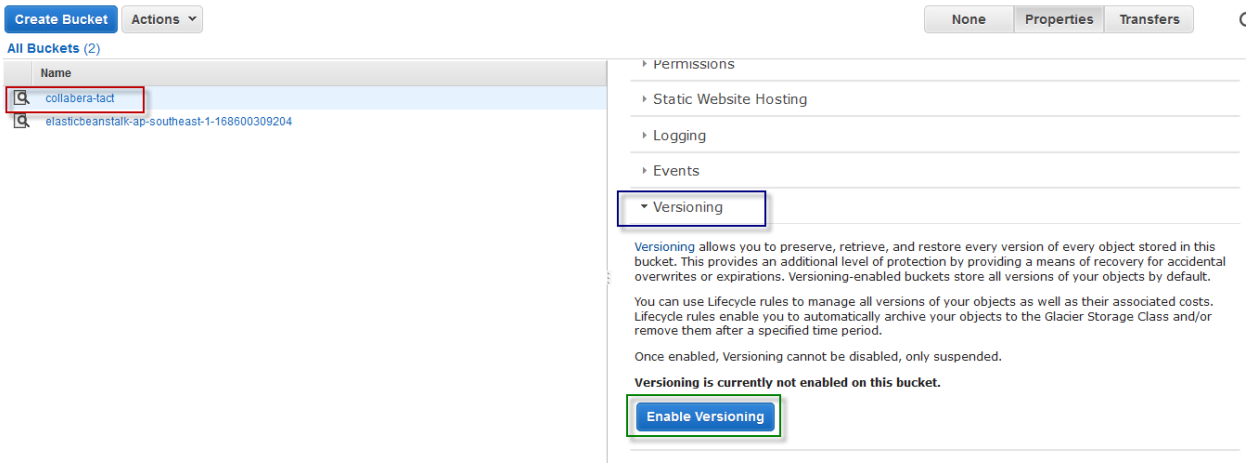
A pop up window will open to confirm, choose OK to confirm.



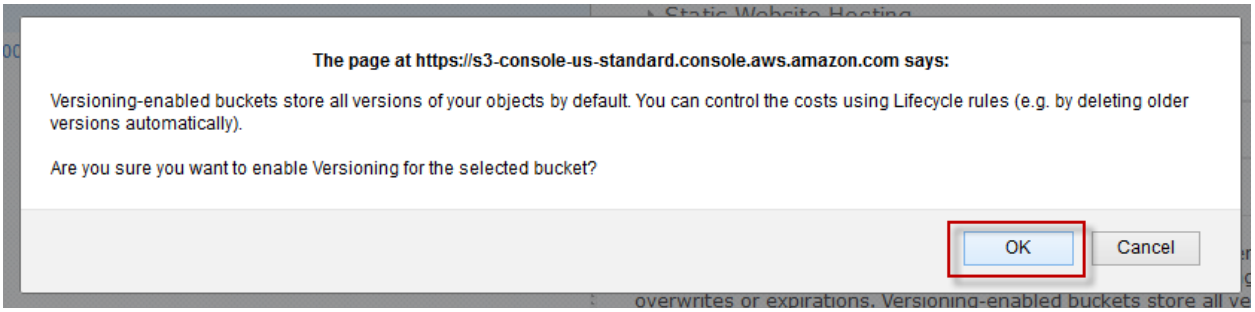
Once done, again go to the All buckets section, select your bucket, go to properties of your bucket, expand Static Website Hosting.
Copy or click on the link to open your static website hosted on S3.

S3 OBJECT VERSIONING

Under S3, go to all Buckets section, choose Properties of the Bucket.
Under Properties, expand Versioning, then choose Enable versioning to enable.



A pop up window will open to confirm, choose OK to confirm.



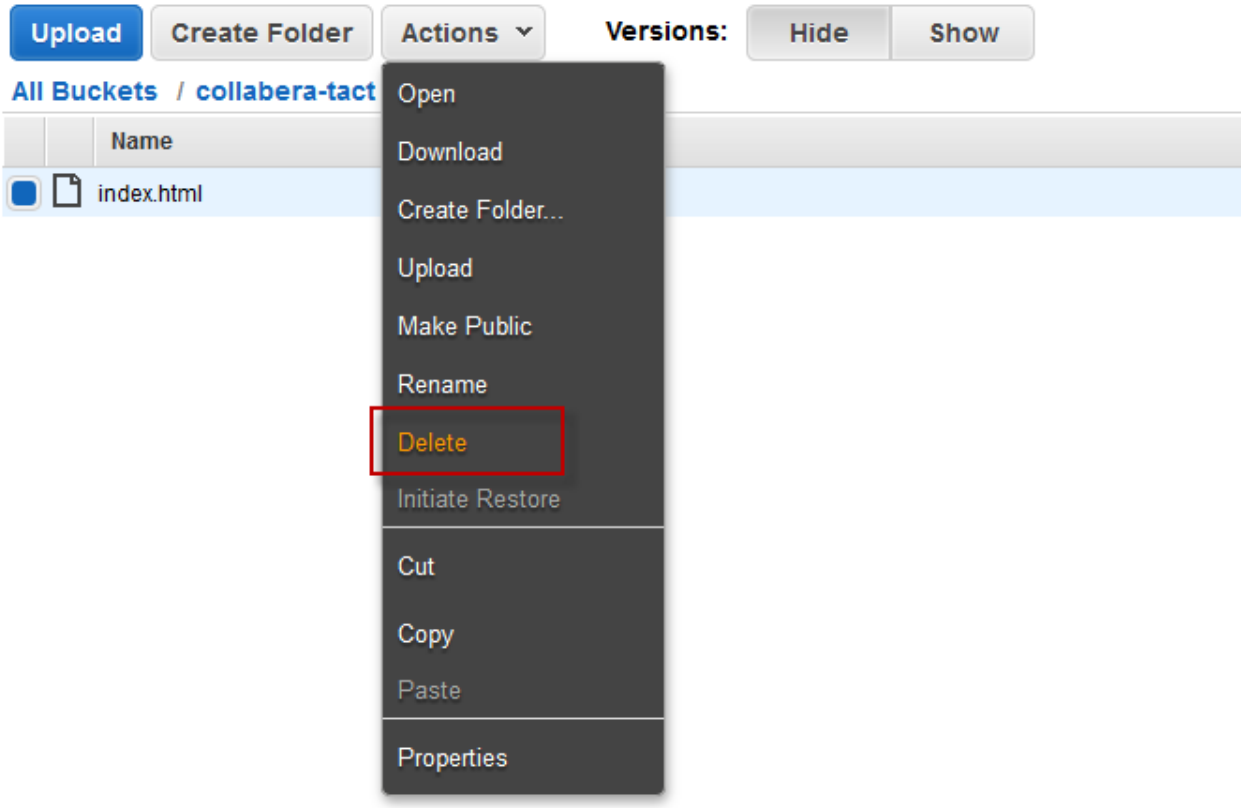
Add below code to existing index.html file and upload it to same bucket.

```
<html>
<body>
<h1 style="color:blue;">This is for testing S3 Versioning</h1>
<h2 style="color:green;">Hi Welcome to S3 Versioning</h2>
</body>
</html>
```

You can see those changes were reflected by opening the static website which we configured.

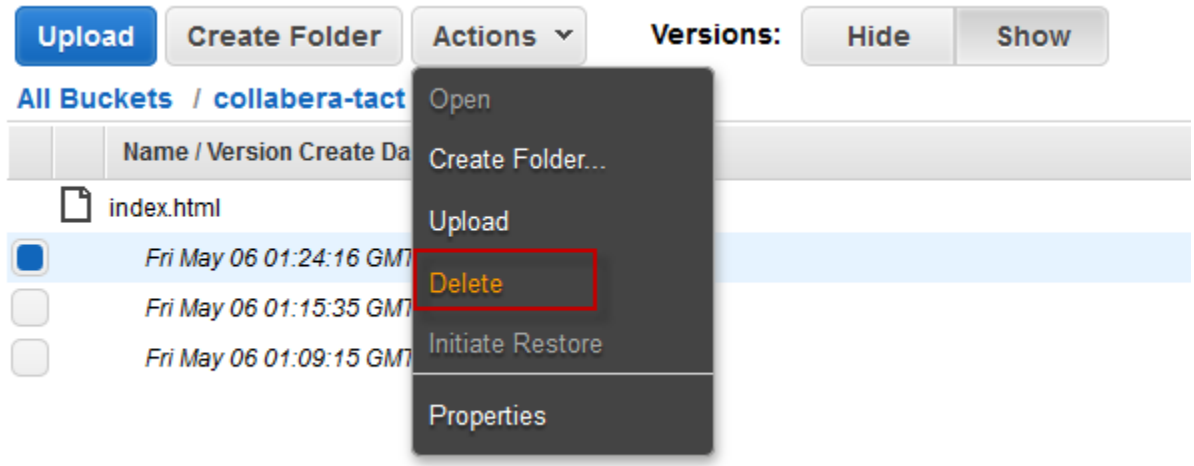
Once enabled versioning, you can see a Versions tab will display beside of the Actions tab.
Choose Show to see the versions of current file.

Choose index.html under the Bucket, click on Delete under Actions tab to remove the current version of the object.

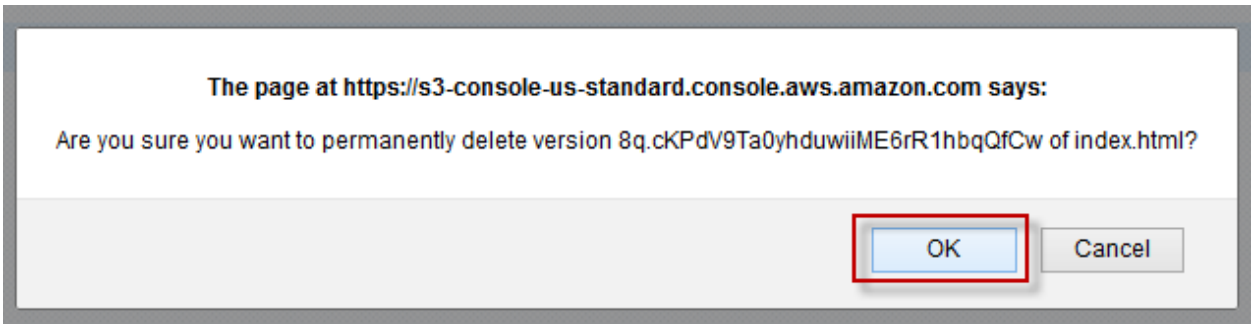


Click on Show option for Versions to see the available versions.
You can be able to see file has been deleted and added Delete marker to the file.

You choose the file which has delete marker and choose delete from the Actions tab.

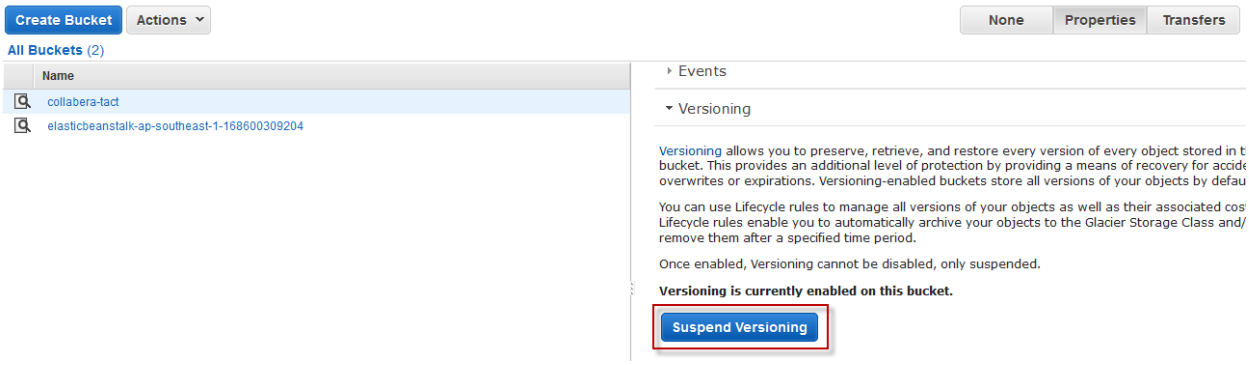


Confirm deletion of delete marker.



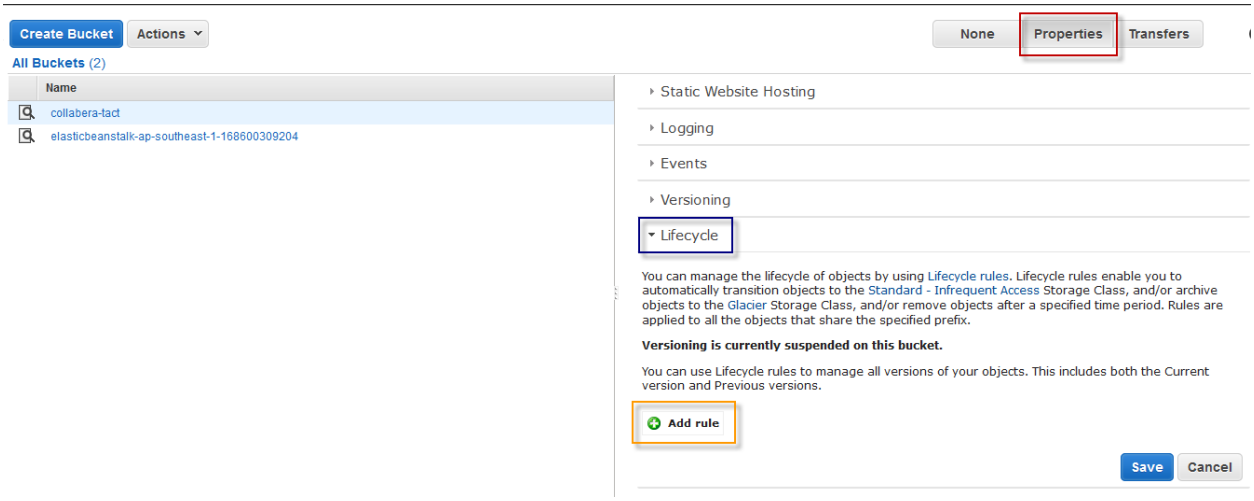
You can be able to see the file has been restored back.

To suspend versioning on the Bucket, go to properties of the Bucket, expand Versioning, under versioning choose Suspend Versioning.

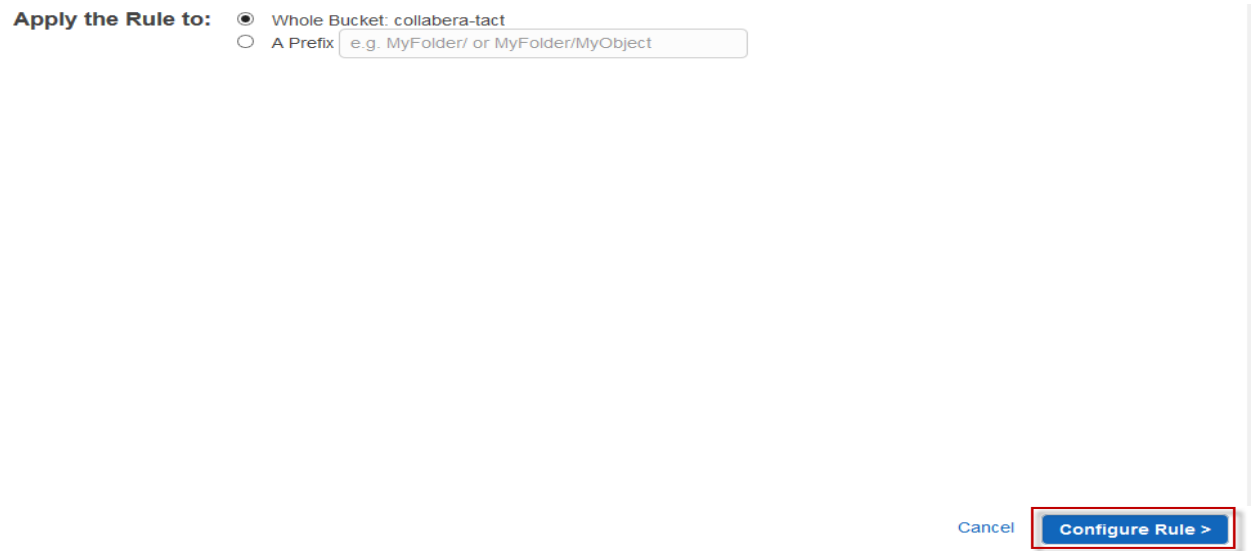


S3 LIFECYCLE POLICIES

Expand Lifecycle under bucket properties, then click on Add rule.

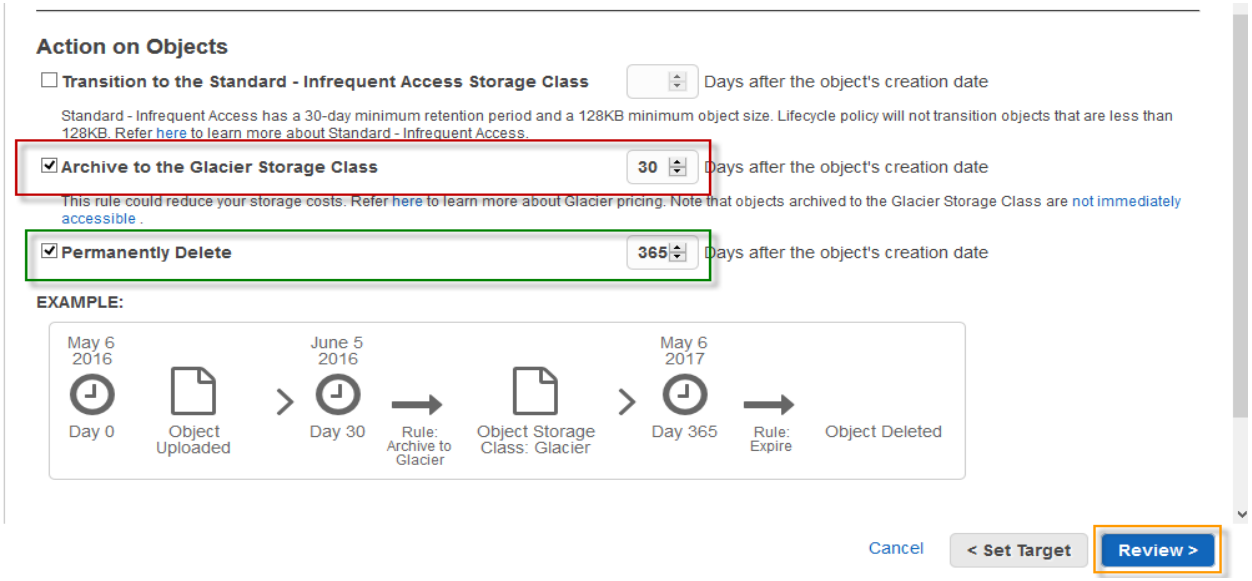


Specify you want to create lifecycle for whole Bucket or for specific folder, then choose Configure Rule.

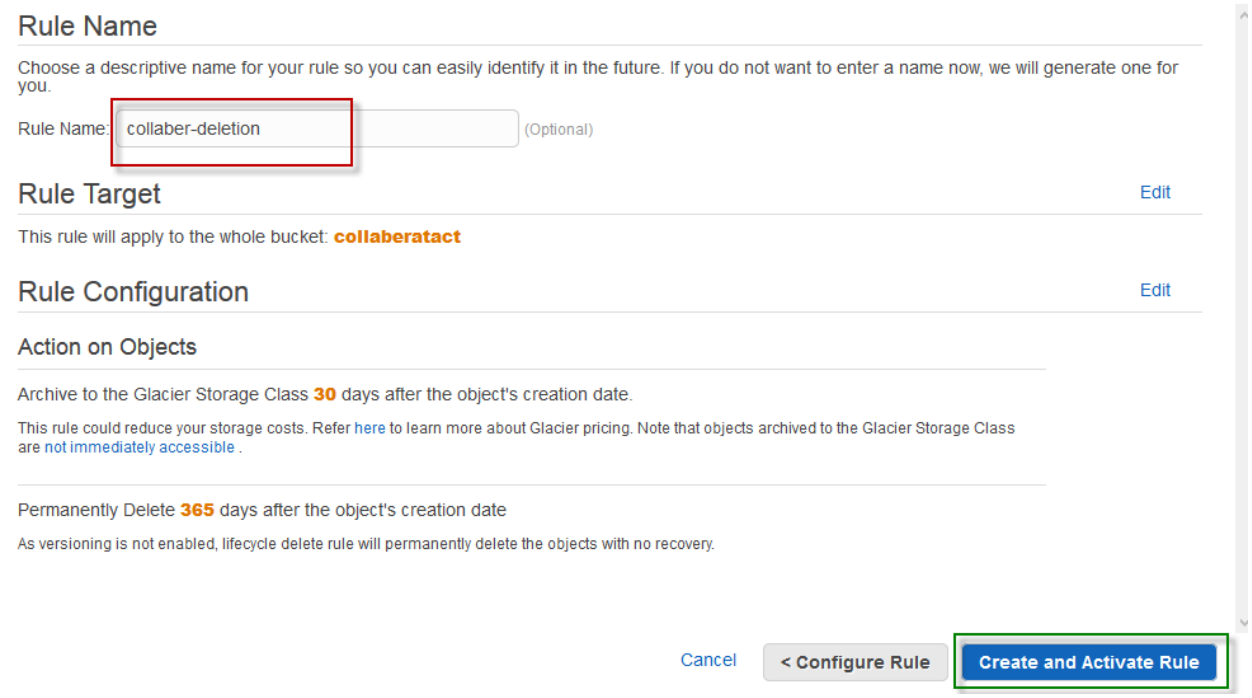


Now choose the options to how you want your objects to be moved over to glacier or Standard Infrequent Access storage or permanently deleted.
Select the lifecycle policy and specify the days where object needs to be moved over or deleted.

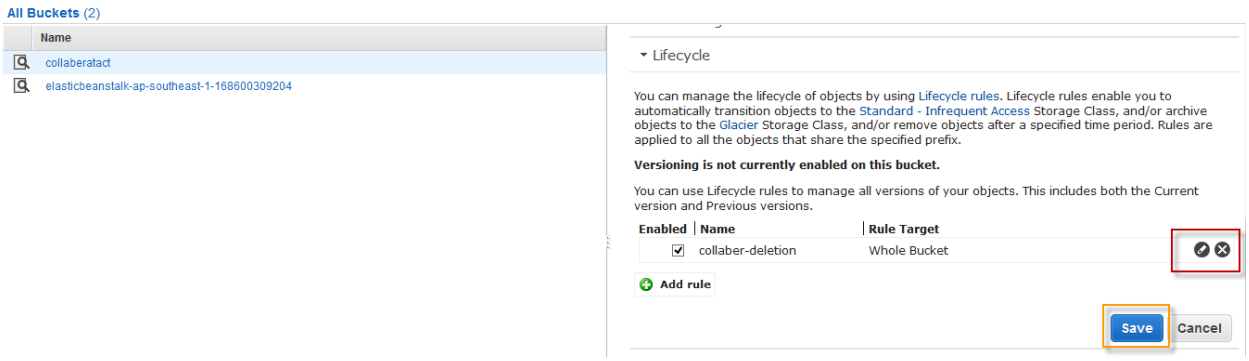
Then choose Review.



Then specify a rule name under Rule Name text field and choose Create and Activate Rule.

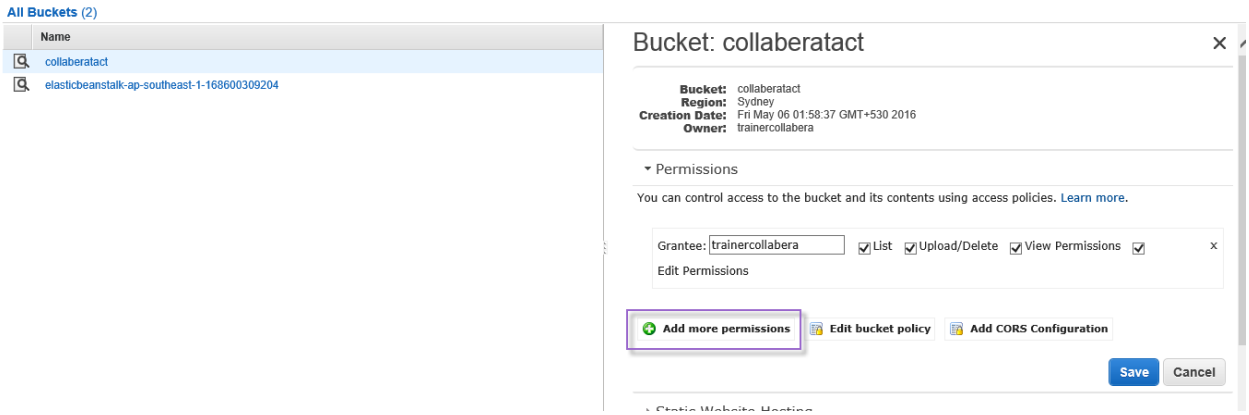


Under lifecycle policies choose cross mark against the rule and click save to delete the rule which you created.

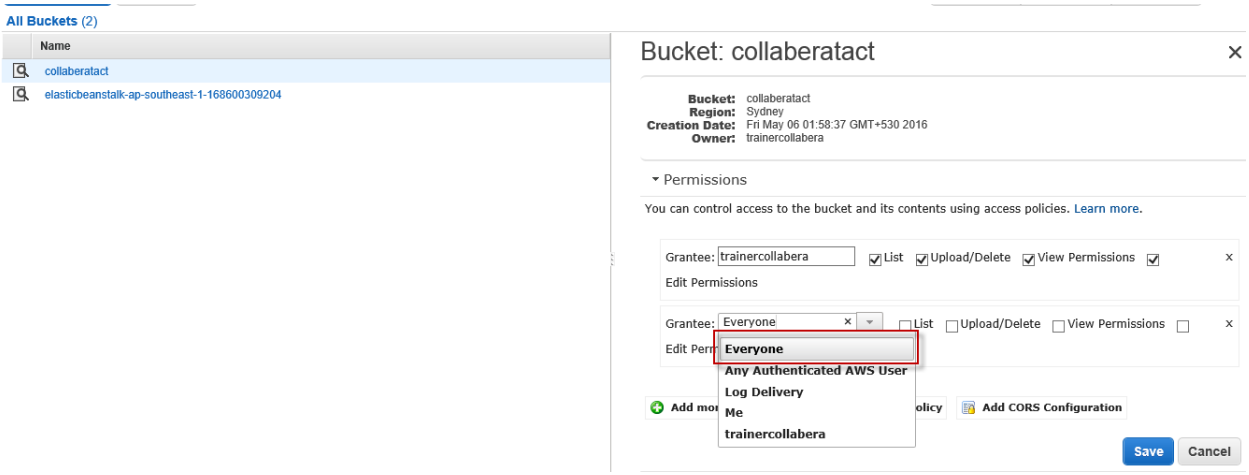


S3 PERMISSIONS AND BUCKET POLICIES

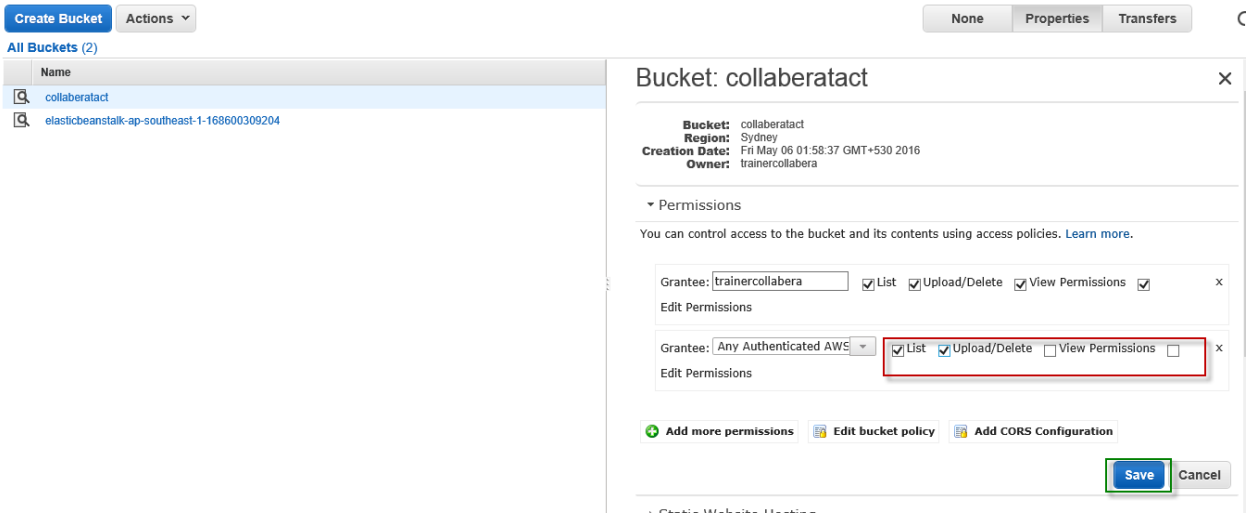
Go to properties of your bucket and under properties expand permissions.
Then choose Add more permissions.



Under Grantee choose option for your permission.

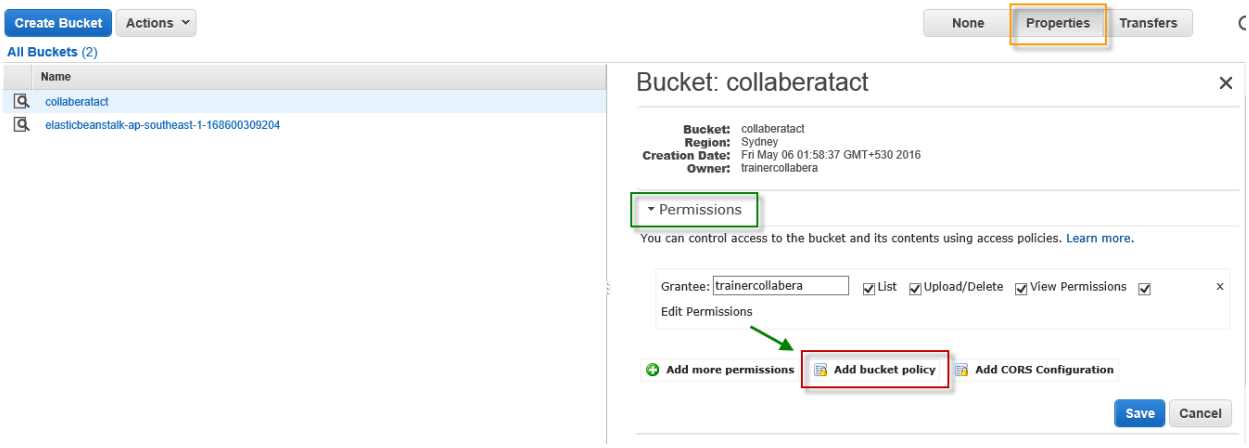


Then check permissions which you want to give for particular grantee, and choose save to apply the policy permission.

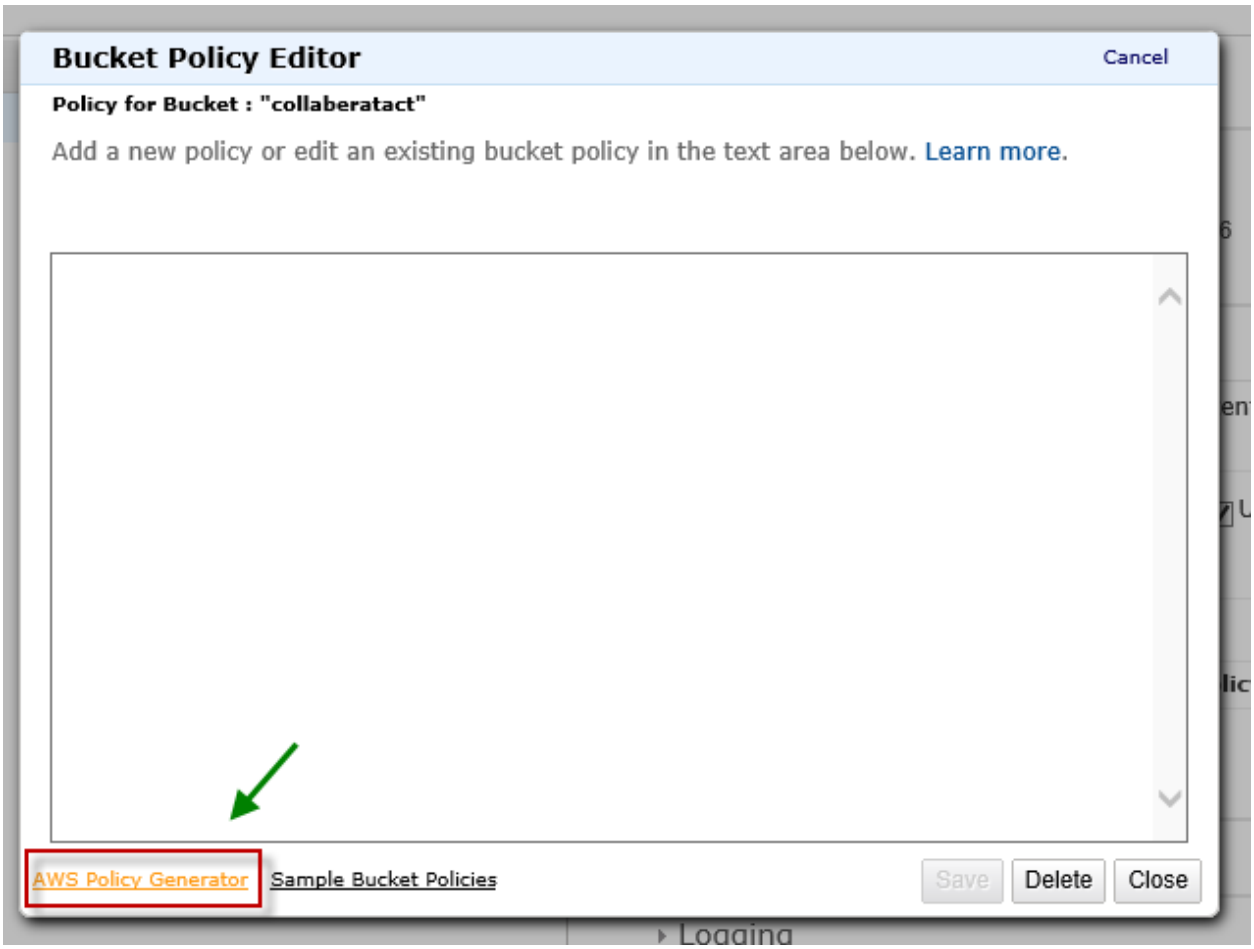


S3 BUCKET POLICIES:

Go to properties of your bucket and under properties expand permissions, then choose **Add bucket policy** to add a new policy to bucket.

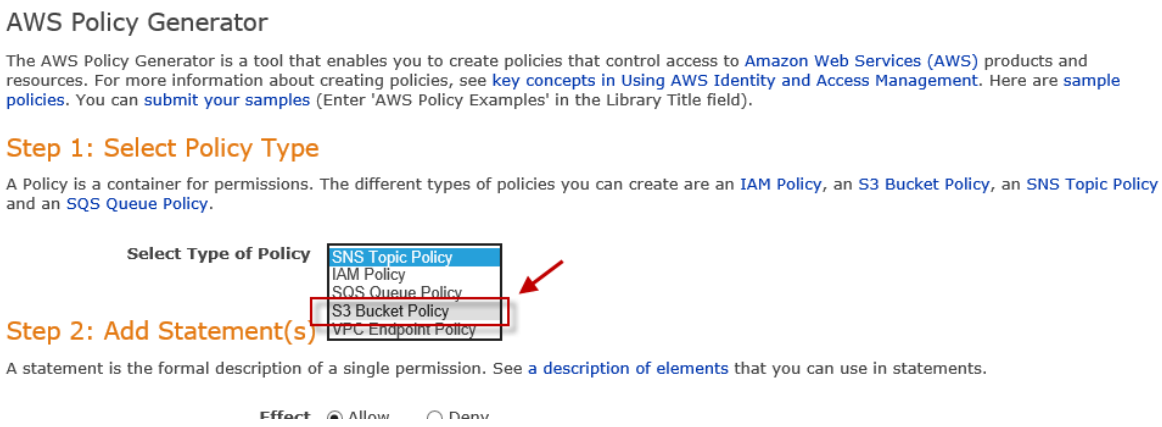


Bucket policy Editor text will be opened, then choose AWS Policy Generator.

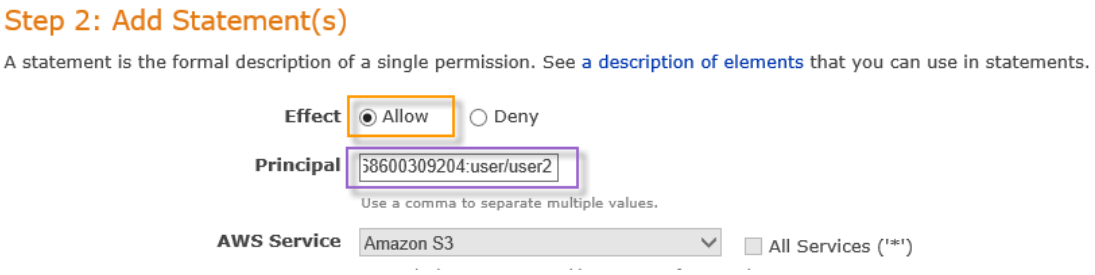


From the AWS policy generator page, choose various options to generate policy.

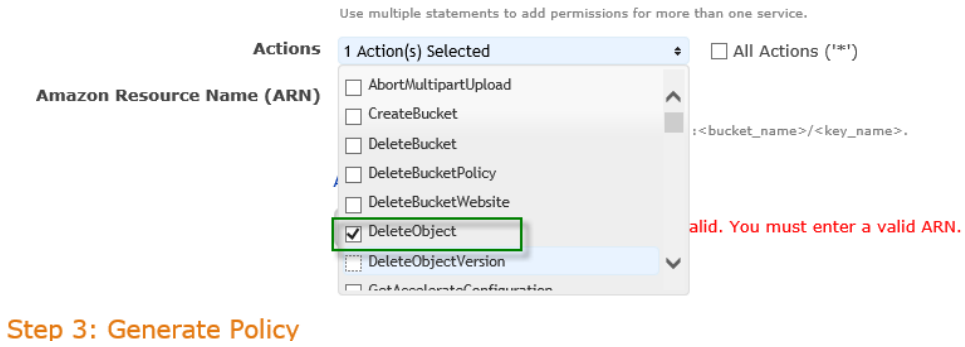
Choose S3 Bucket Policy from Select type of policy.



Choose Allow or Deny from Effect, then specify the AWS IAM user ARN in Principal text box.



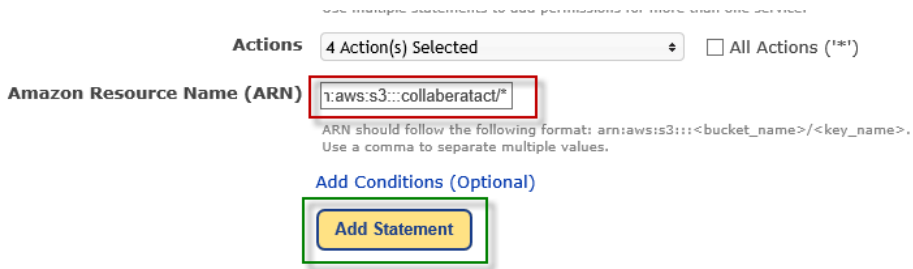
From the Actions drop down list either choose All Actions or choose only specific options to give.



Under Amazon Resource Name (ARN) specify the S3 bucket ARN in the following format.

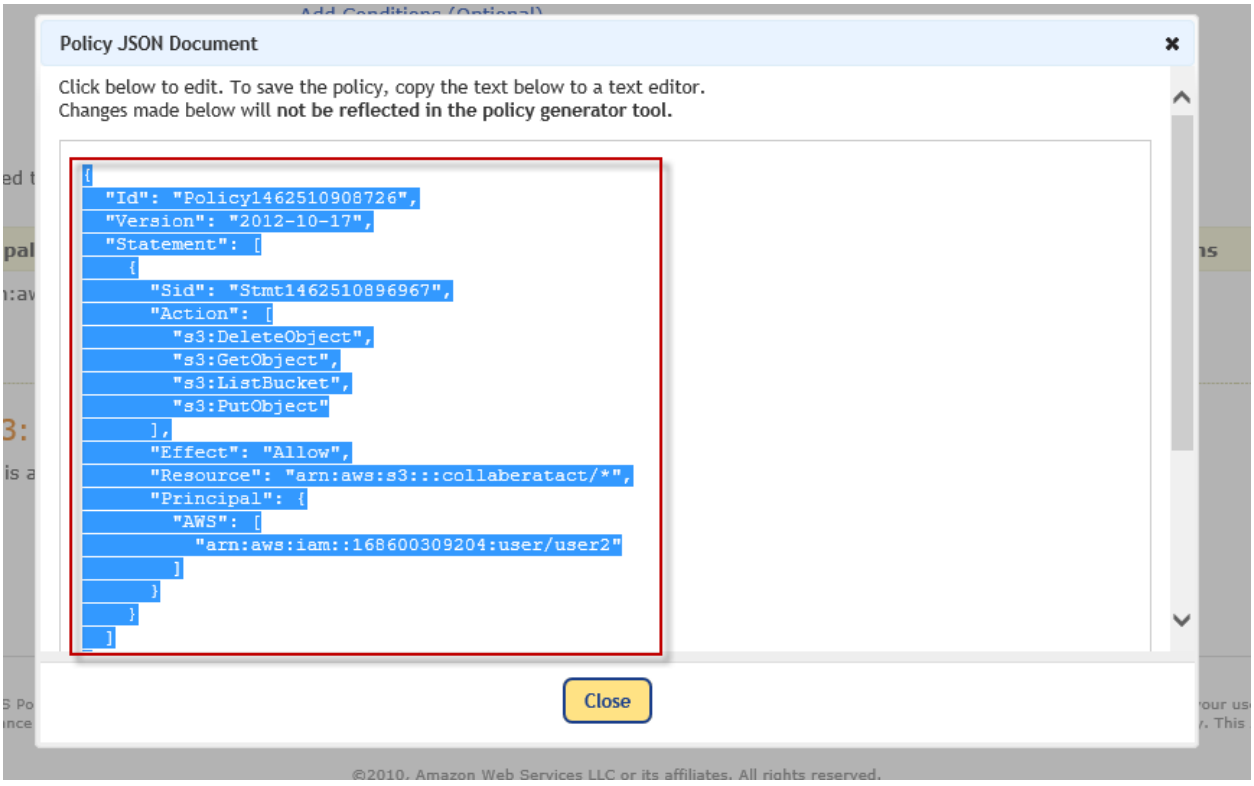
arn:aws:s3:::<bucket_name>/<key_name>

Once you specified choose Add statement button.



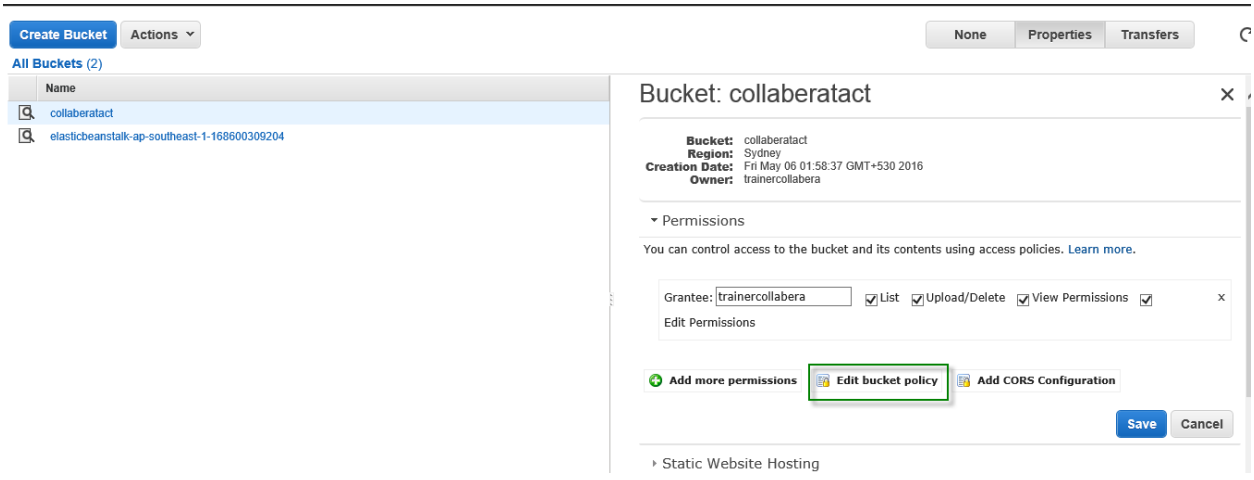
Then choose Generate Policy to generate S3 bucket policy.

Then a pop up window will open with JSON format code, copy the code and paste it in the AWS bucket policy page where we choose AWS policy generator option.

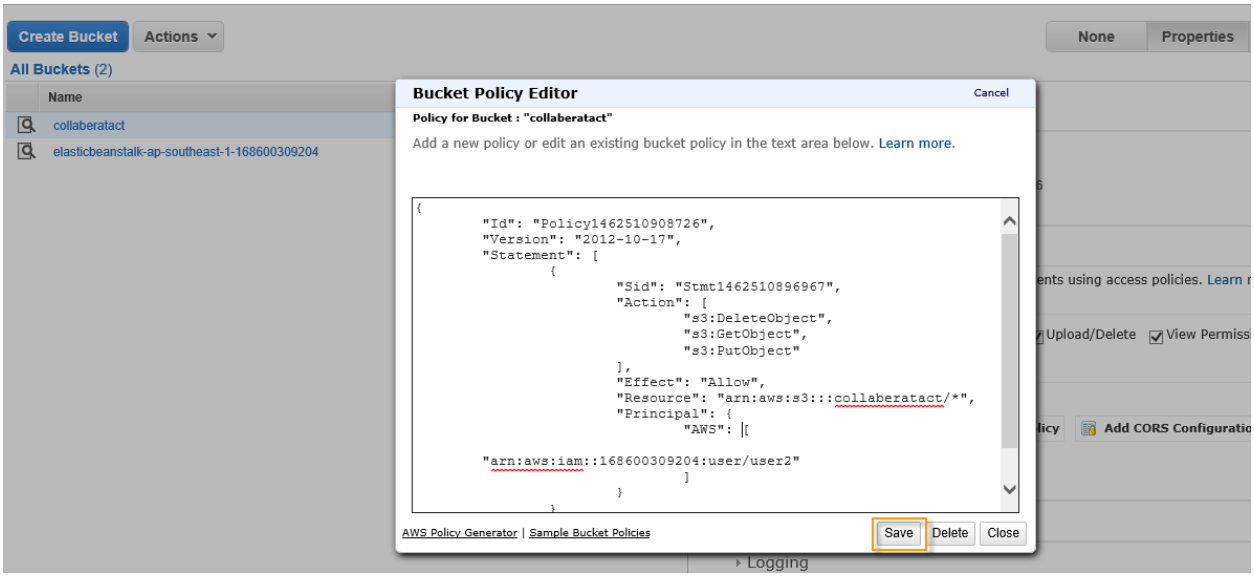


Once pasted, select Save to save and apply the policy.

To edit the policy, choose edit bucket policy option under Permissions of the bucket properties.



Existing policy will open, either you can modify code or choose AWS policy generator to create a new policy then choose save to apply policies.


Create Bucket
Actions
None
Properties
All Buckets (2)
Name
collaberatact
elasticbeanstalk-ap-southeast-1-168600309204
Bucket Policy Editor
Cancel
Policy for Bucket : "collaberatact"
Add a new policy or edit an existing bucket policy in the text area below. Learn more.
{
"Id": "Policy1462510908726",
"Version": "2012-10-17",
"Statement": [
{
"Sid": "Stmt1462510896967",
"Action": [
"s3:DeleteObject",
"s3:GetObject",
"s3:PutObject"
],
"Effect": "Allow",
"Resource": "arn:aws:s3:::collaberatact/*",
"Principal": {
"AWS": [
"arn:aws:iam::168600309204:user/user2"
]
}
}
AWS Policy Generator | Sample Bucket Policies
Save
Delete
Close
Upload/Delete
View Permiss
Add CORS Configuratio
Logging