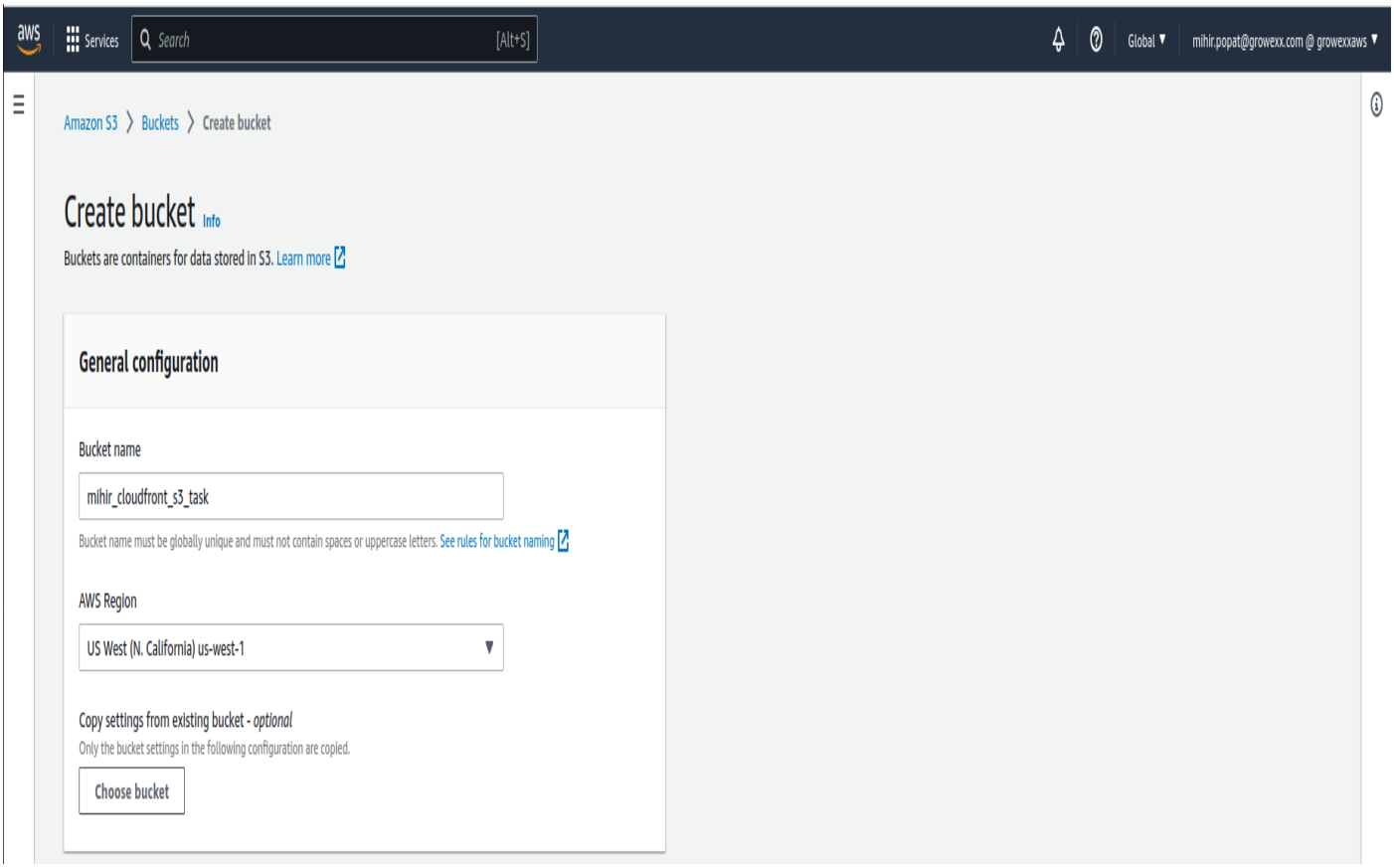
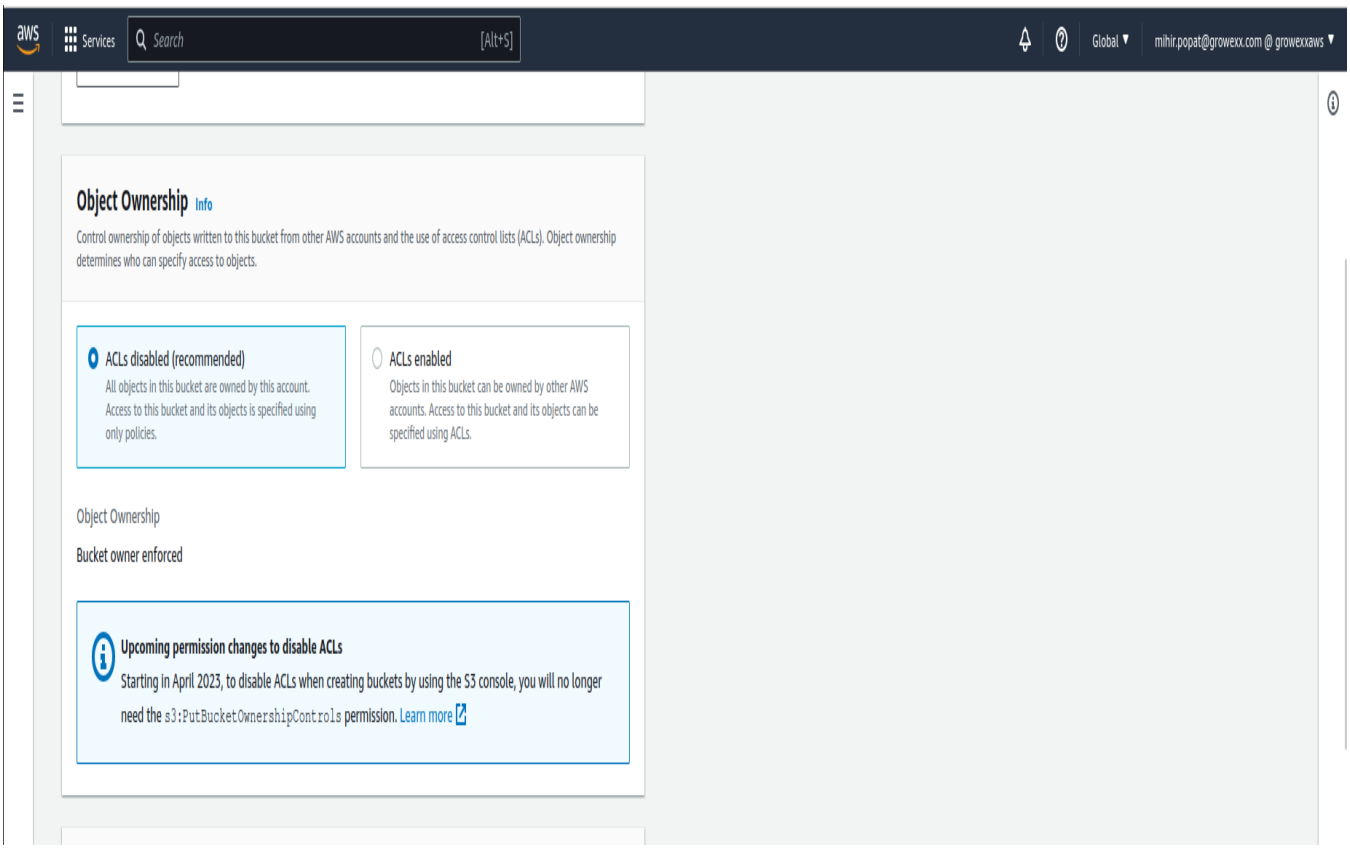
Hosting a static website with S3 & CloudFront

Steps :-

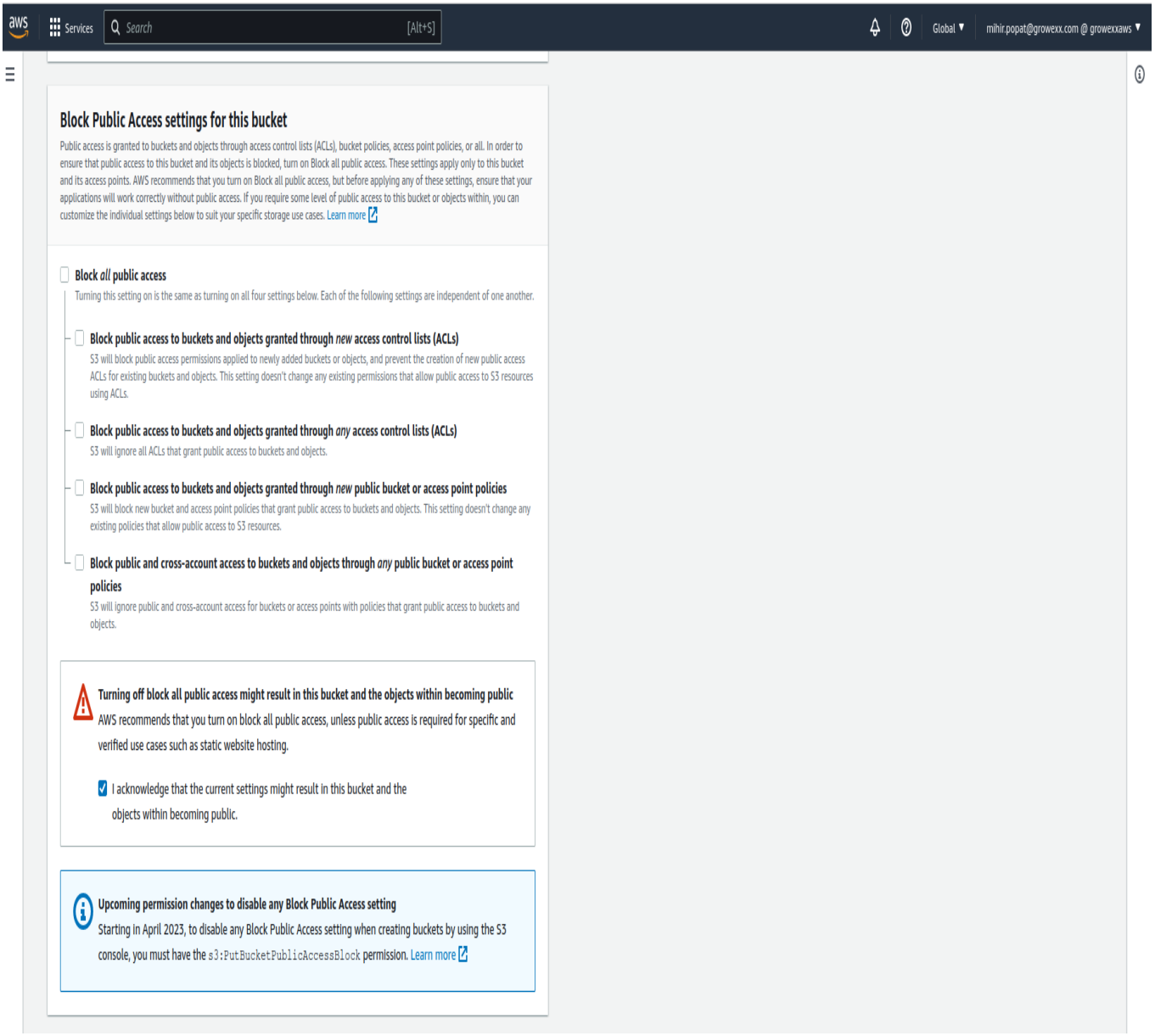
Inside of the S3 dashboard, click on “Create bucket”.

Give your bucket a unique name and select the options as shown below:





This is done to make the bucket accessible to the public because it is the host of your static website.



Scroll to the bottom and click “Create bucket”.

Starting in April 2023, to disable any Block Public Access setting when creating buckets by using the S3 console, you must have the `s3:PutBucketPublicAccessBlock` permission. Learn more

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 (0) - *optional*

You can use bucket tags to track storage costs and organize buckets. Learn more

No tags associated with this bucket.

Add tag

Default encryption Info

Server-side encryption is automatically applied to new objects stored in this bucket.

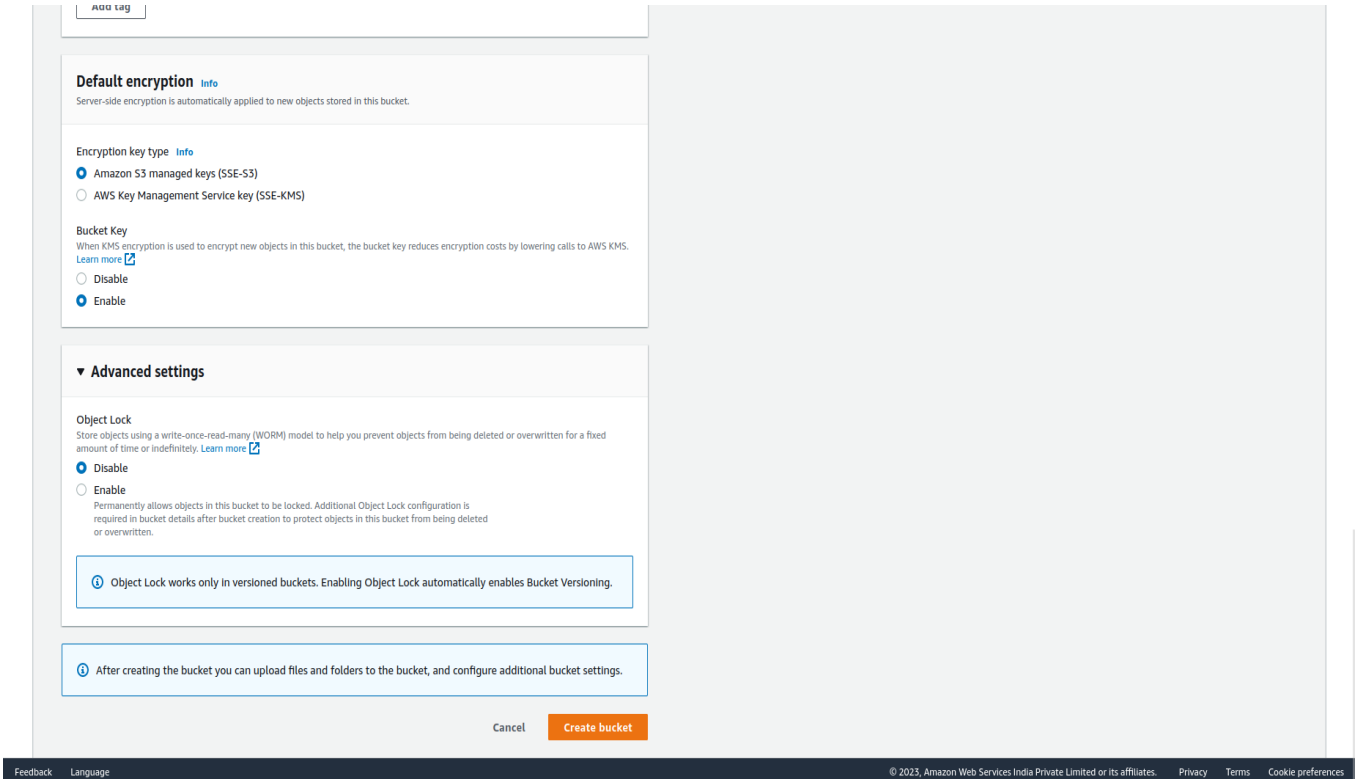
Encryption key type Info

- (•) Amazon S3 managed keys (SSE-S3)
- ( ) AWS Key Management Service key (SSE-KMS)

Bucket Key

When KMS encryption is used to encrypt new objects in this bucket, the bucket key reduces encryption costs by lowering calls to AWS KMS. Learn more

- ( ) Disable
- (•) Enable


Add tag
Default encryption Info
Server-side encryption is automatically applied to new objects stored in this bucket.
Encryption key type Info
Amazon S3 managed keys (SSE-S3)
AWS Key Management Service key (SSE-KMS)
Bucket Key
When KMS encryption is used to encrypt new objects in this bucket, the bucket key reduces encryption costs by lowering calls to AWS 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.
Cancel
Create bucket
Feedback
Language
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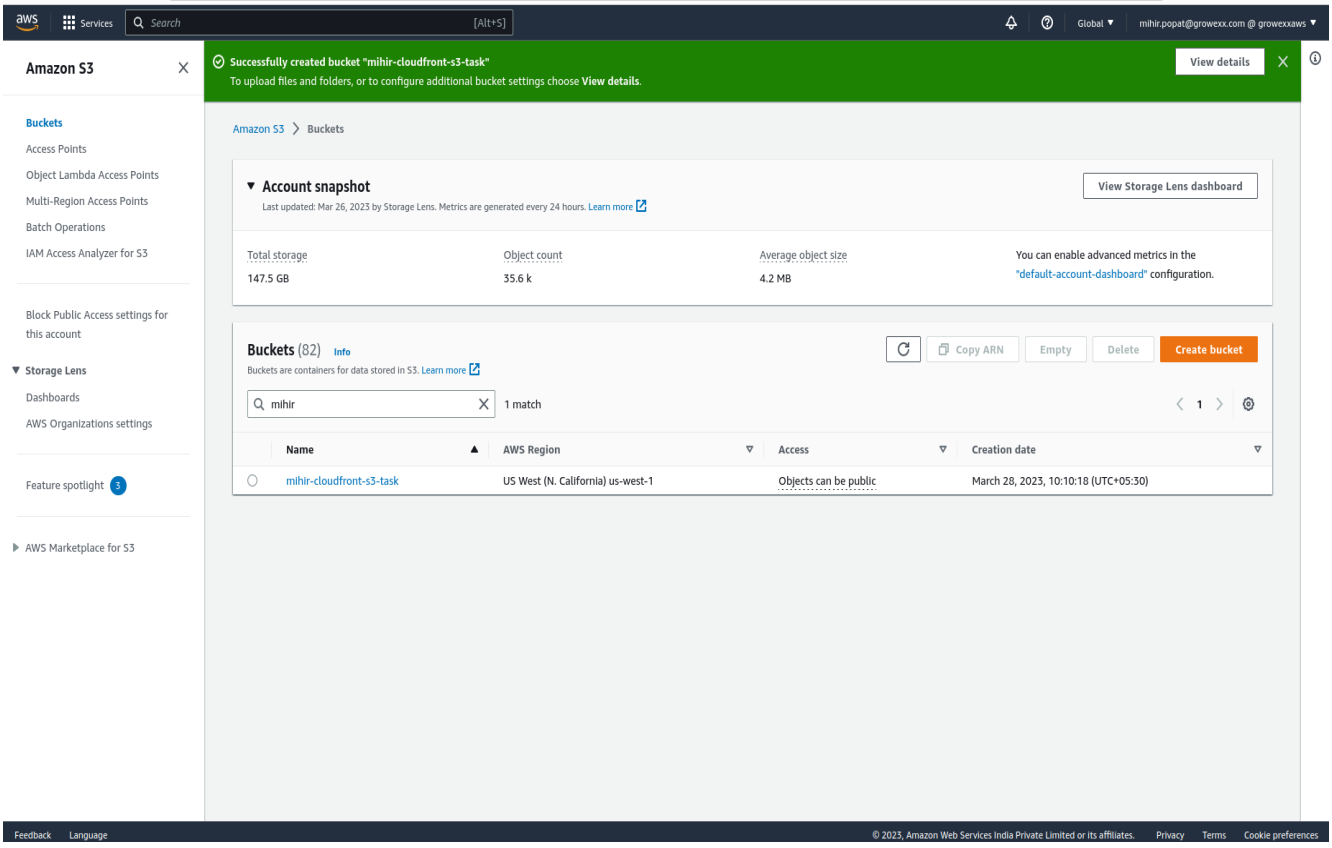
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Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight
AWS Marketplace for S3
Successfully created bucket "mihir-cloudfront-s3-task"
To upload files and folders, or to configure additional bucket settings choose View details.
View details
Amazon S3 > Buckets
Account snapshot
Last updated: Mar 26, 2023 by Storage Lens. Metrics are generated every 24 hours. Learn more
View Storage Lens dashboard
Total storage
147.5 GB
Object count
35.6 k
Average object size
4.2 MB
You can enable advanced metrics in the "default-account-dashboard" configuration.
Buckets (82) Info
Buckets are containers for data stored in S3. Learn more
Copy ARN
Empty
Delete
Create bucket
mihir
1 match
Name
AWS Region
Access
Creation date
mihir-cloudfront-s3-task
US West (N. California) us-west-1
Objects can be public
March 28, 2023, 10:10:18 (UTC+05:30)
Feedback
Language
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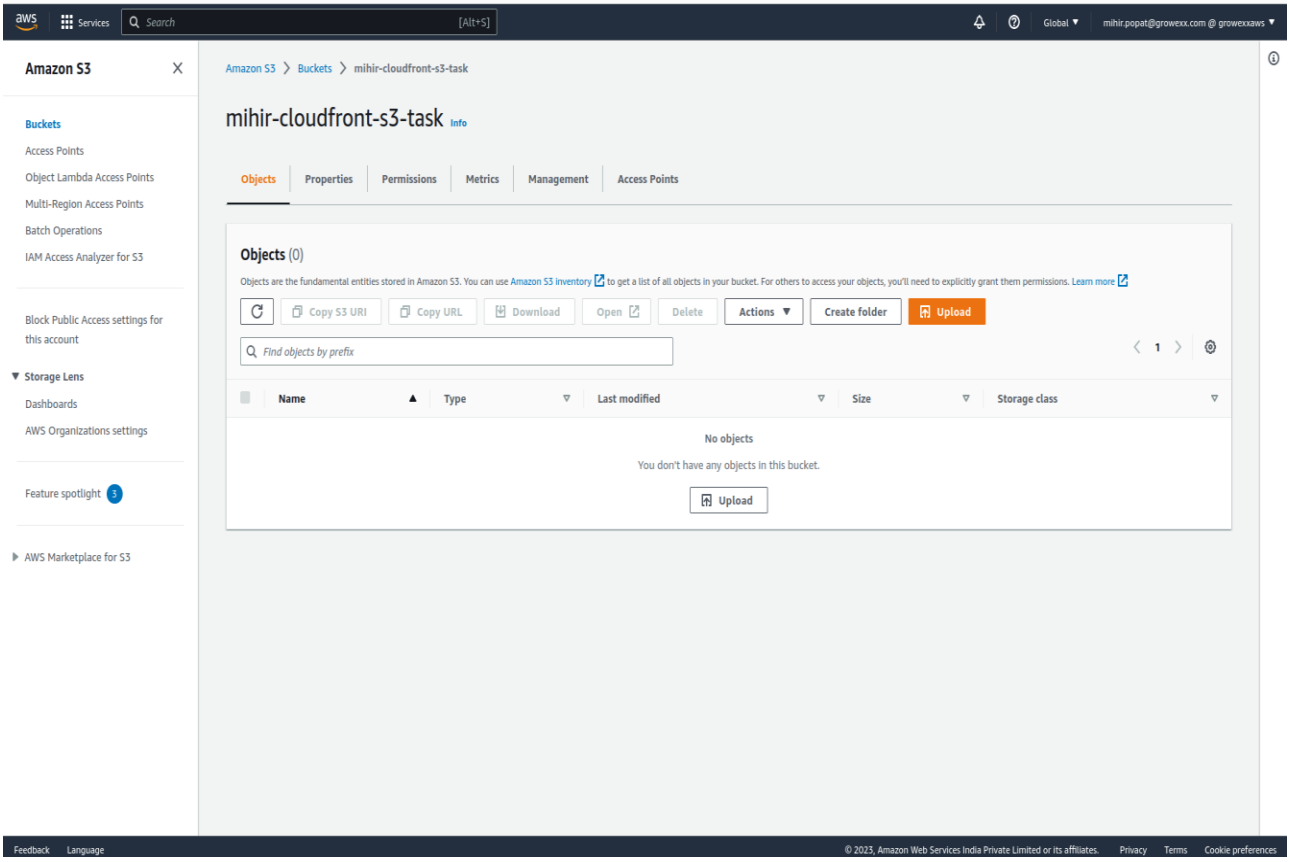
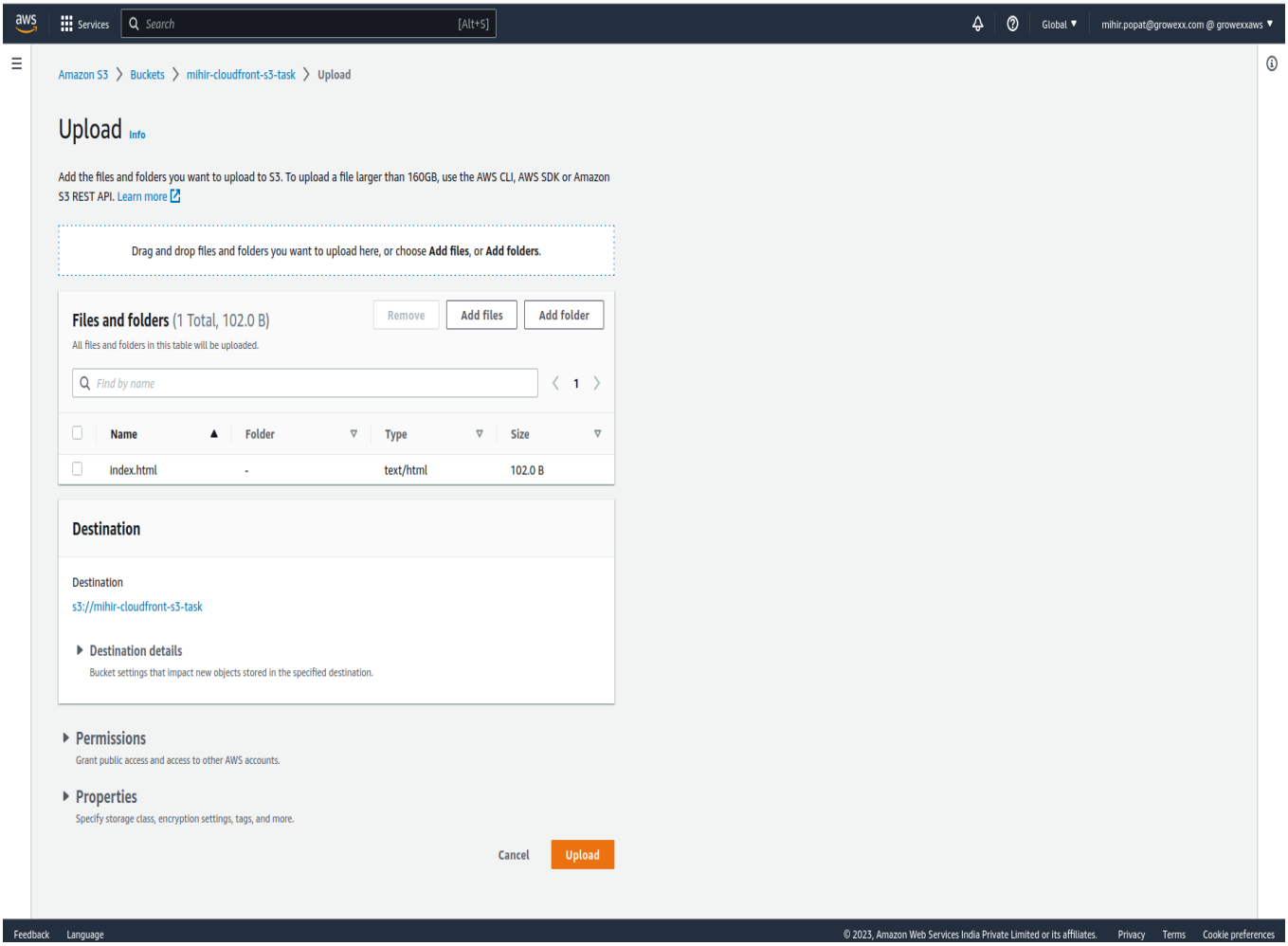


After creating the bucket, upload your website to the bucket to the bucket by clicking on the bucket name. Once inside of your bucket on the “Objects” tab, click on the “Upload” button.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Amazon S3 > Buckets > mihir-cloudfront-s3-task > Upload
Upload Info
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 folders.
Files and folders (1 Total, 102.0 B)
Remove
Add files
Add folder
All files and folders in this table will be uploaded.
Find by name
1
Name
Folder
Type
Size
index.html
-
text/html
102.0 B
Destination
Destination
s3://mihir-cloudfront-s3-task
Destination details
Bucket settings that impact new objects stored in the specified destination.
Permissions
Grant public access and access to other AWS accounts.
Properties
Specify storage class, encryption settings, tags, and more.
Cancel
Upload
Feedback
Language
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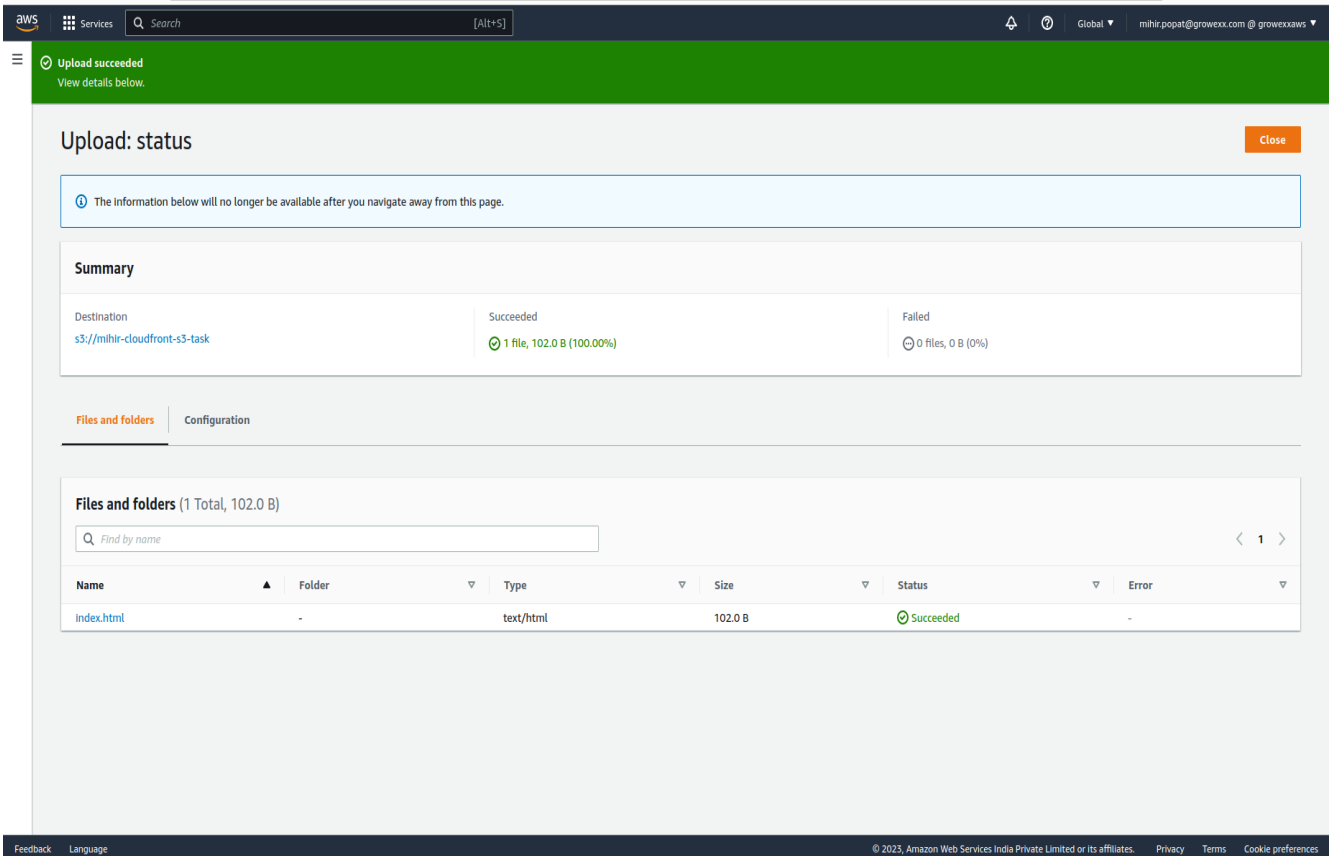
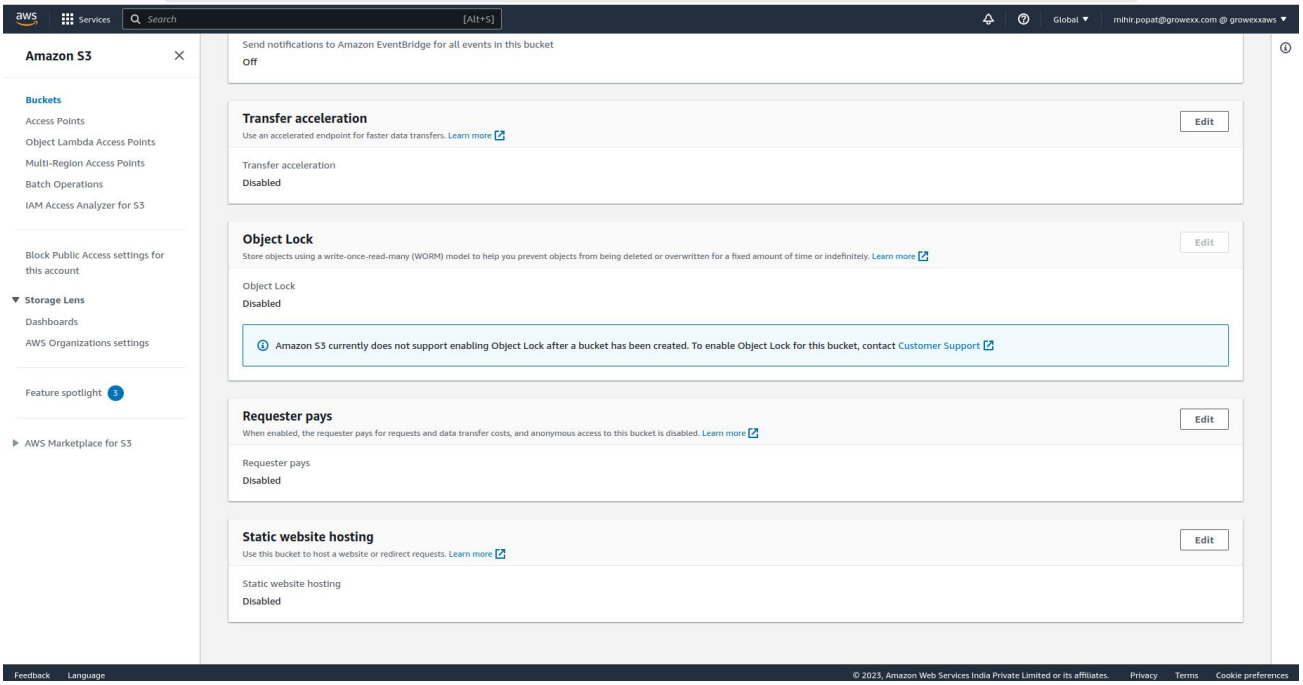


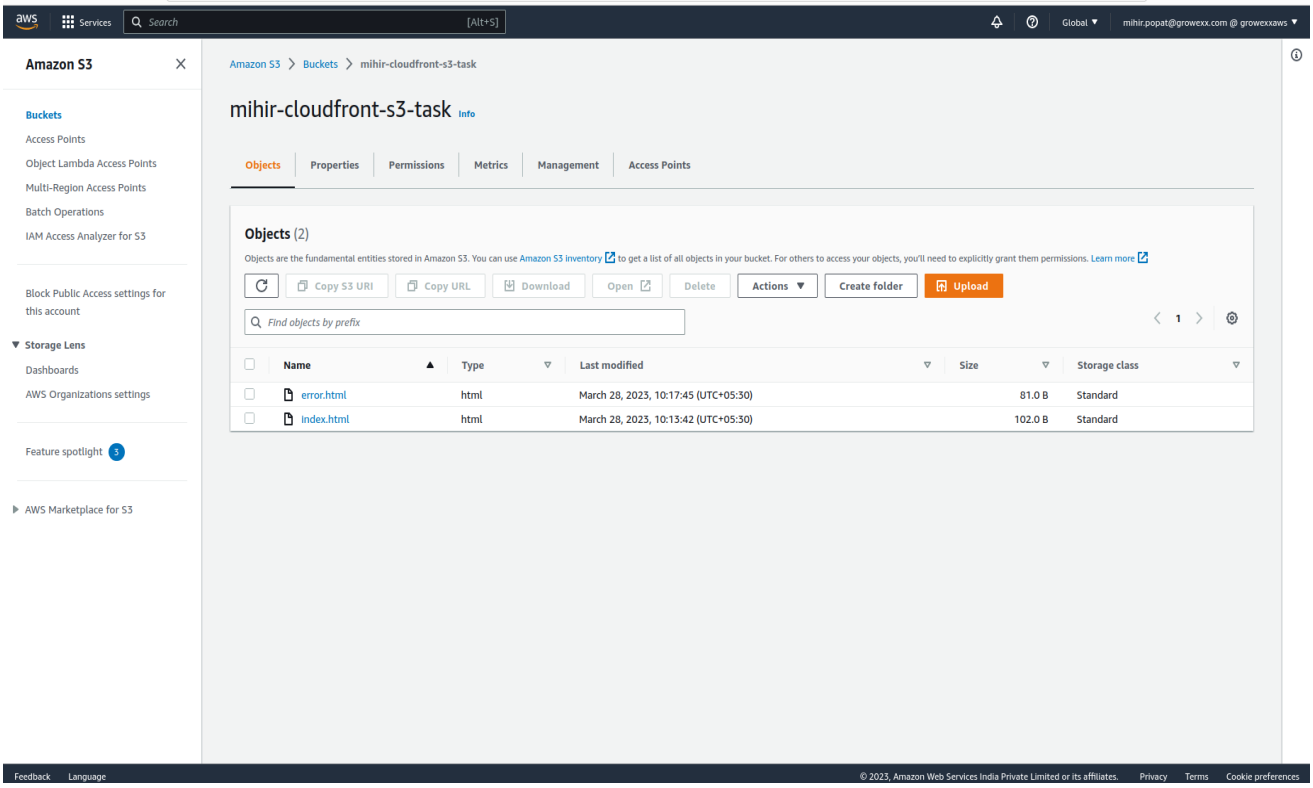
Now click on the “Properties” tab and scroll to the bottom to the “Static website hosting” section and click on the “Edit” button.

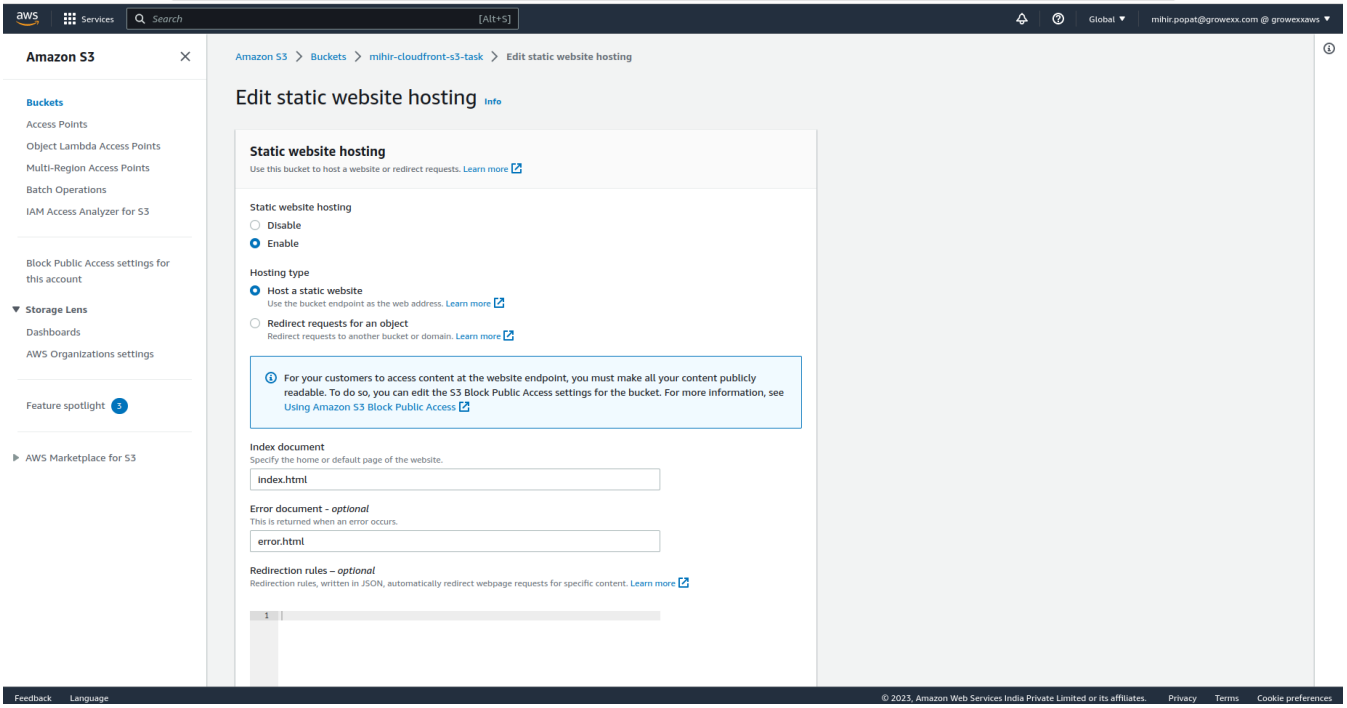


Select “Enable” for Static website hosting.

Also, select “Host a static website” for the Hosting type.

Enter the file for your “index” document. The error document is optional as this will load an error page if you try to access a file that isn’t available.





The next step is to grant permissions to your bucket so that this page is accessible by everyone.

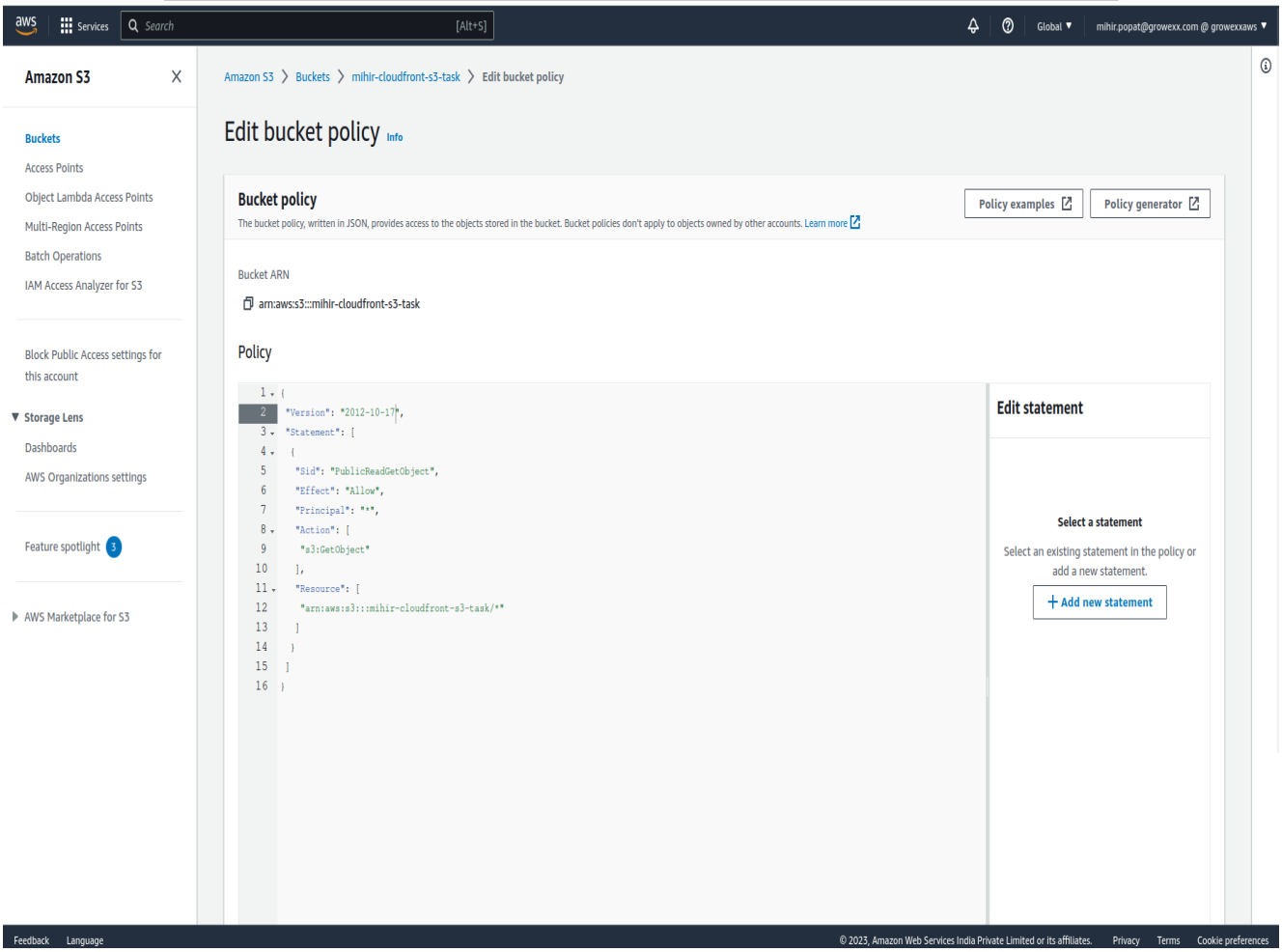
To do that, head over to the “Permissions” tab of your bucket. Scroll down to the “Bucket policy” section and click on the “Edit” button.

Paste the below code into the bucket policy:

```
{
"Version": "2012-10-17",
"Statement": [
 {
  "Sid": "PublicReadGetObject",
  "Effect": "Allow",
  "Principal": "*",
  "Action": [
   "s3:GetObject"
  ],
```

```
  "Resource": [
   "arn:aws:s3:::<BUCKET_NAME>/*"
  ]
 }
]
}
```

Then scroll down and click on “Save changes”.



Now the last step is to create a CloudFront Distribution.

Head over to the search bar and type in “CloudFront”. The CloudFront dashboard will now be displayed.

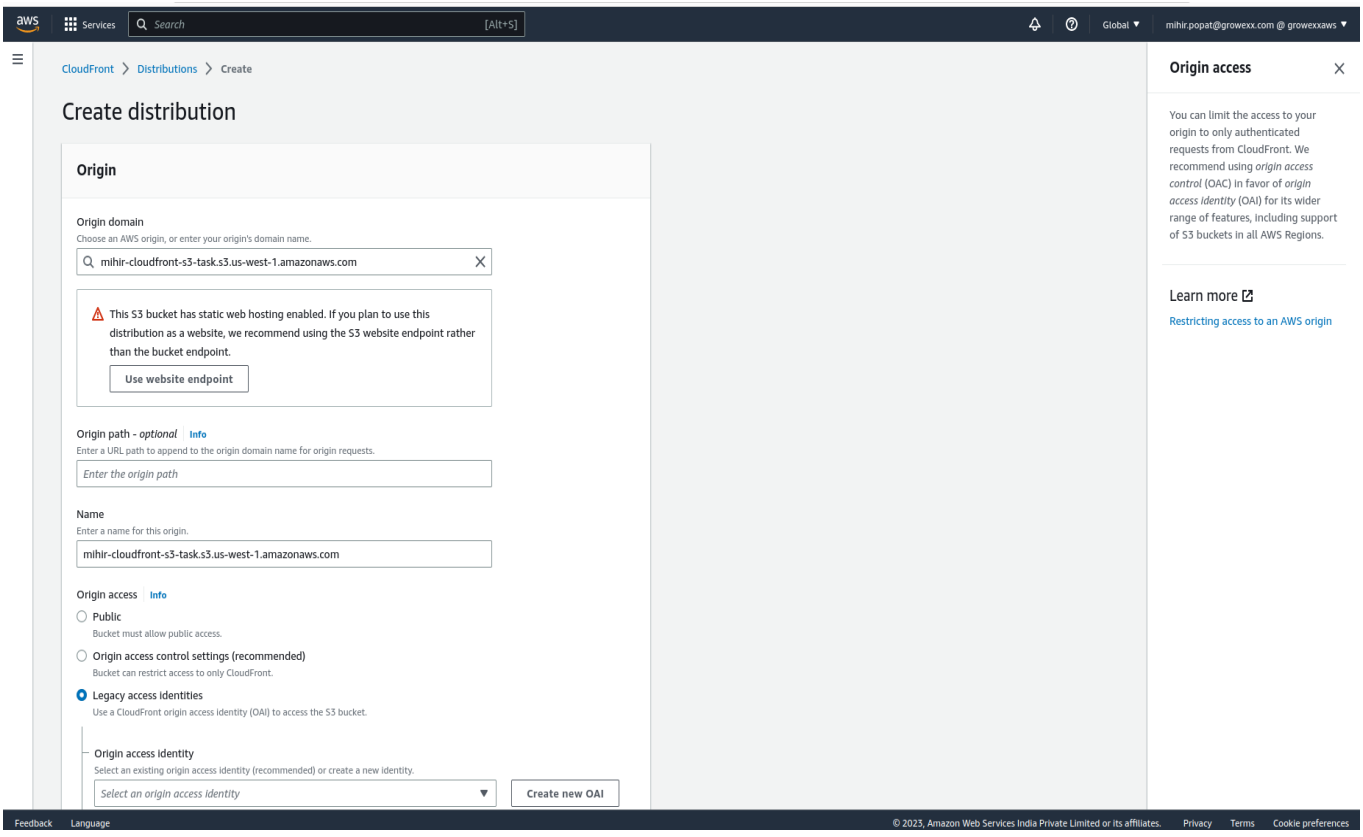
From the dashboard, on the right-hand side click on the orange button “Create a CloudFront distribution”.

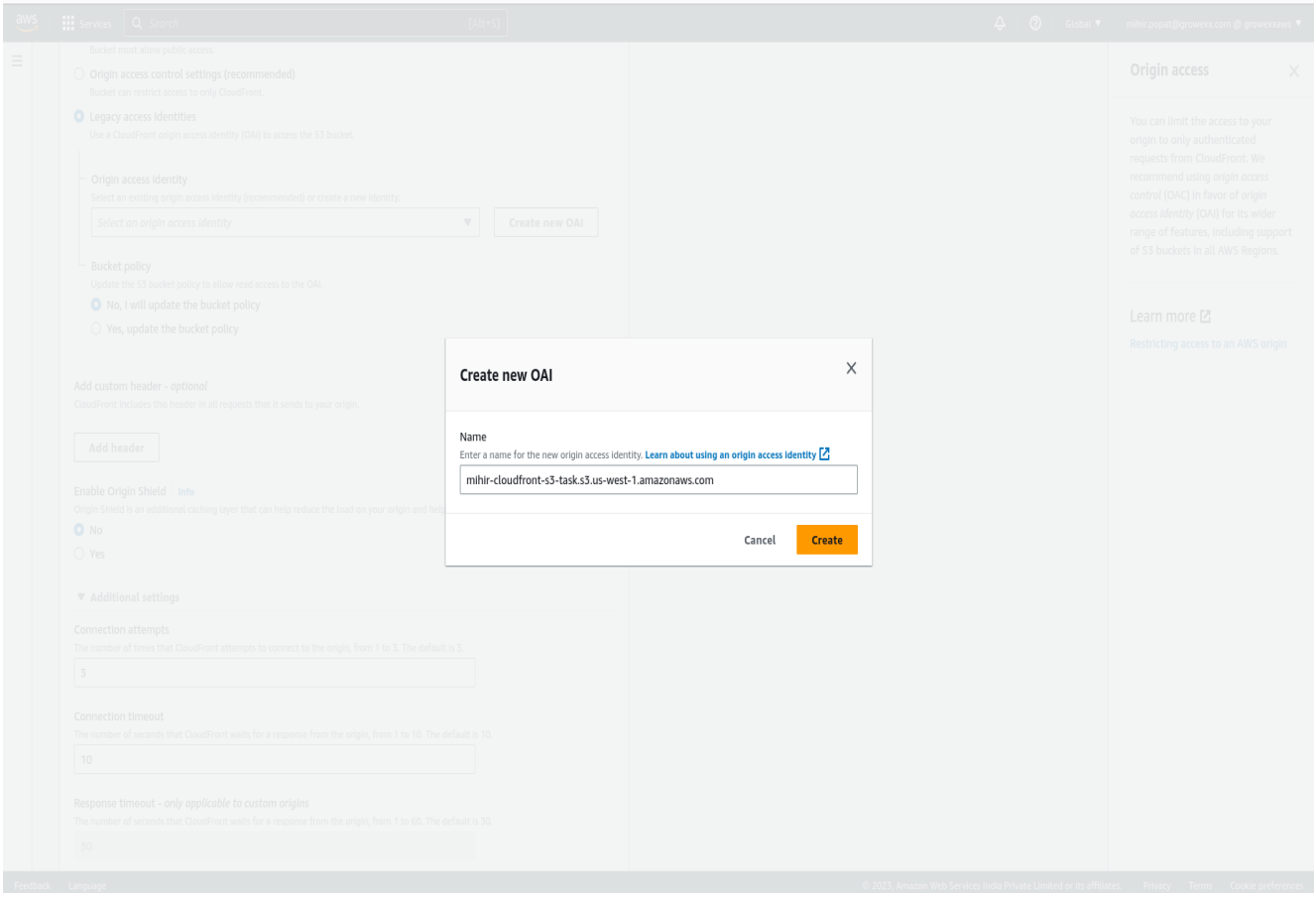
This should take you to the Create Distribution page, click on the Origin Domain Name field and select the S3 bucket you created earlier.

Also notice that name is already pre-filled. For Under “S3 Bucket Access”, select “Yes Use OAI”. Click on “Create new OAI”. OAI or Origin Access ID grants CloudFront the permissions to call our S3 bucket.

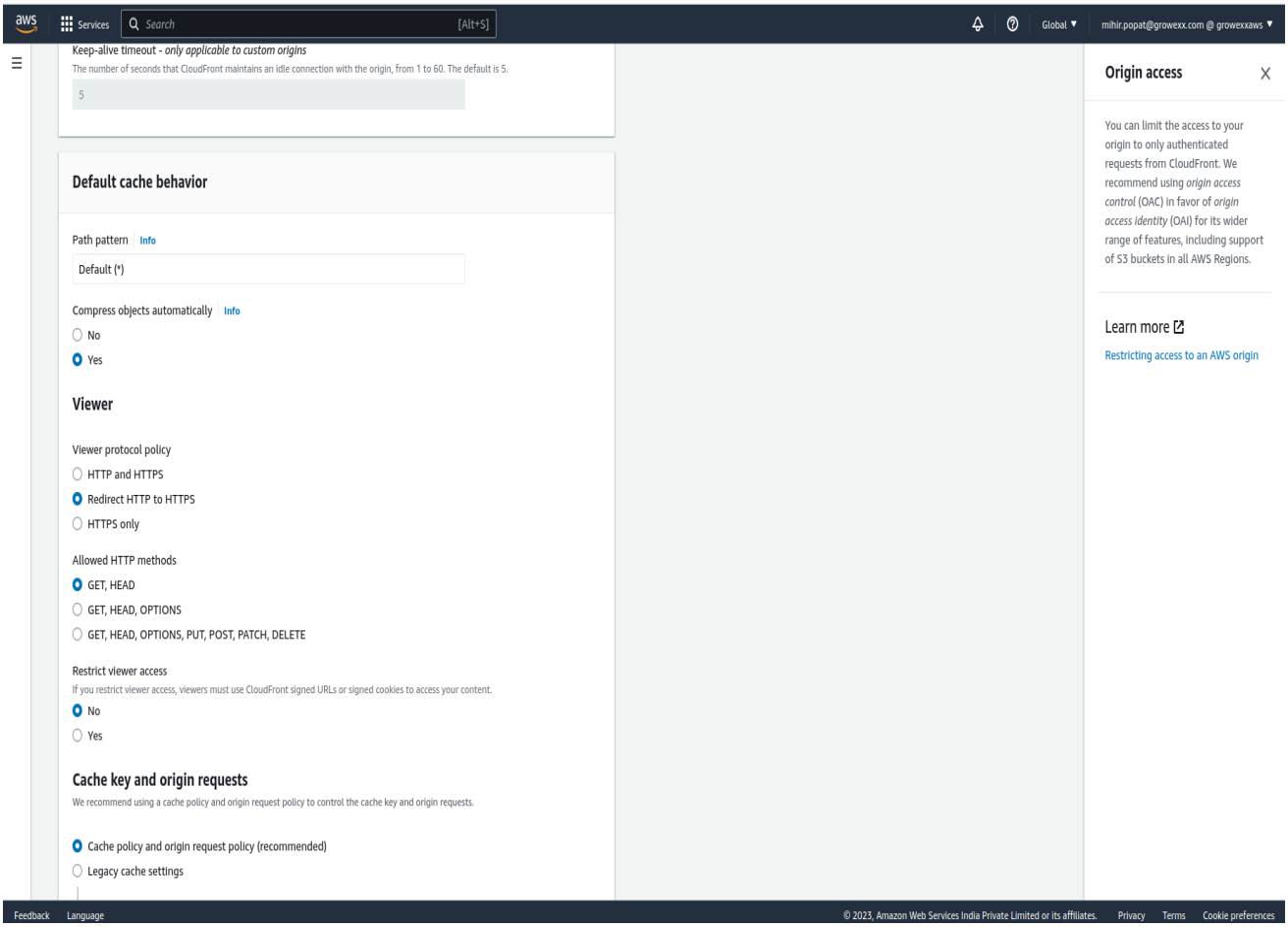
The picture below sums up everything discussed above:

Select public in origin access

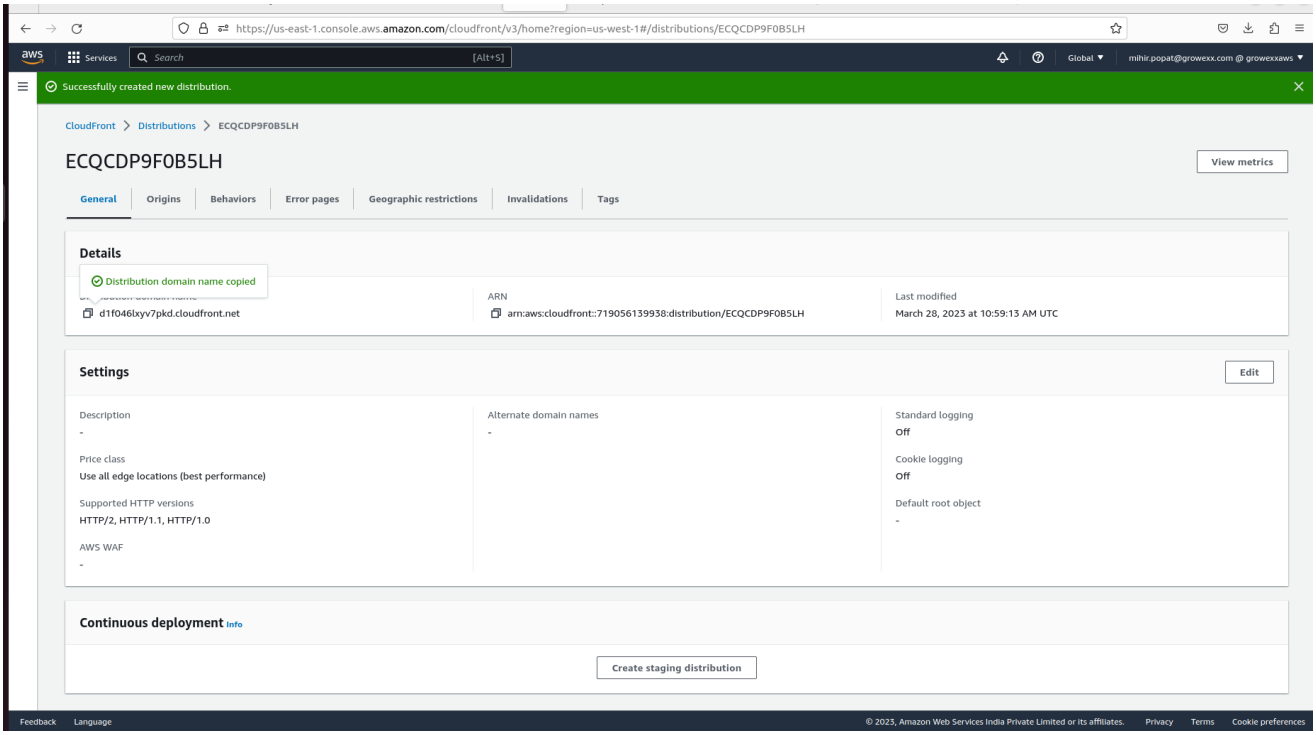




Scroll down to until you see “Viewer”, For “Viewer Protocol Policy”, select “Redirect HTTP to HTTPS”. And the reasons for this are mostly for security measures as HTTPS is more secure than HTTP.

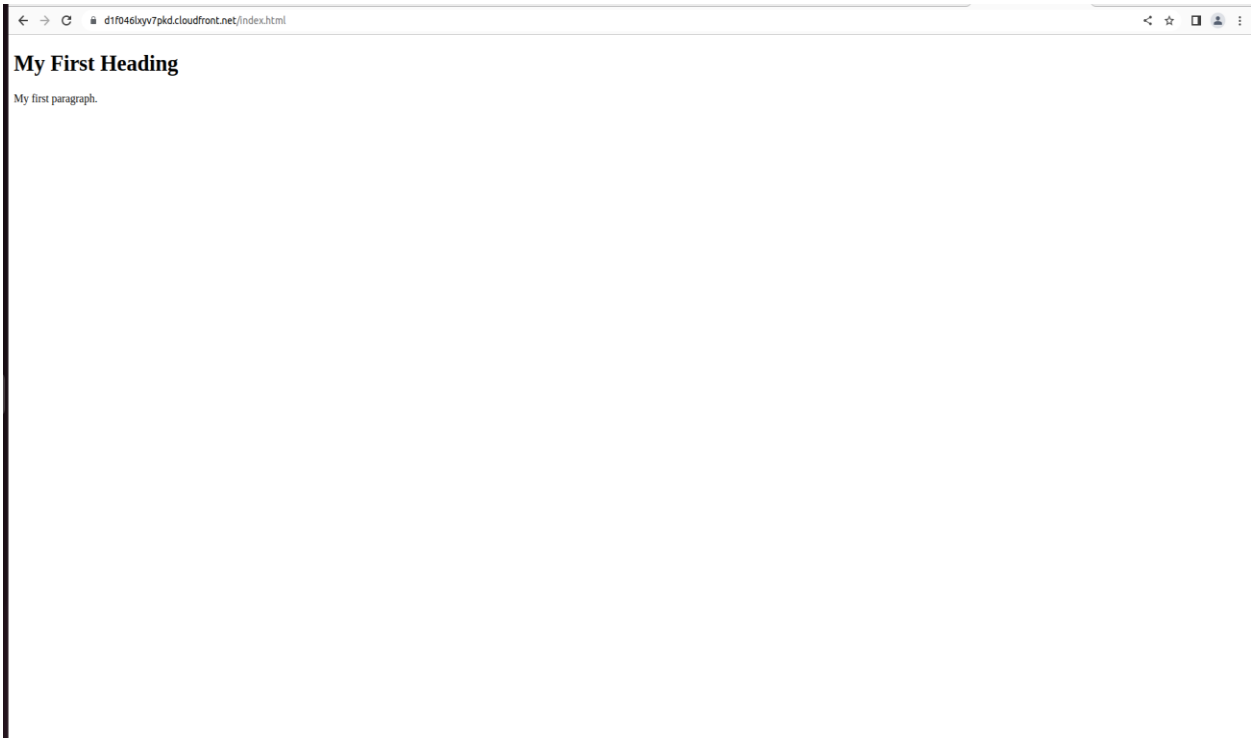


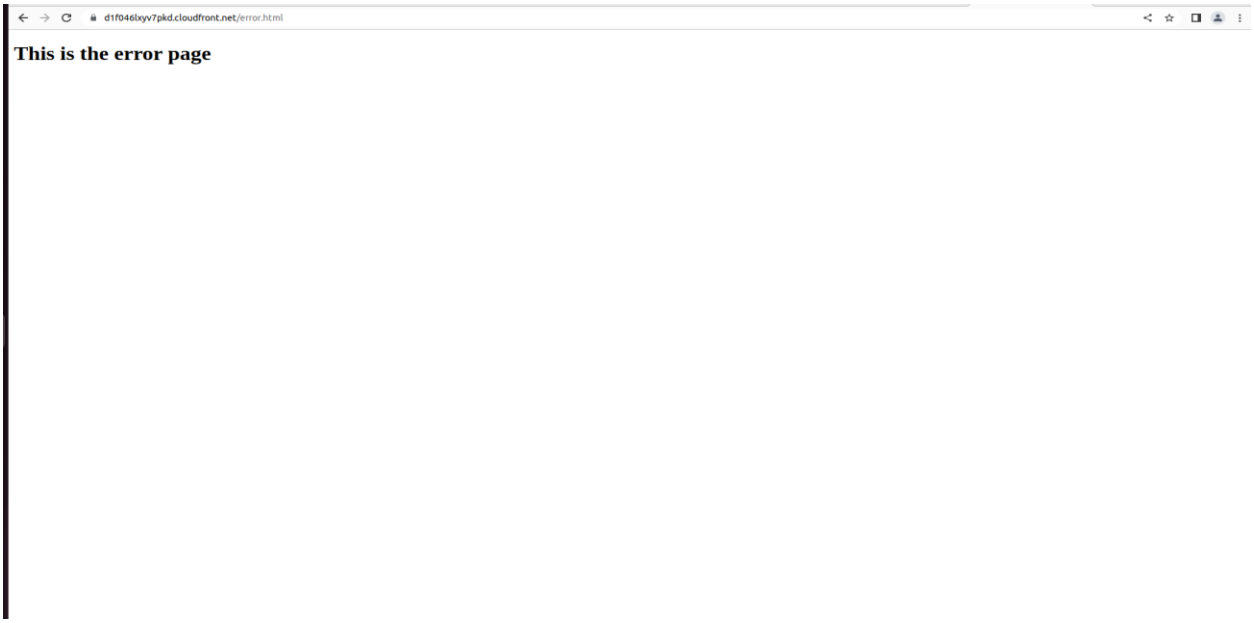
From this point forward and for our project the rest of the options can remain as default and click on “Create Distribution”.



A domain name has been provided to you which can be used to access your static website.

Note: When pasting the domain on the url make sure you enter “/index.html” at the end.



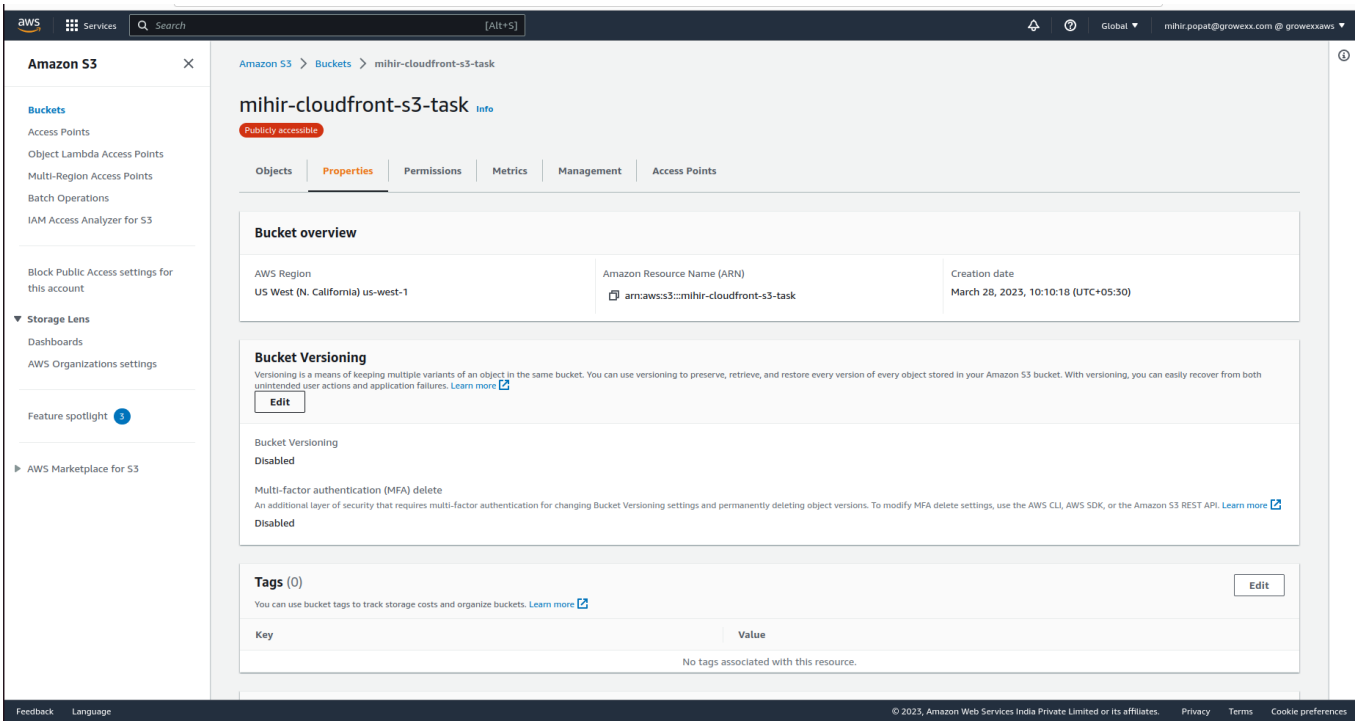


S3 versioning

S3 Versioning, as the name implies, allows you to “version control” objects within your Bucket. This allows you to recover from unintended user changes and actions (including deletions) that might occurred through misuse or corruption. Enabling Versioning on the bucket will keep multiple copies of the object. Each time the object changes, a new version of that object is created and acts as the new current ‘version’.

One thing to be wary of with Versioning is the additional storage costs applied in S3. Storing multiple copies of the same object will use additional space and increase your storage costs.

Once Versioning on a Bucket is enabled, it can’t be disabled – only suspended.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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
Feature spotlight
AWS Marketplace for S3
Amazon S3 > Buckets > mihir-cloudfront-s3-task
mihir-cloudfront-s3-task Info
Publicly accessible
Objects
Properties
Permissions
Metrics
Management
Access Points
Bucket overview
AWS Region
US West (N. California) us-west-1
Amazon Resource Name (ARN)
arn:aws:s3:::mihir-cloudfront-s3-task
Creation date
March 28, 2023, 10:10:18 (UTC+05:30)
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
Edit
Bucket Versioning
Disabled
Multi-factor authentication (MFA) delete
An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the Amazon S3 REST API. Learn more
Disabled
Tags (0)
Edit
You can use bucket tags to track storage costs and organize buckets. Learn more
Key
Value
No tags associated with this resource.
Feedback
Language
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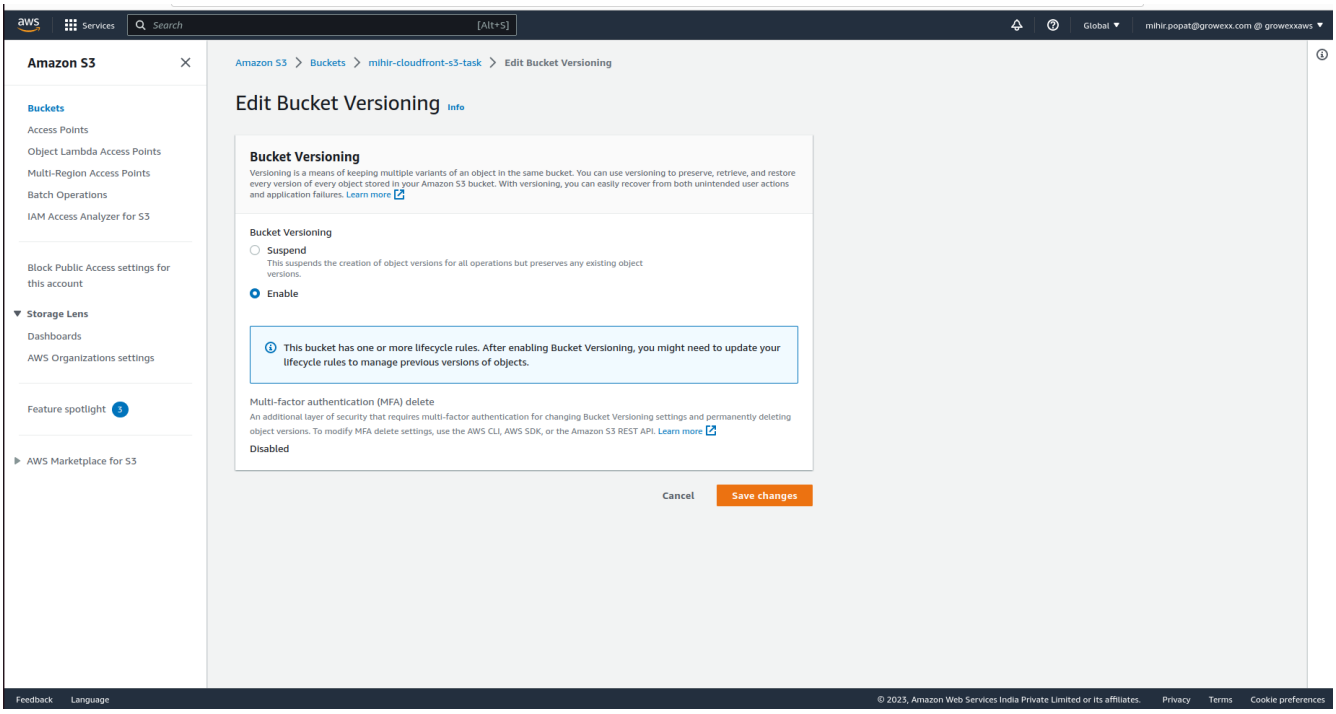
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Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight
AWS Marketplace for S3
Amazon S3 > Buckets > mihir-cloudfront-s3-task > Edit Bucket Versioning
Edit Bucket Versioning Info
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
Suspend
This suspends the creation of object versions for all operations but preserves any existing object versions.
Enable
This bucket has one or more lifecycle rules. After enabling Bucket Versioning, you might need to update your lifecycle rules to manage previous versions of objects.
Multi-factor authentication (MFA) delete
An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the Amazon S3 REST API. Learn more
Disabled
Cancel
Save changes
Feedback
Language
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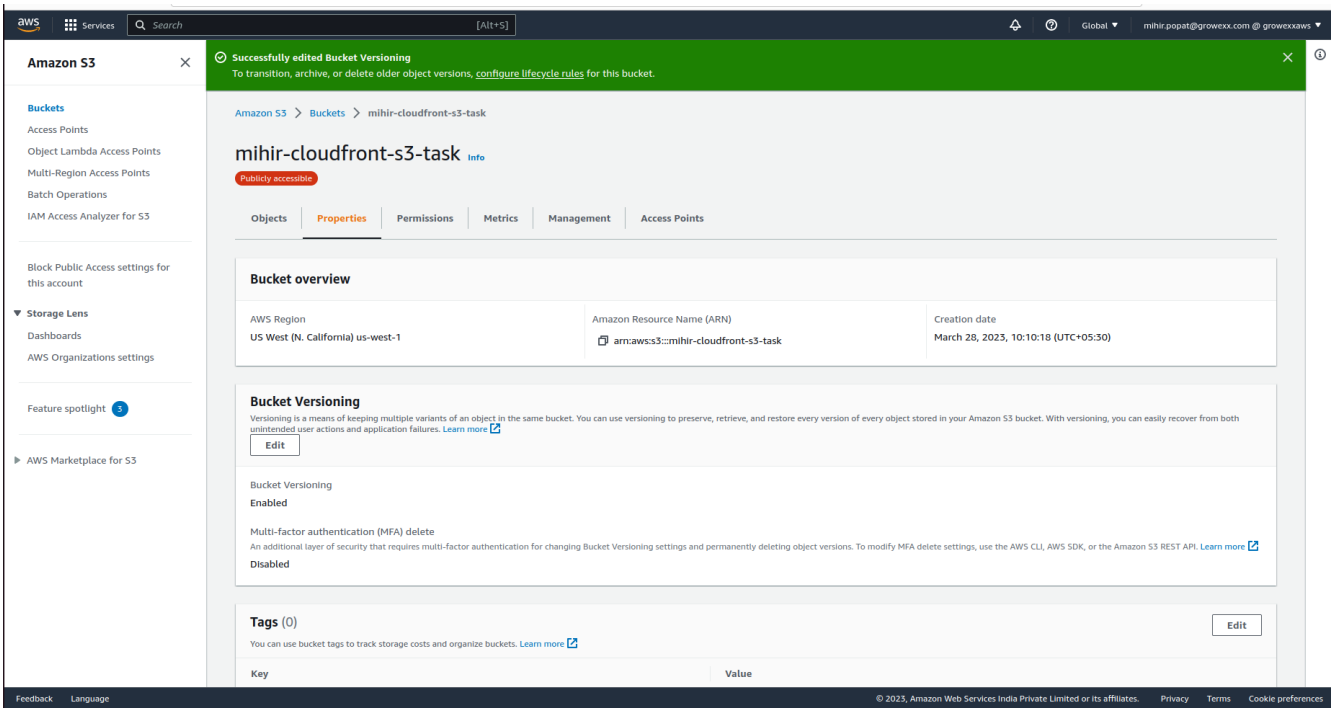
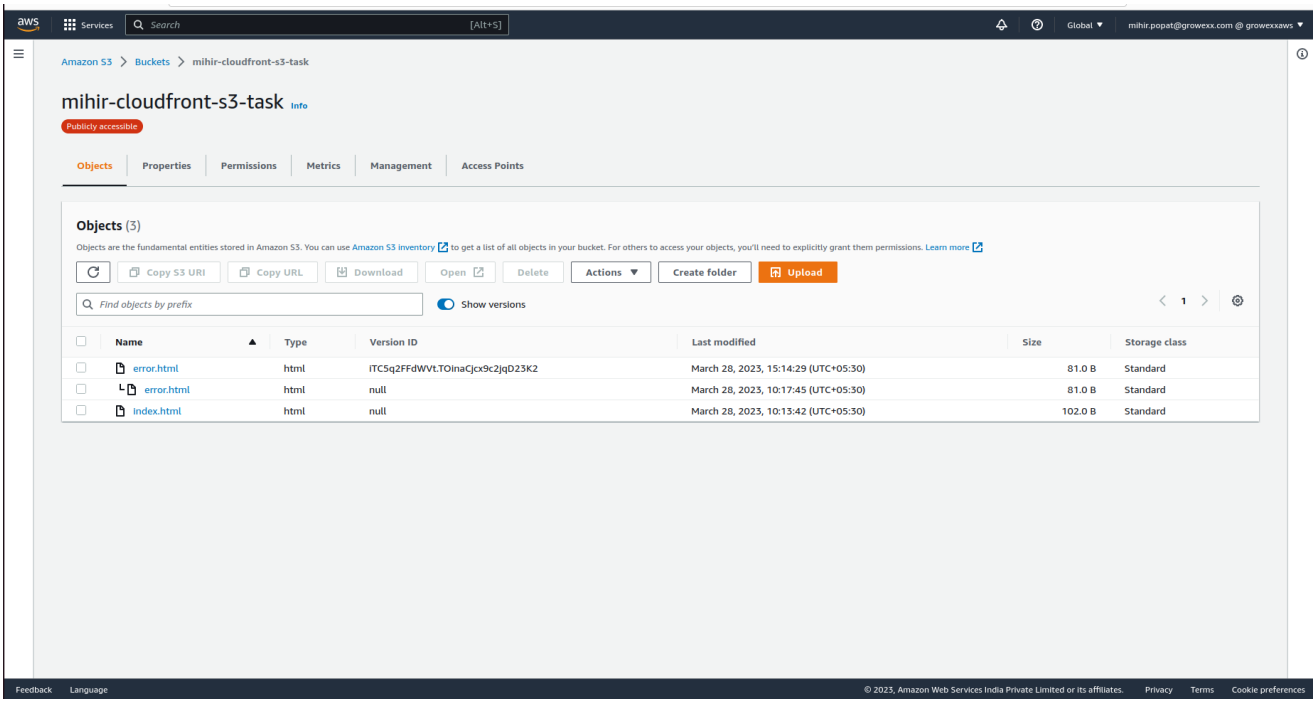




S3 Object Life Cycle policy

Object Life Cycle policy is used to move the objects in your bucket from one storage class to another automatically. Let's say we have objects in our bucket which are stored in Standard Storage.

Now we have to move those files from Standard Storage to Infrequent Access Storage after 60 days of creation

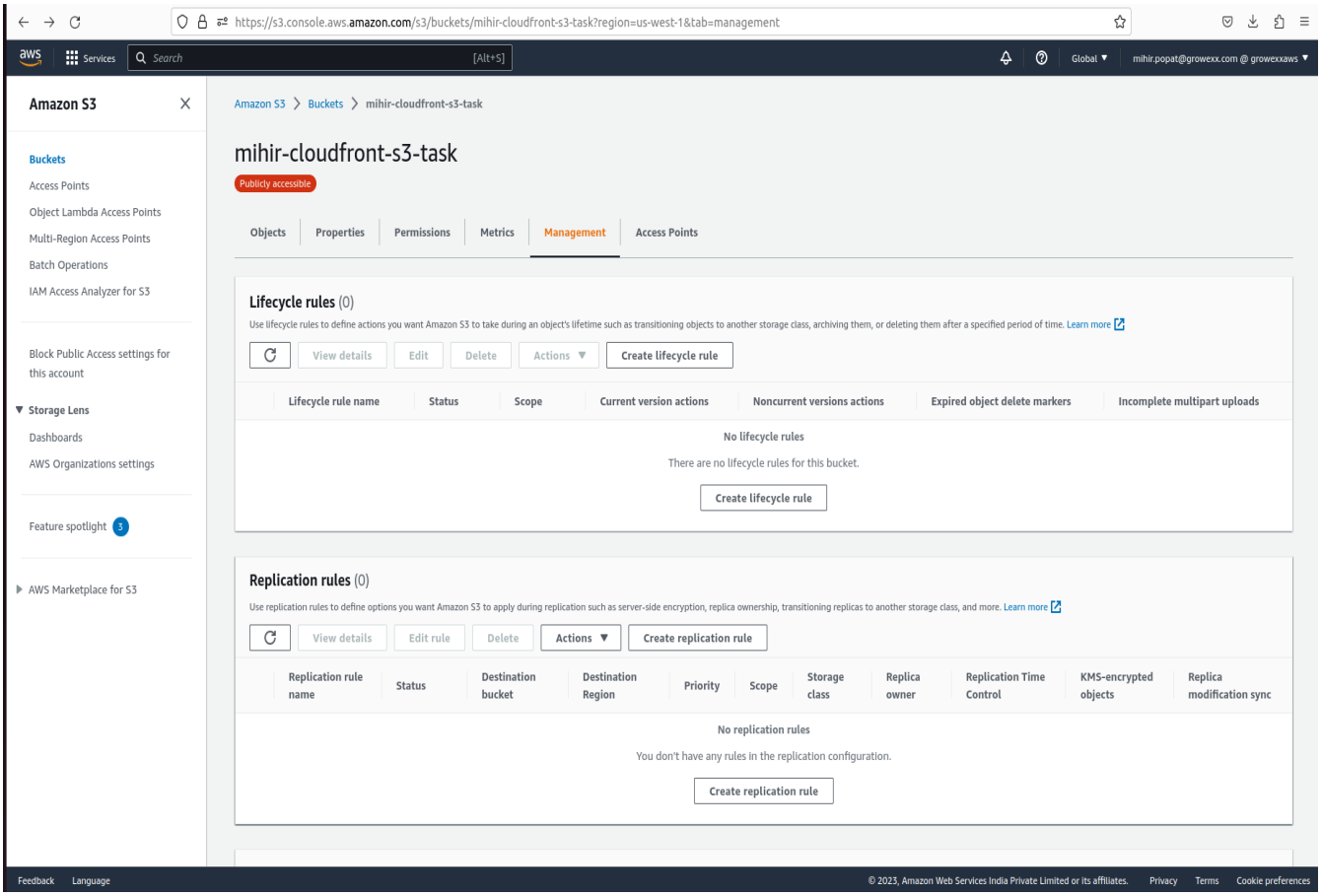
After 120 days we have to move those files from Infrequent Access Storage to Glacier.

Now in order to implement the above statements

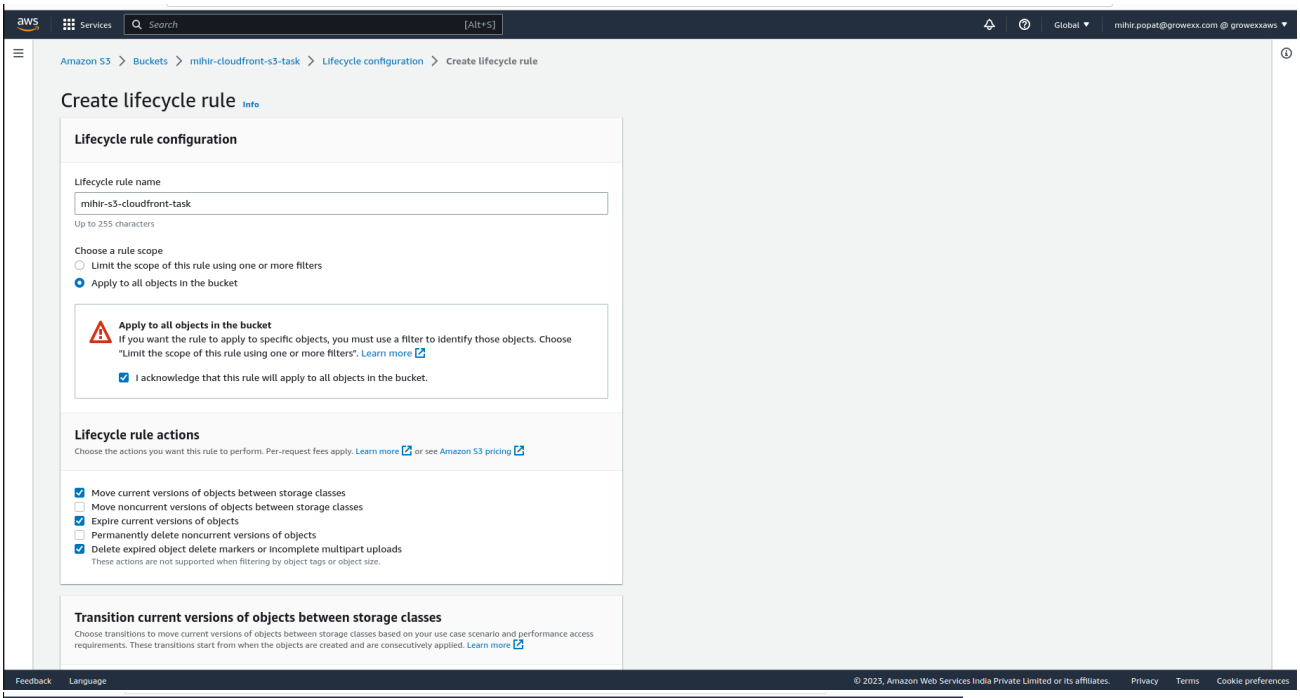
You have to log in to AWS and navigate to S3, choose the bucket you want to implement object life cycle rules.

Now you can add new life cycle rules under the management section.

Click on Add life cycle rules it will open a new window



The first step adding life cycle rule is giving a name to it and adding prefix or tags if required.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Amazon S3 > Buckets > mihir-cloudfront-s3-task > Lifecycle configuration > Create lifecycle rule
Create lifecycle rule info
Lifecycle rule configuration
Lifecycle rule name
mihir-s3-cloudfront-task
Up to 255 characters
Choose a rule scope
Limit the scope of this rule using one or more filters
Apply to all objects in the bucket
Apply to all objects in the bucket
If you want the rule to apply to specific objects, you must use a filter to identify those objects. Choose "Limit the scope of this rule using one or more filters". Learn more
I acknowledge that this rule will apply to all objects in the bucket.
Lifecycle rule actions
Choose the actions you want this rule to perform. Per-request fees apply. Learn more or see Amazon S3 pricing
Move current versions of objects between storage classes
Move noncurrent versions of objects between storage classes
Expire current versions of objects
Permanently delete noncurrent versions of objects
Delete expired object delete markers or incomplete multipart uploads
These actions are not supported when filtering by object tags or object size.
Transition current versions of objects between storage classes
Choose transitions to move current versions of objects between storage classes based on your use case scenario and performance access requirements. These transitions start from when the objects are created and are consecutively applied. Learn more
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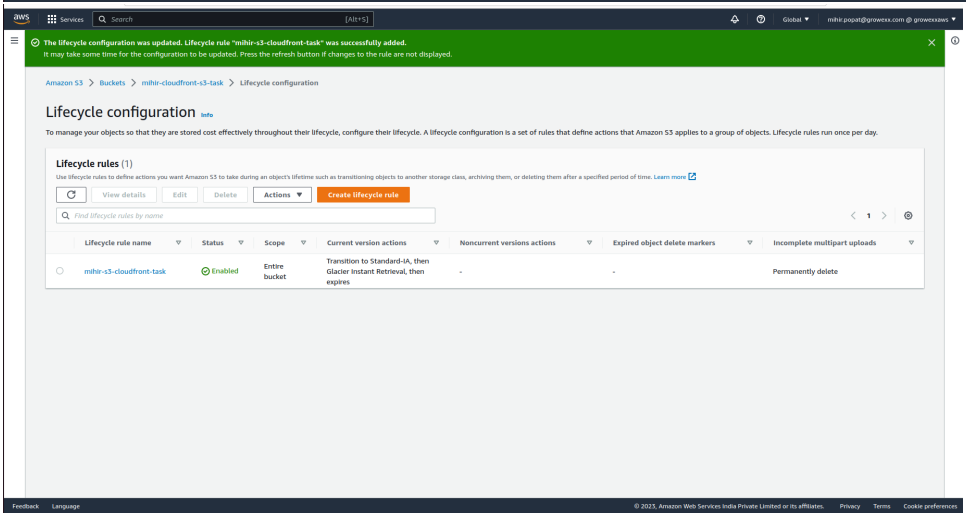
The lifecycle configuration was updated. Lifecycle rule "mihir-s3-cloudfront-task" was successfully added.
It may take some time for the configuration to be updated. Press the refresh button if changes to the rule are not displayed.
Amazon S3 > Buckets > mihir-cloudfront-s3-task > Lifecycle configuration
Lifecycle configuration info
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 (1)
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
View details
Edit
Delete
Actions
Create lifecycle rule
Find lifecycle rules by name
Lifecycle rule name
Status
Scope
Current version actions
Noncurrent versions actions
Expired object delete markers
Incomplete multipart uploads
mihir-s3-cloudfront-task
Enabled
Entire bucket
Transition to Standard-IA, then Glacier Instant Retrieval, then expires
-
-
Permanently delete
Feedback
Language
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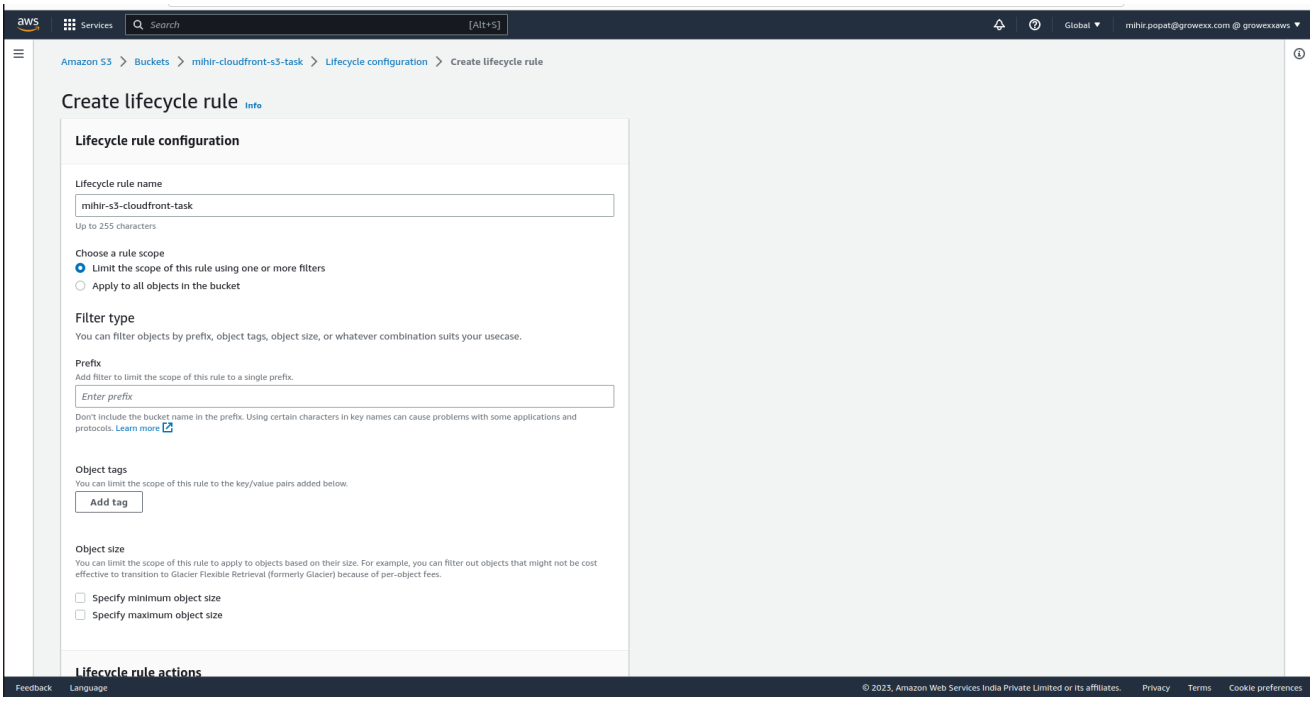
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Amazon S3 > Buckets > mihir-cloudfront-s3-task > Lifecycle configuration > Create lifecycle rule
Create lifecycle rule Info
Lifecycle rule configuration
Lifecycle rule name
mihir-s3-cloudfront-task
Up to 255 characters
Choose a rule scope
Limit the scope of this rule using one or more filters
Apply to all objects in the bucket
Filter type
You can filter objects by prefix, object tags, object size, or whatever combination suits your usecase.
Prefix
Add filter to limit the scope of this rule to a single prefix.
Enter prefix
Don't include the bucket name in the prefix. Using certain characters in key names can cause problems with some applications and protocols. Learn more
Object tags
You can limit the scope of this rule to the key/value pairs added below.
Add tag
Object size
You can limit the scope of this rule to apply to objects based on their size. For example, you can filter out objects that might not be cost effective to transition to Glacier Flexible Retrieval (formerly Glacier) because of per-object fees.
Specify minimum object size
Specify maximum object size
Lifecycle rule actions
Feedback
Language
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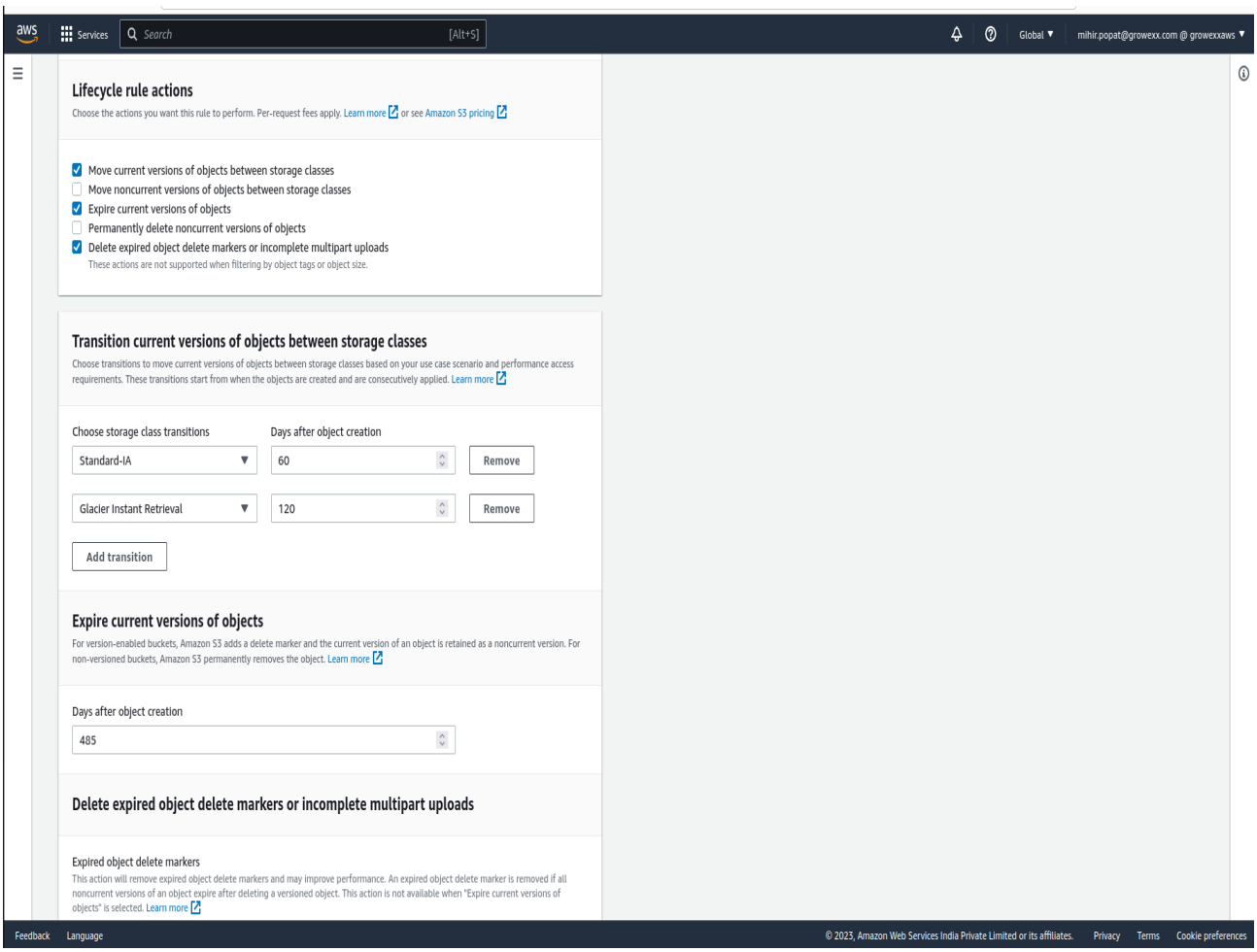
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Lifecycle rule actions
Choose the actions you want this rule to perform. Per-request fees apply. Learn more or see Amazon S3 pricing
Move current versions of objects between storage classes
Move noncurrent versions of objects between storage classes
Expire current versions of objects
Permanently delete noncurrent versions of objects
Delete expired object delete markers or incomplete multipart uploads
These actions are not supported when filtering by object tags or object size.
Transition current versions of objects between storage classes
Choose transitions to move current versions of objects between storage classes based on your use case scenario and performance access requirements. These transitions start from when the objects are created and are consecutively applied. Learn more
Choose storage class transitions
Days after object creation
Standard-IA
60
Remove
Glacier Instant Retrieval
120
Remove
Add transition
Expire current versions of objects
For version-enabled buckets, Amazon S3 adds a delete marker and the current version of an object is retained as a noncurrent version. For non-versioned buckets, Amazon S3 permanently removes the object. Learn more
Days after object creation
485
Delete expired object delete markers or incomplete multipart uploads
Expired object delete markers
This action will remove expired object delete markers and may improve performance. An expired object delete marker is removed if all noncurrent versions of an object expire after deleting a versioned object. This action is not available when "Expire current versions of objects" is selected. Learn more
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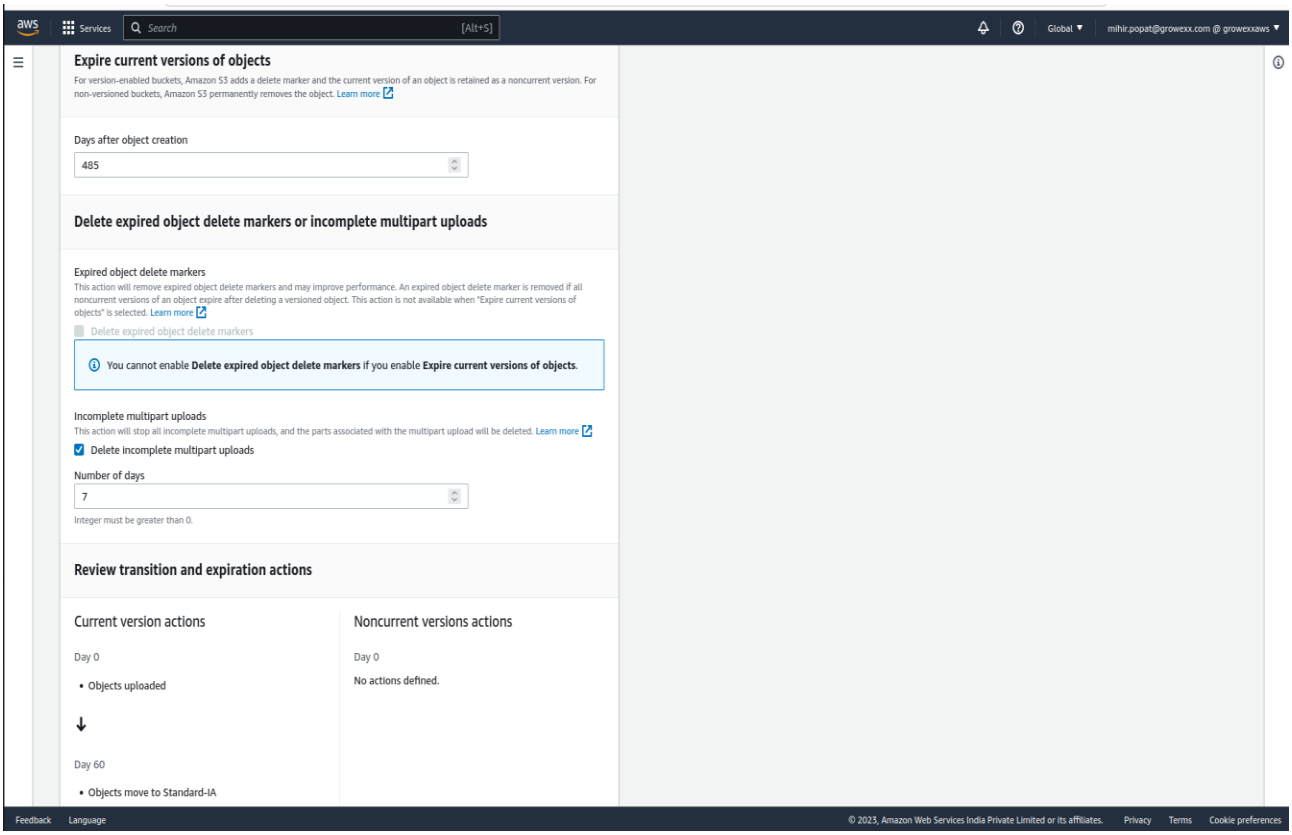
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Days after object creation
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Delete expired object delete markers or incomplete multipart uploads
Expired object delete markers
This action will remove expired object delete markers and may improve performance. An expired object delete marker is removed if all noncurrent versions of an object expire after deleting a versioned object. This action is not available when "Expire current versions of objects" is selected. Learn more
Delete expired object delete markers
You cannot enable Delete expired object delete markers if you enable Expire current versions of objects.
Incomplete multipart uploads
This action will stop all incomplete multipart uploads, and the parts associated with the multipart upload will be deleted. Learn more
Delete incomplete multipart uploads
Number of days
7
Integer must be greater than 0.
Review transition and expiration actions
Current version actions
Day 0
• Objects uploaded
Day 60
• Objects move to Standard-IA
Noncurrent versions actions
Day 0
No actions defined.
Feedback
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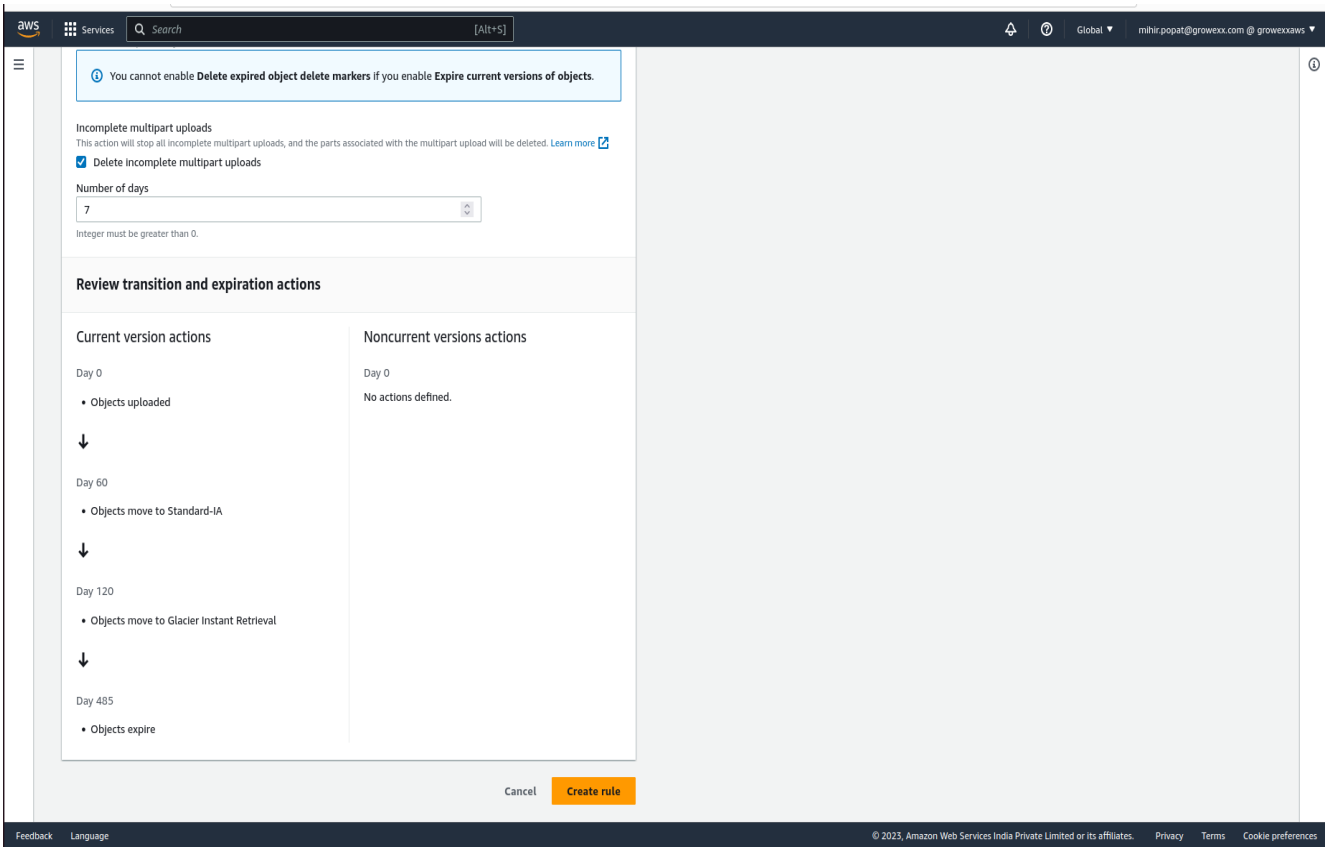
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You cannot enable Delete expired object delete markers if you enable Expire current versions of objects.
Incomplete multipart uploads
This action will stop all incomplete multipart uploads, and the parts associated with the multipart upload will be deleted. Learn more
Delete incomplete multipart uploads
Number of days
7
Integer must be greater than 0.
Review transition and expiration actions
Current version actions
Day 0
• Objects uploaded
Day 60
• Objects move to Standard-IA
Day 120
• Objects move to Glacier Instant Retrieval
Day 485
• Objects expire
Noncurrent versions actions
Day 0
No actions defined.
Cancel
Create rule
Feedback
Language
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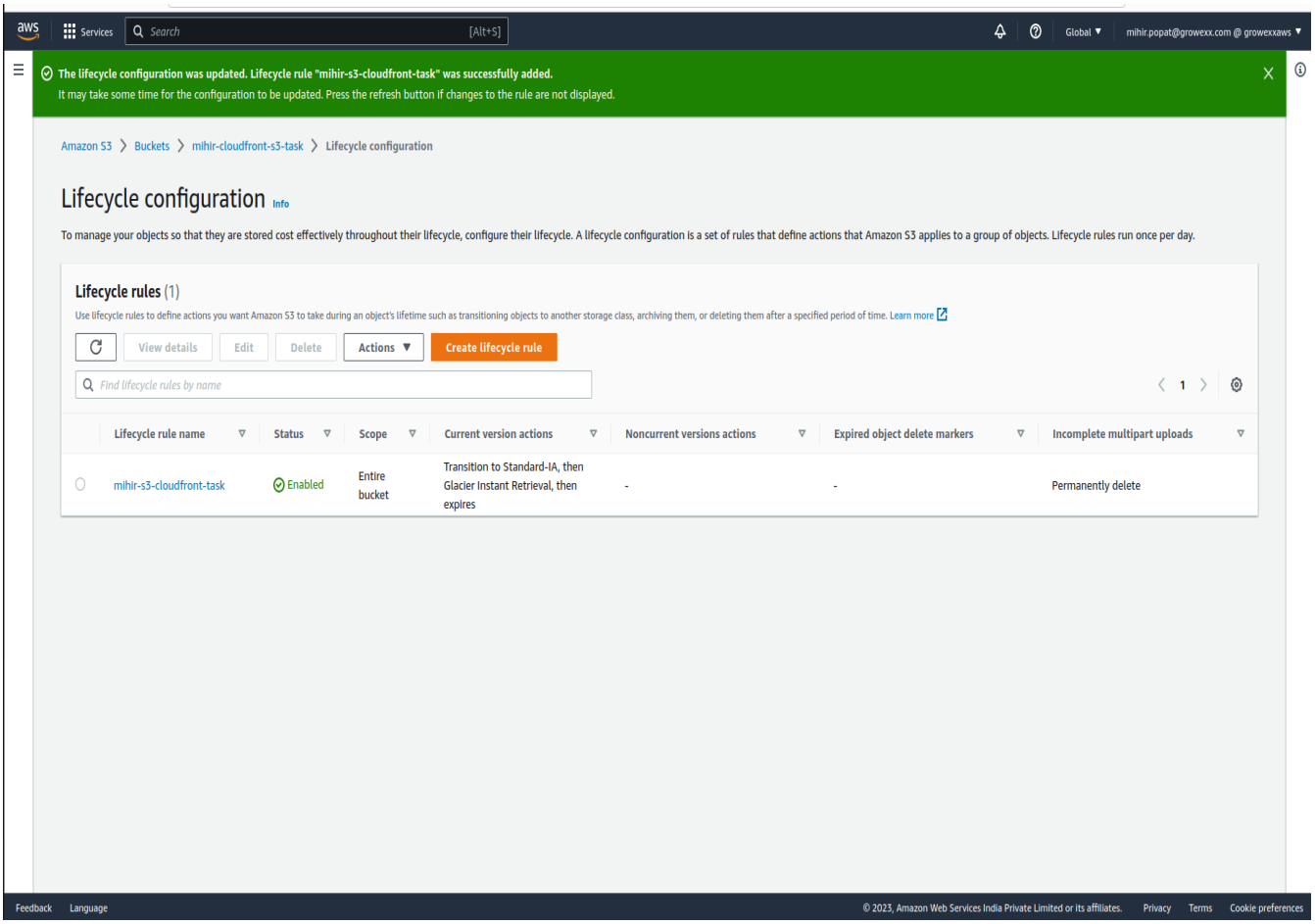
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The lifecycle configuration was updated. Lifecycle rule "mihir-s3-cloudfront-task" was successfully added.
It may take some time for the configuration to be updated. Press the refresh button if changes to the rule are not displayed.
Amazon S3 > Buckets > mihir-cloudfront-s3-task > Lifecycle configuration
Lifecycle configuration Info
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 (1)
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
View details
Edit
Delete
Actions
Create lifecycle rule
Find lifecycle rules by name
1
Lifecycle rule name
Status
Scope
Current version actions
Noncurrent versions actions
Expired object delete markers
Incomplete multipart uploads
mihir-s3-cloudfront-task
Enabled
Entire bucket
Transition to Standard-IA, then Glacier Instant Retrieval, then expires
-
-
Permanently delete
Feedback
Language
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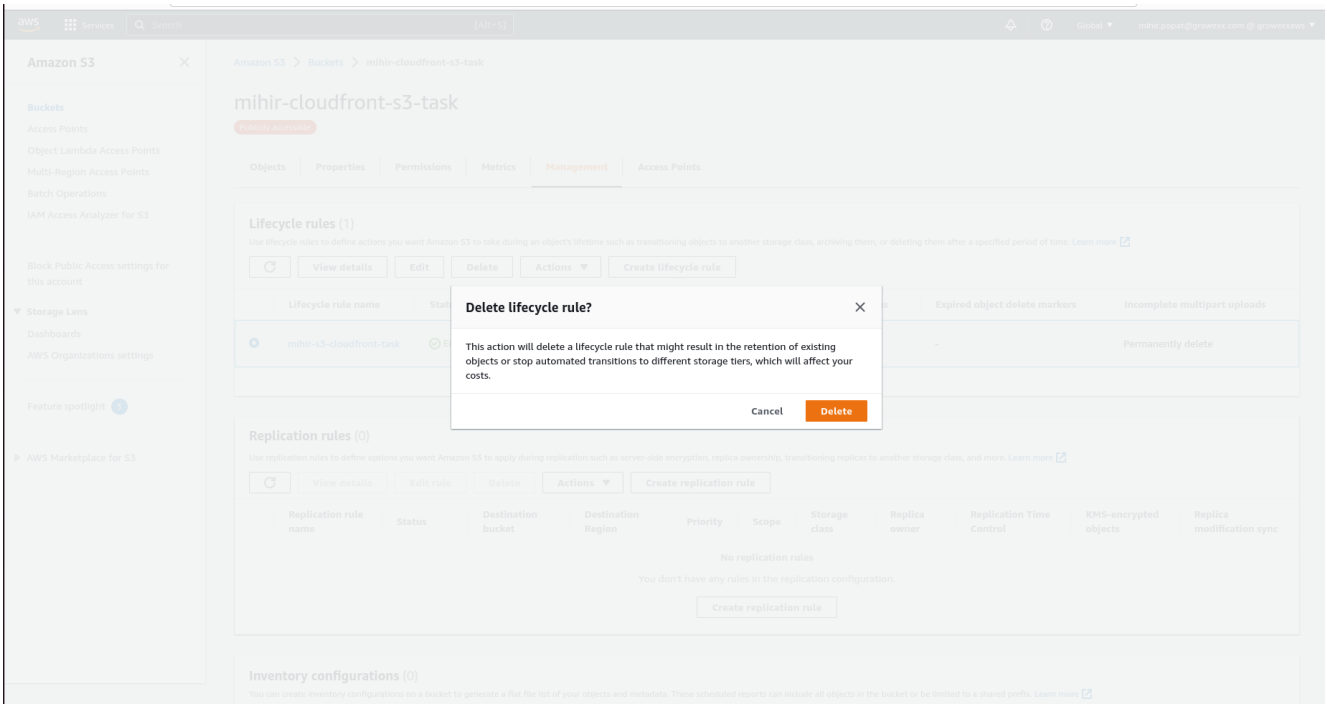
Amazon S3
mihir-cloudfront-s3-task
Delete lifecycle rule?
This action will delete a lifecycle rule that might result in the retention of existing objects or stop automated transitions to different storage tiers, which will affect your costs.
Cancel
Delete