SVKM'S NMIMS Nilkamal School of Mathematics, Applied Statistics & Analytics

Master of Science (Data Science)

Practical-4 Storage as a service using AWS.

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Write up :-

- **Storage as a service-s3**

Amazon Simple Storage Service (S3) is a widely used Storage as a Service (SaaS) offering by Amazon Web Services (AWS). S3 provides a scalable and durable object storage solution that allows users to store and retrieve data over the internet. With a focus on high availability, S3 ensures 99.999999999% durability by replicating data across multiple servers and facilities. Users can easily scale their storage needs, starting with a minimal amount and expanding as their requirements grow. Security features such as access control lists, bucket policies, and AWS Identity and Access Management provide robust control over data access. S3's versatility makes it suitable for various use cases, including data backup, archiving, content distribution, and analytics. Objects are stored with unique keys in a flat, non-hierarchical structure, and users can take advantage of features like versioning and lifecycle management. S3's straightforward setup, reliability, and accessibility make it a fundamental component for cloud-based applications and services, offering simplicity and cost-effectiveness in managing data in the cloud.

- **S3 use cases**

Data Backup and Archiving: S3 is often used for data backup and archiving purposes. Its high durability ensures that data remains intact, and versioning support allows for easy recovery of previous versions of objects.

Web Hosting and Content Distribution: S3 can be used to host static websites or distribute content globally. By leveraging S3's content delivery features, such as Amazon CloudFront, users can deliver static and dynamic web content with low latency and high transfer speeds.

Big Data Analytics: S3 is commonly employed as a data lake for big data analytics. It allows organizations to store vast amounts of raw and processed data, making it accessible for analysis using services like Amazon Athena, Amazon Redshift, or third-party analytics tools.

Media Storage and Distribution: S3 is suitable for storing and distributing multimedia files such as images, videos, and audio. Its scalable architecture ensures seamless handling of large media files, and the integration with CloudFront facilitates efficient content delivery.
Application Hosting: Developers use S3 to store and retrieve data for cloud-based applications. It provides a reliable and scalable storage solution for applications hosted on AWS, supporting features like static website hosting and application data storage.

Disaster Recovery: S3 is a key component in building robust disaster recovery solutions. By replicating data across different AWS regions, organizations can ensure data availability even in the event of a regional outage.

Data Migration: S3 is often involved in data migration projects. Users can upload large datasets to S3 and then transfer the data to other AWS services or on-premises systems efficiently.

Log Storage and Analysis: S3 is used to store log files generated by various applications and services. Combined with services like Amazon CloudWatch and AWS Lambda, organizations can analyze logs for insights, troubleshoot issues, and monitor system performance.

Collaborative Workflows: S3 supports collaborative workflows by providing a centralized repository for shared documents, images, and other collaborative assets. Teams can use S3 to store and share files securely.

IoT Data Storage: S3 is suitable for storing large volumes of data generated by Internet of Things (IoT) devices. It allows organizations to capture, store, and analyze IoT data efficiently.
These use cases demonstrate the flexibility and adaptability of Amazon S3 across diverse scenarios, making it a foundational service for various industries and applications in the cloud.

- **Steps for s3**

To use Amazon S3 effectively, you can follow these general steps:

Sign Up for AWS: If you don't have an AWS account, sign up for one at https://aws.amazon.com/. You'll need to provide billing information, but many AWS services, including S3, offer a free tier with limited resources.

Access AWS Management Console: Log in to the AWS Management Console using your account credentials.

Navigate to S3: In the AWS Management Console, find and select the "S3" service under the "Storage" category.

Create a Bucket: In the S3 dashboard, click the "Create Bucket" button. Give your bucket a unique name (S3 bucket names are globally unique) and choose the region where you want the bucket to be located.

Configure Bucket Properties: Set up additional configurations for your bucket, such as versioning, logging, and tags. Versioning is especially useful for data backup and recovery.

Set Permissions: Define access permissions for your bucket. This includes setting bucket policies and access control lists (ACLs) to manage who can access your data and what they can do with it.

Upload Objects to the Bucket: Once your bucket is set up, you can upload files, also known as objects, to it. You can either use the web interface to upload individual files or leverage AWS SDKs and command-line tools for larger-scale uploads.

Configure Object Properties: Set metadata and configure properties for your uploaded objects, including storage class, encryption, and access control.

Manage Objects: Use the S3 console to manage your objects, including copying, moving, and deleting. You can also organize objects into folders within your bucket.

Enable Versioning (Optional): If you want to enable versioning for your bucket, allowing you to keep multiple versions of an object, you can do so in the bucket properties.

Enable Logging (Optional): If you want to log access to your S3 bucket, configure logging settings in the bucket properties.

Set Up Lifecycle Policies (Optional): Define lifecycle policies to automatically transition objects to different storage classes or delete them after a specific period.

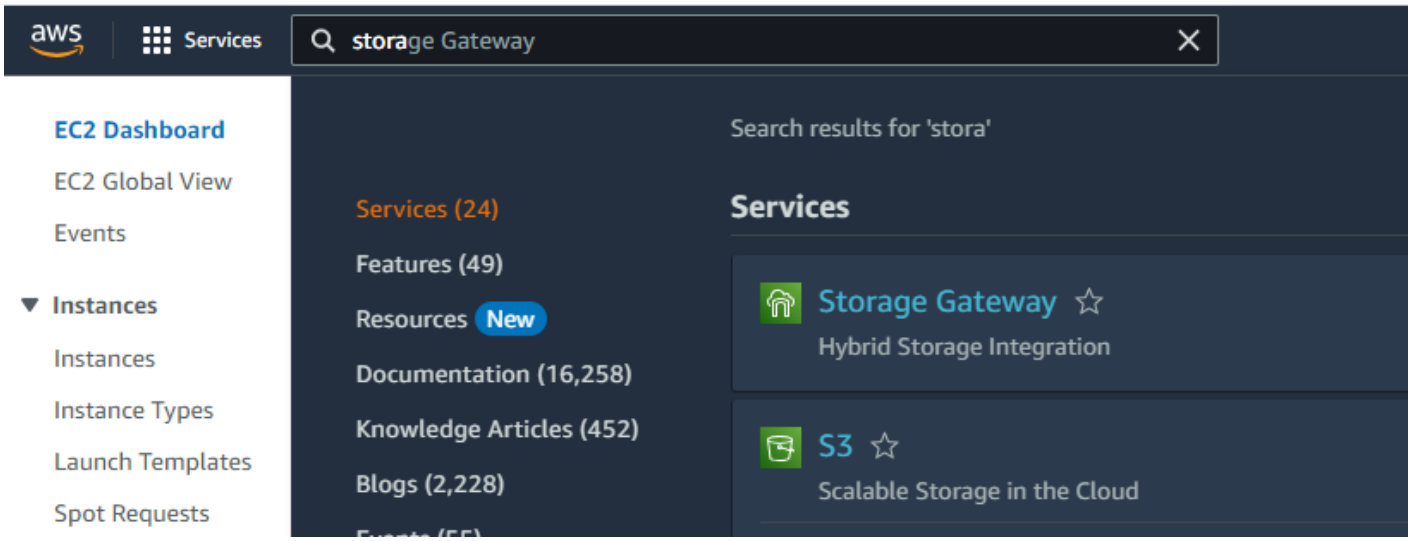
Secure Access with AWS Identity and Access Management (IAM): Use IAM to control access to your S3 resources. Create IAM users and roles with appropriate permissions to ensure secure access.

Integrate with Other AWS Services (Optional): Explore integrations with other AWS services. For example, you can connect your S3 bucket with AWS Lambda, CloudFront for content delivery, or AWS Glue for data processing.

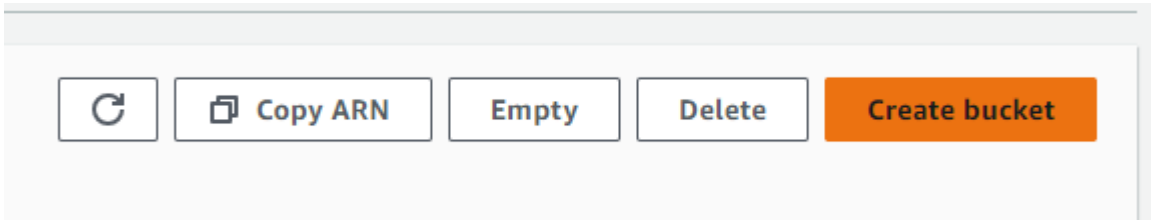
Implement S3 for :

1. **uploading a file, video, etc.**

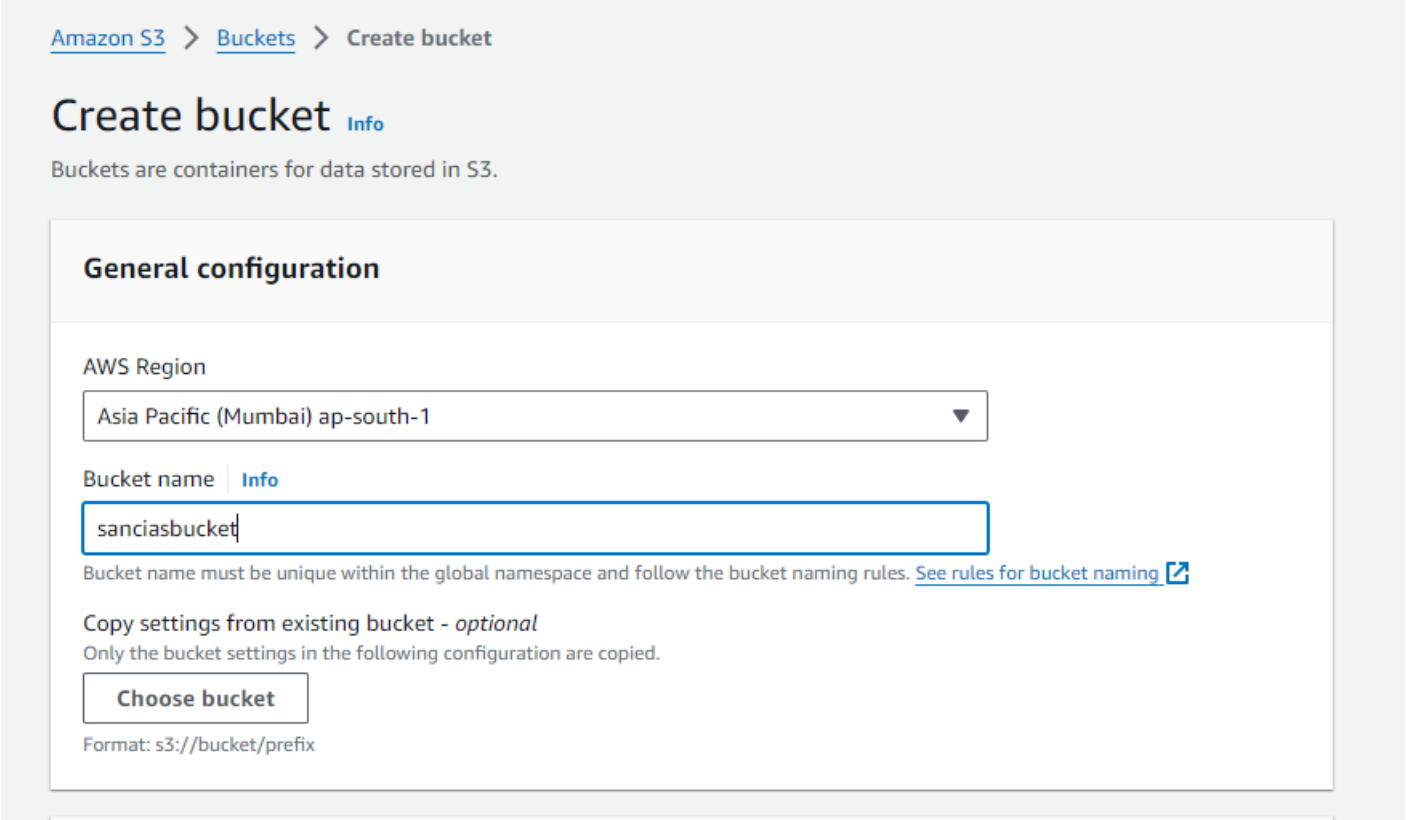
Open AWS Console and select S3 Storage



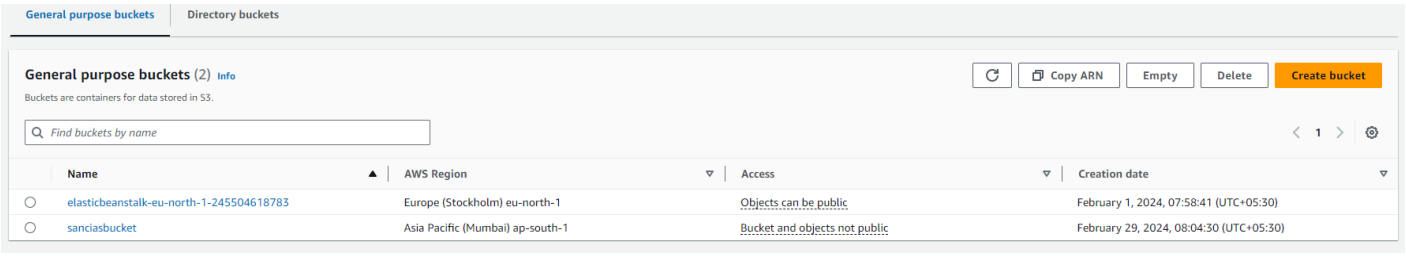
On S3 page click on “Create bucket”



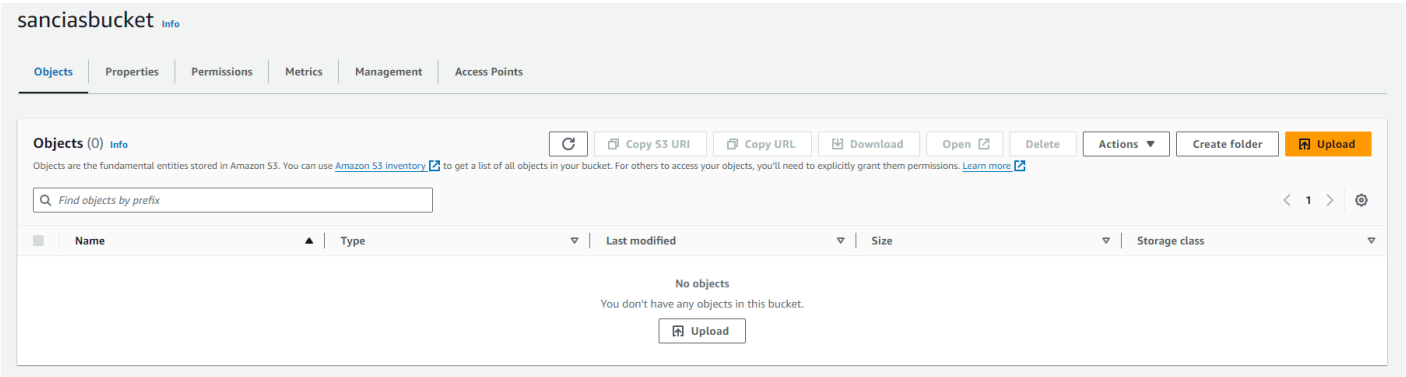
Select the desired region and give your bucket name



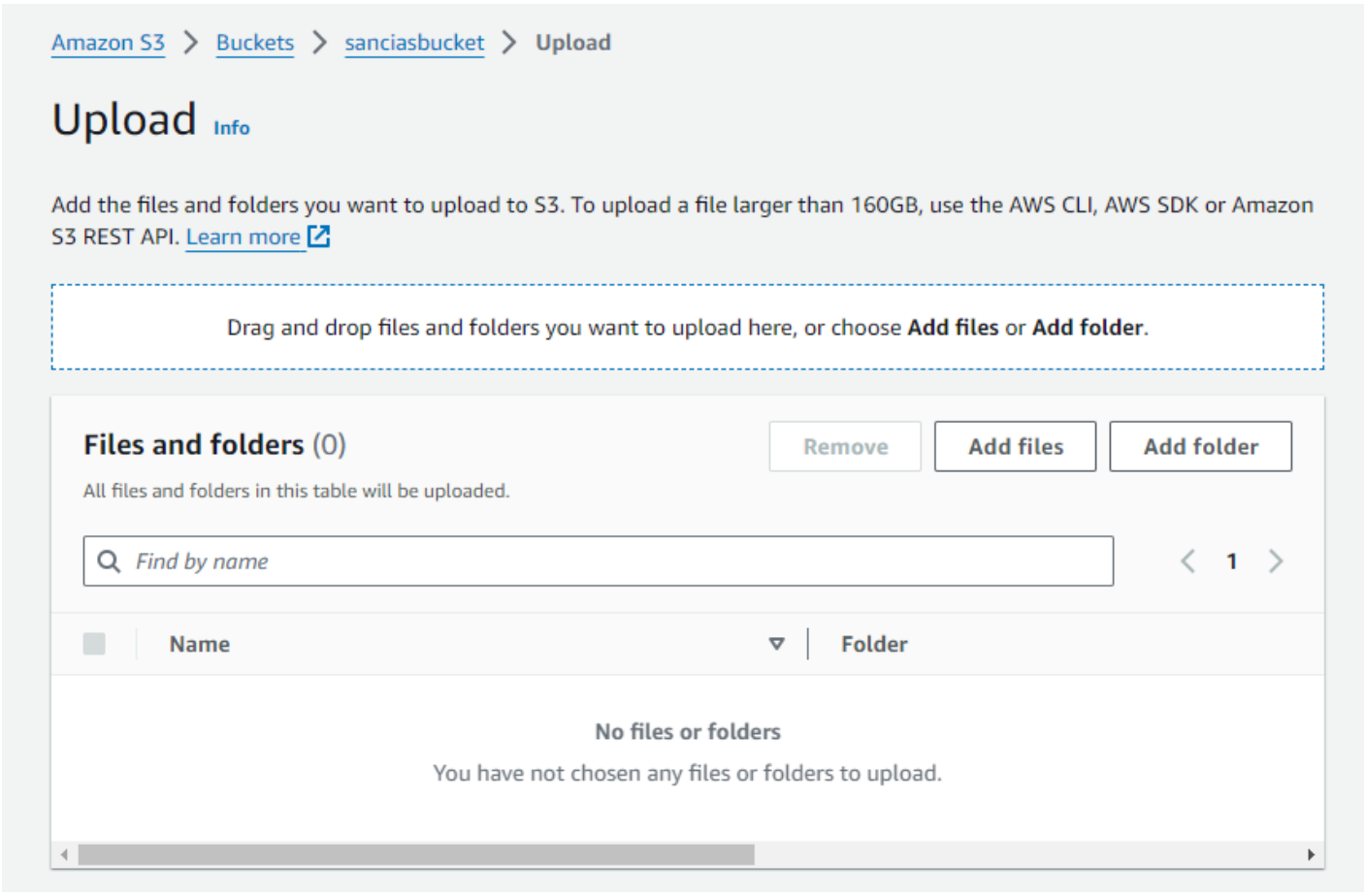
Verify that the bucket is created

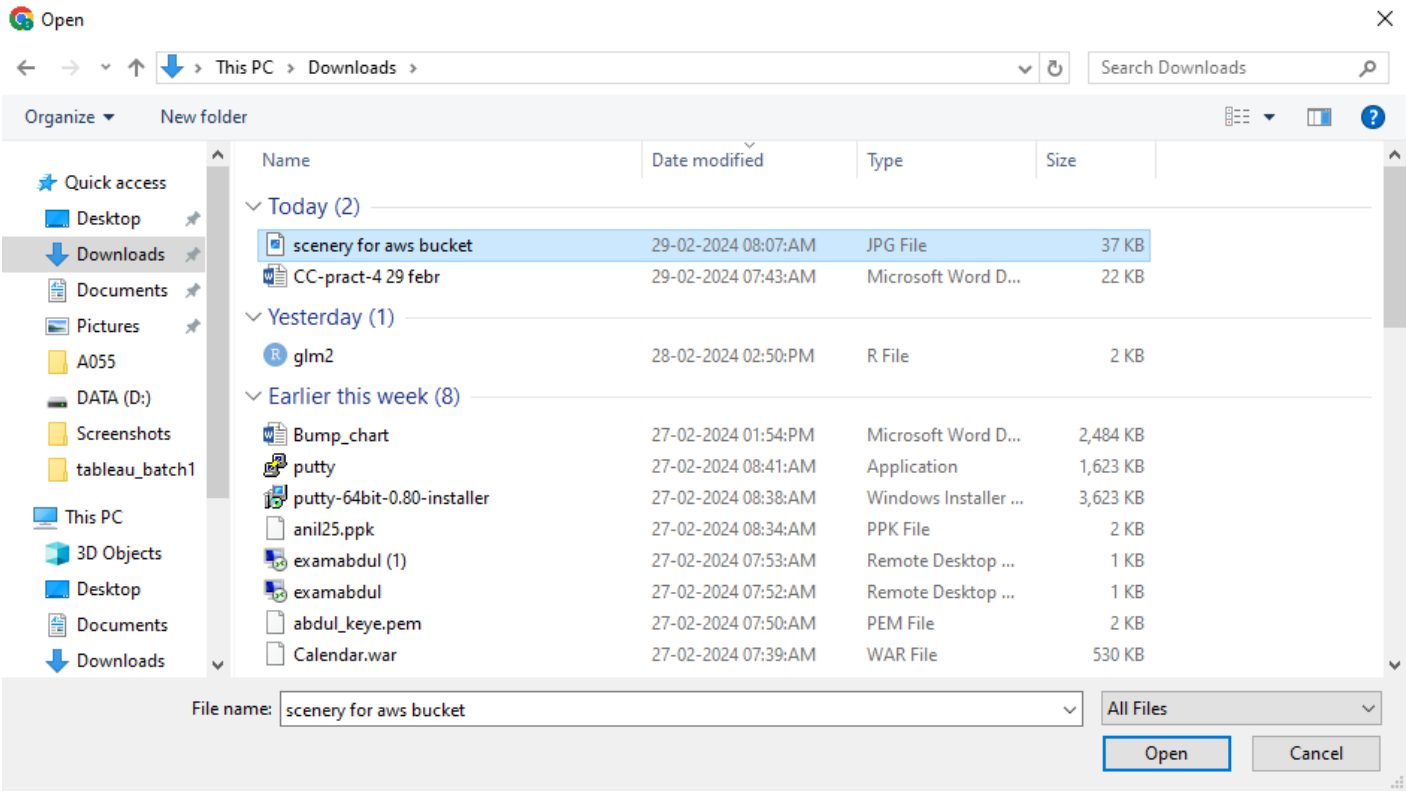


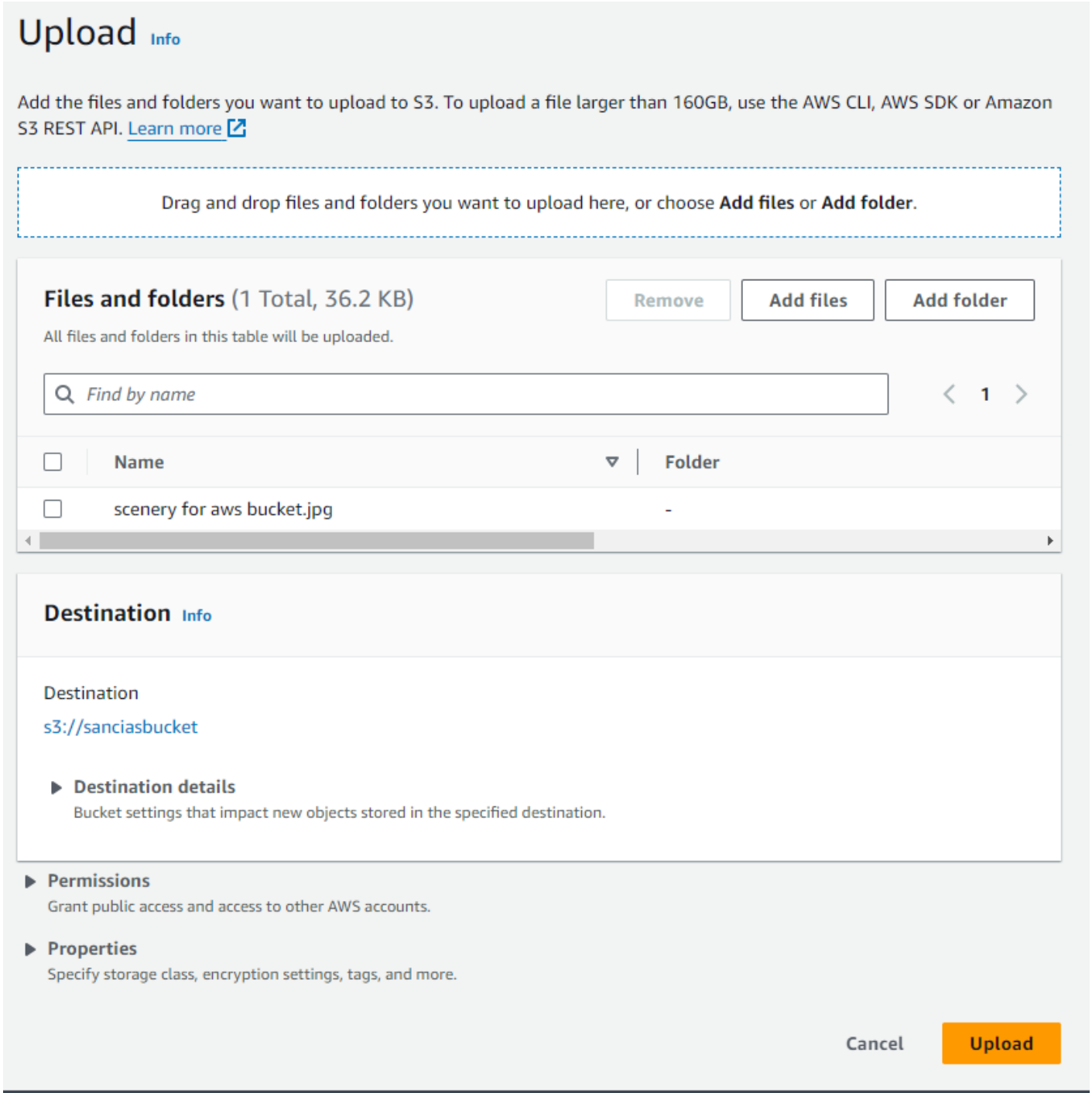
Click on Upload file



Click on Add Files and upload any downloaded image/pdf/videos, etc.


Amazon S3 > Buckets > sanciasbucket > 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 folder.
Files and folders (0)
Remove
Add files
Add folder
All files and folders in this table will be uploaded.
Find by name
1
Name
Folder
No files or folders
You have not chosen any files or folders to upload.


Open
This PC > Downloads >
Search Downloads
Organize
New folder
Quick access
Desktop
Downloads
Documents
Pictures
A055
DATA (D:)
Screenshots
tableau_batch1
This PC
3D Objects
Desktop
Documents
Downloads
Name
Date modified
Type
Size
Today (2)
scenery for aws bucket 29-02-2024 08:07:AM JPG File 37 KB
CC-pract-4 29 febr 29-02-2024 07:43:AM Microsoft Word D... 22 KB
Yesterday (1)
glm2 28-02-2024 02:50:PM R File 2 KB
Earlier this week (8)
Bump_chart 27-02-2024 01:54:PM Microsoft Word D... 2,484 KB
putty 27-02-2024 08:41:AM Application 1,623 KB
putty-64bit-0.80-installer 27-02-2024 08:38:AM Windows Installer ... 3,623 KB
anil25.ppk 27-02-2024 08:34:AM PPK File 2 KB
examabdul (1) 27-02-2024 07:53:AM Remote Desktop ... 1 KB
examabdul 27-02-2024 07:52:AM Remote Desktop ... 1 KB
abdul_keye.pem 27-02-2024 07:50:AM PEM File 2 KB
Calendar.war 27-02-2024 07:39:AM WAR File 530 KB
File name: scenery for aws bucket
All Files
Open
Cancel



After Uploading verify if the image has been uploaded

Upload succeeded
View details below.

Upload: status

Close

The information below will no longer be available after you navigate away from this page.

Summary

Destination	Succeeded	Failed
s3://sanciasbucket	1 file, 36.2 KB (100.00%)	0 files, 0 B (0%)

Files and folders | Configuration

Files and folders (1 Total, 36.2 KB)

Find by name

1

Name	Folder	Type	Size	Status	Error
scenery for ...	-	image/jpeg	36.2 KB	Succeeded	-

Amazon S3 > Buckets > sanciasbucket > scenery for aws bucket.jpg

scenery for aws bucket.jpg Info

Copy S3 URI | Download | Open | Object actions

Properties | Permissions | Versions

Object overview

Owner
78dbbcfb21a0d5080098ec43532b5cfb9a443dae6311ec818679c90180a1241c

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

Last modified
February 29, 2024, 08:09:22 (UTC+05:30)

Size
36.2 KB

Type
jpg

Key
scenery for aws bucket.jpg

S3 URI
s3://sanciasbucket/scenery for aws bucket.jpg

Amazon Resource Name (ARN)
arn:aws:s3:::sanciasbucket/scenery for aws bucket.jpg

Entity tag (Etag)
d617129afa4935bd674975d56043254e

Object URL
https://sanciasbucket.s3.ap-south-1.amazonaws.com/scenery+for+aws+bucket.jpg

Object management overview

The following bucket properties and object management configurations impact the behavior of this object.

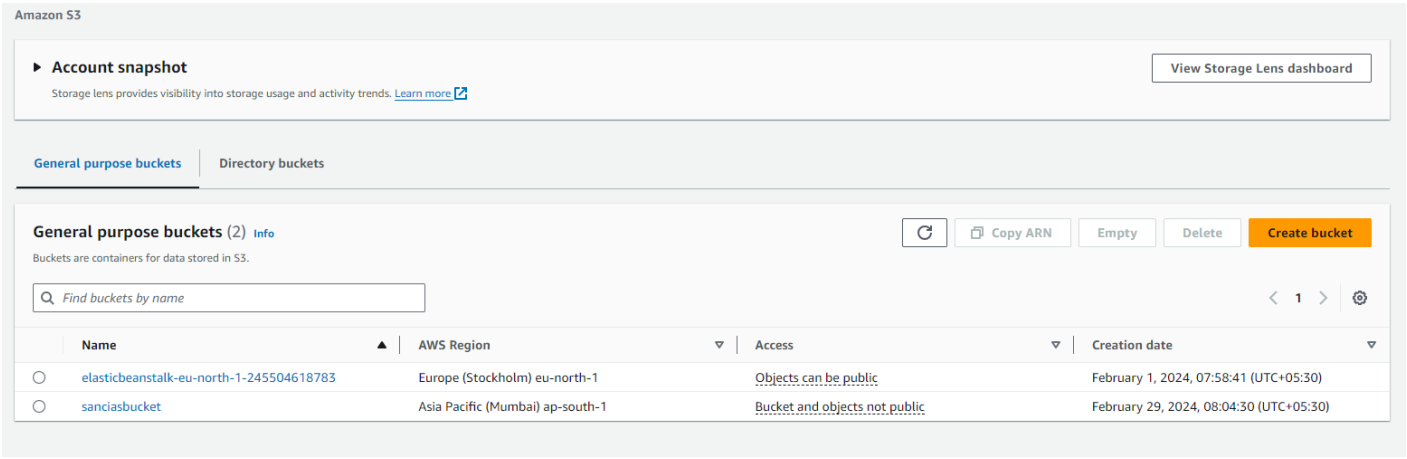
Bucket properties

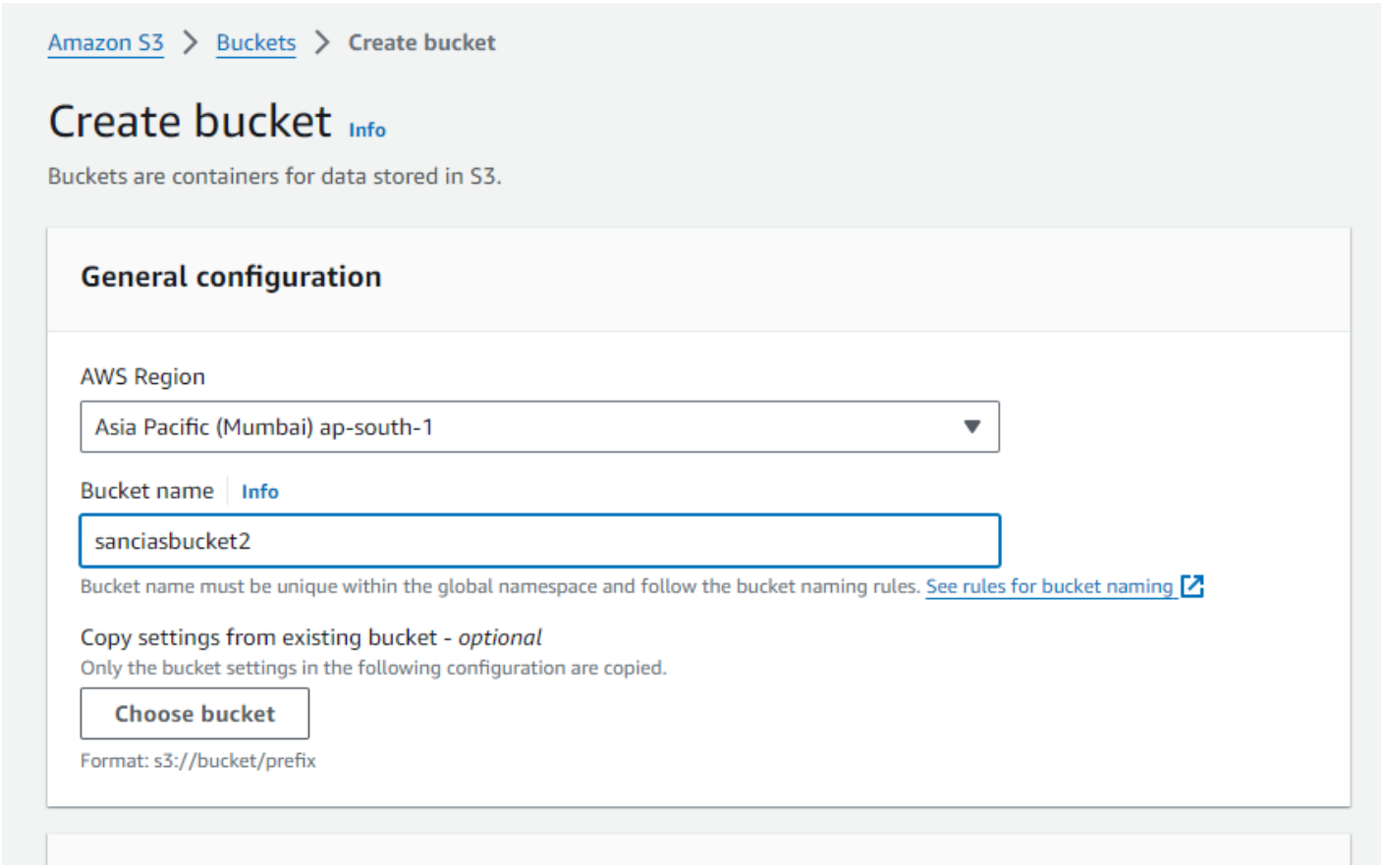
Bucket Versioning

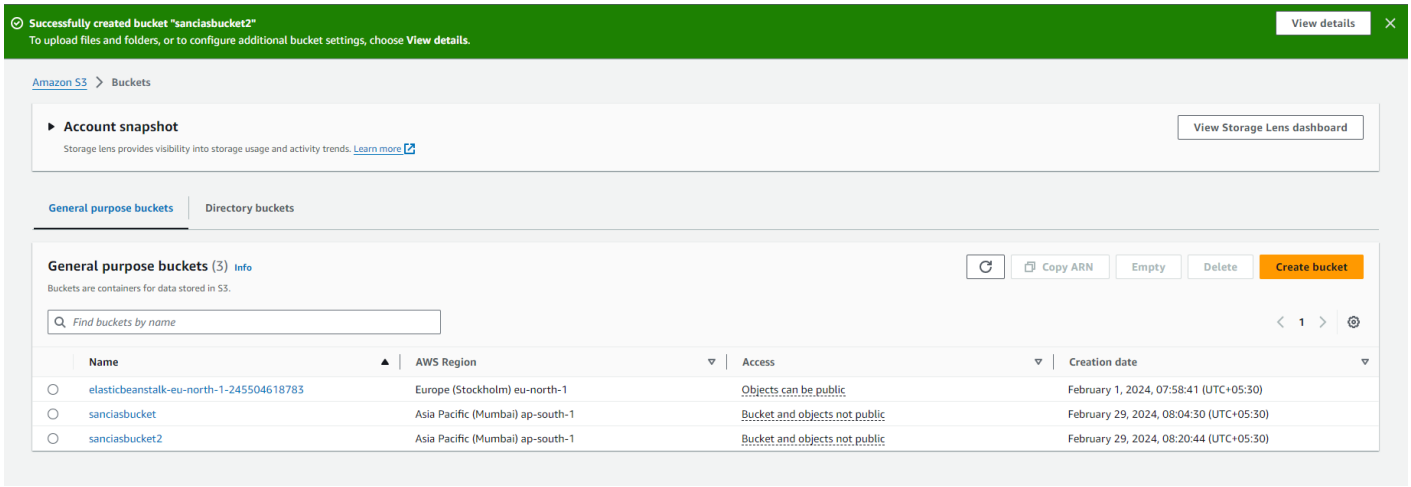
Management configurations

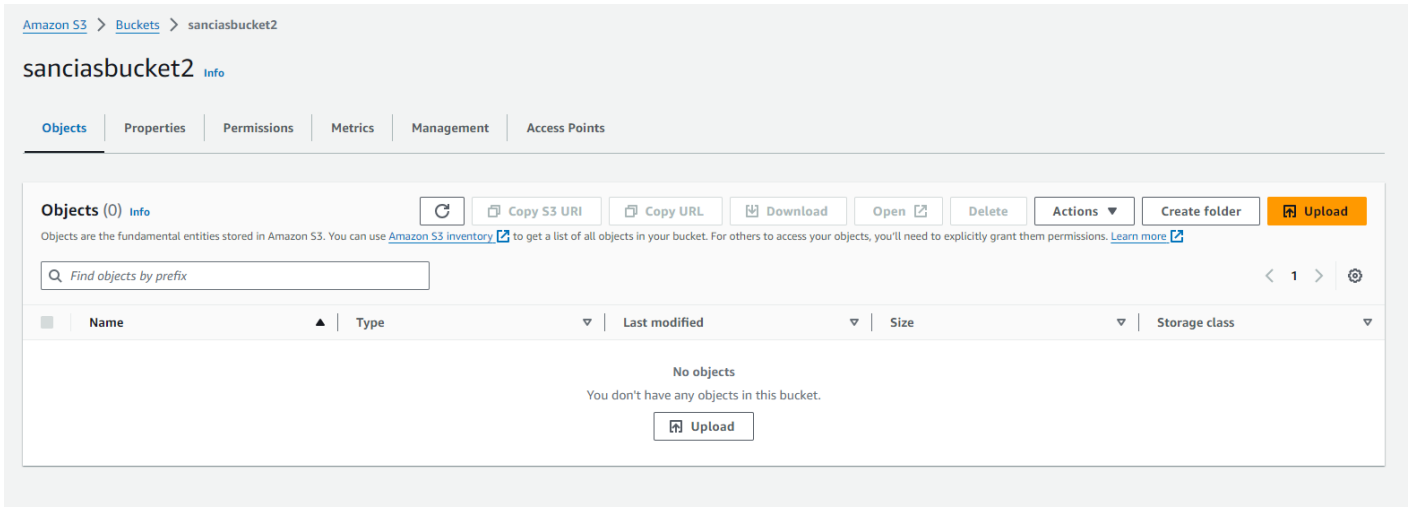
Replication status

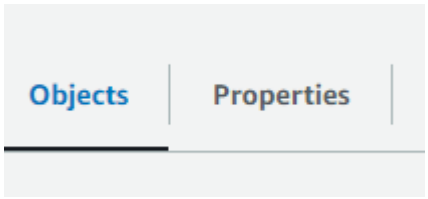
2. uploading a static website






Successfully created bucket "sanciasbucket2"
To upload files and folders, or to configure additional bucket settings, choose View details.
View details
Amazon S3 > Buckets
Account snapshot
Storage lens provides visibility into storage usage and activity trends. Learn more
View Storage Lens dashboard
General purpose buckets
Directory buckets
General purpose buckets (3) Info
Buckets are containers for data stored in S3.
Copy ARN
Empty
Delete
Create bucket
Find buckets by name
1
Name
AWS Region
Access
Creation date
elasticbeanstalk-eu-north-1-245504618783
Europe (Stockholm) eu-north-1
Objects can be public
February 1, 2024, 07:58:41 (UTC+05:30)
sanciasbucket
Asia Pacific (Mumbai) ap-south-1
Bucket and objects not public
February 29, 2024, 08:04:30 (UTC+05:30)
sanciasbucket2
Asia Pacific (Mumbai) ap-south-1
Bucket and objects not public
February 29, 2024, 08:20:44 (UTC+05:30)


Amazon S3 > Buckets > sanciasbucket2
sanciasbucket2 Info
Objects
Properties
Permissions
Metrics
Management
Access Points
Objects (0) Info
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload
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
Find objects by prefix
1
Name
Type
Last modified
Size
Storage class
No objects
You don't have any objects in this bucket.
Upload


Objects
Properties

Amazon S3 > Buckets > sanciasbucket2 > 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 folder**.

Files and folders (1 Total, 573.0 B)

Remove | Add files | Add folder

All files and folders in this table will be uploaded.

Find by name

1

Name	Folder
web.html	-

Destination Info

Destination

s3://sanciasbucket2

▶ **Destination details**

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

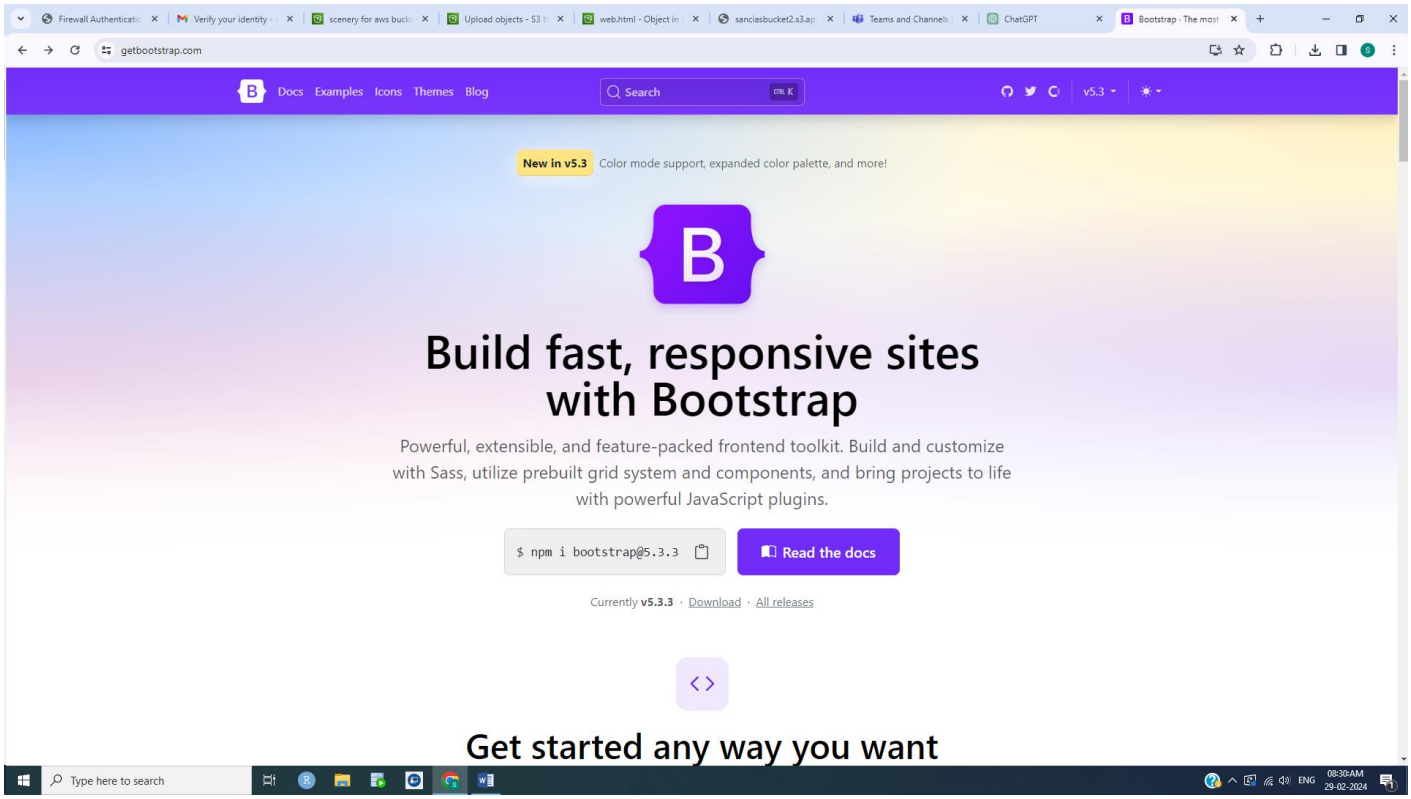
▶ **Permissions**

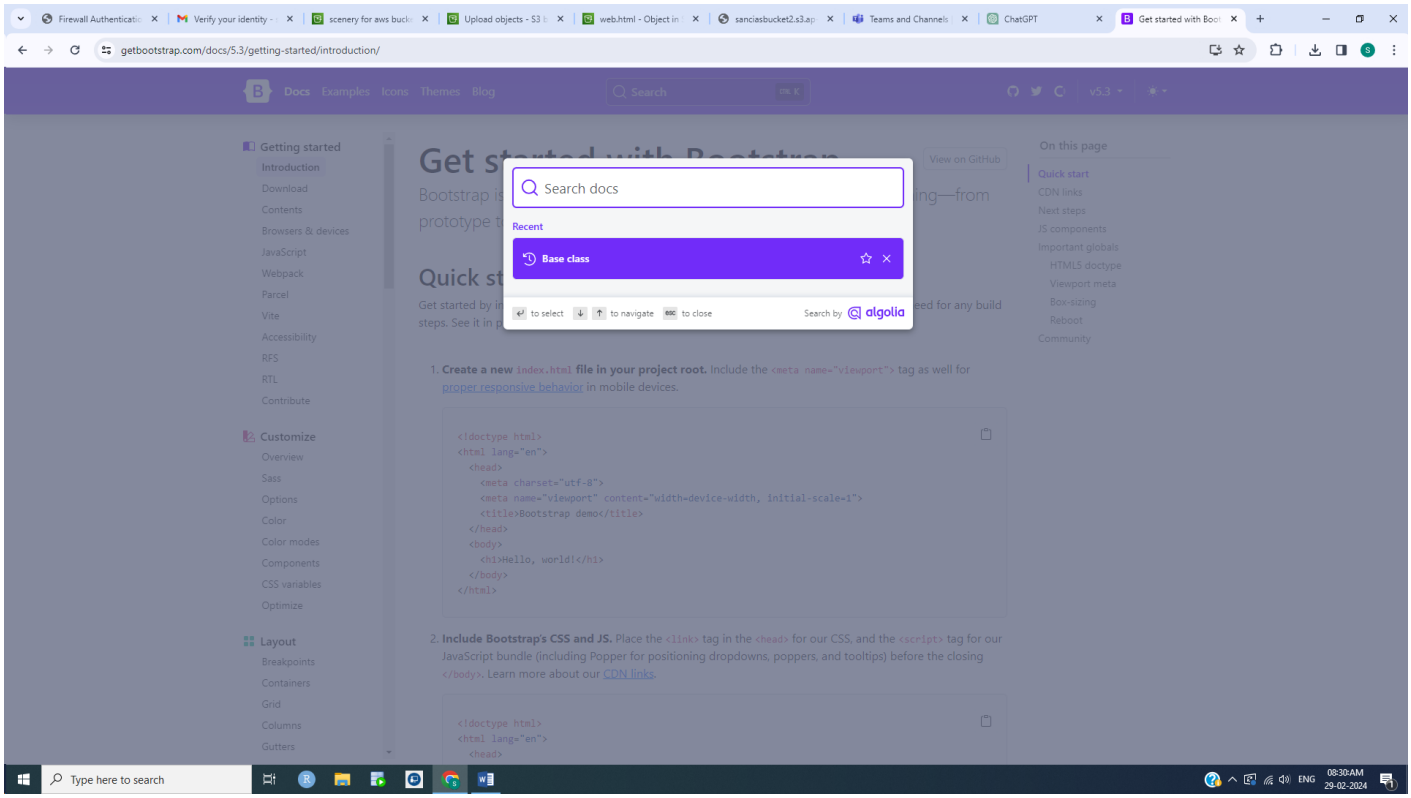
Grant public access and access to other AWS accounts.

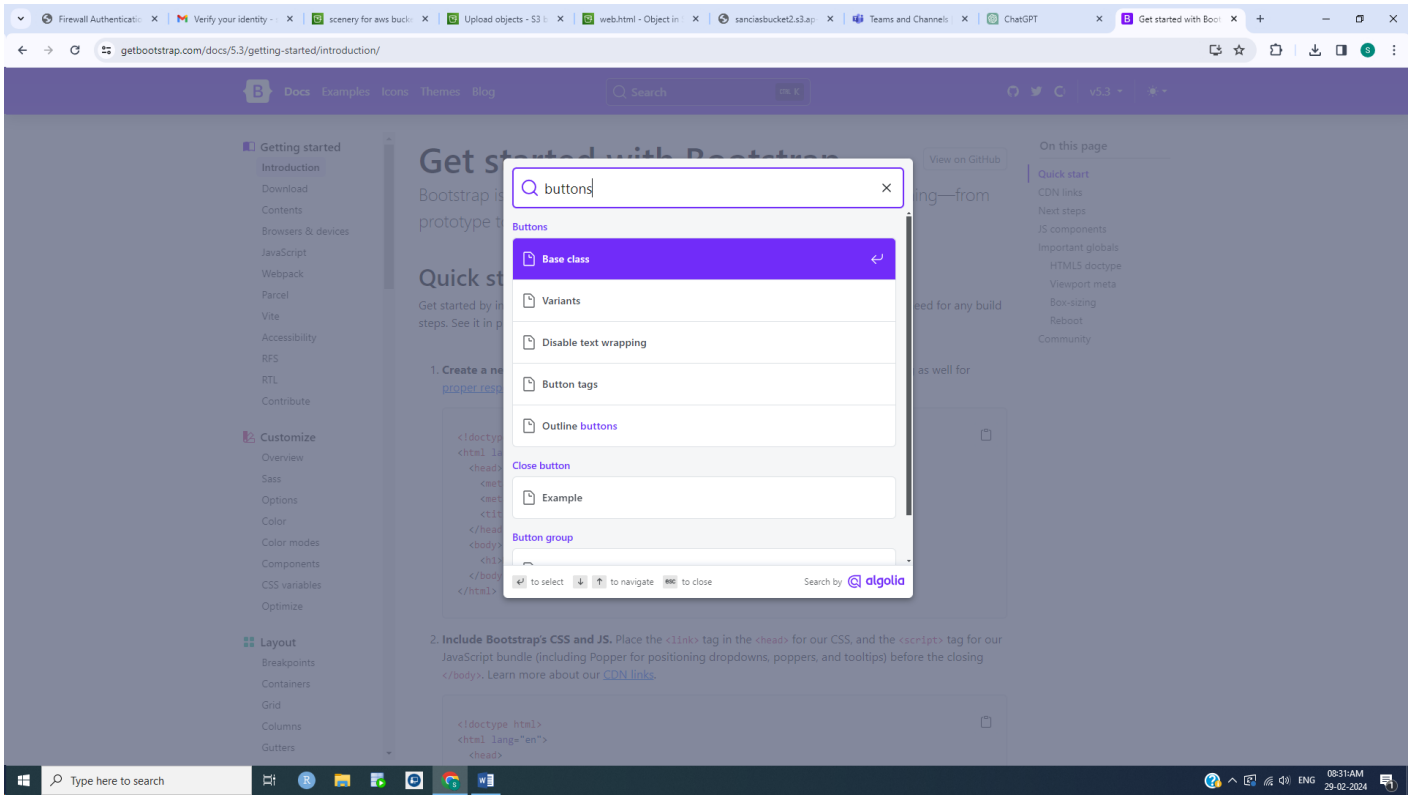
▶ **Properties**

Specify storage class, encryption settings, tags, and more.

Cancel | Upload


getbootstrap.com
Docs Examples Icons Themes Blog
Search
v5.3
New in v5.3
Color mode support, expanded color palette, and more!
Build fast, responsive sites with Bootstrap
Powerful, extensible, and feature-packed frontend toolkit. Build and customize with Sass, utilize prebuilt grid system and components, and bring projects to life with powerful JavaScript plugins.
$ npm i bootstrap@5.3.3
Read the docs
Currently v5.3.3 · Download · All releases
Get started any way you want
Type here to search


getbootstrap.com/docs/5.3/getting-started/introduction/
Docs Examples Icons Themes Blog
Search
v5.3
Getting started
Introduction
Download
Contents
Browsers & devices
JavaScript
Webpack
Parcel
Vite
Accessibility
RFS
RTL
Contribute
Customize
Overview
Sass
Options
Color
Color modes
Components
CSS variables
Optimize
Layout
Breakpoints
Containers
Grid
Columns
Gutters
View on GitHub
Search docs
Recent
Base class
to select
to navigate
to close
Search by algolia
On this page
Quick start
CDN links
Next steps
JS components
Important globals
HTML5 doctype
Viewport meta
Box-sizing
Reboot
Community
Type here to search

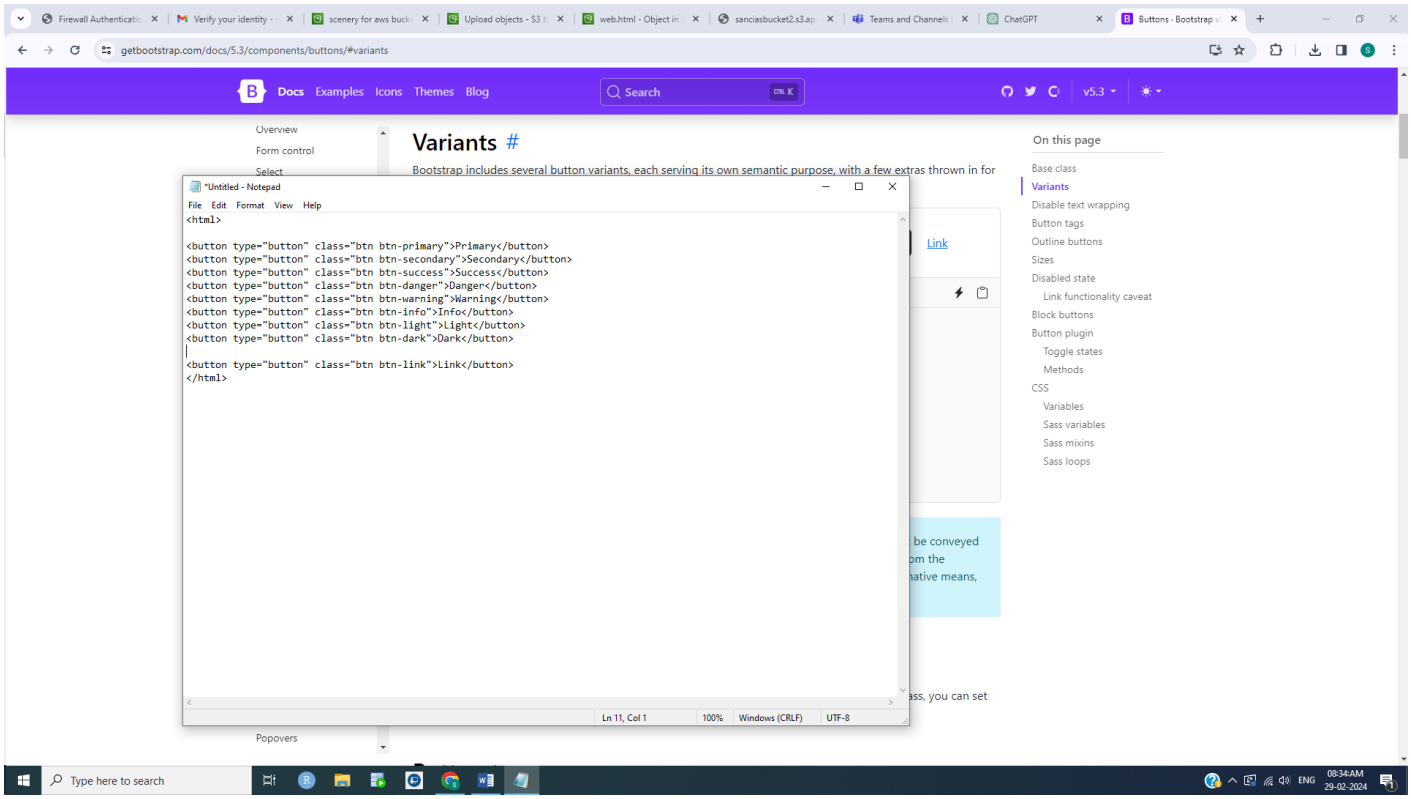


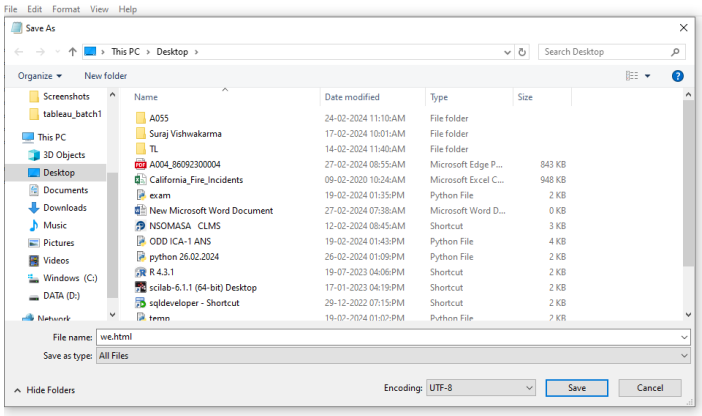
Primary Secondary Success Danger Warning Info Light Dark Link

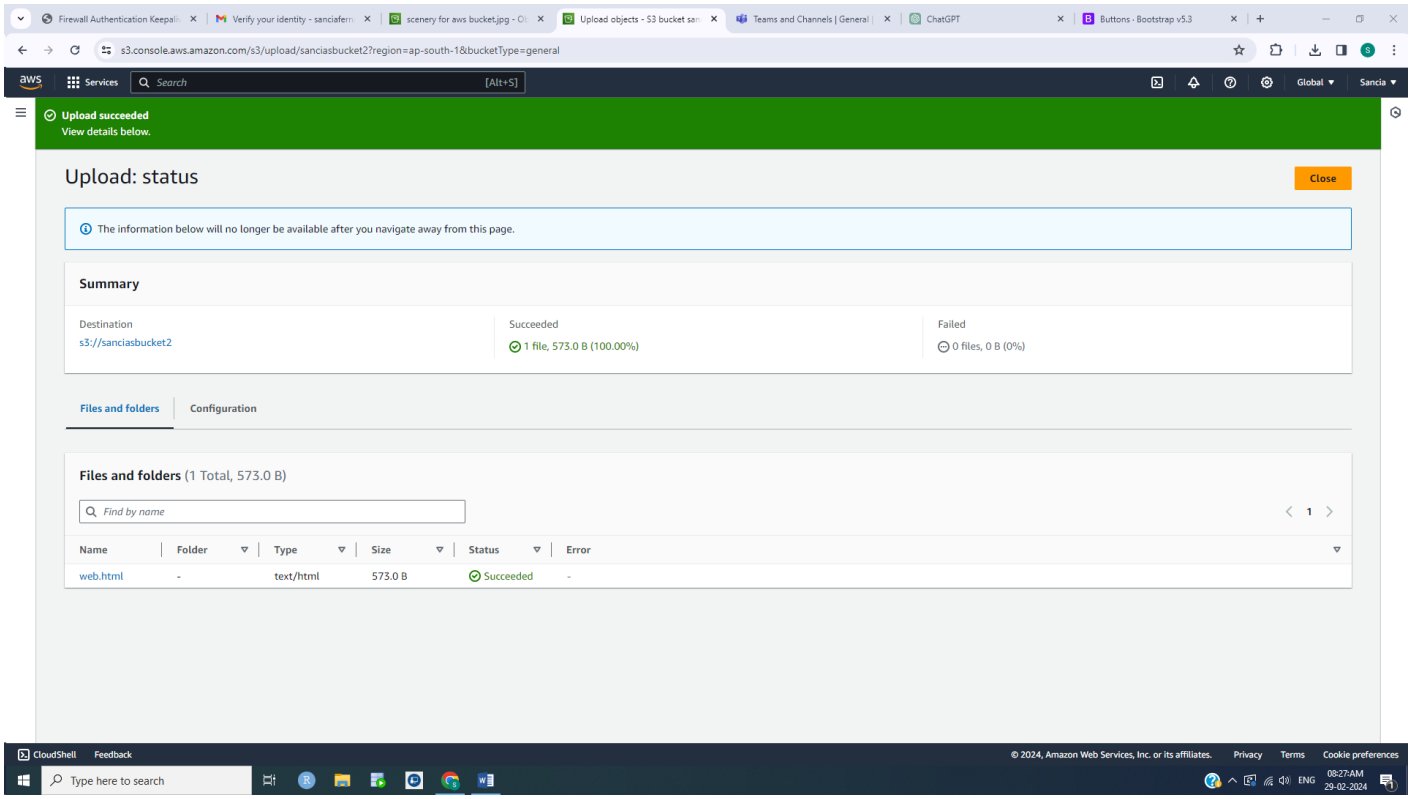
HTML

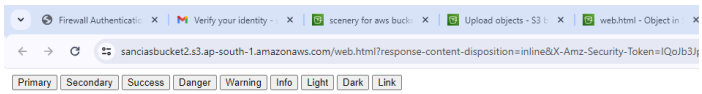
```
<button type="button" class="btn btn-primary">Primary</button>
<button type="button" class="btn btn-secondary">Secondary</button>
<button type="button" class="btn btn-success">Success</button>
<button type="button" class="btn btn-danger">Danger</button>
<button type="button" class="btn btn-warning">Warning</button>
<button type="button" class="btn btn-info">Info</button>
<button type="button" class="btn btn-light">Light</button>
<button type="button" class="btn btn-dark">Dark</button>

<button type="button" class="btn btn-link">Link</button>
```


getbootstrap.com/docs/5.3/components/buttons/#variants
Docs Examples Icons Themes Blog
Search
v5.3
Overview
Form control
Select
Popovers
Variants #
Bootstrap includes several button variants, each serving its own semantic purpose, with a few extras thrown in for
On this page
Base class
Variants
Disable text wrapping
Button tags
Outline buttons
Sizes
Disabled state
Link functionality caveat
Block buttons
Button plugin
Toggle states
Methods
CSS
Variables
Sass variables
Sass mixins
Sass loops
Link
be conveyed
om the
native means,
ss, you can set
"Untitled - Notepad
File Edit Format View Help
<html>
<button type="button" class="btn btn-primary">Primary</button>
<button type="button" class="btn btn-secondary">Secondary</button>
<button type="button" class="btn btn-success">Success</button>
<button type="button" class="btn btn-danger">Danger</button>
<button type="button" class="btn btn-warning">Warning</button>
<button type="button" class="btn btn-info">Info</button>
<button type="button" class="btn btn-light">Light</button>
<button type="button" class="btn btn-dark">Dark</button>
<button type="button" class="btn btn-link">Link</button>
</html>
Ln 11, Col 1
100%
Windows (CRLF)
UTF-8
Type here to search
ENG
08:34 AM
29-02-2024


File Edit Format View Help
Save As
This PC › Desktop ›
Search Desktop
Organize
New folder
Screenshots
tableau_batch1
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Windows (C:)
DATA (D:)
Name
Date modified
Type
Size
A055
Suraj Vishwakarma
TL
A004_86092300004
California_Fire_Incidents
exam
New Microsoft Word Document
NSOMASA_CLMS
ODD ICA-1 ANS
python 26.02.2024
R 4.3.1
scilab-6.1.1 (64-bit) Desktop
sqldeveloper - Shortcut
File name: we.html
Save as type: All Files
Hide Folders
Encoding: UTF-8
Save
Cancel


Upload succeeded
View details below.
Upload: status
Close
The information below will no longer be available after you navigate away from this page.
Summary
Destination
s3://sanciasbucket2
Succeeded
1 file, 573.0 B (100.00%)
Failed
0 files, 0 B (0%)
Files and folders
Configuration
Files and folders (1 Total, 573.0 B)
Find by name
Name
Folder
Type
Size
Status
Error
web.html
-
text/html
573.0 B
Succeeded
-
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
Type here to search
ENG
08:27:AM
29-02-2024


sanciasbucket2.s3.ap-south-1.amazonaws.com/web.html?response-content-disposition=inline&X-Amz-Security-Token=IQoJb3J
Primary
Secondary
Success
Danger
Warning
Info
Light
Dark
Link