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

Master of Science (Data Science)

Practical-4 Storage as a service using AWS.

Writeup:-

- **Storage as a service-s3**
- **S3 usecases**
- **Steps for s3**

Implement S3 for :

1. **uploading a file,video,etc.**
2. **uploading a static wesite**

Purva Burundkar A018

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.

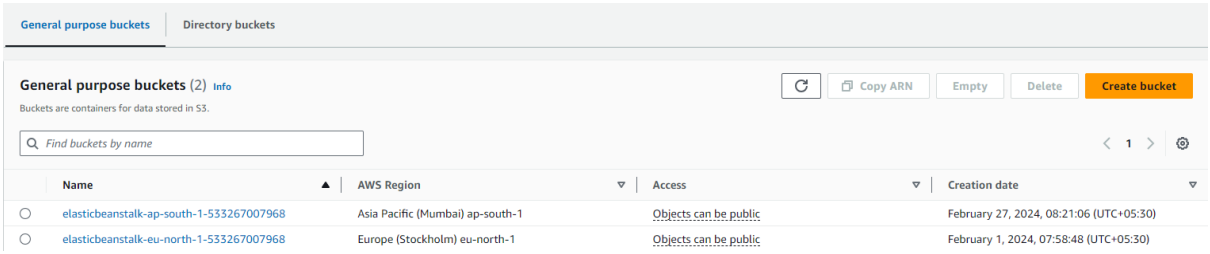
Integrate with Other AWS Services (Optional): Explore integrations with other AWS services. For example, you can connect your S3 bucket with AWS Lambda, CloudFront for content delivery, or AWS Glue for data processing.

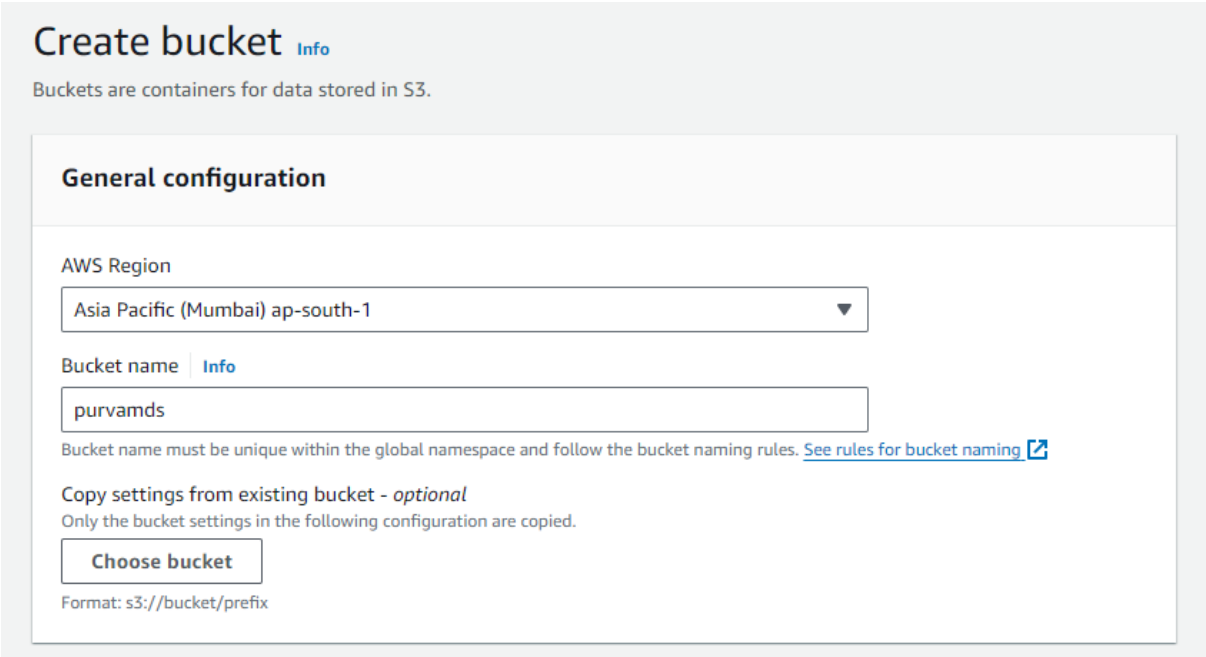
Implement S3 for :

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

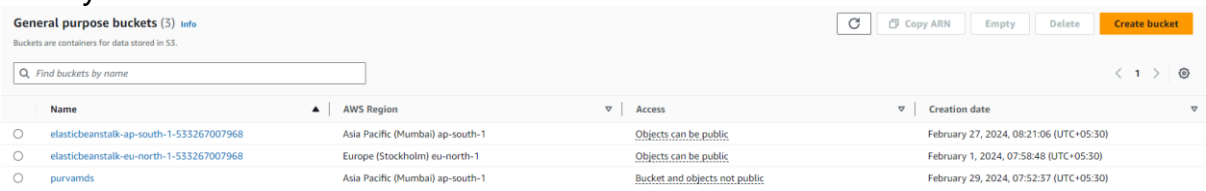
Open AWS Console and select S3 Storage

Creating a bucket

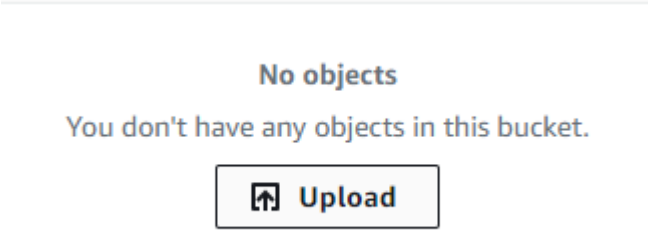




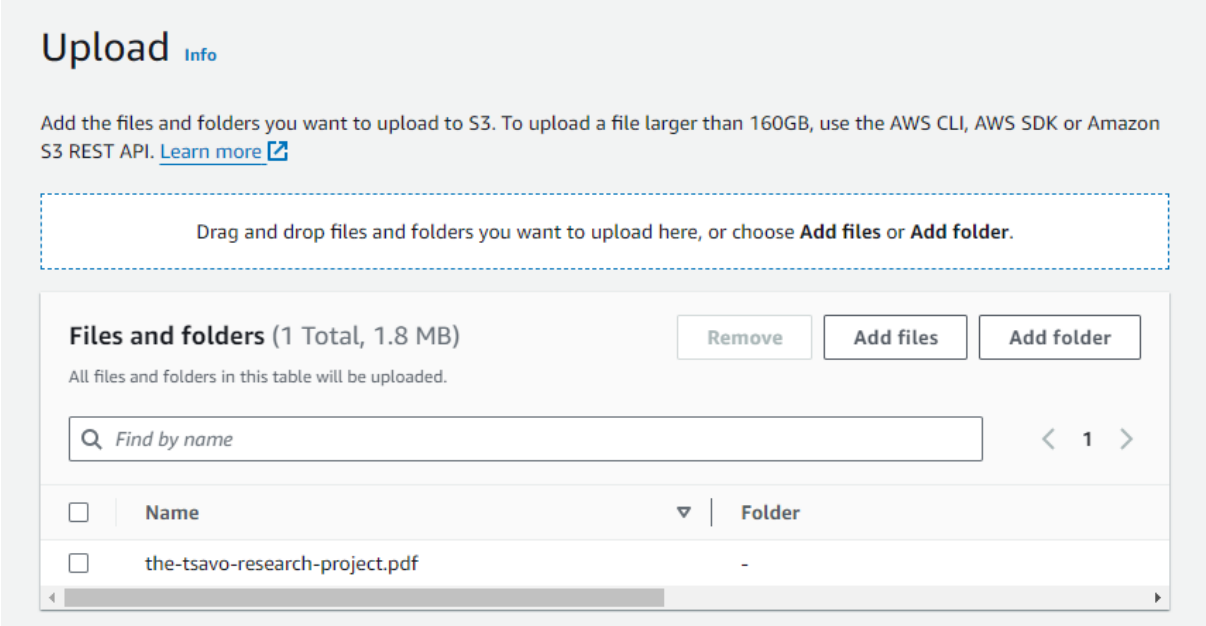
Verify that the bucket is created



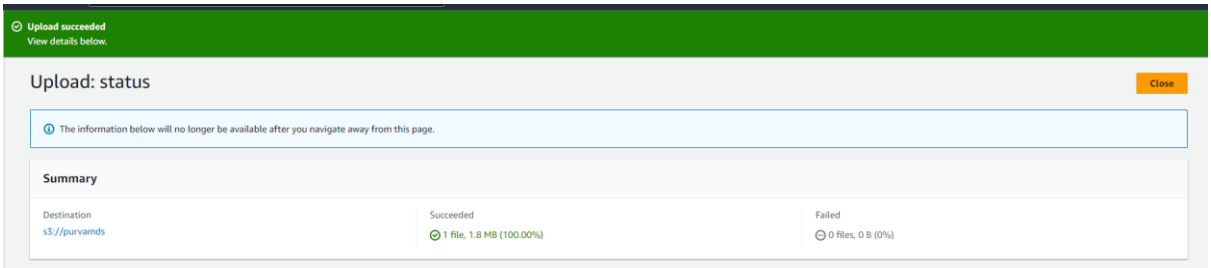
Click on Upload file



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



After Uploading verify if the image has been uploaded



S3 URI

s3://purvamds/the-tsavo-research-project.pdf

Amazon Resource Name (ARN)

arn:aws:s3:::purvamds/the-tsavo-research-project.pdf

Entity tag (Etag)

e32875019bcb2cc100fb7516af2ff170

Object URL

https://purvamds.s3.ap-south-1.amazonaws.com/the-tsavo-research-project.pdf

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, 1.7 MB)

Remove | Add files | Add folder

All files and folders in this table will be uploaded.

Find by name

1

Name	Folder
ButterflyFamilyTree.webp	-

Destination Info

Destination

s3://purvamds

▶ **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

Amazon S3 > Buckets > purvamds > ButterflyFamilyTree.webp

ButterflyFamilyTree.webp Info

Copy S3 URI | Download | Open | Object actions

Properties | Permissions | Versions

Object overview

Owner
efe0367ff9d1bc99e1fb21f118517414a0775a9489f39d97cafed5984f0ef071

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

Last modified
February 29, 2024, 08:11:42 (UTC+05:30)

Size
1.7 MB

Type
webp

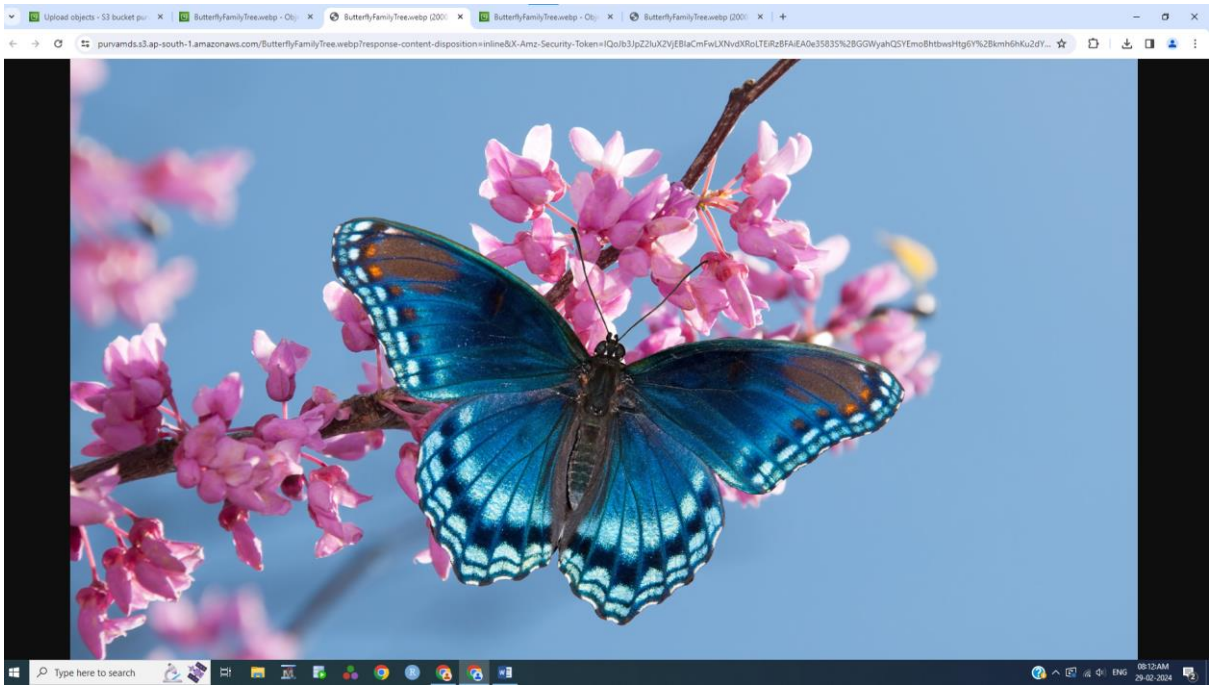
Key
ButterflyFamilyTree.webp

S3 URI
s3://purvamds/ButterflyFamilyTree.webp

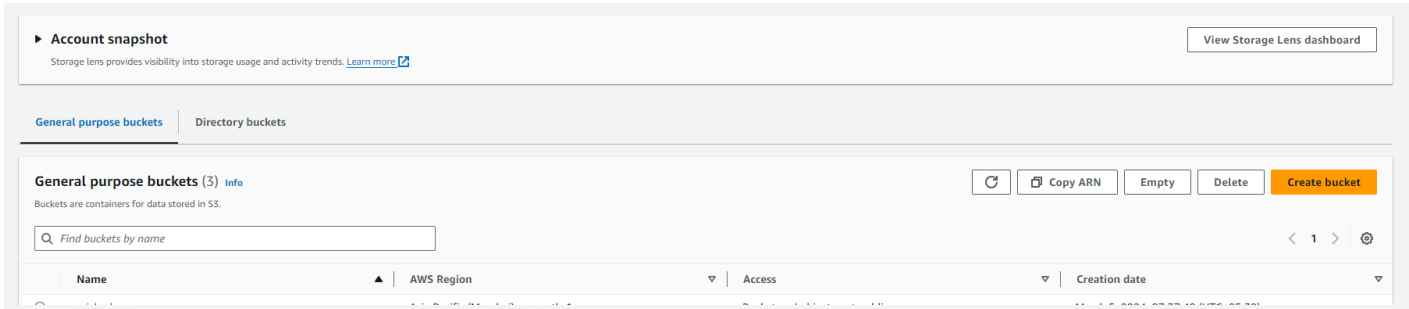
Amazon Resource Name (ARN)
arn:aws:s3:::purvamds/ButterflyFamilyTree.webp

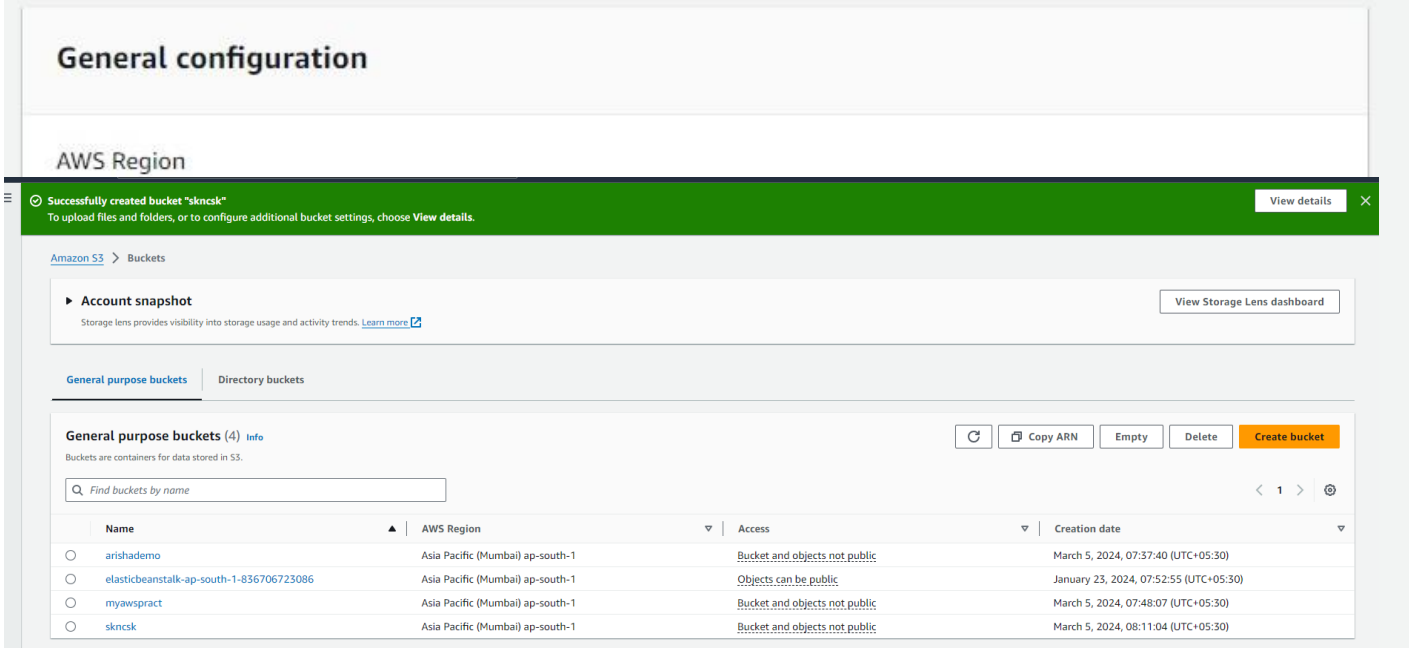
Entity tag (Etag)
0e307c4aee3687632b9be90a76ed28a5

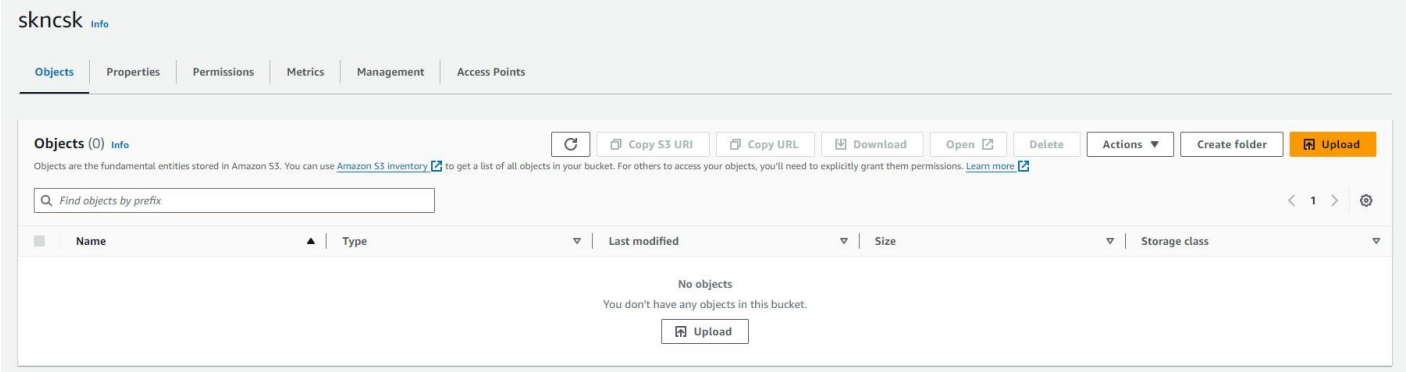
Object URL
https://purvamds.s3.ap-south-1.amazonaws.com/ButterflyFamilyTree.webp

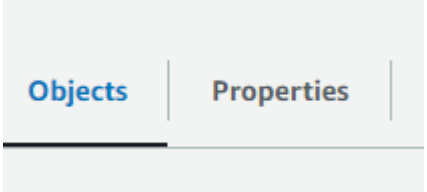


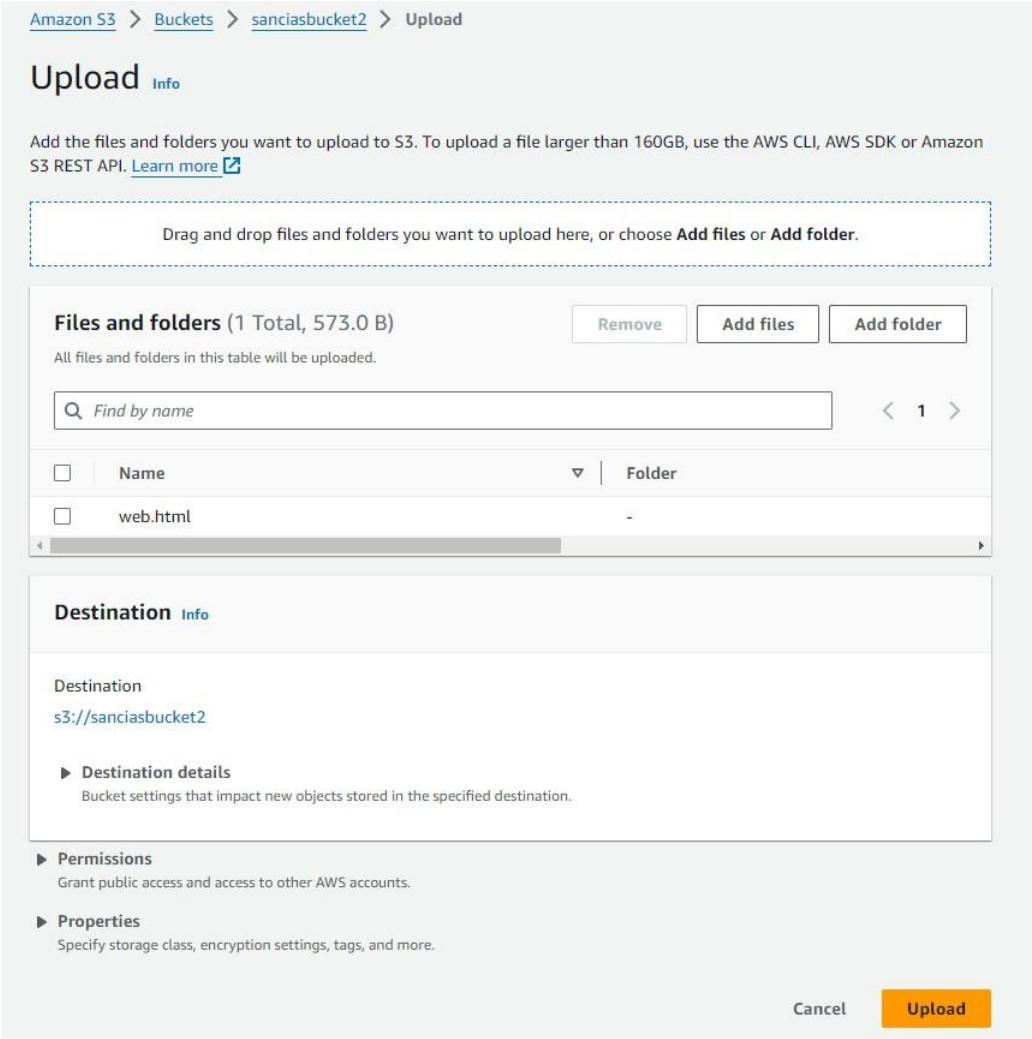
1. uploading a static website

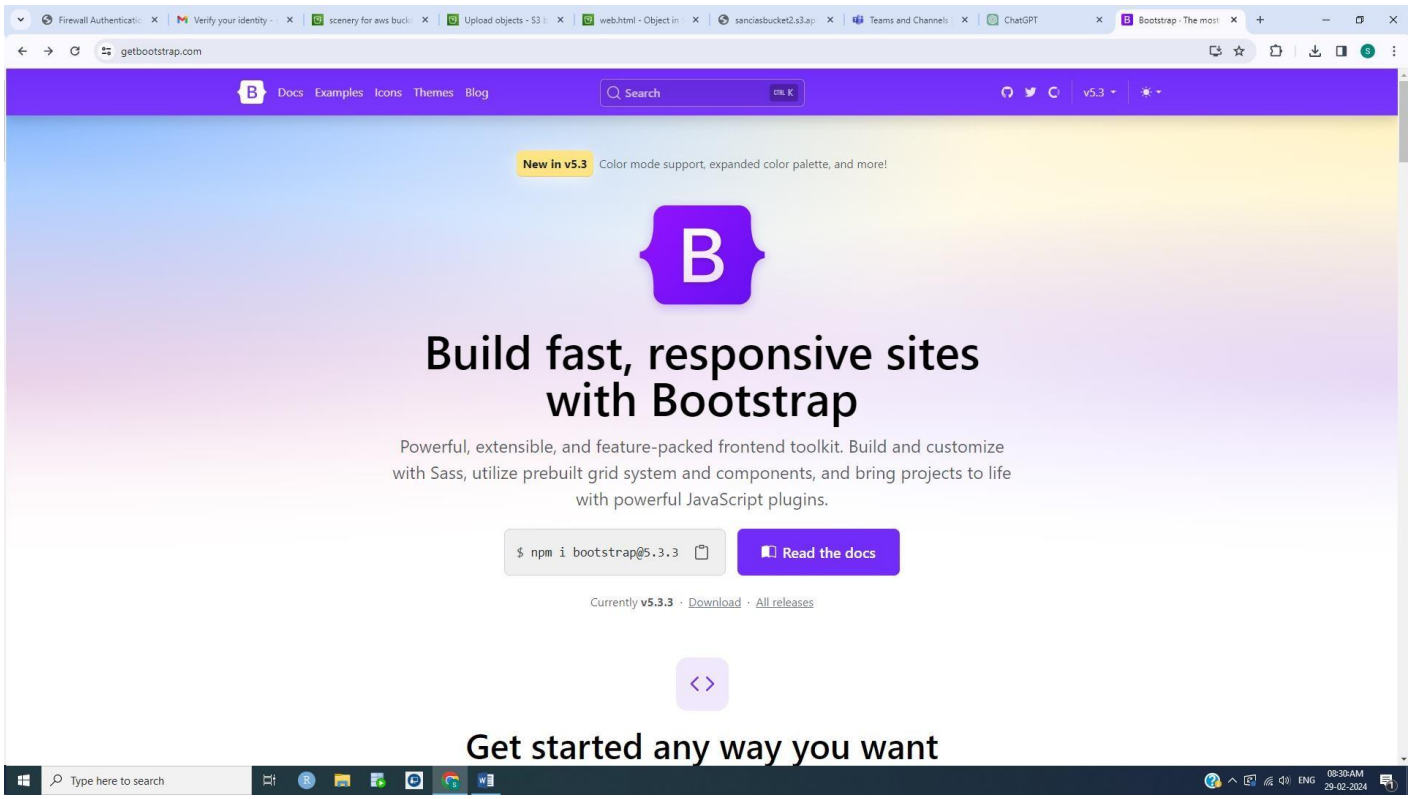


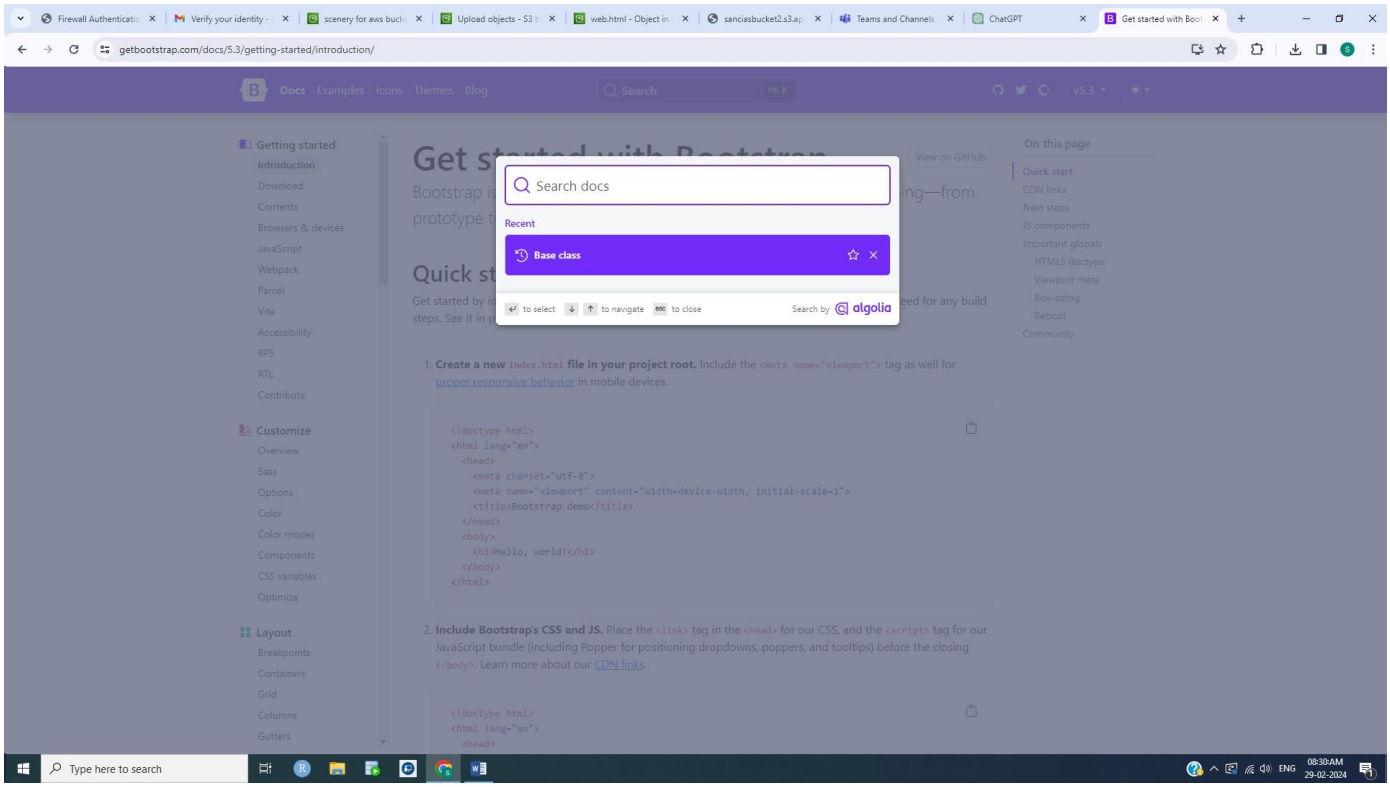



skncsk Info
Objects
Properties
Permissions
Metrics
Management
Access Points
Objects (0) Info
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload
Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more
Find objects by prefix
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


getbootstrap.com/docs/5.3/getting-started/introduction/
Search docs
Recent
Base class
to select
to navigate
to close
Search by algolia
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
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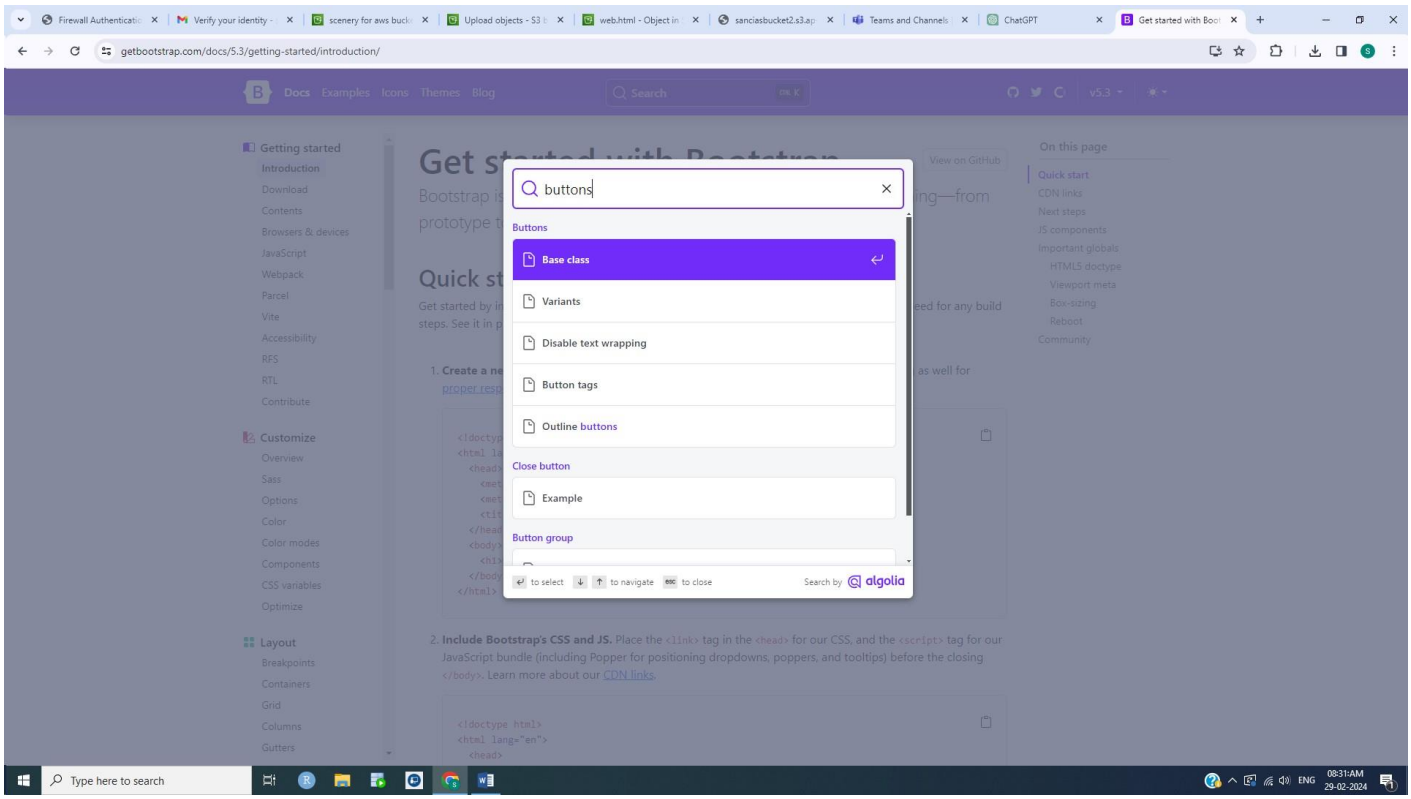
Quick start
CDN links
Next steps
JS components
Important globals
HTML5 doctype
Viewport meta
Box-sizing
Reboot
Community

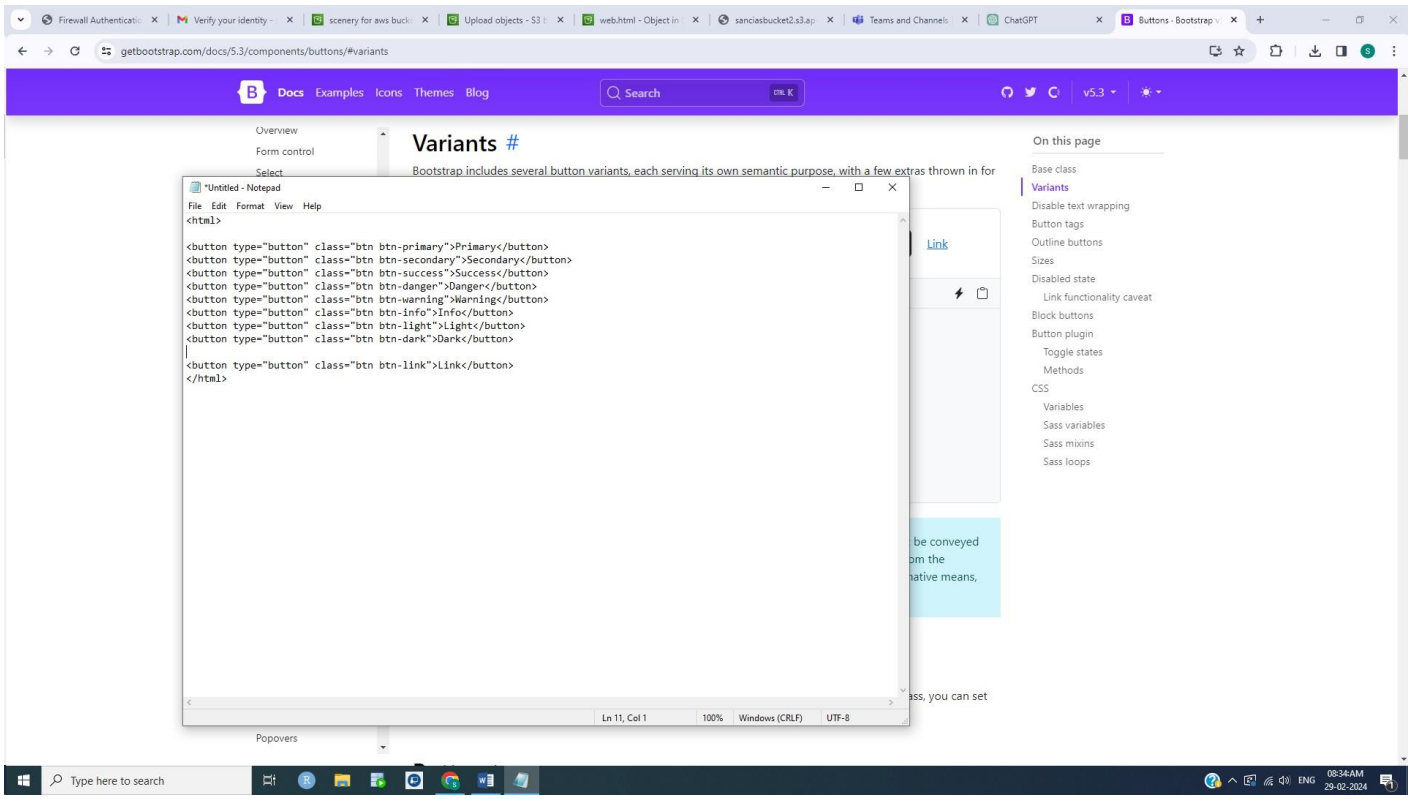


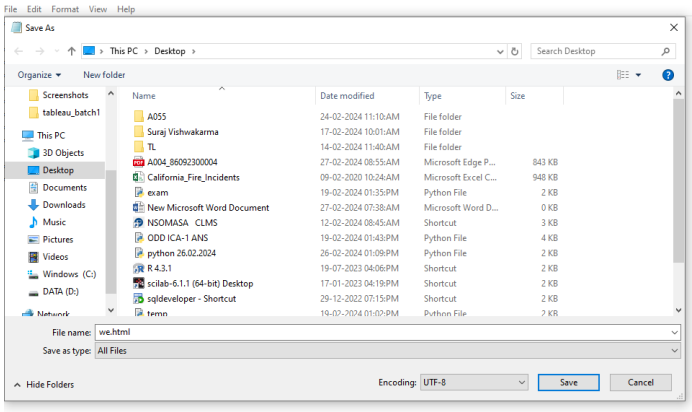
Primary Secondary Success Danger Warning Info Light Dark Link

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
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
Popovers
*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 24-02-2024 11:10 AM File folder
Suraj Vishwakarma 17-02-2024 10:01 AM File folder
TL 14-02-2024 11:40 AM File folder
A004_86092300004 27-02-2024 08:55 AM Microsoft Edge P... 843 KB
California_Fire_Incidents 09-02-2020 10:24 AM Microsoft Excel C... 948 KB
exam 19-02-2024 01:35 PM Python File 2 KB
New Microsoft Word Document 27-02-2024 07:38 AM Microsoft Word D... 0 KB
NSOMASA_CLMS 12-02-2024 08:45 AM Shortcut 3 KB
ODD ICA-1 ANS 19-02-2024 01:43 PM Python File 4 KB
python 26.02.2024 26-02-2024 01:09 PM Python File 2 KB
R 4.3.1 19-07-2023 04:06 PM Shortcut 2 KB
scilab-6.1.1 (64-bit) Desktop 17-01-2023 04:19 PM Shortcut 2 KB
sqldeveloper - Shortcut 29-12-2022 07:15 PM Shortcut 2 KB
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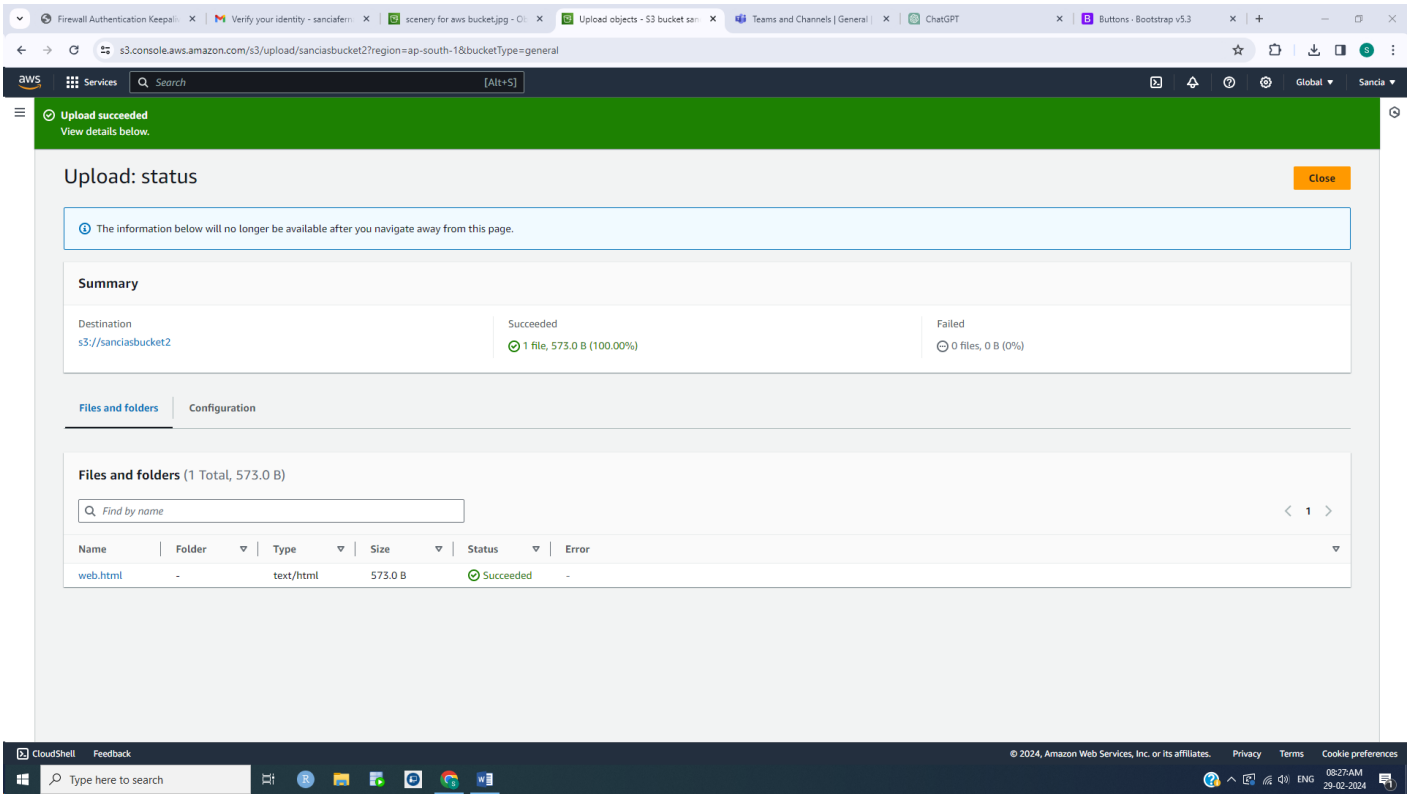
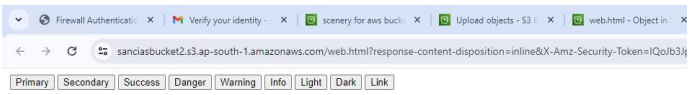
Save as type: All Files
Hide Folders
Encoding: UTF-8
Save
Cancel


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