

Hosting a Static Website on Amazon S3

Bucket website endpoint

<http://priyaproject1.s3-website.ap-south-1.amazonaws.com>

We can use Amazon S3 to host a static website. On a static website, individual web pages include static content.

Hera is the general process and steps to host a static website on Amazon S3 with custom domain:

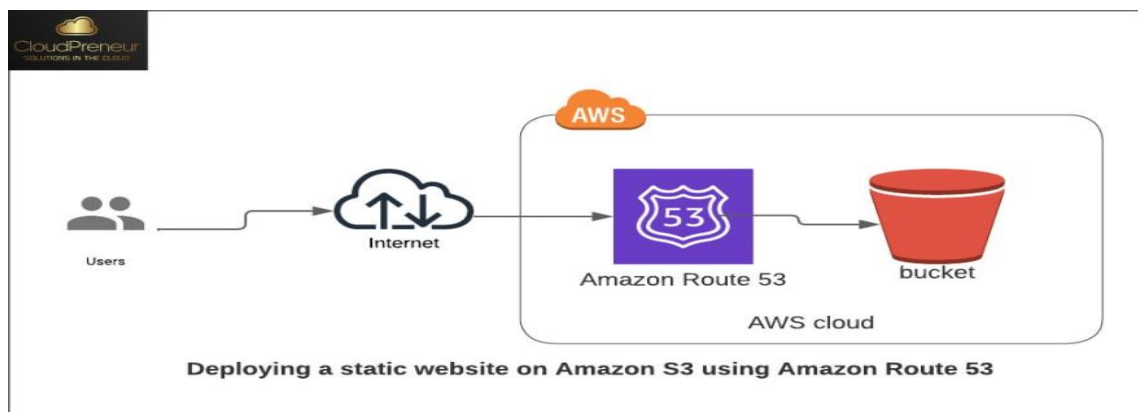
1. Create a custom domain name using Amazon Route 53.
2. Use an Amazon S3 bucket to host a simple website.
3. Enable Static website hosting and direct the domain to the S3 bucket.

AWS services used:

1> **Route 53:** Amazon Route 53 is a scalable and highly available Domain Name System (DNS) web service provided by Amazon Web Services (AWS). It offers domain registration, DNS routing, and health checking of resources within your infrastructure. Route 53 allows you to manage the DNS records that translate domain names (such as example.com) into IP addresses or other resources.

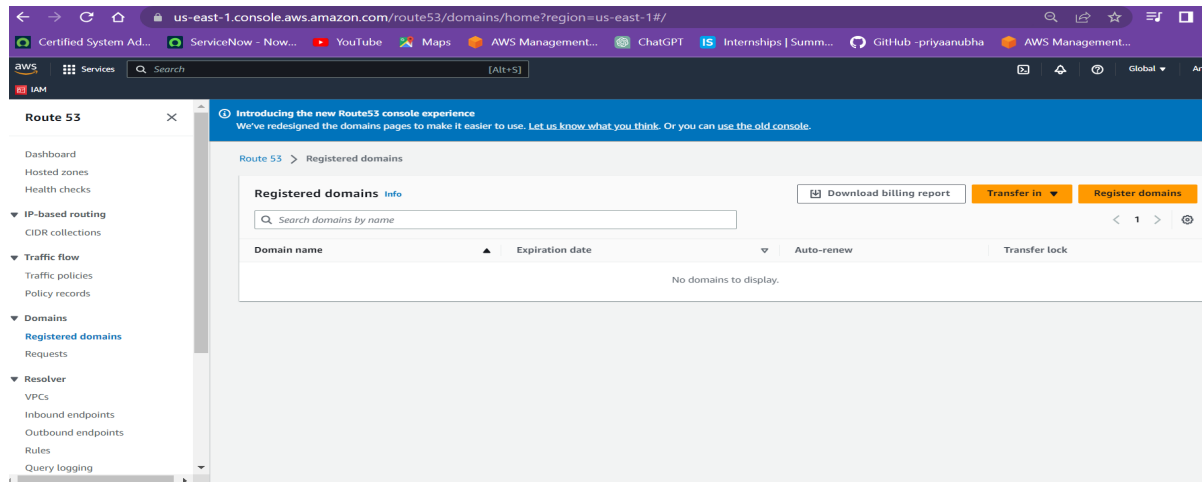
2> **S3 Bucket:** An Amazon S3 bucket is a storage container provided by Amazon Simple Storage Service (S3), which is an object storage service offered by Amazon Web Services (AWS). It is used to store and retrieve any amount of data, including static website files, images, videos, backups, log files, and more

Pictorial representation of deployment

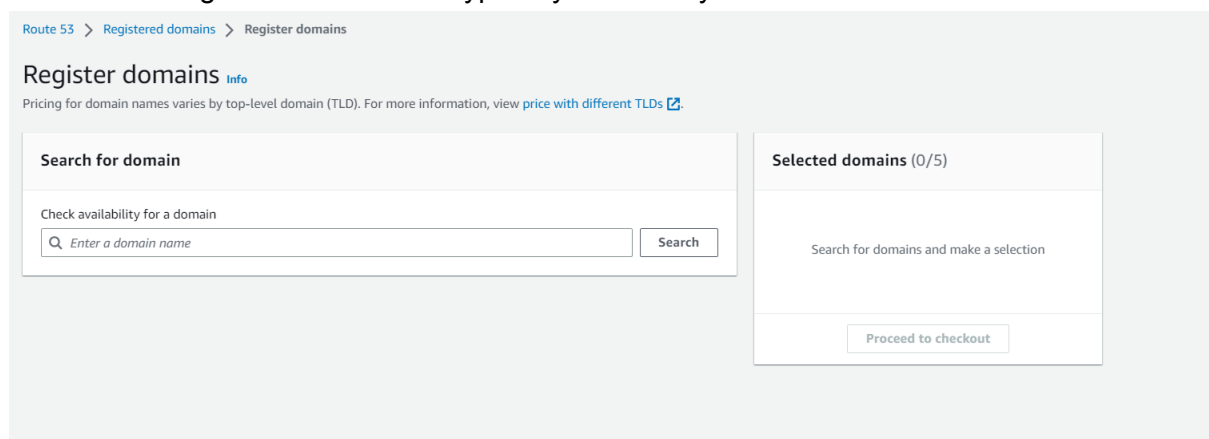


1> Steps to create a custom domain name using Amazon Route 53.

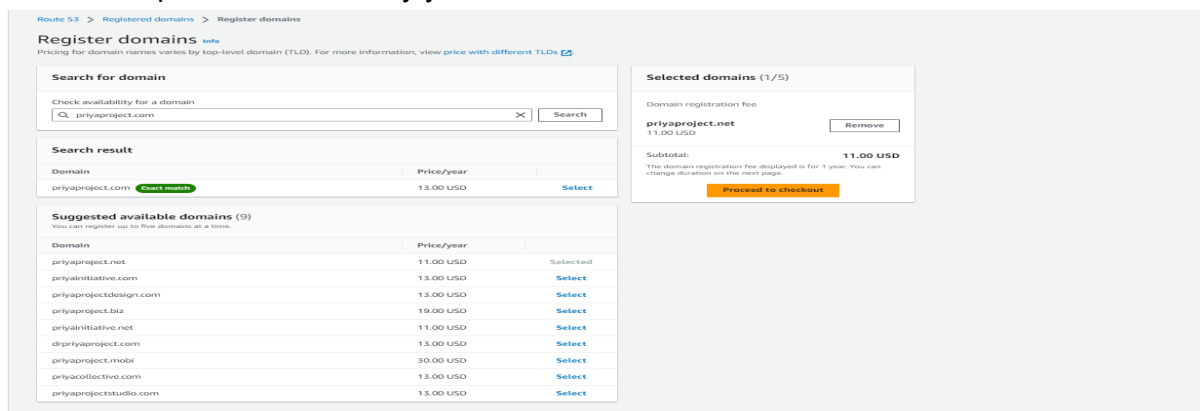
A> Search Route 53 in aws services



B> Click on Register domains and type any name for your custom domain



C> For example i am using priyaproject after that click on search option to check all available domain and price in order to buy your custom domain in AWS



D> Purchase your custom domain in aws by paying the cost. Domain registration might take 3 days to complete however in most of the cases it will complete and be available in 10 minutes. Here we are done with creating a custom domain to host our static website.

2> Use an Amazon S3 bucket to host a simple website

A> Now we have to create our S3 bucket to host out static website so go to AWS services and search for S3 bucket

Storage

Amazon S3

Store and retrieve any amount of data from anywhere

Amazon S3 is an object storage service that offers industry-leading scalability, data availability, security, and performance.

Create a bucket

Every object in S3 is stored in a bucket. To upload files and folders to S3, you'll need to create a bucket where the objects will be stored.

Create bucket


Pricing

With S3, there are no minimum fees. You only pay for what you use. Prices are based on the location of your S3 bucket.

Estimate your monthly bill using the [AWS Simple Monthly Calculator](#)

[View pricing details](#)

How it works



B> Click on create bucket

Amazon S3 > Buckets > Create bucket

Create bucket

Buckets are containers for data stored in S3. [Learn more](#)

General configuration

Bucket name

priyaproject

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#)

AWS Region

Asia Pacific (Mumbai) ap-south-1

Copy settings from existing bucket - optional

Only the bucket settings in the following configuration are copied.

Choose bucket

Object Ownership

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

☒ **ACLs disabled (recommended)**

All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

☐ **ACLs enabled**

Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

Object Ownership

Bucket owner enforced

Block Public Access settings for this bucket

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

☐ **Block all public access**

☐ **Block public access to buckets and objects granted through new access control lists (ACLs)**

☐ **Block public access to buckets and objects granted through any access control lists (ACLs)**

☐ **Block public access to buckets and objects granted through new public bucket or access point policies**

☐ **Block public and cross-account access to buckets and objects through any public bucket or access point policies**

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

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☐ **Block public access to buckets and objects granted through new public bucket or access point policies**

☐ **Block public and cross-account access to buckets and objects through any public bucket or access point policies**

**Turning off block all public access might result in this bucket and the objects within becoming public.**

AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting.

☒ I acknowledge that the current settings might result in this bucket and the objects within becoming public.

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Bucket Versioning

☒ Disable

☐ Enable

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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 type [Info](#)
☒ Server-side encryption with Amazon S3 managed keys (SSE-S3)
☐ Server-side encryption with AWS Key Management Service keys (SSE-KMS)
☐ Dual-layer server-side encryption with AWS Key Management Service keys (DSSE-KMS)
 Secure your objects with two separate layers of encryption. For details on pricing, see [DSSE-KMS pricing](#) on the [Storage](#) tab of the [Amazon S3 pricing page](#).

Bucket Key
Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSE-KMS. [Learn more](#)
☐ Disable
☒ Enable

► **Advanced settings**

After creating the bucket, you can upload files and folders to the bucket, and configure additional bucket settings.

Cancel [Create bucket](#)

Bucket name = keep your Route 53 custom domain name
AWS region = Region near to your location
Block Public Access settings for this bucket = Uncheck this and acknowledge the checkbox
 Rest all keep as it is and click on create S3 bucket.

☑ **Successfully created bucket "priyaproject1"**
To upload files and folders, or to configure additional bucket settings choose [View details](#).

Amazon S3 > Buckets

► **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](#)

[Refresh](#) [Copy content](#) [Empty](#) [Delete](#) [Create bucket](#)

Find buckets by name

Name	AWS Region	Access	Creation date
<input type="radio"/> priyaproject1	Asia Pacific (Mumbai) ap-south-1	Objects can be public	July 6, 2023, 14:09:37 (UTC+05:30)

Once the bucket is created it will be visible like this under buckets. Click on your bucket (priyaproject1) and upload the object into it.

Amazon S3 > Buckets > priyaproject1

priyaproject1 [Info](#)

[Objects](#) | [Properties](#) | [Permissions](#) | [Metrics](#) | [Management](#) | [Access Points](#)

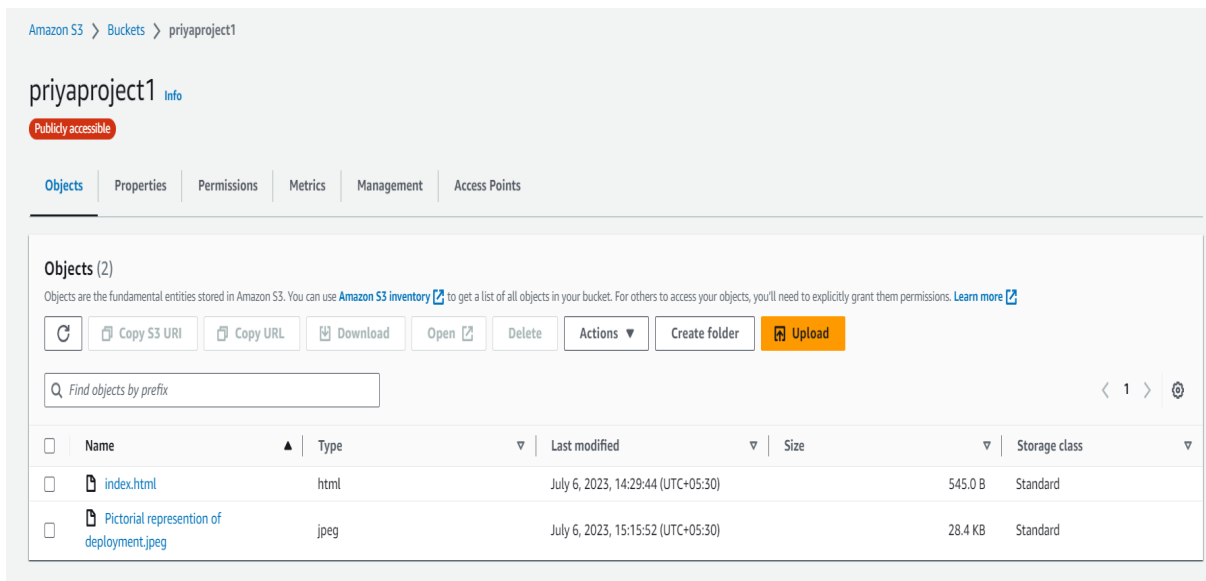
Objects (0)
Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 Inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

[Refresh](#) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#) [Actions](#) [Create folder](#) [Upload](#)

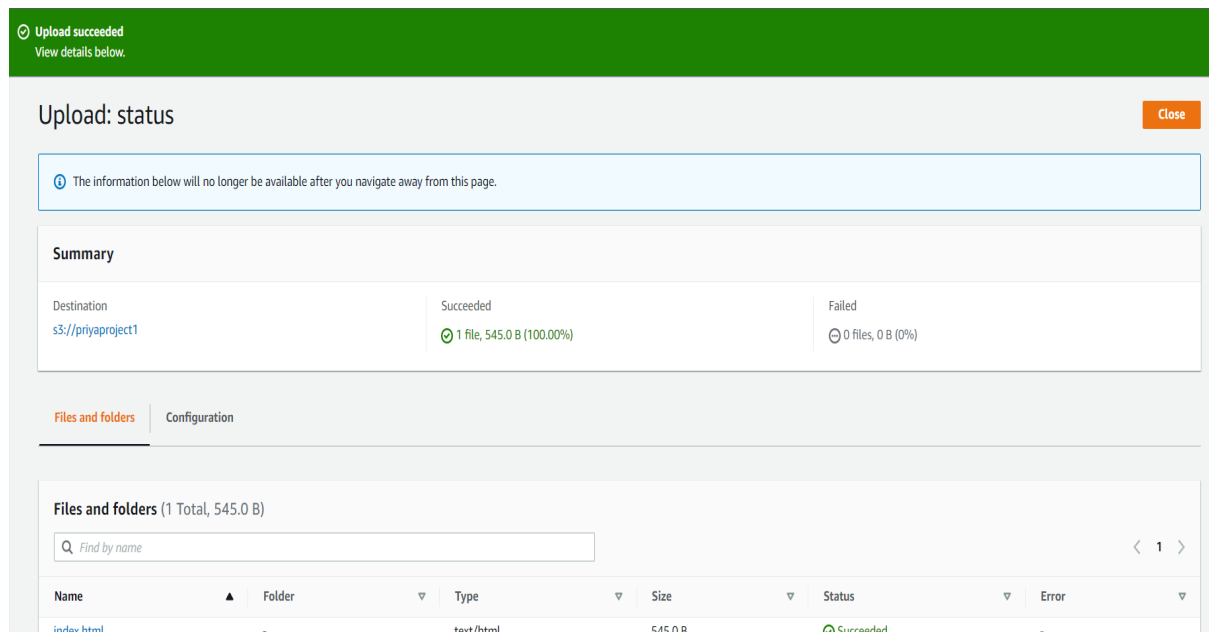
Find objects by prefix

Name	Type	Last modified	Size	Storage class
No objects You don't have any objects in this bucket.				

[Upload](#)



Here, I have created my index.html static website and uploaded on S3 bucket



3> Enable Static website hosting and direct the domain to the S3 bucket.

Now, we have to make sure that our S3 bucket is enabled for Static website hosting and right permission has been given to it to be accessed by the user over the internet.

Go to your S3 bucket properties and enable Static website hosting ->Edit ->Enable ->Host a static website. Specify index.html and error.html

Amazon S3 > Buckets > priyaproject1 > Edit static website hosting

Edit static website hosting [Info](#)

Static website hosting
Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting
☐ Disable
☒ Enable

Hosting type
☒ Host a static website
 Use the bucket endpoint as the web address. [Learn more](#)
☐ Redirect requests for an object
 Redirect requests to another bucket or domain. [Learn more](#)

For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see [Using Amazon S3 Block Public Access](#)

Index document
Specify the home or default page of the website.

Error document - optional
This is returned when an error occurs.

Redirection rules - optional
Redirection rules, written in JSON, automatically redirect webpage requests for specific content. [Learn more](#)

[Cancel](#) [Save changes](#)

Here, the changes are saved

Successfully edited static website hosting.

Amazon S3 > Buckets > priyaproject1

priyaproject1 [Info](#)

[Objects](#) | [Properties](#) | [Permissions](#) | [Metrics](#) | [Management](#) | [Access Points](#)

Bucket overview

AWS Region Asia Pacific (Mumbai) ap-south-1	Amazon Resource Name (ARN) amaws:s3::priyaproject1	Creation date July 6, 2023, 14:09:37 (UTC+05:30)
--	---	---

Bucket Versioning
[more](#)
[Edit](#)

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](#)

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](#)

MFA delete
Disabled

Static website hosting
[more](#)
[Edit](#)

Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting
Enabled

Hosting type
Bucket hosting

Bucket website endpoint
When you configure your bucket as a static website, the website is available at the AWS Region-specific website endpoint of the bucket. [Learn more](#)
<http://priyaproject1.s3-website.ap-south-1.amazonaws.com>

Now, we have to attach a Bucket policy for your S3 bucket. Click on “Permissions” and we need to write JSON code for our bucket.

Objects | Properties | **Permissions** | Metrics | Management | Access Points


Permissions overview

Access
Objects can be public

Block public access (bucket settings)

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Block all public access

 Off
► Individual Block Public Access settings for this bucket

Bucket policy

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. [Learn more](#)

No policy to display.


Amazon S3 > Buckets > priyaproject1 > Edit bucket policy

Edit bucket policy [Info](#)

Bucket policy

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. [Learn more](#)

Bucket ARN

 arn:aws:s3:::priyaproject1

Policy

```

1 {
2   "Version": "2012-10-17",
3   "Statement": [{
4     "Sid": "PublicReadGetObject",
5     "Effect": "Allow",
6     "Principal": "*",
7     "Action": ["s3:GetObject"],
8     "Resource": ["arn:aws:s3:::priyaproject1/*"]
9   }]
10 }
11
```

For reference:

JSON code for our S3 bucket policy


```

{
  "Version": "2012-10-17",
  "Statement": [{
    "Sid": "PublicReadGetObject",
    "Effect": "Allow",
    "Principal": "*",
    "Action": ["s3:GetObject"],
    "Resource": ["arn:aws:s3:::priyaproject1/*"]
  }]
}
```



Now save changes and we will go to our bucket ->object->open

Welcome to My Static Website

This is a simple example of a static website using HTML.

 Pictorial representation of deployment

Our static website will be visible but this is not hosted on our custom domain as we can see from the next image. This is Amazon provider URL

priyaproject1.s3.ap-south-1.amazonaws.com/index.html?response-content-disposition=inline&X-Amz-Security-Token=IQoJb3JpZ2luX2VjEMb%...  

Now we have to redirect our custom domain (priyaproject.net) to our S3 bucket

So, in order to do that go to Route 53 -> Hosted Zones -> select our custom domain name (priyaproject) -> need to add addition record (and this is to make sure bucket is connected to Route 53) -> Create record -> choose simple routing policy

Now, I have specified all below fields while creating simple routing policy record creation:

Record type: A-Route traffic to an IPV4 address and some AWS resources

Value /Route traffic to: Alias to S3 website endpoint , Asia Pacific (Mumbai) // your S3 hosted AWS region.

Evaluate target health : Yes

Then, Click on create record

Bucket website endpoint

<http://priyaproject1.s3-website.ap-south-1.amazonaws.com>

Object URL

<https://priyaproject1.s3.ap-south-1.amazonaws.com/index.html>

Amazon Resource Name (ARN)

<arn:aws:s3:::priyaproject1/index.html>