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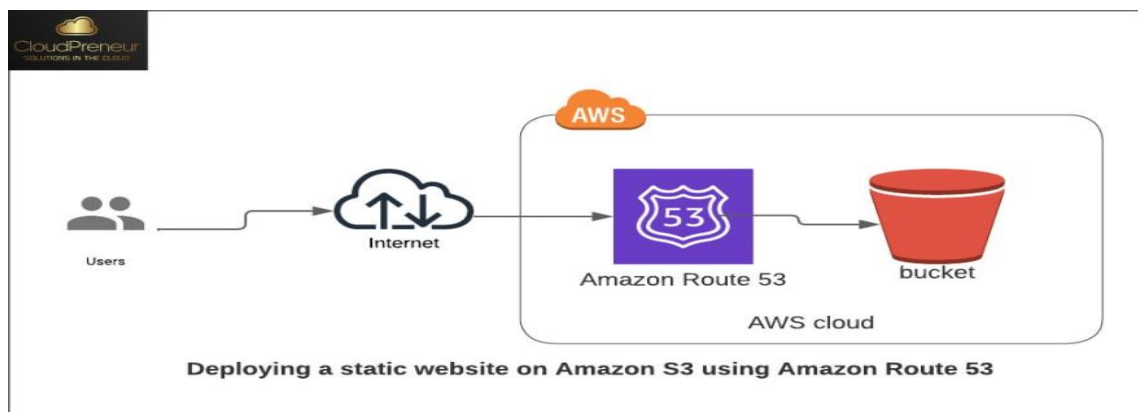
1. Create a custom domain name using Amazon Route 53.
2. Use an Amazon S3 bucket to host a simple website.
3. Enable Static website hosting and direct the domain to the S3 bucket.

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
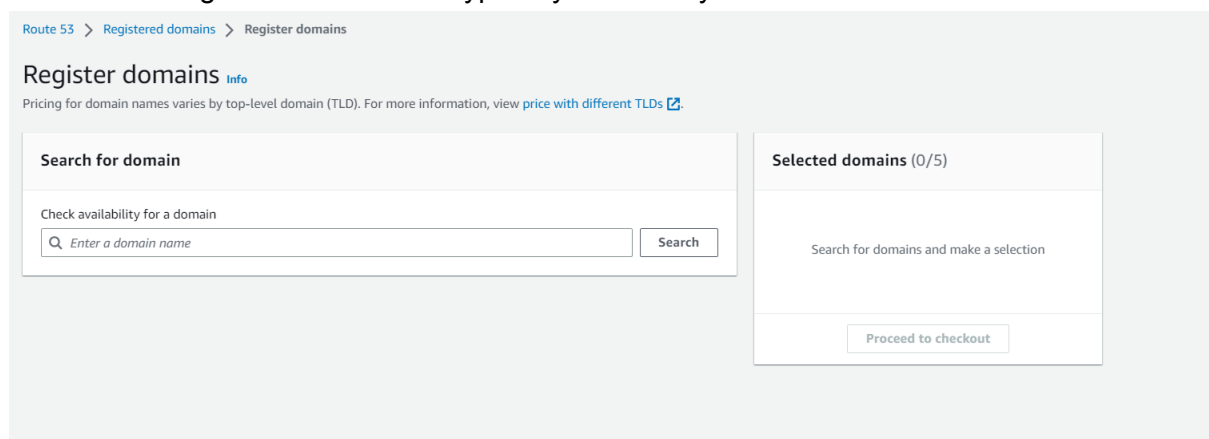
Pictorial representation of deployment

Deploying a static website on Amazon S3 using Amazon Route 53

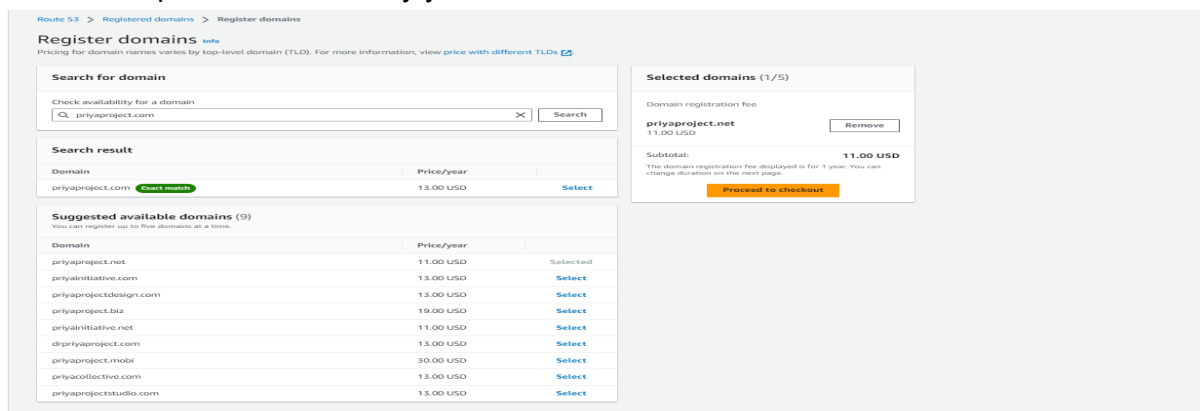# 1> Steps to create a custom domain name using Amazon Route 53.

A> Search Route 53 in aws services
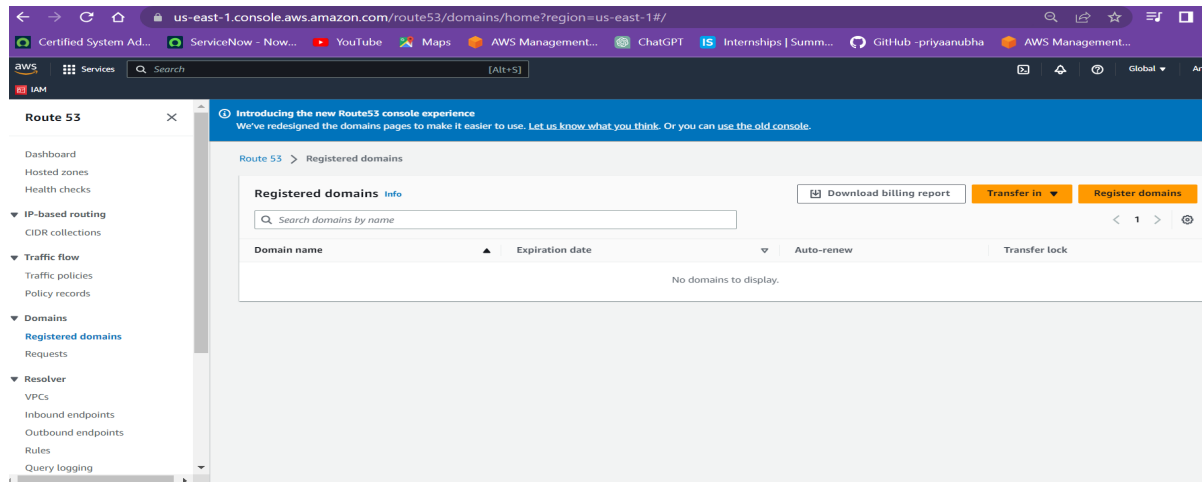
B> Click on Register domains and type any name for your custom domain

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

B> Click on 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"**   [View details]
To upload files and folders, or to configure additional bucket settings choose **View details**.

Amazon S3 ❯ Buckets

▶ **Account snapshot**   [View Storage Lens dashboard]
  Storage lens provides visibility into storage usage and activity trends. Learn more 🗗

Buckets (1) Info   ↻   Copy content   Empty   Delete   **Create bucket**
Buckets are containers for data stored in S3. Learn more 🗗

🔍 Find buckets by name   < 1 >   ⚙

	Name ▲	AWS Region ▽	Access ▽	Creation date ▽
◯	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 🗗

↻   Copy S3 URI   Copy URL   ⤓ Download   Open 🗗   Delete   Actions ▾   Create folder   **⊞ Upload**

🔍 Find objects by prefix   < 1 >   ⚙

☐	Name ▲	Type ▽	Last modified ▽	Size ▽	Storage class ▽

No objects
You don't have any objects in this bucket.
[⊞ Upload]
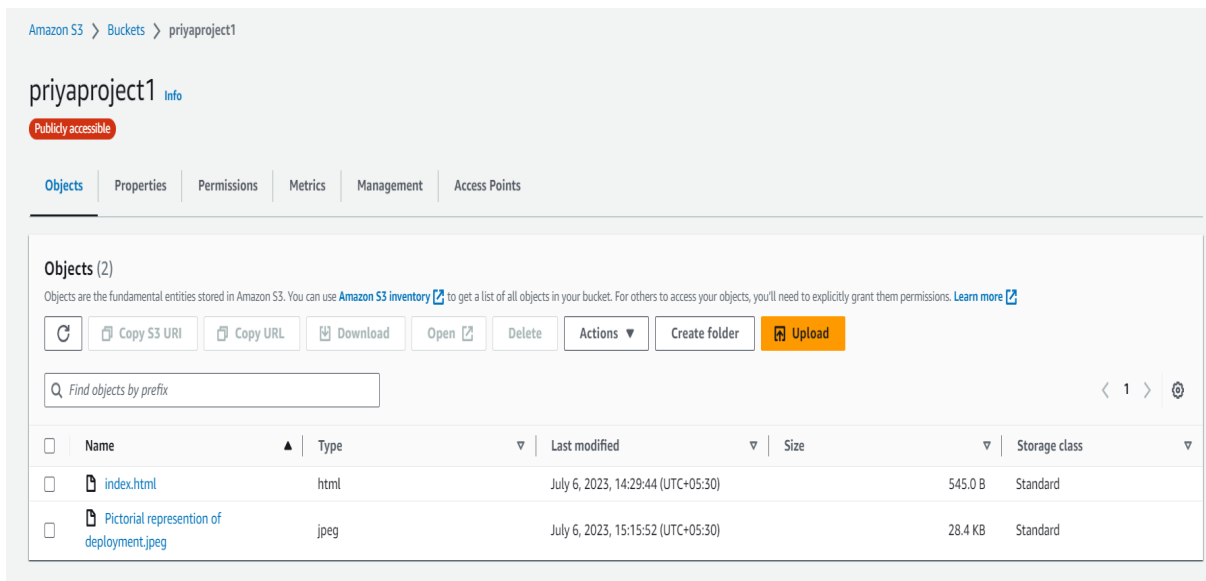
Here, I have created my index.html static website and uploaded on S3 bucket
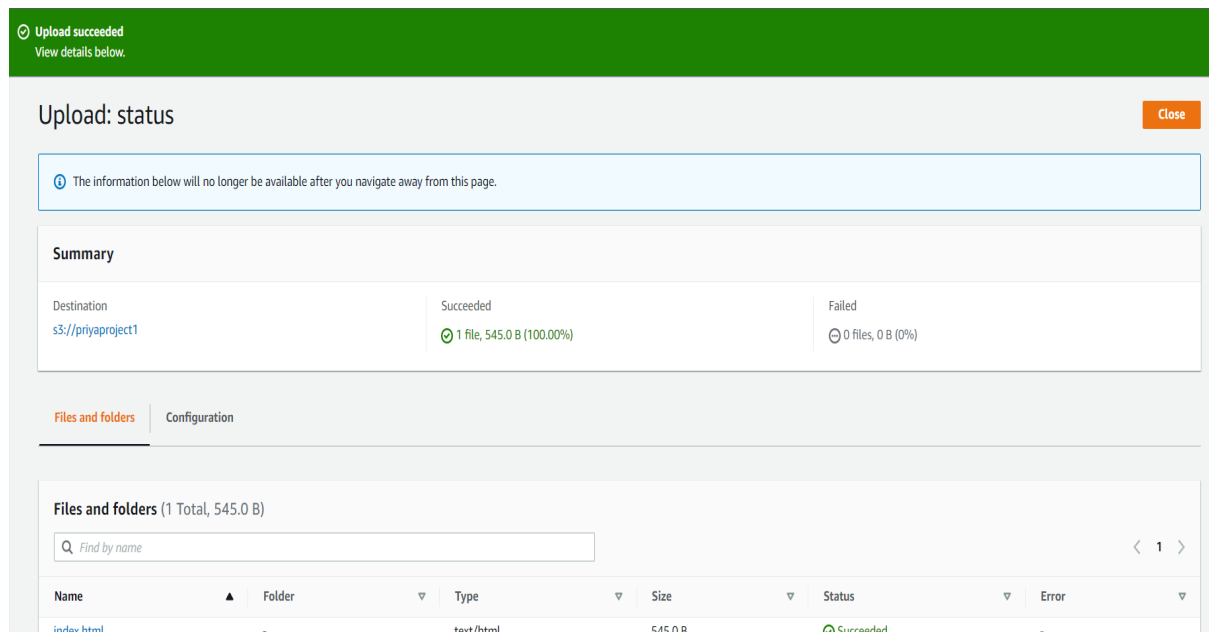
3> Enable Static website hosting and direct the domain to the S3 bucket.

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

Here, the changes are saved

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.

Permissions overview

Access
Objects can be public

Block public access (bucket settings)

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 all your S3 buckets and 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 your buckets or objects within, you can customize the individual settings below to suit your specific storage use cases. Learn more

Edit

Block *all* public access
⚠ Off
▶ Individual Block Public Access settings for this bucket

Bucket policy   Edit   Delete

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.   Copy

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 represention 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