Deploying a Static Website on AWS S3 Bucket

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Introduction

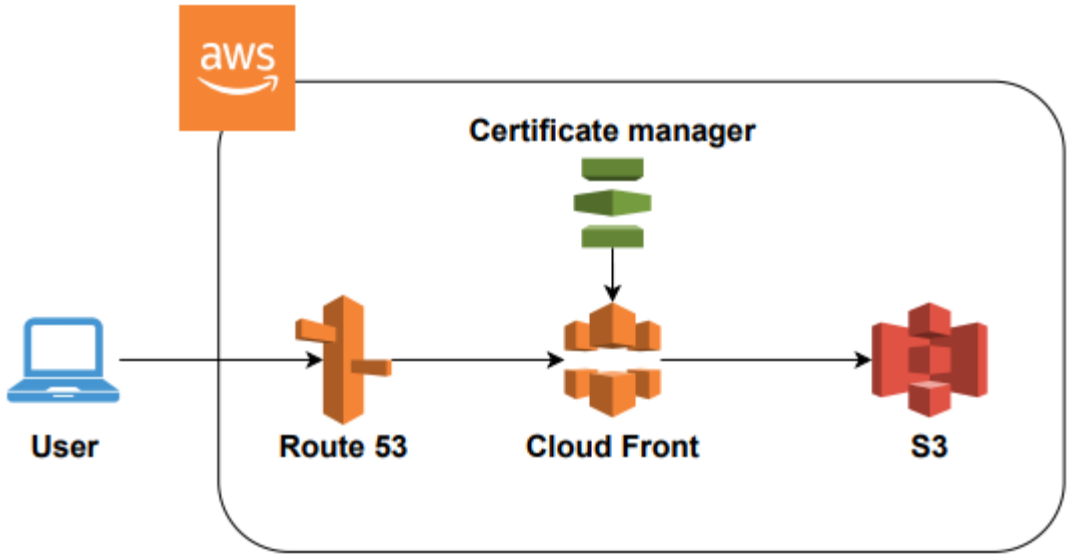
The document shows how to deploy a static website on AWS using the instructions provided in the task

Methodology

Given below are general steps for the procedure

1. The first step is to create an S3 bucket and save the files as objects in the bucket also make it publicly accessible
2. Create and configure a domain name and create hosted zones using Route53
3. Create a cloud-front distribution and attach a certificate using aws certificate manager to secure the site
4. Connect route53 to cloudfront

Flow Diagram

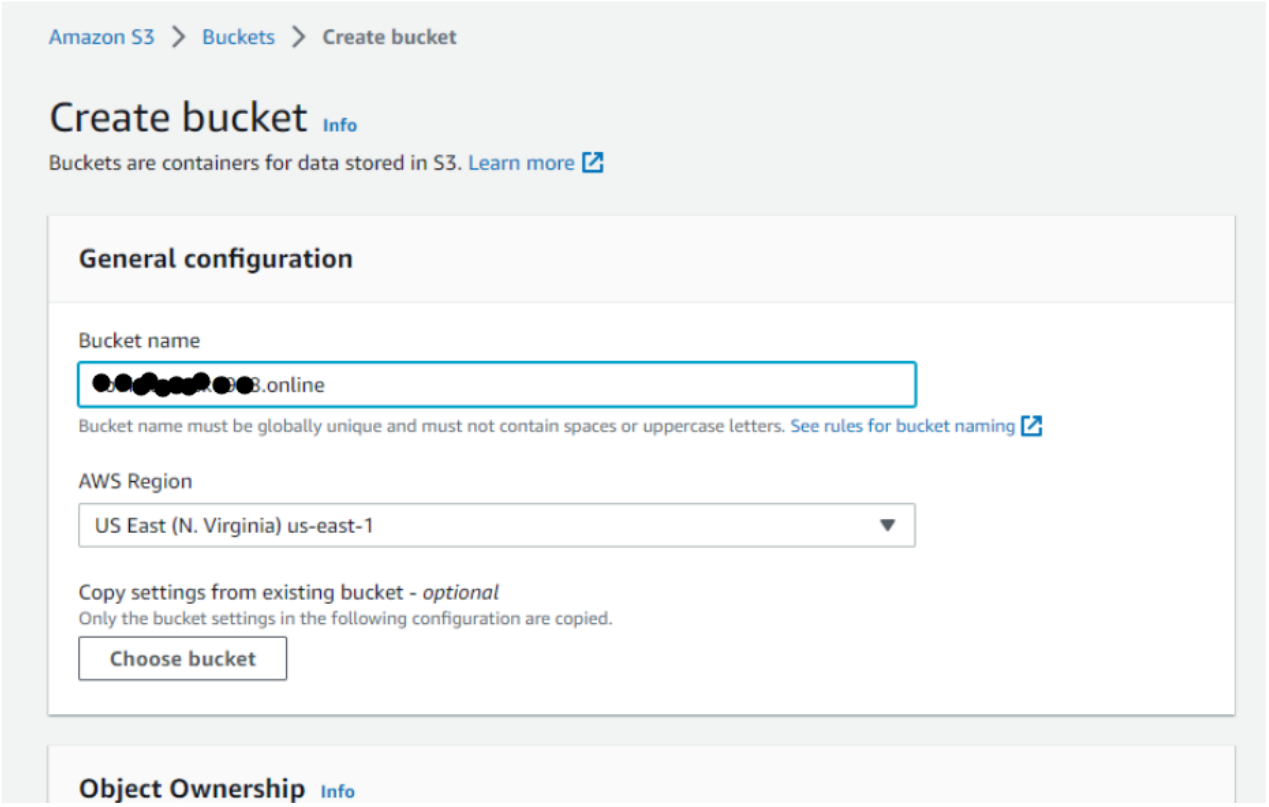


Procedure

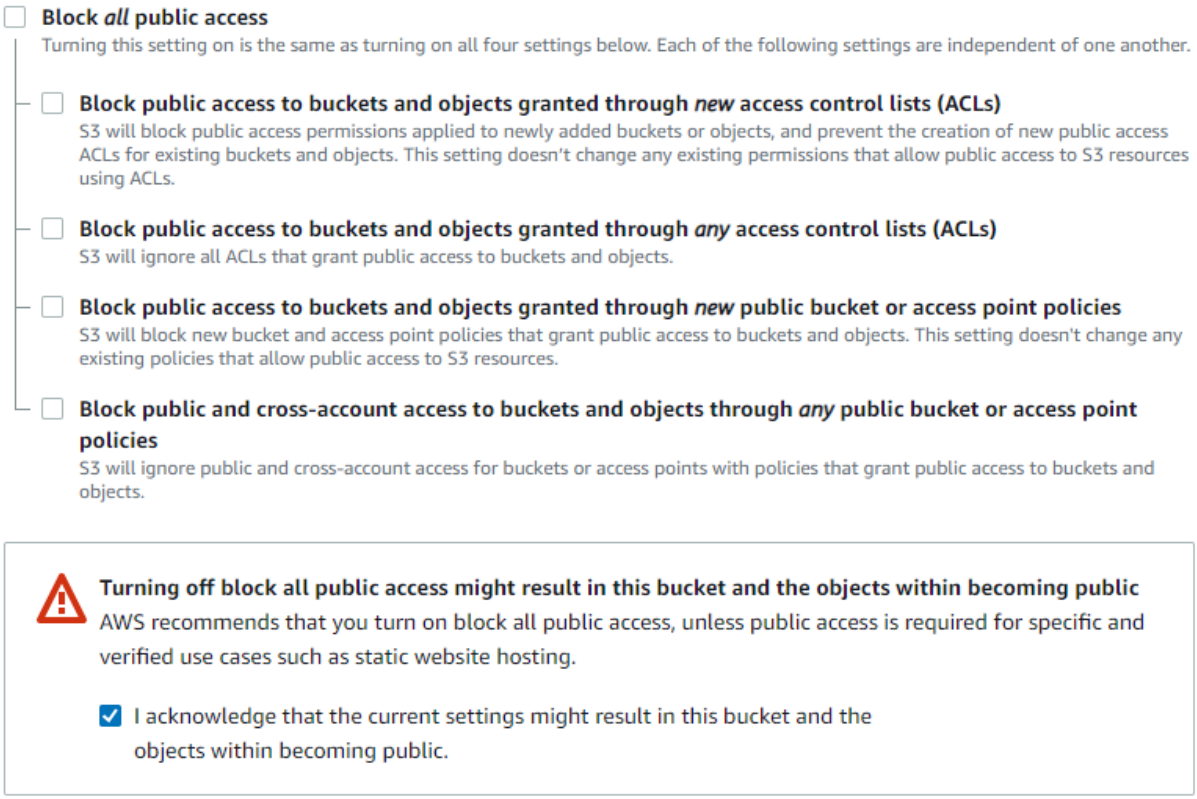
Following are detailed steps

a) Configuration:

- The first step is to create an S3 bucket and give it the same name as the domain name because the DNS server will only know to route requests to the S3 bucket if the name of the bucket matches the name of the domain.



- Uncheck the block all public access as we have to make a public website



- Note that the bucket isn't publicly accessible yet so we have to create a new policy that allows the public to get the object and in the resource add the arn of the bucket, it can also be created using the policy generator.

Policy

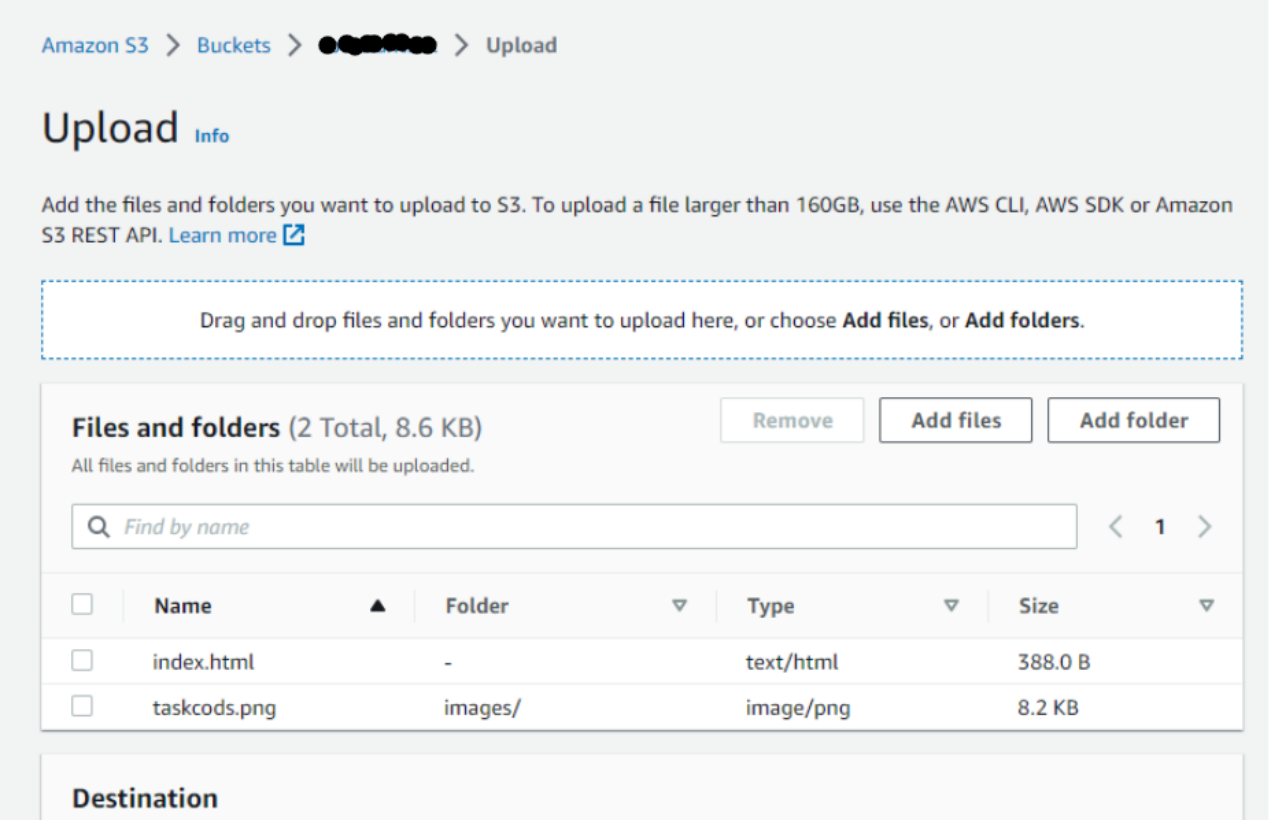
```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "PublicReadGetObject",
            "Effect": "Allow",
            "Principal": "*",
            "Action": [
                "s3:GetObject"
            ],
            "Resource": [
                "arn:aws:s3:::[redacted]/*"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

b) Upload Website Files:

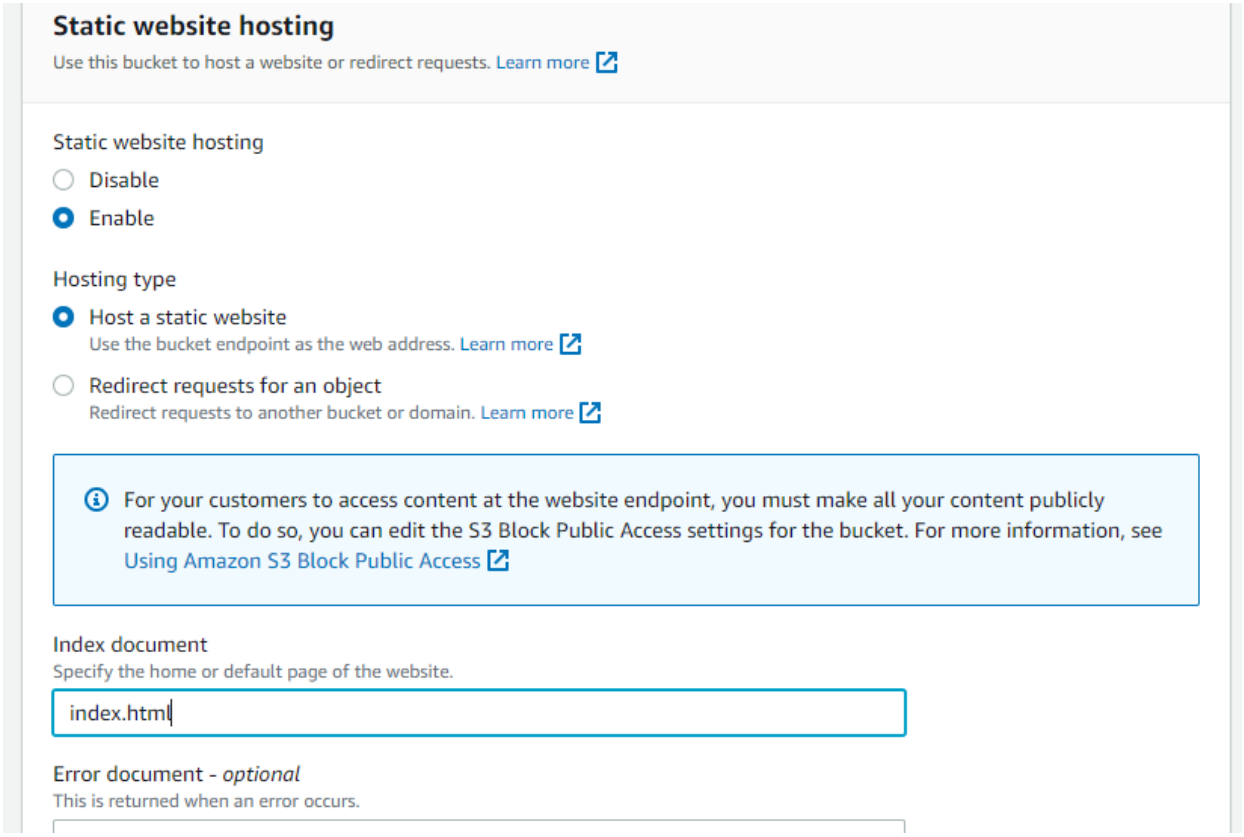
- Upload the index.html file for the website in my case i also added the folder containing an image which is optional

```
<!DOCTYPE html>
<html>
<head>
  <title>[redacted]</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      margin: 0;
      padding: 20px;
    }
    h1 {
      color: #333;
    }
  </style>
</head>
<body>
  <h1>Welcome to My Static Website!</h1>
  <p>Codistan ventures task.</p>
  <img src="images/taskcods.png" alt="Sample Image">
</body>
</html>
```

- Upload the files

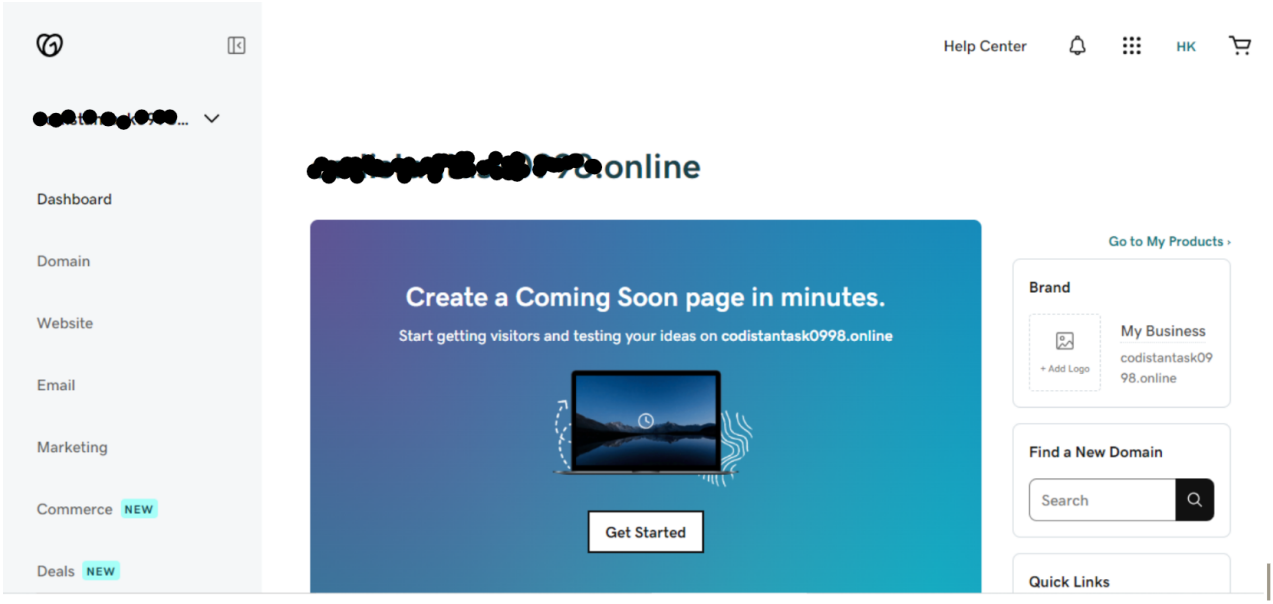


- After uploading the files create the bucket and go to the properties section scroll down and at the end, there will be an option for static website hosting enable it using the edit button
- In the index document write the name of the HTML file that was uploaded to the S3 bucket

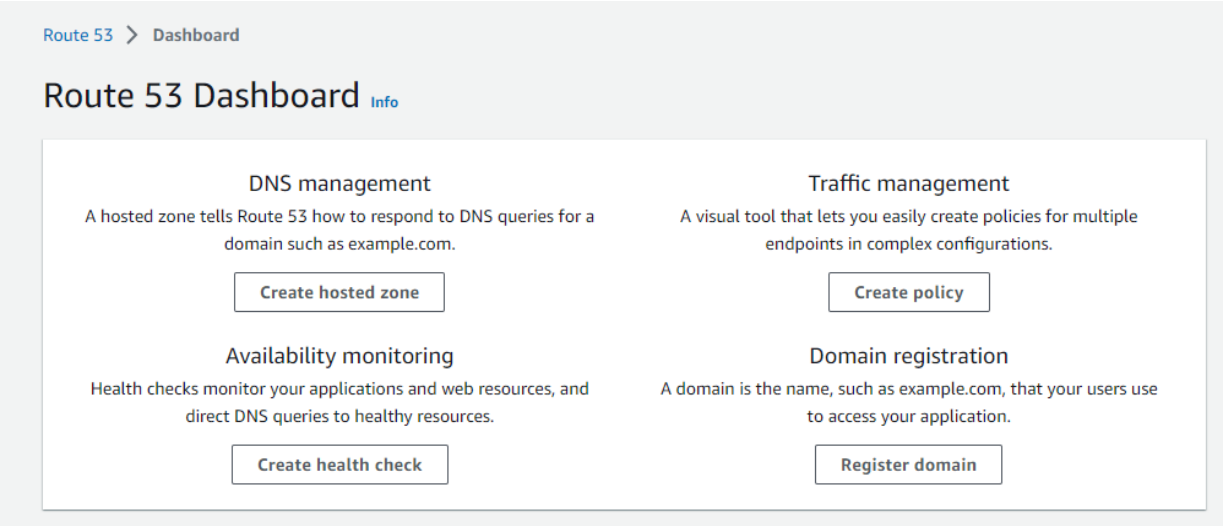


c) Domain Configuration:

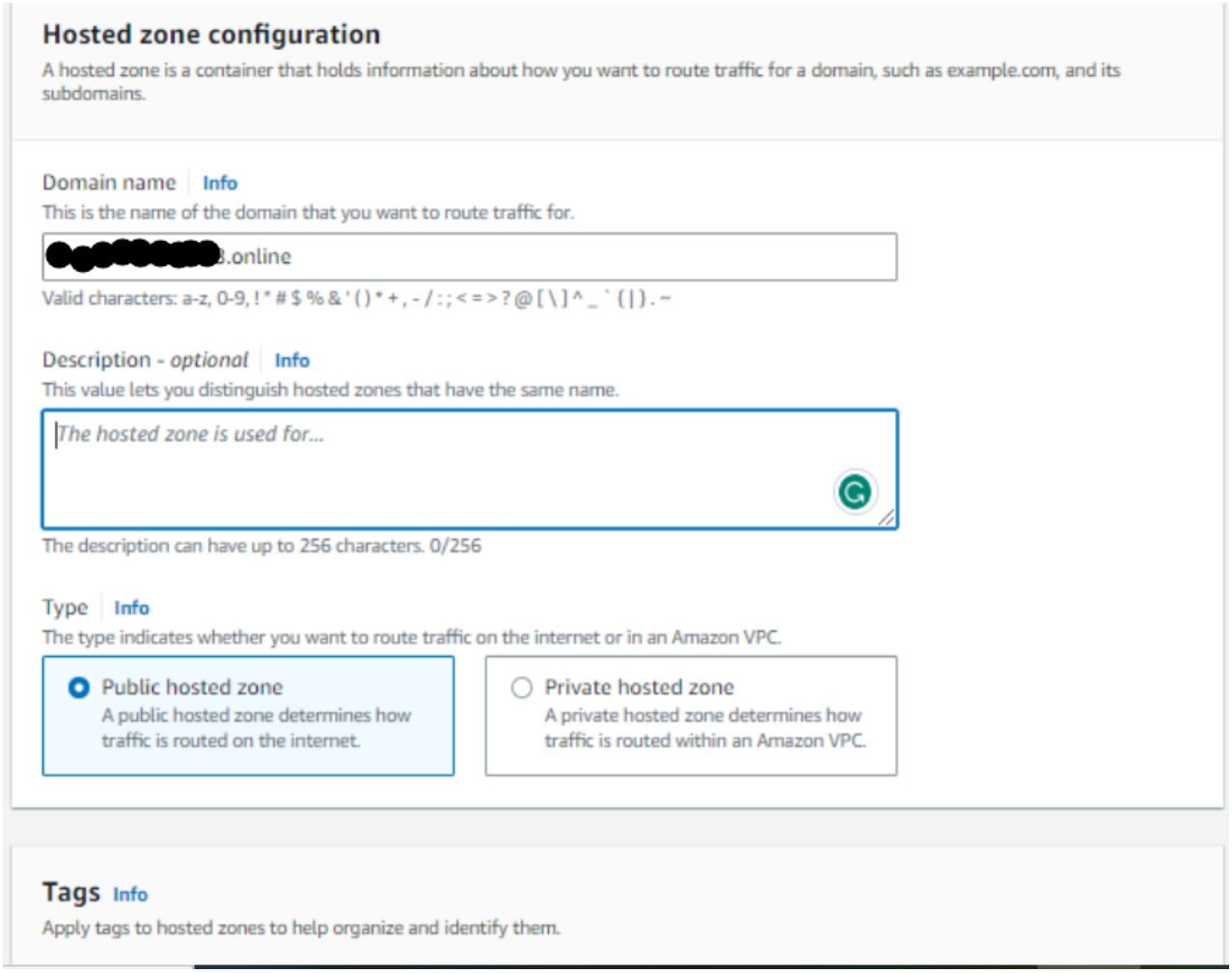
- Select the domain where you want to host the website I purchased the domain from Godaddy website



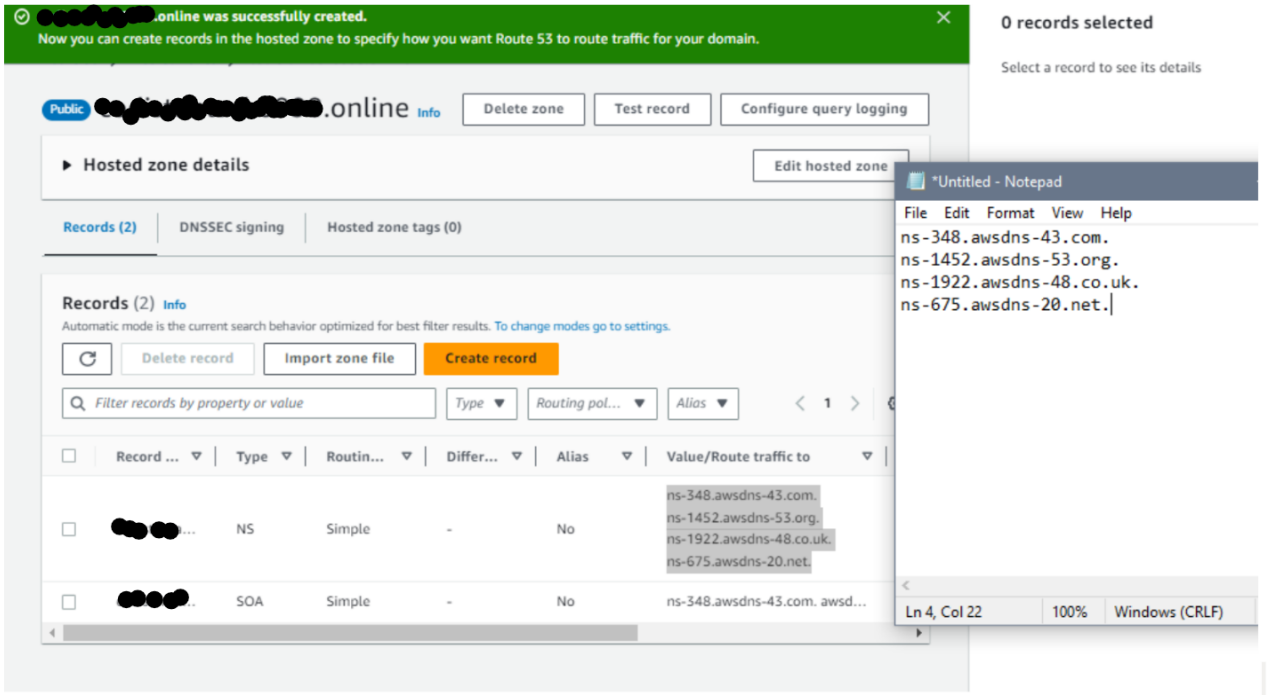
- Now we have to create a hosted zone for the domain to connect it with the S3 bucket for that purpose go to route53 and select Create a hosted zone



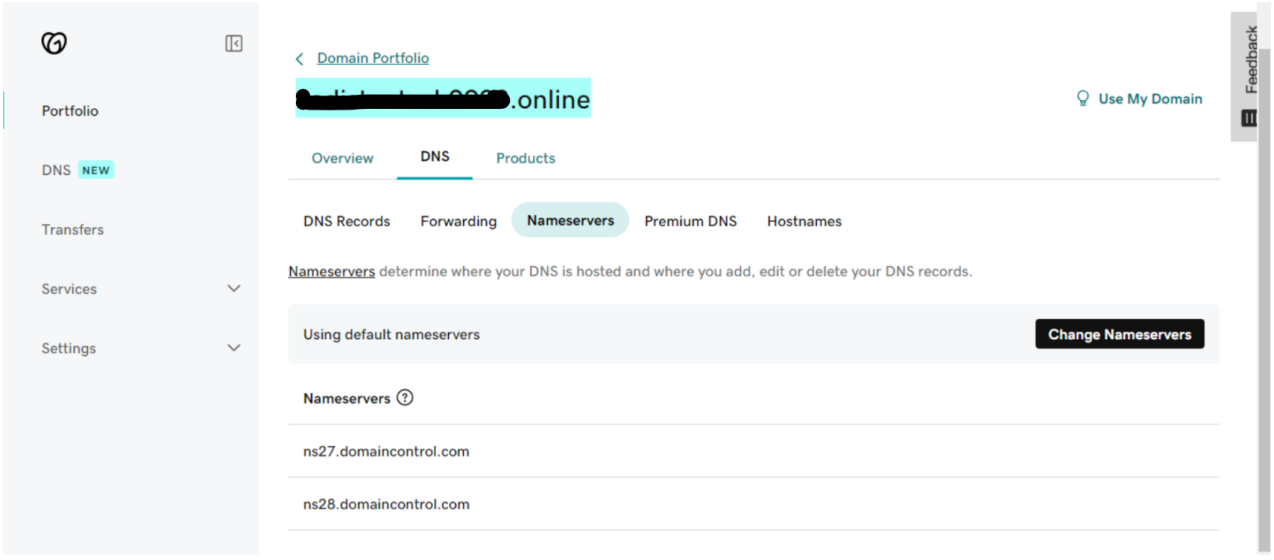
- In the domain name add the name of the registered domain
- In the type select public hosted zone as it is publicly accessible.



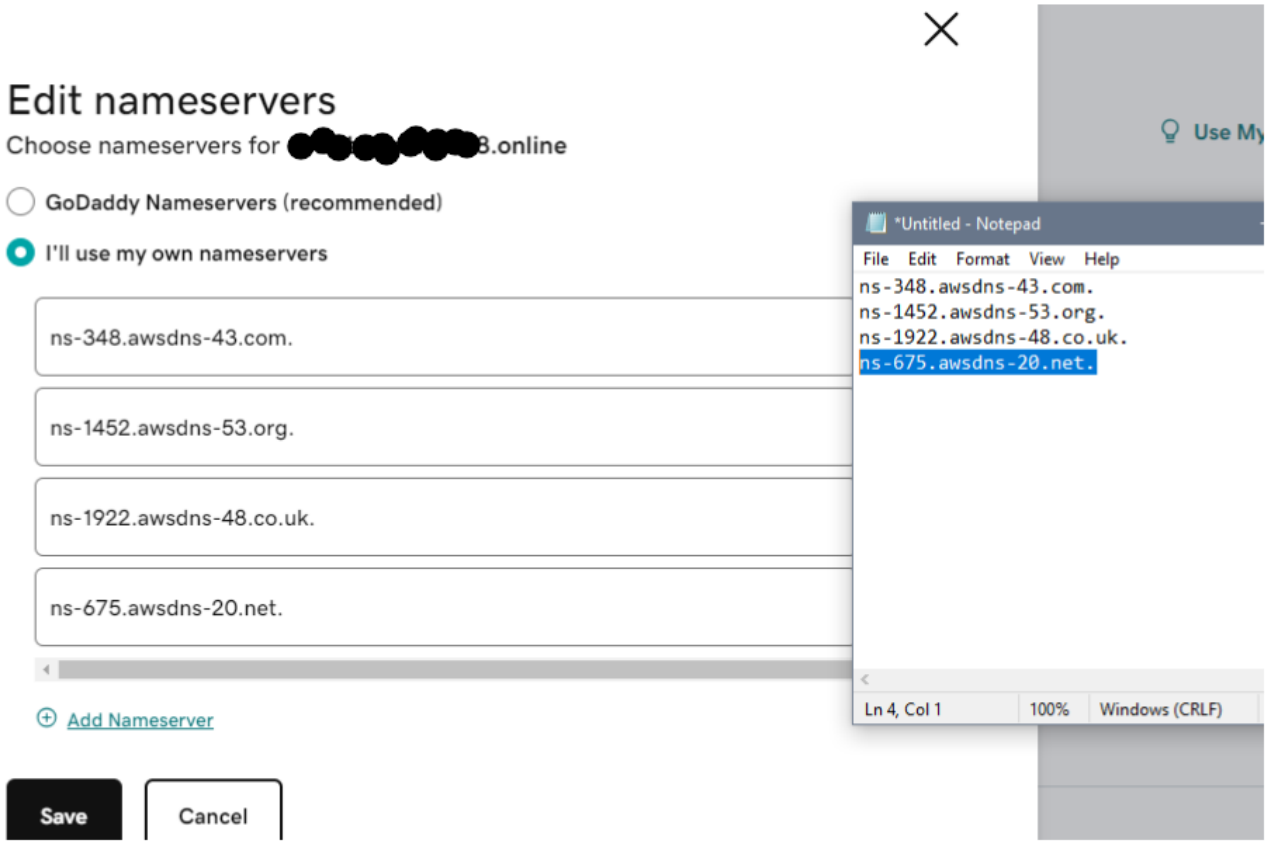
- Now we have to configure the name servers of our Godaddy domain for that purpose go to the route53 service and select Create a hosted zone, in the section copy the Name servers provided by AWS.



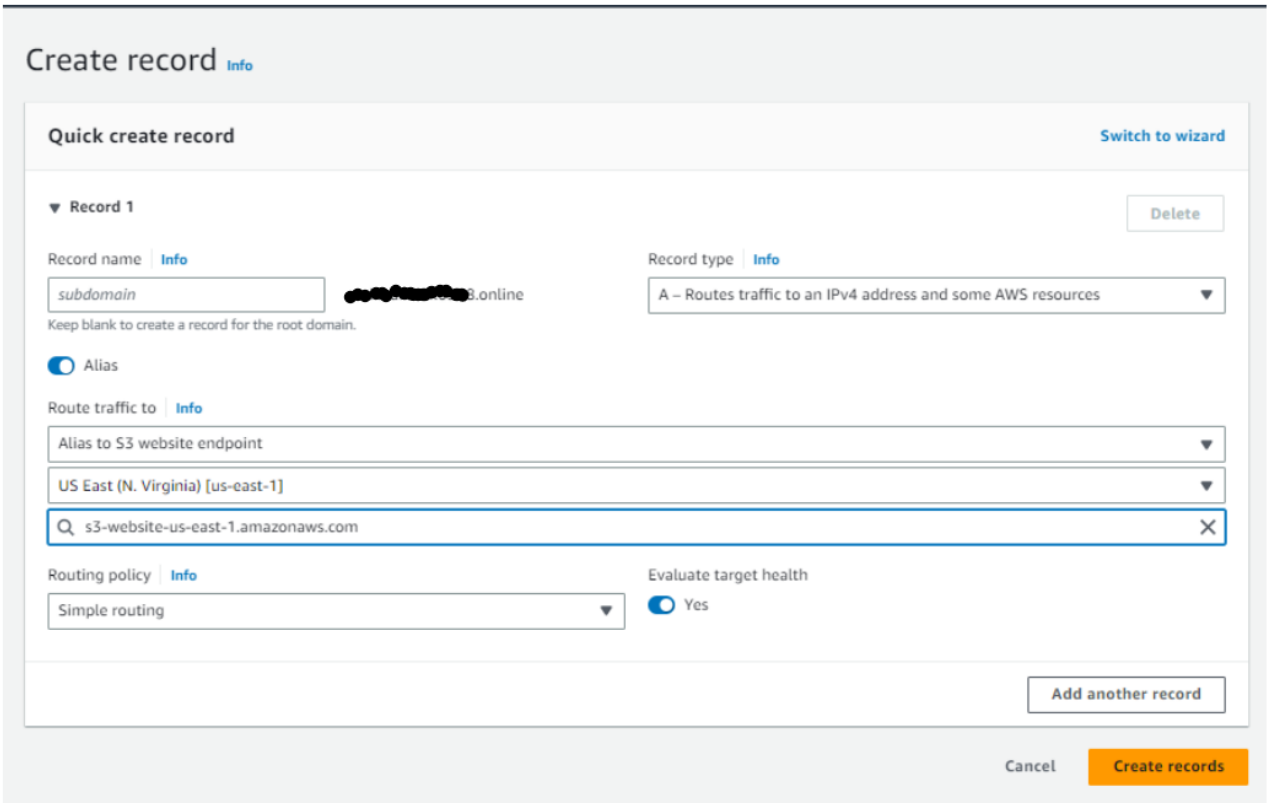
- Now go to the Godaddy website and in the domain tab select Nameservers and click on change Nameservers



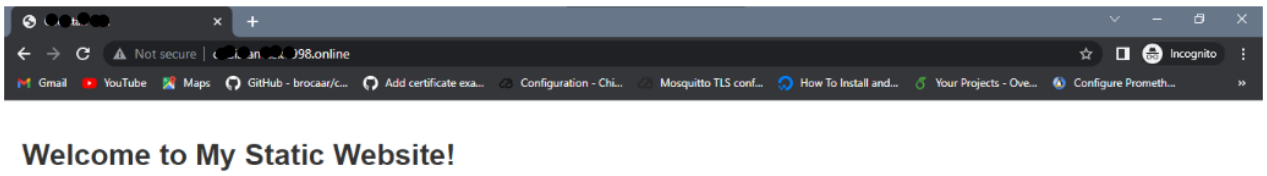
- Click on the second option and paste the Nameservers provided by AWS



- Go to route 53 and under the hosted zone Click on create record. Select record type A and click on Alias.
- Select the S3 endpoint and click on create records.



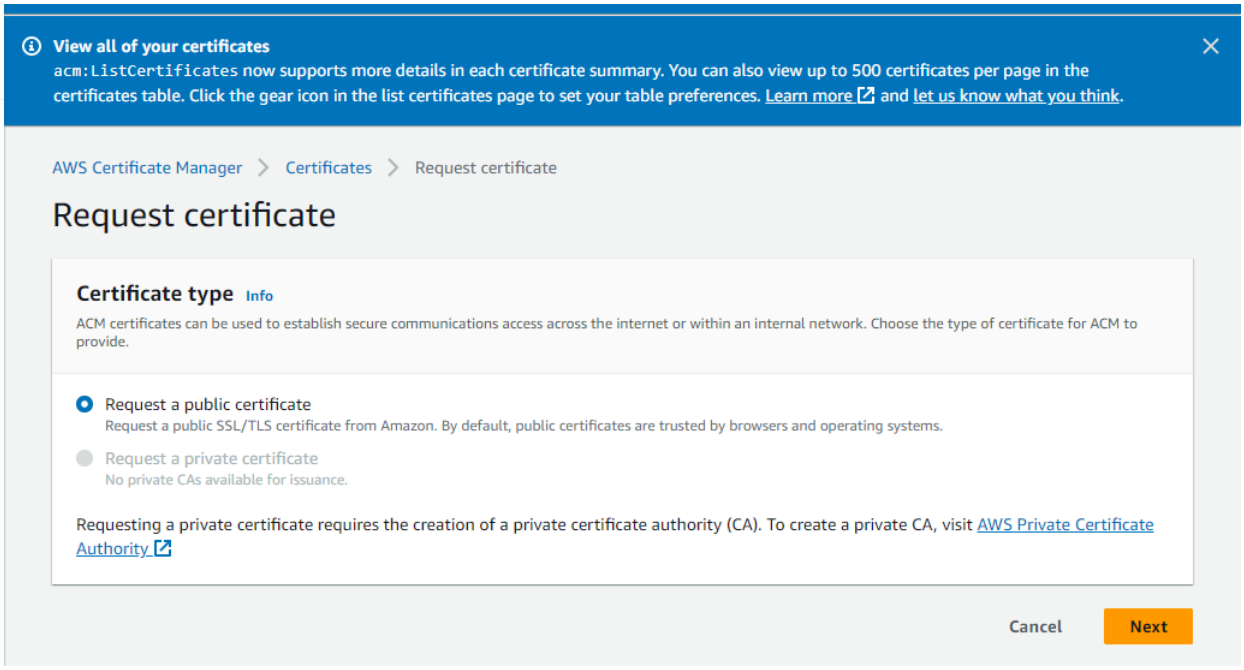
- Copy the domain name and enter it into the browser to see the static website (Note that if the page isn't updating paste the domain name in an incognito tab)



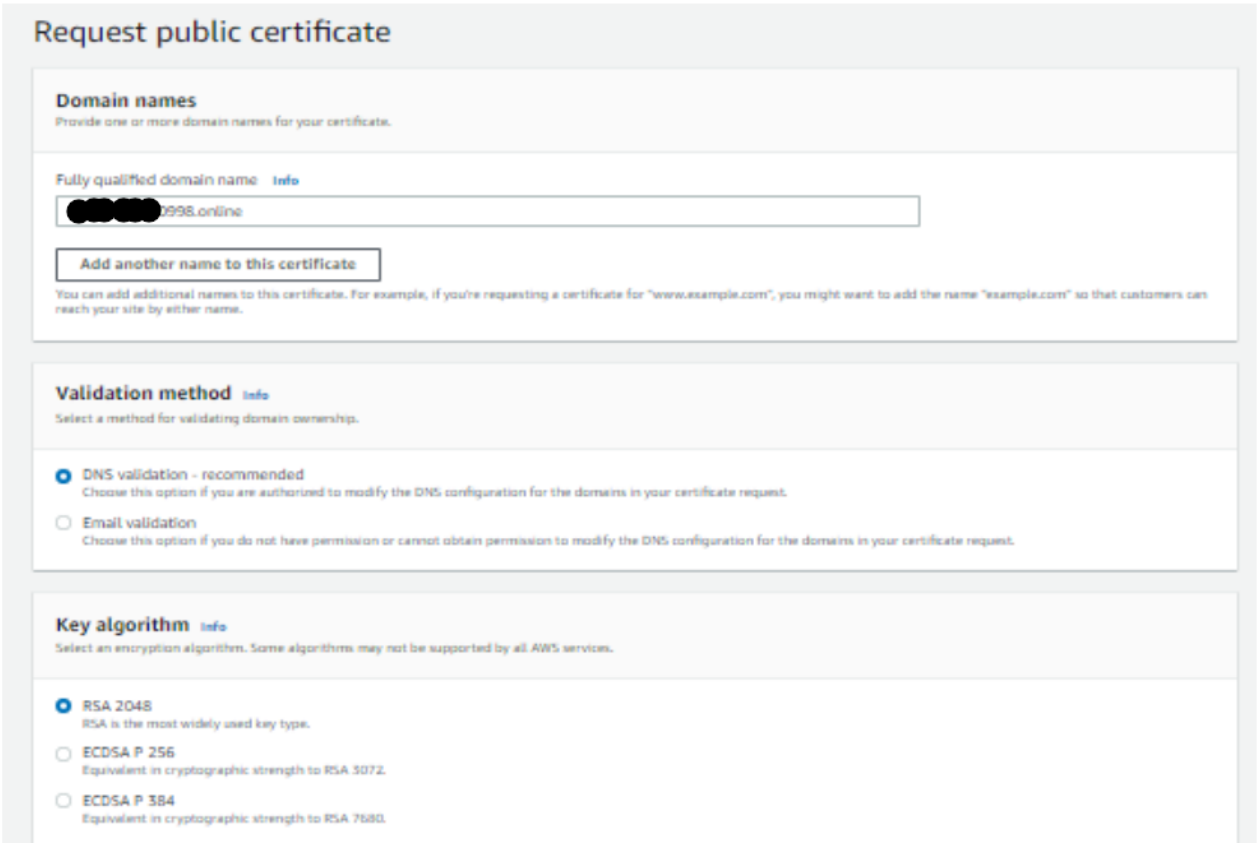
d) Security and performance

- Note that the static website isn't secure and to secure it we have to add the certificate.

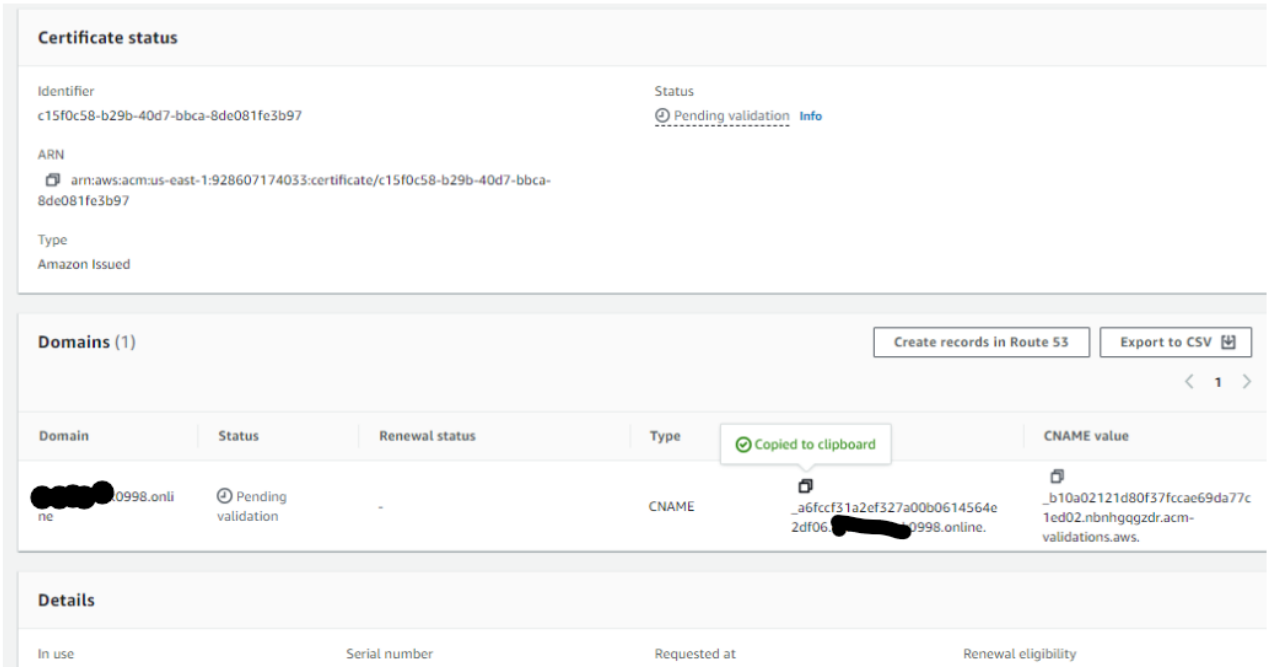
- For that purpose go to the certificate manager and click on request certificate under the certificates tab and select the public certificate



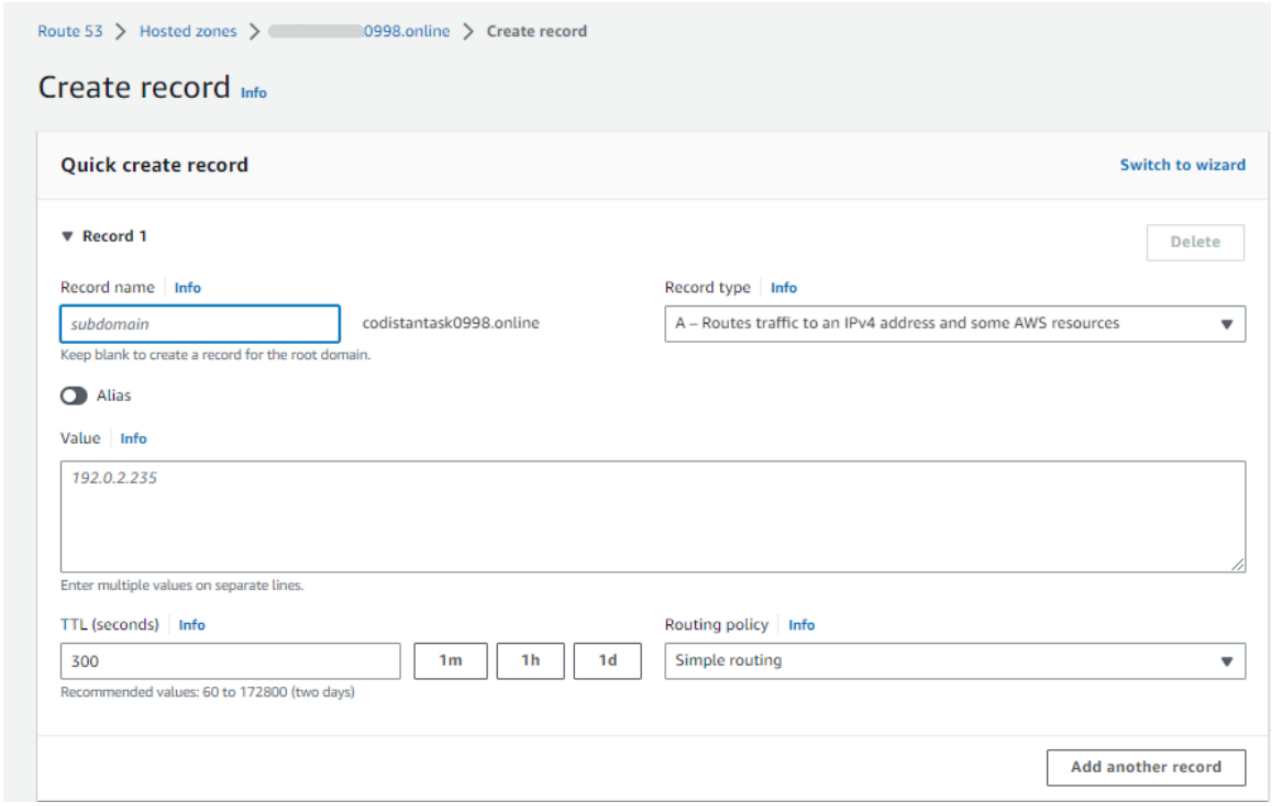
- Enter the domain name and note that you can also add tags which are optional but it is better to add tags as it helps to identify the details. Select the DNS validation option.



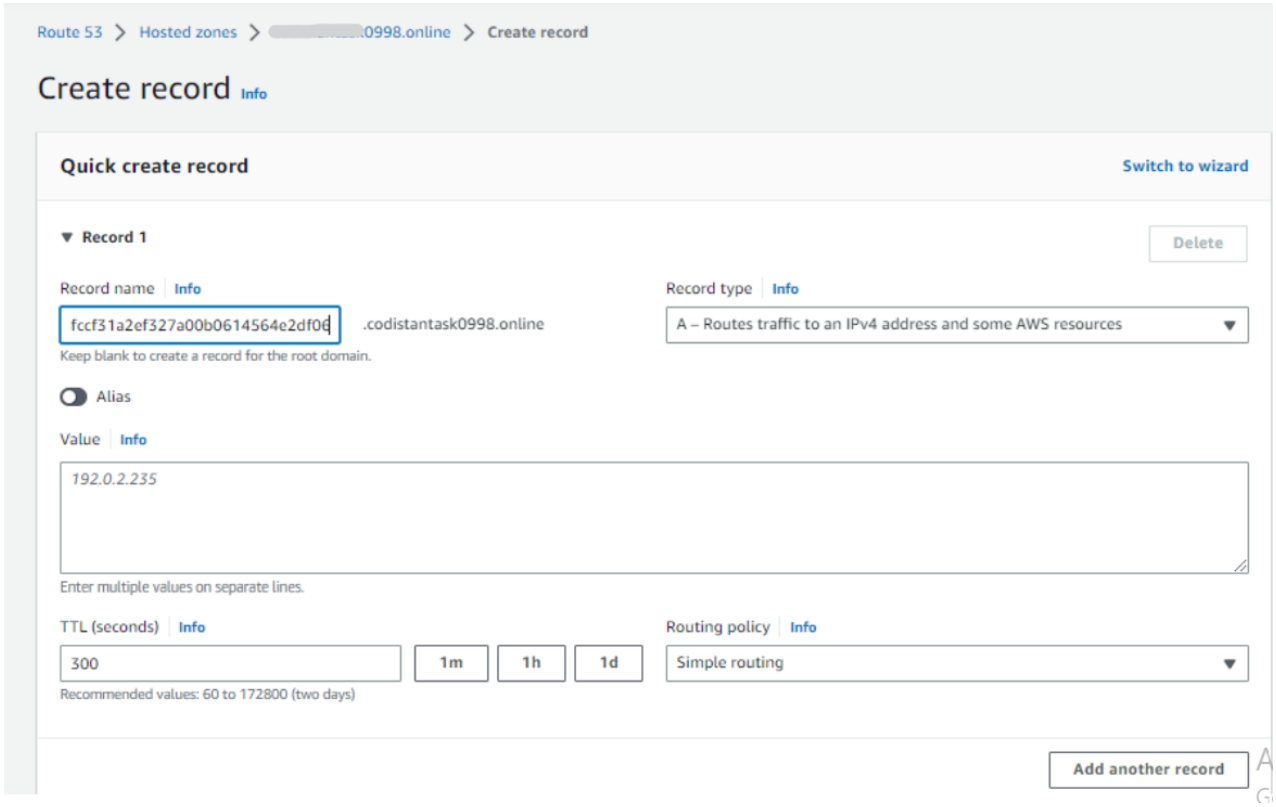
- Copy the CNAME name as it will be used to create the new record



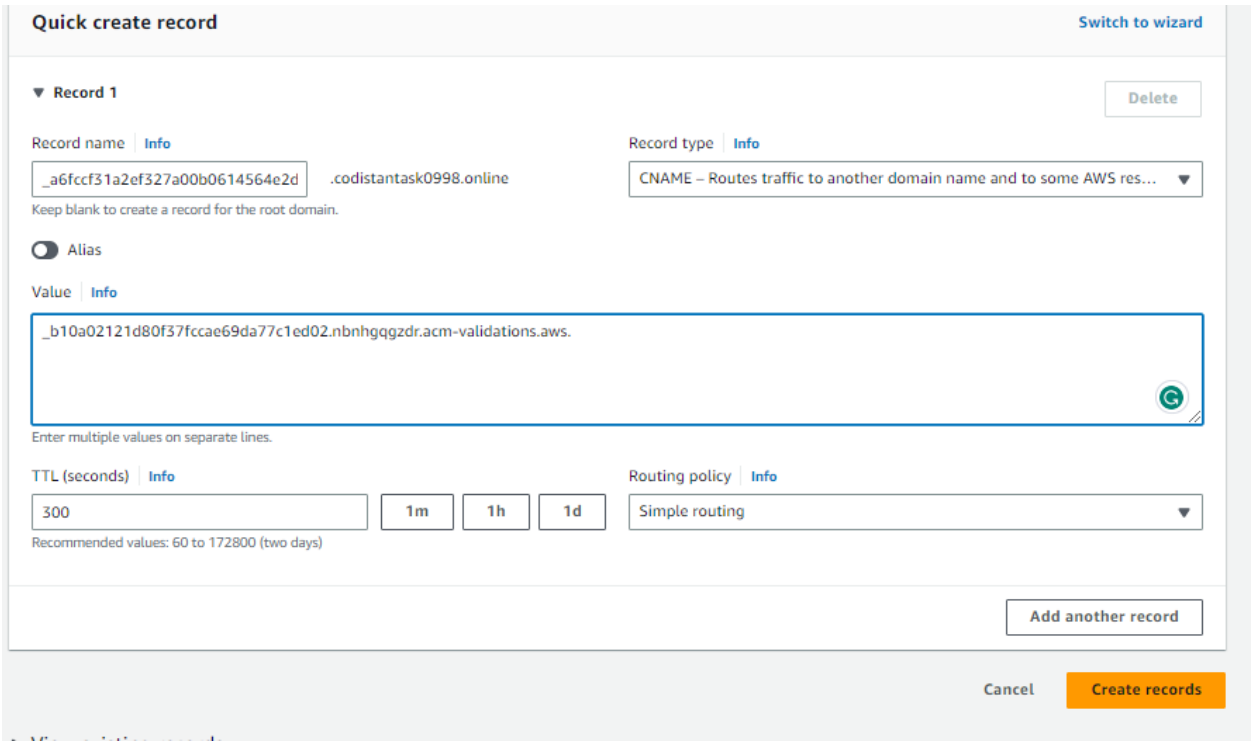
- Now go to the certificate will be created and for it's validation we have to create a new record route53 section and select the create record



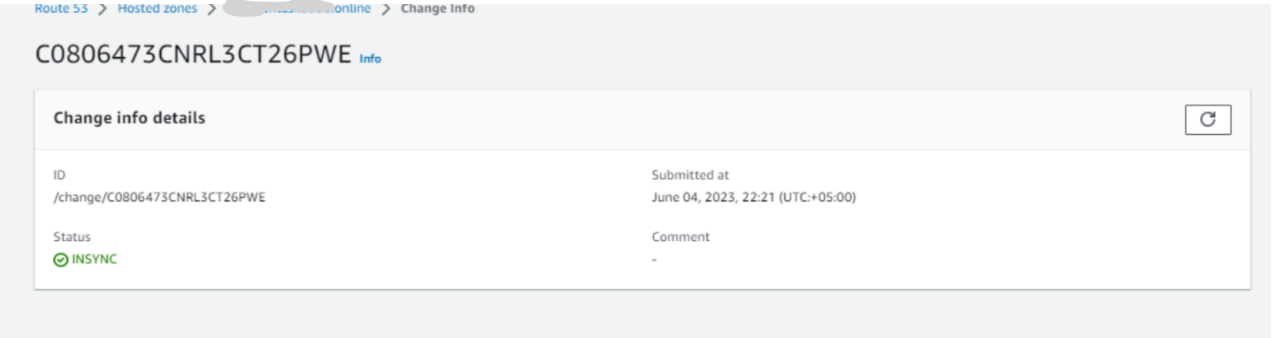
- Paste the CNAME name in the record name section and cut ".codistantask0998.online" as it is already present



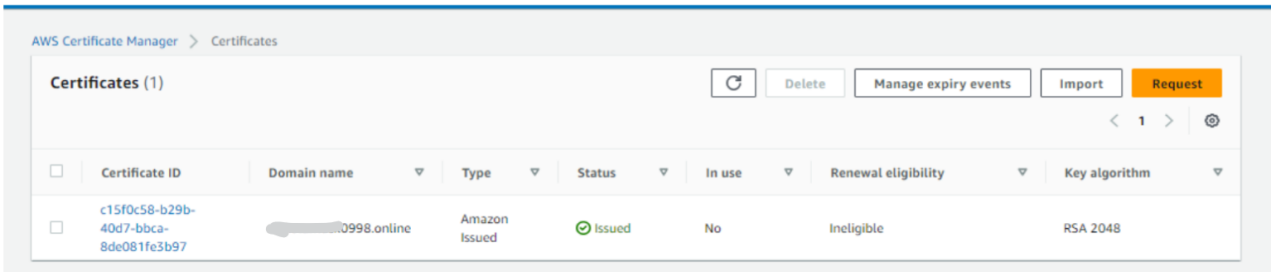
- Select the record type as CNAME and in the value tab enter the CNAME value from the certificate.



- Click on the create records option note that after a few minutes, the status changes from pending to in sync



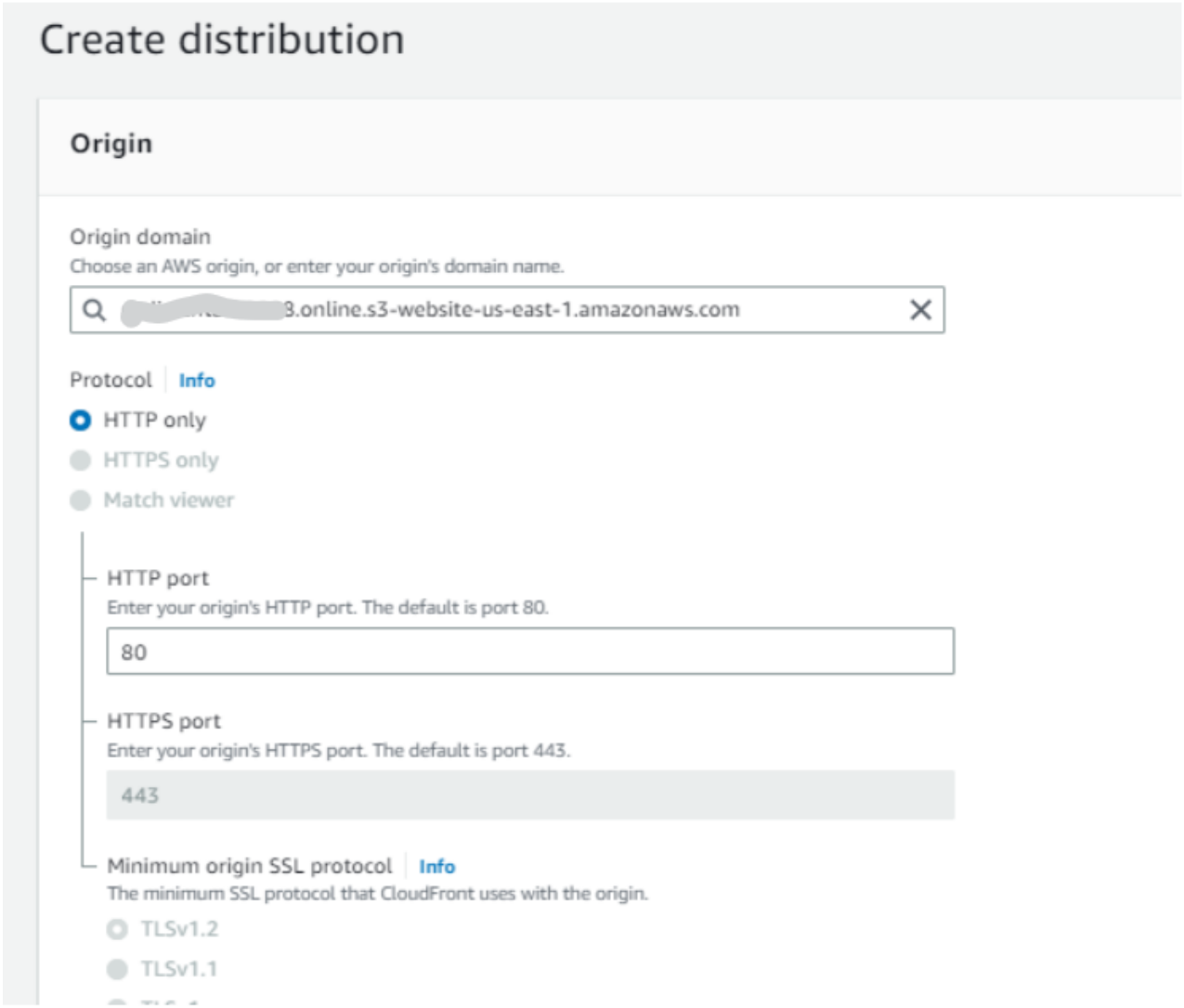
- Go to the certificates tab and it will change the status to issued after a few minutes.



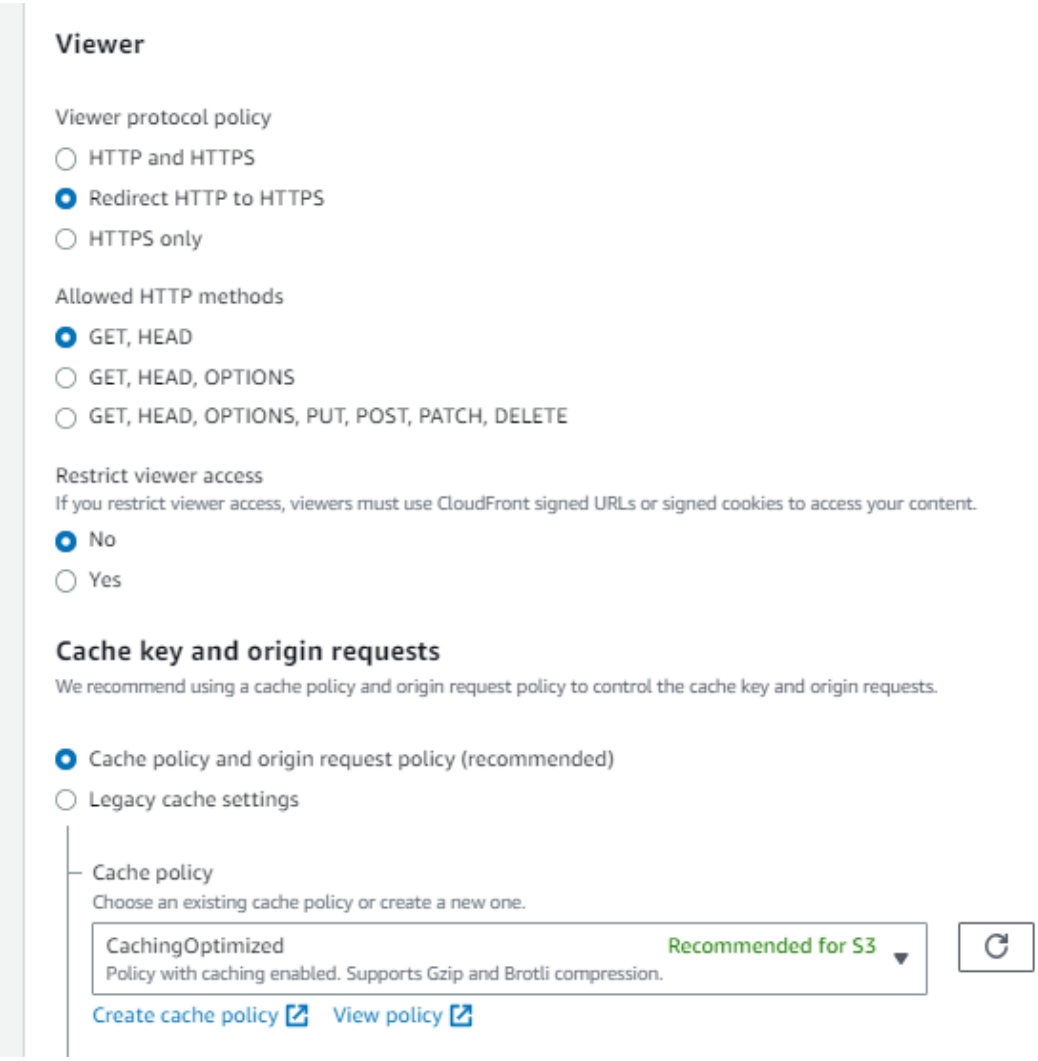
Cloud front

The Cloudfront service is used to deliver content such as web pages etc with low latency and higher transfer speeds

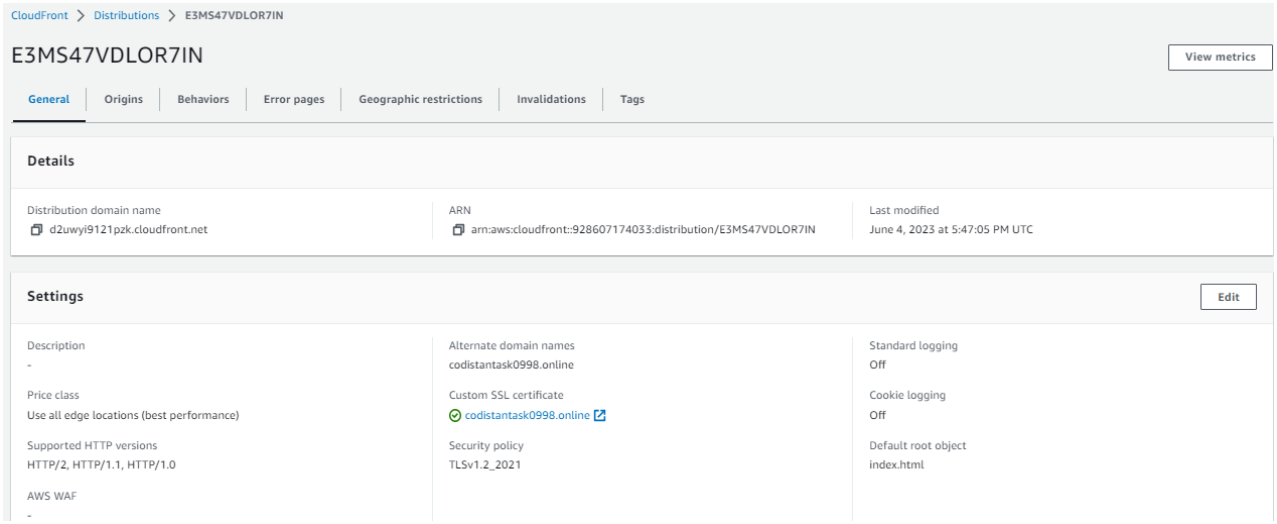
- now we have to attach the certificate to the Cloudfront distribution for that purpose go to the create distribution tab in the original domain and select the static website endpoint that was provided in the properties section of the s3 bucket
- It will appear automatically in the Drop down menu
- Also, select the use website endpoint option



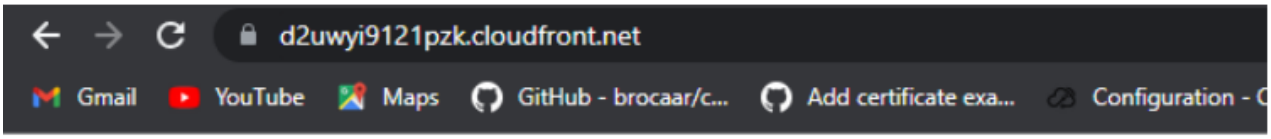
- In the viewer protocol policy select the redirect HTTP to HTTPS option

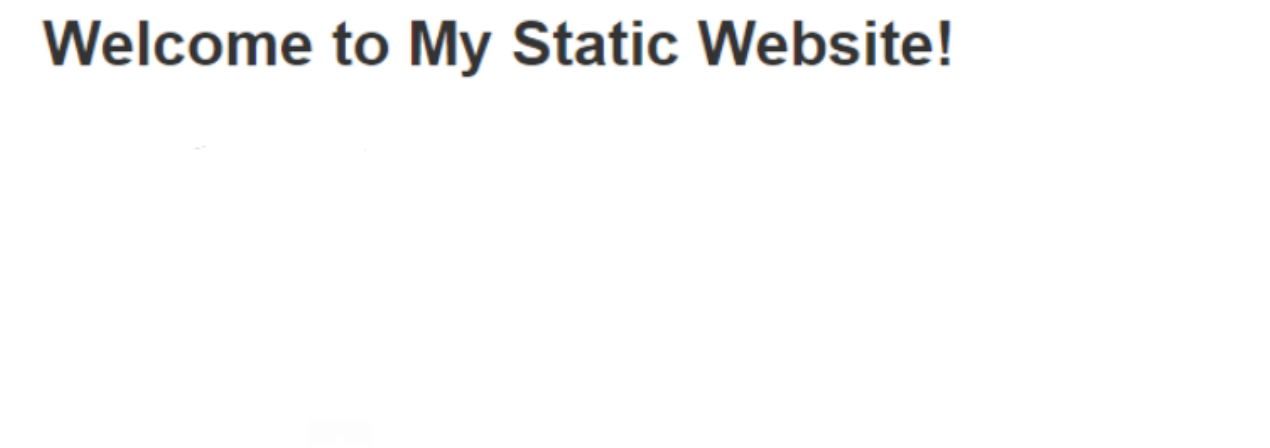


- In the custom SSL certificate option select the certificate that was previously created.
- In the alternate domain name select the domain name.
- In the default root object type index.html which was the html file.
- Click on Create distribution



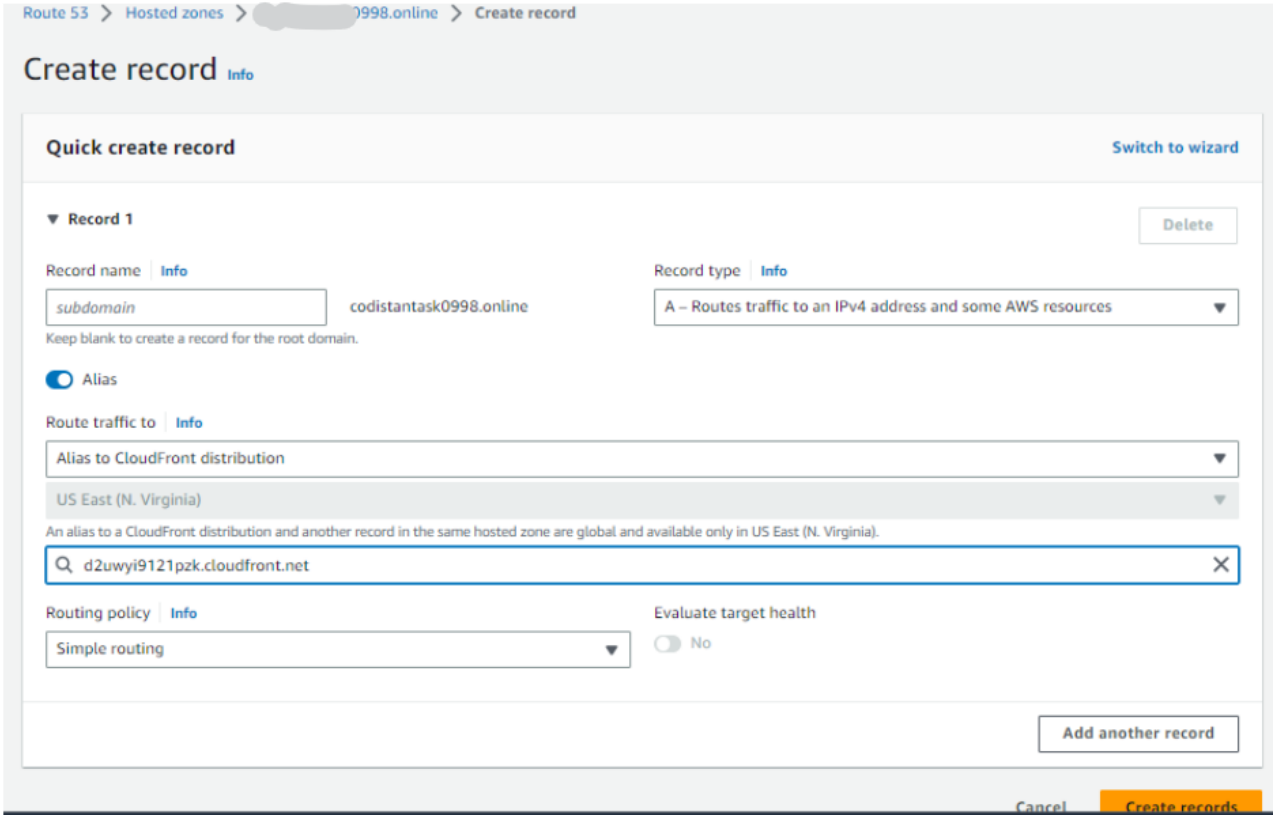
- Copy the distribution domain name and paste it in the browser to check if everything has been done correctly.



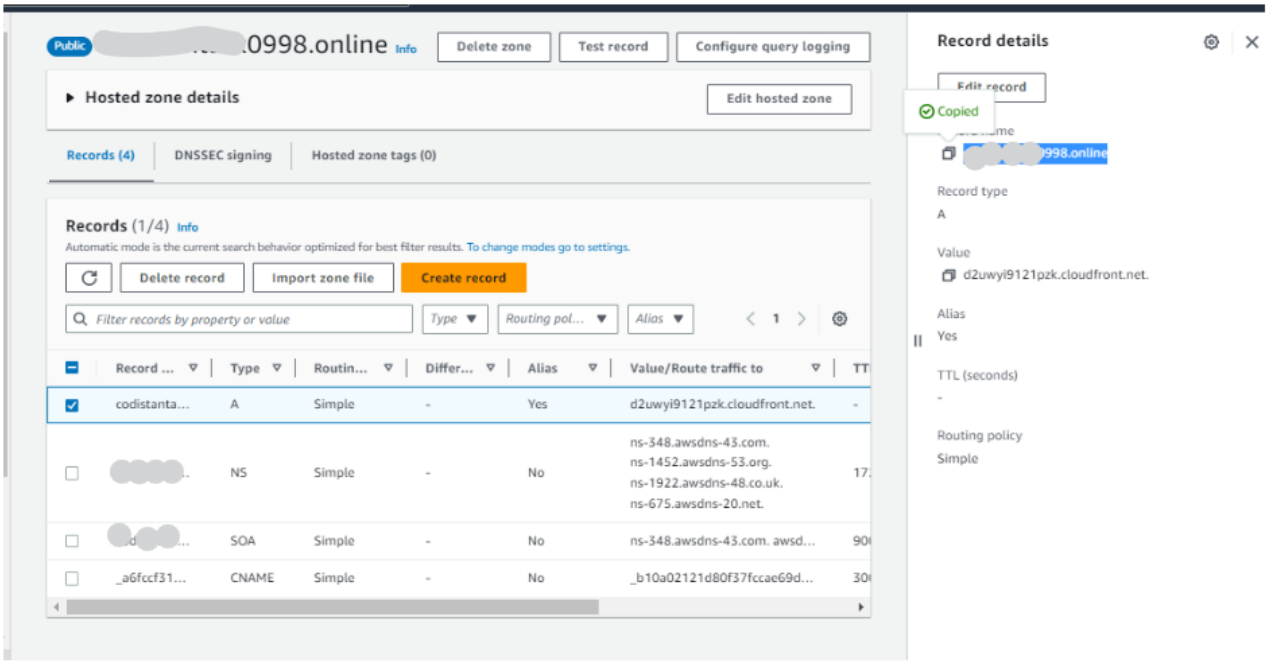


connect Route 53 with the Cloudfront

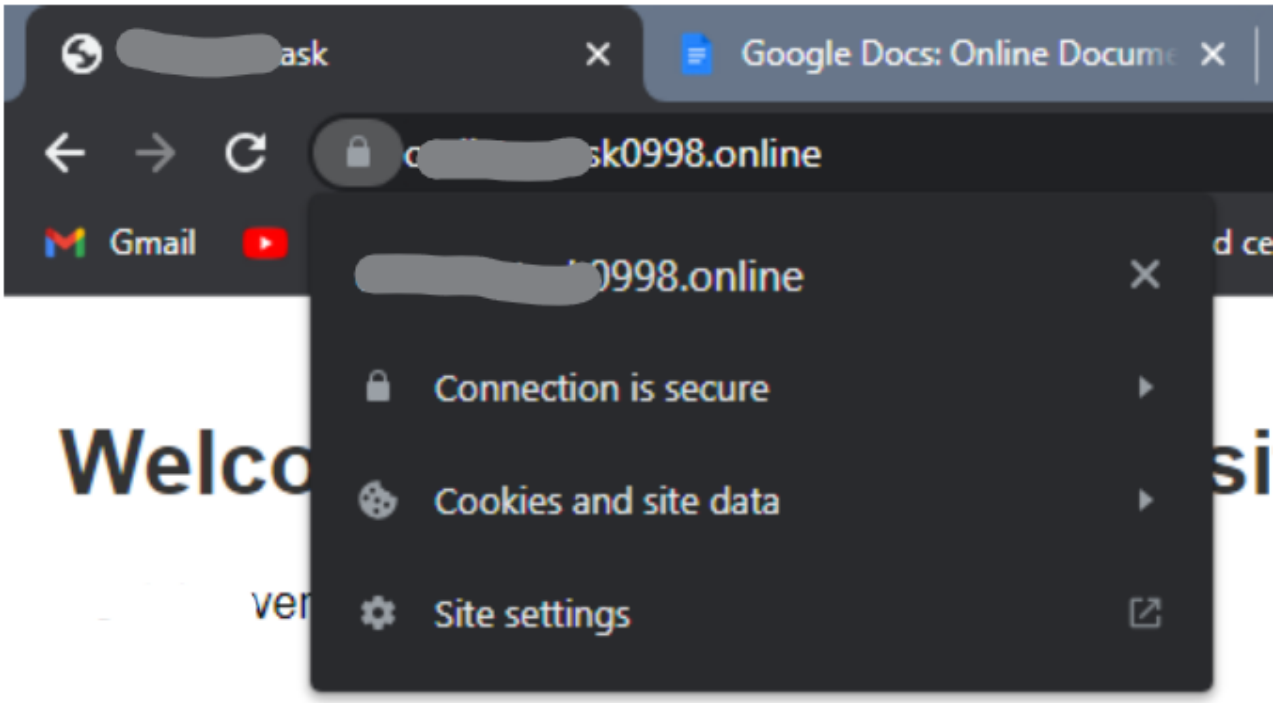
- Go to route53 and create a new record enable the alias option in the route traffic to option paste the distribution domain name and create records



- After the records have been created copy the domain name



- Paste the link in the browser and note that the site is now secure



Conclusion

I have successfully Deploying a Static Website on AWS S3 Bucket with all the conditions mentioned in the manual furthermore here is the link to website