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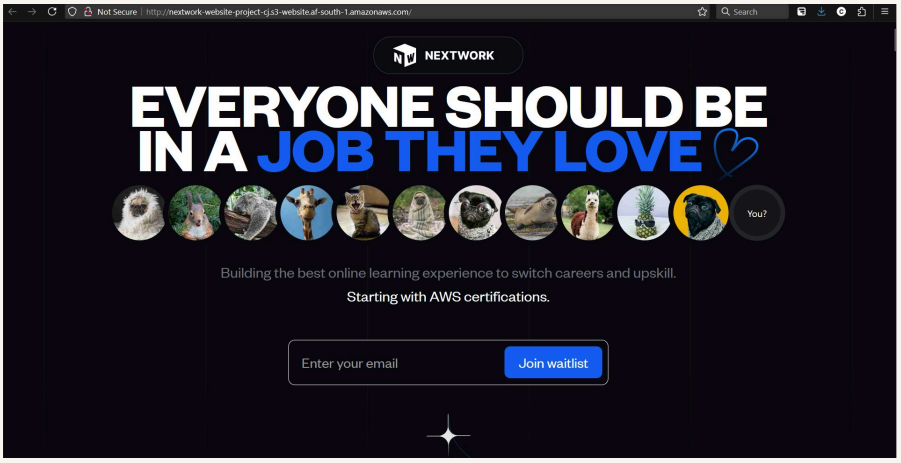
Host a Website on Amazon S3

Chrispinus Jacob



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Introducing Today's Project!

In this project, I will demonstrate how to host a static website using Amazon S3 (Simple Storage Service). I am doing this project to learn and understand key S3 features, including bucket creation, object storage, static website hosting configuration, and permissions management.

Tools and concepts

Services I used were Amazon S3 (Simple Storage Service) through the AWS Management Console to store, manage, and host my static website files. S3 key concepts I learnt include how to create and configure an S3 bucket, upload and organize files, set permissions using ACLs and bucket policies, make objects public, and enable static website hosting so the site can be accessed on the internet.

Project reflection

This project took me approximately 30 minutes to complete. The most challenging part was finding and understanding how to use the ACL settings correctly to control access. It was most rewarding to successfully host the website on an S3 bucket and see it live on the internet.

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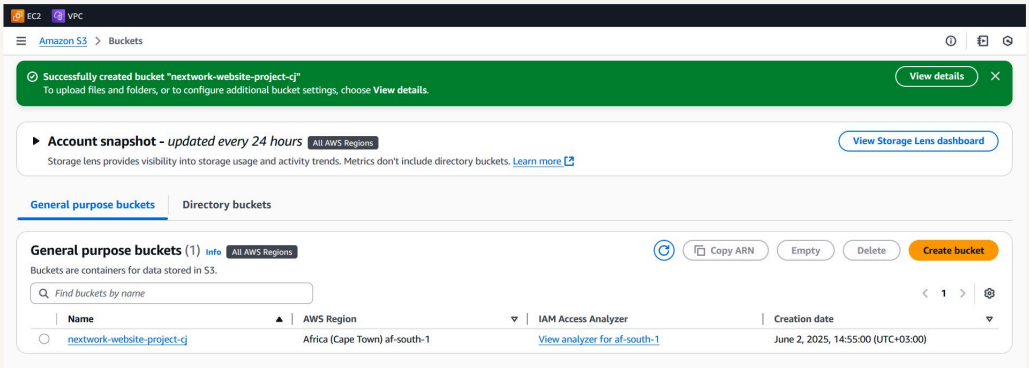
How I Set Up an S3 Bucket

Creating an S3 bucket took me... less than 5 Minutes

The Region I picked for my S3 bucket was Africa (Cape Town). I chose this Region because it is geographically closer to me, which helps reduce latency when accessing and managing my website files compared to using other Regions.

S3 bucket names are globally unique! This means that no two S3 buckets across all AWS accounts and regions can have the same name



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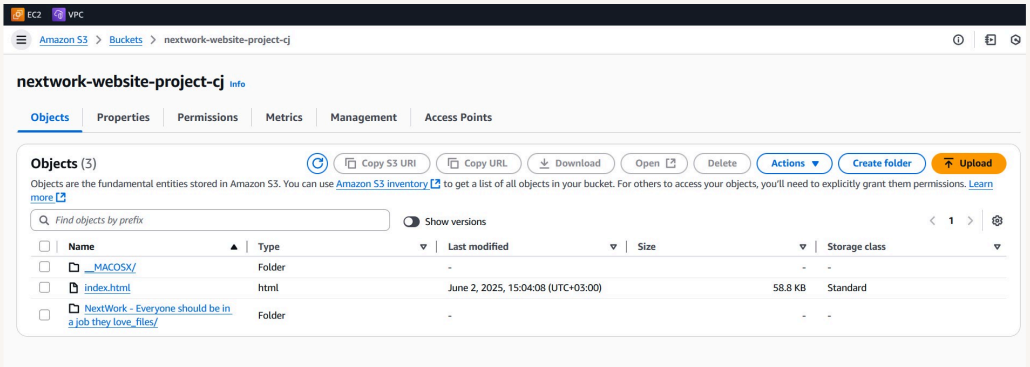
Upload Website Files to S3

index.html and image assets

I uploaded two files to my S3 bucket: index.html and a folder containing additional website files. These files make up the content and structure of my static website.

Both files are necessary for this project as...index.html is the structure of the website while the folders carries the images and styles



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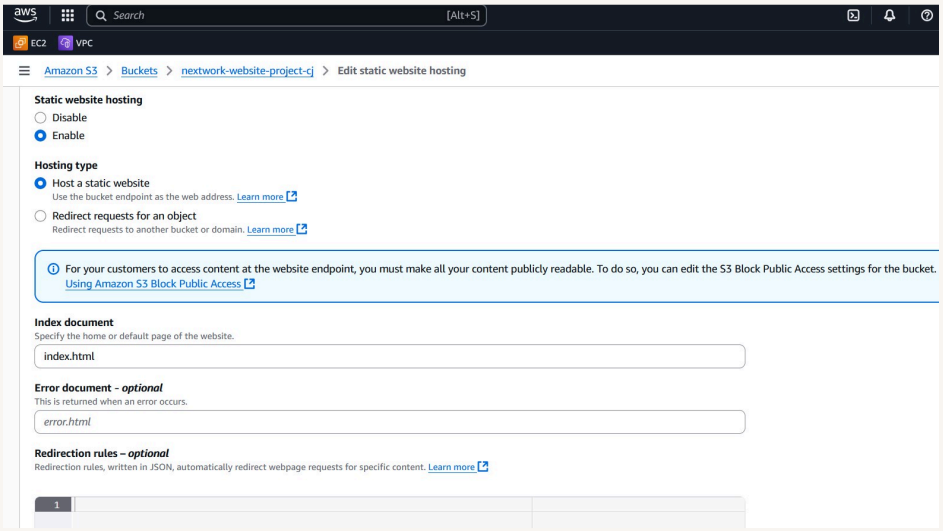
Static Website Hosting on S3

Website hosting means...it means making your website accessible to people on the internet.

To enable website hosting with my S3 bucket, I...will navigate to the bucet properties and then enable the static web hosting and setting up the index page

An Access Control List (ACL) is a set of rules that determines who can access a resource (such as an S3 bucket or object) and what actions they are allowed to perform (like read, write, or full control).



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Bucket Endpoints

Once static website is enabled, S3 produces a bucket endpoint URL, which is... http://nextwork-website-project-cj.s3-website.af-south-1.amazonaws.com/

When I first visited the bucket endpoint URL, I saw... 403 status code meaning am not authorized to view the bucket The reason for this error was... the buckets is visible but the contents of the bucket are made private by default for security

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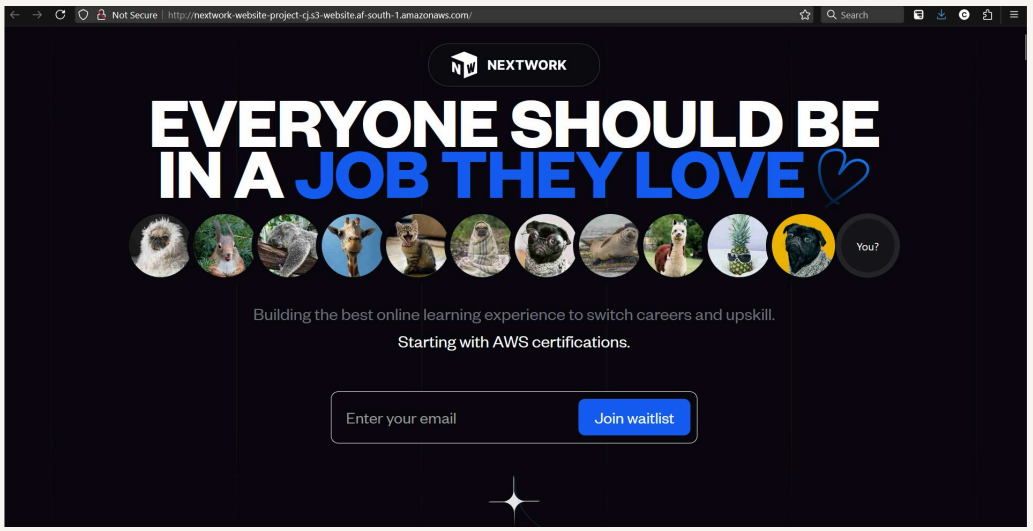
Success!

To resolve this 403 Forbidden error, I...made the bucket objects public using ACL



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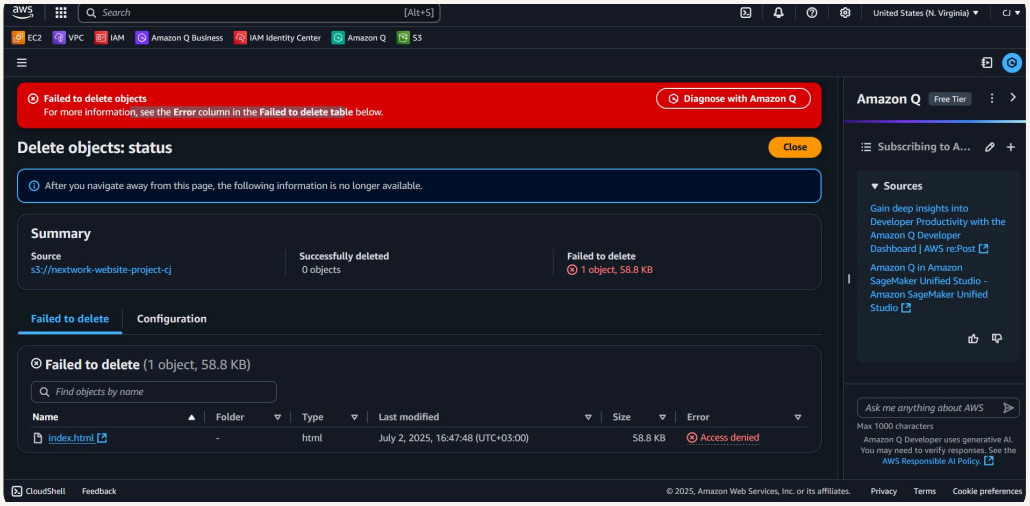
Bucket Policies

An alternative to ACLs are bucket policies, which are JSON documents attached to an S3 bucket that define who can access the bucket and what actions they are allowed to perform. The benefit of using bucket policies is that they allow centralized, fine-grained control over permissions for all objects in the bucket. They make it easier to manage access for multiple users or entire groups without having to set permissions on each object individually. While ACLs are useful for setting simple, object-level permissions (like making a single file public), they become harder to manage when you have many files or complex access requirements. That's why bucket policies are generally preferred for controlling access at scale.

My bucket policy denies the s3:DeleteObject action for everyone on all objects in my bucket. This protects my website files from being accidentally or intentionally deleted by unauthorized users. I tested this by trying to delete the index.html file using an IAM user without owner permissions. I saw that the delete action was blocked and an Access Denied error appeared, confirming that the policy works as expected.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[Alt+S]
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Amazon Q
S3
Failed to delete objects
For more information, see the Error column in the Failed to delete table below.
Diagnose with Amazon Q
Delete objects: status
Close
After you navigate away from this page, the following information is no longer available.
Summary
Source
s3://nextwork-website-project-cj
Successfully deleted
0 objects
Failed to delete
1 object, 58.8 KB
Failed to delete
Configuration
Failed to delete (1 object, 58.8 KB)
Find objects by name
Name
Folder
Type
Last modified
Size
Error
index.html
-
html
July 2, 2025, 16:47:48 (UTC+03:00)
58.8 KB
Access denied
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