

Static Website Hosting on AWS S3

Project Overview

This project creates a personal portfolio website hosted entirely on AWS S3. It shows how you can deploy a static website without the need for traditional web servers.

What You'll Build

- **Portfolio Website** - A personal website using HTML/CSS templates
- **Cloud Storage** - S3 bucket configured to serve web content
- **Public Access** - Security settings to make your content accessible on the web

Architecture Overview

This solution uses these AWS microservices:

- **S3 (Simple Storage Service)** hosts all website files and serves to visitors
- **IAM Policies** control access to your website files
- **CloudFront** (optional) can be added for global content delivery

Prerequisites

Software Requirements

- Web browser to access AWS Console and test your website
- Text editor to modify HTML files (Notepad, VS Code, etc.)
- Portfolio template files (provided in tutorial)

Cost

- S3 Standard Storage: ~\$0.023/GB-month
- Data Transfer: First 100GB/month out to internet is ~\$0.09/GB
- Should qualify for AWS Free Tier (12 months)

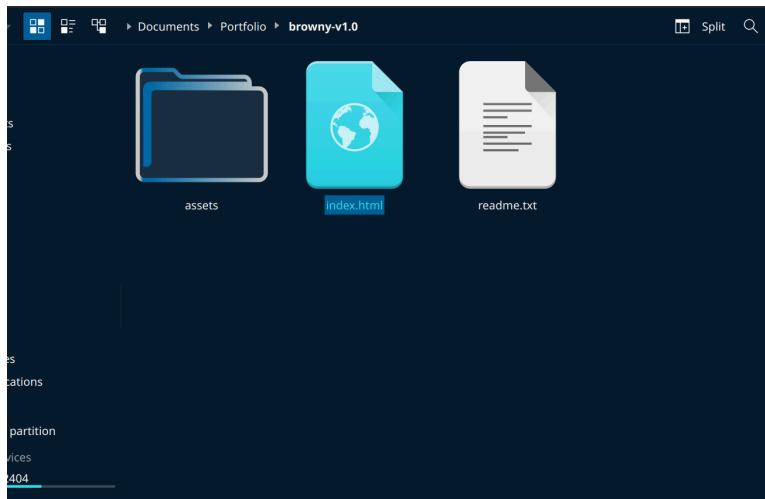
Knowledge

- Basic understanding of HTML/CSS
- Familiarity with file structures
- No prior AWS experience required

Project Start

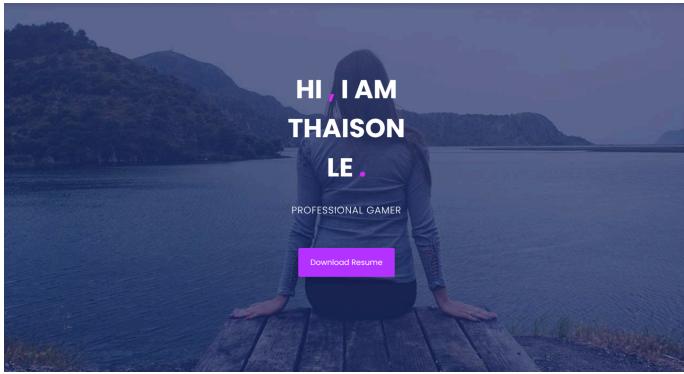
Making the website

- 1) Find the index.html for your selected portfolio and double click to open it



2) Observe it, and find parts you like and don't like

3) Edit index.html with your editor and add in your name and details, remove parts you don't like



```
<!--welcome-hero start -->
<section id="welcome-hero" class="welcome-hero">
  <div class="container">
    <div class="row">
      <div class="col-md-12 text-center">
        <div class="header-text">
          <h2>hi <span>, </span> i am <br> Thaison <br> Le <span>. </span> </h2>
          <p>Professional Gamer </p>
          <a href="assets/download/brownney.txt" download>download resume</a>
        </div><!-- /.header-text-->
      </div><!-- /.col-->
    </div><!-- /.row-->
  </div><!-- /.container-->
</section><!-- .welcome-hero-->
<!--welcome-hero end -->
```

Make the AWS Account

TBD, don't know how CPath system will work

Make the S3 Bucket

1) Go to dashboard(Should log in to it, or else if not click on top left logo)

The screenshot shows the AWS Console Home page. At the top, there's a search bar and navigation links for United States (Ohio) and K12ThaisonAWSCourse. Below the header, there are several sections:

- Recently visited**: Shows a cube icon and a message "No recently visited services". Buttons for EC2, S3, Aurora and RDS, and Lambda are present.
- Applications**: Shows 0 applications. A "Create application" button is available.
- Welcome to AWS**: Includes "Getting started with AWS" (with a rocket icon) and "Training and certification" (with a document icon).
- AWS Health**: Shows 0 open issues (Past 7 days), 0 scheduled changes (Upcoming and past 7 days), and 0 other notifications (Past 7 days).
- Cost and usage**: Shows a bar chart icon and a message "Data unavailable".

At the bottom right, there's a "Go to myApplications" link.

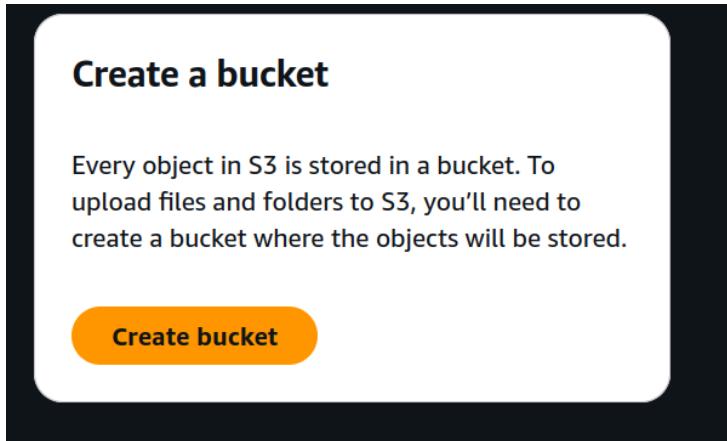
2) Look up S3

The screenshot shows the AWS Services search results for "s3". The search bar at the top contains "s3". Below it, the "Services" section is displayed, showing two items:

- S3**: Scalable Storage in the Cloud. It has a green bucket icon and a star icon.
- S3 Glacier**: It has a green snowflake icon and a star icon.

On the left, there's a sidebar with links: Services (selected), Features, Resources (New), Documentation, and Knowledge articles.

3) Create bucket



4) Name bucket, and enable public access. Name must be unique across all users

The screenshot shows the 'General configuration' section of the AWS S3 Bucket Configuration page. It includes fields for 'AWS Region' (set to 'US East (Ohio) us-east-2'), 'Bucket type' (set to 'General purpose'), 'Bucket name' (set to 'myportfoliobucket-thaileaf'), and 'Copy settings from existing bucket - optional' (with a 'Choose bucket' button). The 'General purpose' bucket type is highlighted with a blue border. The 'Bucket name' field has a red border. A note at the bottom says 'Format: s3://bucket/prefix'.

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**
Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.
- Block public access to buckets and objects granted through new access control lists (ACLs)**
S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.
- Block public access to buckets and objects granted through any access control lists (ACLs)**
S3 will ignore all ACLs that grant public access to buckets and objects.
- Block public access to buckets and objects granted through new public bucket or access point policies**
S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.
- Block public and cross-account access to buckets and objects through any public bucket or access point policies**
S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

⚠️ 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.

5) Access bucket

The screenshot shows the AWS S3 console interface. At the top, there are two tabs: "General purpose buckets" (which is selected) and "Directory buckets". Below the tabs, a header bar includes "General purpose buckets (1)" with an "Info" button and "All AWS Regions" dropdown, along with "Copy ARN", "Empty", "Delete", and "Create bucket" buttons. A search bar labeled "Find buckets by name" is present. The main content area displays a table with one row of data:

Name	AWS Region	IAM Access Analyzer	Creation date
myportfoliobucket-thaileaf	US East (Ohio) us-east-2	View analyzer for us-east-2	March 4, 2025, 16:17:10 (UTC-05:00)

6) Upload files. Then upload portfolio folder



hers to access your objects,

Add folder



Then press upload button.

Should see this on completion

⌚ Upload succeeded
For more information, see the [Files and folders](#) table.

Summary

Destination	Succeeded	Failed
s3://myportfoliobucket-thaileaf	⌚ 57 files, 2.5 MB (100.00%)	⌚ 0 files, 0 B (0%)

[Files and folders](#) [Configuration](#)

Files and folders (57 total, 2.5 MB)

Name	Folder	Type	Size	Status	Error
readme.txt	browny-v1.0/	text/plain	859.0 B	⌚ Succeeded	-
glyphicon-halfings-reg...	browny-v1.0/assets/f...	font/woff2	17.6 KB	⌚ Succeeded	-
glyphicon-halfings-reg...	browny-v1.0/assets/f...	font/woff	22.9 KB	⌚ Succeeded	-
glyphicon-halfings-reg...	browny-v1.0/assets/f...	font/ttf	44.3 KB	⌚ Succeeded	-
Linearicons-Free.svg	browny-v1.0/assets/f...	image/svg+xml	201.2 KB	⌚ Succeeded	-
fontawesome-webfont.s...	browny-v1.0/assets/f...	font/woff2	75.4 KB	⌚ Succeeded	-
glyphicon-halfings-reg...	browny-v1.0/assets/f...	application/vnd.ms-f...	19.7 KB	⌚ Succeeded	-
fontawesome-webfont.s...	browny-v1.0/assets/f...	image/svg+xml	434.0 KB	⌚ Succeeded	-
glyphicon-halfings-reg...	browny-v1.0/assets/f...	image/svg+xml	106.2 KB	⌚ Succeeded	-
Linearicons-Free.woff	browny-v1.0/assets/f...	font/woff	54.4 KB	⌚ Succeeded	-

7) Go back to bucket/ open the properties Tab

click on the destination link to go back

⌚ **Upload succeeded**

For more information, see the [Files and folders](#) table.

Summary

Destination

<s3://myportfoliobucket-thaileaf>

Succe

⌚ 57

Files and folders

Configuration

8) Try accessing website

Find your index.html and click on copy url, then paste it in a different tab. What happens? You should see its forbidden. This is because even though we disabled block public access, we didn't **enable** public access with an access policy. We will do that later.

Now press the Open button. What do you see now? You see we can access the index.html fine, but there's no graphics. This is because you are only accessing the html, not the other css for designs. We will fix this by enabling static website hosting to allow the index.html to access the other files.

The screenshot shows the AWS S3 console interface. At the top, there are buttons for Copy S3 URI, Copy URL, Download, Open, Delete, Actions, Create folder, and Upload. Below this is a search bar labeled 'Find objects by prefix'. A table lists three objects:

Name	Type	Last modified	Size	Storage class
assets/	Folder	-	-	-
<input checked="" type="checkbox"/> index.html	html	March 4, 2025, 16:25:36 (UTC-05:00)	34.7 KB	Standard
<input type="checkbox"/> readme.txt	txt	March 4, 2025, 16:25:29 (UTC-05:00)	859.0 B	Standard

9) Move files to top layer

Move all files to the top layer of the bucket. This is because index.html needs to be at the top layer

The screenshot shows the AWS S3 console interface with the 'Actions' menu open for three selected objects: assets/, index.html, and readme.txt. The 'Move' option is highlighted. The menu also includes options like Download as, Share with a presigned URL, Calculate total size, Copy, Initiate restore, Query with S3 Select, Edit actions, Rename object, Edit storage class, Edit server-side encryption, Edit metadata, Edit tags, and Make public using ACL.

Click on the browse S3 to pick which bucket

Browse S3

Click on your bucket and then press choose destination

Destination

[S3 Buckets](#) > [myportfoliobucket-thaileaf](#) > [browny-v1.0/](#)

Objects (3)

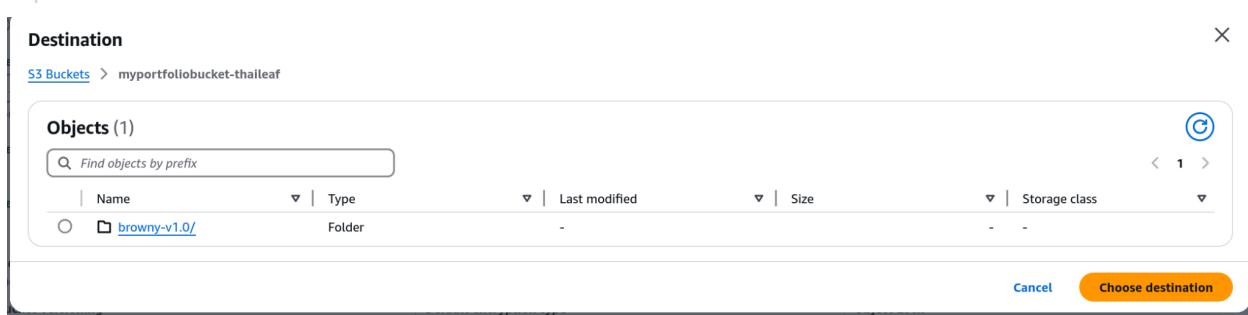
Destination

S3 Buckets > myportfoliobucket-thaileaf

Objects (1)

Name	Type	Last modified	Size	Storage class
browny-v1.0/	Folder	-	-	-

Cancel Choose destination



You should see this now in your destination

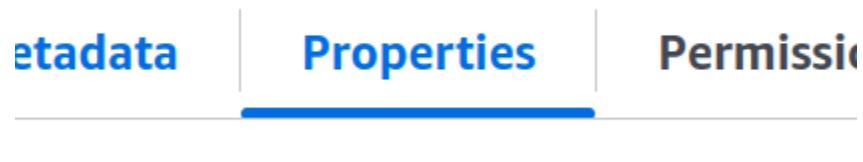
Destination

s3://myportfoliobucket-thaileaf

Format: s3://<bucket-name></optional-prefix-with-path/>

10) Set up Static Website Properties

Go to properties tab



Scroll down and click on Edit on static website hosting

A screenshot of the 'Edit static website hosting' configuration page. It shows the 'Static website hosting' section with the following details:

- Static website hosting:** Use this bucket to host a website or redirect requests. [Learn more](#)
- We recommend using AWS Amplify Hosting for static website hosting:** Deploy a fast, secure, and reliable website quickly with AWS Amplify Hosting. Learn more about [Amplify Hosting](#) or [View your existing Amplify apps](#).
- S3 static website hosting:** Disabled
- Edit** button
- Create Amplify app** button

Enable static website hosting, then put index.html for the index document.

A screenshot of the 'Edit static website hosting' configuration page. It shows the 'Static website hosting' section with the following details:

- Static website hosting:** Use this bucket to host a website or redirect requests. [Learn more](#)
- Static website hosting:** Enable
- Hosting type:** Host a static website
- 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](#)

Try going to your endpoint url. What do you see? Still forbidden

Static website hosting

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

 We recommend using AWS Amplify Hosting for static website hosting

Deploy a fast, secure, and reliable website quickly with AWS Amplify Hosting. Learn more about [Amplify Hosting](#)  or [View your site](#) 

S3 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://myportfoliobucket-thaileaf.s3-website.us-east-2.amazonaws.com> 

11) Set up bucket policies

Go to permissions

myportfoliobucket-thaileaf [Info](#)

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

Edit bucket policies

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](#)

[Edit](#) [Delete](#)

No policy to display.

[Copy](#)

Copy paste this into bucket policy. Make sure you change bucket name to your bucket name.

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

Edit bucket policy Info

Bucket policy

[Policy example](#)

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:::myportfoliobucket-thaileaf

Policy

```
1 ▼ {
2     "Version": "2012-10-17",
3     "Statement": [
4         {
5             "Sid": "PublicReadGetObject",
6             "Effect": "Allow",
7             "Principal": "*",
8             "Action": [
9                 "s3:GetObject"
10            ],
11            "Resource": [
12                "arn:aws:s3:::myportfoliobucket-thaileaf/*"
13            ]
14        }
15    ]
16}
17
```

[Edit statement](#)
[PublicReadGetObject](#)

[Add action](#)

[Choose a service](#)
 Filter

[Included services](#)
[S3](#)

[Available services](#)
[AI Operations](#)
[AMP](#)
[API Gateways](#)

Now try the endpoint again.

Static website hosting

[Edit](#)

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

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Deploy a fast, secure, and reliable website quickly with AWS Amplify Hosting. Learn more about [Amplify Hosting](#) or [View your existing Amplify apps](#)

[Create Amplify app](#)

S3 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://myportfoliobucket-thaileaf.s3-website.us-east-2.amazonaws.com>

Congratulations! You've set up a static website on AWS