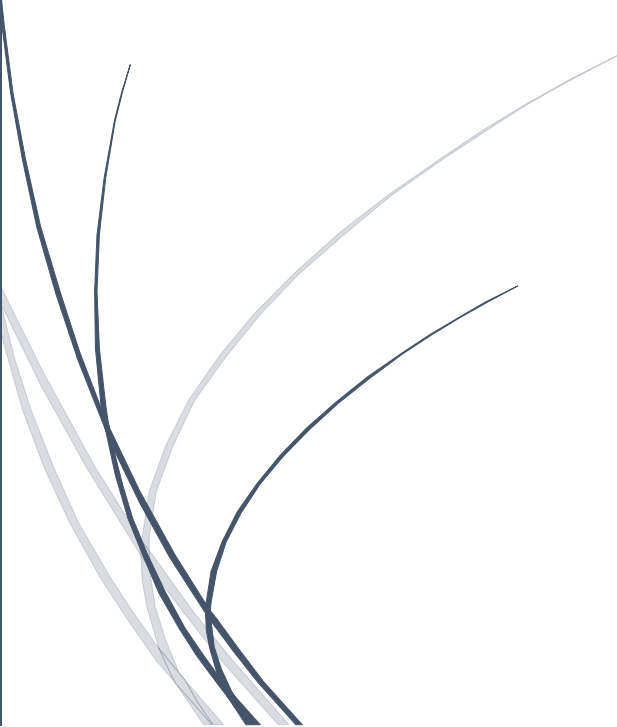




“Deploy Static Website on AWS” August 2022

# Advanced Cloud DevOps

## Nanodegree Program



Prepared by  
**Aya RABIH Mostafa**

## INFORMATION FOR USER

- NAME: Aya Rabih Mostafa
- Project : Deploy Static Website on AWS
- USER: 598824656916
- LINK PROJECT: <https://d3g7c4ah6f8c9c.cloudfront.net/>

## PROJECT OVERVIEW

The cloud is perfect for hosting static websites that only include HTML, CSS, and JavaScript files that require no server-side processing. The whole project has two major intentions to implement:

Hosting a static website on S3 and

Accessing the cached website pages using Cloud Front content delivery network (CDN) service. Recall that Cloud Front offers low latency and high transfer speeds during website rendering.

Note that Static website hosting essentially requires a public bucket, whereas the Cloud Front can work with public and private buckets.

➤ In this project, you will deploy a static website to AWS by performing the following steps:

1. You will create a public S3 bucket and upload the website files to your bucket.
2. You will configure the bucket for website hosting and secure it using IAM policies.
3. You will speed up content delivery using AWS's content distribution network service, Cloud Front.
4. You will access your website in a browser using the unique Cloud Front endpoint.

# 1) You will create a public S3 bucket and upload the website files to your bucket.

➤ Click create bucket

The screenshot shows the Amazon S3 console interface. At the top, there's a navigation bar with the AWS logo, a 'Services' menu, a search bar, and a user profile. Below the navigation bar, the main content area is titled 'Storage' and 'Amazon S3'. It features a large heading 'Store and retrieve any amount of data from anywhere' and a subheading 'Amazon S3 is an object storage service that offers industry-leading scalability, data availability, security, and performance.' To the right of this main content, there's a 'Create a bucket' section with a yellow border and an orange 'Create bucket' button. Below this, there's a 'Pricing' section with text explaining that there are no minimum fees and prices are based on usage and location. It also includes links to 'Estimate your monthly bill using the AWS Simple Monthly Calculator' and 'View pricing details'. At the bottom, there's a 'How it works' section with a video player titled 'Introduction to Amazon S3' and a 'Copy link' button.

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

[Introduction to Amazon S3](#) [Copy link](#)

aws

- Click create bucket name
- Click create Region you will create your bucket there
- Click create Acls disabled

Amazon S3 > Buckets > Create bucket

## Create bucket [Info](#)

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

### General configuration

**Bucket name**

my-598824656916 bucket

Bucket name must be globally unique and must not contain spaces or uppercase letters. [See rules for bucket naming](#)

**AWS Region**

US East (Ohio) us-east-2

Copy settings from existing bucket - *optional*  
Only the bucket settings in the following configuration are copied.

[Choose bucket](#)

### Object Ownership [Info](#)

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

- Click to remove block all public access
- Click to sure that you want be public

### 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.

➤ Click create bucket

**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**

Track storage cost or other criteria by tagging your bucket. [Learn more](#)

No tags associated with this bucket.

Add tag

**Default encryption**

Automatically encrypt new objects stored in this bucket. [Learn more](#)

Server-side encryption

☒ Disable

☐ Enable

**▼ Advanced settings**

**Object Lock**

Store objects using a write-once-read-many (WORM) model to help you prevent objects from being deleted or overwritten for a fixed amount of time or indefinitely. [Learn more](#)

☒ Disable

☐ Enable

Permanently allows objects in this bucket to be locked. Additional Object Lock configuration is required in bucket details after bucket creation to protect objects in this bucket from being deleted or overwritten.

① Object Lock works only in versioned buckets. Enabling Object Lock automatically enables Bucket Versioning.

① After creating the bucket you can upload files and folders to the bucket, and configure additional bucket settings.

Cancel

Create bucket

## ➤ Now we create bucket

✔ Successfully created bucket "my-598824656916-bucket"  
To upload files and folders, or to configure additional bucket settings choose [View details](#).

ℹ Follow security best practices for S3. [Learn more](#)

Amazon S3 > Buckets

▶ Account snapshot  
Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

View Storage Lens dashboard

Buckets (1) [Info](#)

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

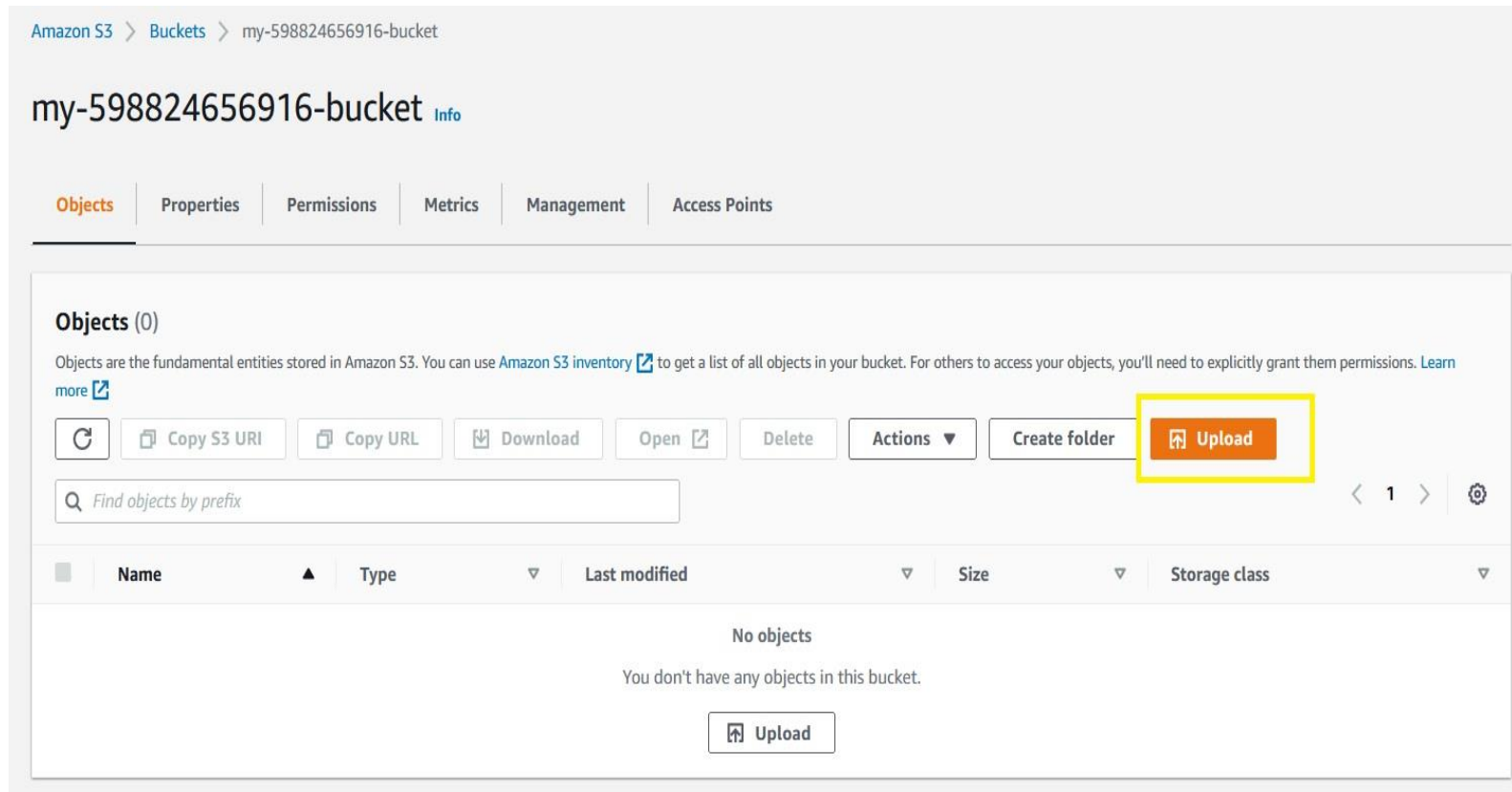
< 1 > ⚙

	Name ▲	AWS Region ▼	Access ▼	Creation date ▼
<input type="radio"/>	my-598824656916-bucket	US East (Ohio) us-east-2	Objects can be public	September 6, 2022, 01:42:44 (UTC+02:00)



## 2. You will configure the bucket for website hosting and secure it using IAM policies

### ➤ Upload files to S3 Bucket



- Click "Add files" to upload the index.html file, and click "Add folder" to upload the css, img, and vendor folders.

**Upload** [Info](#)

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose **Add files**, or **Add folders**.

**Files and folders (0)** Remove Add files Add folder

All files and folders in this table will be uploaded.

Find by name

	Name	Folder	Type	Size
No files or folders				
You have not chosen any files or folders to upload.				

الاسم	تاريخ آخر تعديل	حجم الملف	
MACOSX__	-	KB 342	📁
css	-	KB 15	📁
img	-	KB 418	📁
vendor	-	MB 14	📁
index.html	2019/05/18	KB 6	📄
README.txt	2019/05/18	382 بايت	📄

## ➤ Now update files to S3 Bucket

### Upload Info

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose **Add files**, or **Add folders**.

**Files and folders** (1631 Total, 14.7 MB)

All files and folders in this table will be uploaded.

< 1 2 3 4 5 6 7 ... 164 >

<input type="checkbox"/>	Name	Folder	Type	Size
<input type="checkbox"/>	.DS_Store	vendor/	-	6.0 KB
<input type="checkbox"/>	.DS_Store	vendor/bootstrap/	-	6.0 KB
<input type="checkbox"/>	.DS_Store	img/	-	6.0 KB
<input type="checkbox"/>	500px.svg	vendor/fontawesome-free/svg/brands/	image/svg+xml	1.2 KB
<input type="checkbox"/>	LICENSE.txt	vendor/fontawesome-free/	text/plain	1.5 KB
<input type="checkbox"/>	_animated.less	vendor/fontawesome-free/less/	-	297.0 B
<input type="checkbox"/>	_animated.scss	vendor/fontawesome-free/scss/	-	300.0 B
<input type="checkbox"/>	_bordered-pulled.less	vendor/fontawesome-free/less/	-	422.0 B
<input type="checkbox"/>	_bordered-pulled.scss	vendor/fontawesome-free/scss/	-	428.0 B
<input type="checkbox"/>	_core.less	vendor/fontawesome-free/less/	-	291.0 B

#### Destination

Destination

s3://my-598824656916-bucket

► **Destination details**

Bucket settings that impact new objects stored in the specified destination.

► **Permissions**

Grant public access and access to other AWS accounts.

► **Properties**

Specify storage class, encryption settings, tags, and more.

Cancel **Upload**

➤ Now complete update files to S3 Bucket

Upload succeeded  
View details below

Upload: status

Close

The information below will no longer be available after you navigate away from this page.

Summary

Destination  
s3://my-598824656916-bucket

Succeeded  
1631 files, 14.7 MB (100.00%)

Failed  
0 files, 0 B (0%)

Files and folders

Configuration

Files and folders (1631 Total, 14.7 MB)

Find by name

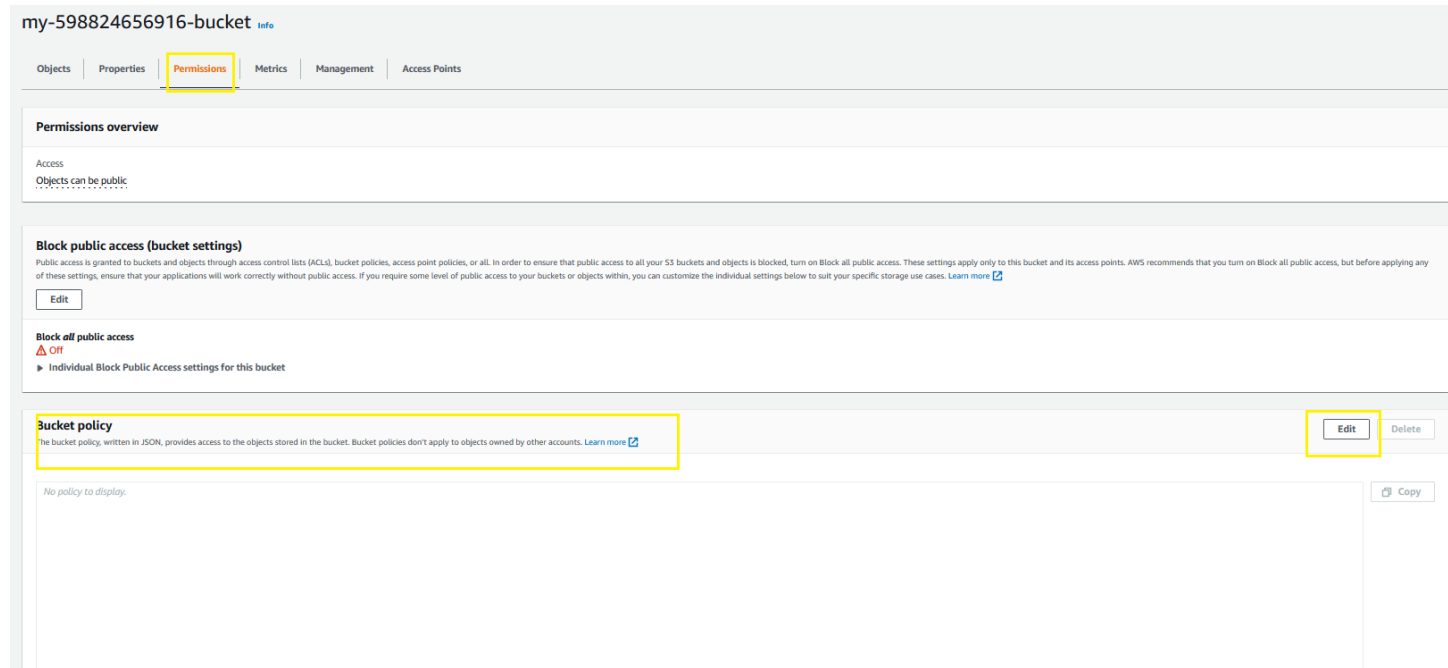
< 1 2 3 4 5 6 7 ... 164 >

Name	Folder	Type	Size	Status
.DS_Store	vendor/	-	6.0 KB	Success
.DS_Store	vendor/bootstrap/	-	6.0 KB	Success
.DS_Store	img/	-	6.0 KB	Success
500px.svg	vendor/fontawesome-free/svgs/brands/	image/svg+xml	1.2 KB	Success
LICENSE.txt	vendor/fontawesome-free/	text/plain	1.5 KB	Success
_animated.less	vendor/fontawesome-free/less/	-	297.0 B	Success
_animated.scss	vendor/fontawesome-free/scss/	-	300.0 B	Success
_bordered-pulled.less	vendor/fontawesome-free/less/	-	422.0 B	Success
_bordered-pulled.scss	vendor/fontawesome-free/scss/	-	428.0 B	Success
_core.less	vendor/fontawesome-free/less/	-	291.0 B	Success

< >

11 | Page

## 1. Click on the “Permissions” tab.



## 2. The “Bucket Policy” section shows it is empty. Click on the Edit button.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "AddPerm",
      "Effect": "Allow",
      "Principal": "*",
      "Action": ["s3:GetObject"],
      "Resource": ["arn:aws:s3:: my-598824656916-bucket/*"]
    }
  ]
}
```

3- Enter the following bucket policy replacing my-598824656916-bucket with the name of your bucket and click “Save”.

Bucket ARN

arn:aws:s3::my-598824656916-bucket

Policy

```
1 {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Sid": "AddPerm",
6       "Effect": "Allow",
7       "Principal": "*",
8       "Action": ["s3:GetObject"],
9       "Resource": ["arn:aws:s3::my-598824656916-bucket/*"]
10    }
11  ]
12 }
```

+ Add new statement

JSON Ln 12, Col 2

Edit statement

Select a statement

Select an existing statement in the policy or add a new statement.

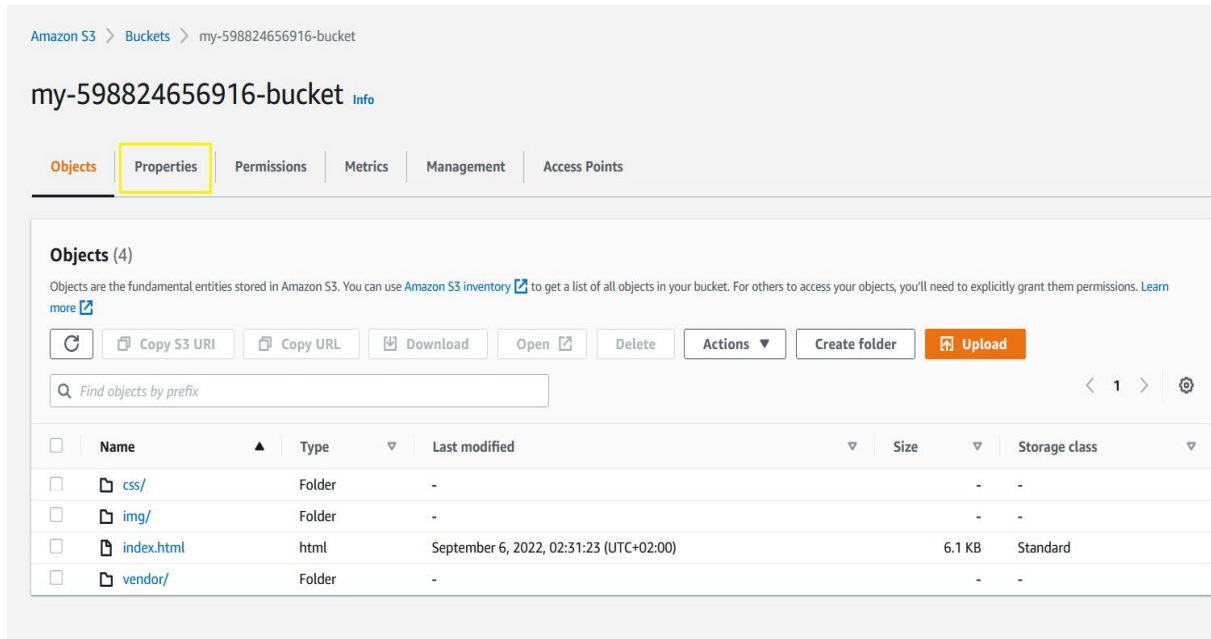
+ Add new statement

Cancel

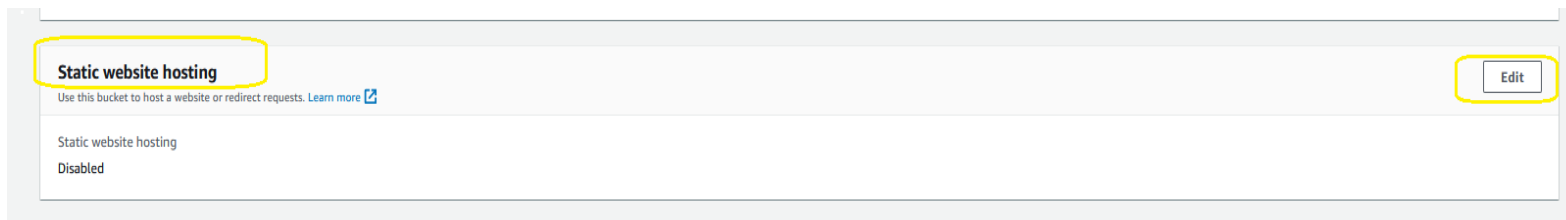
Save changes

## CONFIGURE S3 BUCKET

1. Go to the Properties tab and then scroll down to edit the Static website hosting section



2. Click on the “Edit” button to see the Edit static website hosting screen.



3. Now, enable the Static website hosting, and provide the default home page and error page for your website.

### 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](#)

**i** 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.

index.html

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

index.html

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

1



4. Check the **Static website hosting** section again under the **Properties** tab. You must now be able to view the website endpoint as shown below:

The screenshot displays the AWS S3 console interface. At the top, a green notification bar states "Successfully edited static website hosting." Below this, the "Object Lock" section is shown with a status of "Disabled" and a message indicating that Amazon S3 currently does not support enabling Object Lock after a bucket has been created. The "Requester pays" section is also shown with a status of "Disabled". The "Static website hosting" section is highlighted with a yellow border and shows a status of "Enabled". It includes a "Bucket hosting" type and a "Bucket website endpoint" which is highlighted with a red border and contains the URL "http://my-598824656916-bucket.s3-website-us-east-2.amazonaws.com".

Successfully edited static website hosting.

Object Lock

Store objects using a write-once-read-many (WORM) model to help you prevent objects from being deleted or overwritten for a fixed amount of time or indefinitely. [Learn more](#)

Object Lock

Disabled

Amazon S3 currently does not support enabling Object Lock after a bucket has been created. To enable Object Lock for this bucket, contact [Customer Support](#)

Requester pays

When enabled, the requester pays for requests and data transfer costs, and anonymous access to this bucket is disabled. [Learn more](#)

Requester pays

Disabled

Static website hosting

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

Static website hosting

Enabled

Hosting type

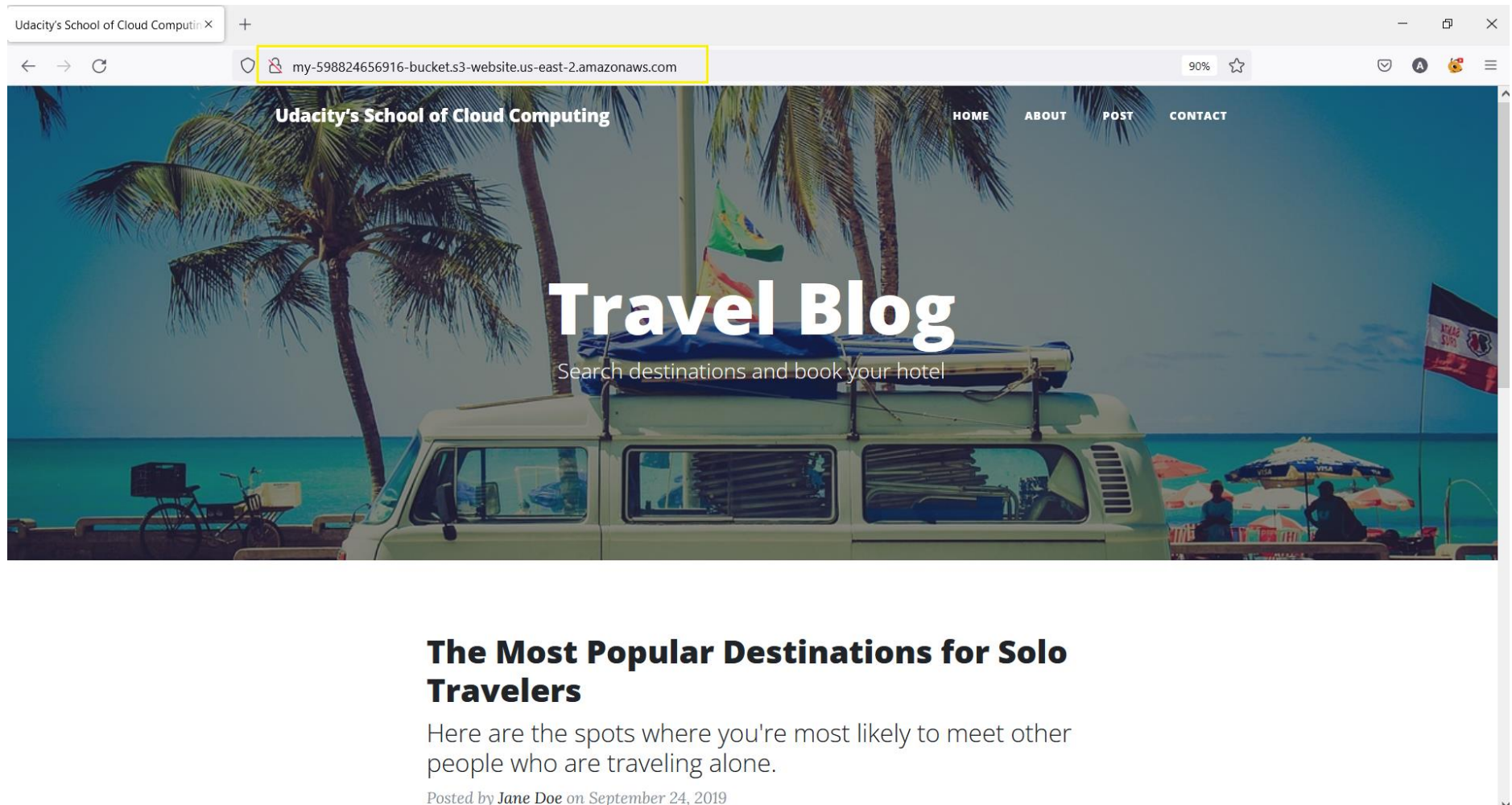
Bucket hosting

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://my-598824656916-bucket.s3-website-us-east-2.amazonaws.com>

## 5. Copy the website endpoint for future use (WE GIT IT )



## Distribute Website via CloudFront

1. Select “cloud front”
2. Click “Create Distribution”.

The screenshot shows the Amazon CloudFront console page. At the top is the AWS navigation bar with the 'Services' menu, a search bar, and user information. Below the navigation bar is a sidebar with a hamburger menu icon and a list of services including EC2, S3, and IAM. The main content area has a dark blue header with the text 'Networking & Content Delivery'. The main heading is 'Amazon CloudFront' followed by the subheading 'Securely deliver content with low latency and high transfer speeds'. Below this is a brief description of the service. To the right of the main heading is a white box titled 'Get started with CloudFront' containing a description of the service and a prominent orange button labeled 'Create a CloudFront distribution'. Below the main heading is a section titled 'Benefits and features' which contains two columns of text. The first column is titled 'Reduce latency' and describes the global network of PoPs. The second column is titled 'Improve security' and describes the integration with AWS Shield Standard. To the right of the 'Benefits and features' section is a white box titled 'AWS Free Tier' which lists the free usage limits for the service.

aws Services Search for services, features, blogs, docs, and more [Alt+S] Global voclabs/user2110435=56dae268-77cd-7

EC2 S3 IAM

Networking & Content Delivery

# Amazon CloudFront

## Securely deliver content with low latency and high transfer speeds

Amazon CloudFront is a fast content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to customers globally with low latency and high transfer speeds.

### Get started with CloudFront

Enable accelerated, reliable and secure content delivery for Amazon S3 buckets, Application Load Balancers, Amazon API Gateway APIs, and more in 5 minutes or less.

Create a CloudFront distribution

### Benefits and features

#### Reduce latency

The CloudFront network has 225+ points of presence (PoPs) that are connected by fully redundant, parallel 100 GbE fiber delivering ultra-low latency to end users.

#### Improve security

Use CloudFront for perimeter protection, traffic encryption, and access controls. AWS Shield Standard defends traffic transmitted through CloudFront.

### AWS Free Tier

1 TB of data transfer out
10,000,000 HTTP or HTTPS requests
2,000,000 CloudFront Function invocations
Each month, always free

### 3. Configure distribution

#### Create distribution

##### Origin

Don't select the bucket from the dropdown list. Paste the Static website hosting endpoint of the form `http://my-598824656916-bucket.s3-website.us-east-2.amazonaws.com/`

##### Origin domain

Choose an AWS origin, or enter your origin's domain name.

Q my-598824656916-bucket.s3-website.us-east-2.amazonaws.com X

##### Origin path - optional [Info](#)

Enter a URL path to append to the origin domain name for origin requests.

Enter the origin path

##### Name

Enter a name for this origin.

my-598824656916-bucket.s3-website.us-east-2.amazonaws.com

##### Add custom header - optional

CloudFront includes this header in all requests that it sends to your origin.

Add header

##### Enable Origin Shield [Info](#)

Origin Shield is an additional caching layer that can help reduce the load on your origin and help protect its availability.

☒ No

☐ Yes

► Additional settings

**Default cache behavior**Path pattern [Info](#)

Default (\*)

Compress objects automatically [Info](#)

- ☐ No  
☒ Yes

**Viewer**

Viewer protocol policy

- ☐ HTTP and HTTPS  
☒ Redirect HTTP to HTTPS  
☐ HTTPS only

Allowed HTTP methods

- ☒ GET, HEAD  
☐ GET, HEAD, OPTIONS  
☐ GET, HEAD, OPTIONS, PUT, POST, PATCH, DELETE

Restrict viewer access

If you restrict viewer access, viewers must use CloudFront signed URLs or signed cookies to access your content.

- ☒ No  
☐ Yes

**Cache key and origin requests**

We recommend using a cache policy and origin request policy to control the cache key and origin requests.

- ☒ Cache policy and origin request policy (recommended)  
☐ Legacy cache settings

Cache policy

Choose an existing cache policy or create a new one.

CachingOptimized

Default policy when CF compression is enabled

[Create policy](#) [View policy](#)

Origin request policy - optional

Choose an existing origin request policy or create a new one.

## 5. Click distribution

### Settings

**Price class** [Info](#)  
Choose the price class associated with the maximum price that you want to pay.

☒ Use all edge locations (best performance)

☐ Use only North America and Europe

☐ Use North America, Europe, Asia, Middle East, and Africa

**AWS WAF web ACL - optional**  
Choose the web ACL in AWS WAF to associate with this distribution.

Choose web ACL ▼

**Alternate domain name (CNAME) - optional**  
Add the custom domain names that you use in URLs for the files served by this distribution.

[Add item](#)

① To add a list of alternative domain names, use the [bulk editor](#).

**Custom SSL certificate - optional**  
Associate a certificate from AWS Certificate Manager. The certificate must be in the US East (N. Virginia) Region (us-east-1).

Choose certificate ▼ [Refresh](#)

[Request certificate](#) [↗](#)

**Supported HTTP versions**  
Add support for additional HTTP versions. HTTP/1.0 and HTTP/1.1 are supported by default.

☒ HTTP/2

☐ HTTP/3

**Default root object - optional**  
The object (file name) to return when a viewer requests the root URL (/) instead of a specific object.

**Standard logging**  
Get logs of viewer requests delivered to an Amazon S3 bucket.

☒ Off

☐ On

**IPv6**


☐ Off


☒ On

**Description - optional**

[Cancel](#) [Create distribution](#)

6. now all things is perfect distribution
7. get link cope and past in new tap

 Successfully created new distribution.

 Do you have 30 seconds to share your experience? [Help us improve CloudFront.](#)

CloudFront > Distributions > E2LTLHC6W1WDFR

## E2LTLHC6W1WDFR

General

Origins

Behaviors



Error pages

Geographic restrictions

Invalidations

Tags

### Details

Distribution domain name  d3g7c4ah6f8c9c.cloudfront.net	ARN  arn:aws:cloudfront::598824656916:distribution/E2LTLHC6W1WDFR	Last modified September 6, 2022 at 1:04:59 AM UTC
---	---	--

### Settings

Edit

Description -	Alternate domain names -	Standard logging Off
Price class Use all edge locations (best performance)		Cookie logging Off
Supported HTTP versions HTTP/2, HTTP/1.1, HTTP/1.0		Default root object -
AWS WAF -		

✓ NOW JOB DONE

<https://d3g7c4ah6f8c9c.cloudfront.net/>

