



OCTOBER 14, 2020

WORKFLOW DOCUMENTATION

DEPLOY A STATIC WEBSITE ON AWS

YARA AMR-ALLAH

UDACITY
Project 1

Cloud Fundamentals Project

The cloud is perfect for hosting static websites that only include HTML, CSS, and JavaScript files that require no server-side processing. In this project, you will deploy a static website to AWS. First, you will create a S3 bucket and upload the website files to your bucket. Next, you will configure the bucket for website hosting and secure it using IAM policies. Next, you will speed up content delivery using AWS' content distribution network service, CloudFront. Lastly, you will access your website in a browser using the unique CloudFront endpoint.

Prerequisites:

- AWS Account
- [Student-ready starter code](#)

Topics Covered:

- S3 bucket creation
- S3 bucket configuration
- Website distribution via CloudFront
- Access website via web browser

Dependencies

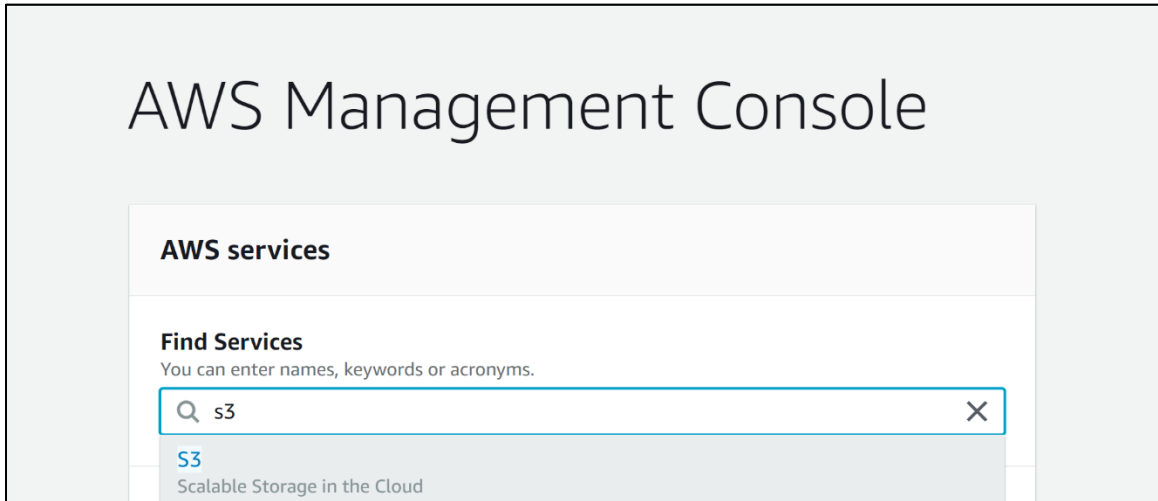
Cloud Services

- Amazon Web Services S3 - Resource hosting and deployments
- AWS CloudFront - CDN

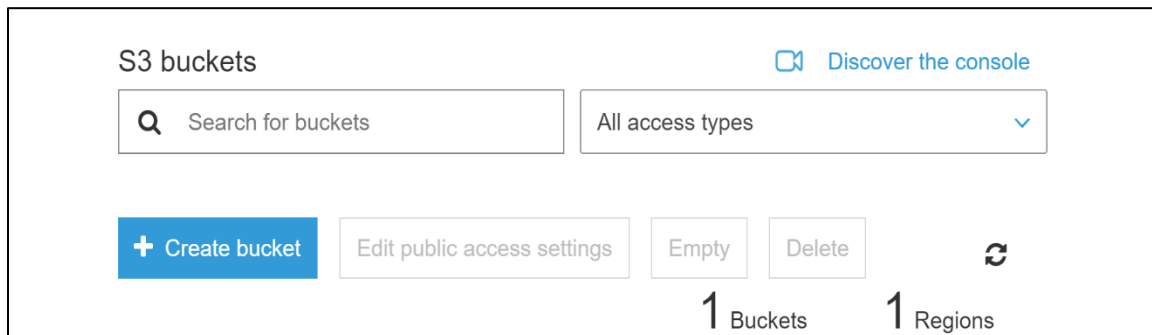
AWS Simple Storage Service

Create S3 Bucket

1. Navigate to the “AWS Management Console” page, type “S3” in the “Find Services” box and then select “S3”



2. The Amazon S3 dashboard displays. Click “Create bucket”




3. Enter a “Bucket name” and click “Next”. **Note:** Bucket names must be globally unique



4. Click “Next” again to skip over “Step 2: Configure Options”

- On “Step 3: Set Permissions”, uncheck “Block all public access”



Disabling Block all public access may result in this bucket and the objects within becoming public



AWS recommends that you block all public access to your bucket, unless public access is required for specific and verified use cases such as static website hosting.

☒ I acknowledge that the current settings may result in this bucket and the objects within becoming public

☐ **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.

- Click “Next” and click “Create bucket”.
- Once the bucket is created, click on the name of the bucket to open the bucket to the contents

	 <u>project-udacity-1</u>	Objects can be public	US East (Ohio)	Oct 14, 2020 12:10:17 PM GMT+0200
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Upload files to S3 Bucket

- Once the bucket is open to its contents, click the “Upload” button

project-udacity-1

Overview

Properties

Permissions

Management

Access points

Upload

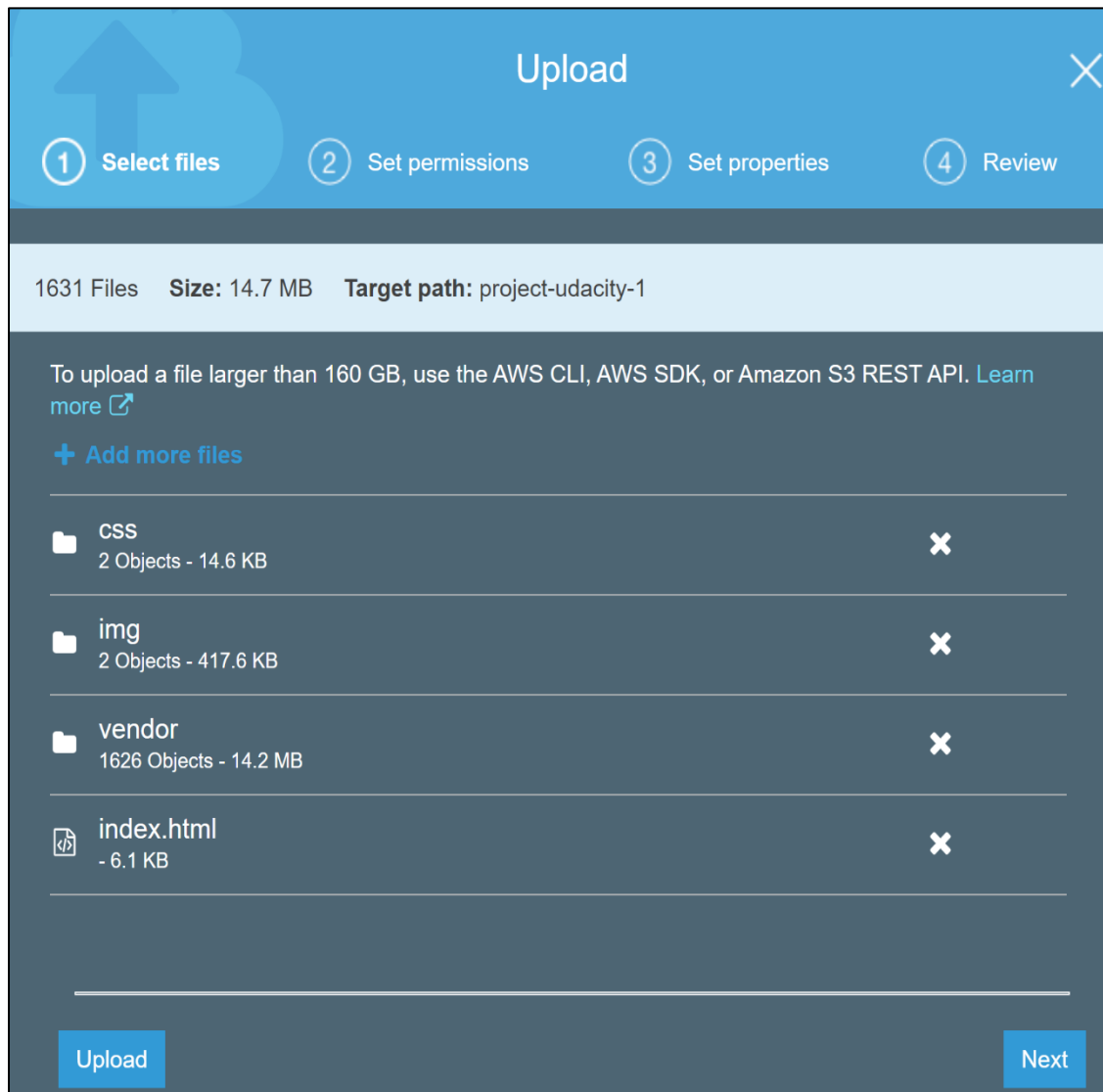
Create folder

Download

Actions

US East (Ohio)

- Click the “Add Files” button and drag and drop files and folders from your local computer to the S3 bucket and select “Upload”. Note: Upload the downloaded student-ready starter code files



Upload

Create folder

Download

Actions

US East (Ohio)

Viewing 1 to 4

<div><input type="checkbox"/></div>	<div>Name </div>	<div>Last modified </div>	<div>Size </div>	<div>Storage class </div>
<div><input type="checkbox"/></div>	<div><div></div><div>css</div></div>	<div>--</div>	<div>--</div>	<div>--</div>
<div><input type="checkbox"/></div>	<div><div></div><div>img</div></div>	<div>--</div>	<div>--</div>	<div>--</div>
<div><input type="checkbox"/></div>	<div><div></div><div>vendor</div></div>	<div>--</div>	<div>--</div>	<div>--</div>
<div><input type="checkbox"/></div>	<div><div></div><div>index.html</div></div>	<div>Oct 14, 2020 12:18:12 PM GMT+0200</div>	<div>6.1 KB</div>	<div>Standard</div>

Secure Bucket via IAM

1. Click on the “Permissions” tab.
2. Click on “Bucket Policy” and enter the bucket policy below replacing “your-website” with the name of your bucket and click “Save”

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

You will see warnings about making your bucket public, but this step is required for static website hosting.

Block public access


Access Control List

Object Ownership

Bucket Policy

Public

CORS configuration


This bucket has public access
 You have provided public access to this bucket. We highly recommend that you never grant any kind of public access to your S3 bucket.

Bucket policy editor ARN: arn:aws:s3::project-udacity-1
 Type to add a new policy or edit an existing policy in the text area below.

Delete

Cancel

Save

```

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

Configure S3 Bucket

1. Click on the "Properties" tab and then click on "Static website hosting"
2. Click on "Use this bucket to host a website"

3. For both “Index document” and “Error document”, enter “index.html” and click “Save”

Static website hosting

Endpoint : <http://project-udacity-1.s3-website.us-east-2.amazonaws.com>

☒ Use this bucket to host a website [Learn more](#)

Index document [i](#)

Error document [i](#)

Redirection rules (optional) [i](#)

☐ Redirect requests [Learn more](#)

☐ Disable website hosting

☒ Disabled

[Cancel](#) [Save](#)

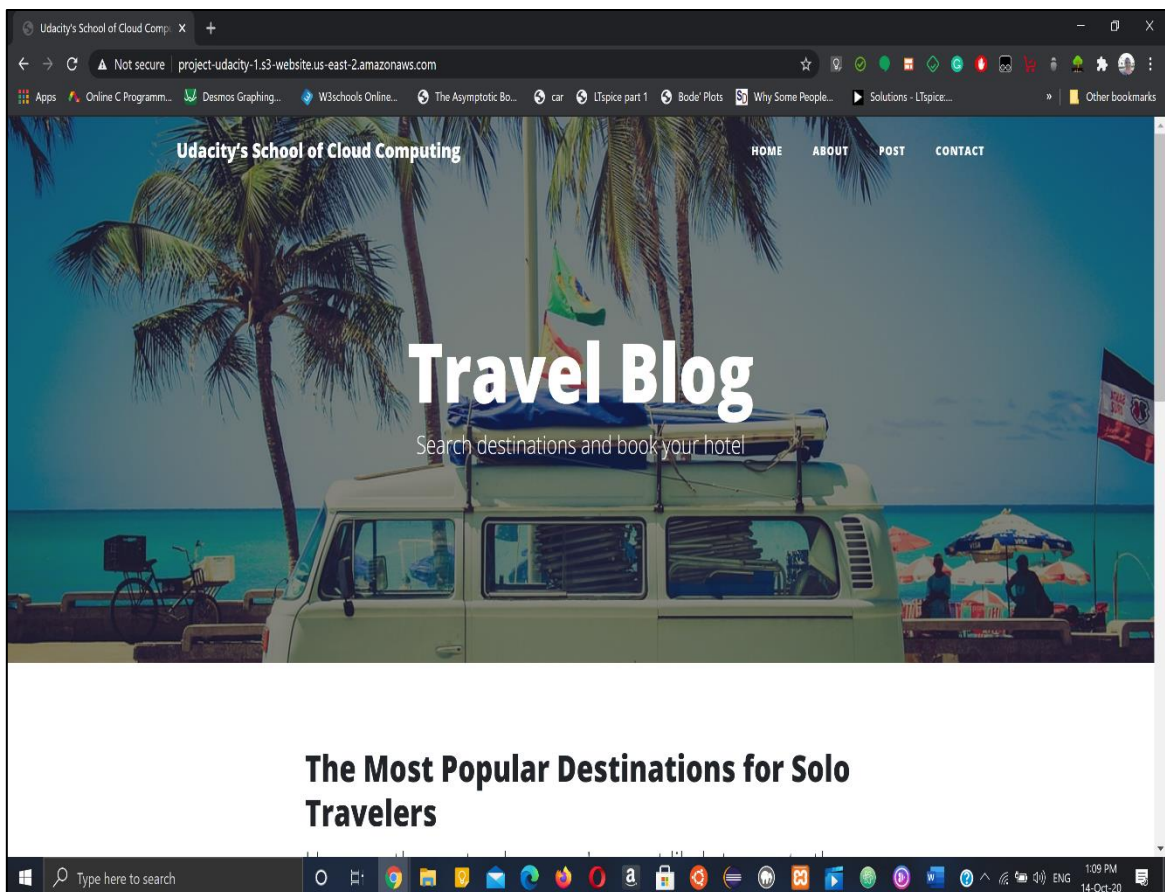
Static website hosting

Host a static website, which does not require server-side technologies.

[Learn more](#)

☒ Bucket hosting

4. The website will show up when using the given endpoint link:
<http://project-udacity-1.s3-website.us-east-2.amazonaws.com>



AWS Cloud Front

Distribute Website via Cloud Front


1. Select “Services” from the top left corner and enter “cloud front” in the “Find a service by name or feature” text box and select “CloudFront”
2. From the CloudFront dashboard, click “Create Distribution”

Create Distribution

3. For “Select a delivery method for your content”, click “Get Started”
4. Under “Origin Settings”:
 - i. Under “Origin Domain Name”, select the S3 bucket that you just created
 - ii. Under “Origin Path”, enter “/” to indicate the root level

Create Distribution

Origin Settings

Origin Domain Name 

Origin Path 

Origin ID 

Restrict Bucket Access ☐ Yes  ☒ No

Origin Connection Attempts 

Origin Connection Timeout 

5. Leave the defaults for the rest of the options, scroll down, and click “Create Distribution”.

Note: It may take up to **10 minutes** for the CloudFront Distribution to be created

CloudFront Distributions

Create Distribution

Distribution Settings

Delete

Enable

Disable

Viewing :

Any Delivery Method

Any State

<<

<

Viewing 1 to 1 of 1 Items

>

>>

Delivery Method	ID	Domain Name	Comment	Origin	CNAMEs	Status	State	Last Modified
<input type="checkbox"/> Web	E2NMFMB1GNZESD	d2ebeq1iz7o8g.cloud	-	project-udacil	-	In Progress	Enabled	2020-10-14 13:21 UT

<<

<

Viewing 1 to 1 of 1 Items

>

>>

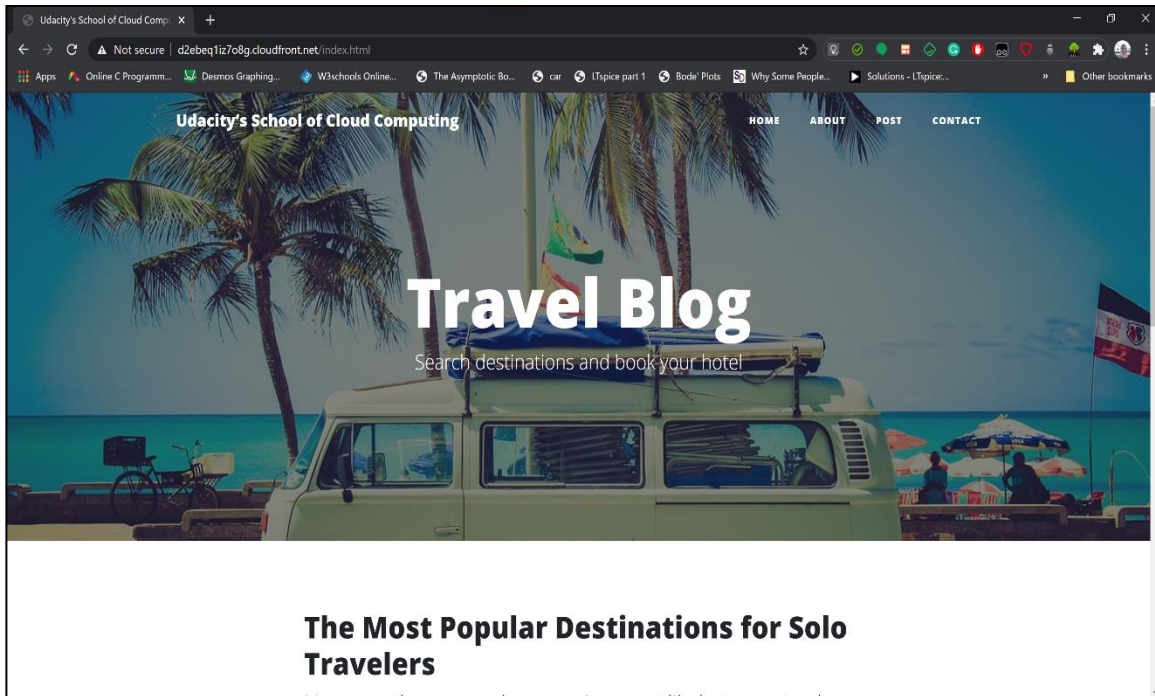
- Once the status of your distribution changes from “In Progress” to “Deployed”, copy the endpoint URL for your CloudFront distribution found in the “Domain Name” column.

Viewing : Any Delivery Method		Any State				<< < Viewing 1 to 1 of 1 Items > >>			
	Delivery Method	ID	Domain Name	Comment	Origin	CNAMEs	Status	State	Last Modified
	Web	E2NMF8M1GNZESD	d2e8eq1iz7o8g.cloud	-	project-udacii	-	Deployed	Enabled	2020-10-14 13:21 UT

- Domain Name value is: [d2e8eq1iz7o8g.cloudfront.net](#)

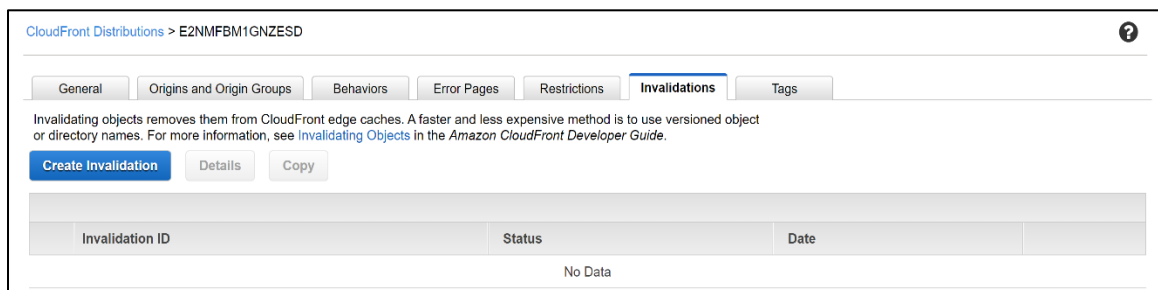
Access website in Web Browser

1. Open a web browser like Google Chrome and paste the copied endpoint URL and append `/index.html` on the end
`d2ebq1iz7o8g.cloudfront.net/index.html`
2. The website displays in your browser

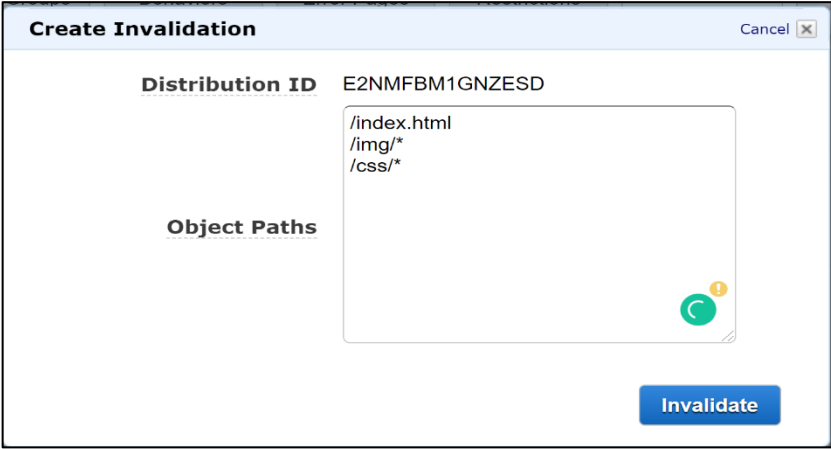


Updating the website

1. Reupload the edited files/folders to the S3 bucket
2. We notice that refreshing the website doesn't update the content since CloudFront has everything cached in the cloud edges
3. Request refreshing content instantly outside the refresh schedule by creating an invalidation



4. Enter the modified objects paths



The 'Create Invalidation' dialog box is shown. It has a title bar with 'Create Invalidation' and a 'Cancel' button. The 'Distribution ID' field contains 'E2NMF8M1GNZESD'. The 'Object Paths' field contains a list of paths: '/index.html', '/img/*', and '/css/*'. There is a green circular refresh icon with a yellow exclamation mark next to it. At the bottom right is a blue 'Invalidate' button.

Distribution ID	Object Paths
E2NMF8M1GNZESD	<ul style="list-style-type: none">/index.html/img/*/css/*

5. Wait for the status to turn to "Completed" and refresh the page

Viewing 1 to 1 of 1 Items			
Invalidation ID	Status	Date	
11U5SKZKFIFDCD	Completed	2020-10-14 15:45 UTC+2	

