

CS 524 Introduction to Cloud Computing

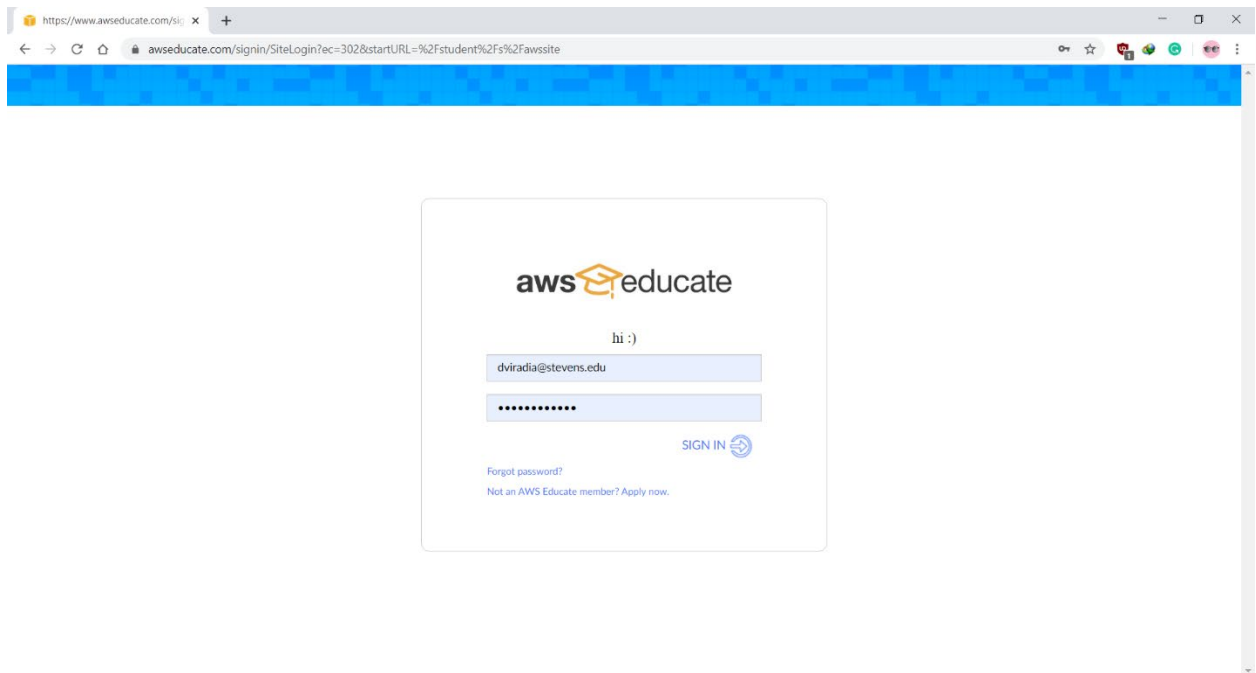
Dharmit Viradia

Lab Assignment 3

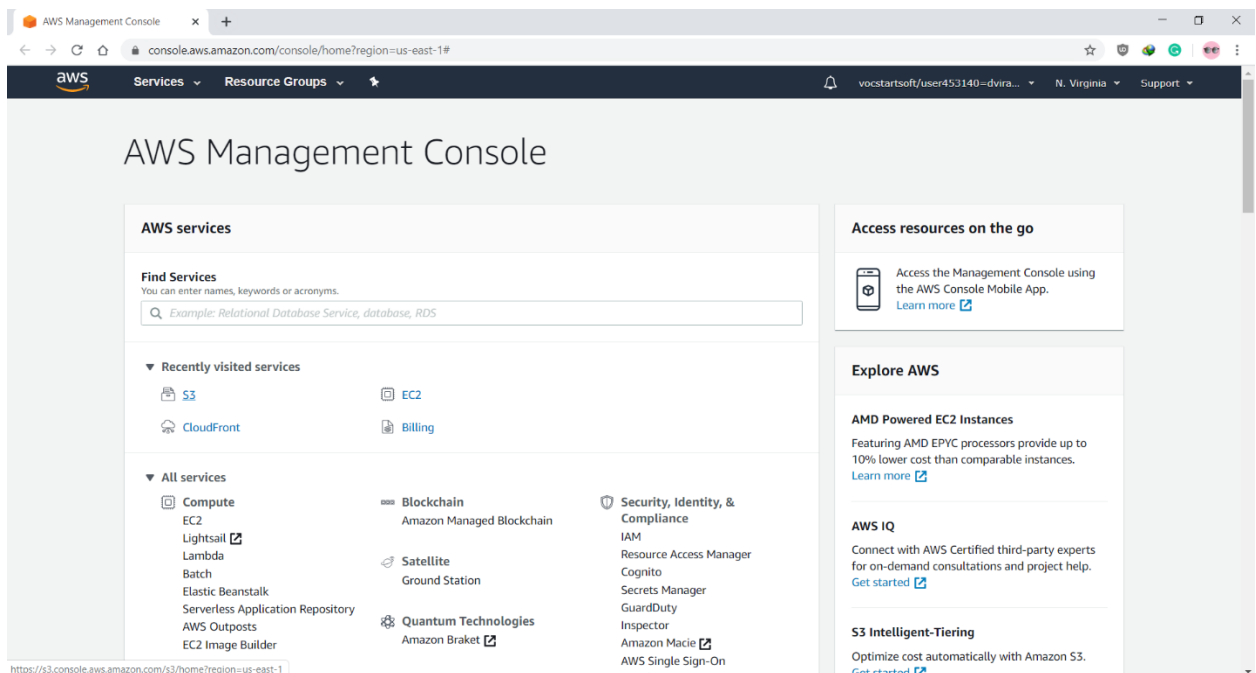
Prof. Igor Faynberg

Step for Creating an S3 Bucket

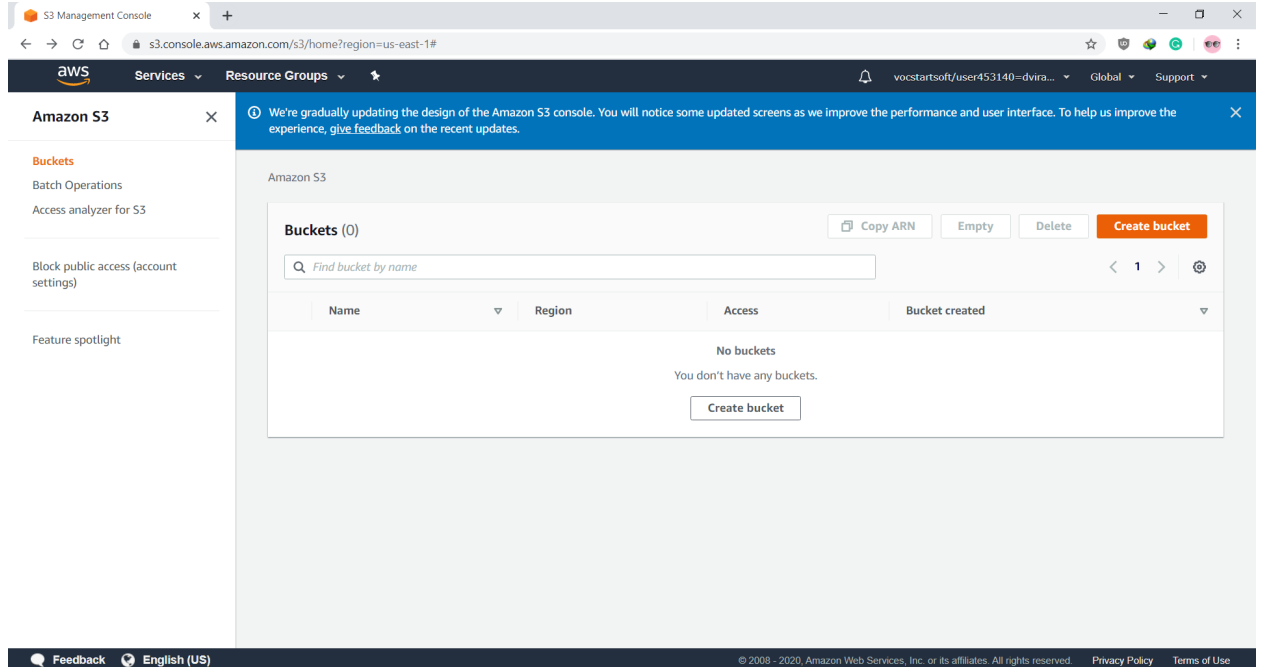
- First login in to your AWS account



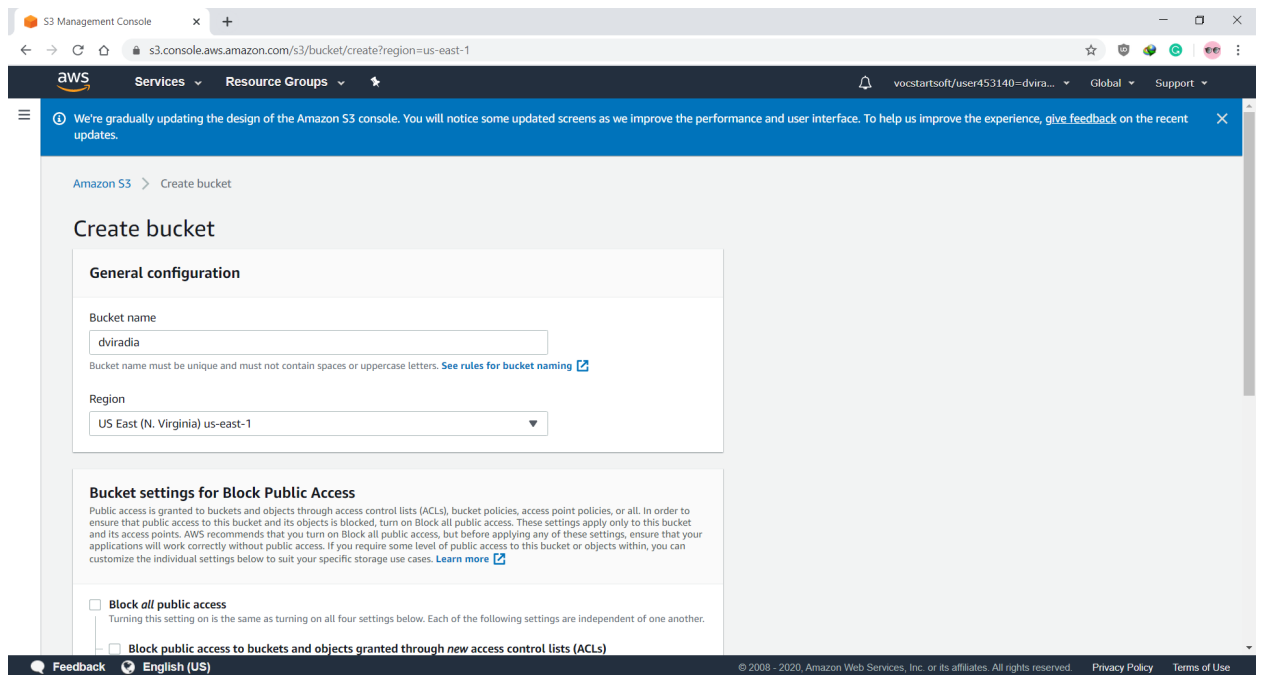
- On AWS Dashboard go to S3 Services



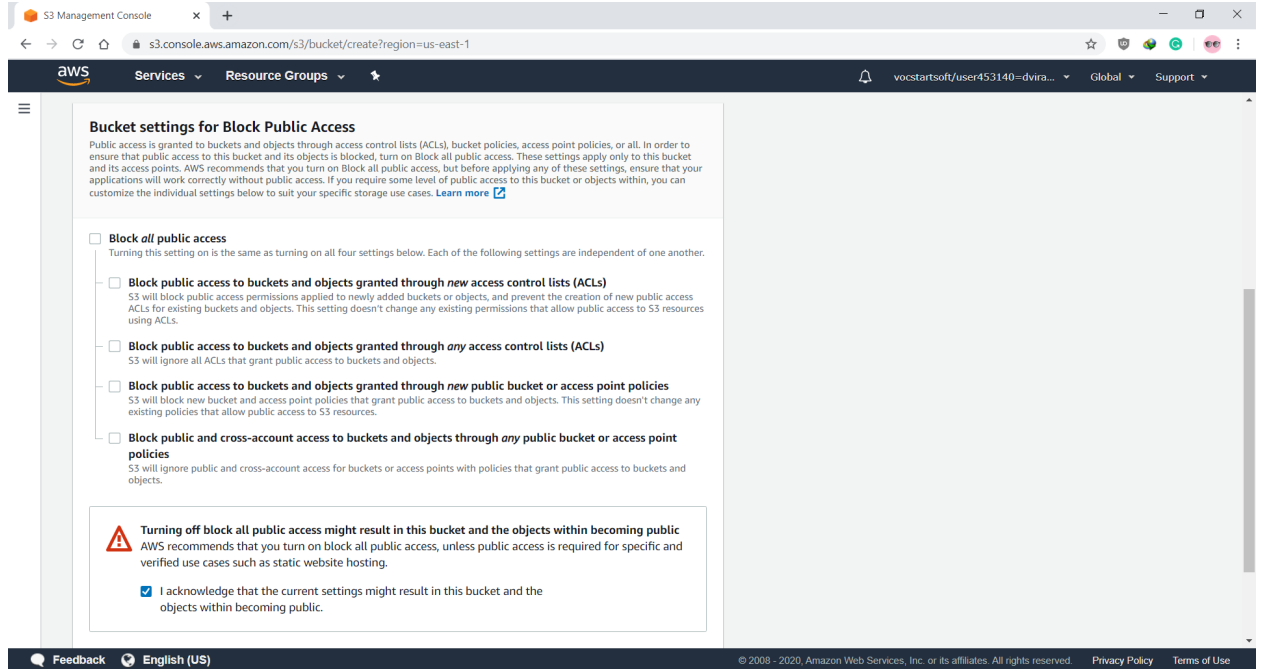
- On S3 bucket Dashboard create new bucket



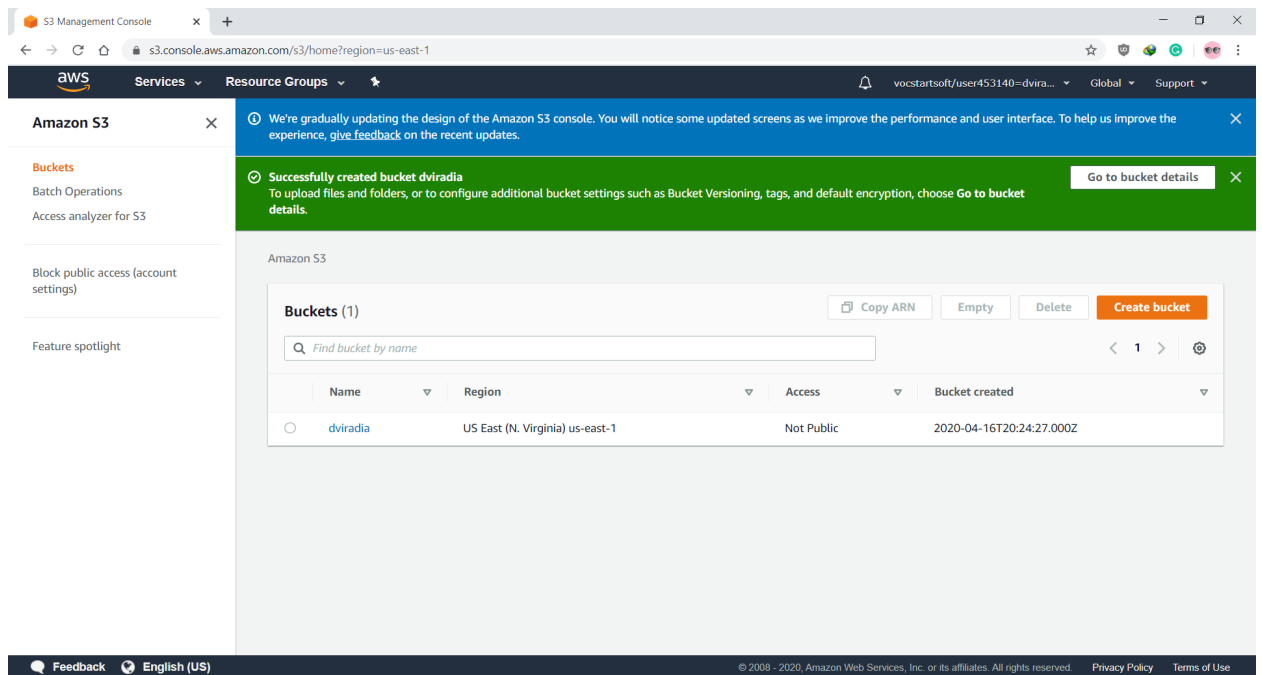
- Give the unique name to your bucket



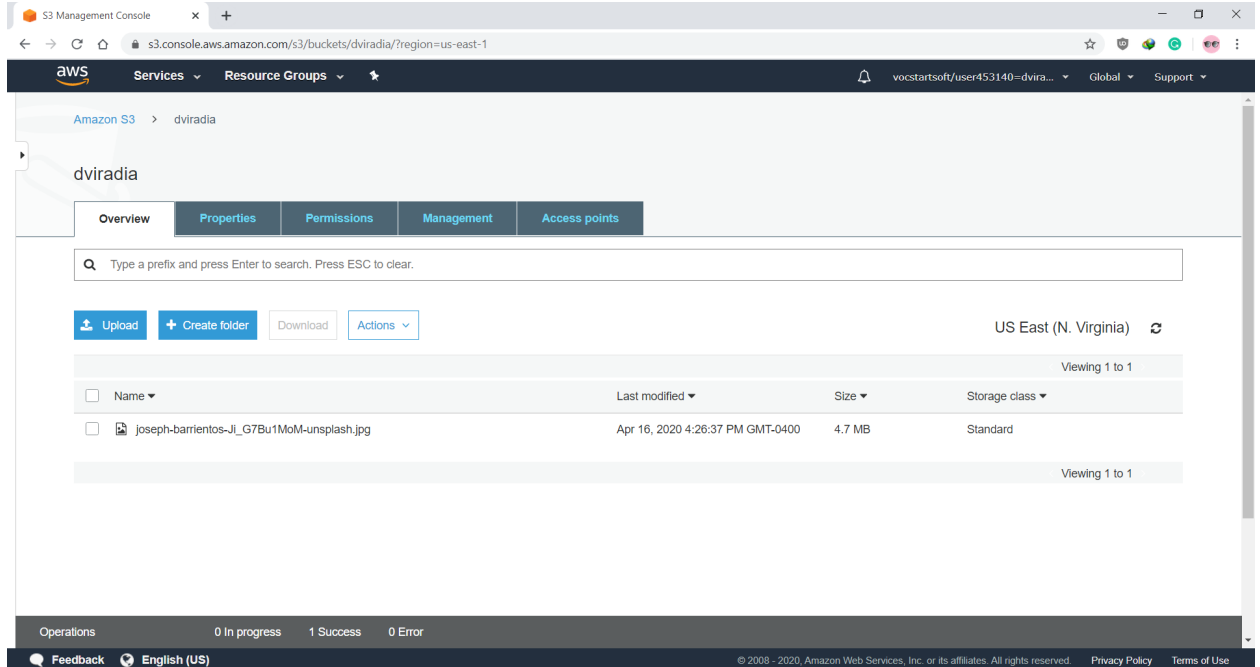
- Turn off the Block all public access



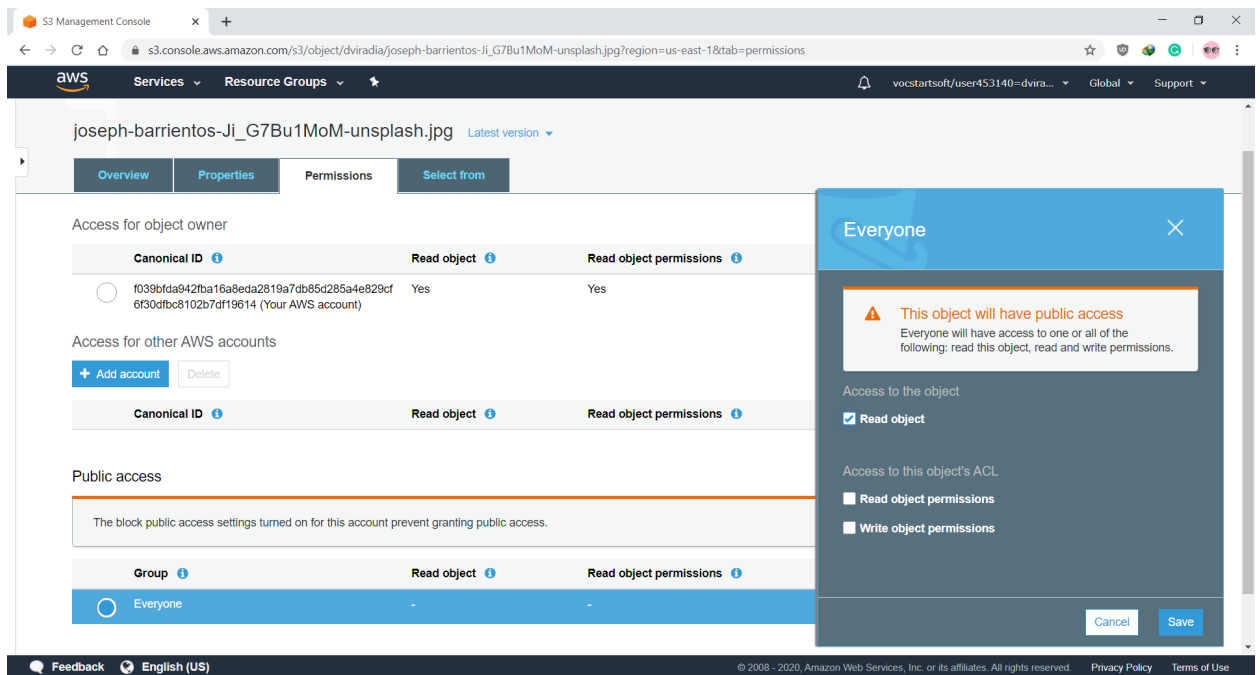
- After Bucket is created successfully it shows on dashboard



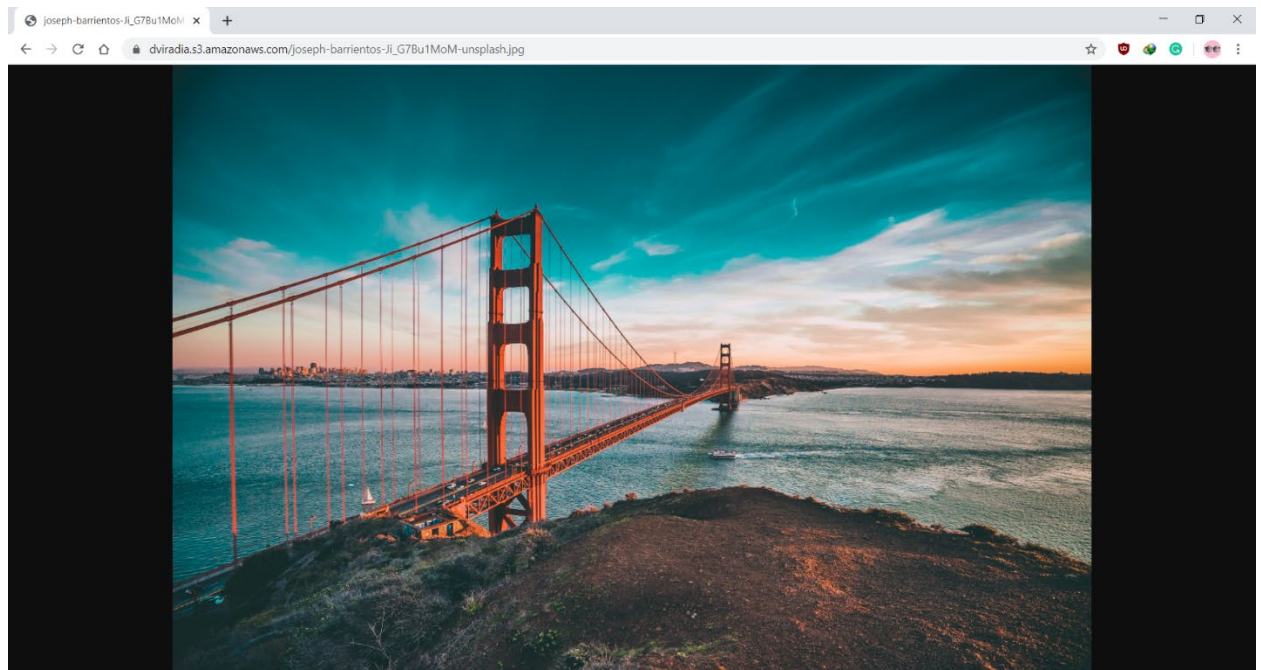
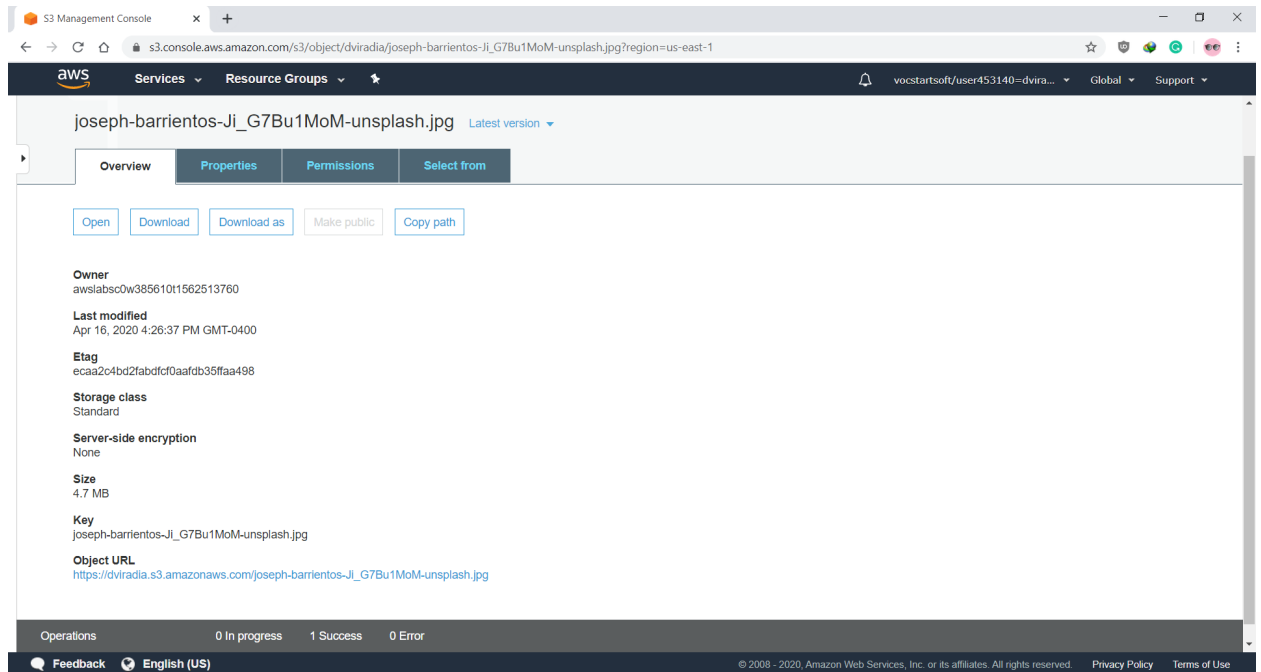
- Click on Bucket name to view bucket and upload an image of your choice.



- After the images is uploaded update permission for public view access

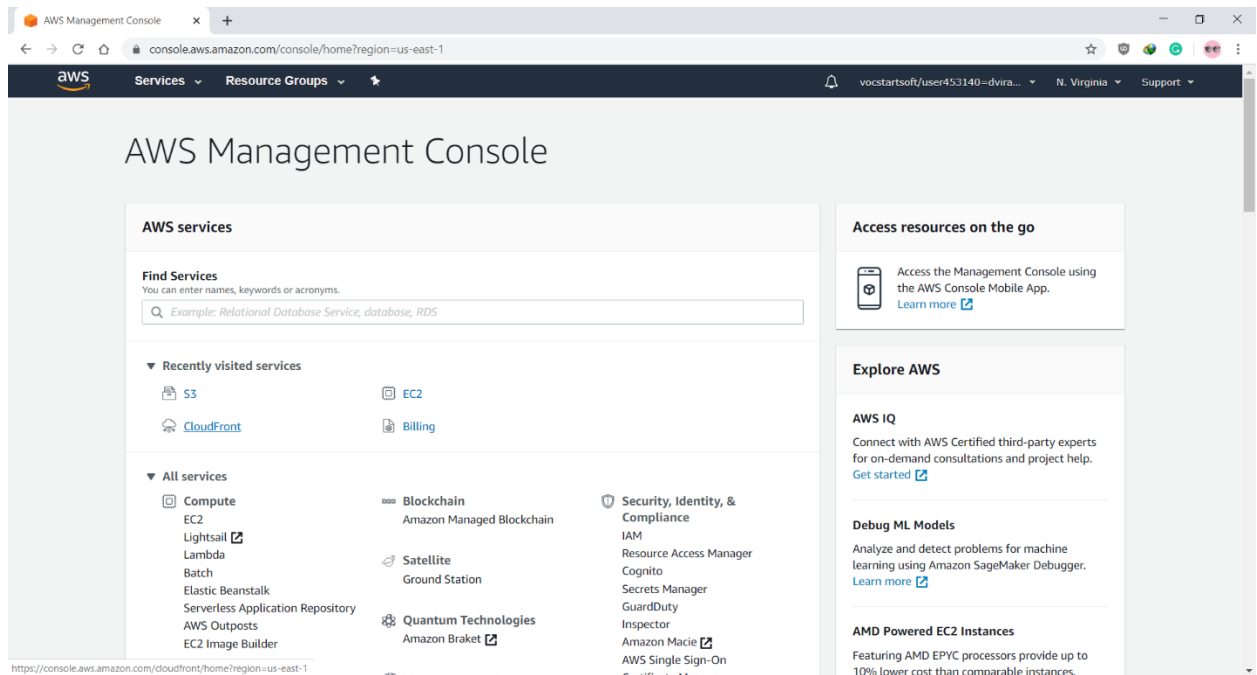


- Click on object URL on overview page to view your image

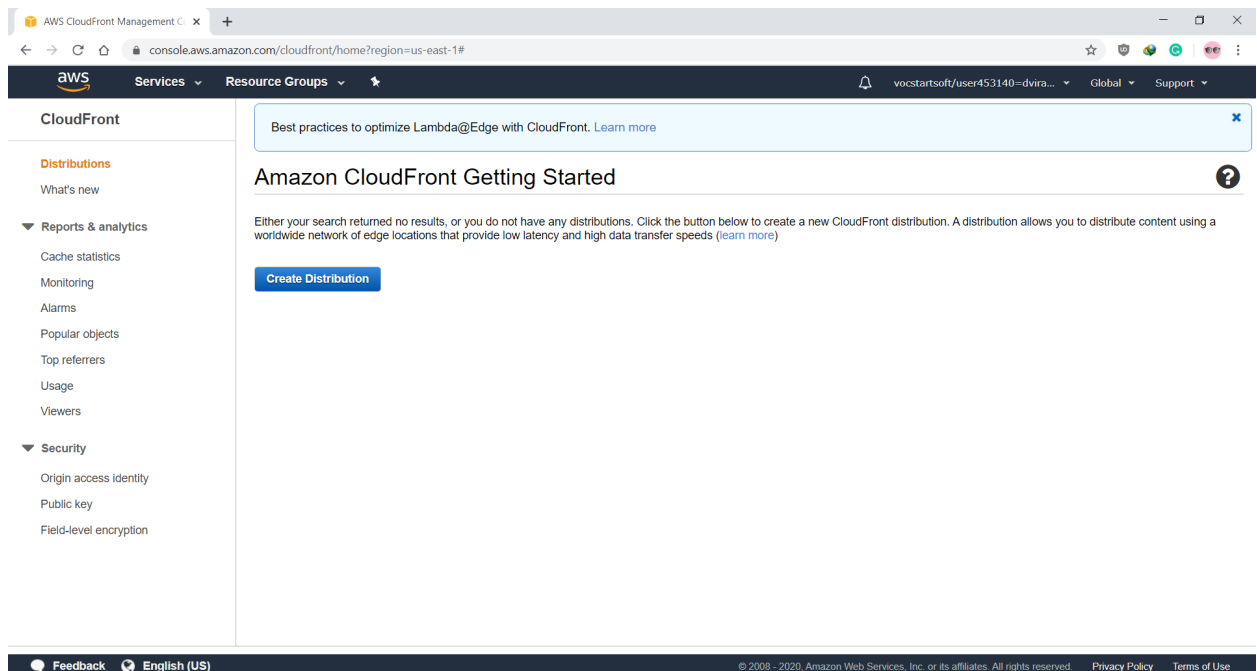


Step for Creating an CloudFront Distribution

- To create a CloudFront service go to AWS Dashboard and click on CloudFront



- Click on Create Distribution



- Select Web Method

Step 1: Select delivery method
Step 2: Create distribution

Select a delivery method for your content.

Web

Create a web distribution if you want to:

- Speed up distribution of static and dynamic content, for example, .html, .css, .php, and graphics files.
- Distribute media files using HTTP or HTTPS.
- Add, update, or delete objects, and submit data from web forms.
- Use live streaming to stream an event in real time.

You store your files in an origin - either an Amazon S3 bucket or a web server. After you create the distribution, you can add more origins to the distribution.

[Get Started](#)

RTMP

CloudFront is discontinuing support for RTMP distributions on December 31, 2020. For more information, please [read the announcement](#).

Create an RTMP distribution to speed up distribution of your streaming media files using Adobe Flash Media Server's RTMP protocol. An RTMP distribution allows an end user to begin playing a media file before the file has finished downloading from a CloudFront edge location. Note the following:

- To create an RTMP distribution, you must store the media files in an Amazon S3 bucket.
- To use CloudFront live streaming, create a web distribution.

[Get Started](#)

[Cancel](#)

- Set origin Domain Name to your S3 bucket URL and restrict Bucket access

Create Distribution

Origin Settings

Origin Domain Name:

Origin Path:

Origin ID:

Restrict Bucket Access: ☒ Yes ☐ No

Origin Access Identity: ☒ Create a New Identity ☐ Use an Existing Identity

Comment:

Grant Read Permissions on Bucket: ☒ Yes, Update Bucket Policy ☐ No, I Will Update Permissions

Origin Custom Headers

Header Name	Value
<input type="text"/>	<input type="text"/>

Default Cache Behavior Settings

Path Pattern:

Viewer Protocol Policy: ☒ HTTP and HTTPS ☐ Redirect HTTP to HTTPS ☐ HTTPS Only

- Update other options as per preference, here I have set view protocol policy to redirect all http request to https and have created a log file for logging all the requests

The screenshot shows the 'Default Cache Behavior Settings' page in the AWS CloudFront console. The left sidebar indicates 'Step 1: Select delivery method' and 'Step 2: Create distribution'. The main content area contains the following settings:

- Path Pattern:** Default (*)
- 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
- Field-level Encryption Config:** (Dropdown menu)
- Cached HTTP Methods:** GET, HEAD (Cached by default)
- Cache Based on Selected Request Headers:** None (Improves Caching) (Learn More)
- Object Caching:** ☒ Use Origin Cache Headers, ☐ Customize (Learn More)
- Minimum TTL:** 0
- Maximum TTL:** 31536000
- Default TTL:** 86400

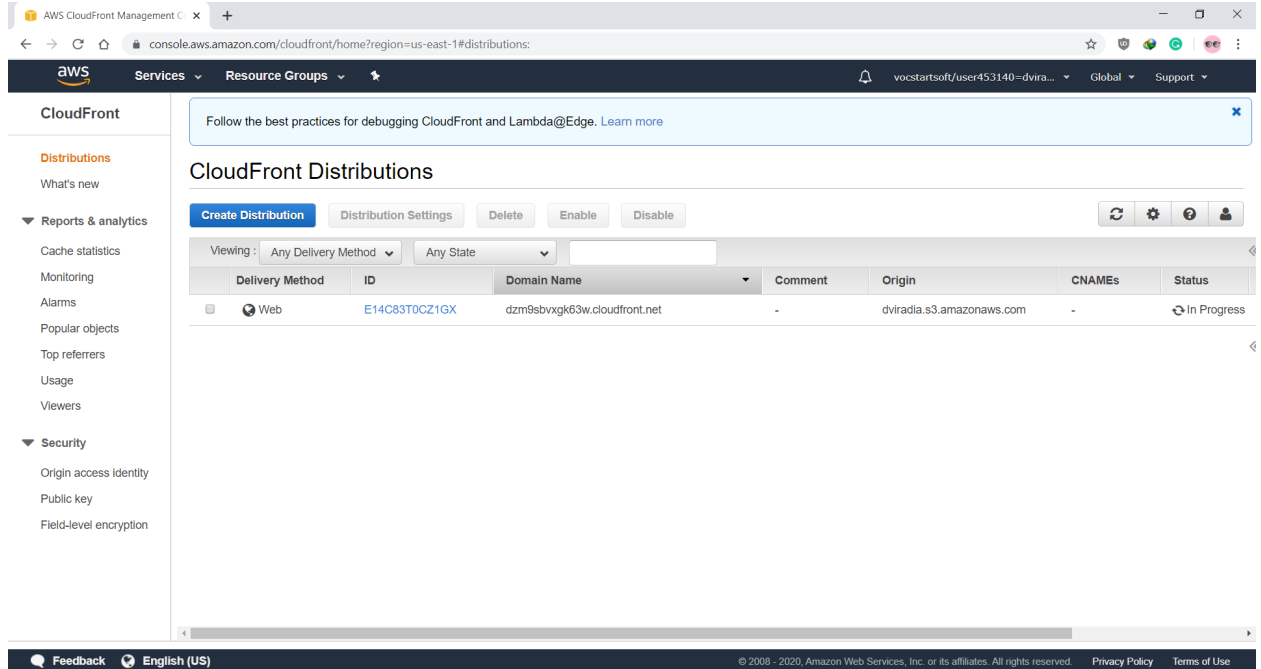
The footer includes 'Feedback', 'English (US)', and copyright information: '© 2008 - 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use'.

The screenshot shows the 'Request or Import a Certificate with ACM' step in the AWS CloudFront console. The left sidebar indicates 'Step 1: Select delivery method' and 'Step 2: Create distribution'. The main content area contains the following settings:

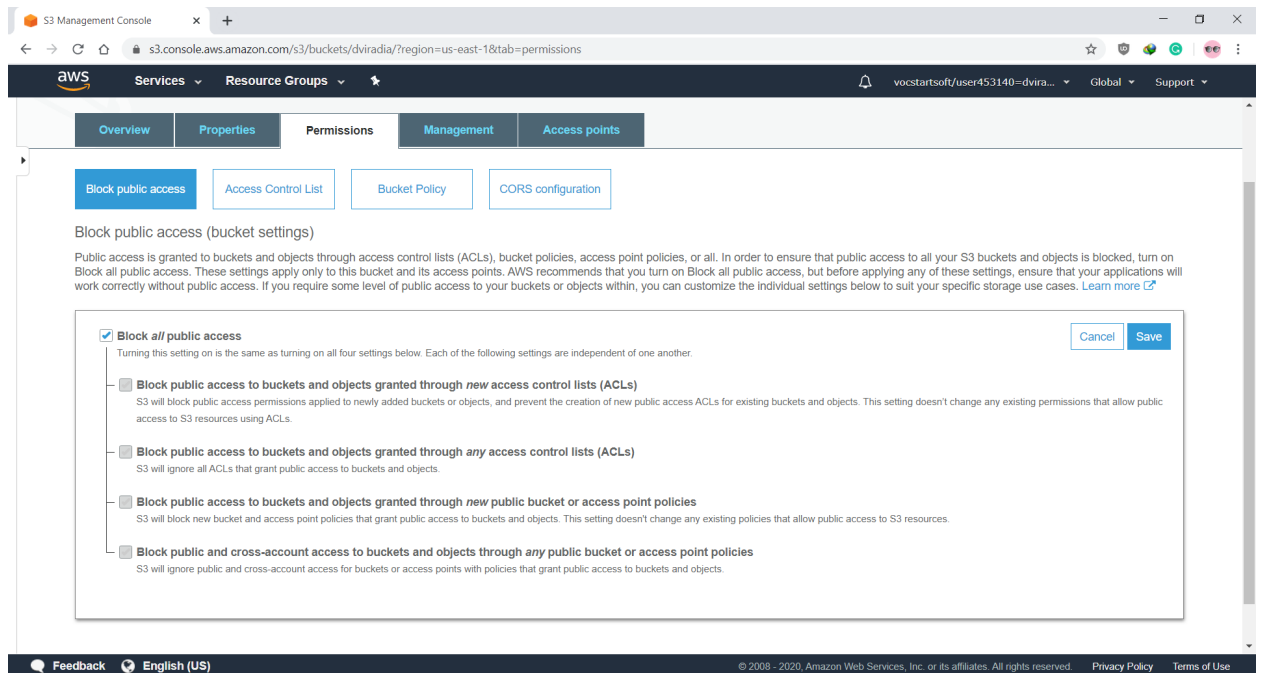
- Supported HTTP Versions:** ☒ HTTP/2, HTTP/1.1, HTTP/1.0, ☐ HTTP/1.1, HTTP/1.0
- Default Root Object:** (Text input field)
- Logging:** ☒ On, ☐ Off
- Bucket for Logs:** dviradia.s3.amazonaws.com
- Log Prefix:** bucketlog
- Cookie Logging:** ☐ On, ☒ Off
- Enable IPv6:** ☒ (Learn more)
- Comment:** (Text input field)
- Distribution State:** ☒ Enabled, ☐ Disabled

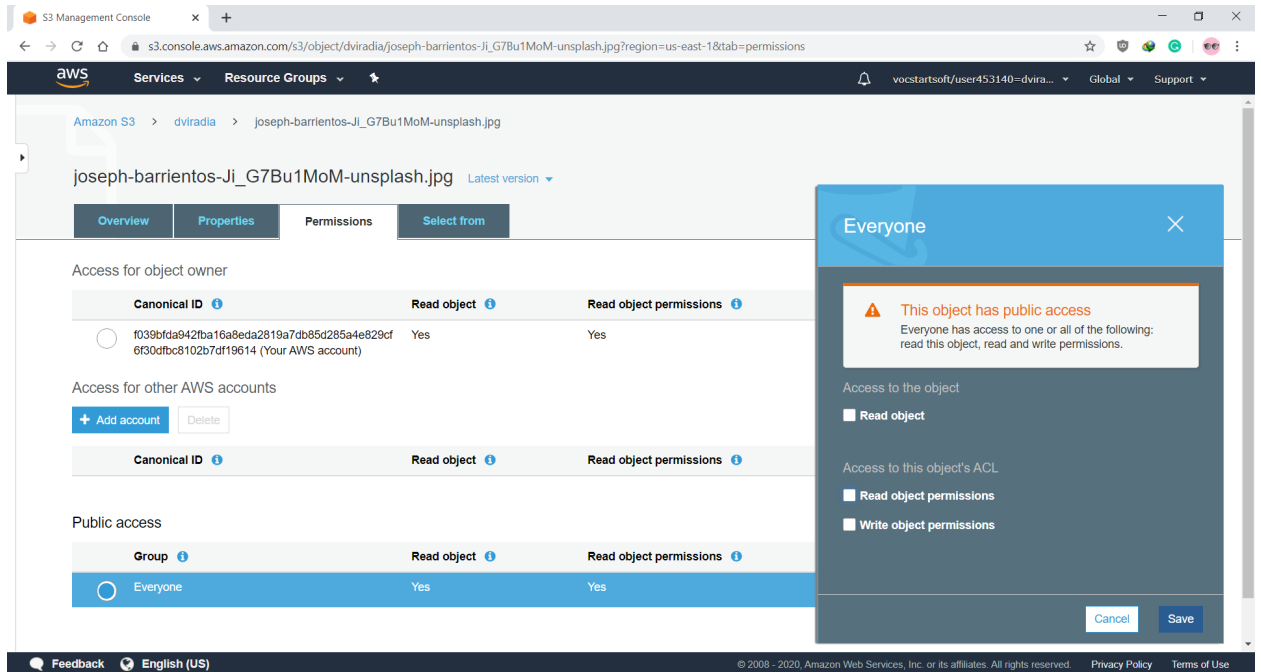
At the bottom right, there are three buttons: 'Cancel', 'Back', and 'Create Distribution'. The footer includes 'Feedback', 'English (US)', and copyright information: '© 2008 - 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use'.

- Created Cloud distribution is available on the CloudFront Dashboard

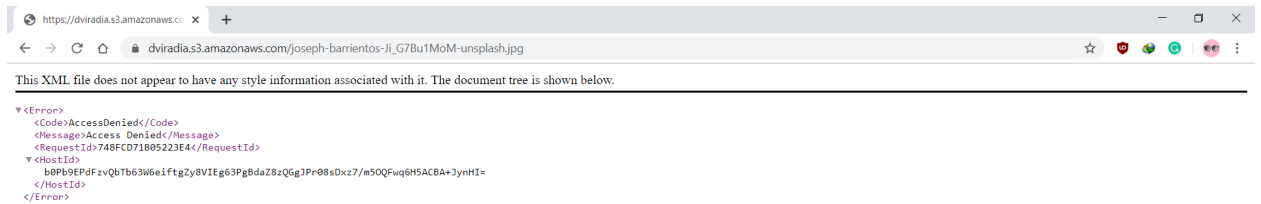


- Now go to S3 Console and disable all public access to the bucket



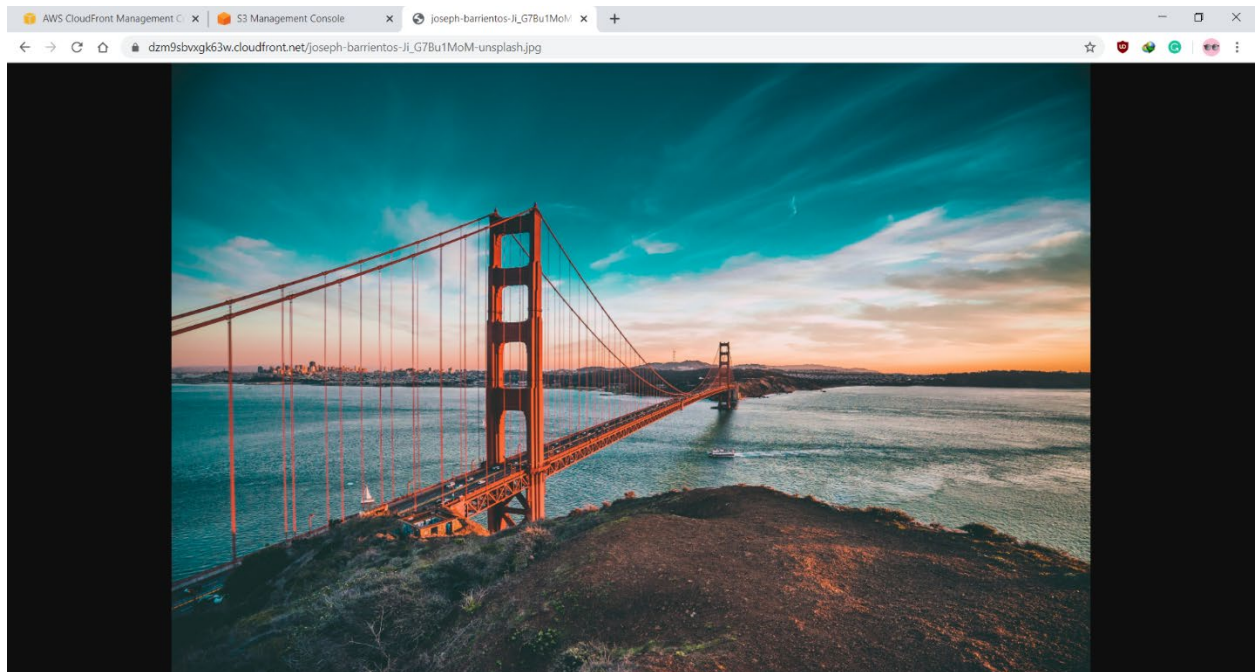


- Click on object URL and access to file should be denied



(The access to file is denied because the public access to file was revoked to view or manage file access key and secret key would be required)

- To view files now we have to replace S3 bucket address with CloudFront distribution address



- All logs to CloudFront Distribution are saved to S3 bucket as configured

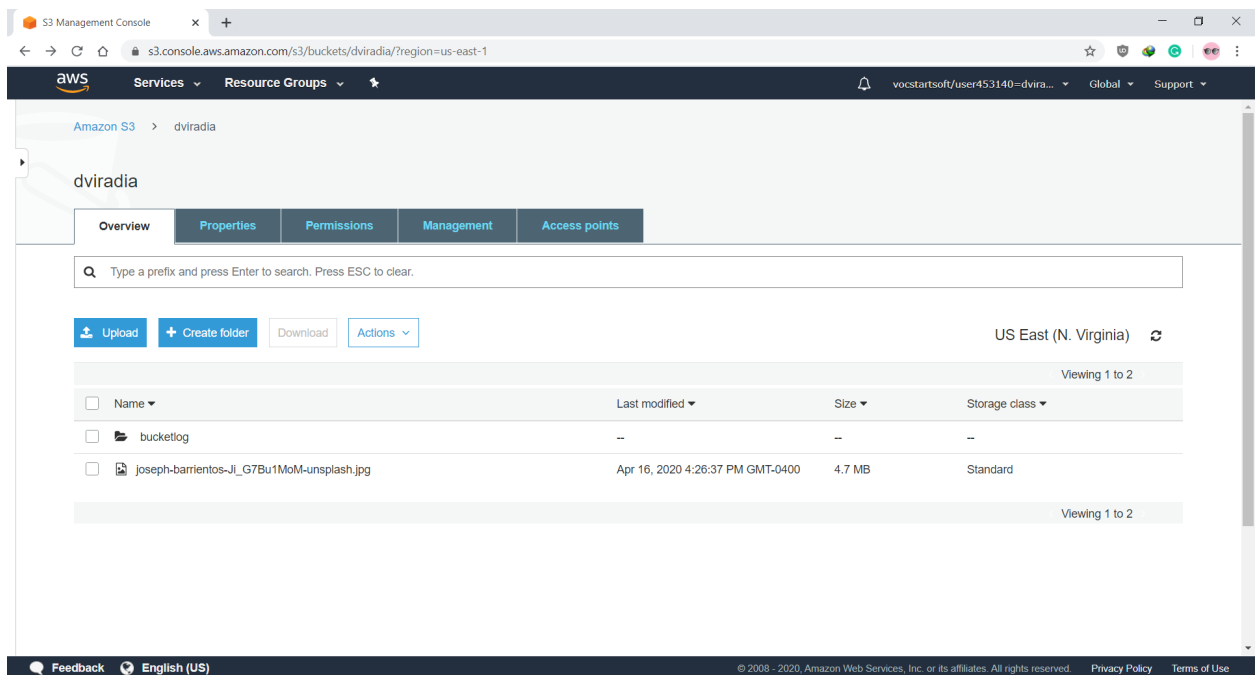


Image from CDN load significantly faster as compared to S3 bucket link

The Benefits of using CDN:

1. Different domains

Browsers limit the number of concurrent connections (file downloads) to a single domain. Most permit four active connections so the fifth download is blocked until one of the previous files has been fully retrieved. You can often see this limit in action when downloading many large files from the same site.

CDN files are hosted on a different domain. In effect, a single CDN permits the browser to download a further four files at the same time.

2. Files may be pre-cached

jQuery is ubiquitous on the web. There's a high probability that someone visiting your pages has already visited a site using the Google CDN. Therefore, the file has already been cached by your browser and won't need to be downloaded again.

3. High-capacity infrastructures

You may have great hosting but I bet it doesn't have the capacity or scalability offered by Google, Microsoft or Yahoo. The better CDNs offer higher availability, lower network latency and lower packet loss.

4. Distributed data centers

If your main web server is based in Dallas, users from Europe or Asia must make a number of trans-continental electronic hops when they access your files. Many CDNs provide localized data centers which are closer to the user and result in faster downloads.

5. Built-in version control

It's usually possible to link to a specific version of a CSS file or JavaScript library. You can often request the "latest" version if required.

6. Usage analytics

Many commercial CDNs provide file usage reports since they generally charge per byte. Those reports can supplement your own website analytics and, in some cases, may offer a better impression of video views and downloads.

7. Boosts performance and saves money

A CDN can distribute the load, save bandwidth, boost performance and reduce your existing hosting costs — often for free.