

[Proof of Concept]

Use Amazon Cloud Front to serve a static website hosted on Amazon S3 with secure bucket

Topic:

1. Static website
2. Dynamic website
3. S3 bucket
4. Web Code deployment from AWS CLI
5. Cloudfront
6. Amazon CloudFront Reports
7. Using HTTPS with Amazon CloudFront
8. Cache invalidation
9. Conclusion

1. Static Website: -

A static website delivers content in the same format in which it is stored. No server-side code execution is required. For example, if a static website consists of HTML documents displaying images, it delivers the HTML and images as-is to the browser. Some examples of static sites include:

- Marketing websites
- Product landing pages
- Microsites that display the same content to all users
- Team homepages

Static websites load quickly since content is delivered as-is and can be cached by a content delivery network (CDN). The web server doesn't need to perform any application logic or database queries. Static websites are most suitable when the content is infrequently updated. After the content evolves in complexity or needs to be frequently updated, personalized, or dynamically generated, it's best to consider a dynamic website architecture.

2. Dynamic Website:-

Dynamic websites can display dynamic or personalized content. They usually interact with data sources and web services and require code development expertise to create and

maintain. For example, a sports news site can display information based on the visitor's preferences and use server-side code to display updated sport scores. Other examples of dynamic sites are e-commerce shopping sites, news portals, social networking sites, finance sites, and most other websites that display ever-changing information.

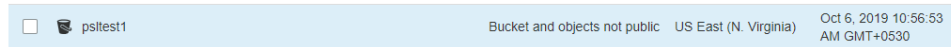
3. S3 bucket :-

Amazon Simple Storage Service (Amazon S3) can host static websites without a need for a web server. The website is highly performant and scalable at a fraction of the cost of a traditional web server. Amazon S3 is storage for the cloud, providing you with secure, durable, highly scalable object storage.

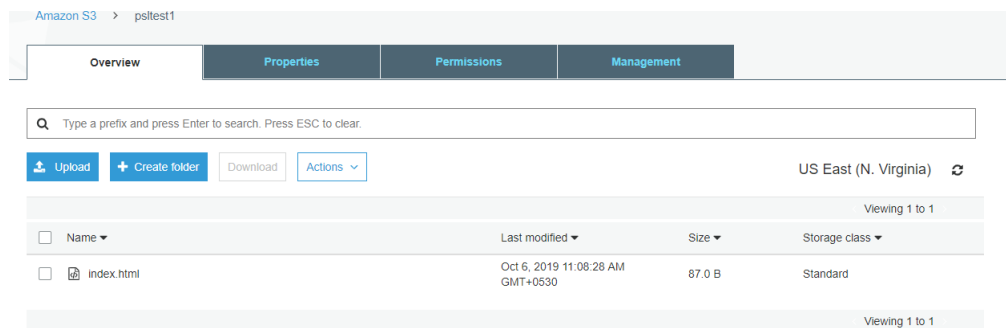
LAB 1.0 :-

Created S3 bucket and copied all required files for frontend

Bucket should not be accessible from public.



Bucket and Object are not in public mode



Note:- In this solution, there are no Windows or Linux servers to manage, and no need to provision machines, install operating systems, or fine-tune web server configurations. Create Cloud front distribution and assign above bucket details as well.

4. Web Code deployment from AWS CLI

To deploy, copy any new or modified files to the Amazon S3 bucket. You can use the AWS API, SDKs, or CLI to script this step for a fully automated deployment.

Example:-

```
aws s3 cp --recursive digital-agency-html/ s3://psltest11/ --profile cc2.0
```

Please refer aws cli configuration link

<https://docs.aws.amazon.com/cli/latest/userguide/cli-chap-configure.html>

5. Cloudfront :-

Amazon CloudFront is a CDN that uses a global network of edge locations for content delivery. Amazon CloudFront also provides reports to help you understand how users are using your website

As a CDN, Amazon CloudFront can distribute content with low latency and high data transfer rates. There are multiple CloudFront **edge locations** all around the world. Therefore, no matter where a visitor lives in the world, there is an Amazon CloudFront edge location that is relatively close (from an Internet latency perspective)

Comment [AV1]: <https://aws.amazon.com/cloudfront/features/>

Comment [AV2]:

6. Amazon CloudFront Reports :-

Amazon CloudFront includes a set of reports that provide insight into and answers to the following questions:

- What is the overall health of my website?
- How many visitors are viewing my website?
- Which browsers, devices, and operating systems are they using?
- Which countries are they coming from?

Please refer CloudFront setting

<https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/GettingStarted.html>

7. Using HTTPS with Amazon CloudFront:-

We can configure Amazon CloudFront to require that viewers use HTTPS to request our objects, so that connections are encrypted when Amazon CloudFront communicates with viewers. You can also configure Amazon CloudFront to use HTTPS to get objects from your origin, so that connections are encrypted when Amazon CloudFront communicates with your origin. If you want to require HTTPS for communication between Amazon CloudFront and Amazon S3, you must change the value of the Viewer Protocol Policy to Redirect HTTP to HTTPS or HTTPS Only.

CloudFront Distributions > EBD07B9LAVRMV

General | Origins and Origin Groups | Behaviors | Error Pages | Restrictions | Invalidation | Tags

Edit

Distribution ID EBD07B9LAVRMV
 ARN arn:aws:cloudfront::385647173560:distribution/EBD07B9LAVRMV
 Log Prefix -
 Delivery Method Web
 Cookie Logging Off
 Distribution Status InProgress
 Comment -
 Price Class Use All Edge Locations (Best Performance)
 AWS WAF Web ACL -
 State Enabled
 Alternate Domain Names (CNAMEs) -
 SSL Certificate Default CloudFront Certificate (*.cloudfront.net)
 Domain Name d2sy0rskms8k6.cloudfront.net
 Custom SSL Client Support -
 Security Policy TLSv1
 Supported HTTP Versions HTTP/2, HTTP/1.1, HTTP/1.0
 IPv6 Enabled
 Default Root Object index.html
 Last Modified 2019-10-06 11:07 UTC+5:30
 Log Bucket -

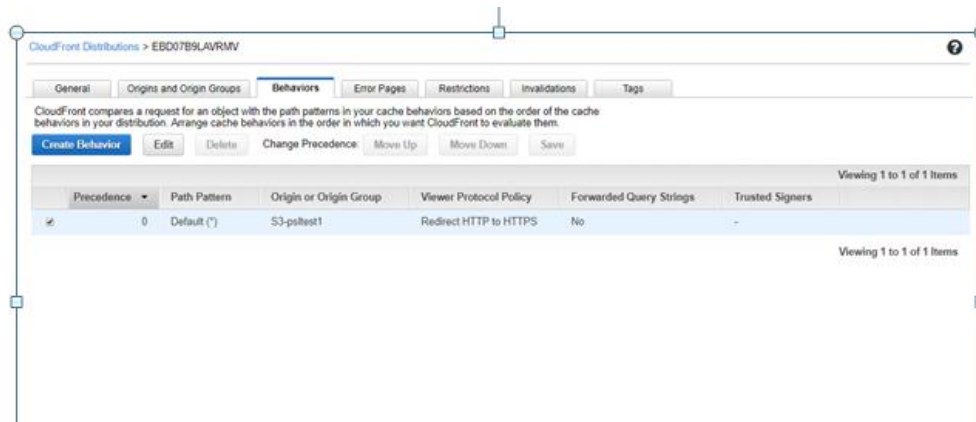
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Origins

Create Origin | Edit | Delete

	Origin Domain Name and Path	Origin ID	Origin Type	Origin Access Identity	Origin Protocol Policy	HTTPS Port	HTTP
<input type="checkbox"/>	psitest1.s3.amazonaws.com	S3-psitest1	S3 Origin	origin-access-identity/cloudfront/E1N72745MKFEBT	-	-	-

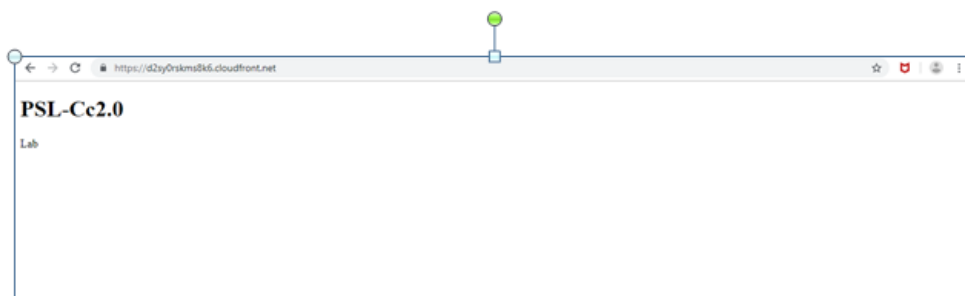


8. Cache invalidation :-

CloudFront invalidation requests are a way to force CloudFront to expire content. For the occasional requests, you can submit them using the AWS Management Console. Otherwise, use the AWS CLI or AWS APIs to script the invalidation. In addition, CloudFront lets you specify which content should be invalidated: You can choose to invalidate your entire Amazon S3 bucket, individual files, or just those matching a wildcard pattern. For example, to invalidate only the images directory, issue an invalidation request for: `/images/*`.

9. Conclusion:-

This topic began with a look at traditional (non-AWS) architectures for static websites. We then showed AWS Cloud-native architecture based on Amazon S3, Amazon CloudFront.



Note: - we can use Route53 when we get details from client. This setup can be referring for any project.