

# CloudFront Distribution

CLOUDFRONT : It's a low latency content delivery service. CloudFront uses Edge location for fast access of data.

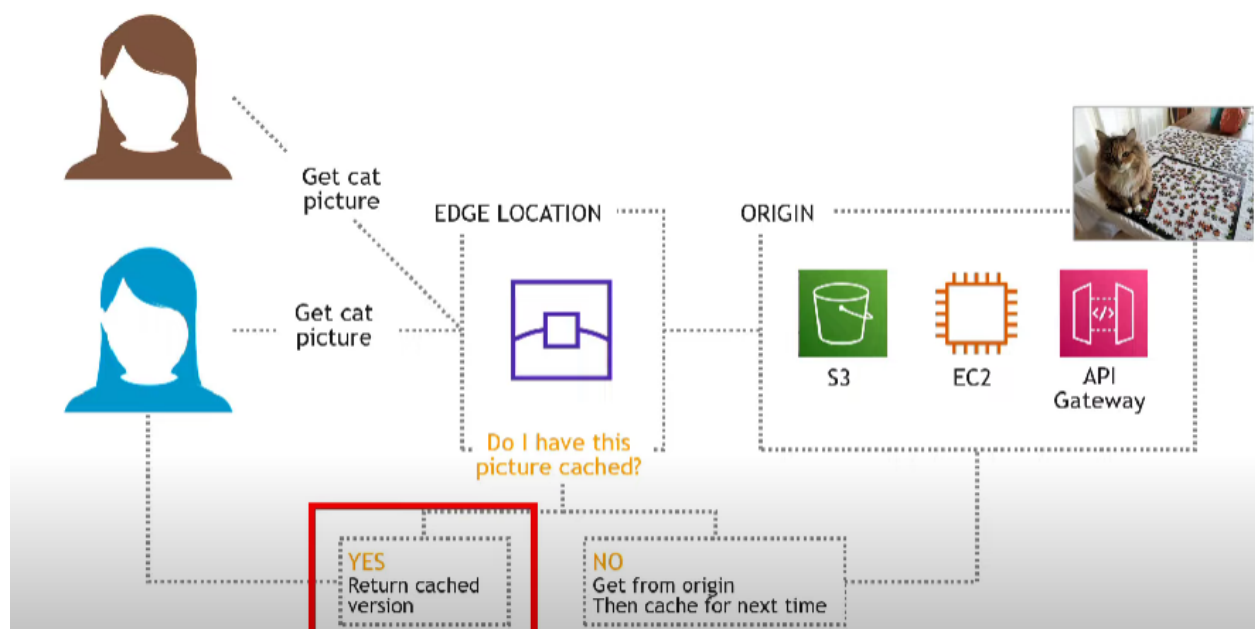
## Technologies used

Using S3 or Ec2

API gateway

In-order to create Cloud front we can use S3 or EC2 and to use API gateway to create that connectivity.

## ARCHITECTURE :



Architecture goes this way . Suppose we have a picture of a cat , as we know **CLOUDFRONT** uses **EDGE LOCATION**

for fast access to data. Hence the picture gets cached inside the edge location when you store it for the first time.

So next time when the user comes and looks for the cat picture the edge location will say "YES I HAVE THE CAT PICTURE" and return it

If the picture doesn't exist users need to cache/create it for the next time use by creating the origin.  
i.e to create an EC2 instance or S3 bucket and cache the image.

1. Create an S3 bucket (name needs to be unique) and leave the rest settings as default and create bucket

**S3 bucket name : myawsbucket-19922**

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

**General configuration**

Bucket name  
  
Bucket name must be globally unique and must not contain spaces or uppercase letters. See rules for bucket naming.

AWS Region

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

2. Navigate to the bucket and upload the html file . Drag and drop the image and html file
3. Here I have created a simple Welcome page with an image and uploaded it to bucket

**Objects (2)**  
Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get

<input type="checkbox"/>	Name	Type
<input type="checkbox"/>	<a href="#">Welcome.html</a>	html
<input type="checkbox"/>	<a href="#">WELCOME.png</a>	png

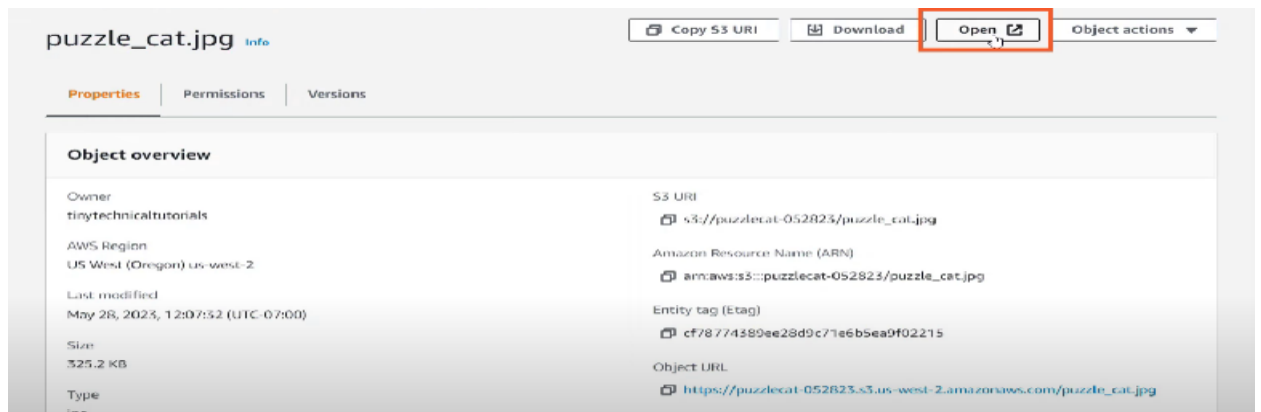
1. If I try to access the object, welcome. PNG I get access denied message  
OBJECT URL : <https://myawsbucket-19922.s3.us-east-2.amazonaws.com/WELCOME.png>  
I will get access denied message as it's not we didn't allow public access

Hence we get an error message

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<?xml version="1.0" encoding="UTF-8" ?>
<Error>
  <Code>AccessDenied</Code>
  <Message>Access Denied</Message>
  <RequestId>E2TM02740DDYFQDJ</RequestId>
  <HostId>a6ac0GhZ+rM1SgGQhj8pqG+9qfnm0wgg40abHWP2e8M1xKnShwK0wZSeXgwjeg3gEVb/3df+sgPpy9y/oiUodg==</HostId>
</Error>
```

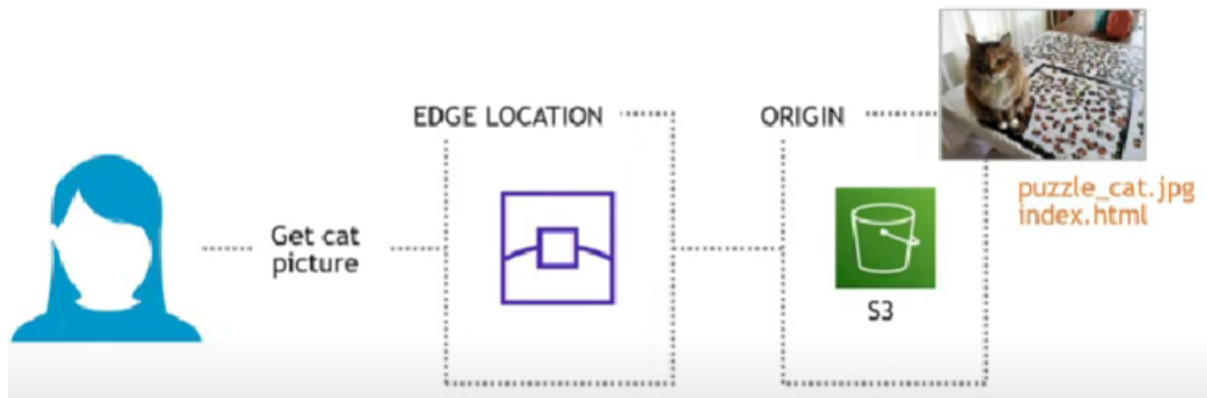
1. We can open using the open button on the top right corner . It will give access to the image temporarily.



The challenging part comes here we don't need this temporary access we need to be able to access these files using

cloud front . Hence let's work on establishing a cloud front

6. Open a new tab and navigate to the cloud front on the management console.
7. Our origin here would be an S3 bucket



8. Now create a cloud distribution

We need to select Origin access settings as we want the origin to be an S3 bucket

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

**Origin path - optional** [Info](#)  
Enter a URL path to append to the origin domain name for origin requests.

**Name**  
Enter a name for this origin.

**Origin access** [Info](#)

☐ **Public**  
Bucket must allow public access.

☒ **Origin access control settings (recommended)**  
Bucket can restrict access to only CloudFront.

☐ **Legacy access identities**  
Use a CloudFront origin access identity (OAI) to access the S3 bucket.

**Origin access control**  
Select an existing origin access control (recommended) or create a new configuration.

**Bucket policy**  
Policy must allow access to CloudFront IAM service principal role.  
☒ I will manually update the policy

**You must update the S3 bucket policy**  
CloudFront will provide you with the policy statement after creating the distribution.

Once you click on Create control settings select S3 as origin type and click on create

Create control setting

Name

myawsbucket-19922.s3.us-east-2.amazonaws.com

The name must be unique. Valid characters: letters, numbers and most special characters. Use up to 64 characters.

Description - optional

Enter description

The description can have up to 256 characters.

Signing behavior

☐ Do not sign requests
 ☒ Sign requests (recommended)
 

☐ Do not override authorization header
 

Do not sign if incoming request has authorization header.

Origin type

S3

The origin type must be the same type as origin domain.

Cancel

Create

Web Application Firewall (WAF) can be turned off i.e check on do not enable firewall.

Rest all the options can be default

It will also show bucket policy update alert

- Bucket policy
  - Policy must allow access to CloudFront IAM service principal role.
  - ☒ I will manually update the policy

⚠

**You must update the S3 bucket policy**

CloudFront will provide you with the policy statement after creating the distribution.

After creating distribution it will let us update the policy. So create the distribution using the above steps.

9. When you create a bucket you will find this alert to update the bucket policy

⚠ The S3 bucket policy needs to be updated

Complete distribution configuration by allowing read access to CloudFront origin access control in your policy statement. [Go to S3 bucket permissions to update policy](#)

Copy policy

CloudFront > Distributions > EPLK770BIDMVV

EPLK770BIDMVV

View metrics



1. Copy the policy and **go the S3 bucket update policy link** paste the policy that you copied there.
2. Click on Edit under Bucket Policy and paste it there and also remember to block all public access.

### 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

1. The bucket says that Allow access to Cloud Front and get object/read from S3 Bucket that we created which is the origin.
2. Go back to the distribution where the modified section would give us date and time that's when we say that the distribution is ready or created.

Details		
Distribution domain name	ARN	Last modified
 dc6fy8k9gjhzw.cloudfront.net	 arn:aws:cloudfront::087276982965:distribution/EPLK770BIDMVV	October 3, 2023 at 11:15:30 PM UTC

1. Now copy the domain name <https://dc6fy8k9gjhzw.cloudfront.net> and open in a new tab
2. And we would see the Welcome Page

**WELCOME TO MY PAGE**



16. So this is our first time opening the files copied on S3 bucket which is the origin using the Cloud front. So now we need to refresh the page in order to cache them for them and can be stored in edge location. After refreshing it would be our cached copy.

1. The whole point of caching using cloud front is users can get the content faster.
2. Make sure you delete all the files once done .