

AWS CloudFront


Content Delivery Network (CDN)


Popular CDN Services

What is AWS CloudFront

Content Delivery Network (CDN)

- A content delivery network (CDN) refers to a geographically distributed group of servers which work together to provide fast delivery of Internet content.
- A CDN allows for the quick transfer/loading of Internet content including HTML pages, javascript files, images, and videos.
- The CDN services continues to grow, and today the majority of web traffic is served through CDNs, including traffic from major sites like Facebook, Netflix, and Amazon
- Benefits of using a CDN
 - Improving website load times
 - Reducing bandwidth costs
 - Increasing content availability and redundancy
 - Improving website security

 Edge Location

 Web server



Popular CDN Services

- Cloudflare CDN
- Akamai CDN
- Amazon CloudFront
- Microsoft Azure CDN
- Google Cloud CDN
- Alibaba Cloud CDN
- Imperva Cloud Application Security
- Rackspace CDN
- Fastly CDN
- CDN77 CDN

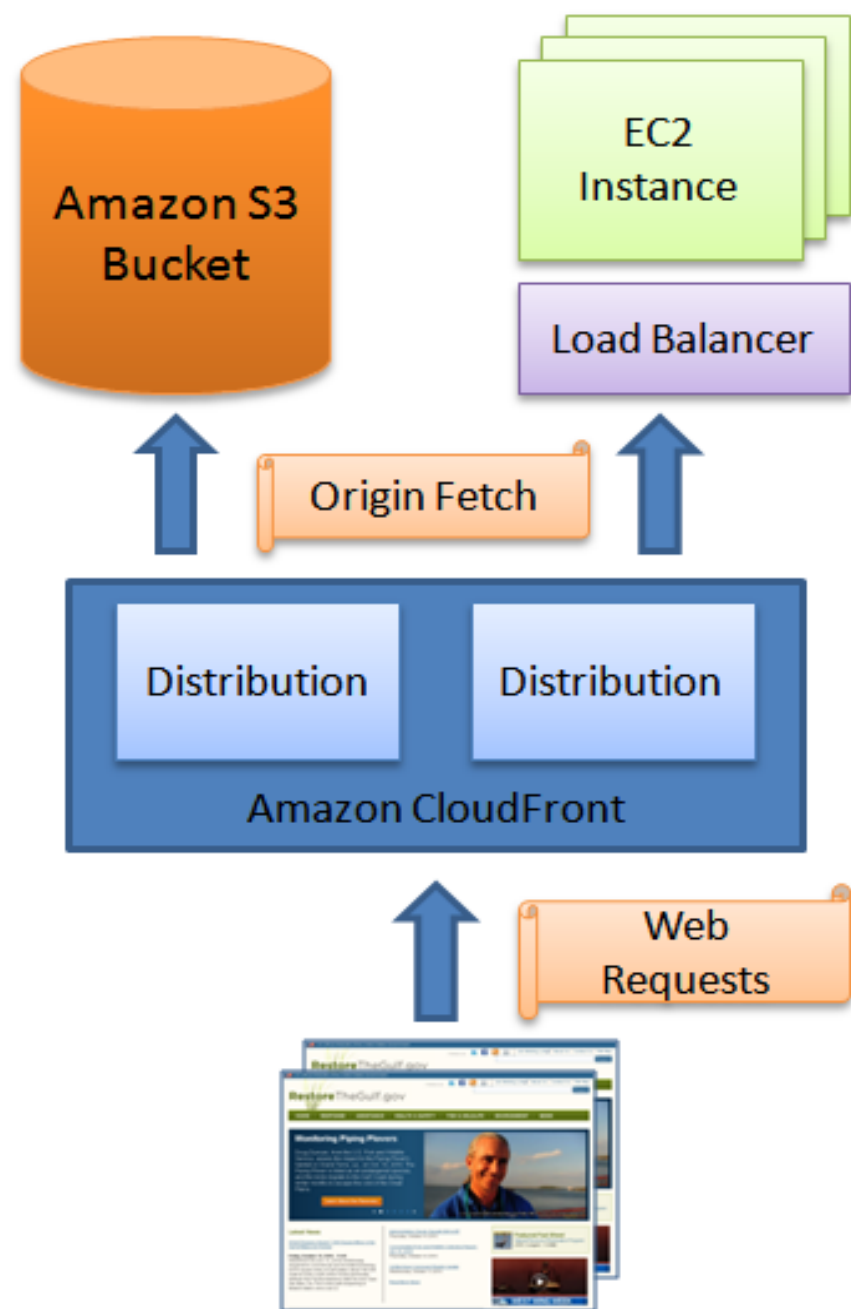
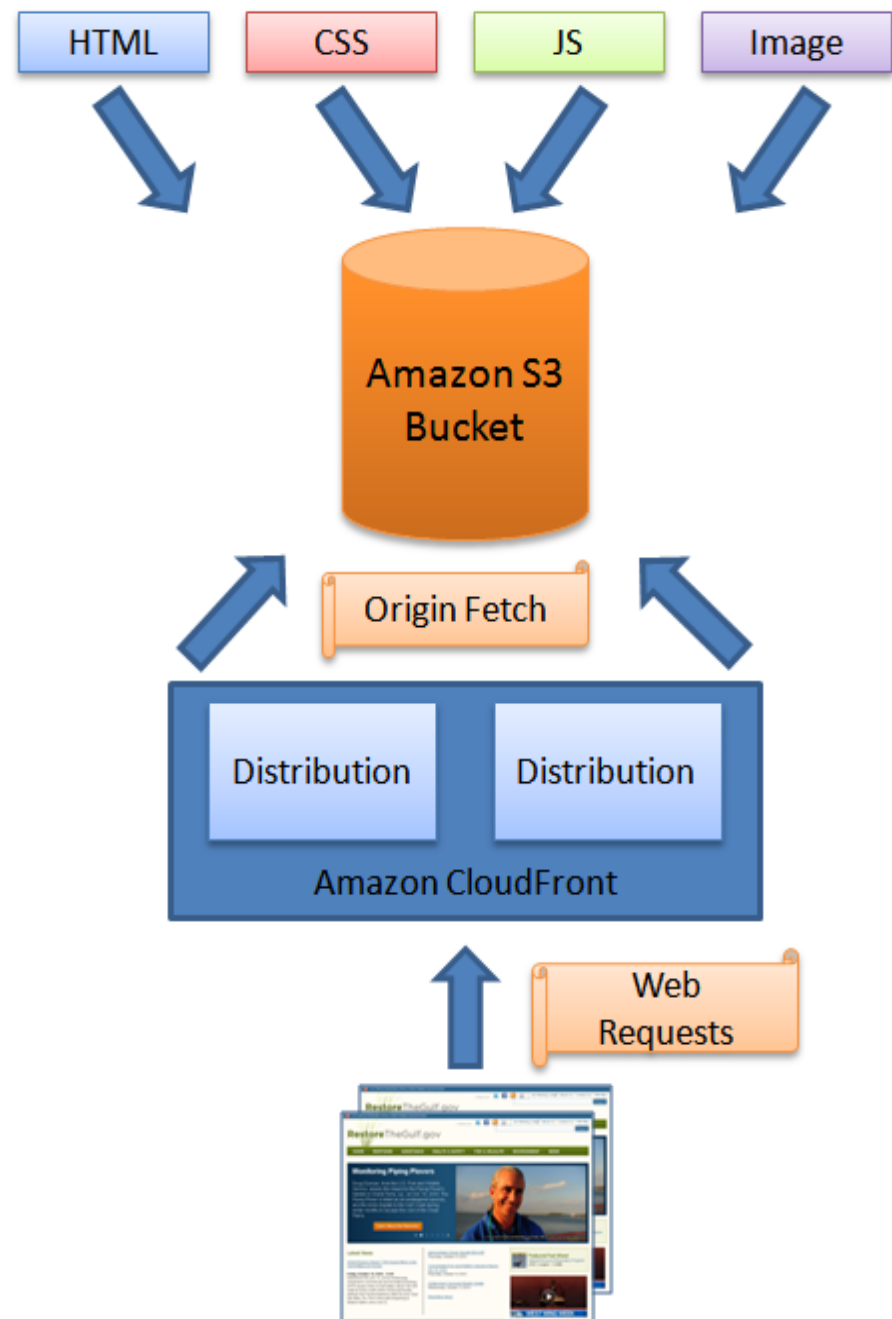
What is AWS CloudFront

- Amazon CloudFront is a fast content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to customers globally with low latency, high transfer speeds, all within a developer-friendly environment.
- Use cases
 - Deliver fast, secure websites
 - Accelerate dynamic content delivery and APIs
 - Stream live and on-demand video
 - Distribute patches and updates



AWS CloudFront

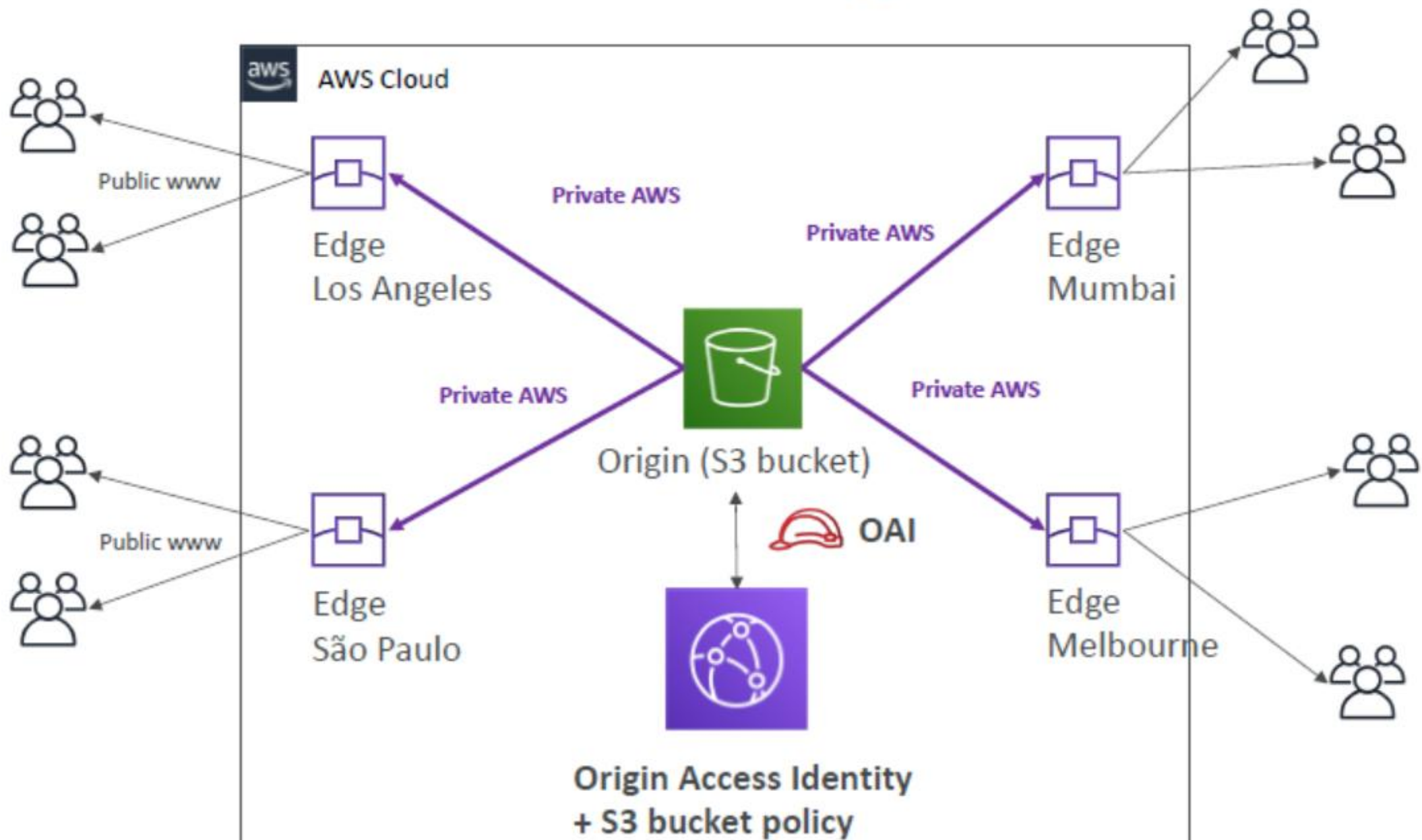
- CloudFront is a global (not regional) service.
- Amazon CloudFront is a web service that speeds up distribution of your static and dynamic web content, such as .html, .css, .js, and image and video files.
- CloudFront delivers your content through a network of data centers called **Edge Locations**.
- When a user requests content that you're serving with CloudFront, the user is routed to the edge location that provides the lowest latency.
- Amazon CloudFront has added several regional edge cache locations globally.
- DDoS protection, integration with Shield, AWS Web Application Firewall



CloudFront Origins

- An origin is the location where you store the **original web content**, which you want to distribute via CloudFront
- **S3 bucket**
 - For distributing files and caching them at the edge
 - Enhanced security with CloudFront Origin Access Identity (OAI)
- **Custom Origin (HTTP)**
 - Application Load Balancer
 - EC2 instance
 - S3 website (must first enable the bucket as a static S3 website)
 - Any HTTP backend you want

CloudFront – S3 as an Origin



Amazon CloudFront Distributions

- **Web Distributions:** serve the following content over HTTP or HTTPS:
 - Static and dynamic download content, for example, .html, .css, .js, and image files, using HTTP or HTTPS.
 - Multimedia content on demand using progressive download and Apple HTTP Live Streaming (HLS).
 - Your origin can be either an Amazon S3 bucket or an HTTP server
- **RTMP distributions**
 - Stream media files using Adobe Media Server and the Adobe Real-Time Messaging Protocol (RTMP).
 - An RTMP distribution must use an Amazon S3 bucket as the origin.
- CloudFront lets you create a total of up to 200 web distributions and 100 RTMP distributions for an AWS account.

CloudFront Invalidation

- If you need to remove/update an object from CloudFront edge caches before it expires, you can do one of the following:
 - Invalidate the object from edge caches. The next time a viewer requests the object, CloudFront returns to the origin to fetch the latest version of the object.
 - Use object versioning to serve a different version of the object that has a different name.
 - You can't cancel an invalidation after you submit it.
- You can invalidate most types of objects that are served by a web distribution
- You cannot invalidate media files in the Microsoft Smooth Streaming format when you have enabled Smooth Streaming for the corresponding cache behavior.

Geographic Restrictions

- You can use geo restriction, also known as geo-blocking, to prevent users in specific geographic locations from accessing content that you're distributing through a CloudFront web distribution.
- Restriction type
 - No restrictions
 - Allow list
 - Block list