Group 2

* Explore the difference between AWS CloudFront and a caching tool like AWS Elasticache. What are the differences between the two? When would you use CloudFront and when would you use Elasticache?

**AWS Cloudfront vs Elasticache**

* **Amazon ElastiCache** is to get managed Redis or Memcached
* Caches are in-memory databases with high performance, low latency
* Helps reduce load off databases for read intensive workloads
* **Amazon CloudFront** provides a Content Delivery Network (CDN) caching HTTP close to your worldwide customers.
* Improves read performance, content is cached at the edge
* Improves users experience
* Point of Presence spread throughout globally (edge
* locations)
* DDoS protection (because worldwide), integration with Shield, AWS Web Application Firewall

**Use Cases Differences**

**AWS Cloudfront:**

### 1. Static asset caching

By using CloudFront, the advantage of AWS backbone can be obtained for your application. CloudFront gives your end users a fast, safe, and reliable experience.

Amazon S3 Bucket can be used as a simple approach for storing and delivering static content. When S3 is used together with CloudFront, an option to use Origin Access identity (OAI) can be used to easily restrict access to your S3 content.

2. Live Streaming

Both pre-recorded and live events can be streamed to global viewers.

* Formats such as MPEG DASH, Apple HLS, Microsoft Smooth Streaming, and CMAF can be streamed using the CloudFront for the Video on Demand (VOD) streaming service.
* For live streaming, media fragments are cached at the edge, so the multiple requests for the manifest file which delivers the fragments in order can be combined. This method reduces the load on the origin server.

3. During the system processing, encrypt specific fields:

You have secure end-to-end connections to origin servers when configuring HTTPS with CloudFront. In addition to HTTPS security, field-level encryption allows you to protect specific data throughout system processing so that only certain applications at your origin can see it. To enable field-level encryption, add a public key to CloudFront and specify the set of fields to be encrypted with the key.

**AWS Elasticache**

1. Message Management- When the message is delivered to subscribers via various channels, there is always a fluctuation of some subscribers canceling their subscriptions and others entering the channel.

2. Real-time analytics- When users shop online, product recommendations must be generated right away while they are still perusing the catalog.

This calls for the customer’s previously selected items to be cached and evaluated in realtime in order to suggest the next set of products.

3. Leaderboards- The number of points that players have acquired and where they stand on the leaderboard are constantly updated in the gaming business.

To be able to continuously display the changing leadership positions, requires continuous updates, therefore caching is crucial.