Assignment 2.10

SCTP CLOUD INFRASTRUCTURE ENGINEERING

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1. Explore the difference between AWS CloudFront and a commercial 3rd party tool like Cloudflare. In what situation would you use CloudFront over Cloudflare and vice versa?

Cloudflare is a CDN (content delivery network) that focuses on security, whereas cloud front specializes in speed optimization.

Cloudflare is a service that offers CDN and DDoS protection as well as a web application firewall (WAF) for its customers while **Cloudfront** is just a CDN provider with no other added benefits except for accelerating content delivery

Cloudflare is a CDN that acts as a DNS for your website while Amazon **Cloudfront** operates closer to networks and serves content directly. In other words, Cloudflare works like a proxy whereas cloudfront is an actual server that delivers **content** from servers closer to end-users for faster speeds and performance.

Cloudflare is a perfect solution for those looking to protect their site from attacks {provide more protection against DDoS attacks} or speed up their websites by delivering the right files closer to visitors to provide an optimal web experience regardless of location.

If you're planning to stream live or recorded videos to more than one location, it's best to use a dedicated streaming service like Amazon CloudFront. Amazon CloudFront has built-in support for playing streaming media files and offers several features that make managing and delivering this type of content easier.

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?

Feature	AWS CloudFront	AWS Elasticache
Type	Content delivery network (CDN)	In-memory data store
Cached content	Static web content (images, HTML, CSS, JavaScript)	Data for applications (e.g., session data, product catalogs)
Goal	Reduce latency, improve load times	Reduce latency, increase throughput, reduce load on database
Use cases	Website content delivery, streaming video, mobile applications	Web applications, gaming applications, financial applications
Security	HTTPS/TLS encryption, Signed URLs, Geolocation filtering	Access control lists (ACLs), Network ACLs (NACLs), Security groups

3. Is AWS CloudFront a secure CDN? How does security in CloudFront work? Is CloudFront sufficient without alternative security tools like AWS DDoS Protection, WAF and Shield?

- Yes it is a secure CDN, it has various secuirty features such as:

- 1. SSL/TLS Encryption

- 2. Control Access using IAM, IP whitelisting/blacklisting

- 3. Geo-restrictions

- 4. AWS WAF integration, protect against web vulnerabilities

- 5. AWS Shield integration, protect against DDoS

- Cloudfront by itself although it has some security features, but it is not suffice at scale.

4. Is AWS CloudFront better than other cloud providers' CDN tools? Do a quick research to illustrate the similarities and differences between the AWS, GCP and Azure CDNs.

- There are no real benefits between the CDN networks of GCP, AWS and Azure. They each provide more or less the same features, it's just a matter of which platform you are using the services on.