What Is A CDN?

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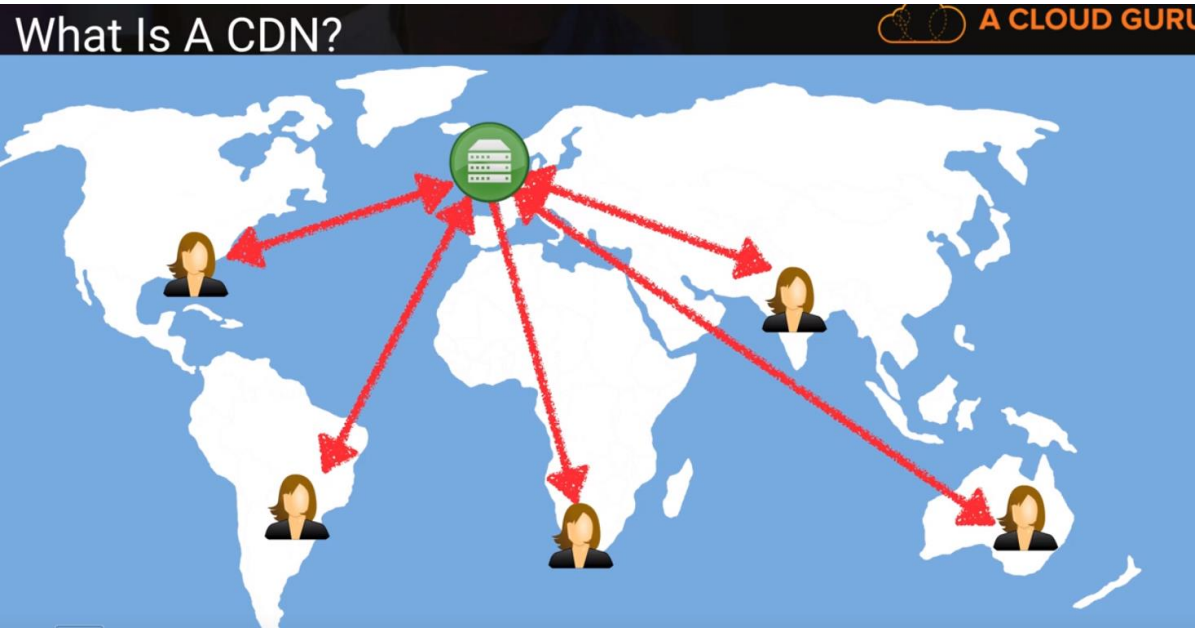
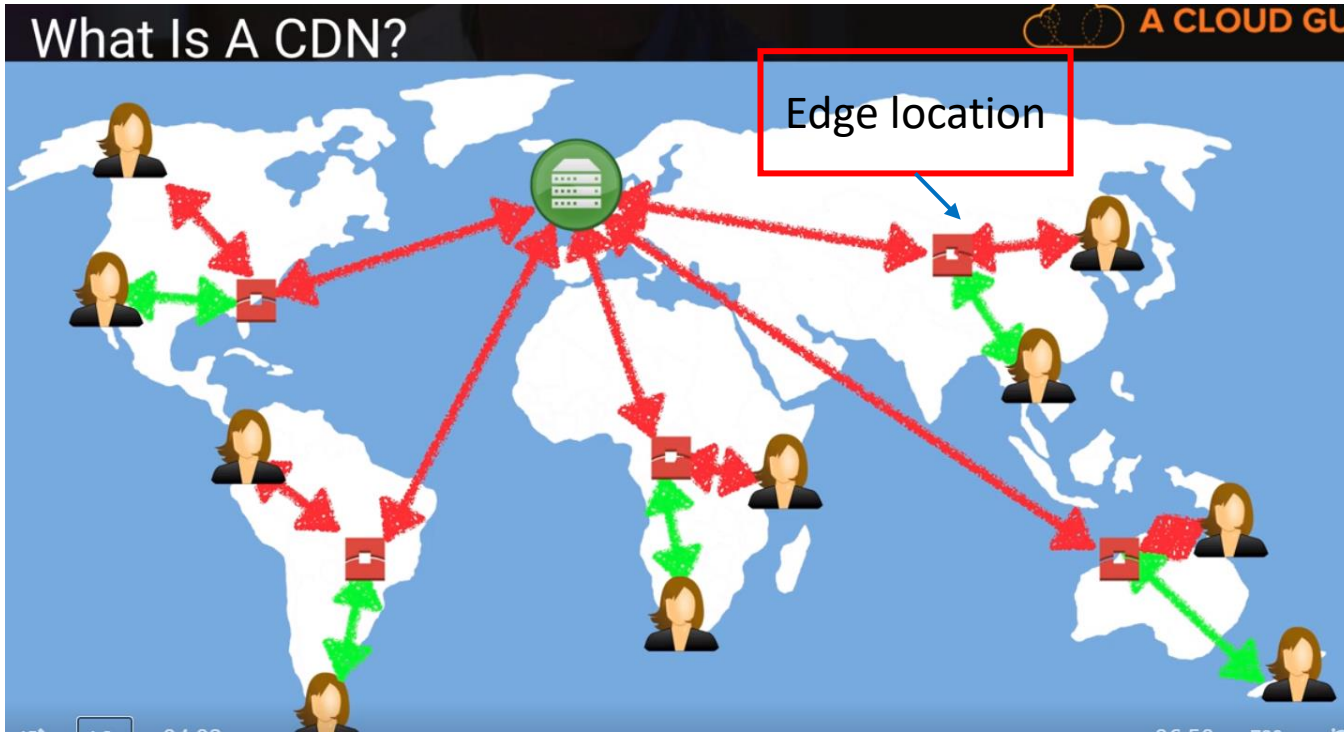
A content delivery network (CDN) is a system of distributed servers (network) that deliver webpages and other web content to a user based on the geographic locations of the user, the origin of the webpage, and a content delivery server.



Imagine a website located in UK and many users across word are accessing this website. Users request is routed via many different networks to reach the server. Network hops and distance the request needs to travel has significant impact on performance and responsiveness of the website. Network latency is going to be different for different location. User who is farther way going to experience worst network latency and user closer to server with great network latency. This is transfer acceleration which uses cloudfront technology. Transfer acceleration vs cloudfront – cloudfront focused on content delivery by allowing efficient reads and downloads where as transfer acceleration is about enabling faster uploads o s3.

Instead of users accessing server located in UK, there is a concept called edge location. Edge location is the collection of services which are geographically distributed data centers. Each edge locations used by cloudfront keep a copy of objects (files, images , serving contents). User make request to edge location which is closer geographically than making request to the server in UK. Once the request is made, Edge locations makes request to main server and cache the objects locally. When a user makes request, contents are retrived from local edge locations. This improves response times, transfer rates and reduces network hops. After “time to live” is up, the objects are automatically cleared from cache. User can clear cache by themselves when there is newer version of files/images and this will be charged.



CloudFront - Key Terminology

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- Edge Location - This is the location where content is cached and can also be written. Separate to an AWS Region/AZ.

- Origin - This is the origin of all the files that the CDN will distribute. Origins can be an S3 Bucket, an EC2 Instance, an Elastic Load Balancer, or Route53.

- Distribution - This is the name given the CDN, which consists of a collection of Edge Locations.
- Web Distribution - Typically used for Websites
- RTMP - Used for Media Streaming.

What Is CloudFront?

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Amazon CloudFront can be used to deliver your entire website, including dynamic, static, streaming, and interactive content using a global network of edge locations. Requests for your content are automatically routed to the nearest edge location, so content is delivered with the best possible performance.

e.g. Can be used to be used to optimize performance for users accessing a website backed by S3.

What Is CloudFront?

Amazon CloudFront is optimized to work with other Amazon Web Services, like Amazon Simple Storage Service (Amazon S3), Amazon Elastic Compute Cloud (Amazon EC2), Amazon Elastic Load Balancing, and Amazon Route 53. Amazon CloudFront also works seamlessly with any non-AWS origin server, which stores the original, definitive versions of your files.





CloudFront - Key Terminology

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CloudFront Distribution types:

- Web Distribution - Used for Websites, HTTP / HTTPS
- RTMP Distribution - (Adobe Real Time Messaging Protocol)
  Used for Media Streaming / Flash multi-media content

CloudFront And S3 Transfer Acceleration

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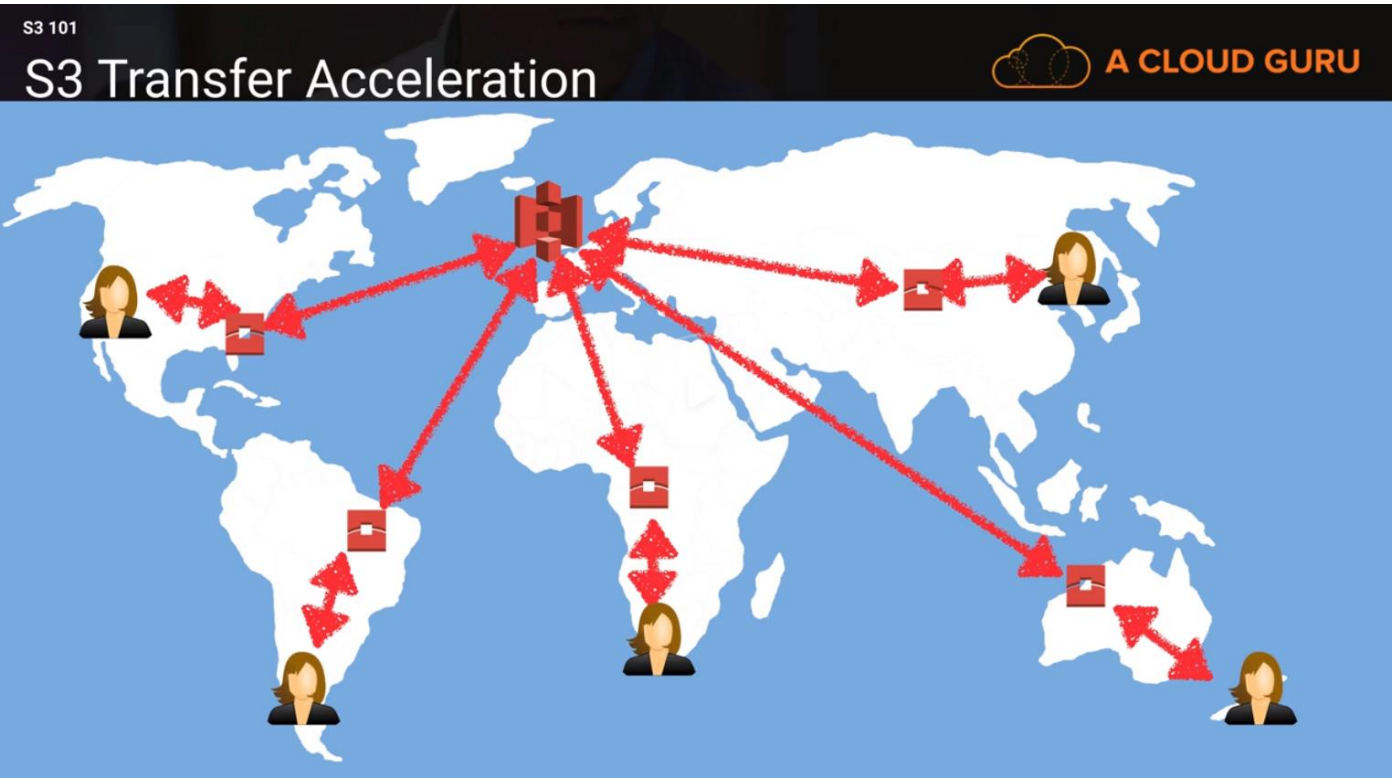
Amazon S3 Transfer Acceleration enables fast, easy, and secure transfers of files over long distances between your end users and an S3 bucket.

Transfer Acceleration takes advantage of Amazon CloudFront's globally distributed edge locations. As the data arrives at an edge location, data is routed to Amazon S3 over an optimized network path.



Users across need to upload files to S3 bucket located in the London, then user uploads to edge location and this edge locations uploads to the main s3.

CloudFront - Exam Tips

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- Edge Location - This is the location where content will be cached. This is separate to an AWS Region/AZ.
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CloudFront - Exam Tips

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- Edge locations are not just READ only — you can WRITE to them, too. (i.e. PUT an object on to them.)
- CloudFront Edge Locations are utilised by S3 Transfer Acceleration to reduce latency for S3 uploads.
- Objects are cached for the life of the TTL (Time To Live.)
- You can clear cached objects, but you will be charged.