Amazon - CloudFront

What is Cloud Front ?

"Amazon CloudFront is a CDN (Content Delivery Network) that speeds up distribution of static and dynamic web content, such as .html, .css, .js, and image files, to users.

CloudFront delivers content through a worldwide network of data centers called edge locations.the nearest edge location is routed when the user requests for data, resulting in lowest latency, low network traffic, fast access to data."

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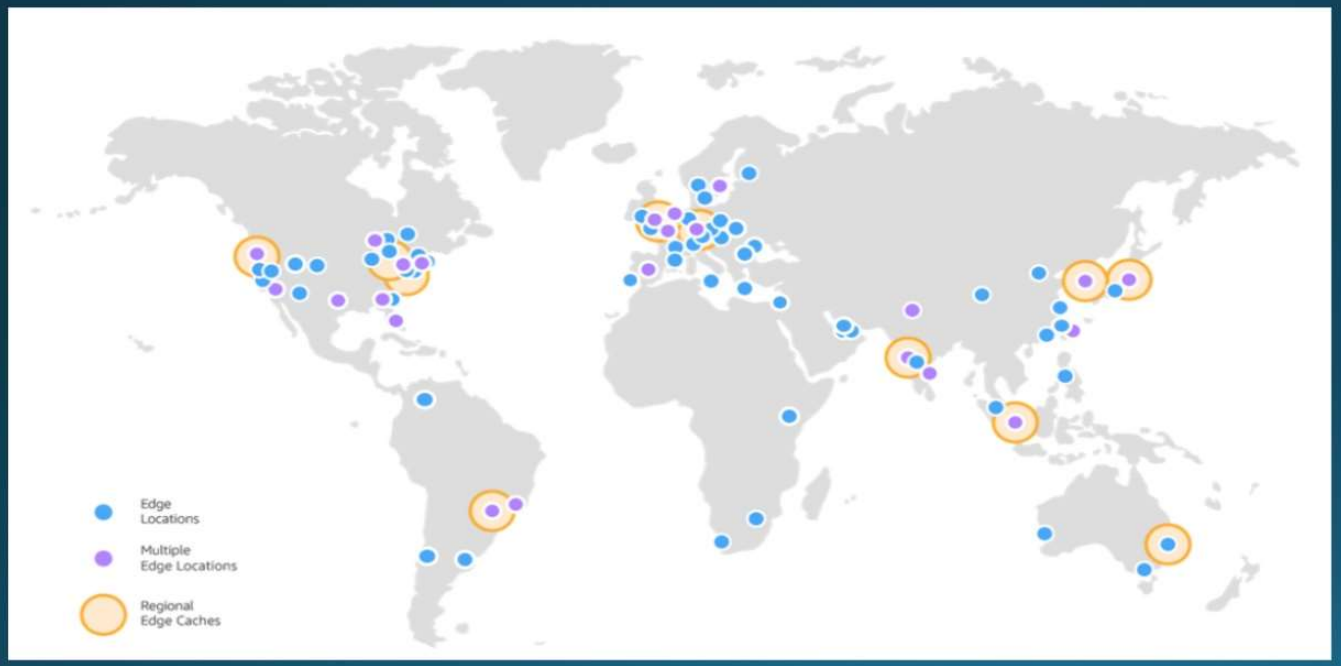
CloudFront Global Infrastructure



300+ Points of Presence

300 Edge Locations

13 Regional Edge Caches

aws CERTIFIED Solutions Architect Associate
aws CERTIFIED Developer Associate
aws CERTIFIED SysOps Administrator Associate
aws CERTIFIED Solutions Architect Professional
aws CERTIFIED Cloud Practitioner

Web Services

Microsoft CERTIFIED Trainer MCT

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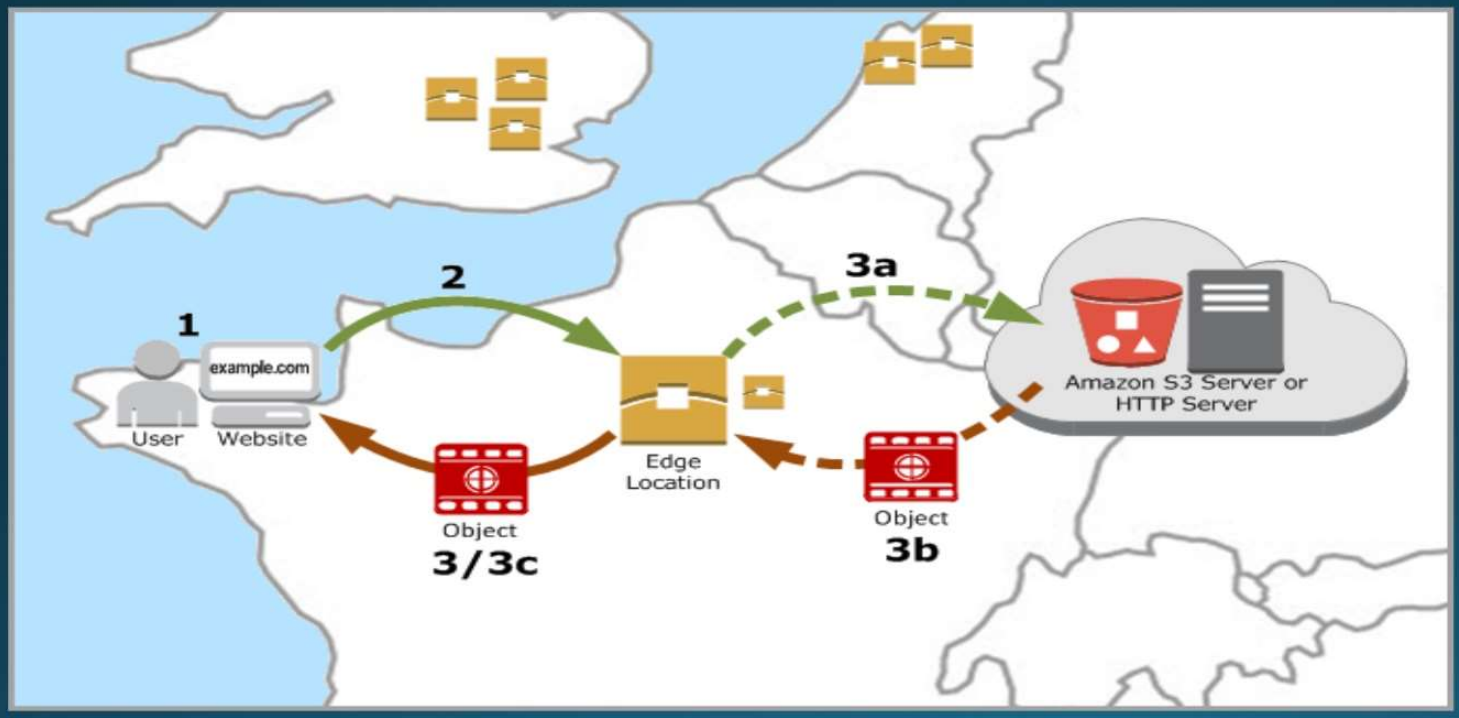

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How AWS CloudFront Delivers the Content?

- AWS CloudFront delivers the content in the following steps.

  Step 1 – The user accesses a website and requests an object to download like an image file.

  Step 2 – DNS routes the request to the nearest CloudFront edge location to serve the user request..

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How AWS CloudFront Delivers the Content?

Step 3 – At edge location, CloudFront checks its cache for the requested files. If found, then returns it to the user otherwise does the following –

First CloudFront compares the request with the specifications and forwards it to the applicable origin server for the corresponding file type.

The origin servers send the files back to the CloudFront edge location.

As soon as the first byte arrives from the origin, CloudFront starts forwarding it to the user and adds the files to the cache in the edge location for the next time when someone again requests for the same file.

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How AWS CloudFront Delivers the Content?

Step 4 – The object is now in an edge cache for 24 hours or for the provided duration in file headers. CloudFront does the following –

CloudFront forwards the next request for the object to the user's origin to check the edge location version is updated or not.

If the edge location version is updated, then CloudFront delivers it to the user.

If the edge location version is not updated, then origin sends the latest version to CloudFront. CloudFront delivers the object to the user and stores the latest version in the cache at that edge location.

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Faster Performance and Simple:

The broad network of edge locations and CloudFront caches copies of content close to the end users that results in lowering latency, high data transfer rates and low network traffic. All these make CloudFront fast.

Cost-effective

Using Amazon CloudFront, we pay only for the content that deliver through the network, without any hidden charges and no up-front fees.

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Can be used with other AWS Services:

Amazon CloudFront is designed in such a way that it can be easily integrated with other AWS services, like Amazon S3, Amazon EC2 & Custom Origin.

Elastic:

Using Amazon CloudFront, not to worry about maintenance. The service automatically responds if any action is needed, in case the demand increases or decreases.

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Reliable:

Amazon CloudFront is built on Amazon's highly reliable infrastructure, i.e. its edge locations will automatically reroute the end users to the next nearest location, if required in some situations.

Origin Failover:

You can enable Origin Failover for your Amazon CloudFront distributions to improve the availability of content delivered to your end users.

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Regional Edge Caches:

Amazon CloudFront has added a new type of edge location called Regional Edge Cache that further improves performance for your viewers. Regional Edge Caches, in addition to improving performance, also help reduce the load on your origin resources, minimizing operational burden associated with scaling your origin and reducing your origin costs.

Regional Edge Caches have larger cache-width than any individual edge location, so your objects remain in cache longer at these locations. This helps keep more of your content closer to your viewers, reducing the need for CloudFront to go back to your origin webserver, and improving overall performance for viewers.

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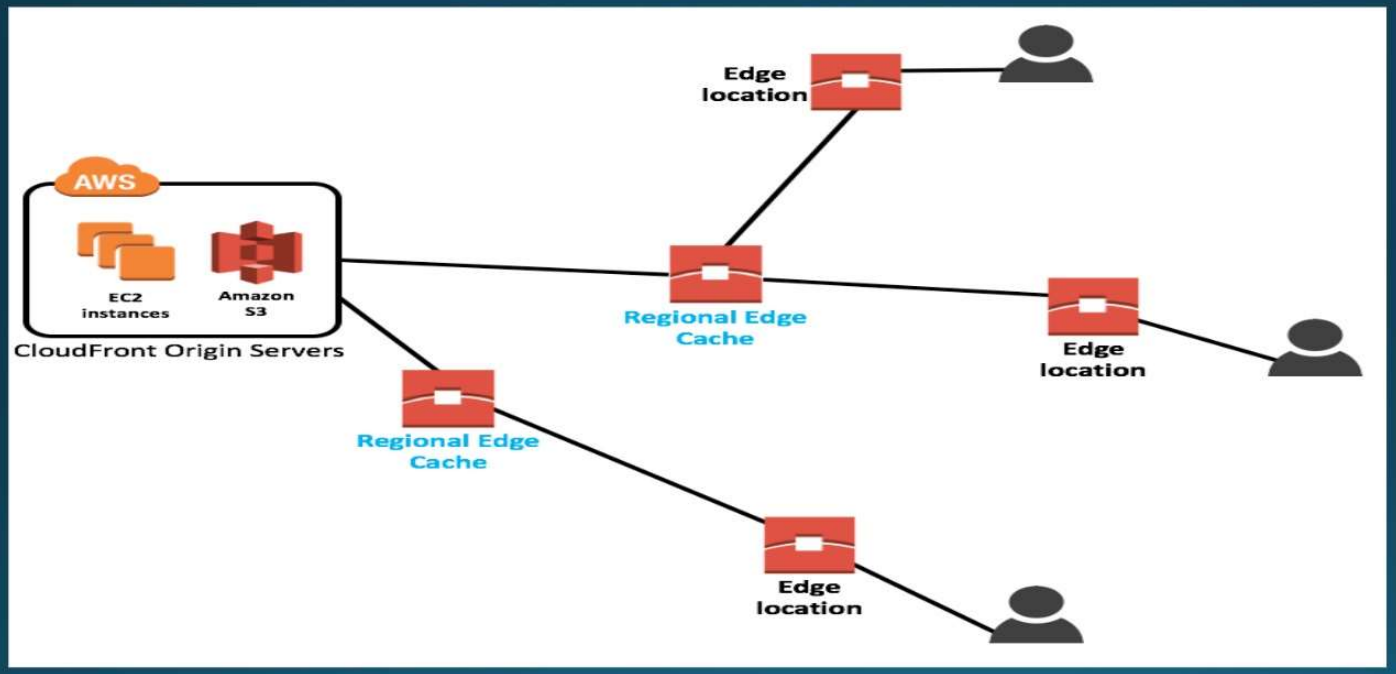

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CloudFront Pricing:

Amazon CloudFront is designed so you don't have to pay any up-front fees or commit to how much content you'll have. As with the other AWS services, you pay as you go and pay only for what you use.

AWS provides two usage reports for CloudFront: a billing report and a report that summarizes usage activity. To learn more about these reports, see AWS Billing and Usage Reports for CloudFront.

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