CloudFront and S3 Website Hosting Interview Questions

Basic CloudFront Questions

1. What is Amazon CloudFront and what problem does it solve?
2. Explain the difference between an origin server and an edge location in CloudFront.
3. What types of origins can CloudFront use?
4. What is a CloudFront distribution?
5. Explain the difference between Web and RTMP distributions in CloudFront.
6. What is Time to Live (TTL) in CloudFront and how does it affect caching?
7. How do you clear cached content from CloudFront before it expires?
8. What is the difference between a cache behavior and the default cache behavior in CloudFront?
9. How does CloudFront handle HTTPS requests?
10. What is the purpose of Origin Access Identity (OAI) in CloudFront?

S3 Website Hosting Questions

1. What are the requirements for hosting a static website on Amazon S3?
2. What is the URL format for an S3 static website endpoint?
3. Can you enable HTTPS directly on an S3 website endpoint? If not, how can you add HTTPS support?
4. What is the difference between hosting a website directly on S3 versus using CloudFront with S3?
5. How do you configure an S3 bucket for static website hosting?
6. What is the purpose of the index document and error document in S3 website hosting?
7. How do you make objects in an S3 bucket publicly accessible for website hosting?
8. Can you use a custom domain directly with an S3 website? What are the limitations?
9. What is the maximum size of an object that can be served through an S3 website?
10. How do you implement redirects in an S3 static website?

Intermediate CloudFront Questions

1. Explain the difference between Origin Access Identity (OAI) and Origin Access Control (OAC) in CloudFront.
2. How does CloudFront handle cache invalidation and what are the costs associated with it?
3. What are CloudFront Functions and when would you use them?
4. Explain the difference between CloudFront Functions and Lambda@Edge.
5. How can you restrict access to CloudFront content using signed URLs or signed cookies?
6. What is CloudFront Origin Shield and when would you use it?
7. How do you configure CloudFront to forward cookies, headers, and query strings to the origin?

8. What is the purpose of price classes in CloudFront and how do they affect global distribution?

9. How can you configure CloudFront to work with non-AWS origins?

10. Explain how CloudFront integrates with AWS WAF (Web Application Firewall).

Custom Domain and SSL Questions

1. How do you associate a custom domain name with a CloudFront distribution?

2. What are the requirements for using a custom SSL certificate with CloudFront?

3. Explain the process of requesting and validating an SSL certificate through AWS Certificate Manager (ACM).

4. What is the difference between DNS validation and email validation in ACM?

5. Why must SSL certificates for CloudFront be in the US East (N. Virginia) region?

6. How do you configure DNS records to point your custom domain to a CloudFront distribution?

7. What is the difference between using an A record alias and a CNAME record for CloudFront?

8. How do you handle both the root domain and www subdomain for a website using CloudFront?

9. What happens when an SSL certificate expires when used with CloudFront?

10. How do you troubleshoot SSL/TLS certificate issues with CloudFront?

Advanced CloudFront and Architecture Questions

1. Design a multi-region, highly available architecture for a global website using S3 and CloudFront.

2. How would you implement A/B testing using CloudFront?

3. Explain how you would use CloudFront to serve both static content from S3 and dynamic content from an API Gateway or Application Load Balancer.

4. How would you implement a secure content delivery solution that restricts access based on user authentication?

5. Design a solution for serving different content to users based on their geographic location using CloudFront.

6. How would you optimize CloudFront for serving video content?

7. Explain how you would implement a multi-CDN strategy that includes CloudFront and another CDN provider.

8. How would you monitor and optimize the performance of a CloudFront distribution?

9. Design a solution for a website that needs to comply with data residency requirements in specific countries while still using CloudFront.

10. How would you implement a continuous deployment pipeline for a static website hosted on S3 and served through CloudFront?

Scenario-Based Questions

1. Your company has a website hosted on S3 and delivered through CloudFront. Users in certain regions are reporting slow load times. What steps would you take to diagnose and resolve this issue?

2. You need to host a website that serves both public content and private content that requires user authentication. How would you architect this solution using S3, CloudFront, and other AWS services?

3. Your organization needs to migrate an existing website to AWS with minimal downtime. The website currently uses a custom domain with HTTPS. Outline the steps you would take to migrate to S3 and CloudFront.

4. You're experiencing high costs with your CloudFront distribution. What strategies would you implement to optimize costs while maintaining performance?

5. Your website hosted on S3 and CloudFront needs to comply with security requirements that mandate specific HTTP headers on all responses. How would you implement this?

6. You need to serve different versions of your website to users based on the device they're using (mobile, tablet, desktop). How would you implement this using CloudFront?

7. Your company has regulatory requirements to log all access to certain files served through your website. How would you implement comprehensive logging and monitoring for your S3 and CloudFront setup?

8. You need to implement a solution where users can securely upload files to your S3 bucket through a web interface, without having direct access to your AWS resources. How would you design this?

9. Your website needs to handle sudden traffic spikes during promotional events. How would you ensure your S3 and CloudFront architecture can handle these spikes efficiently?

10. You need to implement a solution where certain parts of your website are cached for different durations based on how frequently they change. How would you configure CloudFront to handle this requirement?