



CASE STUDY

Route 53

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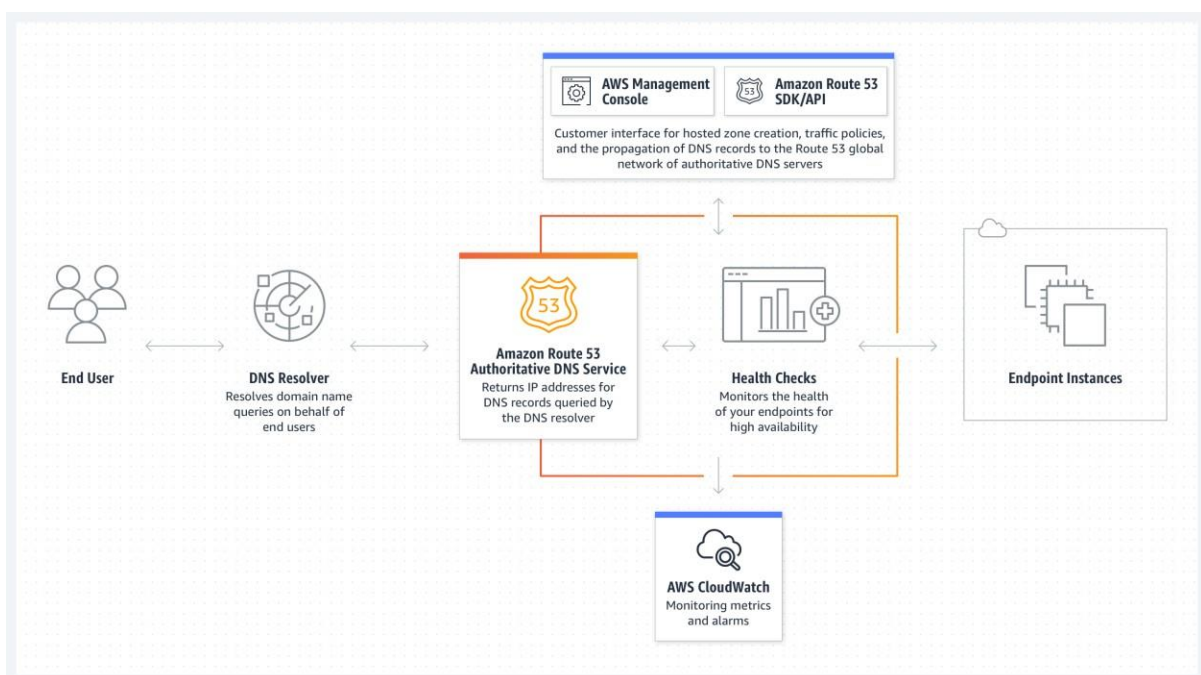
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ROUTE 53:

1. What is the purpose of route 53 and significance of DNS in the context of Route 53 ?



Route 53, an Amazon Web Services (AWS) offering, is a scalable DNS service primarily focused on translating user-friendly domain names like `www.example.com` into IP addresses

for internet identification. It efficiently manages DNS routing and traffic to direct users to appropriate resources, employing factors like geographic location and endpoint health.

Purpose:

Route 53's main aim is managing DNS routing and traffic. It facilitates domain registration, DNS hosting, health checking, load balancing, and traffic management. It enables users to register or transfer domains, manage DNS records, monitor endpoint health, balance incoming traffic, and control DNS query responses.

Significance of DNS in Route 53:

DNS is pivotal for internet functionality, allowing access to services via memorable domain names instead of complex IP addresses. Route 53 relies on DNS to execute its functions, ensuring efficient resource allocation, high availability, and optimized performance through traffic management strategies. DNS underpins Route 53's scalability, reliability, and flexibility in managing domain names and directing internet traffic.

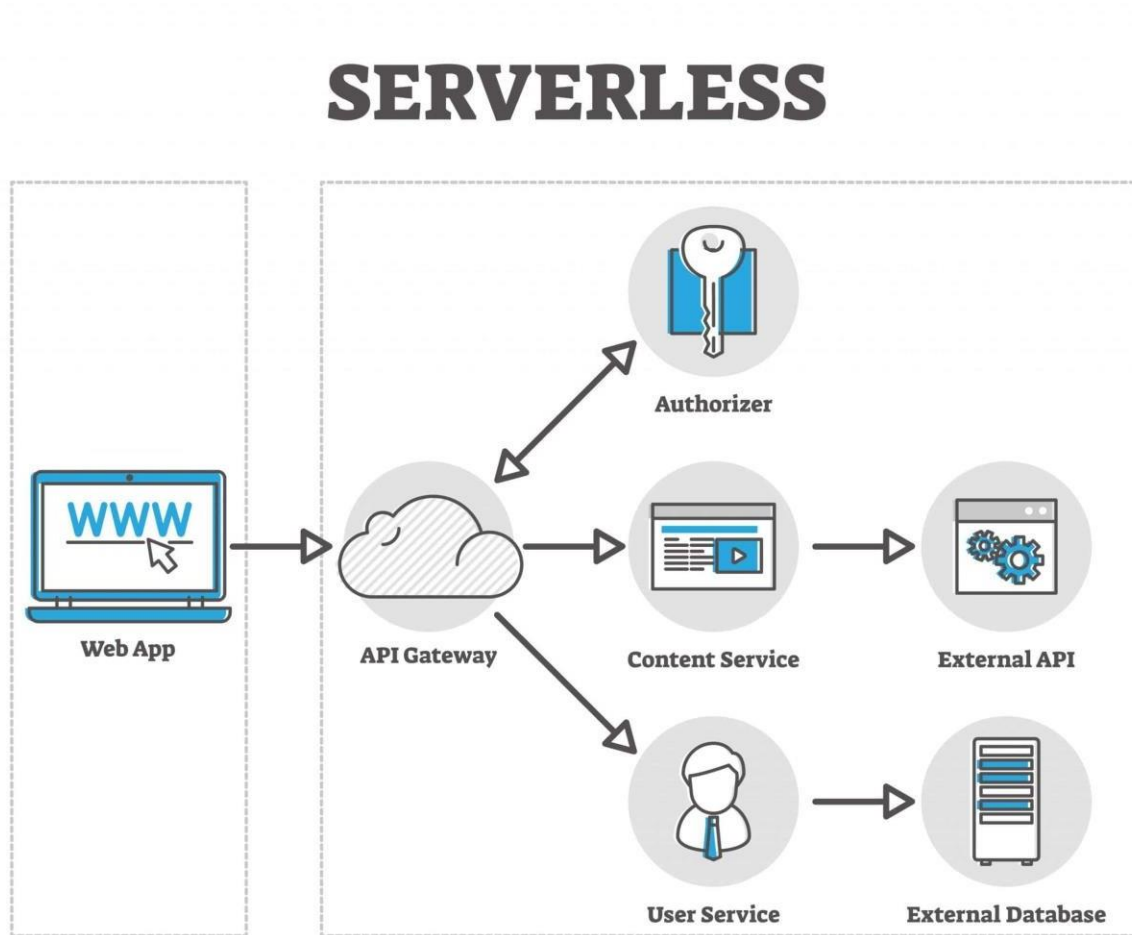
2. What is Amazon Cloud Front, and what problem does it solve ?

Amazon CloudFront is a content delivery network (CDN) service provided by Amazon Web Services (AWS). Its primary function is to accelerate the delivery of web content, including websites, videos, images, and other static or dynamic files, to users across the globe with low latency and high data transfer speeds.

CloudFront solves the problem of latency and slow content delivery experienced by users accessing web content from distant locations. Traditional web hosting relies on serving content from a single origin server, which can result in slower load times for users located far from the server's location due to increased network latency. CloudFront mitigates this issue by caching content at edge locations strategically distributed worldwide, closer to end users. When a user requests content, CloudFront delivers it from the nearest edge location, reducing the distance data needs to travel and significantly improving load times.

Additionally, CloudFront enhances security by offering features like SSL/TLS encryption, access control, and DDoS protection. It also provides detailed analytics and real-time monitoring to optimize content delivery performance further. Overall, Amazon CloudFront efficiently addresses the challenge of delivering web content quickly and securely to users worldwide, making it an essential tool for enhancing the user experience and improving website performance.

3. Explain the concept of "server less" computing in the context of AWS Lambda?



Serverless computing, exemplified by AWS Lambda, represents a paradigm shift in cloud computing where developers can build and run applications without managing underlying infrastructure. In the context of AWS Lambda, developers focus solely on writing code to define the application's functionality, without concerning themselves with provisioning or managing servers.

Lambda allows developers to upload their code, written in supported programming languages such as Python, Node.js, or Java, and define triggers or events that will invoke this code. These triggers could be HTTP requests, changes to data in an AWS service like S3 or DynamoDB, or scheduled events. When a trigger occurs, Lambda automatically executes the associated code in a stateless and isolated environment, scaling seamlessly based on the incoming workload. Developers are charged only for the compute time consumed by their code, with no charges when the code is not running.

The serverless model offers several benefits. It eliminates the need for server provisioning, maintenance, and scaling, reducing operational overhead and costs. It also enables rapid development and deployment, as developers can focus entirely on writing

application logic. Additionally, serverless architectures inherently support high availability and scalability, as the underlying infrastructure is managed by the cloud provider. Overall, AWS Lambda and serverless computing revolutionize application development by providing a scalable, cost-effective, and efficient platform for building and running applications.