**Amazon Web Services (AWS) Route 53**

**Overview**

Amazon Web Services (AWS) Route 53 is a highly available and scalable cloud Domain Name System (DNS) web service. It is designed to give technically skilled individuals, developers, and businesses a reliable and cost-effective way to route end users to their websites and internet-based applications.

**Key Features:**

**Domain Registration**: Route 53 offers domain name registration services, where you can search for and register available domain names or transfer in existing domain names to be managed by Route 53.

**DNS Routing**: Route 53 connects user requests to internet applications running on AWS via IP addresses.

**Traffic Management**: Route 53 Traffic Flow enables users to manage traffic worldwide by utilizing a variety of routing types through what is referred to as routing policies for enhanced application availability and performance.

**Health Checks and Failover**: Route 53 sends automated requests over the internet to a resource, such as a web server, to verify that it is reachable, available, and functional. If it is not, it will redirect traffic to healthy resources ensuring high availability.

**DNS Security**: Route 53 supports Domain Name System Security Extensions (DNSSEC) by signing DNS records for all existing and new public hosted zones, as well as DNSSEC validation for Amazon Route 53 Resolver.

**Common Use Cases:**

**Hosting Websites**: Route 53 can be used to connect domain names to your web applications on AWS resources like Amazon S3 buckets or EC2 instances.

**Load Balancing Traffic**: It involves distributing traffic to multiple resources in proportions that you specify using AWS resources, such as Elastic Load Balancers, for improved application scalability.

**Disaster Recovery**: It can help users increase dependability by rerouting their customers to an alternate destination if the user's original application endpoint becomes unavailable - Employing the failover routing strategy.

**Global Content Delivery**: It can route traffic based on the location of users and for latency optimisation purposes.

**Routing Based on Health Checks**: It monitors the health of resources and routes traffic away from unhealthy resources, thus ensuring uninterrupted service.

**Managing Domain Names**: It allows users to register, transfer and manage domain names.

**DNS Routing Strategies:**

**Simple Routing**: It is used for a single resource that performs standard DNS functions for your domain.

**Weighted Routing**: It is used to route traffic to multiple resources choose how much traffic is routed to each resource. This can be useful for a variety of purposes, including load balancing and testing new versions of software.

**Latency-Based Routing**: It is used when you have resources in multiple AWS Regions, and you want to route traffic to the Region that provides the best latency to boost speed for a better user experience.

**Geolocation-Based Routing**: It is used when you want to route traffic based on the location of your users. It is great for multinational organizations.

**Multi-value Routing**: It is used when you want Route 53 to respond to DNS queries with up to eight healthy records (multiple values, such as IP addresses for your web servers) selected at random.

**Failover Routing**: It is used when you want to configure active-passive failover, where traffic is automatically redirected to a standby resource when the active and primary route becomes unavailable.

**DEMO**

Unfortunately, my domain name registration failed three times and I do not know what caused it. However, I have my s3 bucket created:

<https://myprofilecp.s3.amazonaws.com/cpportfolio.html>