**Assignment-14-May-2022:**

1. **What is DNS? Explain**

* DNS stands for Domain Name System.
* DNS is used when you use an internet. DNS is used to convert human-friendly domain names (such as ****https://www.javatpoint.com****) into an Internet Protocol (IP) address.
* IP addresses are used by computers to identify each other on the network.
* IP addresses are of two types, ****i.e., Ipv4 and Ipv6.****

1. **What is Route 53?**

[AWS Route 53](https://aws.amazon.com/route53/" \t "https://avinetworks.com/glossary/aws-route-53/_blank) is intended for managing DNS for services and machines deployed on Amazon’s public cloud. The AWS Route 53 DNS service connects user requests to ELB load balancers, Amazon EC2 instances, Amazon S3 buckets, and other infrastructure running on AWS.

Amazon Route 53 is a highly available and scalable cloud [Domain Name System (DNS)](https://aws.amazon.com/route53/what-is-dns/" \t "https://aws.amazon.com/route53/_blank) web service. It is designed to give developers and businesses an extremely reliable and cost effective way to route end users to Internet applications by translating names like www.example.com into the numeric IP addresses like 192.0.2.1 that computers use to connect to each other. Amazon Route 53 is fully compliant with IPv6 as well.

1. **What is hosted zone?**

A hosted zone is an Amazon Route 53 concept. A hosted zone is **analogous to a traditional DNS zone file; it represents a collection of records that can be managed together, belonging to a single parent domain name**. All resource record sets within a hosted zone must have the hosted zone's domain name as a suffix.

1. **What is sub domain?**

A subdomain is the part of your URL that appears before your domain name. For example, **www** is the subdomain of **www.amazon.com** and **aws** is the subdomain of **aws.amazon.com.**

1. **What are the features of route 53?**

## Key features

**Latency based routing**  
Route end users to the Amazon Web Services China regions that provides the lowest possible latency.  
**Private DNS for Amazon VPC**  
Manage custom domain names for your internal Amazon Web Services resources without exposing DNS data to the public Internet.  
**DNS Failover**  
Automatically route your website visitors to an alternate location to avoid site outages.  
**Health Checks and Monitoring**  
Amazon Route 53 can monitor the health and performance of your application as well as your web servers and other resources.

**DNSSEC**  
Enable DNSSEC validation for Amazon Route 53 Resolver.  
**Cloud-Front Zone Apex Support**  
When using Amazon Cloud-Front to deliver your website content, visitors to your website can now access your site at the zone apex (or "root domain"). For example, your site can be accessed as example.com instead of www.example.com.  
**Amazon ELB Integration**  
Amazon Route 53 is integrated with Elastic Load Balancing (ELB).  
**Management Console**  
Amazon Route 53 works with the [Amazon Management Console](https://console.amazonaws.cn/route53/home" \t "https://www.amazonaws.cn/en/route53/features/_blank). This web-based, point-and-click, graphical user interface lets you manage Amazon Route 53 without writing any code at all.  
  
**Weighted Round Robin**  
Amazon Route 53 offers Weighted Round Robin (WRR) functionality.

**Resolver**  
Get recursive DNS for your Amazon VPC and on-premises networks. Create conditional forwarding rules and DNS endpoints to resolve custom names mastered in Amazon Route 53 private hosted zones or in your on-premises DNS servers.

1. **Do hands on, create domain name, create hosted zone in aws for ec2 instance and check whether its working .**

**Not able to Register Domain**

1. **What is single point of failure?**

A SPOF or single point of failure is **any non-redundant part of a system that, if dysfunctional, would cause the entire system to fail**.

1. **What is the drawback of vertical scaling?**

* Manual work usually needed to upgrade to larger machine
* Downtime from server changes
* Vulnerability to downtime if hardware fails

1. **What is Auto-Scaling?**

auto scaling allows you to scale your Amazon EC2 instances up or down automatically as per the instructions set by the user. Parameters like minimum and maximum number of instances are set by the user. Using this, the number of Amazon EC2 instances you’re using increases automatically as the demand rises to maintain the performance, and decreases automatically as the demand decreases to minimize the cost.

1. **What is Load Balancing?**

Load Balancer is a virtual machine or appliance that balances your web application load that could be Http or Https traffic that you are getting in. It balances a load of multiple web servers so that no web server gets overwhelmed.

1. **What is High Availability and Fault tolerance ?**

High Availability means that availability is more for the users with low latency.

Fault tolerance means if something happens to one server we should have other server to serve.

**12. What are the different types of Load Balancers?**

1. Application Load Balancer

2. Network Load Balancer

3. Classic Load Balancer

4. Gateway Load Balancer