

A close-up photograph of a person's fingers interacting with a glowing orange icon of two interlocking clouds. The icon has a bright, fiery glow with streaks of light emanating from it. The background is dark, making the orange glow stand out. This image serves as the background for the top half of the slide.

# Cloud Computing with AWS Training

# THE WORLD OF CLOUD COMPUTING & AWS

Cloud computing enables a user to focus on their projects and customers, without worrying about infrastructure concerns. It not only saves time, money, and effort but also allows users to concentrate on the differentiating aspects of their business.

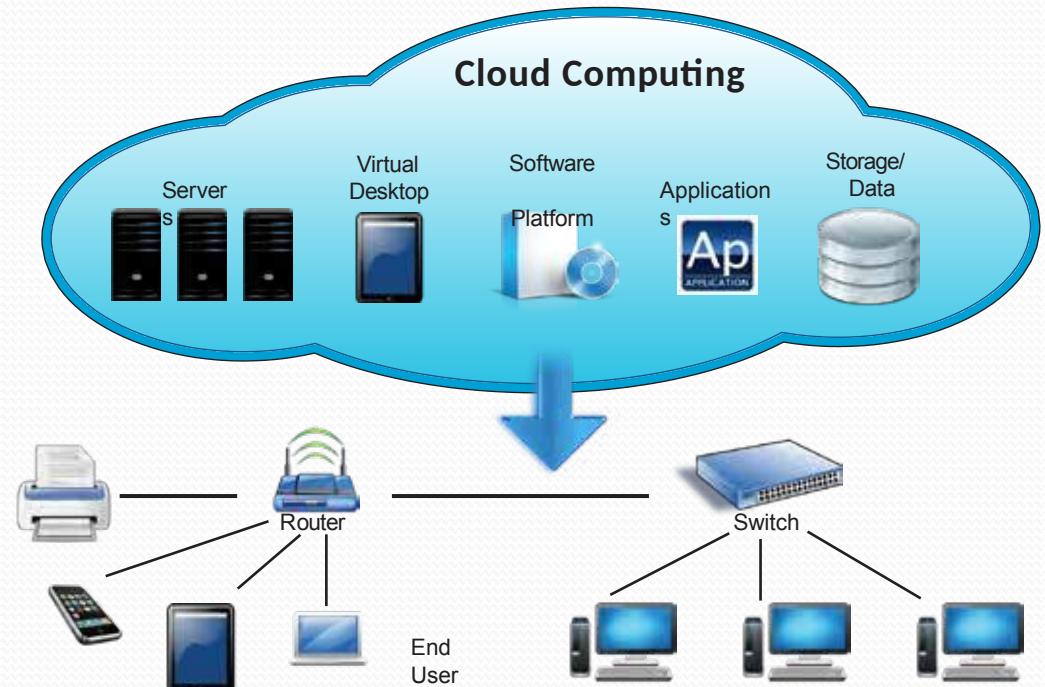
**Netflix, Expedia, Spotify, and Ubisoft are some of the top companies that utilize AWS. In fact, AWS holds about 41.5 percent of all installed application workloads. Its market share, in 2017, was about 47 percent with a whopping Q4 revenue of \$3.66 billion.**

AWS offers every benefit that one expects from cloud. It is considerably superior to other cloud service providers in the market in many aspects such as data availability and high transfer stability.

This Cloud Computing with AWS course begins by discussing the basics of AWS and Cloud Computing, then moves on to discussing intermediary level concepts such as service Models (IaaS, PaaS, SaaS) and Amazon Virtual Private Cloud (VPC) and ends with diving deep into the particular elements of the AWS platform in detail.

As part of the course participants get a chance to explore VPC, Route53, IAM, EC2, S3, Cloud Front, Autoscaling, Load Balancing, RDS, RedShift, CloudWatch, CloudFormation, Elastic Beanstalk, CloudTrail, Trusted Advisor, SQS, SWF, Lambda, SNS, DynamoDB, Glacier, EFS, Elastic Transcoder, Kinesis, Direct Connect, Snowmobile and API Gateway.

The course encompasses hands-on exercises and real-time use cases to ensure that participants develop a thorough practical understanding of the concepts.



# WHO SHOULD STUDY CLOUD COMPUTING WITH AWS?

This course is specifically designed for tech savvy professionals with a keen interest in the subject, who aim to pursue a career in cloud computing or are looking to develop cloud-based applications using AWS. This course is also recommended for individuals looking to gain exposure to cloud computing and AWS. Pursuing the course would help learners get a better understanding of the AWS offerings and assist them in preparing for the examinations to get an AWS certification.

## ELIGIBILITY / PRE-REQUISITES

An understanding of Linux would be beneficial, though, not mandatory



# TRENDS IN THE AWS CLOUD COMPUTING + INDUSTRY VIEWS

"The demand for hybrid cloud has been gaining popularity, particularly among midsize enterprises, including manufacturing companies, regardless of their expensive nature." Technavio

"The public cloud services market will grow rapidly to \$236 Billion in 2020" Forrester

"Cloud-based security services will be worth \$9 billion in 2020" Gartner

"Cloud computing is projected to increase from \$67B in 2015 to \$162B in 2020 attaining a compound annual growth rate (CAGR) of 19%" Forbes

"By 2020, a corporate 'no-cloud' policy will be as rare as a 'no-internet' policy is today" Gartner



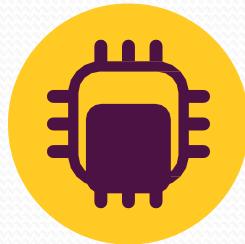
# PROGRAM STRUCTURE



48 hours live online training with an Industry Expert Instructor



POC support and multiple assignments to gain thorough understanding



Training within  
Amazon  
Webserver  
Ecosystem



## AMAZON WEB SERVERS



Amazon EC2



Amazon Elastic  
Block Storage



Amazon Aurora



Amazon EFS



AWS Lambda

# CASE STUDIES

## **Case Study #1:** “Moving from on-premises to the cloud”

An organization decides to migrate from on-premise solutions to AWS. This would reduce its turnaround time to deliver products to its customers from months to just weeks, while also reducing time and money spent on maintaining hardware & infrastructure. The organization employs Auto Scaling Technology, Amazon RDS and Amazon S3 to improve their operations. By migrating to cloud services, they are now able to roll out customer implementations in a span of weeks instead of months. Also, they are now able to encourage and focus on being innovative and relevant.

## **Case Study #2:** “Digital Marketing Campaigns”

A large enterprise needed a cloud hosting provider with global infrastructure to support their countless web properties scattered all over the world. The enterprise felt that by making this move, they would not only enhance business agility and operational efficiency but also gain a competitive advantage in the market.

By making the move, they were able to launch digital marketing campaign and set up the entire website infrastructure for the same in a span of just two days, a task that would earlier have taken them at least two weeks. This was 7 times faster than their initial capability!

## **Case Study #3:** “Big Data Analysis”

An organization provides programmatic advertising solutions to customers across the globe. It processes Big Data (no hyphen in between) queries from thousands of sources in just a few seconds. It scales up using AWS to keep up with growing demand.

They need about three months to procure the hardware, and set up everything in the data center. They use AWS to build a sophisticated Big Data platform on the cloud, effectively eliminating the need for back-end management. Post scaling up, they support over 400 instances, with fewer employees.

# MODULES

## Introduction to Cloud Computing

- Introduction to Cloud Computing
- Why Cloud Computing?
- Benefits of Cloud Computing
- Public Cloud, Private Cloud, Hybrid Cloud
- Service Models (IaaS, PaaS, SaaS)

## Amazon Web Services (AWS)

### Introduction to AWS

- Elastic computing.
- Introduction to the AWS products.
- Regions and Availability Zones.
- Signing up for AWS.
- AWS Free usage tier.
- Introduction AWS management console.
- Take a digital tour of an AWS Data Center.

### EC2 Compute Service

- EC2 Introduction
- Spinning Windows/Linux servers in EC2
- Connecting to Instances using RDP, MobaXTerm, Putty
- EC2 Vertical Scaling Overview and Scale UP and Scale Down Servers
- Security Group Basics and Implementing Security for Real Time Environments

# MODULES

- Automating Backups for Instances using Snapshots
- Understanding AMI and Its Features
- Creating AMI for Windows/Linux Servers.
- Configuring INSTANCE-AMI-INSTANCE Lifecycle
- Real time use case for Boot Strapping for EC2 Instances

## **Amazon Virtual Private Cloud (VPC)**

- Introduction to VPC
- IPv4 Addressing Scheme
- Public and Private IP's
- Understanding Subnetting
- Elastic IP's
- Basic VPC configuration
- Implementing Private/Public subnets in VPC
- VPC security
- Inbound and outbound ACL's
- Deep Dive in to VPC core concepts (Route Tables, Subnets, Internet Gateway)
- Building Custom VPC Network Topology for Real Time Environments
- Implementing NAT (Network Address Translation) in VPC

## **ELB (Elastic Load Balancer)**

- Introduction to ELB.
- Implementing HA using Load Balancer for Websites.
- Understanding ELB Load Distribution using Round Robin Algorithm.
- Understanding Health Checks.
- Configuring Advanced VPC and Cross Zone Load Balancing
- Adding and removing instances on ELB

# MODULES

## Simple Notification Service (SNS)

- Introduction to SNS.
- Creating topics and Evaluating ARNs.
- Subscribing using Various Protocols.
- Publishing Notifications using SNS.
- Integrating SNS Topics with CloudWatch and Autoscaling Services.

## CloudWatch

- Introduction of AWS Monitoring
- Understanding Virtualization
- Making a Status Check Failed Incident manually
- CloudWatch Basic and Detailed Monitoring and Its Features.
- Implementing Real Time monitoring by Integrating with SNS.
- Understanding CloudWatch Logs and Metrics.
- Creating Alarms and Its Actions.
- Configuring Dashboards for Organization Architectures.

## Relational Database Service (RDS)

- Introduction to Relational Databases.
- Creating Relational Databases in RDS.
- Connecting to RDS Database Instances using SQLYog.
- Installing a WordPress APP using RDS Database.
- Automating Backups and Patching for Various Database Engines.
- Creating Redundant and Fault Tolerant Databases.
- Implementing Read Replicas for Read Heavy databases.
- RDS Resilient Architecture using Point in Time Recovery.
- Configuring Event Notifications for Database Instances.
- Understanding Parameter, Option, and Subnet Groups.

# MODULES

## Auto scaling

- Understanding Horizontal vs. Vertical scaling.
- Understanding Auto Scaling.
- Create a launch configuration.
- Create an Auto Scaling group.
- Understanding Various Scaling Types (Dynamic, Scheduled, Step, Target Tracking Scaling Policies).
- Setting up an auto-scaled, load-balanced Application using Autoscaling.

## Route53

- Introduction of Domain Name System.
- Buying Domain names at Domain Registrars.
- Creating Zones on Route53.
- Creating Route53 Records (Address, CNAME, Alias).
- Creating Health Checks in Route53.
- Understanding routing policies provided by AWS.
- Simple Routing Policy and its Implementation.
- Weighted Routing Policy and its Implementation.
- Latency Routing Policy and its Implementation.
- Failover Routing Policy and its Implementation.
- Geolocation Routing Policy and its Implementation.
- Routing Policies Use cases and When to use Which Policy.

## S3 (Simple Storage Service)

- Introduction to AWS Object Storage.
- Creating S3 Buckets and Uploading Data in to it.
- S3 durability and redundancy.
- Various S3 Storage Types (Standard, Infrequent, One Zone)
- Configuring S3 Versioning, Logging, Encryption.

# MODULES

- Hosting a Static Website on S3.
- Implementing Lifecycle and replication for S3 Buckets.
- Understanding S3 Analytics, Metrics and Inventory.

## **CloudFront**

- Introduction to Content Delivery Network (CDNs).
- Understanding AWS EDGE Network Locations.
- Understanding CloudFront Distributions and Origins.
- Implementing CDN for Websites using CloudFront.
- Going through CloudFront Reports and Analytics.
- CloudFront Security for S3 buckets using OAI (Origin Access Identity).
- Configuring origins and behaviors.

## **Identity access management (IAM)**

- Introduction of IAM Service.
- Creating Users and Groups.
- Grant Least Privilege.
- Configuring a Strong Password Policy for your Users.
- Enabling MFA for Privileged Users.
- Granting permissions using IAM Policies.
- Creating Custom Policies and Associating to Users and Groups.
- Understanding Roles.
- IAM Access Credentials and its usages.
- AWS CLI.

## **Elastic Beanstalk**

- Understanding DevOps tools of AWS.
- Automation by Elastic Beanstalk.

# MODULES

- Creating an Application Environment using EB.
- Application versioning and Deploying.
- Clean up of EB Environment.

## Cloud Formation

- Introduction to Cloud Formation
- Understanding Stacks and Cloud Former Tool.
- Automating a Ruby on Rails Application using Cloud Formation.
- Clean up of Cloud formation Environment.
- Creating custom Templates using Cloud Former Tool.

## Dynamo DB

- Understanding NOSQL Databases.
- Creating a DynamoDB table with Sample Data.
- Understanding RCU and WCU of DynamoDB Tables.
- Understanding Throttling in DynamoDB.
- Creating Alarms in DynamoDB.

## Glacier

- Introduction to Glacier Storage.
- Creating Vaults.
- Uploading data to Vaults.
- Key differences between S3 and Glacier.

## CloudTrail

- Introduction to Audit logging by CloudTrail.
- Creating Trials.
- Storing Trial logs in S3 Buckets.

# MODULES

## Trusted Advisor

- Introduction to Trusted Advisor.
- Understanding Cost Optimization Tab.
- Understanding Performance Tab.
- Understanding Security Tab.
- Understanding Fault Tolerance Tab.
- Understanding Service Limits Tab.

## Elastic File System

- Introduction to EFS.
- Creating EFS and mounting on Linux Servers.

## AWS Application Services for Certifications

- SQS Overview and implementing polling messages.
- SWF Overview.
- Introduction to Elastic Transcoder.
- Introduction API Gateway.
- Introduction to Kinesis and Various types of Kinesis Streams.
- Introduction of Lambda.
- Implementing a sample script and executing by Lambda.
- AWS Direct Connect.
- AWS Snowmobile.
- Redshift Overview.

## AWS Cost Controlling Strategies

- Introduction to AWS Pricing.
- Understanding AWS Pricing Models (On Demand, Reserved, Spot).
- Best Practices for Cost Optimization.

# MODULES

## AWS Well Architect Framework

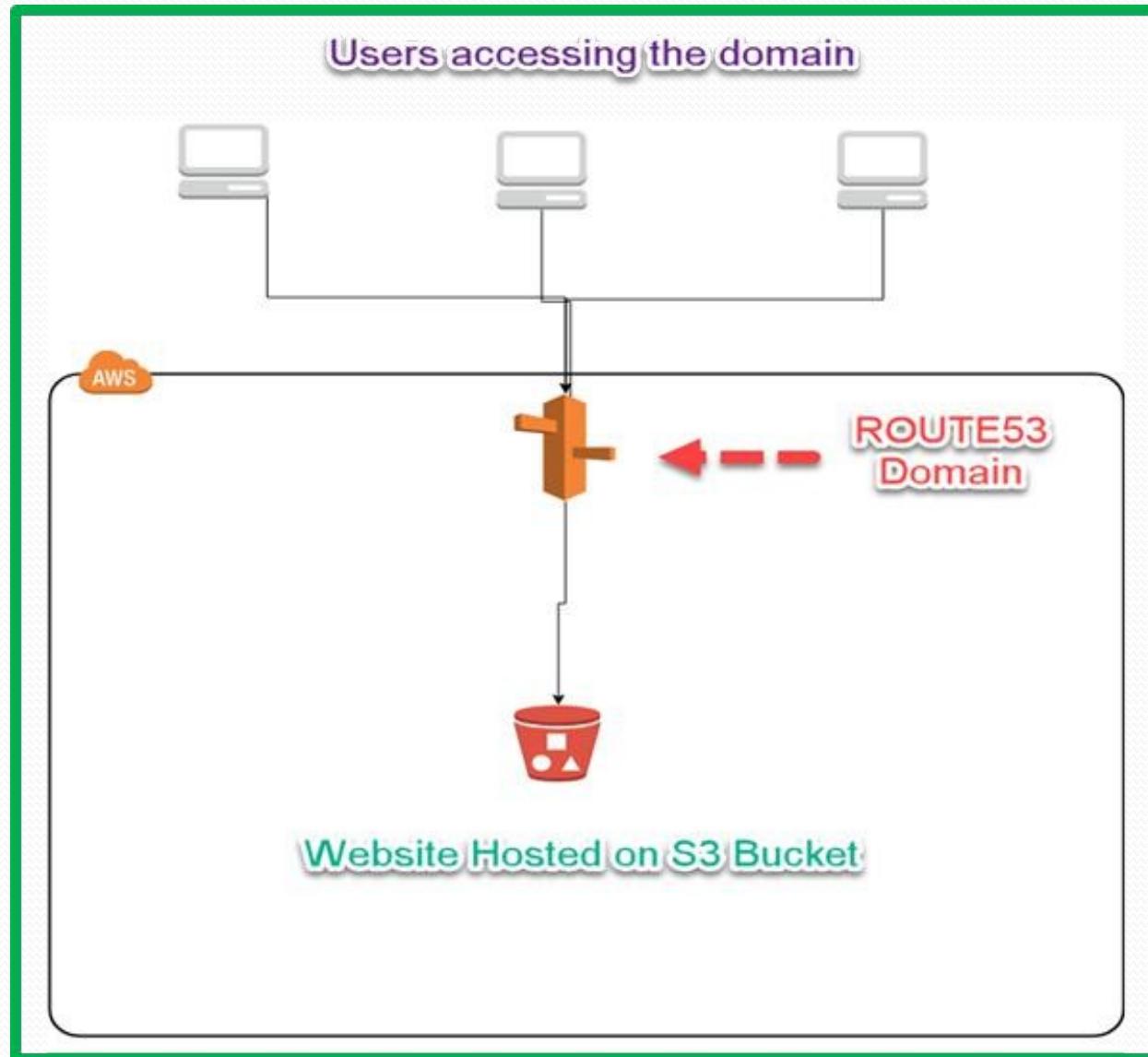
- Introduction to Well Architected Framework.
- Security Pillar.
- Reliability Pillar.
- Performance Efficiency Pillar.
- Cost Optimization Pillar.
- Operational Excellence Pillar.

## AWS Certifications

- List of AWS Certifications.
- Enrolling for AWS Certification.
- AWS Practice Exam.
- Tips and Tricks for Cracking the Exams.
- Going through the sample questions and implementing tricks on live session.

# S3

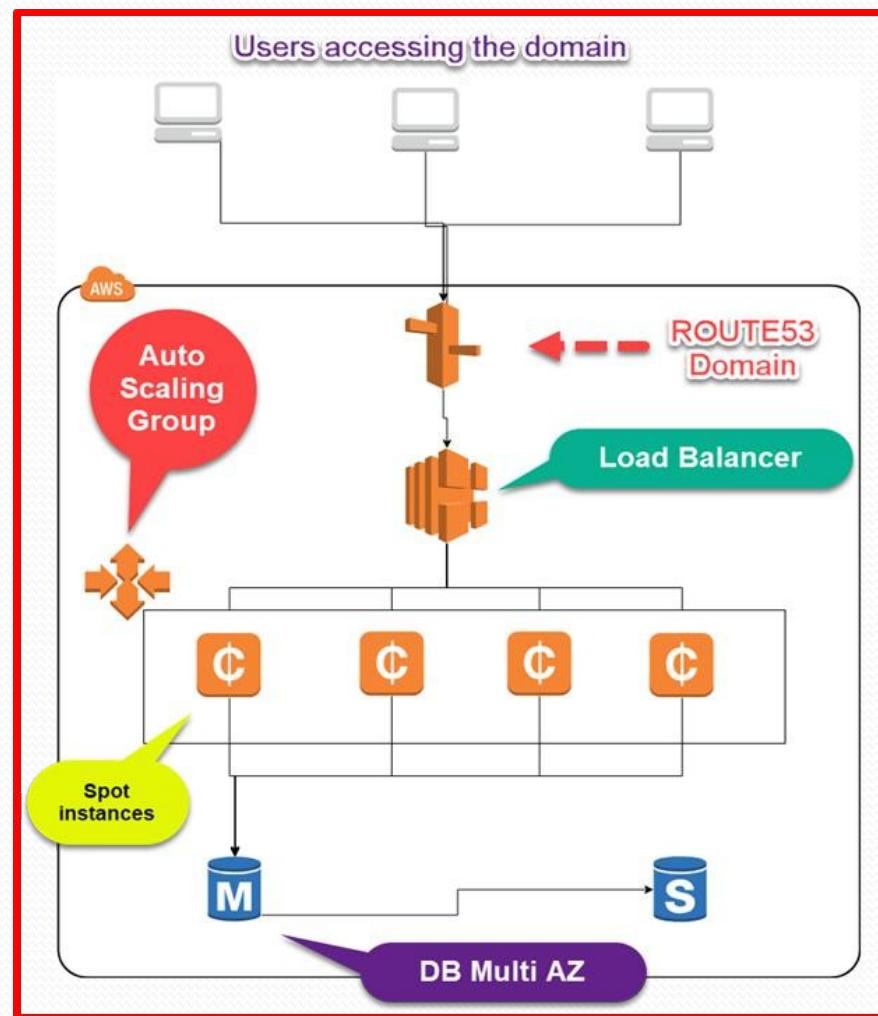
We are hosting a html website on S3 bucket using static website hosting option on S3 and point the S3 bucket endpoint to a domain name using Route53.



# PROJECT 2: HOSTING A JAVA WEBSITE 3 TIER WEBSITE USING SPOT INSTANCES

We are hosting a java website on ELB, EC2 Spot Instances, and RDS.

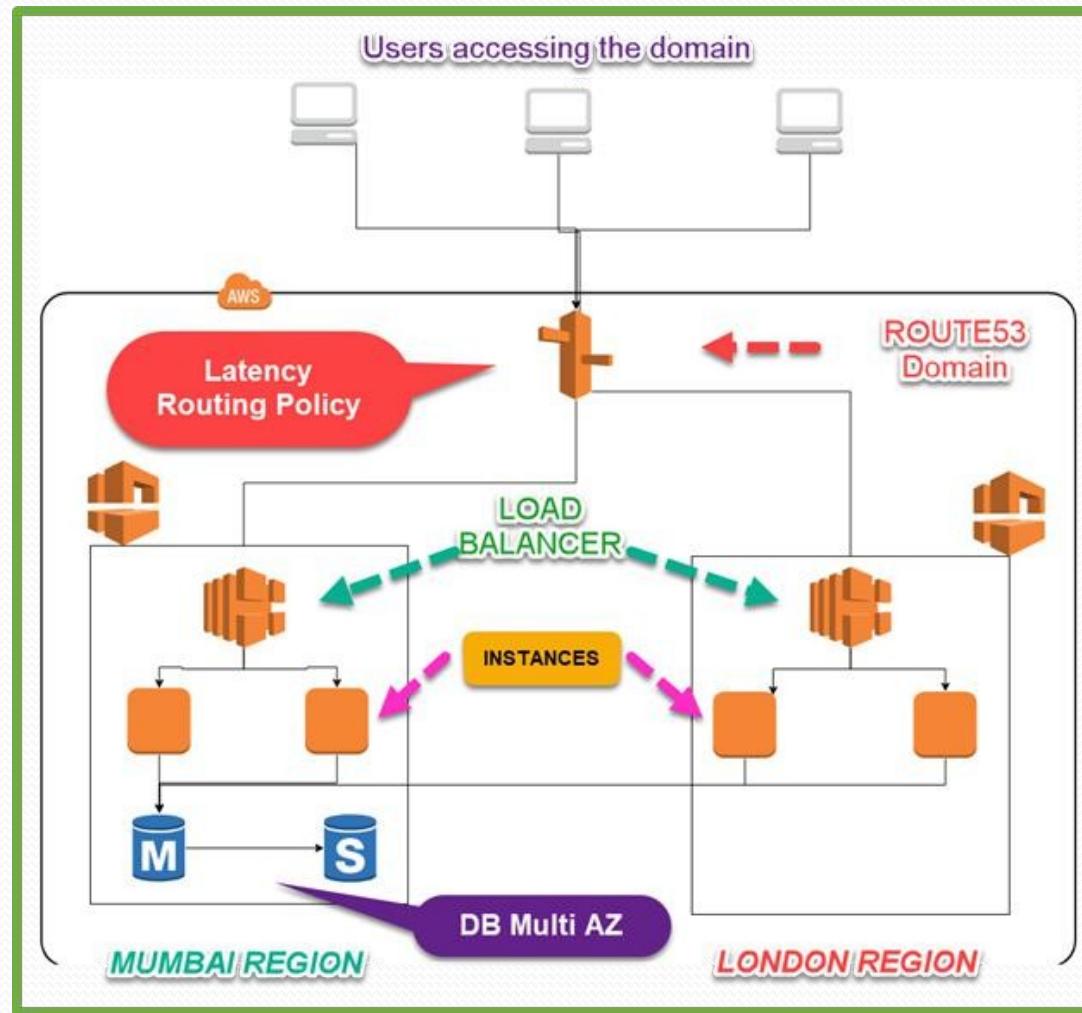
We will use ELB as Web TIER and Spot Instances as APP Tier which hosts the application which we will deploy on Tomcat. And we will integrate JAVA app with RDS for DB TIER with Multi AZ enabled.



# PROJECT 3: HOSTING A WORDPRESS WEBSITE AS REDUNDANT AND FAULT TOLERANT USING MULTI REGION ARCHITECTURE

We are hosting a WordPress website on AWS using ELB, Route53 Latency Routing Policy, EC2, and RDS Multi AZ.

We will host the website on two regions, so that if one region is fully down still our customers can be able to access the website without any down-time.



# KEY DIFFERENTIATORS



LIFETIME LMS ACCESS



24 x 7 SUPPORT



REAL-LIFE PROJECTS & CASE STUDIES



INDUSTRY EXPERTS AS TRAINERS



INDUSTRY STANDARD CERTIFICATE



AWS CLOUD SOLUTION ARCHITECT

AWS CLOUD OPERATION ENGINEER

AWS CLOUD ADMINISTRATOR

