



# SYLLABUS

- **AWS BASICS**
- **AMAZON COMPUTER SERVICES**
- **AMAZON ANALYTICS SERVICES**
- **AMAZON APPLICATION SERVICES**
- **AMAZON NETWORK SERVICES**
- **AMAZON STORAGE SERVICES**
- **AMAZON DATABASE SERVICES**
- **SIMPLE EMAIL SERVICES**
- **AWS SECURITY MANAGEMENT**
- **CLOUD FORMATION**
- **PRACTICALS**

# AWS BASICS

## **AWS — Cloud Computing**

- What is Cloud Computing?**
- Types of Clouds**
- Cloud Service Models**
- Advantages of Cloud Computing**
- Disadvantages of Cloud Computing**

## **AWS — Basic Architecture**

- Key Considerations for Web Hosting in AWS**

## **AWS — Management Console**

- How to Access AWS?**
- Customizing the Dashboard**

## **AWS — Console Mobile App**

## **AWS — Account**

- How to Use AWS Account?**
- AWS Account Identifiers**
- Account Alias**
- Multi Factor Authentication**
- AWS Identity & Access Management (IAM)**



# AMAZON COMPUTE SERVICES

## **AWS — Elastic Compute Cloud**

- EC2 Components**
- Features of EC2**
- How to Use AWS EC2?**

## **AWS — Auto Scaling**

- Elastic Load Balancing**
- Features of ELB**
- How to Create Load Balancers?**
- How to Delete a Load Balancer?**

## **AWS — WorkSpaces**

- How It Works?**
- How to Create Amazon Workspaces?**
- Amazon WorkSpaces Features**
- Benefits of Amazon WorkSpaces**

## **AWS — Lambda**

- How to Configure AWS Lambda?**
- Benefits of AWS Lambda**
- AWS Lambda Limits**

# AMAZON NETWORK SERVICES

## **AWS — Virtual Private Cloud**

**-How to Use Amazon VPC?**

**-Features of VPC**

## **AWS — Route 53**

**-How to Configure Amazon Route 53?**

**-Features of Route 53**

## **AWS — Direct Connect**

**-Requirements to Use AWS Direct Connect**

**-How to Configure AWS Direct Connect?**

**-Features of Direct Connect**



# AMAZON DATABASE SERVICES

## **AWS — Relational Database Service**

- Features of Amazon RDS**
- How to Set Up Amazon RDS?**
- How to Connect Database to MySQL DB Instance?**
- How to Delete a DB Instance?**
- Cost of Amazon RDS**

## **AWS — DynamoDB**

- How to Run DynamoDB on Computer?**
- Benefits of Amazon DynamoDB**

## **AWS — Redshift**

- How to Set Up Amazon Redshift?**
- Features of Amazon Redshift**

# AMAZON ANALYTICS SERVICES

## **AWS — Amazon Kinesis**

- How to Use Amazon KCL?**
- Limits of Amazon Kinesis?**
- How to Use Amazon Kinesis?**
- Features of Amazon Kinesis**

## **AWS — Elastic MapReduce**

- How to Set Up Amazon EMR?**
- Benefits of Amazon EMR**

## **AWS — Data Pipeline**

- How to Set Up Data Pipeline?**
- How to Delete a Pipeline?**
- Features of AWS Data Pipeline**

## **AWS — Machine Learning**

- Types of Tasks Performed by Amazon Machine Learning**
- How to Use Amazon Machine Learning?**
- Features of Amazon Machine Learning**

# AMAZON APPLICATION SERVICES

## **AWS — Simple Workflow Service**

- How to Use SWF?**
- Benefits of Amazon SWF**

## **AWS — WorkMail**

- How to Use Amazon WorkMail?**
- Features of Amazon WorkMail**



# Amazon Cloud Front

- How Cloud Front Delivers Content**
- Locations and IP Address Ranges of Cloud Front Edge Servers**
- Working with Distributions**
- Working with Objects**



# Simple Email Service

- Setting up Amazon SES**
- Verifying Email Addresses and Domains**
- Authorizing Amazon SES Sending from Your Domain**
- Requesting Production Access**

# AWS Security Management

- Cloud Trail
- Trust advisor



# Simple Email Service

- Registering Domain Names**
- Configuring Amazon Route 53 as Your DNS Service**
- Working with Public/Private Hosted Zones**
- Working with Resource Record Sets]**
- Using Traffic Flow to Route DNS Traffic**
- Health Checks and DNS Failover**

# Cloud Formation

**-Creating sample Cloud Formation stack**





# + DEVOPS

## Introduction to DevOps

- DevOps Principles in detail
- DevOps Engineer Skills in the market
- Knowing DevOps Delivery Pipeline
- Market trend of DevOps
- DevOps Technical Challenges
- Tools we use in DevOps

## DevOps on Cloud

- Essentials of Cloud computing?
- Cloud and virtualization architecture
- Cloud deployment architecture
- Cloud providers – An overview
- Why we need DevOps on Cloud?
- Introducing to Amazon web services

# **GIT – A Version controlling tool**

- Knowing about Version control**
- Git – A CLI**
- Essentials of GIT in industry**
- How to setup GIT**
  - o Installing Git**
  - o First-Time Git Setup**
  - o Getting a Git Repository**
- Working with various commands in GIT**
- Recording Changes to the Repository**
  - o How to check the Status of Your Files**
  - o How to track New Files**
  - o Staging our modified files**
  - o Ignoring Files from GIT**
  - o Viewing Your Unstaged and Staged Changes**
  - o How to commit Your Changes**
  - o Skipping the Staging Area and commit**



## **Viewing the Commit History**

- o Limiting Log Output**
- o Using a GUI to Visualize History**
- Undoing Things**
- o Changing Your Last Commit**
- o Unstaging a Staged File**
- o Unmodifying a Modified File**
- Working with Remotes**
- o Showing Your Remotes**
- o Adding Remote Repositories**
- o Fetching and Pulling from Your Remotes**
- o Pushing to Your Remotes**
- o Inspecting a Remote**
- o Removing and Renaming Remotes**
- Branching and Merging in Git**
- o What a Branch Is**
- o Basic in Branching and Merging**
- o Branch Management in GIT**
- o Branching Workflows and its usage**
- o Remote Branches – create and delete**
- o Rebasing**
- Git workflows**
- Git cheat sheet**

# Jenkins

- Essentials of Continuous Integration
- An example scenario where CI is used
- Know about Jenkins and its architecture in detail
- Jenkins tool Management in detail
- Know about User management in Jenkins
- Authentication
  - o Jenkins own database user creation
- Authorization
  - o Matrix based authorization
  - o Project based authorization
- Overview of Maven
  - o Maven project structure
  - o Maven plugins
  - o Project Object Model (POM) – fundamental unit of work in Maven project
  - o Maven build lifecycle
  - o Adding external dependencies to maven pom.xml
  - o Maven build and test project



## **Creating jobs and automatic build settings**

- o What is Jenkins Pipeline?**
- o Why Pipeline?**
- o Integration with GIT**
- o How to enable project based authorization for a job**
- o Source code management while creating jobs**
- o Triggering automated build**
- o Maven job setup**
- o Know about post build options for jobs like notifications, trigger another build, publishing reports, etc.**
- Adding a slave node to Jenkins**
- Building Delivery Pipeline**
- Notification settings in Jenkins**
- Plugin management in Jenkins**

# **Kubernetes**

- Introduction to Kubernetes**
- Kubernetes Cluster Architecture – An overview**
- Understanding concepts of Pods, Replica sets, deployments and namespaces**
- Understanding the concepts of services and networking**
- Persistent volumes and persistent volume claims –an overview**
- Design of Pods**
- Understanding labels, selectors, jobs, and schedulers**

# Docker

## □ Introduction

- o Real-world Shipping Transportation Challenges

- o Introducing Docker and its technology

- o Understanding of Docker images and containers

## □ Working with container

- o How to Share and copy a container

- o Container Life Cycle

- o How to use Base Image and customize

- o Creation of Docker File

- o How to Publish Image on Docker Hub

## □ Introduction to Docker Networking

- o Network Types in docker technology

- o Docker Container Networking

- o Docker Compose – An introduction

## □ Docker Swarm – An introduction

- o Use Docker Compose to create php, wordpress, mysql

- o How to Start Containers on a Cluster with Docker Swarm

- o Creating and Scaling an application in Docker swarm



# OTHERS

**-Labs/Practicals and Special Notes**

