AWS DEVOPS COURSE SYLLABUS

Section 1: Cloud Computing Introduction

➢ What is Cloud Computing
➢ Why Cloud Computing?
➢ Advantages of Cloud Computing
➢ What is Private Cloud
➢ What is Public Cloud
➢ What is Hybrid Cloud
➢ What is Software as a Service (SaaS)
➢ What is Platform as a Service(PaaS)
➢ What is Infrastructure as a Service (IaaS)
➢ Basics of Linux

Section 2: Introduction to AWS Services

➢ Amazon Elastic Compute Cloud(EC2)
➢ Amazon Simple Storage Service (S3)
➢ Elastic Block Storage (EBS)
➢ Elastic Load Balancing (ELB)
➢ Amazon Relational Database Service (RDS) Amazon DynamoDB
➢ Auto Scaling
➢ Amazon ElastiCache
➢ Identity and Access Management (IAM)
➢ Virtual Private Cloud (VPC)
➢ loud Formation
➢ Simple Email Services (SES)
➢ Simple Queue Services (SQS)
➢ Simple Notification Services (SNS)
➢ Server less computing (Lambda)
➢ Import/Export (Snowball)
➢ Code Commit

- ➢ Cloud Trail
- ➢ Elastic Beanstack
- ➢ CloudFront
- ➢ Route-53
- ➢ Glacier
- ➢ Key Management Service (KMS)

Section 3: Understanding Object Storage

- ➢ Explain AWS Storage
- ➢ AWS Simple Storage Service – S3
- ➢ Creating an AWS S3 bucket
- ➢ AWS Storage Gateway
- ➢ What is Command Line Interface (CLI)
- ➢ What is Amazon S3
- ➢ Understanding Amazon Glacier storage for long-term data backup and archiving
- ➢ Learn Amazon Snowball for data import/export

Section: 4 Understanding Database services

- ➢ What is Elastic Block Storage (EBS
- ➢ Relational Data bases Amazon RDS and Amazon Aurora
- ➢ What is Amazon DynamoDB – No SQL Data base
- ➢ Data warehousing Product - Amazon Redshift
- ➢ Memory data Store - Amazon ElasticCache
- ➢ Deploying AWS database migration service

Section: 5: Auto Scaling

- ➢ Introduction to auto scaling
- ➢ Auto scaling components
- ➢ Launch configuration Prerequisites
- ➢ How to Create Launch configuration.

➢ How to Create Auto Scaling Groups (ASG)
➢ How to Attach & Detach EC2 Instances in ASG
➢ configuring auto scaling policies based on the Load on EC2 instances.
➢ Using Auto scaling with Elastic Load balancer (ELB).
➢ Removing the Instances Temporarily
➢ Suspend and Resume Process
➢ Shut Down – Auto Scaling Process
➢ Monitoring – Auto Scaling Instances
➢ Health Checks
➢ Getting Notifications When ASG Changes

Section 6: ELB – Elastic Load Balancing

➢ What is ELB
➢ How to Create load balancer
➢ What is Internal & External Load balancers
➢ Load balancing protocols
➢ What is Listener Configurations
➢ What is SSL Negotiation Configurations
➢ How to Attach & Detach Subnets
➢ Creating Security groups for the load balancer
➢ Configuring health check for the load balancer
➢ Adding multiple instances to the load balancer
➢ What is Custom Domain Names & Cross-Zone Load Balancing
➢ Explain DNS Failover
➢ What is Sticky Sessions
➢ Perform Monitoring and Logging
➢ What is Connection Draining & ELB traffic logging

Section 7: VIRTUAL PRIVATE CLOUD (VPC)

➢ Setting up the different types of networks in AWS
➢ How to Create custom VPC

➢ What is NACLs & Security Groups
➢ How to Create Internet Gateway(IGW)
➢ How to Connect to instances in the gateway
➢ What is Subnets, Route Tables & Association
➢ NAT Instances & NAT-Gateways
➢ DHCP Options Sets & DNS'
➢ VPC Peering
➢ Overview of VPN and its components

Section 8: Application Services

➢ Study about AWS application services
➢ Learn Elastic Beanstalk
➢ Learn Simple Email Services
➢ Learn Simple Notification Service
➢ Learn AWS Lambda
➢ Learn Elastic OpsWorks and CLI

Section 9: Identity and Access Management(IAM)& Monitoring

➢ What is IAM
➢ What is Monitoring
➢ To Create user accounts
➢ To Set up multi factor Authentication (MFA)
➢ IAM Roles & IAM Groups
➢ Cloudwatch

Section10: Cloud Formation

➢ How to Build AWS infrastructure as a code
➢ Understanding Sample templates – Utilization
➢ What is JSON

Section: 11: AWS Migration

➢ AWS Cloud Migration
➢ Business driver
➢ Cloud Adoption
➢ Various tools and services in Migration
➢ Types of Migration
➢ Migration Process track

Section: 12: AWS Security

➢ Study about AWS Cloud Security
➢ Understanding Security compliance
➢ Logging and monitoring
➢ Security: Using IAM to Manage Access to Amazon RDS Resources
➢ Understanding Native AWS Security

Section: 13: Install DevOps Tools

➢ Git
➢ Docker
➢ Selenium
➢ Maven
➢ Jenkins
➢ Puppet
➢ Ansible
➢ Kubernetes
➢ Nagios

Section 14: Introduction to DevOps

➢ What is Software Development
➢ Understanding Software Development Life Cycle
➢ What & Why Devops?

- ➢ Devops Lifecycle & Tools
- ➢ Section – Software Version Control
- ➢ What is software version control
- ➢ Types of Version control
- ➢ Create a git project
- ➢ Create a file and add to git, Edit file, Commit the code
- ➢ Study about SVN & Git

Section 15 : Containerization with Docker

- ➢ Docker Fundamentals
- ➢ What is Container Orchestration
- ➢ Docker Volumes
- ➢ Docker Swarm
- ➢ Create an image in Docker and run it

Section 16 : Puppet Configuration Management Tool

- ➢ Study about Configuration Management
- ➢ What is a Puppet?
- ➢ Puppet Architecture
- ➢ Setting up Master Slave with Puppet
- ➢ Learn Puppet Manifests
- ➢ Learn Puppet Modules
- ➢ Learn Puppet Commands
- ➢ Applying configuration using Puppet
- ➢ Understanding Puppet File Server

Section 17 : Ansible

- ➢ What is Ansible
- ➢ Configuration,Writing Ansible Playbooks
- ➢ Ansible based Configuration Management
- ➢ Ansible Roles

➢ Command Line usage.

➢ Write Ansible playbook

Section 18 : Continuous Testing

➢ Basics about the Automating Builds – Maven, Ant

➢ What is Maven?

➢ Running Testing Cases

Section 19 : Jenkins

➢ What is Continuous Integration?

➢ What is Jenkins?

➢ Setting up continuous Delivery Pipeline using Jenkins

➢ Building a continuous Delivery Pipeline Using Jenkins

➢ Understanding CI/CD Pipelines

➢ Creating an end to end automated CI/CD Pipeline

Section 20: Continuous Orchestration with Kubernetes

➢ What is Kubernetes

➢ Docker Swarm vs Kubernetes

➢ Explain Kubernetes Architecture

➢ Deploying Kubernetes using Kubeadms

➢ Alternate ways of deploying Kubernetes

➢ Study about YAML Files

➢ Creating a Deployment in Kubernetes using YAML

➢ Services & Ingress in Kubernetes

Section 21 : Continuous Monitoring with Nagios

➢ What is Continuous Monitoring

➢ What is Nagios

➢ Explain Nagios Architecture

➢ Monitoring Services in Nagios

➢ Study about NRPE Plugin
➢ Monitoring System Info using NRPE plugins

Section 22: AWS DevOps Services

➢ AWS CodeCommit
➢ AWS CodeDeploy
➢ AWS CodePipeline
➢ AWS CodeBuild
➢ Study about Beanstalk