

AWS and DevOps

COURSE CONTENT

1. Basic of Networking

- What is Networking
- IP address Basic
- Classes of IP
- Subnetting
- Public / Private IP
- Natting/ Patting
- IP V6 Implementation

2. Basic of Linux Admin

- Introduction to UNIX & LINUX
- Installation of Linux
- Access the command line
- Manage files from the command line
- Advanced File Permissions
- Disk Partitioning and Mounting File System

3. Introduction to Cloud Computing

- AWS Architecture
- AWS Management Console
- Setting up of the AWS Account
- What is cloud computing?
- History of cloud
- Different vendors for Cloud
- Cloud main objectives
- IaaS overview
- PaaS overview
- SaaS overview
- Why AWS Cloud
- Features of AWS cloud

4. EC2 Cloud Compute services

- Launching the Instance AMI
- Configuring Security Groups
- Understanding Security Key pair
- Configuring N/W Interfaces
- Understanding and Configuring dedicated Host

5. VPC (Virtual Private Cloud)

- Understanding & Configuring VPC
- Configuring Subnet & extracting N/W's out of VPC
- Configuring Route Table
- Understanding & Configuring Internet Gateway for VPC
- Egress only Internet Gateway
- DHCP option set
- Elastic IP
- Network access list
- Vpc Peering
- Endpoint
- Egress Only Internet Gateways

6. VPN Connections

- Customer Gateway
- VPG Gateways & VPN Connections

7. Storage & Content Delivery

- S3 Bucket Configuration & Implementation
- Static Web Hosting via S3 Bucket
- S3 bucket policy
- EBS
- Cloud front Configuration
- Understanding & Implementing Glacier Versioning S3
- Understanding Functionality Snow ball Migrations

8. Route 53

- Traffic Management
- DNS Management
- Traffic Policy & Endpoint
- Domain Name Registration

9. Management Tools

- Understanding Integrated Features of Cloud watch
- Configuring Alarms & Cloud watch based actions

10. Security Identify & Compliances

- Identify & Access Management

11. Auto Scaling & ELB

- Configuring Auto Scaling & Creating Cloud watch for Optimization
- Creating Load Balancing with application & Classic Load Balancers

12. Easy to Container Services

- Creating EC2 Container Services for Auto Scaling

13. Databases

- RDS
- Dynamo DB

14. Version Control with Git

Learning Objectives: Upon completing this module, you should be able to install GIT and work with remote repositories and perform management of files for small as well as large projects, execute branching and merging operation and will learn about various GIT commands in Git cheat sheet.

Topics

- What is version control?
- What is Git?
- Why Git for your organization?
- Installing Git
- Working with Remote Repositories
- Branching and Merging in Git
- Git workflows
- Git cheat sheet

Hands On/Demo

- GIT Installation, Version Control, branching and merging of code.
- Pulling and Pushing repositories from remote server

15. Continuous Integration using Jenkins

Learning Objectives: Upon completing this module, you should be able to understand the importance of Continuous Integration, learn about Jenkins and Maven by building and deploying codes using Jenkins and Maven, also perform automation tests and build Delivery Pipelines.

Topics

Introduction

- Understanding continuous integration

- Introduction about Jenkins
- Introduction to Maven
- Jenkins Architecture

Installation

- Obtaining and installing Jenkins
- Installing and configuring Jenkins using WAR and RPM
- Java installation and configuration
- Maven Installation
- Exploring Jenkins Dashboard

Jobs

- Creating Jobs
- Running the Jobs
- Setting up the global environments for Jobs
- Adding and updating Plugins
- Disabling and deleting jobs

Build Deployments

- Understanding Deployment.
- Tomcat installation and configuration

Securing Jenkins

- Authentication
- Jenkins Plugin
- Authorization
- Confidentiality
- Creating users
- Best Practices for Jenkins

Building Delivery Pipeline

Hands On/Demo

- Build and automation of Test using Jenkins and Maven
- Build the complete pipeline by invoking top level Maven project

16. Continuous Deployment: Containerization with Docker

Topics

- Shipping Transportation Challenge
- Introducing Docker
- Understanding images and containers
- Running Hello World in Docker
- Introduction to Container
- Container Life Cycle

- Sharing and Copying
- Base Image
- Docker File
- Working with containers
- Publishing Image on Docker Hub

Hands On/Demo

- Create and Implement Docker images and containers
- Publishing image on Docker Hub

17. Configuration Management with Ansible

Learning Objectives: Upon completing this module, you should be able to install Ansible on your machine, write Ansible Playbooks, execute ad-hoc commands using Ansible and differentiate Ansible and Puppet.

Topics

- Introduction to Ansible
- Ansible Installation
- Configuring Ansible Roles
- Write Playbooks
- Executing Ad-Hoc command

Hands On/Demo

- Installing Ansible
- Configuring Ansible Role
- Write Playbooks
- Execute Ad-Hoc commands

18. Aws Devops

Management Tools, Lambda, and Kinesis

- Basic Concepts of CloudFormation
- Basic Concepts of Elastic Beanstalk
- Basic Concepts of Lambda
- Basic Concepts of Kinesis

Practice Assignment: Cloud Formation

Deployment and Provisioning

- CloudFormation: Terminology
- CloudFormation: Structure of the template
- CloudFormation: Working with Stacks
- CloudFormation: Ref functions
- CloudFormation: Parameters
- CloudFormation: Init and User Data

- CloudFormation: Creating Base templates
- CloudFormation: Troubleshooting templates