



---

# DEVOPS MASTER PROGRAM SYLLABUS

---

# DEVOPS MASTER PROGRAM

## Note :-

1. All the topics which we mentioned below, we are going to give training on from basic to advanced level with Hands on Training by DevOps Experts,
- 2) For Each Topic Soft copy material and interview Questions will provide.
- 3) Real time Use Case Scenarios & examples
- 4) Resume Preparation
- 5) Job Oriented Training

## 1) DevOps introduction :-

- Software Development Life Cycles (SDLC)
- Agile Methodology
- Scrum Model
- Sprint
- What is DevOps?
- Why DevOps?
- DevOps Importance
- DevOps Model

- devops cycles
- devops tools .

## 2.linux :-

- introduction
- linux operating system
- installing required tools
- create an account in aws
- create an Ec2 instance in aws
- linux directory structure
- linux commands

### 3) Git :-

- Account Creation in GitHub/Git Lab/Bit Bucket
- What is git?
- What is the VCS?
- What is SCM?
- What is Branch?
- What is Tag?
- Git Administration
- Git commands
- SSH Key generation
- PAT creation
- Cloning Repositories
- Merging Branches
- Pull Requests
- Cloning Remote Repo
- GitHub API
- Forking Repo
- Branching strategy
- Best practices for Releases/Code commits in any VCS

## 4. Maven

- introduction
- Features & Benefits of Maven
- Installation (Maven Environment Setup)
- Directory Structure
- Content of pom.xml
- Maven Repositories
- Maven Life Cycles
- Executing some Examples
- Maven Multi Modules
- Parent pom
- Child pom

## 5. Tomcat

### Introduction

- Difference between appserver & web server
- Installation
- Directory structure
- Enable tomcat server (active )
- Users creation
- Roles
- How to change the port number ?
- Application deployment

## 6) SonarQube :-

- Introduction
- Pre-Requisites
- Architecture
- Installation
- Change the Port Number
- Execution
- Administration
- Users Creation (Normal User and Administrator)
- Project Creation
- Project deletion
- Token Generation
- Create Quality Profiles
- Create Quality Gates
- Configure
- Sonar Cloud

## 7. Nexus :-

- Introduction
- Installation
- Nexus directory structure
- Admin password change
- Port number change
- Creating the repositories

- integrate the maven with nexus
- creating the users .

## 8. Jenkins

- Introduction
- Continuous integration
- Continuous delivery
- Continuous deployment
- **Installation :-**
  - In linux server
  - Maven project
  - Integrating Maven software
  - Integrating nexus with Jenkins
  - Integrate sonarqube with Jenkins
  - Deploy the app into Tomcat
- **Jenkins plugins :-**
  - Deploy to container plugin
  - JACOCO plugin
  - Next build number

- safe restart
- blue ocean
- maven integration
- artifactory plugin
- sonarqube scanner
- email extension
- deploy weblogic
- schedule build
- ssh agent
- thin backup
- build number
- role based authorization plugin
- rebuild last
- **Jenkins directory structure**
- **Port number change**
- **View**
- **Create view**
- **Jenkins security**
- **Creating users**
- **Access to specific users**
- **Access to specific projects**
- **Pipeline projects**
- **Scripted way**



- declarative way
- creating master & slave.

- Jenkins shared libraries
- Jenkins backup

## 9. SLACK

- Introduction
- Creating account in slack .
- Slack notifications

## 10. Ansible

- Introduction
- Ansible introduction over view
- Benefits of ansible
- Ansible architecture
- Ansible installation
- Host files
- Ansible commands
- Playbooks
- Tags
- Handlers
- Group variables
- Host variables

- loops
- Ansible vault
- dynamic inventory

#### 11. Resume preparation :-

- DEVOPS engineers roles & responsibilities
- day to day activities

#### 12. Mock interview sessions :-

## 13) AWS

- Introduction to Cloud & Cloud Computing
- Cloud Service Models
- Types of clouds
- AWS Introduction & It's Global Architecture
- **Elastic Compute Cloud (EC2)**

Introduction to Amazon EC2

Launch Our First EC2 Instance - Part 1

Launch Our First EC2 Instance - Part 2

How to use Putty (Windows Users Only)

Security Groups

Elastic Volumes,

Instance stores,

EC2 Instance Meta-data

Summary of EC2 Section

Amazon Machine Instance (AMI)

Private IP, Public IP, Elastic IP

### **Elastic Block Store (EBS)**

What is EBS and its uses

EBS Snapshots

Create and attach additional EBS volumes.

EBS Snapshot Manager

- **EFS**
- **Simple Storage Service (S3)**
  - S3 Essentials
  - Creating a S3 Bucket Using The Console
  - S3 Storage Options and Types
  - S3 Version Control
  - Cross Region Replication
  - S3 Lifecycle Management & GlacierS3
  - Security Snowball
  - S3 Summary
- **Virtual Private Cloud (VPC)**
  - VPC Overview
  - Custom VPC's
  - Building our own custom VPC
  - Build A Custom VPC - Part 2
  - Public Subnets, Private Subnets.
  - Network Address Translation (NAT)
  - Access Control Lists (ACLs)
  - VPC Summary
  - VPC Peering
- **Elastic Load Balancer (ELB)**
  - NLB
  - ELB

- **Route 53(DNS)**
- **ACM**
- **Auto Scaling Groups**
- **Identity Access Management (IAM)**

Introduction of IAM

Users

Groups

Roles

Policies

Permissions

- **AWS CLI**
- **Elastic Container Registry (ECR)**
- **Elastic Kubernetes Service (EKS)**