

Devops



DevOps Training

DevOps



SevenMentor
PVT.LTD

Introduction to Devops:

- What is DevOps?
- Why DevOps?
- Principles of DevOps
- History of DevOps
- SDLC models
- Understand Agile Methodology
- Prerequisites for DevOps
- DevOps with Agile using Scrum
- Overview of DevOps Tools
- How to achieve DevOps?
- What is CICD?

Prerequisite for DevOps

Topic 1: - Networking Concepts (Duration: 02:00:00 Hrs)

- Network Fundamental
- Communication Models and Protocols
- IP Addressing and Subnetting

Topic 2: - Introduction to Virtualization (Duration: 00:30 Mins)

- What is Virtualization?
- What is Hypervisor?
- Types of Server Virtualization
- Benefits of Virtualization
- Important Virtualization products
- Create VM's using Hypervisors



Topic 3: - Linux Administration (Duration: 04:00 Hrs)

Linux Introduction

Linux Installation

Basic Linux concepts

Vim Editor

Process Management

Controlling Services & Daemons

SSH with key-based Authentication

Linux Networking

System logs management

Archiving and Copying Files Between Systems

Package Management

Cron Jobs Scheduling

Configure Apache server

Limiting Network Communication with firewall

Topic 4: - Database Concepts and Shell Scripting (Duration: 02:00 Hrs)

Installing MariaDB

Working with MariaDB Databases

Managing Databases Users and Access Rights

Creating and Restoring MariaDB Backups

Shell scripting examples

How real-time shell scripts work

How to call scripts with different tools

Different conditions while using scripts

Database Backup using Scripts

Development ide setup

Installation of java and configuration

Eclipse ide software installation and configuration



Jira Bug Tracking Tool

- Introduction to Jira
- Scrum introduction with Scrum Roles
- Jira login and creating projects
- User creation and deletion
- Account creation and bug issues checking
- Standalone Jira vs cloud Jira
- The workflow of the Scrum process with project

Version Control System

- What is Version Control System?
- What Is Git?
- Git Installation with Different environments
- Commands And Operations In Git with GitHub (Initialize, Status, Add, Commit, Clone, Pull, Push, Difference, Reset, Log, Show, Tag, Stash, Remove)
- Advanced Git operations (Branching, Merging, Rebasing, Merge vs Rebase, Conflict resolving, Deleting remote repositories, Fork Operation)
- Git integration with Eclipse

Build Tool

- Introduction to maven
- Maven compare with ant and other tools
- Maven setup in multiple environments
- Maven lifecycle
- Maven repository structure
- Real-time maven settings for the project
- Maven structure coding and implementation with Eclipse



Application Server Implementation

Need for application and web server
Deploy Tomcat server in different environments
Setup, configure of Tomcat, Apache, Nginx servers
Deploy war file using Tomcat Server

Working with Cloud computing

Cloud Computing + AWS Introduction
Create a free tier AWS account
Basic Overview of services, AWS Billing and account
Virtual Private Cloud:
Set Budget
Instance creation and access using MobaXterm & putty also with RDP using different platforms
Basic Overview of VPC
Subnetting
VPC Creation with multi-tier architecture
Inter VPC peering
VPN - On-premises to Cloud premise connectivity
NAT
AWS Marketplace

EC2:

Purchase, Type & Pricing
Instance Monitoring
SNS
Cloud Watch
IAM
Boot Script
EBS
EFS
Snapshot
AMI Creation
Auto Scaling
ELB



Storage:

- Basic Storage introduction
- Versioning
- Replication
- S3 Browser
- Fast Glacier

Cloud Formation

Container Management:

- Why need configuration management?
- Introduction to tools like ansible, chef, puppet
- What is Ansible?
- How Ansible Works?
- Ansible setup and configuration
- Ansible Inventory Introduction
- Ansible ad-hoc commands
- Managing Ansible Configuration file
- Creating playbooks with structures and conditions
- Managing Ansible Roles
- Real-time servers management
- Ansible vault to protect ansible playbooks
- AWS Provisioning using Ansible

Container Management

- What is Containerization?
- What is Docker?
- Docker setup in multiple environments
- Docker Images
- Docker file creation and deployment
- Working with Docker hub
- Docker ad-hoc commands like push, pull, etc.
- Create Your Own Private Docker Registry on Linux Server
- Manage Docker Volumes
- What is Docker Compose?
- Manage containers using Docker Compose files



Container Orchestration

What is Container Orchestration?
What is Docker Swarm?
Working with Docker Swarm Using EC2 Instance
Introduction of Kubernetes
Installing Kubernetes Cluster
Manage Kubernetes Master and Nodes
What is Pod?
Managing pod network with Example
Replication Controller
ReplicaSet
Deployment
Volume management

Jenkins - Continuous Integration

Introduction to CICD
Introduction to Jenkins, TeamCity
Installation and configuration of Jenkins
Jenkins users and Roles Management
Jobs in Jenkins
Jenkin node setup and configuration
Jenkins integration with GIT (SCM)
AutoDeployment with Jenkins using git, maven and Tomcat server

Backup / Artifactory Tool

What is Artifactory tools and purposes
Jfrog vs nexus
Install and setup Jfrog
Maven dependencies backup with Jfrog
Jenkin Jfrog automation job



Monitoring Tools

Introduction to Nagios XI and Zabbix

Installation and setup of Nagios

Adding nodes to Nagios master

Monitor Windows Servers

Monitor Linux Servers

Monitor EC2 Instances

Monitoring different metrics in Nagios

DevOps Projects:

Project 1: Simple DevOps project for CI/CD through Jenkins

Project 2: CI/CD pipeline using GIT, Jenkins, and Ansible

Project 3: Automatic deployment using Docker

