

DEVOPS

Section: 1 Understanding of DevOps & DevOps Process

- Introduction
- What is DevOps || DevOps Tools
- Continuous Development
- Continuous Testing
- Continuous Integration
- Continuous Deployment & Monitoring

GIT

Section: 2 GIT Introduction & Installation

- Git | Welcome & Goal
- Audience & Study Tips
- Key GIT Terminology
- GIT Introduction
- Install GIT on LINUX
- Download and Install GIT on Windows

Section: 3 GIT Quick Start

- Configure User Information in GIT
- Create First GIT Repository
- First GIT Commit
- Adding Files and GIT Logs
- Understanding of GIT Workflow

Section: 4 GIT with GITHUB

- Explore Git with GitHub
- Create Centralized Repository
- Create Branches in GIT
- Merge Branches in GIT
- Revert a Commit in GIT

Section: 5 GIT Basics

- Add GIT in Existing Project Part
- Fork GitHub Existing Project
- Git CLI Complete Workflow

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Back-out GIT Changes

Delete File in GIT

Rename & Move File in GIT

- Find Commit, File History in GIT

Section: 6 Branching & Merging in GIT

Section: 7 GIT Rebase

Section: 8 GIT Stashing

Section: 9 GIT Tagging

Section: 10 GIT Common Mistakes and Fixes

MAVEN

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- Maven Introduction
- Configure Maven on Windows Machine
- Configure Maven on Linux Machine
- Generate First Maven Project from Maven CLI
- Maven Build Life Cycle
- POM.xml File in Maven Project

JENKINS

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Section:1 Continuous Integration || Jenkins Introduction

- What is Continuous Integration || Need of Jenkins
- Download and Configure Jenkins on Linux
- Download & Configure Jenkins on Windows
- Download and Configure Jenkins on Mac OS

Section:2 Jenkins Getting Started

- Jenkins Architecture
- Create & Execute Jenkins Job
- Install GIT & GitHub Plugin

Section: 3 Continuous Integration | Jenkins Jobs

Configure Jenkins to Work With Java, GIT, Gradle, Maven

Create First Maven Base Jenkin Project

Create First Maven Base Jenkin Project

Run Maven Project Via Jenkins

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Continuous Inspection with Jenkins

Code Quality and Code Coverage Metrics Report

- Continuous Delivery with Jenkins
- Install Tomcat as Staging Env
- Deploy Staging Environment
- The latest Deploy to Container plugin
- Build Pipeline Intro
- Jenkins Parallel Builds
- Deploy to Production
- Jenkins As Code Pipeline
- Distributed Builds
- Jenkins on Cloud

DOCKER

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- What is Docker
- Where I will Find the Docker Resource
- Install Docker on Various Platforms
- Docker For Windows
- Install Docker on Linux Machine
- Creating Docker Containers
- Check Docker Install and Configurations
- Start Your First Container
- Docker Internal Processing
- Containers vs Virtual Machines
- Docker CLI Monitoring
- Run Commands in Running Containers
- Docker Networking
- Docker Network CLI : List & Inspect
- Docker Network : Create, Connect & Disconnect Network
- Docker Network : DNS Concept
- Docker Container Images
- What is Docker Image
- Docker Hub Repository
- Concept of Docker Image Layers
- Docker Image Tagging
- Upload Docker Image to Cloud
- All About Container Images: Discover, Build, Create Images
- Building Images: The Dockerfile Basics

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Building Images: Running Docker Builds

Container Lifetime & Persistent Data

- Persistent Data: Data Volumes
- Persistent Data: Bind Mounts
- Docker Compose: The Multi-Container Tool
- Docker-Compose The Docker Compose YAML File
- Docker Compose CLI Commands
- Adding Image Building to Compose Files
- Swarm Mode: Built-in Orchestration
- Create Docker Swarm Cluster
- Create Service and Scale It
- Using Docker Compose to deploy multiple containers
- Deploying a Multi Node Cluster using Docker Swarm
- Deploying a multi-service app on Docker Swarm
- Docker Compose - Build Application from Scratch
- Setup Docker on Swarm Docker Nodes

KUBERNETES

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- Kubernetes Introduction & Uses
- Kubernetes Architecture
- Basics of Kubernetes
- Kubernetes vs Docker Swarm
- Setting-Up Kubernetes on local
- SetUp Kubernetes with MiniKube
- SetUp Kubernetes on AWS Cloud
- Kops Introduction
- Prepare AWS Environment for Kops
- Kubernetes Setup on AWS Cloud
- Build and Push Docker Custom Image
- Run First Custom Image on Local Kubernetes
- Run Custom Image on AWS Kubernetes
- Kubernetes Node Workflow
- Scaling Pods in Kubernetes • Replica Set in Kubernetes
- Deployment in Kubernetes
- Services in Kubernetes

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- Labels in Kubernetes
- Liveness(HealthCheck) of Application in Kubernetes
- Readiness in Kubernetes & Application
- Lifecycle Of Pods in Kubernetes
- Secrets in Kubernetes
- Lab Secrets in Kubernetes
- Service Discovery using DNS
- ConfigMap in Kubernetes
- Ingress in Kubernetes
- Volume in Kubernetes
- EmptyDir Volume in Kubernetes
- HostPath Volume in Kubernetes
- Dynamic Volume Provisioning in Kubernetes
- Dynamic Volume : Run WordPress On Kubernetes
- Pod Presets in Kubernetes
- Enable and Execute PodPresets in Kubernetes
- Stateful Sets in Kubernetes
- Deploy Cassandra In Stateful Set
- DaemonSet In Kubernetes
- AutoScaling in Kubernetes
- Affinity in Kubernetes
- Architecture and Working Model Of Master Component
- Manage Resource Quota in Kubernetes
- Resource Quota in Kubernetes
- User Management in Kubernetes
- Role Base Access Control
- Networking in Kubernetes
- Node Management
- Package & Deploy on Kubernetes : HELM
- HELM : Introduction
- Installing and Running HELM on Kubernetes
- Create & Deploy HELM Chart on Cluster
- Upload HELM Chart in S3 Bucket

ANSIBLE

- Introduction to Ansible
- Ansible Server Configuration
- Infrastructure Management
- SSH Connection in Ansible Master
- YAML Scripts
- Host Inventory
- Hosts and Groups
- Host Variables
- Group Variables
- Host and Group Specific Data
- Ad-hoc Commands
- Playbooks
- Variables
- Conditionals
- Loops
- Blocks
- Handlers
- Templates
- Modules
- Core Modules
- Extra Modules
- Ansible Roles

Continuous Monitoring using NAGIOS

- What is Continuous Monitoring
- Introduction to Nagios
- Nagios Architecture
- Monitoring Services in Nagios
- What are NRPE Plugins
- Monitoring System Info using NRPE plugins

NEXUS

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- what is artifactory in devops
- Why Artifactory
- Artifactory plugin
- install nexus
- deploy tar file
- deploy docker images
- Installation and Configuration
- Repository Management
- Proxy Management
- Integration with Maven

LINUX

- LINUX Basic and Admin
- Linux OS Introduction
- Importance of Linux in DevOps
- Linux Basic Command Utilities
- Linux Administration
- Environment Variables
- Networking
- Linux Server Installation
- RPM and YUM Installation

CLOUD COMPUTING

- What is Cloud?
- Evolution of Cloud Computing
- IAAS (Infrastructure as a Service)
- SAAS (Software as a Service)
- PAAS (Platform as a Service)
- Private, Public and Hybrid Cloud
- Public Clouds
- Amazon Web Services
- Microsoft Azure
- Google Cloud Services

AWS

- Creating AWS account

DEVOPS TRAINING WITH AWS AND AZURE

- Free tier Eligible services
- Understanding AWS Regions and availability zones
- EC2 (Elastic Cloud Comput)
- About EC2 and types , Pricing
- EIP (Elastic IP address), Allocating, associating , releasing
- Launch windows and Linux Instances in AWS
- Connecting windows and Linux instances from windows desktop and Linux machines •
- S3 (Simple Storage Service)
- About AWS Storage services, EBS and S3
- Creating S3 Buckets and putting objects in bucket
- Discussion about Bucket Properties
- S3 Pricing
- About S3 glacier
- EBS (Elastic Block Storage)
- Types of EBS Volumes
- Creation, attaching and Detaching volumes
- ELB (Elastic Load Balancer)
- Understanding the load balancing
- Configuring ELB and adding the webserver under ELB
- Auto Scaling
- Types of Scaling (Horizontal and Vertical)
- Configuring Launch Configuration
- Creating and defining the auto scaling group policy
- IAM (Identity Access Management)
- Understanding of AWS Security using IAM
- Definition of Roles, policies and Groups
- Creating IAM Users and managing password policies
- RDS (Relational Database server)
- About RDS and available RDS Engines in AWS
- Configuring MYSQL RDS service
- Connecting EC2 Instance to RDS Instance

AZURE DEVOPS

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- Introduction to DevOps
- CI and CD
- Deploy Web Apps to Azure with VSTS CI_CD
- Architecture of CI and CD with Azure Web Apps
- Getting started with CI and CD with Azure Web Apps

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- Create a Team Services Project
- Deploy a Web app to Azure
- Creating a Build Definition for CI and CD
- Deploying an App to VSTS CI and CD
- Azure Web App Deployment Slots
- Deploying to a staging site
- Architecture of CI and CD with Azure VMs
- Creating an Azure VM
- Create a Deployment Group in VSTS
- Creating a Release Definition
- Manually Trigger a Release
- Testing the CI and CD pipeline
- Containers vs VMs
- Important concepts in Containers
- Running Containers with Docker
- Orchestration Technologies
- Architecture of Kubernetes
- Kubernetes objects
- Azure Kubernetes Service
- Getting started with Azure Kubernetes Service (AKS)
- Running the app locally
- Creating Container Registry
- Creating Kubernetes Cluster in Azure
- Running your app
- Scaling your app
- Update your app
- Upgrade your Cluster
- DevOps in AKS
- Azure DevOps Project
- DevOps with Jenkins and Kubernetes

GCP

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- Creating GCP account
- Free tier Eligible services
- Understanding GCP Regions and availability zones
- VM Creation
- About VM's and types , Pricing
- EIP (Elastic IP address), Allocating, associating , releasing

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DEVOPS TRAINING WITH AWS AND AZURE

- Launch windows and Linux Instances in GCP
- Connecting windows and Linux instances from windows desktop and Linux machines
- Storage Buckets
- Google Container Registry
- Google Kubernetes Engine
- IAM
- Service Account
- Pub/Sub
- Database

Terraform

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- The Benefits of Using Terraform
- Terraform Features
- Installation and Setup
- init, plan, and apply
- Terraform Providers
- Resources
- Terraform CLI
- Terraform Variables
- State Management
- Remote Backends
- The Benefits

Real time Projects

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- AWS CICD project using Jenkins and Kubernetes
- Azure CICD project using Jenkins and Kubernetes
- GCP CICD project using Jenkins and Kubernetes
- Terraform Project

Resume Preparation and Interview Questions

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- Sample Multi cloud DevOps Resume
- Interview Questions